The Chiba University International Collaborative Research

2018

Contents

Graduate School of Humanities 1

Graduate School of Social Sciences 2

Faculty of Education 5

Graduate School of Science 13

Graduate School of Engineering 66

Graduate School of Horticulture 85

Graduate School of Medicine 125

Graduate School of Pharmaceutical Sciences 139

Graduate School of Nursing 145

University Hospital 157

Center for Environmental Remote Sensing 158

Marine Biosystems Research Center 183

Medical Mycology Research Center (MMRC) 184

Institute of Management and Information Technologies 187

Center for Frontier Science 188

Center for Frontier Medical Engineering 189

Center for Environment, Health and Field Sciences 201

Center for Forensic Mental Health 205

Center for Preventive Medical Sciences 209

Safety and Health Organization 213

The subject of this survey is specified as “International Collaborative Research”. It refers to an international research carried out jointly on a departmental, laboratory or personal level, and introduces works, which were presented officially, as well as works expected to be presented.

Matters of Survey

1. Name of the research project
2. Chiba University representative research worker
   (place of work / occupation / full name)
3. Partner abroad
   (country / name of institution / full name)
4. Implementation period
5. Project outline
6. Funds, grants, etc
7. Main result
8. Other important items to be stated
   (awards received, symposiums attended, etc)

Graduate School of Humanities

1. Cultural Memories of Tsingtau/Quingdao and Yantai in Germany, Japan and China.
2. Graduate School of Humanities / Professor / Akiko MIYAKE.
3. China / Yantai University / Wenzhe LI

   China / Ludong University / Yinji PIAO
4. Since 2014
5. This study researches cultural memories of the colonial cities

   Tsingtau/Quingdao in German-occupied period(1898-1914), Japan-occupied period(1914-1922,1938-1945) and Post World War II,and Yantai which was in1858 opened. We regard these cities als media of cultural memory and analyze architecture, journals, literature, photos, film,oral history, etc.from German, Japanease, and Chinese view.
6. Grant in Aid for Scientific Research B
7. Main result

   - Miyake, Akiko. Cultural Memories of Tsingtau/Quingdao and Yantai in Germany, Japan and China.

     <I>, “Deutsche Musterkolonie” Tsingtao

     Remembering, Forgetting, and Memory in Culter. Research Project Reports No.268, 2014 ,pp.1-23.
   - MIiyake, Akiko.> Erinnerung an das Deutsche Reich < und > Traum des Kapitalismus <—> Eingedenken < in Walter Benjamins » Berliner Kindheit um neunzehnhundert«und » Das Passagen-Werk « Comparative Culture Chiba University, No.2,2014, pp.1-23.
   - Hashimoto, Yuichi.. Colonial city Dalian and Tsintau.

     Japanese-Chinese Conference of “Cultural Memories of Tsingtau/Quingdao and Yantai in Germany, Japan and China.” Presentation 15.7, 2014, Chiba University.
   - Hashimoto, Yuichi. The War our side began, and the Others who stand in colonies. Now here and beyond, Vol.5,2015, pp.49-55.
   - Hashimoto,Yuichi. Thinking from the Languagespace China Self who becomes >The another< in the life of outer language, Multicultural Rader,2016, Tokyo University of Foreign Studies, pp.80-98.
   - SUTO,Haruko. Kiatschau in deutschen Satirenzeitschriften:Vorstellungen der” Musterkolonie” und Verämderungsproyess der Diskurse. Japanese-Chinese Conference of “Cultural Memories of Tsingtau/Quingdao and Yantai in Germany, Japan and China.” Presentation 11.8, 2014, Chiba University.
   - Miyake, Akiko. Tsingtau: City as Memory Media. Manchukuo Lterature Association (Tokyo University of Foreign Studies) December 22 ,2018.
   - Hashimoto, Yuichi. Tsingtau and mManchou under the colonial time Manchukuo Lterature Association (Tokyo University of Foreign Studies) December 22, 2018.
   - Miyake,Akiko; Hashimoto,Yuichi; Li, Wemzhe.Piao, Jinji Workshop: Cultural Memories of Tsingtau n Germany, Japan and China Japan Comparative Literature Association (University Hokkaido) Juni 15. 2019.

Graduate School of Social Sciences

1. Multidisciplinary research related to conflicts and the environment

   Applications of theory and practice (IT Technology)

   Climate change and risk mitigation strategies

   Food Security and energy security

   FTA, Policy and the construction of win-win relationship

   Business strategies and multidisciplinary approach

   Sustainable development and management

   Global policy and international relation

2. Graduate School of Social Sciences / Assistant Professor / Li Xiang

3. The United States / Cornell University / Harry M. Kaiser

   Canada / York University / Charles J. McMillan

   Canada / Theechim Management Group / Lori C Sparrow

   Canada / Calgary Government / Corporate EHS Auditor / Stephen Leung

4. 2010-

5. Analyzing global issues from a multidisciplinary perspective and proposing effective solutions are my research characteristics. My research topics range from strategic management to food security, energy security, risk mitigation strategies, climate change, adaption to aging issues, construction of win-win relationship, global supply chain and eco business, global policy, IT technology, and the innovation.

6. Cornell University (the USA), York UniversirtySchulich School of Business (Canada), The University of Tokyo (Japan), Tokyo Institute of Technology (Japan), Hitotsubashi University **Graduate School of International Corporate Strategy,** Juntendo University, Pi technology Institute, Yamaoka Scholarship Foundation, other foundations, XIhua University, Yangtze Normal University from 2016- etc.

7. Main result

   2011

   Xiang Li, Taro Takahashi, Nobuhiro Suzuki, Harry M. Kaiser. 2011. The Impacts of climate change maize yields in the United States and China. Agricultural Systems 104, 348-353. (More information can be found online)

   1) The published academic article was selected to be a cutting-edge research by Nature Climate Change in 2011.

      For more details, please refer to

      Nature Climate Change: http://www.nature.com/nclimate/2011/110215/full/nclimate1046.html)

   2) Cornell University Cornell Chronicle:

      http://news.cornell.edu/stories/2011/02/technology-economics-may-counter-climate-impact

   2013

   1) Xiang Li, Taro Takahashi, Nobuhiro Suzuki, and Harry M. Kaiser. 2013. Impact of climate change on maize production in Northeast and Southwest China and risk mitigation strategies. ICAAA 2013, 11-20.

2) Xiang Li and Nobuhiro Suzuki. 2013. Implications of Climate Change Impacts on Regional maize Production in the United States: Risk Mitigation Strategies and Food Security. International Journal of Environmental Science and Development 4, pp. 446-451.

2014

1) Xiang Li and Charles McMillan. 2014. Corporate Strategy and the Weather: Towards a Corporate Sustainability Platform. Journal of Problems and Perspectives in Management 12 (Issue 2), pp. 200-214.

2) Xiang Li, Taro Takahashi, Nobuhiro Suzuki, Harry M. Kaiser. 2014. Impact of Climate Change on Maize Production in Northeast and Southwest China and Risk Mitigation Strategies. APCBEE Procedia 8, pp. 11-20.

2015

1) Xiang Li. 2015. Impacts of Business Strategies on Coffee Production and the Environment, International Journal of Environmental Science and Development 6, pp. 405-408.

2) Charles McMillan and Xiang Li. 2015. Impacts of prices incentives, Costs and Management Awareness on maize supply in two regions of the USA. International Journal of Environmental Science and Development 6, pp. 254-258.

2016

1) Hidefumi Kurasaka, Teruya Sekine, Sasiro Murayama, Takahide Aoyagi, and Karen Mitamura, Xiang Li. 2016. Impacts of climate change on Japanese Radish in Ichihara and their potential implications. International Journal of Environmental Science and Development 7, pp. 778-782 (to be published).

2017

1) Xiang Li. 2017. The Popularity of Japanese Universities to International Students and Its Potential Implications. International Journal of Social Science and Humanity 7, pp. 325-329.

2018

1) Xiang Li. 2018. Multidisciplinary Research and Applications. Journal of Xihua University (Nstural Science Edition) 37 (1), pp.27-30.

2019

1) Xiang Li. 2019. Future Earth and Risk Management. Journal of Xihua University (Natural Science Edition) 38 (1), pp. 79-88.

2) Zhongchuang Liu, Boning Chen , Xiang Li, Li-ao Wang, Hongyan Xiao , Dongsheng Liu. 2019. Toxicity assessment of artificially added zinc, selenium, and strontium in water Short Communication. Science of The Total Environment 670 (20), pp. 433-438.

8. （Granted Japanese Patent (IT Technology), 2012）

1) Li Xiang and Ken Tatsuzawa. 2014. Encryption and decryption method of Pi++ cipher and Pi data-based encryption algorithm and decryption algorithm. Japanese Patent 5044848, Granted in July 27th, 2014.

2) The published academic article was selected to be a cutting-edge research by Nature Climate Change in 2011. Xiang Li, Taro Takahashi, Nobuhiro Suzuki, Harry M. Kaiser. 2011. The Impacts of climate change maize

yields in the United States and China. Agricultural Systems 104, 348-353.

For more details, please refer to

1) Nature Climate Change: http://www.nature.com/nclimate/2011/110215/full/nclimate1046.html)

2) Cornell University Cornell Chronicle:

http://news.cornell.edu/stories/2011/02/technology-economics-may-counter-climate-impact

1. Wellness as Fairness
2. Graduate School of Social Sciences / Professor / Masaya Kobayashi
3. U.S.A. / Miami University / Isaac Prilleltensky
4. 2017-
5. This project examines "well-being" at the personal, organizational, and community level, in order to unravel the relationship between each level in promoting community well-being and integrating well-being and fairness. The project attempts to capture and analyze the concept of "well-being" from philosophical as well as from a psychological point of view. By conducting an online survey designed by Professor Prilleltensky, the project's overseas collaborator, in Japan, the project will be able to gather comparative data to the U.S.
6. Chiba University Leading Research Promotion Program "Chiba Studies on Global Fair Society", Grant-in-Aid for Scientific Research on Innovative Areas "Political/Economic Regional Integration", "Civilizations and Global Networks".
7. Published 8 articles in Journal on Public Affairs (Association for Studies on Public Affairs, Chiba University) in March 2018.
8. Organized an international symposium titled "Wellness as Fairness" on November 23, 2017 and an open lecture titled "Understanding and Promoting Community Well-Being" on November 22, 2017, both at Chiba University.

1. Future of Fariness: Comprehensive and Normative Examinations
2. Graduate School of Social Sciences / Associate Professor / Takayuki Kawase
3. Germany / Technical University of Munich / Christoph Lütge

   Germany / Technical University of Munich / Mattias Uhl
4. 2017-
5. The aim of this project is to examine the concept of "fairness" from an ethical point of view. Self-driving cars, which were once thought of as a device in the future, is now almost becoming a reality. By collaborating with academics majoring in business ethics and members of the Ethics Advisory Board and Ethics Committee of Bavaria, Germany, the project attempts to illustrate both practical and philosophical issues and solutions surrounding the concept of "fairness" in the globalized world of the 21st century.
6. Chiba University Leading Research Promotion Program "Chiba Studies on Global Fair Society"
7. Published a lecture note "An Ethics Code for Self-Driving Cars: The Case from Germany" in Chiba Journal of Law and Politics in March 2018.
8. Organized an international symposium titled "Future of Fairness: Comprehensive and Normative Examinations" on October 30, 2017 and an open lecture titled "An Ethics Code for Self-Driving Cars: The Case from Germany" on October 31, 2017, both at Chiba University.

1. Children in the 24-hour economy
2. Graduate School of Social Sciences / Professor / Akiko Oishi
3. United States / New York University / Wen-Jui Han
   Italy / University of Torino / Daniela Del Boca
   Australia / Australian National University / Lyndall Strazdins
   Germany / WZB Berlin Social Science Center / Jianghong Li
   Finland / University of Jyväskylä / Anna Rönkä
4. 2017-
5. Bringing together scholars around the world, this project aims to examine the prevalence, causes, and consequences of parental nonstandard work schedules on child wellbeing and to explore the role of public policies in facilitating family and child wellbeing in this globalized 24 hours/7 days economy. Specifically, this project will focus on the following issues; (1) describing the prevalence of parental NSWS across nations and examining difference in the prevalence by social and demographic characteristics, (2) examining links between parental NSWS and child wellbeing across nations, and macro-level factors that are likely to modify the micro-level factors that may mediate the effects of parental NSWS on child wellbeing.
6. Grant-in-Aid for Scientific Research (B) , Research Grant from New York University
7. Akiko S. Oishi (2019) "Inequality in time spent with children (Kodomo wo kea suru jikan no kakusa)" in I. Matsumoto and N. Yuzawa, eds., Umare, Sodatsu Kiban (in Japanese), Akashi-shoten.
8. Held an international workshop in October 2017 at WZB Berlin Social Science Center, Berlin, Germany and established an international research network GRNCE (Global Research Network on Children in the 24/7 Economy).

1. Towards a Global Welfare Society: Care, Gender, and Migration in East Asia
2. Graduate School of Social Sciences / Associate Professor / Reiko Ogawa
3. Canada / Toronto University / Ito Peng
4. 2018-
5. The aim of this project is to analyze care, gender, and migration in Japan and East Asia under rapidly aging society. Since April 2019, new law on migration has been enforced in Japan. Shortage of workers in elderly care has made care work the frontier of work and globalization. Increasing foreign migrant workers in the care sector enhances changes not only in care work, but also in areas such as working conditions of part-time workers and issues such as work-life-balance. The project brings together scholars from social policy and migration, as well as those working in international organizations and in the care sector.
6. Chiba University Leading Research Promotion Program "Chiba Studies on Global Fair Society"
7. Book publication in Japanese due in June 2019 "Imin Jidai no Makuake".
8. Held an international symposium in December 2018 at the International House in Tokoy, Japan.

Faculty of Education

1. Development of Method and Materials for Physics Education (PDL system)

2. Education / Professor / Tetsuya KATO

3. Cambodia, Phnom Penh / Royal University of Phnom Penh (RUPP) / Ing Heng, Sou Kalyan,

4. 2002

5. This study aims to develop the method and materials on physics teaching/learning for wider people in the world. The apparatus named PDL has the characteristics as: low cost, small space, ease of re-construction, portable.

6. Asia-Pacific Cultural Centre for UNESCO (ACCU), Okamoto Scholarship Foundation, Ministry of Education, Culture, Sports, Science and Technology (MEXT), Cambodia International Education Support Foundation (CIESF).

7. Main result

- Materials developed:
  - PDL type experimentes; Measurement of shear modulus using by tortional oscillator, and Measurementof Youg's modulus using by reed vibration (2013).
- Published paper:
  - Novel Determination of Peltier Coefficient, Seebeck Coefficient and Thermal Resistance of Thermoelectric Module, Jpn. J. Appl. Phys., 45 No 6A (2006)
  - "DESK LAB" SERIES: A NOVEL EXPERIMENTAL APPARATUS WITH DESK TOP SIZE, EASE OF RESTRUCTURE AND LOW COST": Kalyan SOU, Naoto OZAKI, Satoshi MATSUDA, and Ken-ichi TOZAKI, Journal of the Physics Education Society of Japan (Proc. Int. Conf. Physics Education 2006)
  - A Novel Experimental Apparatus(PDL) and Its Application in Higher Education in Japan and Cambodia: K. Sou, T. Kato, K, Oto, T, Sakurai, K, Yamamoto, E. Omosa, and K. Tozaki (Proc. Int. Conf. on Physics Education 2009(ICPE 2009) AIP Conf. Proc. 1263 (2010) 175-178.
- Patent:
  1) Patent application, 2005－239958: Evaluation method of thermoelectric module
  2) Patent application, 2005－368470 Apparatus for measurement of fluid density and the measurement method
  3) Patent application, 2007－513561 Sectional desk experiment method and device
  4) Patent application, 2006－199741 Radiative heat flow sensor and measurement method of radiative heat flow
  5) Patent application, 2006－337152 Method for magnetic flux measurement and magnetic field sensor
  6) Patent application, 2007－010053 Education system with sectional experimental apparatus
  7) Patent application, 2007－137936 Thermal analyzer

8. Other Important items to be stated

- Pregident prise award at open research expibijion (2006)
- Good Practice (GP) project (2007-2010, MEXT)
- Work shop (« Higher Experimental Physics Education) : RUPP (10/2008, 10/2009 and 10/2011)
- Short stay at Chiba university for the progress of master research by the student of Royal University of Phnom Penh (7/2009 and 7/2012)
- Advise the researches for master course students of Royal University of Phnom Penh (5-11/2013)

1. Development of radiation learning program in the context of risk education
2. Faculty of Education / Professor / Katsuo Sugita
3. U.K. / Faculty of Children and Learning, Institute of Education University of London / Dr. Ralph Levinson
4. 2014-
5. We develop educational program for learning radiation risk in comparison with that of U.K.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan
7. Main result
   - Calmels N, Botta E, Jia N, Fawcett H, Nardo T, Nakazawa Y, Lanzafame M, Moriwaki S, Sugita K, Kubota M, Obringer C, Spitz MA, Stefanini M, Laugel V, Orioli D, Ogi T, Lehmann AR. Functional and clinical relevance of novel mutations in a large cohort of patients with Cockayne syndrome. J Med Genet. 2018 Mar 23. pii: jmedgenet-2017-104877. doi: 10.1136/jmedgenet-2017-104877
   - Kita, K., Sugita, K., Sato, C., Sugaya, S. Sato T, Kaneda, A. Extracellular Release of Annexin A2 is Enhanced upon Oxidative Stress Response via the p38 MAPK Pathway after Low-Dose X-Ray Radiation. Radiat. Res. 186, 79–91 , 2016(DOI: 10.1667/RR14277.1)
   - Wilson BT, Stark Z, Sutton RE, Danda S, Ekbote AV, Elsayed SM, Gibson L, Goodship JA, Jackson AP, Keng WT, King MD, McCann E, Motojima T, Murray JE, OmataT, Pilz D, Pope T, Sugita K, Susan M. White SM, Wilson IJ. The Cockayne Syndrome Natural History (CoSyNH) study: clinical findings in 102 individuals and recommendations for care. Genet Med. 2015 Jul 23. doi: 10.1038/gim.2015.110.
   - Kubota M, Ohta S, Ando A, Koyama A, Terashima H, Kashii H, Hoshino H, Sugita K, Hayashi M. Nationwide survey of Cockayne syndrome in Japan: Incidence, clinical course and prognosis. Pediatr Int. 2015 Jun;57(3):339-47. doi: 10.1111/ped.12635
   - Tanaka T, Arai M, Jiang X, Sugaya S, Kanda T, Fujii K, K Kita, Sugita K, Imazeki F, T Miyashita, A Kaneda, Yokosuka O. Downregulation of microRNA-431 by human IFN-β inhibits viability of medulloblastoma and glioblastoma cells via upregulation of SOCS6. Int J Oncol. Vol 44, 1685-1690, 2014.
   - Endo M, Fuji K, Sugita K, Saito K, Kohno Y, Miyashita T. 2011. Nationwide survey of nevoid basal cell carcinoma syndrome in Japan revealing the low frequency of basal cell carcinoma. Am J Med Genet Feb;158A(2):351-7、2012.
   - Kita K, Sugita K, Chen S-p, Suzuki T, Sugaya S, Tanaka T, Jin Y-U, Satoh T, Tong X-B, Suzuki N. Extracellular recombinant annexin II confers UVC resistance and increases the Bcl-xL to Bax protein ratios in human UVC-sensitive cells Radiation Research 176, 732–742, 2011
8. None

1. Study of biological activity of specimen which extract from sponge-associated Bacteria
2. Faculty of Education / Professor / Jun Nomura
3. Indonesia / Bogol agricaltuer University / NAHROWI RAMLI
4. 2013-
5. This study aim to identify several bioactive substances containing in extract of sponge-associated bacteria.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology,

Japan（B）、TWINCLE program

7. CYTOTOXICITY OF CRUDE EXTRACT FROM SPONGE-ASSOCIATED BACTERIA AGAINST MOLT4 LEUKEMIC CELL LINES THROUGH APOPTOSIS, AI KARWATI, JUN NOMURA, NAHROWI RAMLI, ARIS TRI WAHYUDI, International Journal of Pharmacy and Pharmaceutical Sciences Vol 7, Issue 12, 2015

8. None

---

1. Revealing neural mechanisms underlying bipedal waling and its reflex control in humans.
2. Faculty of Education / Professor / Tomoyoshi Komiyama
3. Canada / University of Victoria / Centre for Biomedical Research / Prof. E.P. Zehr
4. 2015-
5. This research project aims to disclose neural mechanisms underlying bidpedal walking and its reflex control in humans with electrophysiological techniques.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan (16K01593)
7. Main results
   (a) S. Sasada, T. Tazoe, T. Nakajima, G. Futatsubashi, H. Ohtsuka, S. Suzuki, E.P. Zehr, and T. Komiyama, 2016. Common neural element receiving rhythmic arm and leg activity as assessed by reflex modulation in arm muscles. J. Neurophysiol., 115( ), 2065-2075. DOI: 10.1152/jn.00638.
   (b) T. Nakajima, S. Suzuki, G. Futatsubashi, H. Ohtsuska, R.A. Mezzarane, T.S. Barss, T. Klarner, E.P. Zehr, and T. Komiyama, 2016. Regionally distinct cutaneous afferent populations contribute to reflex modulation evoked by stimulation of the tibial nerve during walking. J. Neurophysiol., 116(1), 183-190. DOI: 10.1152/jn.01011.2015
   (c) E.P. Zehr, T.S. Barss, K. Dragert, A. Frigon, E.V. Vasudevan, C. Haridas, S. Hundza, C. Kaupp, T. Klarner, M. Klimstra, T. Komiyama, P.M. Loadman, R.A. Mezzarane, T. Nakajima, G.E.P. Pearcey, Y. Sun, 2016. Neuromechanical interactions between the limbs during human locomotion: an evolutionary perspective with translation to rehabilitation. Exp Brain Res (2016) 234: 3059. doi:10.1007/s00221-016-4715-4
   (d) S. Suzuki, T. Nakajima, G. Futatsubashi, R.A. Mezzarane, H. Ohtsuka, Y. Ohki, E.P. Zehr, and T. Komiyama, 2016. Soleus Hoffmann reflex amplitudes are specifically modulated by cutaneous inputs from the arms and opposite leg during walking but not standing. Exp Brain Res (2016) 234: 2293. doi:10.1007/s00221-016-4635-3
   (e) T. Nakajima, K. Kamibayashi, T. Kitamura, T. Komiyama, E.P. Zehr, and K. Nakazawa, 2016, Short-Term Plasticity in a Monosynaptic Reflex Pathway to Forearm Muscles after Continuous Robot-Assisted Passive Stepping. Front Hum Neurosci.; 10: 368. doi: 10.3389/fnhum.2016. 00368.
8. None

---

1. Experimental assessment of propriospinal interneuronal system in humans
2. Faculty of Education / Professor / Tomoyoshi Komiyama
3. Brazil / University of Brasília, Faculty of Physical Education / Dr. R.A. Mezzarane
4. 2015-
5. This research project aims to reveal propriospinal neural network which is responsible for controlling upper limbs in

humans by means of electrophysiological and computer simulation techniques.

6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan (18K10759)

7. Main results

- Nakajima T, Tazoe T, Sakamoto M, Endoh T, Shibuya S, Elias LA, Mezzarane RA, Komiyama T, Ohki Y. (2017) Reassessment of Non-Monosynaptic Excitation from the Motor Cortex to Motoneurons in Single Motor Units of the Human Biceps Brachii. Front Hum Neurosci. 2017 Jan 30;11:19. doi: 10.3389/fnhum.2017.000198.

8. None

1. International Academic study on Communication of In-service Teachers Emerged from A Centralized Training

2. Faculty of Education / Professor / YOSHIDA Masami

3. Thailand / Thailand Cyber University Project, Ministry of Education, Thailand / Operational Team Members.

4. Since 2014

5. Online communication emerged from a centralized conference is monitored, and plolonged investigation is prepared to know development of online communication of in-service teachers.

6. The research project Grant-in-Aid for scientific research (B) of JSPS, project number 26301035

7. Main result

- Yoshida, M. and Thammetar, T. (2014, May), Observed Discrepancy of In-service Training for Media Information Literacy between Local and International, Paper presented at International Conference on Education and Leadership in Glocalization; ELGIC2014, at Phuket Graceland Resort & Spa, Phuket: Thailand, May 21-24 (Presentation on 23rd), Proceedings pp. 248-253.
- Yoshida, M. and Thammetar, T. (2014, June), Continual Social Graph Analysis of Online Community for a Cultural Project in the Foreign Country, Paper presented at Global Trends in Academic Research 2014; GTAR2014, at Pan Pacific Nirwana Bali Resort, Bali: Indonesia, June 2-3 (Presentation on 3rd), Proceedings p.14-24.
- Yoshida, M. and Thammetar, T. (2014, Oct.), Analysis of Online Community for Business Project in the Foreign Country. Paper presented at the 6th Indonesia Japan Joint Scientific Symposium; IJJSS 2014, At Grafika Room, University Club Universitas Gadjah Mada: Yogjakarta, Indonesia, Octber 29-30 (Presentation on 30th), Program P.23
- Yoshida, M. (2014, Dec.), Study on Online Communication Emerged from Centralized Conference, 6th International Conference on Information and Multimedia Technology (ICIMT), Flora Grand Hotel: Dubai, UAE, December 8-10 (Presentation 9th), Program P.29.
- Yoshida M. and Thammetar, T. (2015, Jan.), Analysis of an Online Community of an International Cultural Project, Paper Presented at the 2015 International Conferences on Socio-Cultural Relationship and Education Pedagogy Learning Sciences; SOCIO-CULTURAL 2015, January 31-February 1 (Presentation on 31st), At the Westin Resort Nusa Dua: Bali, Indonesia, Conference Book pp.7-13.
- Yoshida, M.(2015, Feb.), Study on Dissemination of Scholarly Papers with Open Source Options about Regional In-service Courses, 7th International Conference on Computer Research and Development; ICCRD 2015, February 6-7 (Presentation on 7th), At Vissai Saigon Hotel: Ho Chi Minh City, Vietnam, Proceedings pp.109-113.

- Yoshida, M. and Thammetar, T. (2015), Continual Social Graph Analysis of Online Community for a Cultural Project in the Foreign Country, The Social Sciences, Vol. 10, Issue 2, pp.194-200.
- Yoshida, M. and Thammetar, T. (2015， July), Analysis of an Online Community of an International Cultural Project, Advanced Science Engineering and Medicine, Vol.7, No.7, pp.550-556.
- Yoshida, M. (2016, July), Study on Dissemination of Scholarly Papers with Open Source Options about Regional In-service Courses, International Journal of Information and Educational Technology (IJIET), Vol.6, No.7, pp.550-554.
- Yoshida, M.(2015, May), Comparative Study to Understand the Potential Difference of Communication in Group Learning, Proceedings of the 8th International Conference on Education Reform for Social Justice (ICER 2015), May 26-28 (resentation on 27), At Lotus Hotel Pang Suan Kaew: Chiangmai, Thailand.
- Yoshida, M. and Duangchinda, V. (2015, June), Study on Potential Online Communication of Regional In-service Training, Paper presented at International Conference on Education (ICOED) 2015, June 2-4 (Presentation on 2nd), At Aston Kuta Hotel & Residence: Bali, Indonesia, P.13.
- Yoshida, M. and Duangchinda, V. (2015, July), Study on Potential Online Communication of Regional In-service Training, Advanced Science Letters, Vo.21, No.7, pp.2390-2395.
- Yoshida, M.(2015, Dec.), Study on Online Communication Emerged from Centralized Conference, Journal of Industrial and Intelligent Information (JIII), Vol3. No.4, pp.314-317.
- Yoshida, M. (2015, July), Perspective Views of Empowerment and Protectionism of In-service Teachers about Using Social Media in Education, Paper presented at The Sixth International e-Learning Conference 2015. Global Trends in Digital Learning, July 20-21, at BITEC: Bangkok, Thailand, (Presentation on 20th), Proceedings pp.8-13.
- Yoshida, M.(2015, Sep), Investigation of Protectionism of In-Service Teachers Regarding Social Media Use by Students, Paper presented at the Forth International Conference on E-Learning and E-technologies in Education, Surya University: Tangerang, Indonesia, September 10-12 (Presentation on 10th), Proc. pp.35-40.
- Yoshida, M., Theeraroungchaisri, A., and Pengsuparp, T.(2015, Nov.), Incorporating the Opinions of Teachers and Pre-Service Students to Design a New Lesson Plan, Paper presented at the International Conference on Education, Psychology, and Learning. LCEPL2015-Fall, Nagoya Congress Center: Aichi, Japan, November 10-12 (Presentation on 12th), Proc. pp.65-77
- Yoshida, M. (2016, April), Recognition of Teachers about Students' Competencies of Media and Information Literacy for SNS, Paper presented at International Conference on Education (ICOED) 2016, April 12-14 (presentation on 12th), At Harris Hotel & Conventions Kelapa Gading: Jakarta, Indonesia, p.20-21.
- Yoshida, M., Thammetar, T., and Duangshinda, V. (2016, May), Investigation on Using Twitter Communication during a Conference, Paper presented at 4th International Symposium on Education, Psychology and Social Sciences (ISEPSS) 2016, May 10-12 (Presentation on 10th), At Osaka International Convention Center: Osaka, Japan, Proc., p.57-68.
- Yoshida, M. (2016, July), Study on Dissemination of Scholarly Papers with Open Source Options about Regional In-service Courses, International Journal of Information and Educational Technology (IJIET), Vol.6, No.7,

pp.550-554.

- Yoshida, M., Thammetar, T., and Duangshinda, V. (2016,June), Investigation on Using Twitter Communication during a Conference, International Journal of Educational Science and Research (IJESR), Vol.6, No.3, p.99-110.
- Yoshida, M. (2016, July), Effects of Social Networks to Communication of Learners, Paper presented at The 2016 International Science, Technology, Engineering, and Mathematics (STEM) Education Conference, July 6-8th (Presentation on 7th), At The Imperial Pattaya Hotel: Pattaya, Thailand, Proc., pp.140-143
- Yoshida, M. and Takano, T. (2016, July), Overview of Digital Textbooks in Japan, Paper presented at The Seventh International e-Learning Conference 2016. Disruptive Innovations in Education, July 28-29th (Presentation on 28th), at Bangkok International Trade and Exhibition Center: Bangkok, Thailand, Program P.2.
- Yoshida, M. and Takano, T. (2016, Nov.), Deployment of a Digital Textbook Conforming to a Textbook, Paper presented at the 7th Indonesia Japan Joint Scientific Symposium (IJJSS2016), Nov.20-24 (Presentation on 22nd), at Chiba University: Japan, Proc.pp.108-117.
- Yoshida, M.(2016,Sep.), Recognition of Teachers about Pupils' Competencies to use Social Network System, Paper presented at The 2nd International Conference on Frontiers of Educational Technologies (ICFET 2016), Sep.28-30th(Presentation on 29th), at Nanyang Technological University: Singapore, Proc. CD-ROM.
- Yoshida, M. (2017, February), Recognition of Teachers about Students' Competencies of Media and Information Literacy for Social Network Services, Advanced Science Letters, Vol.23, No.2, pp.920-924.

8. Other important item to be stated

- The best paper award:

  Yoshida, M. and Thammetar, T. (2014, June), Continual Social Graph Analysis of Online Community for a Cultural Project in the Foreign Country, Paper presented at Global Trends in Academic Research 2014; GTAR2014, at Pan Pacific Nirwana Bali Resort, Bali: Indonesia, June 2-3 (Presentation on 3rd), Proceedings p.14-24.
- Award of highly commended paper:

  Yoshida, M.(2015, May), Comparative Study to Understand the Potential Difference of Communication in Group Learning, Proceedings of the 8th International Conference on Education Reform for Social Justice (ICER 2015), May 26-28 (resentation on 27), At Lotus Hotel Pang Suan Kaew: Chiangmai, Thailand.
- Outstanding Paper Award:

  Yoshida, M., Theeraroungchaisri, A., and Pengsuparp, T.(2015, Nov.), Incorporating the Opinions of Teachers and Pre-Service Students to Design a New Lesson Plan, Paper presented at the International Conference on Education, Psychology, and Learning. LCEPL2015-Fall, Nagoya Congress Center: Aichi, Japan, November 10-12 (Presentation on 12th), Proc. pp.65-77

1. Comparative study for educational management between Japanese and U.K. children with developmental disorders
2. Faculty of Education / Professor / Katsuo Sugita
3. U.K. / Durham University / Christine Merrell
4. 2016-
5. We perform comparative study to investigate the differences of educational management between Japanese and U.K.

children with developmental disorders

6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan

7. Main result

- Shiohama T, Ando R, Fujii K, Mukai H, Naruke Y, Sugita K, Kato E, Shimojo N. Case Rep Pediatr. 2017;2017:3861608. doi: 10.1155/2017/3861608. Epub 2017 Oct 25 (https://doi.org/10.1155/2017/3861608)
- Konakawa A, Ebine H, Sugita K. translation of "Working with Difficult Children in Primary Schools
- A Guide for Teachers – 2nd Edition: A research-based guide for teachers, produced by CEM, Durham University, http://doi.org/10.20776/100569
- Hoshino I, Sugita K, Konakawa A, Sugita Ki, Orihara S, Hayashi T, Yokota A. Development of "Lexicon-Concept Link" in the First Language and Second Language. Chibadaigaku Kyouikugakubu Kennkyuukiyou 2017 65, pp269-278
- Suzuki C, Sugita K, Hoshino F, Sugita Ki, Shimoyama I, Orihira S, Yokota A, Minohara M. Development of "Lexicon-Concept Link" in the First Language and Second Language –Part 6-.. Chibadaigaku Kyouikugakubu Kennkyuukiyou 2016, vol64, pp309-316

8. None

---

1. Education for Sustainable Development (ESD) focusing on school lunch with adopting traditional crops in Madhya Pradesh of India
2. Faculty of Education / Associate Professor / Koji Tsuji
3. India / Jawaharlal Nehru Agricultural University / D. Khare etc.
4. 2016-
5. (1) To improve nutritional status of students in MP.
   (2) To promote conservation of traditional crops in MP as plant genetic resources.
   (3) To promote utilization of traditional crops by adopting for school lunch.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan
7. (1) Tsuji K., Nahatkar S.B., Dubey O.P., Tiwari S., Parihar P., Rajput L.P.S. (2017) Field survey on millets in Dindori district of Madhya Pradesh state of India. Breeding Research 19 Suppl. 1. 161.
   (2) Tsuji K., Rajput L.P.S., Joshi R.P., Paradkar V.K., Barpete R.D., Parihar P., Thakur R.S., Nahatkar S.B., Khare D. (2018) Field survey on minor millets in Madhya Pradesh state of India. Breeding Research 20 Suppl. 1. 144.
8. None

---

1. Geological researchs on the Lower Jurassic Nishinakayama Formation, Toyora Group, Japan
2 . Faculty of Education / Assistant Professor (tenure-track) / Kentaro Izumi
3. China / China University of Geosciences / David B. Kemp
   USA / University of Utah / Benjamin T. Breeden III
   Norway / University of Oslo / Viktória Baranyi
   UK / University of Aberdeen / Roger D. Burgess
   USA / College of Charleston / Theodore R. Them

4. 2013- present

5. The Lower Jurassic Nishinakayama Formation, Toyora Group, which crops out in Shimonoseki City, Yamaguchi Prefecture is geologically important. In particular, the formation is fossiliferous, and thus paleontologically important for understanding the paleoecology and evolution of the Early Jurassic. The Nishinakayama Formation is also important owing to the record of the marked environmental changes on the Early Jurassic triggered by global warming. This project studies the Nishinakayama Formation to provide detailed paleoenvironmental changes during the Early Jurassic and biological response(s).

6. Daiwa Anglo-Japanese Foundation, Great Britain Sasakawa Foundation, UK NERC Fellowship, American Philosophical Society, Geological Society of America, University of Utah Department of Geology & Geophysics, Fujiwara Natural History Foundation, Asahi Group Foundation

7. Main result

   1) Kemp, D.B., **Izumi, K.**, 2014. Multiproxy geochemical analysis of a Panthalassic margin record of the early Toarcian oceanic anoxic event (Toyora area, Japan). *Palaeogeography, Palaeoclimatology, Palaeoecology* 414, 332-341.

   2) Izumi, K., Kemp, D.B., Itamiya, S., Inui, M., 2018. Sedimentary evidence for enhanced hydrological cycling in response to rapid carbon release during the early Toarcian oceanic anoxic event. Earth and Planetary Science Letters vol. 481, pp. 162-170.

   3) Izumi, K., Endo, K., Kemp, D.B., Inui, M., 2018. Oceanic redox conditions through the late Pliensbachian to early Toarcian on the northwestern Panthalassa margin: Insights from pyrite and geochemical data. Palaeogeography, Palaeoclimatology, Palaeoecology vol. 493, pp. 1-10.

   4) Izumi, K., Kemp, D.B., Breeden, B.T.III., 2019. The Nishinakayama Formation (Toyora Group) exposed along the Era River revisited: Preliminary report on recent outcrop condition and lithology. Bull. Firefly Museum of Toyota Town vol. 11, pp. 25-35.

   5) Breeden, B.T.III, Izumi, K., 2019. A review of the vertebrate fossil assemblage from the Lower Jurassic Nishinakayama Formation in the Ishimachi district of Toyota Town, Yamaguchi Prefecture, Japan. Bull. Firefly Museum of Toyota Town vol. 11, pp. 9-23.

   6) Izumi, K., Suzuki, K., Kemp, D.B., Iizuka, T., 2019. Palaeogeographic and tectonic setting of the Lower Jurassic (Pliensbachian-Toarcian) Nishinakayama Formation, Toyora Group, SW Japan. Geological Journal vol. xxx, pp. xxx-xxx (in press).

8. Other important items to be stated

   -

Graduate School of Science

1. In-situ Monitoring of Active Structure Transformation Selectively Extracted among Metallic Nanoparticle Catalysts
2. Department of Chemistry, Graduate School of Science / Professor / Yasuo Izumi
3. France / CNRS / Dr. Jean Pierre Candy (Director), Dr. Eric Roisin
4. 2005 to Present

5. One of the most important applications of nanotechnology is catalysis of nanoparticles for environment and energy. This international joint project delineates the reason why the selective hydrogenation activity is enhanced by some orders with the addition of tin to nanoparticles and nanoparticles at three phase interface of electrodes of Polymer Electrolyte Fuel Cells, e.g. platinum, immobilized on surface. The structural and electronic effects of tin are investigated to surface Pt atoms. The originality of this work is to monitor the in-situ structure transformation by selecting Pt atoms to participate in catalysis using high-energy-resolution fluorescence spectrometry.

6. Grant-in-Aid for Scientific Research B and C from the Ministry of Education, Culture, Sports, Science, and Technology. Research Grant for Basic Science from Sumitomo Foundation, The Iwatani Naoji Foundation's Research Grant.

7. Main result

(a) "State-sensitive Monitoring of Active and Promoter Sites. Applications to Au/titania and Pt-Sn/silica Catalysts by XAFS Combined with X-ray Fluorescence Spectrometry",
Yasuo Izumi, Dishad Masih, Jean-Pierre Candy, Hideaki Yoshitake, Yasuko Terada, Hajime Tanida, and Tomoya Uruga, "X-Ray Absorption Fine Structure 13th International Conference", Hedman, B., Pianetta, P. Eds., AIP Conference Proceedings Vol. 882, 588 – 590 (2007).

(b) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Part 18. Tin Site Structure of Pt-Sn Catalyst",
Yasuo Izumi, Dilshad Masih, Eric Roisin, Jean-Pierre Candy, Hajime Tanida, and Tomoya Uruga, Materials Letters, 61(18), 3833 – 3836 (2007).

(c) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Improvement of Spectral Resolution at the Absorption Edges of 9 – 29 keV (Correction)",
Yasuo Izumi, Hiroyasu Nagamori, Fumitaka Kiyotaki, Dilshad Masih, Taketoshi Minato, Eric Roisin, Jean-Pierre Candy, Hajime Tanida, and Tomoya Uruga, Analytical Chemistry, 78(6), 2075 (2006).

(d) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Improvement of Spectral Resolution at the Absorption Edges of 9 – 29 keV",
Yasuo Izumi, Hiroyasu Nagamori, Fumitaka Kiyotaki, Dilshad Masih, Taketoshi Minato, Eric Roisin, Jean-Pierre Candy, Hajime Tanida, and Tomoya Uruga, Analytical Chemistry, 77(21), 6969 – 6975 (2005).

(e) "Development of Structural Analysis Technique for Nano-particles"
Yasuo Izumi, Polyfile, 45(528), 46 – 49 (2008).

(f) "Synthesis and Site Structure of a Replica Platinum-Carbon Composite Formed Utilizing Ordered Mesopores of Aluminum-MCM-41 for Catalysis in Fuel Cells",
Kazuki Oka, Yoshiyuki Shibata, Takaomi Itoi, and Yasuo Izumi, Journal Physical Chemistry C, 114(2), 1260 – 1267 (2010).

(g) "X-ray evaluation of the boundary between polymer electrolyte and platinum and carbon functionalization to conduct protons in polymer electrolyte fuel cells",
Kazuki Oka, Yuta Ogura, and Yasuo Izumi, Journal of Power Sources, 258C, 83–88 (2014).

8. None

1. Application of Metal Nanoparticle Catalysts Modified with Tin to Fine Chemicals Synthesis and In-situ Monitoring of the Active Structure Transformation
2. Department of Chemistry, Graduate School of Science / Professor / Yasuo Izumi
3. Italy / CNR / Dr. Matteo Giudotti, Dr. Vladimiro Dal Santo, Dr. Alverto Naldoni, Professor Dr. Rinaldo Psaro
4. 2004 to Present
5. One of the most important applications of nanotechnology is catalysis of nanoparticles for environment and energy. This international joint project explores the application of nanoparticles, e.g. platinum, immobilized on surface to fine chemicals synthesis. Concretely, selective hydrogenation of unsaturated carbonyl intermediate is performed. In-situ active structure over the discovered catalysts is investigated for surface metallic and Sn sites and control factor of selective catalysis is clarified.
6. Grant-in-Aid for Scientific Research B and C from the Ministry of Education, Culture, Sports, Science, and Technology. Research Grant for Basic Science from Sumitomo Foundation.
7. Main result
   (a) "Tin K-edge XAFS of Pt-Sn/MgO Catalyst Combined with the X-ray Fluorescence Spectrometry",
   Yasuo Izumi, Laura Sordelli, Sandro Recchia, Rinaldo Psaro, and Dilshad Masih, SPring-8 User Experiment Report 2004A, 13, 169 (2004).
   (b) "Tin K-edge XAFS study of supported Ir-Sn/SiO2 bimetallic catalysts for selective propane dehydrogenation",
   Yasuo Izumi, Dilshad Masih, Laura Sordelli, Matteo Guidotti, and Rinaldo Psaro, Photon Factory Activity Report 2005, 23B, 38 (2006).
   (c) "Tin K-edge XAFS study of supported Ir-Sn/SiO2 catalysts utilizing brilliant X-ray beam at 29 keV from PF-AR",
   Yasuo Izumi, Kazushi Konishi, Laura Sordelli, Matteo Guidotti, and Rinaldo Psaro, Photon Factory Activity Report 2006, 24B, 16 (2007).
   (d) A. Gallo, L. Sordelli, G. Peli, L. Garlaschelli, R. Della Pergola, V. Dal Santo, R. Psaro, Y. Izumi, Characterization of supported Ir-Sn nanoparticles catalysts for dehydrogenation of propane; XXXV Congress of Inorg. Chem., (2007), 9月, Milano (Domestic Conference in Italy).
   (e) "Development of Structural Analysis Technique for Nano-particles"
   Yasuo Izumi, Polyfile, 45(528), 46 – 49 (2008).
   (f) "Cluster-derived Ir-Sn/SiO2 catalysts for the catalytic dehydrogenation of propane: a spectroscopic study",
   Alessandro Gallo, Rinaldo Psaro, Matteo Guidotti, Vladimiro Dal Santo, Roberto Della Pergola, Dilshad Masih, and Yasuo Izumi, Dalton Transactions, 42(35), 12714–12724 (2013). September 21 2013, DOI: 10.1039/C3DT51144H.
8. None

1. Development of Environmental-benign Catalysts based on Nano/Meso Reaction Space
2. Department of Chemistry, Graduate School of Science / Professor / Yasuo Izumi
3. People's Republic of China / Henan University of Science and Technology / Associate Professor / Shuge Peng
4. 2007 to Present
5. Hetero-atom-doped titanium oxides have been applied to photo-catalysis excited under visible light, however, very few

examples are known consisted of ordered pore structure. In this project, visible light-excited photo-catalysts consisted of nanotubes or ordered mesopores are synthesized and the catalytic performance will be optimized. Further, we found new catalyst to convert carbon dioxide to methanol utilizing sunlight.

6. Grant-in-Aid for Scientific Research B and C from the Ministry of Education, Culture, Sports, Science, and Technology. Research Grant from Research Foundation for Opto-Science and Technology, Research Grant from the Asahi Glass Foundation. The fee for travel and stay in Japan of Dr. Shuge Peng is based on Henan University of Science and Technology (at Chiba University, February 25 2008 – August 24 2008).

7. Main result

(a) "Site Structure and Photocatalytic Role of Sulfur or Nitrogen-Doped Titanium Oxide with Uniform Mesopores under Visible Light",
Yasuo Izumi, Takaomi Itoi, Shuge Peng, Kazuki Oka, and Yoshiyuki Shibata, Journal of Physical Chemistry C, 113(16), 6706 – 6718 (2009).

(b) "Site Structure and Photocatalytic Role of Sulfur or Nitrogen-Doped Titanium Oxide with Uniform Mesopores under Visible Light." (Erratum),
Yasuo Izumi, Takaomi Itoi, Shuge Peng, Kazuki Oka, and Yoshiyuki Shibata, Journal of Physical Chemistry C, 113(29), 12926 (2009).

(c) "Specific Oxidative Dehydrogenation Reaction Mechanism over Vanadium(IV/III) Sites in TiO2 with Uniform Mesopores under Visible Light", Yasuo Izumi, Kazushi Konishi, and Hideaki Yoshitake, Bulletin of Chemical Society of Japan, 81(10), 1241 – 1249 (2008).

(d) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectroscopy. Monitoring of Vanadium Site in Mesoporous Titania Excited under Visible Light by Selective Detection of the Vanadium K□5,2 Fluorescence",
Yasuo Izumi, Kazushi Konishi, Diaa Mosbah Obaid, Tomohisa Miyajima, and Hideaki Yoshitake, Analytical Chemistry, 79(18), 6933 – 6940 (2007).

(e) "Photo-oxidation over mesoporous V-TiO2 catalyst under visible light monitored by vanadium K□5,2-selecting XANES spectroscopy"
Yasuo Izumi, Kazushi Konishi, Tomohisa Miyajima, and Hideaki Yoshitake, Materials Letters, 62(6/7), 861 -864 (2008).

(f) "Photocatalytic Conversion of Carbon Dioxide into Methanol using Zinc-Copper-M(III) (M = Aluminum, Gallium) Layered Double Hydroxides",
Naveed Ahmed, Yoshiyuki Shibata, Tatsuo Taniguchi, Yasuo Izumi, Journal of Catalysis, 279(1), 123 – 135 (2011).

(g) "Photocatalytic conversion of carbon dioxide into methanol using optimized layered double hydroxide catalysts",
Naveed Ahmed, Motoharu Morikawa, and Yasuo Izumi, Catalysis Today, 185(1), 263–269 (2012).

(h) "Recent advances in the photocatalytic conversion of carbon dioxide to fuels with water and/or hydrogen using solar energy and beyond",
Yasuo Izumi, Coordination Chemistry Reviews, 257, 171−186 (2013).

(i) “Photocatalytic Performance of Sulfur-Doped Titanate Nanotubes”,

Shuge Peng, Yasuo Izumi, Xiaofei Liu, Jun Zhang, Chinese Journal of Applied Chemistry, 29, 285–290 (2012). DOI: 10.3724/SP.J.1095.2012.00217.

8. None

---

1. Photoreduction of Carbon dioxide Utilizing Natural Light
2. Department of Chemistry, Graduate School of Science / Professor / Yasuo Izumi
3. Romania / Technical University "Gh. Asachi" of Iasi / Professor / Gabriela Carja, Graduate Student: Magda C. Puscasu
4. 2014 to Present
5. Photoreduction of carbon dioxide into hydrocarbon fuels or carbon monoxide contributes to CO2 emission and energy saving simultaneously. In this project, new genre of self-reconstuctive layered double hydroxides is utilized for this porpose. Sustainable, and extremely efficient photocatalysts are expected.
6. Kakenhi C, JSPS; A-STEP, JST
7. Main result
   (a) "Photocatalytic conversion of carbon dioxide into methanol in reverse fuel cells with tungsten oxide and layered double hydroxide photocatalysts for solar fuel generation",
   Motoharu Morikawa, Yuta Ogura, Naveed Ahmed, Shogo Kawamura, Gaku Mikami, Seiji Okamoto, and Yasuo Izumi, Catalysis Science and Technology, 4(6), 1644–1651 (2014).
   (b) "Photoconversion of carbon dioxide in zinc–Copper–gallium layered double hydroxides: The kinetics to hydrogen carbonate and further to CO/methanol",
   Motoharu Morikawa, Naveed Ahmed, Yusuke Yoshida, and Yasuo Izumi, Applied Catalysis B, 144, 561–569 (2014).
   (c) "Tailoring assemblies of plasmonic silver/gold and zinc-gallium layered double hydroxides for photocatalytic conversion of carbon dioxide using UV-visible light",
   Shogo Kawamura, Puscasu Magda Cornelia, Yusuke Yoshida, Yasuo Izumi, and Gabriela Carja, Applied Catalysis A, 504, 238–247 (2015). DOI: 10.1016/j.apcata.2014.12.042.
   (d) "Photocatalytic Conversion of Carbon Dioxide Using Zn–Cu–Ga Layered Double Hydroxides Assembled with Cu Phthalocyanine: Cu in Contact with Gaseous Reactant is Needed for Methanol Generation",
   Shogo Kawamura, Naveed Ahmed, Gabriela Carja, and Yasuo Izumi, Oil & Gas Science and Technology, 70, 841–852 (2015). DOI: 10.2516/ogst/2015020.
   (e) "Harnessing self-supported Au nanoparticles on layered double hydroxides comprising Zn and Al for enhanced phenol decomposition under solar light",
   Gaku Mikami, Florentina Grosu, Shogo Kawamura, Yusuke Yoshida, Gabriela Carja, and Yasuo Izumi, Applied Catalysis B, 199, 260–271 (2016). DOI 10.1016/j.apcatb.2016.06.031.
8. None

---

1. Photoconversion of Carbon Dioxide into Fuels by the Hybridization of Organic Dyes and Semiconductors
2. Department of Chemistry, Graduate School of Science / Professor / Yasuo Izumi
3. India / Indian Institute of Petroleum, Dehradun / Suman L. Jain, Senior Scientist
4. 2017 to present

5. By the hybridization of organic dyes and semiconductors, new photocatalysts to convert CO_2 into fuels are explored. Furthermore, the reaction mechanism is investigated by means of state-of-the-art spectroscopy.
6. Kakenhi C
7. None
8. None

---

1. Theoretical Study of Excitonic Insulator State
2. Department of Physics / Professor / Yukinori Ohta
3. Germany / Ernst Moritz Arndt University of Greifswald / Holger Fehske
4. from 2012
5. Theoretical study on the condensation mechanism of excitons in the ground state of strongly correlated electron systems is developed. Focusing in particular on the continuous crossover between a BCS-like transition of Cooper-type pairs (BCS mechanism) and a Bose-Einstein condensation of preformed tightly bound excitons (BEC mechanism), we study the lattice models, such as the extended Falicov-Kimball model and two-orbital Hubbard model, by means of the exact-diagonalization technique on small clusters, density-matrix renormalization group (DMRG) method, and variational cluster approximation (VCA) based on the self-energy functional theory. Based on the results, we aim at quantitative elucidation of the mechanism of condensation of recently-discovered excitonic insulator materials.
6. Grant-in-Aid for Scientific Research
7. Main results:

   (1) Exotic criticality in the dimerized spin-1 XXZ chain with single-ion anisotropy, S. Ejima, T. Yamaguchi, F. H. L. Essler, F. Lange, Y. Ohta, and H. Fehske, SciPost Phys. 5, 059/1-18 (2018).

   (2) Competition between excitonic charge and spin density waves: Influence of electron-phonon and Hund's rule couplings, T. Kaneko, B. Zenker, H. Fehske, and Y. Ohta, Phys. Rev. B 92, 115106/1-7 (2015).

   (3) Order, Criticality, and Excitations in the Extended Falicov-Kimball Model, S. Ejima, T. Kaneko, Y. Ohta, and H. Fehske, Phys. Rev. Lett. 112, 026401/1-5 (2014).
8. Collaborations are made by sending graduate students to the relevant laboratory.

---

1. Theoretical Study of Anomalous Properties of Strongly Correlated Electron Systems
2. Department of Physics / Professor / Yukinori Ohta
3. Germany / Karlsruhe Institute of Technology / Robert Eder
4. from 2003
5. In order to clarify the mechanisms of anomalous electronic properties of strongly correlated electron systems, such as cuprate and iron-based high-temperature superconductors as well as a variety of phase transitions observed in transition-metal oxides and organic materials, we study the Hubbard and related theoretical models using the field-theoretical and computational methods of condensed-matter physics. In particular, we apply the variational cluster approximation (VCA) based on the self-energy functional theory (SFT) to these models and clarify the mechanisms of a variety of phase transitions of these systems that occur at low temperatures. Based on the series of our studies, we aim at the understanding of the basic electronic structures of these systems and elucidation of the origins of the anomalous

low-energy electronic, magnetic, and transport properties observed in experiment.

6. Grant-in-Aid for Scientific Research

7. In preparation.

8. Collaborations are made by sending graduate students to the relevant laboratory.

---

1. DMRG Study of Strongly Correlated Electron Systems

2. Department of Physics / Professor / Yukinori Ohta

3. Germany / Leibniz Institute for Solid State and Materials Research Dresden and Technical University Dresden / Satoshi Nishimoto

4. since 2001

5. We study the electronic states of low-dimensional strongly correlated electron systems such as transition -metal oxides and organic materials by means of recently developed computational techniques such as density-matrix renormalization group (DMRG) method. In particular, we aim at the construction of the theory that can explain experimental findings for novel quantum phase transitions such as charge ordering and anisotropic superconductivity. Recently, we have started a new project for clarifying the topological phase transition of quantum spin systems using the DMRG method, the results of which will be published soon.

6. Grant-in-Aid for Scientific Research

7. Main results:

(1) Strong Coupling Nature of the Excitonic Insulator State in Ta2NiSe5, K. Sugimoto, S. Nishimoto, T. Kaneko, and Y. Ohta, Phys. Rev. Lett. **120**, 247602/1-5 (2018).

(2) Entanglement properties of the Haldane phases: A finite-size approach, S. Miyakoshi, S. Nishimoto, and Y. Ohta, Phys. Rev. B **94**, 235155/1-12 (2016).

8. Collaborations are made by sending graduate students to the relevant laboratory.

---

1. Theoretical study on nuclear level densities by the shell model Monte Carlo methods

2. Graduate School of Science / Professor / Hitoshi Nakada

3. U. S. A. / YALE UNIVERSITY / Yoram Alhassid

TURKEY / KADIR HAS UNIVERSITY / Cem Oezen

4. 1994-

5. Nuclear level densities are important physical quantities in low energy nuclear reactions, and therefore are key inputs to nucleosynthesis in the space , as well as to calculations of reaction rates in nuclear reactors. However, it has been difficult to reproduce or to predict nuclear level densities to a good accuracy.

We have proposed a method to compute nuclear level densities via the shell model Monte Carlo methods. Applying it to the nuclei in the iron-nickel region, we have shown that the experimental data on the nuclear level densities are reproduced to an excellent accuracy, from microscopic standpoints. We have further shown that the crossover from spherical to deformed phase in medium-heavy nuclei is handled appropriately, and opened a road to investigate effects of the nuclear collective motions on the level densities applied the methods microscopically. We now proceed to the study aiming at better and wider understanding of the physics regarding the nuclear level densities.

6. Grant-in-Aid (for Encouragement of Young Scientists, Category A; for Scientific Research, Category B; for Scientific Research, Category C)

7. Main result

① H. Nakada and Y. Alhassid, Physical Review Letters 79, pp.2939-2942 (1997)

② H. Nakada and Y. Alhassid, Physics Letters B436, pp.231-237 (1998)

③ Y. Alhassid, S. Liu and H. Nakada, Physical Review Letters 83, pp.4265-4268 (1999)

④ Y. Alhassid, G. F. Bertsch, S. Liu and H. Nakada, Physical Review Letters 84, pp.4313-4316 (2000)

⑤ H. Nakada and Y. Alhassid, Nuclear Physics A718, pp.691c-693c (2003)

⑥ Y. Alhassid, S. Liu and H. Nakada, Physical Review Letters 99,162504 (2007)

⑦ Y. Alhassid, L.Fang and H. Nakada, Physical Review Letters 101, 082501 (2008)

⑧ H. Nakada and Y. Alhassid, Physical Review C 78, 051304(R) (2008)

⑨ C. Oezen, Y. Alhassid and H. Nakada, Physical Review Letters 110, 042502 (2013)

⑩ C. Oezen, Y. Alhassid and H. Nakada, Physical Review C91,034329(2015)

⑪ Y. Alhassid, M. Bonett-Matiz, S. Liu and H. Nakada, Physical Review C 92, 024307 (2015)

⑫ Y. Alhassid, G. F. Bertsch, C. N. Gilbreth and H. Nakada, Physical Review C 93, 044320 (2016)

8. None

---

1. Theoretical and Numerical Studies of Black hole Accretion Flows and State Transitions

2. Graduate School of Science / Professor / Ryoji Matsumoto

3. USA / Harvard University / Professor / Ramesh Narayan

4. 2009-

5. The aim of this collaboration is to reveal the structure of black hole accretion disks during hard-to-soft state transitions by means of theoretical modeling and magnetohydrodynamic simulations.

6. Grants in Aid for Scientific Research (2008-)

7. Oda, H., Machida, M., Nakamura, K.E., Matsumoto, R., and Narayan, R., Global Structure of Optically Thin, Magnetically Supported, Two-Temperature, Black Hole Accretion Disks, Publ. Astron. Soc. Japan, 64, Article No.15 (2012)

8. A JSPS postdoctoral fellow at Chiba University visited Harvard Smithsonian Center for Astrophysics in 2009 and collaborated with prof. Ramesh Narayan for theoretical models of magnetized black hole accretion flows.

---

1. Theoretical and Numerical Studies of Black Hole Accretion Flows

2. Graduate School of Science / Professor / Ryoji Matsumoto

3. China / Shanghai Astronomical Observatory / Professor / Feng Yuan

4. 2008-

5. The aim of this collaboration is to study the structure, time variability and radiation spectra of black hole accretion flows by means of theoretical modeling and magnetohydrodynamic simulations

6. JSPS, Grants in Aid for Scientific Research (2008-2010, 2011-)

7. None

8. Matsumoto visited Shanghai Astronomical Observatory in Nov. 2008. Prof. Feng Yuan visited Chiba University in Feb.

2009 and carried out collaborative study on black hole accretion flows. Dr. Hiroshi Oda, who was rewarded the doctoral degree at Chiba University in March, 2009 visited Shanghai Astronomical Observatory in 2010-2011 as a post doctoral fellow and worked with prof. Feng Yuan. Dr. Tomihisa Kawashima, who was rewarded the doctoral degree at Chiba University in March 2011 stayed in Shanghai Astronomical Observatory from August 2012 to April 2014 as a post doctoral fellow and worked with prof. Feng Yuan. Matsumoto discussed with prof. Feng Yuan about the collaborative research between Chiba University and Shanghai Astronomical Observatory when they attended the IAU General Assembly held at Beijing, China in August, 2012. Dr. Defu Bu and Mr. Guobin Mou at Shanghai Astronomical Observatory visited Chiba University in September, 2013, and collaborated on magnetohydrodynamic simulations of accretion flows. In June, 2015, Matsumoto was invited to the international workshop on "Black Hole Accretion and AGN Feedback" organized by prof. Feng Yuan at Shanghai and discussed with prof. F. Yuan and Dr. Defu Bu on global magnetohydrodynamic simulations of state transitions in black hole accretion flows. R.,Matsumoto discussed with prof. F.Yuan on radiation magnetohydrodynamic simulations of black hole accretion flows at 2nd Asia-Pacific Conference on Plasma Physics held at Kanazawa, Japan in November 2018.

1. Theoretical and Numerical Studies of Quasi-Periodic Oscillations Observed in Accreting Objects
2. Graduate School of Science / Professor / Ryoji Matsumoto
3. Sweden / Goteborg University / Professor / Marek Abramowicz
4. 2006-
5. The aim of this collaboration is to explain the origin of quasi-periodic oscillations (QPOs) observed in accreting objects such as black hole candidates by means of theoretical modeling and magnetohydrodynamic simulations.
6. Grants in Aid for Scientific Research (2006,2008-2010, 2011-), Yukawa Institute for Theoretical Physics
7. None
8. Matsumoto chaired the international workshop "Quasi-periodic Oscillations and Time Variabilities of Accretion Flows" held at Yukawa Institute for Theoretical Physics in Nov. 20-22, 2007. Prof. Marek Abramowicz was invited to Japan from Nov. 18 to Nov. 23. Matsumoto's collaborator, Dr. Tomohisa Kawashima gave an invited talk on numerical studies of super-Eddington accretion flows at a conference celebrating 20years of slim accretion disk models held at Warsaw Poland in October, 2018.

1. Magnetic Reconnection and Magnetic Self-organization in Space and Laboratory Plasmas
2. Graduate School of Science / Professor / Ryoji Matsumoto
3. USA / Princeton University / Dr Hantao Ji
   USA / University of Wisconsin-Madison / professor / Ellen Zweibel
4. 2010-
5. The aim of this collaboration is to study the physical mechanism of magnetic reconnection and magnetic self-organization in astrophysical plasmas and laboratory plasmas by means of laboratory experiments and numerical simulations.
6. Grants in Aid for Scientific Research, JSPS Core-to-Core Program (PI: Yasushi Ono, Tokyo University), JIFT, Chiba University
7. Matsumoto, R., and Ji, H., Preface to Special Topic: Advances in Magnetic Reconnection Research in Space and

Laboratory Plasmas, Physics of Plasmas 18, 111101 (2011)

Ji, H., Ono, Y., and Matsumoto, R., Preface to Special Topic Section: Advances in Magnetic Reconnection Research in Space and Laboratory Plasmas. Part II, Physics of Plasmas 20, pp.061101 (2013)

8. Matsumoto chaired the international workshop "US-Japan Workshop on Magnetic Reconnection MR2010" held at Nara, in December 2010. Papers presented at this workshop have been published in the Special Topics section of Physics of Plasmas (Physics of Plasmas Vol. 18 No. 11, 2011). Matsumoto worked as a guest editor of Physics of Plasmas to publish this issue. A graduate student of the graduate school of science visited University of Wisconsin-Madison during the period October-December 2011 to work with prof. E. Zweibel and S. Heinz. This visit was supported by Chiba University. Matsumoto attended the US-Japan workshop on magnetic reconnection (MR2012) held at Princeton University in May 2012. Matsumoto attended IPELS (International Workshop on the Interrelationship between Plasma Experiments in the Laboratory and in Space 2013) held at Hakuba, Nagano in July, 2013 as a SOC member, and discussed with US collaborators such as prof. H.Ji. Matsumoto worked as a SOC member of the US-Japan Workshop on Magnetic Reconnection MR2014 held at Tokyo University in May, 2014, US-Japan Workshop on Magnetic Reconnection MR2016 held at Napa, California, USA in March, 2016, US-Japan Workshop on Magnetic Reconnection MR2017 held at Matsuyama, Japan in March 2017, and MR2018 workshop held at Princeton University in September, 2018

1. Theoretical and Numerical Studies of Supercritical Black Hole Accretion Flows
2. Graduate School of Science / Professor / Ryoji Matsumoto
3. USA / University of California Santa Barbara / professor / Omer Blaes
4. 2011-
5. The aim of this collaboration is to study the dynamics and stability of supercritical accretion flows onto a black hole. We carry out radiation magneto-hydrodynamic simulations to study the interaction of plasmas with radiation. We also compute the radiation spectrum from the results of numerical simulations, and compare them with X-ray observations.
6. Grants in Aid for Scientific Research, JSPS Institutional Program for Young Researcher Overseas Visits
7. None
8. JSPS Research Fellow, Tomohisa Kawashima, who obtained the doctoral degree at Chiba University in March, 2011 visited University of California at Santa Barbara during the period July 2011-March 2012 and worked with prof. Omer Blaes on the polarized radiation from supercritical accretion flows onto a black hole. Matsumoto and a graduate student in Chiba University attended a workshop on 'Time for Accretion' held in Sigtuna, Sweden in April 6-10, 2018 and discussed with prof. Omer Blaes on radiation magnetohydrodynamic simulations of black hole accretion flows.

1. Theoretical and Numerical Studies of Jet Propagation
2. Graduate School of Science / Professor / Ryoji Matsumoto
3. USA / Princeton University / Professor / James M. Stone
4. 2012-
5. The aim of this collaboration is to study the interaction of magnetohydrodynamic jets with the ambient medium by means of three-dimensional magnetohydrodynamic simulations. Another aim is to improve the accuracy and stability of magnetohydrodynamic codes and cross-check the results of magnetohydrodynamic simulations carried out by our code and

those by the ATHENA code developed by J. Stone.

6. Grants in Aid for Scientific Research, JSPS Institutional Program for Young Researcher Overseas Visits
7. None
8. One of the graduate students at Chiba University visited Princeton University in November-December 2012, and collaborated with prof. J. Stone on the propagation of magnetohydrodynamic jets. They compared the results of three-dimensional magnetohydrodynamic simulations carried out by our code and by the ATHENA code. Matsumoto and a graduate student in Chiba University attended a mini-workshop on accretion flows held at Tsukuba University in February 2019 and discussed with prof. J. Stone on research collaboration in plasma astrophysics.

1. Theoretical and Numerical Studies of Accretion Disks and Magneto-Rotational Instability
2. Graduate School of Science / Professor / Ryoji Matsumoto
3. USA / Princeton University / Professor / James M. Stone
   Germany / Technical University of Berlin / Professor / W.C. Mueller
4. 2015-
5. Matsumoto is coordinating the collaboration of theoretical and numerical studies on accretion disks and magnetorotational instability by researchers in US, Germany, and in Japan. We carry out magnetohydrodynamic simulations of accretion disks by using simulation codes CANS+ developed in Chiba and Athena++ developed in Princeton, and cross-check the simulation results.
6. Grants in Aid for Scientific Research, NINS International Cooperation Program
7. None
8. Matsumoto attended the Max Planck Princeton Center Workshops held in Berlin in January 2016, in Princeton in December 2016 and in April 2018, and at University of Tokyo in February, 2019 and reported the research activities in Japan on theoretical and numerical studies of accretion disks and magneto-rotational instability.

1. Molecular mechanisms of myofibrillogenesis and their physiological significance
2. Graduate School of Science / Professor / Takeshi Endo
3. Italy / Institute of Genetic and Biomedical Research, National Research Council / Marie-Louise Bang
4. 2012-
5. This project aims to elucidate molecular mechanisms of myofibrillar actin filament formation by using gene-targeting mice and their physiological significance.
6. Grants-in-Aid for Scientific Research (B); Intramural Research Grant for Neurological and Psychiatric Disorders of NCNP
7. Yamamoto, D. L., Vitiello, C., Zhang, J., Gokhin, D. S., Castaldi, A., Coulis, G., Piaser, F., Filomena, M. C., Eggenhuizen, P. J., Kunderfranco, P., Camerini, S., Takano, K., Endo, T., Crescenzi, M., Luther, P., Lieber, R. L., Chen, J., and Bang, M.-L. (2013) The nebulin SH3 domain is dispensable for normal skeletal muscle structure but is required for effective active load bearing in mouse. J. Cell Sci. 126: 5477–5489.
8. None

1. Glacial biological studies on glaciers in Tienshan Mountains in China.
2. Graduate School of Science / Professor / Nozomu Takeuchi
3. China / Tienshan Glaciological Station, Chinese Academy of Science / Director / Dr. Li Zhongqin
4. 2006-
5. This project aims to describe microbial community and its effect on surface albedo on glaciers of Tienshan Mountains in China.
6. Grants-in-Aid from the Ministry of Education, Culture, Sports, Science, and Technology of Japan
7. Main result

- Zawierucha, K., Stec, D., Lachowska-Cierlik, D., Takeuchi, N., Li, Z. and Michalczyk, Ł., 2018, March. High Mitochondrial Diversity in a New Water Bear Species (Tardigrada: Eutardigrada) from Mountain Glaciers in Central Asia, with the Erection of a New Genus Cryoconicus. In Annales Zoologici (Vol. 68, No. 1, pp. 179-201). Museum and Institute of Zoology, Polish Academy of Sciences. doi:10.3161/00034541ANZ2018.68.1.007
- Segawa, T., Yonezawa, T., Edwards, A., Akiyoshi, A., Tanaka, S., Uetake, J., Irvine‐Fynn, T., Fukui, K., Li, Z. and Takeuchi, N., 2017. Biogeography of cryoconite forming cyanobacteria on polar and Asian glaciers. Journal of Biogeography, 44(12), pp.2849-2861, doi:10.1111/jbi.13089
- Zhang, X., Wang, S., Zhang, X., Zhou, P., Jin, S., Li, Z. and Takeuchi, N., 2017. Chemistry and environmental significance of aerosols collected in the eastern Tianshan. Sciences in Cold and Arid Regions, 9(5), pp.455-466. doi:10.3724/SP.J.1226.2017.00455
- Zhang, X., Li, Z., Takeuchi, N., Wang, F., Wang, S., You, X. and Zhou, P., 2017. Heavy metal-polluted aerosols collected at a rural site, Northwest China. Journal of Earth Science, 28(3), pp.535-544. doi:10.1007/s12583-017-0728-6
- Nagatsuka, N., Takeuchi, N., Nakano, T., Shin, K., and Kokado, E. (2014). Geographical variations in Sr and Nd isotopic ratios of cryoconite on Asian glaciers. Environmental Research Letters, 9(4), 045007.
- Segawa, T., Ishii, S., Ohte, N., Akiyoshi, A., Yamada, A., Maruyama, F., Li, Z., Hongoh, Y. and Takeuchi, N. (2014), The nitrogen cycle in cryoconites: naturally occurring nitrification-denitrification granules on a glacier. Environmental Microbiology. doi: 10.1111/1462-2920.12543
- Takeuchi, N., Ishida, Y., Li, Z. (2011) Microscopic analyses of insoluble particles in an ice core of Ürümqi Glacier No. 1: quantification of mineral and organic particles. Journal of Earth Sciences, 22(4), 431-440.

  Takeuchi, N., Nishiyama, H., Li, Z. (2010) Structure and formation process of cryoconite granules on Ürümqi glacier No. 1, Tien Shan, China. Annals of Glaciology, 51(56), 9-14.
- Nagatsuka, N., Takeuchi, N., Nakano, T., Kokado, E., Li, Z. (2010) Sr, Nd and Pb stable isotopes of surface dust on Ürümqi glacier No. 1 in western China. Annals of Glaciology, 51(56), 95-105.
- Ushida, K., Inoue, R., Segawa, T., Kohshima, S., Takeuchi, N., Fukui K., Li, Z., Kanda, H. (2009) Application of real-time PCR array to the multiple detection of antibiotic- resistant genes in glacier ice samples. The Journal of General and Applied Microbiology, 56, 43-52.
- Takeuchi, N., and Li, Z. (2008) Characteristics of surface dust on Ürümqi Glacier No. 1 in the Tien Shan Mountains,

China. Arctic, Antarctic, and Alpine Research, 40(4), 744-750

8. Other important items to be stated

2007.6 Agreement concluded between Tienshan Glaciological Station and Chiba University.

2007.6.22-27 Collaborative investigation on Urumqi Glacier No.1, China

2007.7.29-8.6 Collaborative investigation on Urumqi Glacier No.1, China

2010.8.19-25 Collaborative investigation on Urumqi Glacier No.1, China

2011.2.28-3.2 Seminar in the institute (CRRERI) in Lanzhou, China.

2011.6.28-6.30 Seminar in the institute (CRRERI) in Lanzhou, China.

2011.8.2-8.7 Collaborative investigation on Urumqi Glacier No.1, China

2011.8.2-8.7 International Symposium of 50th anniversary of Tienshan Glaciological Station in Urumqi, China.

2012.8.23-8.30 Collaborative investigation on Urumqi Glacier No.1, China

2013.1 Agreement re-concluded between Tienshan Glaciological Station and Chiba University.

2013.2.28-3.2 Seminar in the institute (CRRERI) in Lanzhou, China.

2013.7.5-9.1 Collaborative investigation on Urumqi Glacier No.1, China

2014.1.10-3.30 A research scienctist in CREERI visited Chiba University.

2014.2.23-3.1 Seminar in the institute (CRRERI) in Lanzhou, China.

2014.3.28-4.1 6 Six research scientists in CREERI visited Chiba University

2014.5.20-25 Visiting to the institute (CRRERI) in Lanzhou, China.

2014.8.21-9.3 Collaborative investigation on Urumqi Glacier No.1, China

2015.8.21-9.2 Collaborative investigation on Urumqi Glacier No.1, China

2016.8.26-9.5 Collaborative investigation on Urumqi Glacier No.1, China

2017.8.21-8.31 Collaborative investigation on Urumqi Glacier No.1, China

2018.8.17-8.20 Collaborative investigation on Urumqi Glacier No.1, China

2019.2.28-3.1 Seminar in the institute (CRRERI) in Lanzhou, China.

1. Ecological studies of microbes and their effect of surface albedo on glaciers in Svalbard and Greenland.
2. Graduate School of Science / Professor / Nozomu Takeuchi
3. UK / Aberystwyth University, Centre of Glaciology / Dr. Tristrium Irvine-Fynn
   UK / Aberystwyth University, Biology / Dr. Arwyn Edwards
   UK / Bristol University / Dr. Alexandre M. Anesio
   UK / University of Leeds / Dr. Liane Benning
4. 2011
5. This project aims to describe microbial activities on Arctic glaciers, in particularly, in Svalbard and Greenland, and quantify their effect on surface albedo on the glaciers.
6. Sasakawa Foundation (UK)
   Royal Society (UK)
   Natural Environment Research Council (UK)

Grants-in-Aid from the Ministry of Education, Culture, Sports, Science, and Technology of Japan

7. Main results

- Segawa, T., Yonezawa, T., Edwards, A., Akiyoshi, A., Tanaka, S., Uetake, J., Irvine‐Fynn, T., Fukui, K., Li, Z. and Takeuchi, N., (2017). Biogeography of cryoconite forming cyanobacteria on polar and Asian glaciers. Journal of Biogeography, 44(12), pp.2849-2861, doi:10.1111/jbi.13089
- Gokul, J. K., Hodson, A. J., Saetnan, E. R., Irvine-Fynn, T. D. L., Westall, P. J., Detheridge, A. P., Takeuchi, N., Bussell, J., Mur, L. A. J. and Edwards, A. (2016), Taxon interactions control the distributions of cryoconite bacteria colonizing a High Arctic ice cap. Mol Ecol, 25: 3752–3767. doi:10.1111/mec.13715
- Musilova, M., Tranter, M., Bamber, JL., Takeuchi, N., Anesio, AM. (2016). Experimental evidence that microbial activity lowers the albedo of glaciers. Geochemical Perspective Lettter, 2, 106-116
- Cook, J., Edwards, A., Takeuchi, N. and Irvine-Fynn, T., (2015). Cryoconite The dark biological secret of the cryosphere. Progress in Physical Geography, 40(1), 66-111. DOI:10.1177/0309133315616574

  Takeuchi, N. (2012) Cryoconite and Darkning process of glaciers, Low temperature science, 70.

8. Other important items to be stated

2011.8.20-30	Collaborative investigation on Svalbard glaciers.
2012.3.25-4.11	Seminar and workshop at Chiba University with Dr. Alexandre M. Anesio
2012.12	Collaborative session on glacial ecology held in America Geophigical Union, Fall meeting.
2013.2.18-3.15	A PhD student of Bristol University stayed in Chiba University to conduct collaborative research.
2013.3	Agreement concluded between Geographical Department, Bristol University and Chiba University.
2013.3.24-4.2	Workshop on glacial ecology at Bristol University
2013.8.5-12	Collaborative investigation on Svalbard glaciers with Aberystwyth University.
2014.1.11-1.26	A PhD student of University of Leeds stayed in Chiba University to conduct collaborative research.
2014.1.22-1.26	Seminar and workshop at Chiba University with Dr. Liane Benning and Dr. Alexandre M. Anesio
2018.3.22-3.23	Seminar at Chiba University with Dr. Tristrium Irvine-Fynn.

1. Ecological studies on Alaska Glaciers
2. Graduate School of Science / Professor / Nozomu Takeuchi
3. USA / Alaska Pacific University / Prof. Roman Dial
4. 2006
5. This project aims to describe microbial activities on Alaska glaciers and quantify their effect on surface albedo on the glaciers.
6. Grants-in-Aid from the Ministry of Education, Culture, Sports, Science, and Technology of Japan
7. Main result

- Murakami, T., Segawa, T., Bodington, D., Dial, R., Takeuchi, N., Kohshima, S., and Hongoh, Y. (2015). Census of bacterial microbiota associated with the glacier ice worm Mesenchytraeus solifugus. FEMS Microbiology Ecology, DOI:10.1093/femsec/fiv003
- Takeuchi, N. (2013) Seasonal and altitudinal variations in snow algal communities on an Alaskan glacier (Gulkana

glacier in the Alaska range).Environ. Res. Lett. 8 035002 doi:10.1088/1748-9326/8/3/035002

- Takeuchi, N. (2009) Temporal and spatial variations in spectral reflectance and characterisitics of surface dust on Gulkana Glacier, Alaska Range. Journal of Glaciology, 55(192), 701-709.
- Takeuchi, N., Dial, R., Kohshima, S., Segawa, T., Uetake J. (2006) Spatial distribution and abundance of red snow algae on the Harding Icefield, Alaska derived from a satellite image. Geophysical Research Letter, 33, L21502, doi:10.1029/2006GL027819.

8. Other important items to be stated

2008.8 Investigation on Harding Icefield, Alaska

2010.8 Investigation on Harding Icefield and Gulkana Glacier, Alaska

2011.8 Investigation on Harding Icefield and Byron Glacier, Alaska

2014.8 Investigation on Harding Icefield and Byron Glacier, Alaska

2015.8 Investigation on Harding Icefield and Gulkana Glacier, Alaska

1. Central Asia Deep Ice core Drilling project
2. Graduate School of Science / Professor / Nozomu Takeuchi
3. USA / University of Idaho / Prof. Vladimir Aizen
   USA / University of Main / Prof. Paul A. Mayewski
   Switzerland / Paul Scherrer Institut / Prof. Margit Schwikowski
4. 2006
5. This project aims to reconstruct past climate change in Central Asia using ice cores drilled from glaciers and to project future environmental changes in global warming.
6. Research Institute for Humanity and Nature
   Grants-in-Aid from the Ministry of Education, Culture, Sports, Science, and Technology of Japan
   National Science Foundation, USA
   International Geological Correlation Programme, UNESCO
7. Main result

- Aizen, E. M., Aizen, V.B., Takeuchi, N., Mayewski, P.A., Grigolm, B.R., Joswiak, R.D., Nikitin, S.A., Fujita, K., Nakawo, M., Zapf, A., and Scheikowski, M. (2016). Abrupt and moderate climate changes in the mid-latitudes of Asia during the Holocene. Journal of Glaciology, doi:10.1017/jog.2016.34
- Grigholm, B., P.A. Mayewski, S. Kang, Y. Zhang, U. Morgenstern, M. Schwikowski, S. Kaspari, V. Aizen, E. Aizen, N. Takeuchi, K.A. Maasch, S. Birkel, M. Handley and S. Sneed (2015). 20th Century Dust Lows and the Weakening of the Westerly Winds over the Tibetan Plateau. Geophysical Research Letters. DOI: 10.1002/2015GL063217
- Takeuchi, N., Fujita, .K., Aizen, B., Vladimir, Narama, C., Yokoyama, Y., Okamoto, S., Kaoki, K., and Kubota, J. (2014) Disappearance of glaciers in the Tien Shan Mountains in Central Asia at the end of Pleistocene. Quaternary Science Reviews, 103, 26-33. DOI: 10.1016/j.quascirev.2014.09.006
- Fujita, K., Takeuchi, N., Nikitin, S. A., Surazakov, A. B., Okamoto, S., Aizen, V. B., Kubota, J. (2011) Favorable climatic regime for maintaining the present-day geometry of the Gregoriev Glacier, Inner Tien Shan. The Cryoshere,

5, 539-539.

- Nakazawa, F., Miyake, T., Fujita, K., Takeuchi, N., Uetake, J., Fujiki, T., Aizen, V., ani Nakawo, M. (2011) Establishing the Timing of Chemical Deposition Events on Belukha Glacier, Altai Mountains, Russia, Using Pollen Analysis. Arctic, Antarctic, and Alpine Research, 43(1), 66-72.
- Okamoto, S., Fujita, K., Narita, H., Uetake, J., Takeuchi, N., Miyake, T., Nakazawa, F., Aizen, V.B., Nikitin, S. A., Nakawo, M. (2011) Reevaluation of the reconstruction of summer temperatures from melt features in Belukha ice cores, Siberian Altai, Journal of Geophysical Research, 116, D02110, doi: 10.1029/2010JD013977.
- Uetake, J., Kohshima, S., Nakazawa, F., Takeuchi, N., Fujita, K., Miyake, T., Narita, H., Aizen, A.B., Nakawo, M. (2011) Evidence for propagation of cold-adapted yeast in an ice core from a Siberian Altai glacier. Journal of Geophysical Research, 116, doi: 10.1029/2010JG001337.

8. Other important items to be stated

2007.8	Ice core drilling on Grigoriev ice cap in Tienshan Mountains,, Kyrgyz Republic.
2008.12.12-12.16	Project meeting in San fransisco, USA
2009.8.4-9.19	Ice core drilling on Fedchenko Glacier, Tajikistanm Pamir.
2011.6.5-6.10	Project meeting at UCSB， Santa Barbara, USA.
2012.5.27-6.1	Project meeting at Dushanbe, Tajikistan.
2016.7.21-8.23	Ice core drilling on Lenin Glacier in Pamir Arai Mountains, Kyrgyz Republic.
2019.1.8-1.12	Project meeting at Paul Scherrer Institut in Switzerland
2019.3.14-3.20	Project meeting at Kyoto Prefectural University.

1. Imaging of snow algae in snow samples using phase-contrast tomography
2. Graduate School of Science / Professor / Nozomu Takeuchi
3. Switzerland / WSL Inst. Snow & Avalanche Research SLF / Martin Schneebeli
   Switzerland / Federal Institute of Technology (ETH) / Lazzaro Anna
4. 2013
5. This project aims to observe micro-structure of snow grain habitat of snow algae using synchrotron tomography.
6. Grants-in-Aid from the Ministry of Education, Culture, Sports, Science, and Technology of Japan
7. None
8. Other important items to be stated

2013.3.6-8	Meeting at workshop in Akita prefecture, Japan to organize the project.
2013.8.25-29	Experiment of snow-grain micro-structure observation at Paul Scherrer Institute (PSI), Switzerland.
2015.4.30	Meeting at ASSW, 2015 in Toyama.
2015.6	Meeting at IUGG in Prague, Czech.

1. Elecromagnetic approach to monitor crustal activities such as earthquake and landslide and their modeling
2. Graduate School of Science / Professor / Katsumi Hattori
3. China / Peking Universtiy / Professor / Qinghua Huang

China / University of Science and Technology of China / Researcher/ Hengxin Ren

China / China Earthquake Administartion / Director / Xuhui Shen

China / Southern University of Sciense and Technology / Assistant Professor / Peng Han

4. 2004-

5. Develop an Early Warning System for crustal activity such as large earthquakes and landslides using electromagnetic approach. And Clarify the mechanism on them.

6. 2007-2010 NiCT R&D promotion scheme funding international joint research.

   2009-2013 JSTJapan(JST)-China(DOIC)-Korea(NRF) Cooperative Research Projects

7. Main resuot

- Peng Han, Katsumi Hattori, Guangjing Xu, Ryo Ashida, Chieh-Hung Chen, Febty Febriani, Hiroki Yamaguchi,Further investigations of geomagnetic diurnal variations associated with the 2011 off the Pacific coast of Tohoku earthquake (Mw9.0), Journal of Asian Earth Sciences, , 114, 321-326, 2015. (doi:10.1016/j.jseaes.2015.02.022)
- Guangjing Xu, Peng Han, Qinghua Huang, Katsumi Hattori, Febty Febriani, Hiroki Yamaguchi, Anomalous behaviors of geomagnetic diurnal variations prior to the 2011 off the Pacific coast of Tohoku earthquake (Mw9.0) J. Asian Earth Sci., 77, 59-65, 2013. http://dx.doi.org/10.1016/j.jseaes.2013.08.011
- Hattori, K., Han, P., Yoshino, C., Febriani, F., Yamaguchi, H., Chen, C.-H., Investigation of ULF Seismo-Magnetic Phenomena in Kanto, Japan During 2000-2010: Case Studies and Statistical Studies, Surveys in Geophysics, 34, 293-316, DOI 10.1007/s10712-012-9215-x, 2013
- Hattori, K., Han, P., Huang, Q., Global variation of ULF geomagnetic fields and detection of anomalous changes at a certain observatory using reference data, Electrical Engineering in Japan (English translation of Denki Gakkai Ronbunshi), 182, No. 3, 9 -18, 2013.
- Hirano, T C. Yoshino, K. Hattori, and Q. Huang, Direction finding of ULF/ELF geomagnetic field data possibility associated with the 2004 Sumatra-Andaman earthquake, 2009 International Workshop on Validation of Earthquake Precursors by Satellite, Terrestrial and other Observations (VESTO).Case studies of the recent Asian events, P10,Chiba University, March 2009
- Han, P., Hattori. K., Huang, Q., Hirano, T., Ishiguro, Y., Febriani, F., and Yoshino, C., Evaluation of ULF Electromagnetic Phenomena Associated with the 2000 Izu Islands Earthquake Swarm by Wavelet Transform Analysis, Natural Hazard and Earth System Sciences, 11, 965-970, 2011. (doi:10.5194/nhess-11-965-2011).
- Hattori, K., Han, P., and Huang, Q, Global variation of ULF geomagnetic fields and detection of anomalous changes at a certain observatory using reference data, IEEJ Transactions on Fundamentals and Materials, 131, 698-704, 2011, (DOI:10.1541/ieejfms.131.698) (in Japanese)
- Peng Han, Katsumi Hattori, Qinghua Huang, Shinji Hirooka, Chie Yoshino, Spatiotemporal characteristics of the geomagnetic diurnal variation anomalies prior to the 2011 Tohoku earthquake (Mw 9.0) and the possible coupling of multiple pre-earthquake phenomena, Journal of Asian Earth Sciences, vol.129, pp.13-21, 2016.11. (doi: 10.1016/j.jseaes.2016.07.011)

- Han, P., Hattori, K., Zhuang, J., Chen, C-H., Liu, J-Y., and Yoshida, S., Evaluation of ULF seismo-magnetic phenomena in Kakioka, Japan by using Molchan's error diagram, Geophysical Journal International, 208 (1), 482-490, 2017. (doi: 10.1093/gji/ggw404)
- 韓鵬, 服部克巳, 山口拓人, 廣岡伸治, 吉野千恵, 2011 年東北地方太平洋沖地震（Mw9.0）に関連する地磁気日変化異常の時空間的特徴, 電気学会論文誌 A, 137, 119-127, 2017. (DOI: 10.1541/ieejfms.137.119)
- 史海霞, 孟令媛, 张雪梅, 常莹, 杨振涛, 谢蔚云, 服部克巳, 韩鹏, 汶川地震前的 b 值变化, 地球物理学報 (Chinese Journal of Geophysics), 61, 2018 DOI: 10.6038/cjg2018M0024, (in Chinese).
- Katsumi Hattori and Peng Han, Statistical Analysis and Assessment of Ultralow Frequency Magnetic Signals in Japan As Potential Earthquake Precursors, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 229-240, DOI: 10.1002/9781119156949.ch13, Wiley, 2018.
- Dimitar Ouzounov, Sergey Pulinets, Jann-Yenq Liu, Katsumi Hattori, and Peng Han, Multiparameter Assessment of Pre‐Earthquake Atmospheric Signals, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 339-359, DOI: 10.1002/9781119156949.ch20, Wiley, 2018.
- Xiaocan Liu, Katsumi Hattori, Peng Han, Huaran Chen, Yoshino Chie, Xudong Zhao, Possible anomalous changes in solar quiet-day geomagnetic variations (Sq) related to the 2011 off the Pacific coast of Tohoku earthquake (Mw 9.0), Pure and Applied Geophysics, 2019. DOI: 10.1007/s00024-018-02086-z
- 周媛媛, 常莹, 陈浩, 周勇, 马永辉, 谢成良,何展翔, 服部克巳, 韩鹏, 基于参考台的盲源分离法在抑制地磁场近场噪音中的应用研究, 地球物理学報(Chinese Journal of Geophysics), 62 (2), 572-586, 2019 DOI: 10.6038/cjg2019M0551 (in Chinese).
- Weiyun Xie, Katsumi Hattori*, Peng Han, Temporal variation and statistical assessment of b value off the Pacific coast of Tokachi, Hokkaido, Japan, Entropy, 21(3), 249, 2019 DOI: 10.3390/e21030249

8. Other important items to be stated

August 2004: After APRASC'04 meeting, Hattori visited Peking Univ. and made a seminar on Seismo-Electromagnetics

March 2005: After IWSE meeting at Chofu, Japan, Prof. Huang (Peking Univ.) came to Hattori Lab. to make scientific discussion. He went to one of our observatory at Boso Peninsula.

July, 2006: After WPGM Beijing, Hattori visited Peking University and made a seminar. He veisited China Earthquake Administration with Prof. Huang..

March 2008: Hattori invited Prof. Huang to IWSLEC-2 held at Sagamihara, Japan. Also he visited Hattori Lab. to discuss technicaland scientific matters at Chiba University after the meeting..

December 2008: Technical and Scientific discussion with Prof. Huang at AGU meeting, San Francisco, US.

March 2009: Hattori invited Prof. Huang to VESTO meeting held at Chiba, Japan. Also he visited Hattori Lab. to discuss technicaland scientific matters at Chiba University after the meeting. He visited Prof. Nonami during his stay in Chiba.

April 2009: Technical and Scientific discussion with Prof. Huang at EGU meeting, Vieena

May 2009: Technical and Scientific discussion with Prof. Huamg at JpGU meeting held at Chiba.

June 2009: Hattori visited Prof. Huang and made a seminar.

June 2009: Mr. Gomita, director of the foreign affair office at Chiba Univ. visited Prof. Huang and foreign affair office at Peking Univ.

October 2009: Mr. Han Peng, former Prof. Huang's graduated student, joined Hattori Lab. as a doctorial student. December

December 2009: Technical and Scientific discussion with Prof. Huang at AGU meeting, San Franscsco, US.

February-march 2010:

Hattori visited Prof. Huang to discuss scientific matters and make a seminar.

March 2010: Prof. Huang came toHattori Lab. to participate international workshop on landslide monitoring and discuss scientific matters.

May 2010: Prof. Huang came toHattori Lab. to participate international workshop on landslide monitoring and discuss scientific matters.

October-November 2010:

Prof. Hattori, Ms Yoshinp and Mr. Han visited Prof. Huang to discuss scientific matters and make a seminar a shor course on magnetic environment on Earth.

March 2011: Prof. Huang and his group came to Hattori Lab. to participate international workshop on landslide monitoring and discuss scientific matters.

April, 2011: Technical and Scientific discussion in the frame on JST China-Korea-Japan Project among Prof. Huang and Dr. Chae, at EGU meeting, Vienna, Austria

July, 2011: Int'l Symposium and Technical and Scientific discussion in the frame on JST China-Korea-Japan Project among Prof. Huang and Dr. Chae, at Daejon, Korea (Prof. Hattori and two graduate students from Chiba Univ., Prof. Huang and two graduate students from Peking Univ., Dr. Chae and many his colleagues)

September, 2011: Prof. Hattori visited Prof. Huang and have a technical and scientific discussion. Prof. Hattori also has a seminar at Peking Univ.

December, 2011: Technical and Scientific discussion in the frame on JST China-Korea-Japan Project among Prof. Huang and Dr. Chae, at AGU meeting, San Francisco, US. (Prof. Hattori and a graduate student from Chiba Univ., Prof. Huang and a graduate student from Peking Univ., Dr. Chae and two his colleagues)

October, 2012: Doctoral student, Han visitedPeking University and have a technical and scientific program.

December, 2011: Technical and Scientific discussion with Prof. Huang and disucussion on program in Jamuary-March, 2013. at AGU meeting, San Francisco, US.

January, 2013: Prof. Huang vistied Chiba Univ. and had a scientific and technical discussion.

March, 2013: Hattori and 2 graduate students (Han and Otsubo) and 1 undergraduate student (Yamazaki) visited Peking University and had ascientific program under short visit program on global human resource development.

May, 2013: Prof. Huang visited Chiba Univ. and had a scientific and technical discussion.

July-August, 2013: Doctoral researcher Dr. Han visited Peking University and have a technical and scientific program

October, 2013: Prof. Hattori visited Prof. Huang and have a technical and scientific discussion. Prof. Hattori also has visited a possible site for landslide monitoring

November, 2013: Prof. Huang vistied Chiba Univ. and had a scientific and technical discussion.

December 2013: Profs. Guo and Zhang at Nanyang Normal University visited Hattori lab. and had a technical and scientific discussion. They also visited Asahi station.

January-February, 2014:

Doctoral researcher Dr. Han visited Peking University and have a technical and scientific program.

July-August, 2014: Prof. Huang participated in the AOGS and IWEP meetings at Sapporo and had a technical and scientific discussion.。

August 2014: Prof. Hattori visited china and had technical and scientific discussions with researchers at Peking Polytechnic University and China Earthquake Administration.

October 2014: Prof. Hattori and Dr. Han visited China and had technical and scientific discussions with Prof. Huang's group at Peking Univ. and Prof. Guo's group at Nanyang Normal Univ.

November, 2014: Prof. Hattori visited China Earthquake Administration and had technical and scientific discussions with Dr. Shen's group.

May 2015: Profs Huang (Peking Univ.), Guo (Nanyang Normal Univ.), Drs. Ren (USTC), Shen (CEA) participated in JpGU and IWEP2 meetings and had technical and scientific discussions.

September, 2015: Prof. Hattori visited China and had technical and scientific discussions with Dr. Shen's group (CEA).

October 2015: Prof. Hattori and Dr. Han visited USTC and had technical and scientific discussions with Dr. Ren.

May, 2016: Prof. Huang (Peking Univ.), Guo (Nanyang Normal Univ.), Drs. Ren (USTC), Shen (CEA) participated in JpGU and IWEP2 meetings and had technical and scientific discussions.

August, 2016: Prof. Hatori visited visited Beijing to present the results and had technical and scientific discussion with Prof. Huang's group, Peking University.

August – September, 2016: Prof. Hatori visited China (Beijing, Lanzou, and so on) to present scientific results and had a technical and scienctific discussions.（With Dr, Shen at CEA, with Prof. Huang's group at Peking Univ.）

December, 2016: Prof. Huang and his graduated student Ms. Hu visited tHattori + Lab., and had a technil-Siencediscussion. Ms. Hu performed the sandbox experiments.

December, 2016 – December, 2017: Dr. Xiaocan Liu visited Hattori Lab., about 1 year as a forign researcher.

April, 2017: Dr. Han visited the Southern Univ., of Scienc and Technology, China and had scientific and technol ogical discussion.

May, 2017: Profs Huang (Peking Univ.) and Dr. Ren (USTC) participated in JpGU and IWEP3 meetings and had technical and scientific discussions.

July, 2017: Dr. Han visited Peking Univ. to presemt; his latest results and had technical anc scientific discussion with Prof. Han'sgroup.

July – August, 2017: Prof. huang came to Japan to participate in the IAGA-IASPEI 2017,held at Kobe and had a t echnical and scientific discussion

September, 2017: Dr. Han at STCU visted Hattori Lab. and had technical and scientific discussion.

October, 2017: Prof. Hattoir visited Beijing to present his latest results in CGS meeting and had thchnical and scientificdiscussion with Prof. Huang's group.

March, 2018: Prof. Hattori, Ms. Yoshino, and Xie (B4) visited the Southern University of Science and Technology and had a technical and scientific discusions. On march 14, Prof. Hattori gave a special lecture.

May 7-10, 2018, Prof. Hattori visited ISSI-Beijing and have discussion with Dr. Shen's group (CEA).

May 12-14, 2018: Prof. Hattori and Xie (M1) participated to present the latese results in the 4th ICCE held at Century City New International Convention & Exhibition Center, Chendu, China.

May 20-27, 2018: Profs Huang (Peking Univ.), Dr. Shen (CEA), and Dr. Han (STCU) participated in JpGU and ISEF-IWEP5 meetings and had technical and scientific discussions.

October 24-18, 2018:Ms.Kaiyan Hu (D1, Peking Univ.) visited Hattori Lab. and have cooperative research on landslide experiments.

November 17-18. 2018: Prof. Hattori visit CEA and participated to present the latest results at CSES meeting, Beijing.

November 19-20, 2018: Prof. Hattori visited Huang's Lab. at Peking University and had technical and scientific discussions.

December 10-14, 2018: Prof. Hattori had a technical and scientific discussion with Prof. Huang at AGU meeting.

March 24-27, 2018: Prof. Hattori visited the Southern University of Science and Technology and had a technical and scientific discusions.

1. On the study of electromagnetic phenomena associated crustal activity
2. Graduate School of Science / Professor / Katsumi Hattori
3. Russia / Institute of Physics of the Earth / Dr. Oleg Molchanov
   Russia / Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation(IZMIRAN) / Dr. Yuri Kopytenko
   Russia / Geophysical Service Kamchatka Department / Dr. Eviginii Gordeev
   Russia / Space Research Institute, Russian Academy of Sciences / Dr. Sergey Pulinets
   Ukraine / Lviv Center of Space Research / Dr. Varely Korepanov
4. 1998-
5. Recognizing the importance of ULF geomagnetic field changes among electromagnetic phenomena preceding large earthquakes, this project aims at researches on developments of sensors, observation, and methodology, clarification of physical mechanism, and establishing the monitoring and short-term prediction of crustal activity.
6. RIKEN (-2002)
   JSPS Grants-in Aid for Scientific Research(2001-2003)
   JSPS Grants-in Aid for Scientific Research(2004-2006)
7. Main result
   - Dimitar Ouzounov, Sergey Pulinets, Katsumi Hattori, Patrick Taylor (Editors), Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, AGU Geophysical Monograph 234, pp.414, Wiley,

2018. (ISBN: 9781119156932)

- Kopytenko, Y.A., Ismaguilov, V.S., Hattori, K., Hayakawa, M Anomaly disturbances of the magnetic fields before the strong earthquake in Japan on March 11, 2011, Ann. Geophys. 55 (1), 101–107, doi:10.4401/ag-5260, 2012
- Mezentsev, A. Y., Hayakawa, M., and Hattori, K., Fractal ULF signature related to seismic process, Journal of Atmospheric Electricity, 29, 81-93, 2009.

  Ismaguilov, V.S., Kopytenko, Y. A., Hattori, K., and Hayakawa, M., Gradients and phase velocities of ULF g geomagnetic disturbances used to determine the source of an impending strong earthquake, Geomagnetism and Agronomy 46, 403-410, 2006.
- Y. Kopytenko, V. Ismaguilov, K. Hattori and M. Hayakawa, Determination of hearth position of a forthcoming strong EQ using gradients and phase velocities of ULF geomagnetic disturbances, Physics and Chemistry of the Earth, 31, 292-298, 2006.
- A. Schekotov, O. Molchanov, K. Hattori, E. Fedorov, V. Gladyshev, G. Belyaev, V. Chebrov, V. Sinitsin, E. Gordeev and M. Hayakawa, Seismo-ionospheric depression of the ULF geomagnetic fluctuations at Kamchatka and Japan, Physics and Chemistry of the Earth, 31, 313-318, 2006.
- Yu. A. Kopytenko, V. S. Ismaguilov, K. Hattori, and M. Hayakawa, Determination of hearth position of forthcoming strong EQ using gradients and phase velocities of ULF geomagnetic disturbances, Extended Abstracts of 2005 International Workshop on Seismo Electromagnetics, pp. 166-169, 15-17 March, 2005, Chofu, Tokyo.
- Kopytenko Yu.A., Ismaguilov V.S., Hattori K., Hayakawa M., Gradients and Phase Velocities of ULF magnetic disturbances (F=0.1-0.4Hz) before and during strong earthquakes in 2003 year at Bosso Peninsula (Japan), 2004 Asia-Pacific Radio Science Conference Proceedings, p. 545, August 24-27, 2004, (Qingdao, China).
- Molchanov, O.A.; Schekotov, A.Ju.; Hattori, K.; Solovieva, M.S.; Fedorov, E.N.; Chebrov, V.; Saltikov, D.; Hayakawa, M., Near-seismic effects in ULF fields and seismo-acoustic emission : statistics and explanation, European Geosciences Union 1st General Assembly (CD-ROM), April 25-30, 2004, Nice, France.
- Gotoh, K., Hayakawa, M., Smirnova, N., and Hattori, K., Fractal analysis of seismogenic ULF emissions, Physics and Chemistry of the Earth, 29, 419-424, 2004.
- M. Hayakawa, K. Hattori, A. P. Nickolaenko, and L. M. Rabinowicz, Relation between the energy of earthquake swarm and the Hurst exponent of random variations of the geomagnetic field, Physics and Chemistry of the Earth, 29, 379-387, 2004.
- Hattori, K., Takahashi, I., Yoshino, C., Isezaki, N., Iwasaki, H., Harada, M., Kawabata, K., Kopytenko, E., Kopytenko, Y., Maltsev, P., Korepanov, V., Molchanov, O., Hayakawa, M., Noda, Y., Nagao, T., Uyeda, S., ULF geomagnetic field measurements in Japan and some recent results associated with Iwateken Nairiku Hokubu Earthquake in 1998, Physics and Chemistry of the Earth., 29, 481-494, 2004.
- Ismaguilov, V., Kopytenko, Y., Hattori, K., and Hayakawa, M., 2003: Variations of phase velocity and gradient values of ULF geomagnetic disturbances connected with the Izu strong earthquake, Natural Hazards and Earth System Sciences, 3, 211-215,2003.
- Kopytenko, Y., Ismaguilov, V., Molchanov, O., Kopytenko, E., Voronov, P., Hattori, K., Voronov, P., Hayakawa M.,

Zaitsev, D., Investigation of ULF magnetic disturbances in Japan during acive seismic period, Journal of Atmospheric Electricity, 22, 3, 207-215, 2002.

- Uyeda, S., Hayakawa, M., Nagao, T., Molchanov, O., Hattori, K., Orihara, Y., Gotoh, K., Akinaga, Y., Tanaka, H., Electric and Magnetic phenomena observed before the volcano-seismic activity 2000 in the Izu islands region, Japan, Proceedings of the US National Academy of Science, 99, 7352-7355, 2002.
- Gorbatikov, A., Molchanov, O., Hayakawa, Uyeda, S., M., Hattori, K., Nagao, T., Tanaka, H., Nikolaev V., Maltsev, P., Acoustic emission possibly related to earthquakes, observed at Matsushiro, Japan and its implications, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 1-10, Terrapub, 2002.
- Kopytenko, Y., Ismaguilov, V., Hattori, K., Voronov, P., Hayakawa M., Molchanov, O., Kopytenko, E., Zaitsev, D.. Monitoring of the ULF electromagnetic disturbances at the Station network before EQ in seismic zones of Izu and Chiba Peninsulas, Seismo-Electromagnetics: Lithosphere-Atmosphere- Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 11-18, Terrapub, 2002.
- Yagova, N., Yumoto, K., Pilipenko, V., Hattori, K., Nagao, T., Saita, K., Local variations of geomagnetic ULF noises and their relation to seismic activity, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 45-48, Terrapub, 2002.
- Uyeda, S., Nagao, T., Hattori, K., Noda, Y., Hayakawa, M., Miyaki, K., Molchanov, O., Gladychev, V., Baransky, L., Schekotov, A., Belyaev, G., Fedorov, E., Pokhotelov, O., Andreevsky, S., Rozhnoi, A., Khabazin, Y., Gorbatikov, A., Gordeev, E., Chevrov, V., Lutikov, A., Yunga, S., Kasarev, G., Surkov, V., Russian-Japanese complex geophysical observatory in Kamchatka for monitoring of phenomena connected with seismic activity, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 413-420, Terrapub, 2002.
- Gladychev, V., Baransky, L., Schekotov, A., G., Fedorov, E., Pokhotelov, O., Andreevsky, S., Rozhnoi, A., Khabazin, Belyaev, G., Gorbatikov, A., Gordeev, E., Chevrov, V., Sinitsin, V., Gorbatikov, A., Gordeev, E., Chevrov, V., Molchanov, O., Hayakawa, M., Uyeda, S., Nagao, T., Hattori, K., Noda, Y.., "Some preliminary results of seismo-electromagnetic research at complex geophysical observatory, Kamchatka, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 413-420, Terrapub, 2002.
- Ismaguilov, V., Kopytenko Y., Hattori, K., Voronov, M., Molchanov, O., Hayakawa, M., ULF magnetic emissions connected with under sea bottom earthquakes, Journal of Natural Hazards and Earth System Science, 1, 23-31, 2001.

8. Other important items to be stated

Concerning with this project, following workshops and symposium were held in Japan.

RIKEN/NASADA Workshop on Seismo-ULF emissions, December 1998, Tokyo.

RIKEN/NASADA Symposium on the Recent Aspects of Electromagnetic Variations Related with Earthquakes, December 1999, Wako.

International Workshop on Seismo Electromagnetics, 2000 of NASDA, September 2000, Tokyo.

September, 1998: Set up the electromagnetic sensors at Paratunka of Kamchatka Peninsula.

November, 1998: Visit to IZMIRAN in St. Petersburg and Institute of Physics of the Earth in Moscow to make technical

and scientific discussions with Dr. Kopytenko and Dr. Molchanov, respectively.

September, 1999: Visit to Kamchatka station for maintenance of observation system.

August, 2000: Visit to Kamchatka station for maintenance of observation system.

November, 2001: Mr. Pavel Maltsev(Lviv Center of Space Research, Ukraine) stayed at Chiba University for technical and scientific discussion.

July-August, 2002: Dr. Vareli Ismaguilov and Andrei Radilov (IZMIRAN, Russia) stayed at Chiba University for technical and scientific discussion.

December, 2004: Mr. Pavel Maltsev(Lviv Center of Space Research, Ukraine) stayed at Chiba University for technical and scientific discussion

March, 2005: Dr. Yuri Kopytenko (IZMIRAN) and Dr. Oleg Molchanov came to Japan to make technical and scientific discussions.

March, 2007: Dr. Oleg Molchanov(Institute of Physics of the Earth)came to Japan to make technical and scientific discussion (at the University of Electro-Communications)

November, 2007: Technical and scientific discussion with Dr. Yuri Kopytenko (IZMIRAN) and Dr. Oleg Molchanov at Bandung, Indonesia.

March, 2008: Technical and scientific discussion with Dr. Koerpanov (Lviv Center of Space Research, Ukraine) at Sagamihara, Japan

April 2009: Technical and scientific discussion with Dr. Koerpanov(Lviv Center of Space Research, Ukraine) and Dr. Molchanov（Institute of Physics of the Earth）at Vienna, Austria

August 2010: Dr. Vira Pronenko (Lviv Center of Space Research, Ukraine) come to Japan to make technical and scientific discussion and visit Matsushiro station to maintain the system.

January, 2014: Prof. Hattori visited International Space Science Institute (ISSI), Bern, Switzerland, and had technical and scientific discussion with Drs. Ouzounov (Chanpman Univ., US), Liu (NCU, Taiwan), Tramutoli (Bascilicata Univ., Italy), and Pulinets (SRI, Russia).

May 2014: Prof. Hattori and Prof. Kopytenko had a technical and scientific discussion on torsion magnetometer system and decided to develop LINUX base system.

June 2015: Prof. Hattori participated in the ISSI meeting at Bern and had technical and scientific discussions with Dr. Pulinets on multi-instrument Space-Borne Observations and Validation of the Physical Model of the Lithosphere-Atmosphere-Ionosphere-Magnetosphere Coupling.

1. Monitoring of Earthquake activity with use of electromagnetic approach in Taiwan,
2. Graduate School of Science / Professor / Katsumi Hattori
3. Taiwan / Taiwan National Central University / Professor / Jann-Yenq Liu

   Taiwan / Taiwan National Central University / Professor / Lung-ChiJ Tsai

   Taiwan / Taiwan National Chung Cheng University / Professor / Chiou-Fen Shieh

   Taiwan / Dahan Institute Technology / Professor / Hua-Hi Sheu

   Taiwan / Institute of Earth Sciences, Academia Sinica / Researcher / Chieh-Hung Chen➔ Taiwan National Chung Cheng

University / Research Associate, from April, 2014.

4. 2001-

5. The project aims at clarification of the physical mechanism of electromagnetic phenomena preceding earthquakes and realizing of monitoring and short-term prediction of large earthquake in Taiwan.

RIKEN (2001),

Interchange Association, Japan (2004)

JSPS Grants-in Aid for Scientific Research C (2001-2003)

JSPS Grants-in Aid for Scientific Research C (2004-2006)

JSPS Grants-in Aid for Scientific Research B (2007-2009)

NiCT R&D promotion scheme funding international joint research(2007-2010)

Joint Research Program in Center for Environmental Remote Sensing, Chiba University (2015)

Joint Research Program in Center for Environmental Remote Sensing, Chiba University（2016）

Joint Research Program in Center for Environmental Remote Sensing, Chiba University（2017）

6. Main result

- Jann‐Yenq (Tiger) Liu, Katsumi Hattori, and Yuh‐Ing Chen, Application of Total Electron Content Derived from the Global Navigation Satellite System for Detecting Earthquake Precursors, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 305-317, DOI: 10.1002/9781119156949.ch17, Wiley, 2018.
- Dimitar Ouzounov, Sergey Pulinets, Jann-Yenq Liu, Katsumi Hattori, and Peng Han, Multiparameter Assessment of Pre‐Earthquake Atmospheric Signals, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 339-359, DOI: 10.1002/9781119156949.ch20, Wiley, 2018.
- Jann-Yenq Liu, Chieh-Hung Chen, Tsung-Yu Wu, Hsiao-Ching Chen, Katsumi Hattori, Tom Bleier, Karl Kappler, I-Ching Yang, Yaqin Xia, Weisheng Chen, Zhengyan Liu, Co-seismic signatures in magnetometer, geophone, and infrasound data during the Meinong Earthquake, Terrestrial, Atmospheric and Oceanic Sciences, Vol.28, No. 5, pp.683-692, 2017.10. (doi:10.3319/TAO.2017.03.05.01) (accepted 2017/3/5)
- Han, P., Hattori, K., Zhuang, J., Chen, C-H., Liu, J-Y., and Yoshida, S., Evaluation of ULF seismo-magnetic phenomena in Kakioka, Japan by using Molchan's error diagram, Geophysical Journal International, vol.208, Issue 1, pp.482-490, 2017.1. (doi: 10.1093/gji/ggw404)
- 廣岡伸治, 市川卓, 服部克巳, 韓鵬, 吉野千恵, 劉正彦, 2011 年東北地方太平洋沖地震(Mw9.0)に先行する電離圏異常の時空間分布, 電気学会論文誌 A(基礎・材料・共通部門誌), vol.136, no.5, pp.265-271, 2016.5. (doi: 10.1541/ieejfms.136.265) (in Japannese)
- Shinji Hirooka, Katsumi Hattori, Jann-yenq Liu, Validation of three-dimensional ionospheric tomography over North-America region, Journal of Atmospheric Electricity, 36, 1-11, 2016. (in Japanese) (doi: 10.1541/jae.36.1)
- Peng Han, Katsumi Hattori, Maiko Hirokawa, Jiancang Zhuang, Chieh-Hung Chen, Febty Febriani, Hiroki Yamaguchi, Chie Yoshino, Jann-Yenq Liu, and Shuji Yoshida, Statistical analysis of ULF seismo-magnetic phenomena at Kakioka, Japan, during 2001-2010, J Geophys. Res., SPA, 119, 4998–5011,

doi:10.1002/2014JA019789., 2014

- Peng Han, Katsumi Hattori, Guangjing Xu, Ryo Ashida, Chieh-Hung Chen, Febty Febriani, Hiroki Yamaguchi,Further investigations of geomagnetic diurnal variations associated with the 2011 off the Pacific coast of Tohoku earthquake (Mw9.0), Journal of Asian Earth Sciences, , 114, 321-326, 2015. (doi:10.1016/j.jseaes.2015.02.022)
- Hattori, K., Han, P., Yoshino, C., Febriani, F., Yamaguchi, H., Chen, C.-H., Investigation of ULF Seismo-Magnetic Phenomena in Kanto, Japan During 2000-2010: Case Studies and Statistical Studies, Surveys in Geophysics, 34, 293-316, DOI 10.1007/s10712-012-9215-x, 2013
- C. H. Chen, H. L. Hsu, S. Wen, T. K. Yeh, F. Y. Chang, C. H. Wang, J. Y. Liu, Y. Y. Sun, K. Hattori, H. Y. Yen, and P. Han, Evaluation of seismo-electric anomalies using magnetic data in Taiwan, Nat. Hazards Earth Syst. Sci., 13, 597–604, 2013 doi:10.5194/nhess-13-597-2013
- Liu, J. Y., Wang, K., Chen, C. H., Yang, W. H., Yen, Y. H., Chen, Y. I., Hattori, K., Su, H.T., Hsu, R. R., and Chang, C. H., A statistical study on ELF-whistlers/emissions and M≥ 5.0 earthquakes in Taiwan, J Geophys. Res., SPA, 118, 3760–3768, doi:10.1002/jgra.50356, 2013
- Chen, C-H., Wen, S., Liu, J-Y, Hattori, K., Han, P., Hobara, Y., Wang, C-H., Yeh, T-K., Yen H-Y., Surface displacements in Japan before the 11 March 2011 M9.0 Tohoku-Oki earthquake, J. Asian Earth Sci., 80, 165-171, 2014. (http://dx.doi.org/10.1016/j.jseaes.2013.11.009)
- S.Wen, C.-H. Chen, H.-Y. Yen, T.-K. Yeh, J.-Y. Liu, K. Hattori, H. Peng, C.-H. Wang, and T.-C. Shin, Magnetic storm free ULF analysis in relation with earthquakes in Taiwan, Natural Hazard and Earth System Sciences, 12, 1747–1754, 2012 (doi:10.5194/nhess-12-1747-2012)
- Chen, C.H., Liu, J.Y., Chang, T.M., Yeh, T.K., Wang, C.H., Wen, S., Yen, H.Y., Hattori, K., Lin, C.R., Chen, Y.R., Azimuthal propagation of seismo-magnetic signals emitted from large earthquakes in Taiwan. Ann. Geophys. 55 (1), 63–71, doi: 10.4401/ag-5326, 2012.
- Chen. C.H., Wen, S., Liu, J. Y., Yeh, T. K., wang, C. H., Yen, H. Y., Hattori, K., and Lin, C. R., Seismomagnetic Signal Comparison using the Morlet Wavelet Method, Disaster Advances, 4(4), 53-60, 2011.
- Jhuang, H. K., Ho, Y. Y., kakinami, Y., Liu, J. Y., Oyama, K., Parrot, M., Hattori, K., Nishihashi, M., and Zhang, D., Seismo-ionospheric anomalies of the GPS-TEC appear before the 12 May 2008 M7.9 Wenchuan Earthquake, International Journal of Remote Sensing, 31, 3579-3587 (2010)
- Chen, C.H., Liu, J.Y., Lin, P.Y., Yen, H.Y., Hattori, K., Liang, W.T., Chen, Y.I., Yeh, Y.H., Zeng, X. Pre-seismic Geomagnetic Anomaly and Earthquake Location, Tectonophysics, 489 (1-4), pp. 240-247 (2010)
- Liu, J. Y., Chen, Y. I., Chen, C. H., and Hattori, K., Temporal and spatial precursors in the ionospheric GPS total electron content observed before the 26 December 2004 M9.3 Sumatra? Andaman Earthquake, Journal of Geophysical Research A: Space Physics, 115 (9), art. no. A09312 2010
- Liu, J. Y., Chen, Y. I., C. H. Chen, Liu, C. Y., Chen, C. Y., Nishihashi, M., Li, J. Z., Xia, Y. Q., Oyama, K. I., Hattori, K., and Lin, C. H., Seismo-ionospheric Anomalies Observed before the 12 May 2008 Mw7.9 Wenchuan Earthquake, J. Geophys. Res., doi: 10.1029 /2008JA013698, 2009.

- Nishihashi, M., Hattori, K., Jhuang, H. K., and Liu, J. Y., Spatial distribution of ionospheric GPS-TEC and NmF2 anomalies during the 1999 Chi-Chi and Chia-Yi Earthquakes in Taiwan, Terrestrial, Atmospheric and Oceanic Sciences, 20, 779-789, 2009.
- Chen, C. H., Liu, J. Y., Yang, W. H., Yen, H. Y., Hattori, K., Lin, C. R., and Yeh, Y. H., SMART analysis of geomagnetic data observed in Taiwan, Physics and Chemistry of the Earth, 34, 350-359, 2009.
- Yumoto, K., Ikemoto, S., Cardinal, M. G., Hayakawa, M., Hattori, K., Liu, J. Y., Saroso, S., Ruhimat, M., Husni, M., Widarto, D., Ramos, E., D. McNamara, R. E. Otadoy, G. Yumul, R. Ebora, and N. Servando, A new ULF wave analysis for Seismo-Electromagnetics using CPMN/MAGDAS data, Physics and Chemistry of the Earth, 34, 360-356, 2009.
- Saroso, S., Liu, J. Y., Hattori, K., and Chen, C. H., Ionospheric GPS TEC Anomalies and M>5.9 Earthquakes in Indonesia during 1993-2002, Terrestrial, Atmospheric and Oceanic Sciences, 19, 481-488, 2008.
- J.Y. Liu, C.H. Chen, Y.I. Chen, H.Y. Yen, K. Hattori and K. Yumoto, Seismo-geomagnetic anomalies and M $\geqslant$ 5.0 earthquakes observed in Taiwan during 1988–2001, Physics and Chemistry of the Earth, 31, 215-222, 2006.
- M. Nishihashi, Y. Suzuki, K. Hattori, J-Y. Liu, D. Widarto, Analysis of GPS-TEC variation associated with large earthquakes using GAMIT, Abstract of Asia Oceania Geosciences Society 3rd Annual Meeting, CDROM, July 2006, Singapore..
- Katsumi Hattori, ULF geomagnetic changes associated with large earthquakes, Terrestrial, Atmospheric and Oceanic Sciences, Vol.15, No.3, 329-360, 2004
- Masashi Kamogawa, Jann-Yenq Liu, Hironobu Fujiwara, Yu-Jung Chuo, Yi-Ben Tsai, Katsumi Hattori, Toshiyasu Nagao, Seiya Uyeda, and Yoshi-Hiko Ohtsuki, Atmospheric field variations before the March 31, 2002 M6.8 earthquake in Taiwan, Terrestrial, Atmospheric and Oceanic Sciences, Vol.15, 397-412, September 2004.
- Hattori, K., Takahashi, I., Yoshino, C., Nagao, T., Liu, J.Y., Shieh, C.F., ULF Geomagnetic and Geopotential Measurement at Chia-Yi, Taiwan, Journal of Atmospheric Electricity, 22, 3,217-222, 2002.
- K. Hattori, Y. Akinaga, K.Gotoh, C. Yoshino, Y. Kopytenko, M. Hayakawa, K. Yumoto, T. Nagao, S. Uyeda, J. Y. Liu, C. H. Shieh, ULF Geomagnetic Anomalies Associated with Earthquakes and Observations in Taiwan, 2002 International Workshop on Earthquake Precursor iSTEP integrated Search for Taiwan Earthquake Precursors, p.96—97, 2002.
- Y. Akinaga, M. Hayakawa, J.Y. Liu, K. Yumoto, K. Hattori, "A precursory signature for Chi-Chi earthquake in Taiwan", Natural Hazards and Earth System Sciences, 1, 33-36, 2001.

7. Other important items to be stated

Install electromagnetic sensor in Chia-Yi.(September, 2001)

Filed survey around Hualien (March, 2002)

Invited talk in the kick off meeting of project of National Central University entitled integrated Search for Taiwan Earthquake Precursors" (2002 International Workshop on Earthquake Precursor iSTEP) (June, 2002)

Install electromagnetic sensor in Hualien.(September, 2002)

Install electromagnetic sensor in Fuli (March, 2003)

Profs. Jann-Yenq Liu and Yi-Ben Tsai came to Chiba University and gave talks (December, 2003)

International workshop was organized at National Central University, Taiwan (March, 2004)

Install electromagnetic sensor in Donghua University (October, 2004)

Discussion with Prof. Liu at National Central University (December 2005)

Mr. Chieh-Hung Chen stayed at Chiba University for collabaration (March-April 2005)

Discussion with Prof. Liu at National Central University (June, 2005)

Discussion with Prof. Liu at National Central University (November, 2005)

Install meteorological equipment at Dong-Hua University (December, 2005)

International workshop on Earthquake Precursor was organized at National Central University, Taiwan (March, 2006)

Prof. Liu came to Chiba University to see the observation network for seismo-electromagnetic and to give a seminar. And we make technical and scientific discussions. (May, 2006)

Masahide Nishihashi who is a Ph. D student visited the Prof. Liu's laboratory at National Central University, Taiwan to have a collaboration on ionospheric disturbances associated with earthquakes (August-September, 2006)

System maintenance of stations at Taiwan (Chia-Yi, Hualien, NCU) (May, 2007)

System maintenance of stations at Hualien. (July 2007)

Prof. Liu came to Chiba University to give a talk and make technical and scientific discussions.(July, 2007)

System maintenance of stations at Hualien. (Auigust-September, 2007)

Technical and scientific discussion at Bandung, Indonesia with Prof. Liu. (November, 2007)

Technical and scientific discussion at Sagamihara, Japan with Profs. Liu and Tsai. (March, 2008)

Technical and scientific discussion at NCU, Chung-li, Taiwan with Prof. Liu. (June, 2008)

Preliminarily observation of beacon radio wave form FORMOSAT-3 satellite at Aso with Prof. Tsai's group (July, 2008)

Technical and scientific discussion at San Francisco, USA with Profs. Liu and Tsai. (August.,2008)

Mr. Simpei Kon (B4 student at Chiba Univ.) visited NCU, Taiwan to participate Ionosphere School organize by Prof. Tsai (October, 2008)

Prof. Tsai's group installed the antenna system to observe beacon radio wave form FORMOSAT-3 satellite at Aso (October-November, 2008)

International workshop (IWSLEC-2) at Tsukuba. Technical and scientific discussion with Profs. Liu (November, 2008)

Preliminarily field survey for beacon radio wave observation form FORMOSAT-3 satellite at Okinawa with Prof. Tsai(January 2009)

Fieldwork at Taiwan (maintenance of stations inTaiwan) (February, 2009)

International workshop (VESTO) at Chiba. Technical and scientific discussion with Profs. Liu (March, 2009)

Preliminarily observation of beacon radio wave observation form FORMOSAT-3 satellite at Sesoko and Cape Heto, Okinawa with Prof. Tsai (May 2009)

International workshop (IWSLEC-3) at Singapore. Technical and scientific discussion with Prof. Liu (June, 2009)

Prof. Tsai's group installed the antenna system to observe beacon radio wave form FORMOSAT-3 satellite at Sesoko, Okinawa (July, 2009)

Prof. Tsai's group visit Japan to perform maintenance of the antennas (September 2009)

International workshop for EQ prediction in Indonesia at Buki-Tinggi, Indonesia. Technical and scientific discussion with Prof. Liu (November, 2009)

June, 2010: Prof. Hattori and Ms. Yoshinp visit Taiwan to perform maintenance.

December, 2010: Technical and scientific discussion with Prof. Liu and his group at AGU meeting, US.

December, 2010: Prof. Hattori and Ms. Yoshinp visit Taiwan to perform maintenance.

March, 2011: Prof. Liu visit Chiba Univ. and make technical and scientific discussion

April, 2011: Technical and scientific discussion with Prof. Liu and his group at EGU meeting, Vienna.

August, 2011: Prof. Hattori visited NCU and had a technical and scientific discussion with Prof. Liu and his group.

August, 2011: Technical and scientific discussion with Prof. Liu and his group at USRI meeting, Istanbul, Turkey.

December, 2011: Technical and scientific discussion with Prof. Liu and his group at AGU meeting, San Francisco, US.

March, 2012: Dr. Chen visited Hattori Lab. and had a technical and scientific discussion

May, 2012: Dr. Chen visited Hattori Lab. And had a technical and scientific discussion.

December, 2012: Technical and scientific discussion and discussion on MoU with Prof. Liu and his group at AGU meeting, San Francisco, US.

December, 2012: Hattori visited NCU to sign up the MoU and had a scientific and technical discussion, and gave a talk on landslide.

January-February, 2013:

Hattori and doctrial student Hirooka visited Prof. Liu's Lab. under the shirt visit program for global human resource development propgram. (Hirooka stayed for 2 weeks)

April, 2013: Technical and scientific discussion and discussion on MoU with Prof. Liu and his group at EGU meeting, Vienna, Austrial

April, 2013: Prof. Hattori visited NCU and had a technical and scientific discussion with Prof. Liu and his group.

May, 2013: Dr. Chen at National Chung Chen University came to Hattori Lab. to have a technical and scientific discussions.

May, 2013: Prof. Liu at NCU came to Hattori Lab. to have a technical and scientific discussions.

July, 2013: Prof. Hattori visited NCU and had a technical and scientific discussion with Profs. Liu, Dong, and his group, gave a talk on landslide.

August, 2013: Prof. Hattori visited NCU and had a technical and scientific discussion with Prof. Liu and his group.

January, 2014: Prof. Hattori visited International Space Science Institute (ISSI), Bern, Switzerland, and had technical and scientific discussion with Drs. Ouzounov (Chanpman Univ., US), Liu (NCU, Taiwan), Tramutoli (Bascilicata Univ., Italy), and Pulinets (SRI, Russia).

July-August, 2014: Prof. Liu participated in the AOGS and IWEP meetings at Sapporo and had a technical and

scientific discussion.

September, 2014: Prof. Hattori visited CCU, NSPO and NARL and had technical and scientific discussions.

December, 2014: Prof. Hattori had a technical and scientific discussion.with Prof. Liu at AGU meeting.

December, 2014: Dr. Ching-Hua Lo、Dr. T. Y. Chen、Dr. Guey-shin Chang, Mr. M.H. Shyu、Ms. C. L. Lee (NARL/NSPO) Prof. Jann-Yenq Liu (NCU) visited Chiba Univ. and had technical and scientific discussion and the meeting for joint research.

May 2015: Prof Liu (NCU) and Dr. Chen (CCU) participated in JpGU and IWEP2 meetings and had technical and scientific discussions.

June, 2015: We establish MoU between NARL and Chiba University.

November-December 2015:

Prof. Liu participated in the workshop by CEReS and had a technical and scientific discussion with Hattori.

December, 2015: Prof. Hattori had a technical and scientific discussion with Prof. Liu at AGU meeting.

January 2016 : Prof. Liu visited Hattori Lab. and had technical and scientiofic discussion with Hattori..

May, 2016: Prof. Hattori and Dr. Han visited Taiwan to have a technical and scientific discussions.

May, 2016: Prof Liu (NCU) and Dr. Chen (CCU) participated in JpGU and IWEP3 meetings and had technical and scientific discussions.

June, 2016: Prof. Liu at NCU visited Chba Univ.. to participate in ths IJJSS2016 and had a technical and scientific discussions.

December, 2016: Prof. Hattori had a technical and scientific discussion with Prof. Liu at AGU meeting.

February, 2017: Prof. Hattori visited Prof. Liu's Lab., Taiwan to have a technical and scientific discussios.

May-June, 2017: Prof. Liu visited Hattori's Lab. for 2 months as suvatical and conducted a joint research. During this period, Prof. Liu presented his lagtes results at JpGU, IWEP4, EM seminar etc. in Japan.

July, 2017: Prof. Liu came to participate in IAGIASPEI2017 meetong held at Kobe and had a technical and sciemtific discussion.

December, 2017: Prof. Hattori had a technical and scientific discussion with Prof. Liu at AGU meeting.

May 24-27, 2018: Prof Liu (NCU) and Dr. Min-Chien Tsai (CWB) participated in JpGU and ISEF-IWEP5 meetings and had technical and scientific discussions.

September 2-7, 2018: Prof. Hattori visited the CWB to evaluate the project on earthquake forecast.

October 26-18, 2018: Prof. Liu (NCU) visited Hattori Lab. and have a technical and scientific discussions with Prof. Josaphat (CEReS)

December 10-14, 2018: Prof. Hattori had a technical and scientific discussion with Prof. Liu at AGU meeting.

February 12-16, 2019: Prof. Liu (NCU) visited Hattori Lab. and have a technical and scientific discussions. He also had presentations at CEReS symposium (February 14) and SEMS seminar (February 15).

1. Ground-based and satellite geophysical monitoring and modeling of seismotectonic structure
2. Graduate School of Science / Professor / Katsumi Hattori

3. Italy / Istituto di Metodologie per l'Analisi Ambientale, CNR C.da S.Loja / Prof. Vincenzo Lepenna

Italy / Istituto di Metodologie per l'Analisi Ambientale, CNR C.da S.Loja / Research Scientist / Dr. Luciano Telesca

Italy / Istituto di Metodologie per l'Analisi Ambientale, CNR C.da S.Loja / Research Scientist / Dr.Nicola Pergola

Italy / Bascilicata University / Professor / Velerio Tramutoli

Italy / Bascilicata University / Researcher / Nicola Genzano

4. 2003-

5. the statistical analysis of geomagnetic and geoelectric signals recorded in seismic areas

6. Funds, grants, etc

2003-2004 JSPS Bilateral collaboration project between Japan and Italy (PI: Prof. M. Hayakawa (The University of Electro-Communications))

2006 Research Foundation for the Electrotechnology of Chubu (REFEC), Chubu Electric Power Co. Inc.

2007 JSPS project on Bilateral Seminar between Japan and Italy (CNR) .

2007 千葉大学国際会議助成金

2007-2010 NiCT R&D promotion scheme funding international joint research.

2015.11- 2016.11 JSPS 科研費 for forign reseacher (Nicola Genzano JSPS 特別研究員）

7. Main result

- Francesco Marchese, Teodosio Lacava, Nicola Pergola, Katsumi Hattori, Emilio Miraglia, Valerio Tramutoli, Inferring phases of thermal unrest at Mt. Asama (Japan) from infrared satellite observations, Journal of Volcanology and Geothermal Research, 237-238, 10-18, doi:10.1016/j.jvolgeores.2012.05.008, 2012
- Hattori, K., and Telesca, L., Editors, Electromagnetics in Seismic and Volcanic Areas (Proceedings of Bilateral Seminar Italy-Japan, July 25-27, 2007), Yuubunsya Pub., pp. 226, 2008
- Telesca, L., Lapenna, V., Macchiato, M., and Hattori, K., Investigating non-uniform scaling behavior in Ultra Low Frequency (ULF) earthquake-related geomagnetic signals, Earth and Planet. Sci. Lett., 268, 219-224, 2008.
- L. Telesca and K. Hattori, Non-uniform scaling behavior in Ultra Low Frequency (ULF) earthquake-related geomagnetic signals,Physica A, 384, 522-528, 2007.
- G. Colangelo, K .Hattori, V. Lapenna,L. Telesca, and C. Yoshino, Extraction of extreme events in geoelectrical signals; an application in a seismic area of Japan, Extended Abstracts of 2005 International Workshop on Seismo Electromagnetics, pp. 93-96, 15-17 March, 2005, Chofu, Tokyo.
- Luciano Telesca, Gerardo Colangelo, Katsumi Hattori, Vincenzo Lapenna, Principal component analysis of geoelectrical signals measured in the seismically active area of Basilicata Region (southern Italy), Natural Hazards and Earth System Sciences, 4, 663-667, 2004
- 服部克巳，吉野千恵，芹田亜矢，高橋一郎，Geraldo Colangelo, Luchiano Telesca, ULF 帯の電磁場データの主成分解析，電気学会研究会資料, EMT-04-101, p65-69，2004 年 9 月

8. Other important items to be staed

October-November, 2003:

Visit to Istituto di Metodologie per l'Analisi Ambientale, CNR and discuss and analyze geoelectrical potential difference data recorded in seismic areas, southern Italy.

June, 2004: Dr. Collangero at Istituto di Metodologie per l'Analisi Ambientale, CNR stayed at Chiba University and discuss and analyze geoelectrical potential difference data recorded in seismic areas, Japan.

March, 2005: Discussion on future collaboration with Prof. Lapenna, Dr. Telesca, and Dr. Collangero in Japan when they came to attend meeting in Japan.

May, 2005: Discussion on landslide study at EGU meeting, Vienna.

July, 2006: Visit Istituto di Metodologie per l'Analisi Ambientale, CNR and give a talk at the institute. Technical and scientific discussion on seismo-electromagnetics and landslide.

July, 2006: Dr. Telesca at Istituto di Metodologie per l'Analisi Ambientale, CNR stayed at Chiba University to discuss on fractal/multi-fractal analysis and analyze geomagnetic data recorded in seismic areas, Japan.

October-November, 2006:

Visit Istituto di Metodologie per l'Analisi Ambientale, CNR and set up the collaborative landslide monitoring station at Picerno, Potenza, in the southern Italy with CNR.

July, 2007: Visit Istituto di Metodologie per l'Analisi Ambientale, CNR and give a seminar on seismo-elecromagnetics. Technical and Scientific discussion on landslide and seismo-electromagnetics have been done.

July, 2007: JSPS bilateral seminar Japan-Italy on electromagnetic study in seismic and volcanic areas(July 25-27, 2007). Discussion on satellite data have been done.

April, 2008: Visit Istituto di Metodologie per l'Analisi Ambientale, CNR and give a seminar on seismo-elecromagnetics. Technical and Scientific discussion on landslide and seismo-electromagnetics have been done.

November, 2008 Italian group visited to Japan to attend International Landslide Forum held at UN Univ., Tokyo. Technical and Scientific discussion on landslide and seismo-electromagnetics have been done.

April, 2009: Technical and Scientific discussion on landslide and seismo-electromagnetics have been done at Vieena, Austria during EGU meeting.

December, 2010: Technical and scientific discussion with Dr. Pergola and his group at AGU meeting, US.

December, 2011: Technical and scientific discussion with Dr. Lapenna at AGU meeting, US.

August, 2012: Technical and scientific discussion with Dr. Angela Pronne (Prof. Lapeena Group) at AOGS meeting, Singaor.

June, 2013: Prof. Hattori visited Italy (Bascilicata University and IMAA, CNR) and had technical and scientific discussion with Profs. Lapenna, Tramutoli, and Dr. Pergola. Also Prof. Hattori gave a special seminar at Bascilicata Univ.

January, 2014: Prof. Hattori visited International Space Science Institute (ISSI), Bern, Switzerland, and had technical and scientific discussion with Drs. Ouzounov (Chanpman Univ., US), Liu (NCU, Taiwan), Tramutoli (Bascilicata Univ., Italy), and Pulinets (SRI, Russia).

July-August, 2014: Prof. Tramutoli participated in the AOGS and IWEP meetings at Sapporo and had a technical and scientific discussion.。

December, 2014: Prof. Hattori participated in the AGU meeting and had a technical and scientific discussion with

Prof. Tramutoli at AGU meeting.

April, 2015: Establish MoU between University of Basilicata and Graduate School of Science, Chiba University.

June 2015: Prof. Hattori participated in the ISSI meeting at Bern and had technical and scientific discussions with Prof. Tramutoli on multi-instrument Space-Borne Observations and Validation of the Physical Model of the Lithosphere-Atmosphere-Ionosphere-Magnetosphere Coupling.

November 2015: Dr. Nicola Genzano came to Hattori Lab. as a post- doctoral fellow under JSPS program. He will stay there for 1 year.

December, 2015: Prof. Hattori and Dr. Ham participated in the pre-AGU meeting by Chapman Univ. had a technical andscientific discussion with Prof. Tramutoli at AGU meeting.

April, 2016: Prof. Hatori visited Wien to present his latest results at EGU and had technical and s Scientific discussion on seismo-electromagnetics.

April, 2016: Dr. Genzano visited Wien to present his latest results at EGU and Univ. of Basilicata to have technical and s scientific discussion and practical experiment there.

May, 2016: Prof. Tramutoli at Univ. Basilicata visited chiba Univ., to present his latest results and have a technical and sciuentific discussion.

August-September, 2016: Prof. Hattori and Dr. Genzano visited China to attend the 2nd CSES meeting and EMSEV meeting and hada atechnical and sciemtfic discussion with Prof. Tramutoli there.

September, 2016: Dr. Alfrd Falconeri visited Hatori Lab., for 3 weeks to perform joint works.

October, 2016: Dr. Nicola Genzano visited Univ. Basilicata to have technical and scientific discussion on his latest results.aa

December, 2017- February, 2018: Prof. Hattori had a technical and scientific discussion to submit proposal to ESA with Profs. Tramutoki, et al. under skype and emails.

May 24-27, 2018: Prof Tramutoli (UniBas) and Dr. DeSantis (INGV) participated in JpGU and ISEF-IWEP5 meetings and had technical and scientific discussions.

September 15-25, 2018: Prof. Hattori participated to present the latest results at EMSEV2018（9/17-21）held at Potenza, Italy and had scientific abd technical discussions with Prof. Tramutoli, Dr, Genzano (UniBas) and Dr. DeSantis (INGV)（9/22-23）

1. Ground-based Monitoring of Seismo-Electromagnetic Signals in Indonesia
2. Graduate School of Science / Professor / Katsumi Hattori
3. Indonesia / Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Djedi Widarto
   Indonesia / Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Eddy Gaffar
   Indonesia / Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Adrin Tohari
   Indonesia / National Institute of Aeronautics and Space-LAPAN / Senior Researcher / Dr. Sarmoko Saroso
   Indonesia / Metrological Agency, Indonesia(BMKG / Director / Dr. Prih Harijadi)
   Indonesia / Indonesian Institute of Science / Senior Researcher /Febty Febriani
4. 2005-
5. The project aims at clarification of the physical mechanism of electromagnetic phenomena preceding earthquakes and

realizing of monitoring and short-term prediction of large earthquake in Indonesia.

6. 2005-2007 JSPS Bilateral collaboration project between Japan and LIPI, Indonesia (PI: Dr K. Hattori (Chiba University)

2007-2009 JSPS Grants-in Aid for Scientific Research B

2007-2010 NiCT R&D promotion scheme funding international joint research.

2009-2010 JSPS Japan-East Asia Network of Exchange for Students and Youths (JENESYS) Programme (PI Dr. K. Hattori)

7. Main result

- Armstrong Fransiskus Sompotan, Nanang T. Puspito, Endra Joelianto, Katsumi Hattori, Analysis of Ionospheric Precursor of Earthquake using GIM-TEC, Kriging and Neural Network, Asian Journal of Earth Sciences, 8, 32-44, 2015. (DOI:10.3923/ajes.2015.32.44)
- F. Febriani, P. Han, C. Yoshino, K. Hattori*, B. Nudiyanto, N. Effendi, I. Maulana, Suhardjono, and E. Gaffar, Ultra Low Frequency (ULF) Electromagnetic Anomalies Associated with Large Earthquakes in Java Island, Indonesia by Using Wavelet Transform and Detrended Fluctuation Analysis, Natural Hazard and Earth System Sciences, 14, 789-798, 2014 (www.nat-hazards-earth-syst-sci.net/14/789/2014/doi:10.5194/nhess-14-789-2014)
- Febty Febriani, Katsumi Hattori*, Djedi S. Widarto, Peng Han, Chie Yoshino, Boko, Nurdiyanto, Noor Effendi, Iwan Maulana, and Eddy Gaffar, Audio Frequency Magnetotelluric Imaging of The Cimandiri Fault, West Java, Indonesia, Journal of Geofisika, 14, 131-143, 2013. (Journal of Himpunan Ahli Geofisika Indonesia HAGI) (http://hub.hagi.or.id/wp-content/uploads/emember/downloads/geofisika-v14-no1-2013/ID_Vol_14_N1_2013_131-143.pdf)
- Peng Han, Katsumi Hattori, Maiko Hirokawa, Jiancang Zhuang, Chieh-Hung Chen, Febty Febriani, Hiroki Yamaguchi, Chie Yoshino, Jann-Yenq Liu, and Shuji Yoshida, Statistical analysis of ULF seismo-magnetic phenomena at Kakioka, Japan, during 2001-2010, J Geophys. Res., SPA, 119, 4998–5011, doi:10.1002/2014JA019789., 2014
- Saito, S., Hattori, K.*, Kaida, D., Yoshino, C., Han, P., Febriani, F., Detection and reduction of precipitation effects in geoelectrical potential difference data, Electrical Engineering in Japan (English translation of Denki Gakkai Ronbunshi), 182, No. 3,1 -8, 2013.
- Hattori, K., Han, P., Yoshino, C., Febriani, F., Yamaguchi, H., Chen, C.-H., Investigation of ULF Seismo-Magnetic Phenomena in Kanto, Japan During 2000-2010: Case Studies and Statistical Studies, Surveys in Geophysics, 34, 293-316, DOI 10.1007/s10712-012-9215-x, 2013
- Guangjing Xu, Peng Han, Qinghua Huang, Katsumi Hattori, Febty Febriani, Hiroki Yamaguchi, Anomalous behaviors of geomagnetic diurnal variations prior to the 2011 off the Pacific coast of Tohoku earthquake (Mw9.0) J. Asian Earth Sci., 77, 59-65, 2013. http://dx.doi.org/10.1016/j.jseaes.2013.08.011
- Adrin Tohari, Khori Sugianti, Katsumi Hattori, Monitoring and Modelling of Rainfall-Induced Landslide in Volcanic Soil Slope, Landslide Science and Practice, edited by C. Margottini, P. Canuti, and K. Sassa, Vol. 2, 503-510, 2013. 10.1007/978-3-642-31445-2_66

- Hattori, K., Han, P., Yoshino, C., Febriani, F., Yamaguchi, H., Chen, C.-H., Investigation of ULF Seismo-Magnetic Phenomena in Kanto, Japan During 2000-2010: Case Studies and Statistical Studies, Surveys in Geophysics, 2012 (in press)
- Saito, S., Hattori, K.*, Kaida, D., Yoshino, C., Han, P., Febriani, F., Detection and reduction of precipitation effects in geoelectrical potential difference data, Electrical Engineering in Japan (English translation of Denki Gakkai Ronbunshi), 182, No. 3,1
- Saito, S, Kaida, D., Hattori, K., Febriani, F., and Yoshino, C., Signal Discrimination of ULF Electromagnetic Data with Using
- Singular Spectrum Analysis - An Attempt to Detect Train Noise -, Natural Hazard and Earth System Sciences, 11, 1863-1874, 2011. (doi:10.5194/nhess-11-1863-2011)
- Saito, S., Hattori, K., Kaida, D., Yoshino, C., Han, P., and Febriniani, F., Detection and reduction of precipitation effects in geoelectrical difference data, IEEJ Transactions on Fundmentals and Materials, 131, 738-743, 2011, (DOI:10.1541/ieejfms.131.738)(in Japanese)
- Yumoto, K., Ikemoto, S., Cardinal, M. G., Hayakawa, M., Hattori, K., Liu, J. Y., Saroso, S., Ruhimat, M., Husni, M., Widarto, D., Ramos, E., D. McNamara, R. E. Otadoy, G. Yumul, R. Ebora, and N. Servando, A new ULF wave analysis for Seismo-Electromagnetics using CPMN/MAGDAS data, Physics and Chemistry of the Earth, 34, 360-356, 2009.
- Widarto, D., Mogi, T., Tanaka, Y., Nagao, T., Hattori, K., and Uyeda, S., Co-seismic Geoelectrical Potential Changes Associated with the June 4, 2000's Earthquake (Mw 7.9) in Bengkulu, Indonesia, Physics and Chemistry of the Earth, 34, 373-379, 2009.
- Saroso, S., Hattori, K., Ishikawa, H., Ida, Y., Shirogane, R., Hayakawa, M., Yumoto, K., Shiokawa, K., and Nishihashi, M., ULF geomagnetic anomalous changes possibly associated with 2004-2005 Sumatra earthquakes, Physics and Chemistry of the Earth, 34, 343-349, 2009.
- Saroso, S., Liu, J. Y., Hattori, K., and Chen, C. H., Ionospheric GPS TEC Anomalies and M>5.9 Earthquakes in Indonesia during 1993-2002, Terrestrial, Atmospheric and Oceanic Sciences, 19, 481-488, 2008.
- S. Saroso, J. Y. Liu, K. Hattori, and C. H. Chen, Ionospheric GPS TEC Anomalies and M>5.9 Earthquakes in Indonesia during 1993-2002, Terrestrial, Atmospheric and Oceanic Sciences, 2007 (accepted).
- K. Hattori, "Space and Lithosphere Environment Changes in Indonesia", Preparatory Meeting for the 7th Science Council of Asia (SCA) Conference, March 20, 2007, Science Council of Japan, Tokyo.
- K. Yumoto and K. Hattori, Environmental Changes in Space and Lithosphere in Indonesia, 21st Pacific Science Congress, no abstract, June 12-18, 2007, Okinawa Convention Center, Okinawa, Japan.
- M. Nishihashi, Y. Suzuki, K. Hattori, J-Y. Liu, D. Widarto, Analysis of GPS-TEC variation associated with large earthquakes using GAMIT, Abstract of Asia Oceania Geosciences Society 3rd Annual Meeting, CDROM, July 2006, Singapore..
- Katsumi Hattori, Ichiro Takahashi, Masashi Hayakawa, Nobuhiro Isezaki, Kiyohumi Yumoto, Toshiyasu Nagao, and Seiya Uyeda, RIKEN's Int'l Frontier Research on Earthquakes 1997-2002 and Recent Progress on ULF

Geomagnetic Changes Associated with Crustal Activity, Mini-Workshop on Seismo Electromagnetic Precursors of Earthquakes: State of the Art and Research Progress, LIPI Campus, Bandung, Indonesia, September 5, 2005

- Djedi Widrto, T. Mogi, Y. Tanaka, T. Nagao, K. Hattori, JY. Liu, and S. Uyeda, Seismo-Electromagnetic signatures possibly associated with the earthquakes in southern Sumatra, Indonesia, , Mini-Workshop on Seismo Electromagnetic Precursors of Earthquakes: State of the Art and Research Progress, LIPI Campus, Bandung, Indonesia, September 5, 2005
- Sarmoko Saroso1 , K. Hattori2, J. Y. Liu3, M. Hayakawa4, K. Shiokawa5, and K. Yumoto6, ULF Geomagnetic Anomaly and TEC Perturbation Related With the Aceh Earthquake of December 26, 2004, Mini-Workshop on Seismo Electromagnetic Precursors of Earthquakes: State of the Art and Research Progress, LIPI Campus, Bandung, Indonesia, September 5, 2005.

8. Other important items to be stated

September, 2005: Visit to LIPI and organize the mini-workshop on Seismo Electromagnetic Precursors of Earthquakes. Visit LIWA observatory, Sumatra Island

January-March, 2006: Dr. Widarto and Mr. Hananto at LIPI and Dr. Saroso at stayed at Chiba University and discuss and analyze geoelectrical potential difference and geomagnetic data recorded in seismic areas, Japan.

March, 2006: Visit to Indonesia and install Electromagnetic sensor at LIWA station. Discussion on future collaboration with Drs. .Widarto and Saroso.

October, 2006: Vice Chairman of LIPI visited Chiba University and Hattori Laboratory.

November, 2006: Mini-workshop have been held at LAPAN, Bandung, Indonesia. Visit the candidate of a new site at PLRatu near Sukabumi, which belongs to BMG.

February-March, 2007: Dr. Widarto and Mr. Dadan at LIPI and Dr. Saroso at stayed at Chiba University and discuss and analyze geoelectrical potential difference and geomagnetic data recorded in seismic areas, Japan.

March, 2007: Set up the geoelectromagnetic station at PLRatu, BMG station. But thee is a power trouble.

April, 2007: Visit PLRatu station to improve the power troubles.

September, 2007: Install sensors at the Kototabang near Padan, Sumatra Islands.

November, 2007: Organize international workshop on seismo-electromagnetic phenomena, 2007 (IWSEP2007), at Bandung, Indonesia. System maintenance at Kototabang station. Visit to see the candidate of landslide station and VLF subionopspheric monitoring station.

February-March, 2008: Dr. Widarto and Mr. Dadan at LIPI and Dr. Saroso at stayed at Chiba University and discuss and analyze geoelectrical potential difference and geomagnetic data recorded in seismic areas, Japan.

March, 2008: Dupty Chairman of LIPI, Dr. Hery Harijono and Dr. Mastrijono visited the Dean of Graduate School of Science, Chiba University.

March, 2008: Internatinal Workshop (IWSLEC2008) at Sagamihara, Japan. Drs. Widarto and Hery Hariyoono (LIPI) and Sarmoko (LAPAN), and Mastrjono (BMKG) joined it and made technical and scientific discussioms.

March, 2008: Technical and scientific discussion at Jakarta and Bandung, Indonesia with BMKG and LIPI.

March, 2008: Field survey of Kotabumi station, Sumatra and Technical and scientific discussion at Jakarta, Indoensia

witj BMKG and LIPI.

May, 2008: EMC test at Kotabumi station.

August, 2008: Installation of Kotabumi station. Technical and scientific discussion at BMKG Jakarta.

October, 2008: Maintenance of PLRatu station. Technical and scientific discussion at BMKG Jakarta

October, 2008: Ms. Febti Febrinani participated in Hattori Lab. as a foreign research student supportd by INPEX foundation.

October-November, 2008:

Hattori visited bandung to participate in HAGI meeting. Maintenace of PLRatu station also has been performed.

November, 2008: International workshop (IWSLEC-2) at Tsukuba. Dr. Sarmoko (LAPAN), Dr, Husni and Dr. Subarjo (BMKG) joined and made technical and scientific discussion.

February, 2009: Dr. Widarto came to Lab. and made a seminar.

March, 2009: Maintenance of KotabumiPL station. Technical and scientific discussion at BMKG Jakarta

March, 2009: International workshop "VESTO"have been held at Chiba. Sunaryo (BMG) participated. Technical and scientific discussion has been done.

April, 2009: Ms. Febti Febrinani joined Hattori Lab. as a master student supported byINPEX foundation.

June, 2009: International workshop "IWSLEC-3" was held at Singapore. Dr. Prih Harijadi and Dr. Sunarjo participated in the meeting and made technical and scientific discussion.

July-August, 2009: Fieldwork at PLRatu have been done: EM exploration for landslide and understand the underground structure.

October, 2009: Dr. Widarto came to Lab. and made a seminar.

November 2009: Partisipate the International workshop organized by BMKG at Buki-Tinnggi

December, 2009: Dr. Gaffar visited Hattori Lab. and Technical and scientific discussion has been done

February, 2010: Hattori visited LIPI、LAPAN、BMKG to make technical and scientific discussion.

June- July, 2010: Adrin(LIPI), Khori(LIPI), Iwan(BMKG), Noor(BMKG), Boko(BMKG), and Andi(BMKG) come to Chiba Univ, for cooperation under the JSPS JENESYS program

August-September, 2010: Prof. Hattori, Ms. Yoshno, and graduted students visit Indonesia for cooperative observation under the JSPS JENESYS program

November, 2010: Dr. Bambamg (BMKG), Dr. Hendri (BMKG) visit Hattori lab. to make technical and scientific discussion.

November, 2010: Ms. Yoshino and Mr. Yabe visit Indonesia and perform fieldworks at PLRatu station.

February, 2011: Dr. Gaffar (LIPI) come to Chiba Univ. to make technical and scientific discussion.

March, 2011: Dr. Adrin (LIPI) and Ms. Khori (LIPI), come to Chiba Univ. to make technical and scientific discussion.

November, 2011: Prof. Hattori, Ms. Yoshino, Mr. Otsubo (M1), and Mr. Ichikawa (M1) visited Indonesia and perform fieldworks at PLRatu station.

December, 2011: Prof. Hattori and Ms. Yoshino visited Indonesia and perform fieldworks at PLRatu station.

February, 2012: Dr. Gaffar (LIPI) come to Chiba Univ. to make technical and scientific discussion.

March, 2012: Dr. Adrin (LIPI) and Ms. Khori(LIPI), come to Chiba Univ. to make technical and scientific discussion.

May, 2012: Prof. Hattori, Ms. Yoshino, aand 1 graduate student Otsubo visited Indoensia and constructed solar battery system at kotabumi station. 00

February, 2013: Prof. Hattori, Ms. Yoshino, aand 1 graduate student Han visited Indoensia to have scientific and technical discussions and have fieldworks at PL Ratu and Kotbumi stations (under short visit program (global human resource development)

May, 2013: Drs. Fachrizal, Boko Nurdianto, and Suliyanti Pakpahan from BMKG visited Hattori Lab. and had a technical and scientific discussion.

March, 2014: Dr. Han and Ms. Yoshino visited Indonesia and perform fieldworks and maintenance at PLRatu station and the Headquater of BMKG.

August, 2016: BMKG, Dr. Jaya and、Dr. Suaidii (BMKG) visited Hatori Lab. to have technical discussion.

September-October, 2016: Prof. Hattori and Ms. Yoshino visited Indoensia to have scientific and technical discussion and have fieldworks at PL Ratu station. Prof. Hattori also gave a special lectures at BMKG, LIPI, Pertamina Univ., and so on.

November 23, 2017: Dr. Jaya Murjaya and one person from BMKG visited Hattori Lab. to have a scientific and technical discussion.

September 30-October 27, 2018 : Prof. Wahyudi W. Parnadi and Mr. Rizandi G. Parnadi (ITB) stayed at Hattori Lab. for a month. Prof. Wahyudi W. Parnadi gave a lecture at SEMS seminar on October 12.

1. Project on Development of early warning system for landslide using EM method
2. Graduate School of Science / Professor / Katsumi Hattori
3. Korea / KIGAM / Senior Researcher Chae Byng-Gong
4. 2009-
5. Development of early warning system for landslide using EM method
6. JST China-Korea-Japan trilateral program(2009-2013)
7. None
8. Other important items to be stated

November , 2010: Prof. Hattori visit KIGAM to make technical and scientific discussion with Dr. Chae and his group. a nd participate in CKJ workshop held at Cheju, Korea

April, 2011: Technical and Scientific discussion in the frame on JST China-Korea-Japan Project among Prof. Huang and Dr. Chae, at EGU meeting, Vienna, Austria

July, 2011: Int'l Symposium and Technical and Scientific discussion in the frame on JST China-Korea-Japan Project among Prof. Huang and Dr. Chae, at Daejon, Korea (Prof. Hattori and two graduate students from Chiba Univ., Prof. Huang and two graduate students from Peking Univ., Dr. Chae and many his colleagues)

December, 2011: Technical and Scientific discussion in the frame on JST China-Korea-Japan Project among Prof. Huang and Dr. Chae, at AGU meeting, San Francisco, US. (Prof. Hattori and a graduate student from Chiba Univ., Prof. Huang and a

graduate student from Peking Univ., Dr. Chae and two his colleagues)

1. A Multi-Sensor Approach on Atmosphericand Ionospheric Signals Associated with Major Earthquakes.
2. Graduate School of Science / Professor / Katsumi HATTORI
3. US / Chapman university / Associate Professor / Dimitar Ouzounov
4. 2007-
5. Study on short - term earthquake prediction using satellite and ground besed data / Lithosphere-Atmosphere-Ionsphere Coupling
6. 2007-2010：NiCT R&D promotion scheme funding international joint research

   2013-2014：JSPS, Grants in Aid for Scientific Research

   Joint Research Program in Center for Environmental Remote Sensing, Chiba University (2015)

   Joint Research Program in Center for Environmental Remote Sensing, Chiba University (2016)

   Joint Research Program in Center for Environmental Remote Sensing, Chiba University (2017)
7. Main result
   - Dimitar Ouzounov, Sergey Pulinets, Katsumi Hattori, Patrick Taylor (Editors), Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, AGU Geophysical Monograph 234, pp.414, Wiley, 2018. (ISBN: 9781119156932)
   - Katsumi Hattori and Peng Han, Statistical Analysis and Assessment of Ultralow Frequency Magnetic Signals in Japan As Potential Earthquake Precursors, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 229-240, DOI: 10.1002/9781119156949.ch13, Wiley, 2018.
   - Jann‐Yenq (Tiger) Liu, Katsumi Hattori, and Yuh‐Ing Chen, Application of Total Electron Content Derived from the Global Navigation Satellite System for Detecting Earthquake Precursors, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 305-317, DOI: 10.1002/9781119156949.ch17, Wiley, 2018.
   - Dimitar Ouzounov, Sergey Pulinets, Jann‐Yenq (Tiger) Liu, Katsumi Hattori, and Peng Han, Multiparameter Assessment of Pre‐Earthquake Atmospheric Signals, Pre-Earthquake Processes: A Multidisciplinary Approach to Earthquake Prediction Studies, edited by Ouzounov et al., 339-359, DOI: 10.1002/9781119156949.ch20, Wiley, 2018.
   - Co-editing of special issue on Journal of Asian Earth Sciences Vol. 41(2011)
   - Ouzounov D. S.Pulinets, K.Hattori, M, Kafatos, P.Taylor (2011) “Atmospheric Signals Associated with Major Earthquakes. A Multi-Sensor Approach, in the book “Frontier of Earthquake short-term prediction study”, M Hayakawa, (Ed), Japan, 510-531
   - Ouzounov, D; K.Hattori, J.Y. Liu, (2011) Validation of Earthquake Precursors-VESTO Preface, Journal of Asian Earth Sciences Volume: 41 Issue: 4-5 Pages: 369-370
   - Ouzounov D., S. Pulinets, K,.Hattori, M. Kafatos and P. Taylor (2011) Atmospheric Response to Fukushima Daiichi NPP (Japan) Accident Reviled by Satellite and Ground observations,(submitted) http://arxiv.org/abs/1107.0930
8. Other important items to be stated

December, 2007: Scientific discussions at AGU, San fransisco, US

December, 2008: Scientific discussions at AGU, San fransisco, US

March 26-29, 2009: Co-organaiz the International Workshop on Validation of Earthquake Precursors by Satellite, Terrestrial and other.

Observations (VESTO).Case studies of the recent Asian events at Chiba University.

December, 2009: Scientific discussions at AGU, San fransisco, US

December, 2010: Scientific discussions at AGU, San fransisco, US

December, 2011: Scientific discussions at AGU, San fransisco, US

September, 2012: Dr. Ouzounov visited Chiba University to give a talk and scientific discussion

October, 2012: Establish international working group GENET and start regular exchange of information on EQ-relate anomalies using mailing List.

December, 2012: Scientific discussions at AGU, San fransisco, US, Establish MoU at AGU fall meeting, 2012

April, 2013: Scientific discussions at EGU, Vienna, Austria

May, 2013: Dr. Ouzounov visited Hattori Lab. and gave two talks and have a technical and scientific discussion.

October-November, 2013:

Prof. Hattori and Ms. Tsutsumi (his Ms. student) visited Chapman University and gave a seminar and had a technical and scientific discussion. Ms. Tsutsu stayed the Ouzounov Lab. from Oct. 30 to Dec. 7 to analyze satellite data.

December, 2013: Prof. Hattori visited Chanpman Univ. and had a technical and scientific discussion.

January, 2014: Prof. Hattori visited International Space Science Institute (ISSI), Bern, Switzerland, and had technical and scientific discussion with Drs. Ouzounov (Chanpman Univ., US), Liu (NCU, Taiwan), Tramutoli (Bascilicata Univ., Italy), and Pulinets (SRI, Russia).

March, 2014: Dr. Ouzounov visited Hattori Lab. and had a technical and scientific discussion.

July-August, 2014: Dr. Ouzounov participated in the AOGS and IWEP meetings at Sapporo and had a technical and scientific discussion

August, 2014: Dr. Ouzounov visited Hattori Lab. and had a technical and scientific discussion

December, 2014: Prof. Hattori participated in the AGU meeting and had a technical and scientific discussion with De. Ouzounov at AGU meeting.

May, 2015: Dr. ouzounov participated in the JpGU and IWEP2 meetings at Chiba and had a technical and scientific discussion.

June, 2015: Prof. Hattori participated in the ISSI meeting at Bern and had technical and scientific discussions with Dr. Ouzounov on multi-instrument Space-Borne Observations and Validation of the Physical Model of the Lithosphere-Atmosphere-Ionosphere-Magnetosphere Coupling.

November-December, 2015:

Dr. Ouzounov participated in the workshop by CEReS and had a technical and scientific discussion with Hattori.

December, 2015: Prof. Hattori and Dr. Ham participated in the pre-AGU meeting by Chapman Univ. had a technical

andscientific discussion with De. Ouzounov at AGU meeting. They also visited Dr. Tom Bleier at Quakefinder Inc. to have a technical and scientific discussion.

January, 2016: Prof. Hattori participated in the UNISDR meeting on disaster prevention in Swiss and had a technical and scientific discussion.

April, 2016: Prof. Hattori participated in EGU meeting and had a technical and scientific discussion with Dr. Ouzounov.

May, 2016: Dr. Ouzounov participated in the JpGU and IWEP3 meetings at Chiba and had a technical and scientific discussion.

August-September, 2016: Prof. Hattori visited China to attend the 2nd CSES meeting (Beijing) and EMSEV (Lanzou) meeting and hada atechnical and sciemtfic discussion with Prof. Tramutoli there.

November, 2016: Dr. Ouzounov visited Hatori Lab., to have a technical and scientific discussion.

December, 2016: Prof. Hattori participated in the pre-AGU meeting by Chapman Univ. and had a technical andscientific discussion with De. Ouzounov at AGU meeting.

May, 2016: Dr. Ouzounov participated in the JpGU and IWEP4 meetings at Chiba and had a technical and scientific discussion.

July-August, 2017: Dr. Ouzounovvisited Kobe to attend IAGA-IASPEI 2017meeting to show his latest results and we had a technical and scientific discussion there.

December, 2017: Prof. Hattori participated in the pre-AGU meeting by Chapman Univ. and had a technical and scientific discussion with De. Ouzounov at AGU meeting.

May 15-28, 2018: Dr. Ouzouov participated in JpGU and ISEF-IWEP5 meetings and had technical and scientific discussions.

November 8-12, 2018: Dr. Ouzouov visited Hattori Lab. to have scientific and technical discussions.

December 8-17, 2018: Prof. Hattori had a technical and scientific discussion with Dr. Ouzounov at AGU meeting.

1. Study on Insertions/Deletions by Using Mathematical Objects Related to Root Systems
2. Faculty of Science / Associate Professor / Manabu Hagiwara
3. U.S.A. / University of Colorado / Richard M. Green
4. 2018.4 – 2021.3
5. Research on Insertion/Deletion Collecting Codes from a Point of View of Root Systems.
6. KAKENHI (B) H30-32
7. KAKENHI (B)
8.

1. Research Communication on Coding Theory, Information Theory, Mathematical Science and Their Related Topics
2. Faculty of Science / Associate Professor / Manabu Hagiwara
3. U.S.A. / University of Hawaii / J.B.Nation, M.Chyba, D. Webb
4. 2014.3-
5. Develop Coding Theory, Information Theory and Their Related Topics Thoughout Research Communication
6. Science Faculty Dean's Budget (H26, 27, 28, 29, 30)
7. Formalization of Insertion/Deletion Codes and the Levenshtein Metric in Lean, J.Kong, D.Webb, M.Hagiwara, ISITA2018, submitted.
8. Organize an International Symposium ISITA2020 in Hawaii. (Sponsored by IEICE-ESS)

1. Kanto Asperity Project
2. Graduate School of Science / Professor / Toshinori Sato,
3. USA / Univ. California, Santa Cruz / Casey J. Moore
   USA / Syracuse U. / Daniel Curewitz
4. 2007-
5. Kanto Asperity Project (KAP) is a proposal for IODP (Integrated Ocean Drilling Program). Our scientific goal is to understand characteristics of three different events (Taisho, Genroku, and slow slip), and to improve earthquake generation models using slow slip events. We propose a deep drilling program for obtaining fault materials and pore pressure data, and a long-term monitoring program for observing several cycles of slow slip events. The proposal for the long-term monitoring program has been passed at the rating of Excellent by IODP PEP (Proposal Evaluation Panel) (proposal #770). Now, we start observations of crustal deformation by ocean bottom pressure gauges.
6. Grant-in-Aid for Scientific Research B from JSPS. 2013-2017.
7. Main result
   - The proposal for the long-term monitoring program has been passed at the rating of Excellent by IODP PEP. This evaluation is about scientific issues. Now, state of our proposal is “holding bin”.
   - T. Sato, H. Higuchi, T. Miyauchi, K. Endo, N. Tsumura, T. Ito, A. Noda, M. Matsu'ura, The source model and recurrence interval of Genroku-type Kanto earthquakes estimated from paleo-shoreline data, Earth Planets Space, 68:17, DOI: 10.1186/s40623-016-0395-3, 2016.
   - T. Sato, S. Hasegawa, A. Kono, H. Shiobara, T. Yagi, T. Yamada, M. Shinohara, N. Usui, Detection of vertical motion during a slow-slip event off the Boso Peninsula, Japan, by ocean-bottom pressure gauges, Geophysical Research Letters, 44, doi:10.1002/2017GL072838, 2017.
   - A. Kono, T. Sato, M. Shinohara, K. Mochizuki, T. Yamada, K. Uehira, T. Shinbo, Y. Machida, R. Hino, R. Azuma, Geometry and spatial variations of seismic reflection intensity of the upper surface of the Philippine Sea plate off the Boso Peninsula, Japan, Tectonophysics, 709, 44-54, 2017.
8. The 3rd International Workshop on the Kanto Asperity Project was held at Chiba University in February, 2008.

1. Soliton cellular automata associated with infinite reduced words
2. Faculty of Science / Associate Professor / Rei Inoue
3. USA / Minnesota University / Pablo Pylyyavskyy
   USA / The Ohio State University / Max Glick
4. 2017-2018.
5. We study the soliton solutions for some cellular automata associated with infinite reduced words of affine symmetric group, using tropical geometry and combinatorics.
6. Grant-in-Aid for Scientific Research (C) 26400037, JSPS 2014—2017
7. Soliton cellular automata associated with infinite reduced words, Rei Inoue, Max Glick and Pavlo Pylyavskyy, Annales de L'Institut Henri Poincare D (to appear).
8. Joint work with Pavlo Pylyavskyy, during 20-27 August 2017, in Minnesota Univesity.

1. Understanding the mechanism of giant piezoelectricity on PbZrTiO3

2. Department of Physics, Graduate School of Science / Associate Professor / Hiroko Yokota

3. U.K. / University of Oxford / Prof. Mike Glaser

   U.K. / Warwick University / Prof. Pam Thomas

   China / Xi`an Jiaotong University / Prof. Nan Zhang

   Isreael / Tel Aviv University / Cr. Semen Gorfman

4. 2009-

5. It is well known that Pb(Zr,Ti)O3 exhibits a giant piezoelectric response around the morphotropic phase boundary (MPB). It has been considered that the origin of the large physical properties around MPB is due to the existence of low symmetry phase. We carried out precise neutron diffraction experiments and confirmed that there is no specific concentration which separates the symmetry and more than two phases coexist for whole concentration. The composition ratio continuously changes against the concentration. We are planning to clarify the crystal symmetry under the applied filed to understand the origin of the large physical response.

6. KAKENHI・Grant-in Aid for JSPS Fellow, KAKENHI・Grant-in Aid for Young Scientists (B), Research grant from The Mazda Foundation

7. Main result

   (1) N. Zhang, S. Gorfman, H. Choe, T. Vergentev, V. Dyadkin, **H. Yokota**, D. Chernyshovf, B.Wang, A. M.l Glazer, W. Ren and Z.-G. Ye

   "Probing the intrinsic and extrinsic origins of piezoelectricity in lead-zirconate titanate single crystal"

   Journal of Applied Crystallography **51**, 1396-1403 (2018) DOI: 10.1107/S1600576718011317

   Cover page of J. Appl. Cryst. **51**, Issue 5 (2018)

   (2) Z. Wang, N. Zhang*, H. Yokota*, A, M. Glazer*, Y. Yoneda, W. Ren and Z.-G. Ye

   "Local structures and temperature-driven polarization rotation in Zr-rich PbZr1-xTixO3"

   Applied Physics Letters**113**, 012901 (2018) DOI: 10.1063/1.5024422

   (3) N. Zhang, H. Yokota, A. M. Glazer, D. A. Keen, S. Gorfman, P. A. Thomas,W. Ren and Z. –G. Ye

   "Local-scale Structures across the Morphotropic Phase Boundary in PbZr1-xTixO3"

   IUCrJ5, 73-81 (2018) DOI: 10.1107/S2052252517016633

   (4) N. Zhang, H. Yokota, A. M. Glazer, Z. Ren, D. A. Keen, D. S. Keeble, P. A. Thomas, and Z. –G. Ye

   "The Missing phase boundary in the phase diagram of PbZr1-xTixO3"

   Nature Communications 5, 5231(2014).

   (5) N. Zhang, H. Yokota, A. M. Glazer and P.A. Thomas

   "The not so simple cubic structure of PbZr1-xTixO3 (PZT): complex local effects in perovskites"

   Acta Crystallographica Section B: Structural Science 67, 461-466 (2011).

   (6) N. Zhang, H. Yokota*, A. M. Glazer and P. A. Thomas

   "Neutron powder diffraction refinement of PbZr1-xTixO3"

   Acta Crystallographica Section B: Structural Science 67, 386-398 (2011).

(7) H. Yokota, N. Zhang, P. A. Thomas, and A. M. Glazer
"Crystal Structure Determinations of Zr Rich-PbZr1-xTixO3"
Ferroelectrics 414, 147-154 (2011).

(8) D. Phelan, X. Long, Y. Xie, Z. –G. Ye, A. M. Glazer, H. Yokota, P. A. Thomas, and P. M. Gehring
"Single Crystal Study of Competing Rhombohedral and Monoclinic Order in Lead Zirconate Titanate"
Physical Review Letters 105, 207601-1~4 (2010).

(9) H. Yokota, N. Zhang, A. E. Taylor, P. A. Thomas, and A. M. Glazer
"Crystal structure of the rhombohedral phase of PbZr1-xTixO3 ceramics at room temperature"
Physical Review B 80, 104109-1~12 (2009).

8. Other important items to be stated

(1) The 21st Morita Scientific Awards (2019)

(2) The American Ceramics Society 2015 Society Award, Spriggs Phase Equilibria Award (2015)

(3) 20th Annual Meeting of MRS-J Best paper award (2010)

(4) The 10th Russia/CIS/Baltic/Japan Symposium on Ferroelectricity, Young scientist award (2010)

---

1. Fabrication and examination of multiferroic properties on hexagonal REFeO3 thin film
2. Department of Physics, Graduate School of Science / Associate Professor / Hiroko Yokota
3. France / Ecole Centrale Paris / Dr. Jean-Michel Kiat, Dr. Pierre-Eymeric Janolin
4. 2014-
5. Materials which possess more than two order parameters are known as multiferroics. Most of them exhibit their properties only at low temperature and it prevents to realize the application. To overcome this problem, we aimed to fabricate the new materials which show multiferroic properties at room temperature. For this purpose, we focus on hexagonal-stabilized REFeO3 thin film. Ferroelectricity was confirmed at room temperature and magnetic structure of Fe ion was determined.
6. KAKENHI・Grant-in Aid for Young Scientists (B), Yazaki Memorial Foundation for Science and Technology, Iketani Science and Technology Foundation
7. Main result

(1) Hiroko Yokota, Tomoya Nozue, Shin Nakamura, Hajime Hojo, Mamoru Fukunaga, Pierre-Eymeric Janolin, Jean-Michel Kiat, and Akio Fuwa
"Ferroelectricity and weak ferromagnetism of hexagonal ErFeO3 thin films"
Physical Review B 92, 054101 (2015).

8. -

---

1. Experimental approach towards domain boundary engineering
2. Department of Physics, Graduate School of Science / Associate Professor / Hiroko Yokota
3. France / Ecole Centrale Paris / Dr. Jean-Michel Kiat
France / Paris Sud University / Dr. Raphael Haumont
4. 2013-
5. Domain walls which separate the regions with different orientation have become a focus of attention because of their

exotic physical properties. We chose materials which does not show polar nature as a balk form and confirmed the polar nature appears at the domain boundary. The purpose of our study is to control its properties by the external stimulus for the further application.

6. KAKENHI・Grant-in Aid for Young Scientists (B), Shimadzu Science Foundation

7. Main result

(1) H. Yokota, S. Niki, R. Haumont, P. Hicher and Y. Uesu
"Polar nature of stress-induced twin walls in ferroelastic CaTiO3"
AIP Advances 7, 085315-1~7 (2017) DOI: 10.1063/1.4990608

(2) H. Yokota, H. Usami, R. Haumont, P. Hicher, J. Kaneshiro, E. K. H. Salje, and Y. Uesu
"Direct evidence of polar nature of ferroelastic twin boundaries in CaTiO3 obtained by second harmonic generation microscope"
Physical Review B 89, 144109 (2014).

8. 31rd FMA conference Young Researcher Presentation Awards (2014)

1. Ordering of polar nature and critical phenomena in Quantum relaxor

2. Department of Physics, Graduate School of Science / Associate Professor / Hiroko Yokota

3. France / Ecole Centrale Paris / Dr. Jean-Michel Kiat, Dr. G. Geneste

4. 2005-

5. Both quantum paraelectrics and relaxor posse the common concept: frustration. We paid attention to this similarity and showedthat the substitution of ion induces the relaxor behavior on quantum paraelectrics.We clarified that around the tricritical point, a critical phenomana occur in this system.

6. KAKENHI・Grant-in Aid for JSPS Fellow,

7. Main result

(1) G. Geneste, J-M. Kiat, H. Yokota, and Y. Uesu,
"Dielectric relaxation in Li-doped KTaO3 studied by kinetic Monte Carlo"
Physical Review B 83, 184202-1~5 (2011).

(2) G. Geneste, J-M. Kiat, H.Yokota, Y. Uesu, F. Porcher
"Polar clusters in impurity-doped quantum paraelectric K1-xLixTaO3"
Physical Review B 81, 144112-1~10 (2010).

(3) H. Yokota ,Y. Uesu, C. Malibert, and J. M. Kiat
"Second-harmonic generation and x-ray diffraction studies of the pretransitional region and polar phase in relaxor K(1-x)LixTaO3"
Physical Review B 75, 184113-1~8 (2007).

(4) Y. Uesu, H. Yokota, J. M. Kiat, and C. Malibert
"Is K(1-x)LixTaO3 a Real relaxor?"
Ferroelectrics 347, p37-p43 (2007).

8. Other important items to be stated

(1) 64th JPS annual meeting, Young Scientist Award of the Physical Society of Japan (2009)

(2) The Ceramics society of Japan, The 17th fall meeting, Best poster award (2005)

1. Hydrodynamic effects induced by active proteins
2. Graduate School of Science / Associate Professor / Hiroyuki Kitahata
3. Germany / Fritz-Haber Institute / Alexander Mikhailov, Professor
4. From February 2014 to present
5. There are a lot of kinds of active proteins in biomembranes and cytoplasm. These active proteins change their conformation and induce the hydrodynamic flow, resulting in the mass transfer. Therefore, we regarded an active protein as a force dipole and discussed the cooperative flow in 2-D and 3-D Stokesian fluids, which represent biomembranes and cytroplasm, respectively. In addition, we consider a group of dumbbell-like particles that imitate active proteins in order to investigate the diffusion enhancement and collective flow.
6. JSPS core-to-core program, Grant-in-Aid for Scientific Research on Innovative Areas
7. Paper:

   i) Hydrodynamic collective effects of active proteins in biological membranes, Yuki Koyano, Hiroyuki Kitahata, and Alexander S. Mikhailov, Phys. Rev. E, 94, 022416 (2016).

   ii) Hydrodynamic effects in oscillatory active nematics, Alexander S. Mikhailov, Yuki Koyano, and Hiroyuki Kitahata, J. Phys. Soc. Jpn., 86, 101013 (2017).
8. We had International meeting “International Workshop on Hydrodynamic Flows in/of Cells” at Tokyo Metropolitan University in November 2016.

1. Information processing using self-propelled particles
2. Graduate School of Science / Associate Professor / Hiroyuki Kitahata
3. Poland / Polish Academy of Sciences / Jerzy Gorecki, Professor
4. From September 2016 to present
5. By using multiple self-propelled particles, we aim to construct a system which can perform information processing. Especially, we consider self-propelled particles that interact through the environemnt, and acquire the ability for information processing. By using a camphor-water system as an experimental system together with numerical calculation and theoretical analysis, we propose a novel system for information proessing using self-propelled particles.
6. JSPS bilateral program, Grant-in-Aid for Scientific Research on Innovative Areas
7. Paper:

   i) Selection of rotation direction for a camphor disk resulting from a chiral asymmetry of a water chamber, Satoshi Nakata, Hiroya Yamamoto, Yuki Koyano, Osamu Yamanaka, Yutaka Sumino, Nobuhiko J. Suematsu, Hiroyuki Kitahata, Paulina Skrobanska, and Jerzy Gorecki, J. Phys. Chem. B, 120, 9166-9172 (2016).

   ii) Unidirectional motion of a camphor disk on water forced by interactions between surface camphor concentration and dynamically changing boudaries, Jerzy Gorecki, Hiroyuki Kitahata, Nobuhiko J. Suematsu, Yuki Koyano, Paulina Skrobanska, Marian Gryciuk, Maciej Malecki, Takahiro Tanabe, Hiroya Yamamoto, and Satoshi Nakata, Phys. Chem. Chem. Phys., 19, 18767-18772 (2017).

iii) Relationship between the size of camphor driven rotor and its angular velocity, Yuki Koyano, Marian Gryciuk, Paulina Skrobanska, Maciej Malecki, Yutaka Sumino, Hiroyuki Kitahata, and Jerzy Gorecki, Phys. Rev. E, 96, 012609 (2017).

iv) Period of oscillatory motion of a camphor boat determined by the dissolution and diffusion of camphor molecules, Ryoichi Tenno, You Gunjima, Miyu Yoshii, Hiroyuki Kitahata, Jerzy Gorecki, Nobuhiko Jessis Suematsu, and Satoshi Nakata, J. Phys. Chem. B, 122, 2610-2615 (2018).

v) Reciprocating motion of a self-propelled rotor induced by forced halt and release operations, Satoshi Nakata, Katsuhiko Kayahara, Hiroya Yamamoto, Paulina Skrobanska, Jerzy Gorecki, Akinori Awazu, Hiraku Nishimori, and Hiroyuki Kitahata, J. Phys. Chem. C, 122, 3482-3487 (2018).

vi) XOR gate for information coded with camphor particles moving on the water surface, Jerzy Gorecki, Hiroyuki Kitahata, Yuki Koyano, Marian Gryciuk, Maciej Malecki, and Nobuhiko J. Suematsu, Int. J. Unconventional Comput., 13, 417-434 (2018).

vii) Bifurcation in the angular velocity of a circular disk propelled by symmetrically distributed camphor pills, Yuki Koyano, Hiroyuki Kitahata, Marian Gryciuk, Nadejda Akulich, Agnieszka Gorecka, Maciej Malecki, and Jerzy Gorecki, Chaos, 29, 013125 (2019).

8. We had International meeting “Mini-symposium on cooperative phenomena in nonequilibrium systems” at Chiba University in March, 2016.

We had International meeting “Spontaneous creation of chemical computing structures based on interfacial interactions” at Hiroshima University in March, 2017.

We had International meeting “International Symposium on Spatio-temporal Patterns of Elements Driven by Self-generated Flows under Geometrical Constraints” at Chiba University in February, 2019.

---

1. Population genomics of early diverged Arabidopsis thaliana
2. Graduate School of Science / Associate Professor / Takashi Tsuchimatsu
3. Germany / Max Planck Institute / Angela Hancock
4. 2016 to date
5. It has recently been revealed that the African populations of the model plant Arabidopsis thaliana reprerent the highest level of polymorphism. In this study, we aim to unveil the early history of A. thaliana using those population samples.
6. KAKENHI Grant-in-Aid for Scientific Research on Innovative Areas, Grant-in-Aid for Young Scientists (B)
7. Arun Durvasula, Andrea Fulgione, Rafal M Gutaker, Selen Irez Alacakaptan, Pádraic J Flood, Célia Neto, Takashi Tsuchimatsu, Hernán A. Burbano, Xavier Pico, Carlos Alonso-Blanco, Angela M Hancock. African genomes illuminate the early history and transition to selfing in Arabidopsis thaliana. PNAS in press.
8. None

---

1. Evolution of self-compatibility in Arabidopsis
2. Graduate School of Science / Associate Professor / Takashi Tsuchimatsu
3. France / CNRS, University of Lille / Vincent Castric, Sylvain Billiard, Xavier Vekemans
4. 2012 to date
5. The evolutionary transition from outcrossing to selfing via loss of self-incompatibility is one of the most prevalent events

in flowering plants. Here we aim to reveal the process of loss of self-incompatibility by analyzing the re-sequenced data of Arabidopsis thaliana.

6. KAKENHI Grant-in-Aid for Scientific Research on Innovative Areas, Grant-in-Aid for Young Scientists (B)

7. Tsuchimatsu, T., Goubet, P.M., Gallina, S., Holl, A.C., Fobis-Loisy, I., Bergès, H., Marande, W., Prat, E., Meng, D., Long, Q., Platzer, A., Nordborg, M., Vekemans, X., Castric, V. (2017) Patterns of polymorphism at the self-incompatibility locus in 1,083 Arabidopsis thaliana genomes. Molecular Biology and Evolution, in press. doi:10.1093/molbev/msx122

8. None

---

1. Theoretical Study on thermoelectric-power Enhancement in Disordered Systems

2. Department of Physics / Professor / Takashi Nakayama

3. Azerbaijan / Instute of Physics, Azerbaijan Natural Science Academy / N.Mamedov (Director, Prof)

4. 2016 to Present

5. Thernary compounds such aas TlInSe2 and TlInS2 show random incommensurate phases at low temperature and exhibit a giant thermoelectric powers, whose features are expected to use in the application for next-generation thermoelectric devices. However, it has not been clear why these systems show such large thermoelectric power. In this project, we clarify why these incommensurate materials show large thermoelectric powers using the theoretical calculations.

6. MEXT Grant-in-Aid for Scientific Research C etc.

7. Main result

"First-principles study of giant thermoelectric power in incommensurate TlInSe2",

M.Ishikawa, T.Nakayama, K.Wakita, Y.G. Shim, N.Mamedov, J. Appl. Phys., 123, 161575-1-5 (2018).

8. None

---

1. Structure and thermodynamic properties of aqueous solutions.

2. Graduate School of Science / Associate Professor / Takeshi Morita

3. Canada / The University of British Columbia / Yoshikata Koga

Denmark / Roskilde University / Peter Westh

4. 2000-

5. Comprehensive structural and thermodynamic studies on non-electrolyte aqueous solutions by X-ray diffraction, measurements of chemical potential and partial molar enthalpy, and determination of entropy.

6. Grants for Excellent Graduate Schools (MEXT, Japan.), mini COE (MEXT, Japan.), Grand-in-Aid for Scientific Research (MEXT, Japan.), Frontier science international training program for young (MEXT, Japan.) researchers leading in material and computational sciences”

7. Main result

(1) A Thermodynamic Study of Aqueous Acetonitrile: Excess Chemical Potentials, Partial Molar Enthalpies, Entropies and Volumes, and Fluctuations.

P. V. Nikolova, S. J. B. Duff, P. Westh, C. A. Haynes, Y. Kasahara, K. Nishikawa and Y. Koga

Can. J. Chem., 78, 1553-1560 (2000).

(2) Mixing Schemes of Aqueous Dimethyl Sulfoxide: A Support by X-ray Diffraction Data.

Y. Koga, Y. Kasahara, K. Yoshino and K. Nishikawa

J. Sol. Chem. 30, 885-893 (2001).

(3) Chemical Potential and Concentration Fluctuation in Some Aqueous Alkane-mono-ols at 298 K.

J. Hu, C. A. Haynes, A. H. Y. Wu, C. M. W. Chang, M. G. M. Chen, E. G. M. Yee, T. Ichioka,

K. Nishikawa and Y. Koga

Can. J. Chem. 81, 141-149 (2003).

(4) Excess Partial Molar Entropy of Alkane-mono-ols in Aqueous Solutions at 298 K.

Y. Koga, P. Westh and K. Nishikawa

Can. J. Chem. 81, 150-155 (2003)

(5) The Effects of Na2SO4 and NaClO4 on the Molecular Organization of H2O.

Y. Koga, P. Westh and K. Nishikawa

J. Phys. Chem. A 108, 1635-1637 (2004).

(6) "Icebergs" or No "Icebergs" in Aqueous Alcohols?: Composition-dependent Mixing Schemes.

Y. Koga, K. Nishikawa and P. Westh

J. Phys. Chem. A 108, 3873-3877 (2004).

(7) Towards Understanding the Hofmeister Series (1): The Effect of Sodium Salts of Some Anions on the Molecular Organization of H2O.

Y. Koga, P. Westh, J. V. Davies, K. Miki, K. Nishikawa H. Katayanagi

J. Phys. Chem. A 108, 8533-8541 (2004).

(8) Effects of ethanol and dimethylsulfoxide on the molecular organization of H2O as probed by 1-propanol.

T. Morita, P. Westh, K. Nishikawa and Y. Koga

J. Phys. Chem. B 116, 7328−7333 (2012).

(9) How Much Weaker Are the Effects of Cations than Those of Anions? The Effects of K+ and Cs+ on the Molecular Organization of Liquid H2O.

T. Morita, P. Westh, K. Nishikawa, and Y. Koga

J. Phys. Chem. B 118, 8744−8749 (2014).

(10) Characterization of BF4− in terms of its effect on water by the 1-propanol probing methodology.

T. Morita, A. Nitta, K. Nishikawa, P. Westh, and Y. Koga

J. Mol. Liq. 198, 211–214 (2014).

(11) Effects of Constituent Ions of a Phosphonium-based Ionic Liquid on Molecular Organization of H2O as Probed by 1-propanol: Tetrabutylphosphonium and Trifluoroacetate Ions.

T. Morita, K. Miki, A. Nitta, H. Ohgi, and P. Westh

Phys. Chem. Chem. Phys. 17, 22170–22178 (2015).

(12) The Effect of 2,2,2-Trifluoroethanol on Water studied by Using Third Derivatives of Gibbs Energy, G.

H. Ohgi, H. Imamura, K. Yonenaga, T. Morita, K. Nishikawa, P. Westh, and Y. Koga

J. Mol. Liq. 224, 401–407 (2016).

(13) Mixing scheme of an aqueous solution of tetrabutylphosphonium trifluoroacetate in the water-rich region.
A. Nitta, T. Morita, K. Nishikawa, and Y. Koga
Phys. Chem. Chem. Phys., 19, 16888–16896 (2017).

(14) Effects of tetraalkylammonium cations on the molecular organization of water studied by means of the "1-propanol probing methodology".
K. Yonenaga, T. Morita, K. Nishikawa, and Y. Koga
J. Mol. Liq. 252 58–61 (2018).

8. None

---

1. Ultrafast Dynamics in Complex Condensed Phases
2. Graduate School of Science / Associate Professor / Hideaki Shirota
3. India / Department of Chemical, Biological and Macromolecular Science, S. N. Bose National Centre for Basic Sciences / Prof. Ranjit Biswas
4. January 2012-
5. We investigate the ultrafast dynamics in Ultrafast Dynamics in Complex Condensed Phases
6. Program of Center for Frontier Science of Chiba University / Grant-in-Aids for Young Scientists (A) / Tokyo Ohka Foundation for Promotion of Science and Technology
7. Main results
   (1) Intermolecular/Interionic Vibrations of 1-Methyl-3-n-octylimidazolium Tetrafluoroborate Ionic Liquid and H2O Mixtures. H. Shirota, R. Biswas. Journal of Physical Chemistry B 116, 13765-13773 (2012).
   (2) Low-Frequency Collective Dynamics in Deep Eutectic Solvents of Acetamide and Electrolytes: A Femtosecond Raman-Induced Kerr Effect Spectroscopic Study. R. Biswas, H. Shirota. J. Chem. Phys. 2014, 141 (13), 134506/1–11.
   (3) Glass Transition Dynamics and Conductivity Scaling in Ionic Deep Eutectic Solvents: The Case of (Acetamide + Lithium Nitrate/Sodium Thiocynate) Melts. Satya Tripathy, Zaneta Wojnarowska, Justyna Knapik, Hideaki Shirota, Ranjit Biswas, Marian Paluch J. Chem. Phys. 2015, 142 (18), 184504/1–10.
8. RB gave some seminars (Center for Frontier Science and Department of Chemistry) at Chiba University.

---

1. Physical Chemistry of Complex Liquids and Solutions
2. Graduate School of Science / Associate Professor / Hideaki Shirota
3. USA / Department of Chemistry and Chemical Biology, Rutgers University / Prof. Edward W. Castner, Jr.
   Italy / Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche / Dr. Alessandro Triolo.
4. March 1999-
5. We investigate the Physical Chemistry of Complex Liquids and Solutions.
6. Grant-in-Aids for Young Scientists (A) / Grant-in-Aids for Basic Sciences (C)
7. Main results
   (1) Solvation in Highly Nonideal Solutions: A Study of Aqueous 1-Propanol using the Coumarin 153 Probe. Hideaki Shirota, Edward W. Castner, Jr. J. Chem. Phys. 2000, 112 (5), 2367–2376.

(2) Ultrafast Dynamics in Aqueous Polyacrylamide Solutions. Hideaki Shirota, Edward W. Castner, Jr. J. Am. Chem. Soc. 2001, 123 (51), 12877–12885.

(3) Aqueous Dimethyl Sulfoxide Solutions: Inter- and Intra-Molecular Dynamics. Piotr P. Wiewior, Hideaki Shirota, Edward W. Castner, Jr. J. Chem. Phys. 2002, 116 (11), 4643–4654.

(4) Dynamic Fluorescence Probing of the Local Environments within Amphiphilic Starlike Macromolecules. Lotti Frauchiger, Hideaki Shirota, Kathryn E. Uhrich, Edward W. Castner, Jr. J. Phys. Chem. B 2002, 106 (30), 7463–7468.

(5) Ultrafast Dynamics of Pyrrolidinium Cation Ionic Liquids. Hideaki Shirota, Alison M. Funston, James F. Wishart, Edward W. Castner, Jr. J. Chem. Phys. 2005, 122 (18), 184512/1–12.

(6) Physical Properties and Intermolecular Dynamics of an Ionic Liquid Compared with Its Isoelectronic Neutral Binary Solution. Hideaki Shirota, Edward W. Castner, Jr. J. Phys. Chem. A 2005, 109 (42), 9388–9392.

(7) Why Are Viscosities Lower for Ionic Liquids with –CH2Si(CH3)3 vs. –CH2C(CH3)3 Substitutions on the Imidazolium Cations? Hideaki Shirota, Edward W. Castner, Jr. J. Phys. Chem. B 2005, 109 (46), 21576–21585.

(8) Molecular Dynamics and Interactions of Aqueous and Dichloromethane Solutions of Polyvinylpyrrolidone. Hideaki Shirota, Edward W. Castner, Jr. J. Chem. Phys. 2006, 125 (3), 034904/1–14.

(9) Ultrafast Structural Rearrangements in the MLCT Excited State for Copper(I) bis-Phenanthrolines in Solution. George B. Shaw, Christian D. Grant, Hideaki Shirota, Edward W. Castner, Jr., Gerald J. Meyer, Lin X. Chen. J. Am. Chem. Soc. 2007, 129 (7), 2147–2160.

(10) Intermolecular Interactions and Dynamics of Room Temperature Ionic Liquids That Have Silyl- and Siloxy-Substituted Imidazolium Cations. Hideaki Shirota, James F. Wishart, Edward W. Castner, Jr. J. Phys. Chem. B 2007, 111 (18), 4819–4829 (Special Issue on Physical Chemistry of Ionic Liquids).

(11) A Nuclear Magnetic Resonance Study of the Dynamics of Imidazolium Ionic Liquids with –CH2Si(CH3)3 vs. –CH2C(CH3)3 Substituents. Song H. Chung, Richard Lopato, Steven G. Greenbaum, Hideaki Shirota, Edward W. Castner, Jr., James F. Wishart. J. Phys. Chem. B 2007, 111 (18), 4885–4893 (Special Issue on Physical Chemistry of Ionic Liquids).

(12) Comparing intermediate range order for alkyl- vs. ether-substituted cations in ionic liquids. A. Triolo, O. Russina, R. Caminiti, H. Shirota, H. Y. Lee, C. S. Santos, N. S. Murthy, E. W. Castner, Jr. Chemical Communications 48 (41) 4959-4961.

(13) How does the Ionic Liquid Organizational Landscape Change when Nonpolar Cationic Alkyl Groups are Replaced by Polar Isoelectronic Diethers? H. K. Kashyap, C. S. Santos, R. P. Daly, J. J. Hettige, N. S. Murthy, H. Shirota, E. W. Castner, Jr., C. J. Margulis. Journal of Physical Chemistry B 117, 1130-1135 (2013).

(14) Differences in Ion Interactions for Isoelectronic Ionic Liquid Homologs. H. Y. Lee, H. Shirota, E. W. Castner, Jr. Journal of Physical Chemistry Letters 4, 1477-1483 (2013).

(15) Structure of Ionic Liquids with Cationic Silicon-Substitutions. B. Wu, H. Shirota, S. L.-Rammarine, E. W. Castner, Jr. Journal of Chemical Physics 145, 114501/1-14 (2016).

8. None.

1. Dynamics and Physical and Thermal Properties of Ionic Liquids.
2. Graduate School of Science / Associate Professor / Hideaki Shirota
3. USA / Brookhaven National Laboratory / Dr. James F. Wisart
4. December 2003-
5. We invesitigate the Dynamics and Physical and Thermal Properties of Ionic Liquids.
6. G rant-in-Aids for Young Scientists (A) / Grant-in-Aids for Basic Sciences (C) / Tokyo Ohka Foundation for Promotion of Science and Technology / Chiba University (Travel Support Program)
7. Main results

   (1) Ultrafast Dynamics of Pyrrolidinium Cation Ionic Liquids. Hideaki Shirota, Alison M. Funston, James F. Wishart, Edward W. Castner, Jr. J. Chem. Phys. 2005, 122 (18), 184512/1–12.

   (2) Intermolecular Interactions and Dynamics of Room Temperature Ionic Liquids That Have Silyl- and Siloxy-Substituted Imidazolium Cations. Hideaki Shirota, James F. Wishart, Edward W. Castner, Jr. J. Phys. Chem. B 2007, 111 (18), 4819–4829.

   (3) Heavy Atom Substitution Effects in Non-Aromatic Ionic Liquids: Ultrafast Dynamics and Physical Properties. Hideaki Shirota, Hiroki Fukazawa, Tomotsumi Fujisawa, James F. Wishart. J. Phys. Chem. B 2010, 114 (29), 9400–9412.

   (4) Effects of Aromaticity in Cations and their Functional Groups on the Low-Frequency Spectra and Physical Properties of Ionic Liquids. Hideaki Shirota, Hironori Matsuzaki, Sharon Ramati, James F. Wishart. J. Phys. Chem. B 2015, 119 (29), 9173–9187 (Branka Ladanyi Festschrift).

   (5) Effects of Aromaticity in Cations and Their Functional Groups on the Temperature Dependence of Low-Frequency Spectrum. S. Kakinuma, S. Ramati, J. F. Wishart, H. Shirota. Journal of Chemical Physics, 2018, 148, 193805/1-10.
8. A graduate student visited to BNL to measure thermal properties of some ionic liquids (October-November 2017)

---

1. Photoconversion of Carbon Dioxide into Fuels Using New Carbon Materials
2. Department of Chemistry, Graduate School of Science / Professor / Yasuo Izumi
3. France / Institut de Science des Matériaux de Mulhouse, CNRS / Julien Parmentier, Associate Professor
4. 2018 to present
5. Using new carbon materials supplied from France, new photocatalysts to convert CO_2 into fuels are explored. Furthermore, the reaction mechanism is investigated by means of state-of-the-art spectroscopy.
6. Kakenhi C
7. None
8. None

---

1. Surface properties of atomic nuclei: contribution to symmetry energy and neutron-star crust
2. Graduate School of Science / Professor / Hitoshi Nakada
3. Bulgaria / Institute of Nuclear Research and Nuclear Energy / Mitko K. Gaidarov
4. 2018-
5. Nuclear surface properties are investigated theoretically, using the mean-field and local-density approximations and focusing on the density gradient and the proton-neutron asymmetry.

6. JSPS Invitational Fellowship for Research in Japan (Short term)

7. None

8. None

---

1. Aggregation state of various kinds of model compounds with alkyl-chain lengths and ring structure in solutions

2. Graduate School of Science / Associate Professor / Takeshi Morita

3. Canada / University of Alberta / Prof. R. R. Tykwinski (Chemistry)
   Canada / University of Alberta / Prof. J. M. Stryker (Chemistry)
   Canada / University of Alberta / Prof. M. R. Gray (Chemistry)

4. April 2018-

5. evaluation of aggregation state using various experimental techniques based on small-angle scattering, ultra-small-angle scattering, solubility parameter and so on.

6. R&D research fund, JPEC research fund

7. main result

(1) Determination of Hansen Solubility Parameters of Asphaltene Model Compounds.
   Masato Morimoto, Naoya Fukatsu, Ryuzo Tanaka, Toshimasa Takanohashi, Haruo Kumagai, Takeshi Morita, Rik R. Tykwinski, David E. Scott, Jeffery M. Stryker, Murray R. Gray, Takashi Sato, and Hideki Yamamoto
   Energy Fuels, 32, 11296-11303 (2018).

8. None

---

1. Searching for cryptic species in ferns

2. Graduate School of Science / Professor / Yasuyuki Watano

3. Taiwan / Taiwan Forestry Research Institute / W.-L. Chiou
   Taiwan / Kaohsiung Medical University / Yi-Shan Chao

4. 2015 to present

5. The region of monsoon Asia including Japan is one of the centers of diversity for ferns. The aim of this study is to clarify the pattern of species diversification and speciation processes of ferns in this geographic region.

6. Grant-in-Aid for Scientific Research C from the Ministry of Education, Culture, Sports, Science, and Technology.

7. Fujiwara, T., Uehara, A., Iwashina, T., Matsumoto, S., Chang, Y.-H., Chao, Y.-S., Watano, Y. (2017) Allotetraploid cryptic species in *Asplenium normale* in the Japanese Archipelago, detected by chemotaxonomic and multi-locus genotype approaches. American Journal of Botany, 104(9):1390-1406. doi: 10.3732/ajb.1700141

8. None

---

1. Physical Chemistry of Ionic Liquids including Sulfur.

2. Graduate School of Science / Associate Professor / Hideaki Shirota

3. Bangladesh / University of Dhaka / Assistant Professor Md. Alauddin

4. March 2019-

5. We investigate the physical chemistry of ionic liquids including sulfur.

6. Takahashi Industrial and Economic Research Foundation

7. None.

8. None.

1. Understanding the origin of polar nature at the domain boundary in ferroelastics
2. Department of Physics, Graduate School of Science / Associate Professor / Hiroko Yokota
3. U. K. / University of Cambridge / Prof. E.K.H. Salje
4. 2018-
5. During the past decade, polar nature at the domain boundary in ferroelastics, which possess centrosymmetry and does not have polarity, has been reported in various materials. Since the width of domain boundary is much thinner than that of magnetics, it is desired to use these functional domain boundary for future devices. In this project, we investigate various different materials with different structures and properties by using defferet techniques to understand the origins of their polar natures.
6. KAKENHI
7. (1) H. Yokota, S. Matsumoto, E. K. H. Salje, and Y. Uesu"Symmetry and three-dimensional anisotropy of polar domain boundaries observed in ferroelastic LaAlO3 in the complete absence of ferroelectric instability"Physical Review B 98, 104105 (2018) DOI: 10.1103/PhysRevB.98.104105
8. None

Graduate School of Engineering

1. Molecular Design of New Electron Donating Polymer
2. Graduate School of Engineering / Associate Professor / Yuji Sasanuma
3. United Kingdom / Imperial College (Department of Chemistry) / Dr. Joachim H. G. Steinke and Dr. Robert V. Law
4. From 2002
5. Intramolecular and intermolecular interactions of polyethers, polysulfides, and polyamines, which have been recently attracted attention to because of their applications to polymer electrolytes and gene delivery polymers, have been revealed and investigated. On the basis of the information thus obtained, molecular design of electron donating polymers has been attempted.
6. The Grand-in-Aid for Scientific Research(c) (No. 14655003)
   The Asahi Glass Foundation
7. Main result
   ① Yuji Sasanuma, Satoshi Hattori, Shinichi Imazu, Tomoyoshi Kaizuka, Takayuki Iijima, Misa Sawanobori, Muhammand A. Azam, Robert V. Law, and Joachim H. G. Steinke： Intramolecular and Intermolecular Hydrogen Bonds Found in Poly(ethylene imine) and Its Model Compounds, IUPAC Polymer Conference on the Mission and Challenges of Polymer Science and Technology (Kyoto), 44PA-018, 2002 年 12 月 4 日.
   ② Yuji Sasanuma： Intramolecular Interactions of Polyethers and Polysulfides, Investigated by NMR, Ab Initio Molecular Orbital Calculations, and Rotational Isomeric State Scheme: An Advanced Analysis of NMR Data, Annual Reports on NMR Spectroscopy, Vol. 49, (G. A. Webb Ed.), Academic Press (Elsevier Science), New York;

Chapter 5 ， 2003 年 5 月.

③ Yuji Sasanuma, Satoshi Hattori, Shinichi Imazu, Satoshi Ikeda, Tomoyoshi Kaizuka, Takayuki Iijima, Misa Sawanobori, Muhammad A. Azam, Robert V. Law, and Joachim H. G. Steinke, “Conformational Analysis of Poly(ethylene imine) and Its Model Compounds: Rotational and Inversional Isomerizations and Intramolecular and Intermolecular Hydrogen Bonds”, Macromolecules, 37, 9169-9183 (2004).

*There are some publications and oral presentations in Japanese (not shown here).

8. None

---

1. Preparation and characterization of nano materials
2. Graduate School of Engineering / Professor / Nobuyuki ICHIKUNI
3. France / CEA-Grenoble / Dr. Hanako Okuno
4. From 2013
5. Nano materials have been attracted due to its novel properties such as nanosize effect. Since nano-technology is an originally multidisciplinary field, the collaboration work will be required. Development of novel nano materials will be discussed in this collaboration especially for the synthesis and structural analysis.
6. The Grant-in-Aid for Scientific Research (C) (No. 23560928) , The Grant-in-Aid for Scientific Research (C) (No. 26420784)
7. Main result

(1) XAFS and HAADF STEM combined characterization for size regulated Ni nanocluster catalyst and its unique size dependence for water gas shift reaction, Hirotake Kitagawa, Nobuyuki Ichikuni, Hanako Okuno Takayoshi Hara, Shogo Shimazu, Appl. Catal. A:General, 2014, 478, 66-70.

(2) Oxygen pretreatment temperature effect of cobalt oxide nanocluster catalyst on CO oxidation reaction activity, Toshiki FUJII, Nobuyuki ICHIKUNI, Hanako OKUNO, Yasutaka INOUE, Kiyotaka NAKAJIMA, Michikazu HARA, Takayoshi HARA, Shogo SHIMAZU, The 94th Annual Meeting of CSJ (2H3-42) (Nagoya, Japan), 2014.3.28.

(3) Dependency of surface Co chemical state of Co oxide nanocluster on the oxidation reaction, Toshiki FUJII, Nobuyuki ICHIKUNI, Hanako OKUNO, Yasutaka INOUE, Kiyotaka NAKAJIMA, Michikazu HARA, Takayoshi HARA, Shogo SHIMAZU, 114th CATSJ Meeting (2G10) (Hiroshima, Japan), 2014.9.26.

(4) Structural investigation of supported Co oxide nanocluster catalyst using XAFS and XPS, Nobuyuki Ichikuni, Toshiki Fujii, Hanako Okuno, Yasunori Inoue, Kiyotaka Nakajima, Michikazu Hara, Takayoshi Hara, Shogo Shimazu, Pacifichem2015 (PHYS377) (Honolulu, USA), 2015.12.16

8. None

---

1. Connection behaviour, robustness and modeling of structures in fire
2. Graduate School of Engineering / Associate Professor / Takeo Hirashima
3. U.K. / The University of Sheffield / Ian Burgess
4. Oct. 2010 to present
5. Discussion on connection behaviour, robustness and modeling of structures in fire.

6. None

7. Main result

(1) Takeo Hirashima, Mariati Taib, Bernice Wong and Ian Burgess, The behaviour of steel beams with moment-resisting beam-splice connections in fire, Proceedings of 7th International Conference on Structures in Fire, Jun. 2012

(2) Mariati Taib, Ian Burgess and Takeo Hirashima, A component-based model for moment-resisting beam-splice connections with high-strength bolts at elevated temperature, Proceedings of 7th International Conference on Structures in Fire, Jun. 2012

8. None

---

1. Asia VLF Observation Network: AVON Project

2. Graduate School of Engineering / Assistant Professor / Hiroyo Ohya

3. Taiwan / National Cheng Kung University / Dr. Alfred B. Chen
Tailand / Chulalongkorn University / Prof. Thanawat Jarupongsaku
Indonesia / LAPAN / Mr. Timbul Manik
Philippines / PAGASA and University of Philippines / Dr. Bonifacio Pajuelas
Vietnam / AMO / Mr. Hoang Anh Nguyen

4. 2007 to present

5. In this project, we first installed a VLF(3-30 kHz)/LF(30-300 kHz) observation network in Southeast Asia to investigate the D/E region ionosphere and lightning locations. This project is an international joint research of 6 countries, and an useful ground observation network to reveal a long-term variations in the lower ionosphere at low-mid latitudes.

6. The joint research program of the Institute for Space-Earth Environmental Research, Nagoya University (2016-2019), The Grant-in-Aid for Scientific Research (B) (No. 25302005) (H25-27)

7. Main results

(1) Ohya, H., K. Shiokawa, and Y. Miyoshi Daytime tweek atmospherics, Journal of Geophysical Research, 査読有、120, doi: 10.1002/2014JA020375, 2015.

(2) Ohya, H., F. Tsuchiya, H. Nakata, K. Shiokawa, Y. Miyoshi, K. Yamashita, and Y. Takahashi, Reflection height of daytime tweek atmospherics during the solar eclipse of 22 July 2009, J. Geophysical Research, 117, doi:10.1029/2012JA018151, 査読有, 2012

(3) Ohya, H., F. Tsuchiya, K. Yamashita, Y. Takahashi, K. Shiokawa, and Y. Miyoshi,,Variations in the D-region ionosphere associated with lightning EMP using AVON and VLF/LF data in Japan, Japan Geoscience Union Meeting 2014, 招待講演, PEM07-09, Yokohama (Japan), April 2014.

8. AVON Winter School 2015 was held in Graduate School of Engineering, Chiba University, by the support of the JST Japan-Asia Youth Exchange Program in Science (SAKURA Science Program). We invited total 10 participants from South-East Asia (two participants from Taiwan, five participants from Indonesia, two participants from Vietnam, and one participant from Philippines).

---

1. Thrombus visualization measurement in blood flow by process tomography

2. Graduate School of Engineering / Professor / Masahiro TAKEI

3. UK / The University of Manchester / Prof. YANG Wuqiang
4. 2015-
5. A highly precise electric circuit, inverse problem, elucidation algorithm were developed in the blood flow by using process tomography (PT) method for the purpose of improvement of clot precision detection.
6. JSPS Invitation Fellowship for Research in Japan(Short –Team)
7. None
8. Prof.Yang gave a lecture entitled "Electrical Capacitance Tomography & Industrial Applications" and provided an opportunity to understand tomography to the students and the lecturer.

1. Real-time Visualization of Particle Behaviors in a Swing Circulating Fluidized Bed
2. Graduate School of Engineering / Professor / Masahiro TAKEI
3. China / Xi`an University of Technology / Dr. Zhao Tong
4. From 2013
5. We studied a highly precise measurement of tow phase flow for the purpose of the use promotion of shipping exhaust heat exchange system contributing to energy saving, the environmental conservation of the ship by paying attention to a circulation fluidized bed, and clarifying influence of the two phase flow movement.
6. JSPS Postdoctoral Fellowship for Foreign Researchers
7. Main result
   (1) Z.Wang, T.Zhao, J.Yao, Y.Kishikawa and M.Takei, Evaluation of the electrochemical characterizations of Lithium-ion battery (LIB) slurry with 10-parameter Electrical Equivalent Circuit (EEC), Journal of The Electrochemical Society,164 (2) A8-A17 (2017)
   (2) Z.Wang, T.Zhao, J.Yao, K.Liu and M.Takei, Influence of particle size on the exit effect of a full-scale rolling circulating fluidized bed, Particulate Science and Technology pp1-11 [DOI: 10.1080/02726351.2016.1276496](2016)
   (3) Tong Zhao, Jiafeng Yao, Kai Liu, and Masahiro Takei, Investigation of particle inertial migration in high particle concentration suspension flow by multi-electrodes sensing (MES) and Eulerian-Lagrangian simulation in a square microchannel, Biomicrofluidics, AIP, Vol. 10, pp.204120 [DOI:10.1063/1.4946012] (2016)
   (4) T.Zhao, Y.Nakamura, H.Murata and M.Takei, The effect of rolling amplitude and period on particle distribution behavior in a rolling circulating fluidized bed, Powder Technology, Elsevier, Vol. 294, pp.484-492 [DOI:10.1016/j.powtec.2016.03.018] (2016)
   (5) T.Zhao, T.Eda, S.Achyut, J.Haruta, M.Nishio and M.Takei, Investigation of Pulsing Flow Regime Transition and Pulse Characteristics in Trickle-bed Reactor by Electrical Resistance Tomography, Chemical Engineering Science, Elsevier, Vol. 130, No.7 pp.8-17,[DOI:10.1016/j.ces.2015.03.010](2015)
   (6) T.Zhao, Z.Wang ,M.Takei, K.Liu and Y.Cui, Investigation of the Dispersion Behavior of Inertial Particles within Accelerated Domain, Journal of Applied Fluid Mechanics, Vol.8, No.1, pp.103-112, 2015
   (7) T.Zhao, K.Liu, H.Murata, K.Harumi, M.Takei, Investigation of Bed-to-wall Heat Transfer Characteristics in a Rolling Circulating Fluidized Bed, Powder Technology, Powder Technology, Elsevier, Vol. 269, pp 46-54,

[DOI:10.1016/j.powtec.2014.08.068] (2014)

(8) Z.Wang, T.Zhao, K.Liu, M.Takei, Euler-Lagrange simulation of the fine particle discharge rate under accelerated air ventilation circumstances, Japanese Journal of Multipurpose Flow, Vol.28, No.3 pp 355-365 (2014)

(9) T. Zhao, K. Liu, and M. Takei, Experimental and numerical investigation of particle distribution behaviors in a rolling circulating fluidized bed, Powder Technology, Elsevier, Vol. 258 pp 38-48 (2014)

(10) Invited lecture：M.Takei, The Potential Medical Application of Electrical Process Tomography, X'an, China, Nov. 28, (2016)

8. We concluded the sister relationship agreement between Xi'an science and technology university, department of engineering in July, 2014.

---

1. Reconstruction of unsteady and three-dimensional density field by background oriented schlieren (BOS) technique
2. Graduate School of Engineering / Associate Professor / Masanori Ota
3. France / French-German Research Institute of Saint-Louis (ISL) / Dr. Friedrich Leopold
4. 2015-
5. Reconstruction of density field by Background Oriented Schlieren (BOS) technique and its application to various experiments.
6. Japan Society for the Promotion of Science (JSPS) bilateral joint research projects (SAKURA program)

---

1. Development of the whole field high sensitive tomography and detection of thrombus in blood flow
2. Graduate School of Engineering / Professor / Masahiro TAKEI
3. Vietnam / Hanoi University of Science and Technology, Department of Biomedical Engineering / Lecturer TRINH Quang Duc
4. 2016-
5. We are conducting research aimed at improving thrombus detection accuracy by integrating highly accurate electric circuits and inverse problem solving algorithms with the development of process tomography (PT) method into blood flow.
6. JSPS –MOST Joint Research Program
7. None

---

1. 3D concentration measurement of micro particles by PT and clarification of flow charact eristics
2. Graduate School of Engineering / Professor / Masahiro TAKEI
3. China / Nanjing University of Aeronautics and Astronautics / Lucturer YAO Jiafeng
4. 2014-
5. We have developed a process spectroscopy tomography (PST) method, conducted 3D visualization measurement of the concentration distribution of fine particle aggregates, and studied the flow characteristics of fine particle aggregates in a shear flow field in a microchannel.
6. JSPS Postdoctoral Fellowship for Foreign Researchers
7. Main result

(1) J.Yao and M.Takei, Application of Process Tomography to Multiphase Flow Measurement in Industrial and Biomedical Fields - A Review, IEEE Sensors Journal, [DOI: 10.1109/JSEN.2017.2682929] (2017)

(2) Z.Wang, T.Zhao, J.Yao, Y.Kishikawa and M.Takei, Evaluation of the electrochemical characterizations of Lithium-ion battery (LIB) slurry with 10-parameter Electrical Equivalent Circuit (EEC), Journal of The Electrochemical Society,164 (2) A8-A17 (2017)

(3) Z.Wang, T.Zhao, J.Yao, K.Liu and M.Takei, Influence of particle size on the exit effect of a full-scale rolling circulating fluidized bed, Particulate Science and Technology pp1-11 [DOI: 10.1080/02726351.2016.1276496](2016)

(4) Tong Zhao, Jiafeng Yao, Kai Liu, and Masahiro Takei, Investigation of particle inertial migration in high particle concentration suspension flow by multi-electrodes sensing (MES) and Eulerian-Lagrangian simulation in a square microchannel, Biomicrofluidics, AIP, Vol. 10, pp.204120 [DOI:10.1063/1.4946012] (2016)

(5) J. Yao, H. Obara, Achyut Sapkota, and Masahiro Takei, Development of Three-dimensional Integrated Microchannel-Electrode System to Understand the Particles Movement with Electrokinetics, Biomicrofludics, AIP, Vol.10(2), pp. 024105 (2016)

(6) J.Yao, A.Sapkota, H.Konno, H.Obara, M.Sugawara, and M.Takei, Non-invasive On-line Measurement of Particle Size and Concentration in Liquid-Particle Mixture by Estimating Equivalent Circuit of Electrical Double Layer, Particulate Science and Technology,Taylor & Francis [DOI:10.1080/02726351.2015.1089345](2015)

(7) J.Yao, T.Kodera, H.Obara, M.Sugawara, and M.Takei, Spatial Concentration Distribution Analysis of Cells in Electrode-Multilayered Microchannel by Dielectric Property Measurement, Biomicrofluidics, AIP, Vol.9, pp. 044129 [DOI: http://dx.doi.org/10.1063/1.4929824] (2015)

(8) Invited lecture：M.Takei, Electrical Impedance Tomography and its Biomedical Applications, Academic Lectures in Jinan University, Guangzhou, China, Aug.12, 2016

(9) Invited lecture：J.Yao, Label Free Cell Manipulation with Microfluidics, Academic Lectures in Jinan University, Guangzhou, China, Aug.12, 2016

1. Study on cerebrovascular regulation using lower body air-pressure system
2. Graduate school of Engineering (Department of Design) / Associate Professor / Keita ISHIBASHI
3. USA / Harvard Medical School(Spaulding Rehabilitation Hospital Network) / Assistant Professor / Can Ozan TAN
4. From 2016
5. On the mechamism of autoregulation of cerebrovascular in humans with reference to the dynamic hemodynamic response to lower body air-pressure
6. Fund for cooperative research agreement between Chiba University and Harvard Medical School
7. Main result

   (1) Yoshida H, Hamner JW, Ishibashi K, Tan CO. Relative contributions of systemic hemodynamic variables to cerebral autoregulation during orthostatic stress. J Appl Physiol 124: 321–329, 2018. [doi:10.1152/japplphysiol.00700.2017.]

   (2) Hamner JW, Ishibashi K, Tan CO. Revisiting human cerebral blood flow responses to augmented blood pressure oscillations. J Physiol 597(6):1553-1564, 2019. [doi: 10.1113/JP277321]
8. None (as of April 2019)

1. Power-scaling of a diode-pumped Nd doped solid-state lasers with a bounce amplifier geometry
2. Graduate School of Engineering / Professor / Takashige Omatsu
3. UK / Imperial College London / Prof. M. J. Damzen
4. Feb.1997-
5. We have investigated power scaling issues of diode-pumped Nd doped bounce laser amplifiers based on highly doped Nd: YAG ceramic as well as Nd doped mixed vanadates.
6. The Scientific Exchange Programme of the Japan Society for the Promotion of Science.
   The Joint Research Project of the Japan Society for the Promotion of Science
7. Main result
   - 10 journal papers have been published.
   - 102conference papers have been published.
   - 1 book has been published.
8. Other important items to be stated
   - International Workshop Novel high power solid-state lasers and laser processing (Chiba, Feb.22, 2005)
   - International workshop Nonlinear optics for high power laser technology (Chiba, July,2008)

1. Physical properties of low-dimensional nano structure formed on semiconductor surfaces
2. Graduate School of Engineering / Professor / Kazuyuki Sakamoto
3. Sweden / Linköping University / Professor R.I.G. Uhrberg
4. From 2002
5. One- and two-dimensional nano structures, which are formed on semiconductor surfaces by the adsorption of metal atoms, have attracted much attention due to the possibility of observing various exotic low-dimensional physical phenomena. The final goal of this project is to observe and to determine low-dimensional physics that have not been reported so far.
6. Grants-in-Aid from the Ministry of Education, Culture, Sports, Science and Technology of the Japanese Government, and the Swedish Research Council
7. Main result
   (1) "Symmetry induced peculiar Rashba effect on thallium adsorbed Si(111) surfaces", K. Sakamoto, T. Oda, A. Kimura, Y. Takeichi, J. Fujii, R.I.G. Uhrberg, M. Donath, H.W. Yeom, J. Electron Spectrosc. Relat. Phenom. 201, 88 (2015).
   (2) Valley spin polarization by using the extraordinary Rashba effect on silicon", K. Sakamoto, T.-H. Kim, T. Kuzumaki, B. Muller, Y. Yamamoto, M. Ohtaka, J.R. Osiecki, K. Miyamoto, Y. Takeichi, A. Harasawa, S.D. Stolwijk, A.B. Schmidt, J. Fujii, R.I.G. Uhrberg, M. Donath, H.W. Yeom, and T. Oda, Nature Communications 4:2073 doi: 10.1038/ncomms3073 (2013).
   (3) "Atomic and electronic structures of the ordered $2\sqrt{3}\times2\sqrt{3}$ and molten 1×1 phase on the Si(111):Sn surface", P.E.J. Eriksson, J.R. Osiecki, K. Sakamoto, and R.I.G. Uhrberg, Phys. Rev. B 81, 235410-1-9 (2010).
   (4) "Eletronic structure of the thallium induced 2×1 reconstruction on Si(001)", P.E.J. Eriksson, K. Sakamoto, and R.I.G. Uhrberg, Phys. Rev. B 81, 205422-1-5 (2010).

(5) "Abrupt Rotation of the Rashba spin to the direction perpendicular to the surface", K. Sakamoto, T. Oda, A. Kimura, K. Miyamoto, M. Tsujikawa, A. Imai, N. Ueno, H. Namatame, M. Taniguchi, P.E.J. Eriksson, and R.I.G. Uhrberg, Phys. Rev. Lett. 102, 096805-1-4 (2009).

(6) "Electronic structure of the Si(110)-(16x2) surface: High-resolution ARPES and STM investigation", K. Sakamoto, M. Setvin, K. Mawatari, P.E.J. Eriksson, K. Miki, and R.I.G. Uhrberg, Phys. Rev. B 79, 045304-1-6 (2009).

(7) "High-temperature annealing and surface photovoltage shifts on Si(111)7×7", H. M. Zhang, K. Sakamoto, G.V. Hansson, and R.I.G. Uhrberg, Phys. Rev. B 78, 035318-1-7 (2008).

(8) "Lithium-induced dimer reconstructions on Si(001) studied by photoemission spectroscopy and band-structure calculations", P.E.J. Eriksson, K. Sakamoto, and R.I.G. Uhrberg, Phys. Rev. B 75, 205416-1-9 (2007).

(9) "Core-level photoemission study of thallium adsorbed on a Si(111)-(7x7) surface: Valence state of thallium and the charge state of surface Si atoms", K. Sakamoto, P.E.J. Eriksson, S. Mizuno, N. Ueno, H. Tochihara, and R.I.G. Uhrberg, Phys. Rev. B 74, 075335-1-5 (2006).

(10) "Structural investigation of the quasi-one-dimensional reconstructions induced by Eu adsorption on a Si (111) surface", K. Sakamoto, A. Pick and R.I.G. Uhrberg, Phys. Rev. B 72, 195342-1-9 (2005).

(11) "Electronic structure of the Ca/Si (111)-(3x2) surface", K. Sakamoto, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 69, 125321-1-7 (2004).

(12) "Band structure of the Ca/Si (111)-(2x1) surface", K. Sakamoto, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 68, 245316-1-5 (2003).

(13) "Surface electronic structures of Au-induced reconstructions on the Ag/Ge (111) √3x√3 surface", H.M. Zhang, K. Sakamoto, and R.I.G. Uhrberg, Surf. Sci. 532-535, 934-939 (2003).

(14) "Structural investigation of the Ca/Si (111) surfaces", K. Sakamoto, W. Takeyama, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 66, 165319-1-8 (2002).

8. None

---

1. Inverse photoemission study of spin-polarized unoccupied surface states originated from strong spin-orbit coupling
2. Graduate School of Engineering / Professor / Kazuyuki Sakamoto
3. Germany / Munster University / Prof. M. Donath
4. From 2010
5. The Rashba effect is a novel low-dimensional physical property that produces spin-polarized two-dimensional electron gas even for nonmagnetic materials. The spin-polarization vector, which is parallel to the surface plane and perpendicular to the wave vector in case of normal Rashba effect, is known to point different directions depending on the symmetry of the surface. The purpose of this project is to have a proper understanding of these peculiar Rashba effects by measuring the spin-polarized occupied surface band using the spin and angular-resolved photoelectron in the system in Japan, and the spin-polarized unoccupied band using the spin and angular-resolved inverse photoelectron system in Germany.
6. Grants-in-Aid from the Ministry of Education, Culture, Sports, Science and Technology of the Japanese Government.
7. Main result

(1) "Valley spin polarization of Tl/Si(111)", S.D. Stolwijk, A.B. Schmidt, K. Sakamoto, P. Krueger, and M. Donath,

Phys. Rev. Mat. **1**, 064604-1-7 (2017).

(2) "Spin texture with a twist in momentum space for Tl/Si(111)", S.D. Stolwijk, K. Sakamoto, A.B. Schmidt, P. Kruger, and M. Donath, Phys. Rev. B 91, 245420 (2015).

(3) "Symmetry induced peculiar Rashba effect on thallium adsorbed Si(111) surfaces", K. Sakamoto, T. Oda, A. Kimura, Y. Takeichi, J. Fujii, R.I.G. Hurberg, M. Donath, H.W. Yeom, J. Electron Spectrosc. Relat. Phenom. 201, 88 (2015).

(4) "Thin line of a Rashba-type spin texture: Unoccupied surface resonance of Tl/Si(111) along Gamma-M", S.D. Stolwijk, K. Sakamoto, A.B. Schmidt, P. Kruger, and M. Donath, Phys. Rev. B 90, 161109(R) (2014).

(5) "Rotating Spin and Giant Splitting: Unoccupied Surface Electronic structure of Tl/Si(111)", S.D. Stolwijk, A.B. Schmidt, M. Donath, K. Sakamoto, and P. Kruger, Phys. Rev. Lett. 111, 116402-1-5 (2013).

(6) "Valley spin polarization by using the extraordinary Rashba effect on silicon", K. Sakamoto, T.-H. Kim, T. Kuzumaki, B. Muller, Y. Yamamoto, M. Ohtaka, J.R. Osiecki, K. Miyamoto, Y. Takeichi, A. Harasawa, S.D. Stolwijk, A.B. Schmidt, J. Fujii, R.I.G. Uhrberg, M. Donath, H.W. Yeom, and T. Oda, Nature Communications 4:2073 doi: 10.1038/ncomms3073 (2013).

8. None

1. Physical properties of novel materials with spin-polarized surface states
2. Graduate School of Engineering / Professor / Kazuyuki Sakamoto
3. Germany / Wurzburg University / Prof. F. Reinert
4. From 2009
5. The topological insulators materialize a new state of quantum matter where an unusual gapless metallic state appears at the surface of a band insulator due to a topological principle. This metallic surface state is characterized by a Dirac-cone dispersion which has been shown to have a helical spin structure where the spin vector points parallel to the surface and perpendicular to the momentum. In an ideal topological insulator, the Dirac-point is located at the Fermi level. In a real system, however, the Dirac-point is far from the Fermi level making the bulk property metallic due to charge doping from defects that are formed during the sample preparation. The purpose of this project is to have a proper understanding of these new state of matters, and to develop an easy way to dope topological insulators making the bulk property insulating so that they can be used as materials for spintronic devices. The sample preparation and ultra-high-resolution photoemission measurements are performed in Germany, and the spin-polarized photoemission measurements are carried out in Japan.
6. Grants-in-Aid from the Ministry of Education, Culture, Sports, Science and Technology of the Japanese Government.
7. Main result

(1) "The Rashba-split surface state of Sb2Te3(0001) and its interaction with bulk states", C. Seibel, H. Maaß, H. Bentmann, J. Braun, K. Sakamoto, M. Arita, K. Shimada, J. Minár, H. Ebert, and F. Reinert, J. Electron Spectrosc. Relat. Phenom. 201, 110 (2015).

(2) "Connection of a topological surface state with the bulk continuum in Sb2Te3(0001)", C. Seibel, H. Bentmann, J. Braun, J. Minár, H. Maaß, K. Sakamoto, M. Arita, K. Shimada, H. Ebert, and F. Reinert, Phys. Rev. Lett., 114, 066802 (2015).

(3) "Single Dirac cone on the Cs-covered topological insulator surface Sb2Te3(0001) ", Christoph Seibel, Henriette Maaß, Minoru Ohtaka, Sebastian Fiedler, Christian Jünger, Chul-Hee Min, Hendrik Bentmann, Kazuyuki Sakamoto, and Friedrich Reinert, Phys. Rev. B 86, 161105 -1-5 (2012).

(4) "Spin orientation and sign of the Rashba splitting in Bi/Cu(111)", H. Bentmann, T. Kuzumaki, G. Bihlmayer, S. Blugel, E. V. Chulkov, F. Reinert and K. Sakamoto, Phys. Rev. B 84, 112456-1-6 (2011).

8. None

1. Interaction mechanism in singlet excited dye/photoacid generator photosensitive system
2. Graduate School of Engineering / Professor / Shigeru Takahara
3. France / Department of Photochemistry, Universite de Haute Alsace / Prof. Xavier Allonas
   France / Department of Photochemistry, Universite de Haute Alsace / Prof. Jean-Pierre Fouassier
4. 2004.7.16-
5. Some novel visible photoinitiating systems mainly based on the PAG sensitization have been investigated. The photodissociation processes of some important classes of PAGs and photophysical and photochemical behavior of the sensitizing dyes have been also studied, as well as their sensitization mechanisms.
6. Gift of money for research and education
7. Main result

- COMMUNICATIONS AND PAPERS

  1) Shota Suzuki, Xavier Allonas,* Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, Tsuguo Yamaoka, Interaction mechanism in pyrromethene dye/photoacid generator photosensitive system for high-speed photopolymer , J. Photochem. Photobio. A: Chem., 181(1) 60-66 (2006).

  2) Jean-Pierre Malval,* Fabrice Morlet-Savary, Xavier Allonas, Jean-Pierre Fouassier, Shota Suzuki, Shigeru Takahara, and Tsuguo Yamaoka, On the cleavage process of the N-trifluoromethylsulfonyloxy-1,8-naphthalimide photoacid generator, Chem. Phys. Lett., 443, 323-327 (2007).

  3) Shigeru Takahara,* Shota Suzuki, Tomoaki Tsumita, Xavier Allonas, Jean-Pierre Fouassier, Tsuguo Yamaoka, Sensitization Reaction of Oxime Type Photoacid Generator, J. Photopolym. Sci. Technol., 21(4), 499-504 (2008).

  4) Shota Suzuki, Fabrice Morlet-Savary, Xavier Allonas,* Jean-Pierre Fouassier, Shigeru Takahara, Tsuguo Yamaoka,Photochemistry of Naphthalimide Photoacid Generators, Jean-Pierre Malval, J. Phys. Chem. A, 112(17), 3879 – 3885 (2008).

- BOOK

  1) Shota Suzuki, Xavier Allonas, Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, and Tsuguo Yamaoka, "High speed photopolymers: Interaction mechanism in a novel dye/photoacid generator system and applications", in Photochemistry and UV curing: New Trends, Jean-Pierre Fouassier ed, Trivandrum, Kerala,

India (Book published in 2006).

- CONTRIBUTIONS TO CONFERENCE

1) S. Suzuki, S. Takahara, T. Yamaoka, X. Allonas, J. P. Fouassier; Pyrromethene Dye Sensitized Photopolymer for Microlithography: SFC Grand Est 2005, Mulhouse, France (2005).

2) S. Suzuki, X. Allonas, J. P. Fouassier, T. Urano, S. Takahara, T. Yamaoka; Interaction Mechanism In Pyrromethene Dye/Photoacid Generator Photosensitive System for High Speed Photopolymer: SICC-4 (Singapore International Chemical Conference, Singapore (2005).

3) S. Suzuki, X. Allonas, J. P. Fouassier, T. Urano, S. Takahara, T. Yamaoka; Photoacid Generation Mechanism in Pyrromethene Sensitizing Dye/Oxime Type Photoacid Generator System: XXI IUPAC Symposium on Photochemistry, P-301, Kyoto (2006).

4) S. Suzuki, X. Allonas, J. P. Fouassier, T. Urano, S. Takahara, T. Yamaoka; Photosensitization of Photoacid Generators by Pyrromethene Dyes: XXI IUPAC Symposium on Photochemistry P-407, Kyoto (2006).

5) Shigeru. Takahara, Shota Suzuki, Tomoaki Tsumita, Xavier Allonas, Jean-Pierre Fouassier, Tsuguo Yamaoka, Sensitization Reaction of Oxime Type Photoacid Generator, 25th Conference of Photopolymer Science and Technology, Chiba (2008).

6) Naoto Nishizawa, Kota Nakazima, Tomoaki Tsumita, Shota Suzuki, Shigeru Takahara, Xavier Allonas, Jean-Pierre Fouassier; Excited Singlet Electron Transfer in Sensitization Reaction of Oxime Type Photo-acid Generator in polymer Matrix, European Symposium of Photopolymer Science, LT1 (Invited short talk), Mulhouse, France (2010).

8. None

1. Theory of X-ray absorption spectroscopy and development of multiple scattering method
2. Graduate School of Engineering / Professor / Peter Krueger
3. Partner abroad
   (1) INFN, Frascati, Italy, Prof. C. R. Natoli.
   (2) University of Rennes I, France, Dr. K. Hatada, Dr. D. Sebilleau.
   (3) NSRL, University of Science and Technology of China, Heifei, Prof. W. Zhu, Prof. L. Song, Mr. J. Xu.
4. 2012-
5. Development of multiple scattering theory for X-ray absorption spectra. Effects of non-spherical potentials and electron correlation. Application to defects and adsorbates in graphene and oxides.
6. Grant-in-Aid for Scientific Research of JSPS, Research activity Start-up grant (2013-2015)
7. Main result
   (1) J. Xu, P. Krüger, C. R. Natoli, K. Hayakawa, Z. Wu and K. Hatada, X-ray absorption spectra of graphene and graphene oxide by full-potential multiple scattering calculations with self-consistent charge density, Phys. Rev. B 92, 125408 (2015).
   (2) J. Xu, C. R. Natoli, P. Krüger, K. Hayakawa, D. Sébilleau, Li Song, and K. Hatada, ES2MS: An interface package for passing self-consistent charge density and potential from Electronic Structure codes To Multiple Scattering

codes, Computer Physics Communications 203, 331-338 (2016).

8. MSnano network scientific workshop “Trends in x-ray Absorption and Photoelectron Spectroscopy and Multiple Scattering Theory”, Chiba, Japan, 27-28 July 2015

---

1. Spectroscopic investigation of electronic structure of titanium oxide nanostructures for solar cell applications.
2. Graduate School of Engineering / Professor / Peter Krueger
3. Partner abroad
   (1) University of Mons, Belgium, Dr. Carla Bittencourt,
   (2) McMaster University, Hamilton, Canada, Prof. A. Hitchcock, Dr. X. Zhu,
   (3) EPFL, Lausanne, Switzerland, Prof. M. Grioni, Dr. K. S. Moser
4. 2012-
5. In order to find better materials for solar cells, we are studying the electronic structure of titanium dioxide nanostructures, in particular the effects of morphology, crystal structure, doping as well as charge-lattice coupling. To this end, we use X-ray absorption and electron spectroscopies and theoretical modeling.
6. None
7. Main result
   (1) C. Bittencourt, M. Rutar, P. Umek, A. Mrzel, K. Vorzel, D. Arcon, K. Henzler, P. Krüger and P. Guttmann, Molecular Nitrogen in N-doped TiO2 Nanoribbons, RSC Adv. 5, 23350 (2015).
   (2) X.Zhu, A. Hitchcock, C. Bittencourt, P.Umek and P. Krüger, Individual Titanate Nanoribbons Studied by 3D-resolved Polarization Dependent X-ray Absorption Spectra Measured with Scanning Transmission X-ray Microscopy, J. Phys. Chem. C 119, 24192-24200 (2015)
   (3) S. Moser, S. Fatale, P. Krüger, H. Berger, P. Bugnon, A. Magrez, H. Niwa, J. Miyawaki, Y. Harada, and M. Grioni, Electron-phonon coupling in the bulk of anatase TiO2 measured by resonant inelastic x-ray spectroscopy, Phys. Rev. Lett. 115, 096404 (2015)
8. None

---

1. STM study of electronic spin properties of nanomagnets
2. Graduate School of Engineering / Associate Professor / Toyo Kazu Yamada
3. Germany / Karlsruhe Institute of Technology / Prof.W. Wulfhekel
4. From Apr.2010
5. Scanning tunneling microscopy (STM) can visualize atomic structures of nanomaterials. In this study we have studied single organic molecules as well as iron nanomagnets, which are considered to be a new candidate material for near-future spintronics
6. JSPS, JST etc.
7. Main result
   (1) Magneto-electric coupling at metal surfaces, L. Gerhard, T.K. Yamada, T. Balashov, A.F. Takacs, M. Daena, S. Ostanin, A. Ernst, I. Mertig, and W. Wulfhekel, Nature Nanotechnology, 5 巻, No.11, pp.792-797, 2010 年.
   (2) Electrical control of the magnetic state of Fe, L. Gerhard, T.K. Yamada, T. Balashov, A.F. Takacs, M. Daena, S.

Ostanin, A. Ernst, I. Mertig, and W. Wulfhekel, IEEE Transactions on Magnetics, 47 巻, No.6, pp.1619-1622, 2011 年.

(3) Giant magnetoresistance through a single molecule, S. Schmaus, A. Bagrets, Y. Nahas, T.K. Yamada, A. Bork, F. Evers, and W. Wulfhekel, Nature Nanotechnology, 6 巻, No.3, pp.185-189, 2011 年.

(4) Electric Field Control of Fe Nano Magnets, T.K. Yamada, L. Gerhard, R.J.H. Wesselink, A. Ernst, and Wulf Wulfhekel, J. Magn. Soc. Jpn., 36 巻, No.2, pp.100-103, 2012 年.

(5) Robust spin crossover and memristance across a single molecule, T. Miyamachi, M. Gruber, V. Davesne, M. Bowen, S.Boukari, F. Scheurer, G. Rogez, T.K. Yamada, P. Phresser, E. Beaurepaire, and W. Wulfhekel, Nature Communications, 3 巻, pp.938:1-6, 2012 年.

(6) Single molecule magnetoresistance with combined antiferromagnetic and ferromagnetic electrodes, A. Bagrets, S. Schmaus, A. Jaafar, D. Kramczynski, T.K. Yamada, M. Alouani, W. Wulfhekel, and F. Evers, Nano Letters, 12 巻, No.10, pp.5131-5136, 2012 年.

(7) Temperature control of the growth of iron-oxide nano-islands on Fe(001), Toyo Kazu Yamada, Yuki Sakaguchi, Lukas Gerhard, and Wulf Wulfhekel accepted JJAP, 18.4.2016.

8. None

---

1. STM electron spectroscopy measurements of graphene on metal substrates.
2. Graduate School of Engineering / Associate Professor / Toyo Kazu Yamada
3. Spain / University Autonoma Madrid / Prof. A. L. Vazquez de Parga
4. From Apr.2010
5. Atomic and electronic structures of graphene grown on Ru(0001) have been studied by using scanning tunneling microscopy (STM) and spectroscopy.
6. JSPS, JST etc.
7. Room temperature spin-polarizations of Mn-based antiferromagnetic nanoelectrodes, T. K. Yamada and A. L. Vazquez de Parga, Appl. Phys. Lett., 105 巻, No.18, pp.183109:1- pp.183109:5, 2014 年.
8. None

---

1. Research and Development of Wireless Sensor Networks
2. Graduate School of Engineering / Professor / Hiroo Sekiya
   Institute of Management and Information Technologies / Asspcoate Professor / Nobuyoshi Komuro
   Graduate School of Engineering / Assistant Professor / Kien Nguyen
3. China / Xiangtan University / Pei Tingrui and Li Zhetao
   Korea / Ajou University / Y.-J. Choi
4. From October 2015
5. Protocol designs and performance analyses of Wireless Sensor Networks (WSNs) are carried out. Now we have a plan to construct acutual WSNs at the main campus of Xiagtan University for environment remort sensing.
6. 2019 Jan.25-31, Xiangtan/Ajou/Chiba University joint workshop and student exchanges at Ajou University.
   2017 Aug. 18-27, Xiangtan/Ajou/Chiba University joint workshop and student exchanges supported by SAKURA Science

Plan.

7. Main result

1) Xianru Liu, Xueming Li, Shu Cao, Qingyong Deng, Rong Ran, Kien Nguyen, and Tingrui Pei, "Hybrid precoding for massive mmWave MIMO systems," IEEE Access, Mar. 2019.

2) Hui Xia, Zhetao Li, Yuhui Zheng, Anfeng Liu, Young-June Choi, Hiroo Sekiya, “A Novel Light-weight Subjective Trust Inference Framework in MANETs,” IEEE Trans. On Sustainable Computing, 2019

3) Shintaro Ikuma, Zhetao Li, Tingrui Pei, Young-June Choi, and Hiroo Sekiya, "Rigorous analytical model of saturated throughput for the IEEE 802.11p EDCA," IEICE Transactions on Communications, Apr. 2019.

4) Kosuke Sanada, Nobuyoshi Komuro, Zhetao Li, Tingrui Pei, Young-June Choi, and Hiroo Sekiya, “Generalized analytical expressions for end-to-end throughput of IEEE 802.11 string-topology multi-hop networks,” Ad Hoc Networks, vol.7, no.1, pp.135-148, Mar. 2018.

5) Thomas Mezmur Birhanu, Zhetao Li, Hiroo Sekiya, Nobuyoshi Komuro, and Young-June Choi. Efficient thread mapping for heterogeneous multicore IoT systems. Hindawi Publishing Corporation Mobile Information Systems. Volume 2017(2017), 3021565

6) Xiao Liu, Anfeng Liu, Zhetao Li, Shujuan Tian, Young-june Choi, Hiroo Sekiya, and Jie Li, “Distributed cooperative communication nodes control and optimization reliability for resource-constrained WSNs,” Neurocomputing, June 2017.

7) PEI Tingrui, LEI Fangqing, LI Zhetao, ZHU Gengming, PENG Xin, CHOI Youngjune, SEKIYA Hiroo. A Delay-aware Congestion Control Protocol for Wireless Sensor Networks. Acta Electronica Sinica. vol.26, no.3, pp.591-599, May 2017.

8) Yuxin Liua, Anfeng Liua, Yuxuan Li, Zhetao Li, Young-june Choi, Hiroo Sekiya, Jie Li, “APMD: A fast data transmission protocol with reliability guarantee for pervasive sensing data communication,” Pervasive and Mobile Computing, Apr. 2017.

9) YuXin Liu, Anfeng Liu, Shuang Guo, Zhetao Li, Young-June Choi, and Hiroo Sekiya, “Context-aware collect data with energy efficient in cyber-physical cloud systems,” Future Generation Computer Systems, June 2017.

10) Zhuangbin Chen, Anfeng Liu, Zhetao Li, Young-June Choi, Hiroo Sekiya, and Jie Li. Energy-efficient broadcasting scheme for smart industrial wireless sensor networks. Hindawi Publishing Corporation Mobile Information Systems. Volume 2017 (2017), 7538190

11) Nobuyoshi Komuro, Ryo Manzoku, Kosuke Sanada, Jing Ma, Zhetao Li, Tingrui Pei, Youngjune Choi, Hiroo Sekiya. Design and analysis of multi-channel MAC protocol with channel grouping in wireless ad-hoc networks. IEICE Transactions on Communications. Volume E99-B (2016), 11

12) Nobuyoshi Komuro, Sho Motegi, Kosuke Sanada, Jing Ma, Zhetao Li, Tingrui Pei, Youngjune Choi, Hiroo Sekiya. Small-world model based route construction method for wireless sensor networks. IEICE Transactions on Communications. Volume E99-B (2016), 11

13) Zhipeng Tang, Anfeng Liu, Zhetao Li, Young-june Choi, Hiroo Sekiya, and Jie Li. A trust-based model for security cooperating in vehicular cloud computing. Hindawi Publishing Corporation Mobile Information Systems. Volume 2016 (2016), 9083608

14) Yuxin Liu, Anfeng Liu, Yanling Hu, Zhetao Li, Young-June Choi, Hiroo Sekiya, and Jie Li. FFSC: An energy efficiency communications approach for delay minimizing in internet of things. IEEE Access. Volume 4 (2016)

15) LI Zhe-tao, CHEN Qian, ZHU Geng-ming, CHOI Young-june, SEKIYA Hiroo. A Low Latency, Energy Efficient MAC Protocol for Wireless Sensor Networks. International Journal of Distributed Sensor Networks. Volume 2015 (2015), 946587.

16) PEI Tingrui, DENG Yafeng, LI Zhetao, ZHU Gengming, PAN Gaofeng, CHOI Youngjune, SEKIYA Hiroo. A throughput aware with collision-free MAC for wireless LANs. SCIENCE CHINA Information Sciences. Volume 25(2016), 1.

17) TIAN Shujuan, FAN Xiaopin, XIE Jingxiong, LI Zhetao, CHOI Youngjune, SEKIYA Hiroo. Alternative Multiplicative Iterative Method for Projection Matrix Design in Compressive Images. International Journal of Distributed Sensor Networks. Submitted.

18) LI Zhetao, ZENG Hongqing, PEI Tingrui, SEKIYA Hiroo, CHOI Youngjune. Back-off and Rectification of Greedy Algorithm for Compressed Sensing. Acta Electronica Sinica. Submitted.

19) LI Zhetao, ZENG Hongqing, TIAN Shujuan, SEKIYA Hiroo, CHOI Youngjune, Greedy Sparse Signal Recovery with Hope-Tree Building for Compressed Sensing. ICASSP2016. Submitted.

8. None

---

1. Nuclera Emulsion for WIMPs Search（NEWS）
2. Graduate School of Engineering / Professor Emeritus / Ken'ichi Kuge
3. Italy / Istituto Nazionale di Fisica Nucleare(INFN) / Giovanni Rosa,
   NEWS group:Italy LNGS, Napori Univ., BARI Univ., Turkey METU, Russia JINR, LPI Moscow, SINP Moscow, Japan Nagoya Univ.
4. 2015-
5. Directional dark-matter search with fine-grained nuclear emulsion of silver-salt photography by analyzing fine tracks of recoiled particles generated by the interaction with dark matter
6. INFN、JSPS KAKENHI etc.
7. J.B.R.Battat,K.Kuge 他 NEWS group, "Readout technologies for directional WIMP Dark Matter detection", Physics Reports, 662, 1-46 (2016)
8. None

---

1. Photo-functions of thioxanthone-anthracenes
2. Graduate School of Engineering / Professor / Shigeru Takahara
3. Turkey / Department of Chemistry, Yıldız Teknik Üniversitesi / Prof. Nergis Arsu
4. 2013.10-

5. Research collaboration of photo-functional materials based on novel thioxanthone-anthracenes has been carried out by the exchange of students in the field of radical initiators and photo-functional dispersants of nanocarbons.

6. Funds, grants, etc

（1）Grant of Takahashi Industrial and Economic Research Foundation（2013）

（2）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan（2014）

（3）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Overseas（2014）

（4）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan（2015）

（5）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Overseas（2015）

（6）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan（2016）

（7）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan and Overseas（2018）

7. Main result

- COMMUNICATIONS AND PAPERS

  (1) Saliha Mutlu, Kohei Watanabe, Shigeru Takahara, Nergis Arsu, Thioxanthone-anthracene-9-carboxylic acid as radicalic photoinitiator in the presence air atmosphere, J. Polym. Sci. Part A, 56, 1878–1883 (2018).

- CONTRIBUTIONS TO CONFERENCE

  (1) Saliha Mutlu, Tolga Ceper, Shigeru Takahara, Nergis Arsu; The investigation of photophysical and photochemical properties of thioxanthone-anthracene-9-carboxylic acid, Macro2016, Istanbul (2016).

8. MOU between Chiba University and YTU was contracted in 2013.

---

1. Structural analysis of supramolecular assemblies by scanning tunneling microscopy
2. Institute for Grobal Prominent Research / Professor / Shiki Yagai
3. France / CEA Sacray / Fabien Silly
4. 2015-
5. We analyze two-dimensional self-assembly of functional molecules by means of scanning tunneling microscopy.
6. Grant-in-Aid for Scientific Research on Innovative Area (2014-2018)
7. ①Hayato Ouchi, Takahiro Kizaki, Masaki Yamato, Xu Lin, Nagahiro Hoshi, Fabien Silly, Takashi Kajitani, Takanori Fukushima, Ken-ichi Nakayama, Shiki Yagai

   Impact of Helical Organization on the Photovoltaic Properties of Oligothiophene Supramolecular Polymers

   Chem. Sci., 2018, accepted. DOI: 10.1039/C7SC05093C

   ②Fabien Silly, Keisuke Aratsu, Shiki Yagai

   Two-Dimensional Chiral Self-Assembly of Barbituric Acid-Functionalized Naphthelene Derivatives

   J. Phys. Chem. C., 2018, 122 (11), 6412-6416.

   ③Hayato Ouchi, Takahiro Kizaki, Xu Lin, Deepak Prabhu, Nagahiro Hoshi, Fabien Silly, Ken-ichi Nakayama, Shiki Yagai

   Effect of Alkyl Substituents on 2D and 1D Self-Assembly and Photovoltaic Properties of Hydrogen-Bonded Oligothiophene Rosettes.

   Chem. Lett., 2017, 46, 1102-1104. (DOI: 10.1246/cl.170407

④Hayato Ouchi, Xu Lin, Takahiro Kizaki, Deepak D. Prabhu, Fabien Silly, Takashi Kajitani, Takanori Fukushima, Ken-ichi Nakayama, Shiki Yagai

Hydrogen-bonded oligothiophene rosettes with benzodithiophene terminal unit: self-assembly and application to bulk heterojunction solar cells

Chem. Commun., 2016, 52, 7874-7877.

8. Lecture meeting, Engineering two-dimensional self-assembled porous organic and hybrid nanoarchtectures on surfaces.(2016.6.13)

---

1. Structural analysis of supramolecular assemblies by small-angle X-ray scattering
2. Institute for Grobal Prominent Research / Professor / Shiki Yagai
3. UK / Keele University / Martin J. Hollamby
4. 2015-
5. We analyze solution-state nanostructures of supramolecular assemblies by means of small-angle X-ray scattering
6. Grant-in-Aid for Scientific Research on Innovative Area (2014-2018)

①Bimalendu Adhikari, Yuki Yamada, Mitsuaki Yamauchi, Kengo Wakita, Xu Lin, Keisuke Aratsu, Tomonori Ohba, Takashi Karatsu, Martin Hollamby, Nobutaka Shimizu, Hideaki Takagi, Rie Haruki, Shin-ichi Adachi, Shiki Yagai

Light-induced unfolding and refolding of supramolecular polymer nanofibers

Nature Commun., 2017, 8, 15254. (DOI: 10.1038/ncomms15254)

②Martin J. Hollamby, Keisuke Aratsu, Brian R. Pauw, Sarah E. Rogers, Andrew J. Smith, Mitsuaki Yamauchi, Xu Lin, Shiki Yagai

Simultaneous SAXS and SANS Analysis Detects Toroidal Supramolecular Polymers Composed of Noncovalent Supermacrocycles in Solution

7. Angew. Chem. Int. Ed., 2016, 55, 9890-9893.
8. Lecture meeting, Order from Disorder: A new controllable method to assemble π-system-containing materials.(2014.8.4)

---

1. Film and electronic strcutures of organic semiconductors
2. Graduate School of Engineering / Professor / Hiroyuki Yoshida
3. Germany / Friedrich-Schiller-Universität Jena / Prof.Torsten Fritz
4. April 2015-
5. Clarify correlation of electric level and states about epitaxially grown organic thin films by ultraviolet photoelectron spectroscopy and Low-Energy Inverse Photo Emission Spectroscory
6. MEXT KAKENHI
7. Yuki Kashimoto, Keiichirou Yonezawa, Matthias Meissner, Marco Gruenewald, Takahiro Ueba, Satoshi Kera, Roman Forker, Torsten Fritz, and Hiroyuki Yoshida, “The Evolution of Intermolecular Energy Bands of Occupied and Unoccupied Molecular States in Organic Thin Films” *J. Phys. Chem. C*, Just Accepted Manuscript, **DOI:** 10.1021/acs.jpcc.8b02581, Publication Date (Web): April 24, 2018
8. None

1. Electronic states of organic semiconductor devices
2. Graduate School of Engineering / Professor / Hiroyuki Yoshida
3. U.S.A. / Princeton University / Prof. Antoine Kahn
4. April 2015-
5. Reserch about molecular states of organic devices of organic solar cells and organic light emitting devices, etc. especially about (1)electronic state control by doping, (2)electronic states of organic-inorganic hybrid solar cells
6. Molecular Chirality Research Center
7. Visit Prof. Kahn's laboratoty in March 2017, 2018.
8. International Workshop on Organic Semiconductors on January 2016, 2017, 2018.

1. Electronic states of organic semiconductor films having extremely high carrier mobility
2. Graduate School of Engineering / Professor / Hiroyuki Yoshida
3. U.S.A. / Princeton University / Prof. Barry P. Rand
4. March 2018-
5. make clear the correlation on coherence of electric charge and electronic state about organic thin films with High Electron Mobility by electron spectrocscopy
6. Molecular Chirality Research Center
7. Visit Prof. Rand'sLaboraroty on March 2018and learned and produced organic molecular.
8. None

1. Preparation and characterization of nanocluster catalysts
2. Graduate School of Engineering / Professor / Nobuyuki ICHIKUNI
3. Belgium / Université catholique de Louvain / Prof. Eric M. Gaigneaux
4. From 2017
5. Development of nanocluster catalysts is discussed in this collaboration especially for the synthesis and structural analysis.
6. The Grant-in-Aid for Scientific Research (C) (No. 26420784), The Grant-in-Aid for Scientific Research (C) (No. 17K06912)
7. Main result

   (1)Development of Supported NiO Nanocluster for Aerobic Oxidation of 1-Phenylethanol and Elucidation of Reaction Mechanism via X-ray Analysis, Takuro Sasaki, François Devred, Pierre Eloy, Eric M. Gaigneaux, Takayoshi Hara, Shogo Shimazu, Nobuyuki Ichikuni, Bull. Chem. Soc. Jpn., 2019, 92, 840-846.
8. None

1. Post oxidation in the exhaust manifold of SI engines
2. Graduate school of engineering, Center for Power Source Research for Next-Generation Mobility / Professor / Yasuo Moriyoshi
3. Germany / University of Stuttgart / Prof. Michael Bargende
4. 2018 June -
5. In order to reduce fuel consumption rate and exhaust gas emissions from gasoline engines in real driving conditions,

postoxidation in exhaust manifold is enhanced to increase the work by a tubo-charger and the early activation and load reduction of the three-way catalyst. An efficient method to use this phenomenon is examined in this study from both view points of numerical simulation and experiments. The final target is to develop a simulation model to predict this phenomenon quantitatively.

6. Japan-side comes from METI. Germany-side comes from government and industries.
7. A test engine system was completed to realize postoxidation and the phenomenon was examined.
   JSAE technical paper was approved entitiled: Scavenging Phenomena Based Post-oxidation in Exhaust Manifold of a Turbocharged Spark Ignition Engine
8. The first collaborative research fund between Japan and Germany on internal combustion engine

---

1. Photo-functional polymer materials and the mechanical approach in computer chemistry
2. Graduate School of Engineering / Professor / Shigeru Takahara
3. Malaysia / Department of Chemistry, University of Malaya / Prof. Seng Neon Gan, Assoc. Prof. Vannajan Sanghiran Lee
4. 2013.11-
5. Research collaboration of photo-functional polymer materials and the mechanical approach in computer chemistry has been carried out by the exchange of students in the field of Electrospinning method photo-functional dispersants of nanocarbons.
6. （1）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan)（2014）
   （2）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Overseas)（2014）
   （3）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan)（(2015）
   （4）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Overseas)（2015）
   （5）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan)（(2016）
   （6）JASSO Student Exchange Support Program (Scholarship for Short-term Study in Japan and Overseas)（(2018）
7. Main result
   - COMMUNICATIONS AND PAPERS
     (1) Sho Fujisawa, Masumi Yamamoto, Daiki Kashiwai, Pedram Azari, Ying Ying Khaw, Seng Neon Gan, and Shigeru Takahara, Formation behavior of polyiodine complex in photocrosslinked polyvinyl alcohol fiber spun by electrospinning method, J. Photopolym. Sci. Technol., 30(4), 569-574 (2018).
   - CONTRIBUTIONS TO CONFERENCE
     (1) Shigeru Takahara, Sho Fujisawa, Masumi Yamamoto, Daiki Kashiwai, Naoki Iwamura, Yusuke Ema, Yusuke Sato, Masanori Mizukoshi, Tomoki Nagano, Nobuyuki Ichikuni, Pedram Azari, Ying Ying Kha, and Seng Neon Gan, Poly(vinyl alcohol)-Iodine Complex Formation Enhanced by Photo-crosslinking, 5th European Symposium of Photopolymer Science, (ESPS2018), P25, Mulhouse, France (2018)
8. MOU between Chiba University and UM was contracted in 2013.

---

1. Environmental measurement technology development for on-site use
2. Graduate School of Engineering / Associate Professor / Tatsuo Shiina
3. Phillipines / De La Salle University / Professor Cecilia Maria Galvez
4. 2018.4 – (Continue)

5. We focus on the new optical devides' developmet for on-site use. LED mini-lidar and Portable OCT systems are developed to make realize the on-site measurement. Their developmets are conducted in Chiba Univ. and the actual measurements and data analyses are considered in De La Salle Univ.
6. None
7. Conctere lab-to-lab collabolation and student exchange
8. None

1. Image reconstruction technique for cell image by soft X-ray
2. Graduate School of Engineering / Associate Professor / Tatsuo Shiina
3. Mongolia / Mongolian Academy of Science / Jamsranjav Erdenetogtokh
4. 2018.4 – (continue)
5. We developed image reconstruction techniques for cell observation image, which is observed soft X-ray of synchrotron Radiation. Its programming due to the image recnstruction is conducted by Mongolia side, while the synchrotron radiation experiment and cell observation is performed by Chiba univ. side.
6. None
7. Conctere lab-to-lab collabolation and organization of international conference
8. Organization of International Conference NSSE2108

1. Low-altitude atmosphere monitoring by LED mini-lidar
2. Graduate School of Engineering / Associate Professor / Tatsuo Shiina
3. China / Hunn University of Arts and Science / Peng Zigi
4. 2018.4 – (Continue)
5. We develops the specialized LED mini-lidar and collabolate to evaluate the atmosphere environment on China. LED mini-lidar is developed by Chiba univ. and The observation and data analysis is conducted by China side.
6. None
7. Concrete lab-to-lab collabolation
8. None

Graduate School of Horticulture

1. A comparative study of soil microbial biomass dynamics and survival strategies in Northern European, China and Japanese soils
2. Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI
3. UK / AFRC Arable Crop Research Institute Rothamsted Experimental Station / Philip C Brookes
   China / Zhejiang University / Luo Yu
   China / Institute of Subtropical Agriculture, CAS / Jinshui Wu, Tida Ge
4. 1986-
5. Soil microorganisms play important roles in nutrient turnover and food production and even survivals of all livings on the Earth. This study is aimed to evaluate soil microbial biomass and their dynamics in bioelements' turnover by the methods

commonly applicable to Northern European and Japanese soils

6. British Council、Grants-In-Aids (Basic Research (B), 1999-2001)

Chinese Academy of Sciences Visiting Professorship for Senior International Scientists (2015-2018), JSPS Bi-lateral Program

7. Main result

- Brookes, P. C., Inubushi, K., Wu J. and Patra, D. D. (1991) Properties of the soil microbial biomass, Japanese Journal of Soil Science and Plant Nutrition, 62, 79-84
- Inubushi, K., Brookes, P. C. and Jenkinson, D. S. (1991) Measurements of soil microbial biomass C, N and ninhydrin-N in aerobic and anaerobic soils by the fumigation-extraction method, Soil Biology and Biochemistry, 23, 737-741
- Shibahara, F. and Inubushi, K. (1995) Measurements of microbial biomass C and N in paddy soils by the fumigation-extraction method, Soil Science and Plant Nutrition,41,681-689.
- Inubushi, K (ed.) (2001) Microbial Diversity and Environmental Remediation in Biosphere, Chiba University International Symposium, Chiba University, pp. 145.
- Inubushi, K. and Ando, A. (2001) Report of International Symposium, Biodivesity and bioremediation in biosphere, Bioscience and Industry, 59, 61.
- Kanazawa S., et al (ed.) (2002) Nutrient Metabolisms and Bioremediation by Soil Microorganisms, Grant-in-aid Report, Kyushu University, pp.321.
- Inubushi, K. and Acquaye, S. (2004) Role of microbial biomass in biogeochemical processes in paddy soil environments, Soil Science and Plant Nutrition, 50 (6), 793-805
- Inubushi, K., Sakamoto, K., and Sawamoto T. (2005) Properties of microbial biomass in acid soils and their turnover, Soil Science and Plant Nutrition, 51 (5), 605-608
- Tirol-Padre, A., Tsuchiya, K., Inubushi, K., and Ladha, J.K. (2005) Enhancing soil quality through residue management in a rice-wheat system in Fukuoka, Japan. Soil Science and Plant Nutrition, 51 (6) 849-860
- Xu, X, Han, L., Wang, Y., and Inubushi, K. (2007) Influence of vegetation types and soil properties on microbial biomass carbon and metabolic quotients in temperate volcanic and tropical forest soils, Soil Science and Plant Nutrition, 53(4), 430-440
- Ushiwata, S., Sasa, H., and Inubushi, K. (2007) Influence of steam-treated grass clipping on grass growth, drainage water quality and soil microbial properties in a simulation of green course, Soil Science and Plant Nutrition, 53(4), 489-498
- Inubushi, K., Cheng, W., Mizuno, T., Lou, Y., Hasegawa, T., Sakai, H., Kobayashi, K. (2011) Microbial biomass carbon and methane oxidation influenced by rice cultivars and elevated CO2 in a Japanese paddy soil. European J. Soil Sci., 62. (1), 69-73
- Arai, H., Hadi, A., Darung, U., Limin, S. H., Takahashi, H., Hatano, R. and Inubushi, K. (2014) Land use change affects microbial biomass and fluxes of carbon dioxide and nitrous oxide in tropical peatlands, Soil Science and Plant Nutrition 60: 423-434

- Baozhen Li, Tida Ge, He'ai Xiao, Zhenke Zhu, Yong Li, Olga Shibistova, Shoulong Liu, Jinshui Wu, Kazuyuki Inubushi, Georg Guggenberger (2016) Phosphorus content as a function of soil aggregate size and paddy cultivation in highly weathered soils, Environmental Science and Pollution Research, 23 (8) 7494-7503
- Inubushi, K and Nagano, H (2016) Microbial biomass and functions in paddy soil, Chapter, Microbial biomass and turnover in soil, Ed. Kevin Tate, World Scientific, London, 103-117.
- Cong Wang, Jianlin Shen, Hong Tang, Kazuyuki Inubushi, Georg Guggenberger, Yong Li, J. Wu, Greenhouse gas emissions in response to straw incorporation, water management and their interaction in a paddy field in subtropical central China, Archives of Agronomy and Soil Science, 63(2) 171-184 (2017)
- Qunli Shen, Kaile Zhang, Jiuwei Song, Jiaxian Shen, Jianming Xu, Kazuyki Inubushi, Philip C. Brookes, Contrasting biomass, dynamics and diversity of microbial community following the air-drying and rewetting of an upland and a paddy soil of the same type, Biology and Fertility of Soils, (2018 August) https://doi.org/10.1007/s00374-018-1308-3

8. Other important items to be stated
   - Chiba University International Symposium, July 6, 2001
   - Japanese Society of Soil Science and Plant Nutrition, Award, April, 2005; Poster Award, September, 2012

1. Composting of unutilized plant materials and their impacts on soil microbial, chemical and physical properties
2. Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI
3. Nepal / Consultant (Agricultural, Environmental Microbiology) / Dr. Shashi S. Rajbanshi
   India / Haryana Agricultural University / Dr. Sneh Goyal, Prof. K.K.Kapoor, Prof. R.S. Antil, Ankit Singla
   India / Vanarashi Hindu University / Dubey S K
   Malaysia / Putra Malaysia University / Dr. Rosenani Abu Bakar, Dr. Shamshuddin Bin Jusop, Dr. Tan Kee Zuan
   Hungary / Szent István University / Dr. Peter Simandi /
   Hungary / Debrecen University / Prof. Katai Yanos
   Hungary / Hungary Academy of Science, Centre of Agricultural Research / Dr. Szili-Kovacs Tibor
4. 1995-
5. Huge amounts of waist materials are now discharged from urban and agricultural ecosystem and cause serious problems. This study aimed to solve such problem by composting unutilized plant materials and evaluate their impacts on soil microbial, chemical and physical properties and ecosystems.
6. JSPS Bi-lateral Program, Grants-In-Aids (Foreign Researchers・Invited Short-term), Nakajima Fundation, JICA, JASSO, Hangarian Academy of Sciences
7. Main result
   - Rajbanshi, S. S., Endo, H., Sakamoto, K. and Inubushi, K. (1998) Stabilization of chemical and biochemical characteristics of grass straw and leafmix during in-vessel composting with and without seeding material, Soil Science and Plant Nutrition, 44, 485-495.
   - Goyal, S., Inubushi,K., Kato, S., Xu, H.L., and Umemura, H.(1999) Effect of anaerobically fermented manure on the

soil organic matter, microbial properties and growth of spinach under greenhouse conditions, Indian Journal of Microbiology, 39, 211-216.

- Inubushi, K., Goyal, S., Sakamoto, K., Wada, Y., Yamakawa, K. and Arai, T., (2000) Influence of application of sewage sludge compost on N2O production in soils, Chemosphere, 2, 329-334.
- Miyittah, M. and Inubushi, K. (2003) Decomposition and CO2-C evolution of okara, sewage sludge, cow and poultry manure composts in soils, Soil Science and Plant Nutrition, 49(1), 61-68.
- Simandi, P., Takayanagi, M., and Inubushi, K. (2005) Changes in the pH of two different composts are dependent on the production of organic acids, Soil Science and Plant Nutrition, 51 (5), 771-774
- Goyal,S., Sakamoto, K., Inubushi, K. and Kamewada, K. (2006) Long-term effects of inorganic fertilization and organic amendments on soil organic matter and soil microbial properties in Andisols, Archives of Agronomy and Soil Science, 52(6), 617-625
- Goyal,S., Sakamoto, K. and Inubushi, K. (2006) Decomposition of sewage sludge compost and its effect on soil microbial biomass and growth of spinach, Research on Crops, 7(2), 517-521
- Imre, V., Sakamoto, K. and Inubushi, K.（2008）: Selection of root-associated fungal endophytes from Ericaceae plants to enhance blueberry seedling growth, Jpn Soc Soil Sci Plnat Nutr, Abstract, 54， p.57
- Inubushi, K, A. Kawakami, F. Okubo, O. Jumadi, L. Melling, H. Kasai, K. Niida (2009): Greenhouse gases production in oil-palm plantation soil in Indonesia and Malaysia、Jpn Soc Trop Agr, Res for Tropical Agr.、2 (Extra issue 1) p .73-74
- F. Okubo, Inubushi, K, A. Kawakami, O. Jumadi, L. Melling, H. Kasai (2009): Organic matter decomposition and greenhouse gases production in oil-palm plantation soil in Indonesia and Malaysia、Jpn Soc Microbial Ecol、 p .1
- Vano, I., Sakamoto, K. and Inubushi, K.（2009）: Selection of dark septate endophytes from Ericaceae plants to enhance blueberry (Vaccinium corymbosum L.) seedling growth. Abstracts of 7th International Symposium on Integrated Field Science, p.15 (Organized by Field Science Center, Tohoku University and Ecosystem adaptability Global COE, Tohoku University) (October 10-12, 2009, Sendai, JAPAN)
- Silvio Ushiwata, Yoshimiki Amemiya, Kazuyuki Inubushi (Aug. 2009): Inhibition of in vitro growth of Rhizoctonia solani by liquid residue derived from steam-treated grass clippings, Journal of General Plant Pathology 75: 312-315
- Vano I, Sakamoto K, Inubushi K (2010) Selection of dark septate endophytes from Ericaceae plants to enhance blueberry (Vaccinium corymbosum L.) seeding growth. 19th World Congress of Soil Science (WCSS) (August 1-6, 2010, Brisbane, Australia), P-0349. Handbook: 49
- Antil R. S., Nagano H, Kobayashi S, Inubushi K (2010) Effects of organic vs. conventional forming on soil organic matter pools in particle-size fractions. 5th International Nitrogen Conference (Dec.3-7, 2010, New Delhi, India) Abstract: 55
- Ankit Singla, Paroda Shashi, Dhamija Sunder, Goyal Sneh, Shekhawat Kirti, Amachi Seigo, Inubushi Kazuyuki (2012) Bioethanol production from xylose: Problems and possibilities, J Biofuels, 3, 1, 39-49
- Vano Imre, Miwa Matsushima, Changyuan Tang, and Kazuyuki Inubushi (2011) Effect of peat moss and sawdust compost applications on N2O emission and N leaching in blueberry cultivating soil, Soil Science and Plant

Nutrition, 57(2), 348-360

- Kong Y, Nagano H, Kátai, J, Vágó I, Oláh Á Z, Yashima M, Inubushi K (2013) CO2, N2O and CH4 production/consumption potentials of soils under different land-use types in central Japan and eastern Hungary. Soil Sci Plant Nutr 59 (3): 455-462
- Ankit Singla, Suresh K. Dubey, Hirokuni Iwasa and Kazuyuki Inubushi (2013) Nitrous oxide flux from komatsuna (Brassica rapa) vegetated soil: a comparison between biogas digested liquid and chemical fertilizer, Biol Fertil Soils 49:971–976
- Ankit Singla and Kazuyuki Inubushi (2013) CO2, CH4 and N2O production potential of paddy soil after biogas byproducts application under waterlogged condition, International Journal of Agriculture, Environment and Biotechnology 6(2): 233-239
- Ankit Singla and Kazuyuki Inubushi (2014) Effect of biochar on CH4 and N2O emission from soils vegetated with paddy, Paddy Water Environ, 12(1) 239-243
- Ankit Singla and Kazuyuki Inubushi (2014) Effect of biogas digested liquid on CH4 and N2O flux in paddy ecosystem. Journal of Integrative Agriculture 13(3): 635-640
- Ankit Singla, Rosnaeni Sakata, Syunsuke Hanazawa and Kazuyuki Inubushi (2014) Methane production/oxidation potential and methanogenic archaeal diversity in two paddy soils of Japan, International Journal of Ecology and Environmental Sciences (India) 40(1): 49-55
- Ankit Singla, Muhammad Aslam Ali, and Kazuyuki Inubushi (2014) Methane flux from paddy vegetated soil: A comparison between biogas digested liquid and chemical fertilizer, Wetlands Ecology and Management (DOI 10.1007/s11273-014-9365-3
- Ankit Singla, Hirokuni Iwasa, Kazuyuki Inubushi (2014) Effect of biogas digested slurry based-biochar and digested liquid on N2O, CO2 flux and crop yield for three continuous cropping cycles of komatsuna (Brassica rapa var. perviridis), Biology and Fertility of Soils, 50:1201–1209
- Kazuyuki Inubushi, János Kátai, Imre Vágó, Ágnes Zsuposné Oláh, Yuhua Kong, Hirohiko Nagano (2014) Effect of agroecological impacts on carbon and nitrogen dynamics in cropland in Eastern-Hungary and Japan. European Society for Agronomy Ⅷth Congress (August 25-29, Debrecen, Hungary) Programbook, p. 21
- Matyas B, Matyas G, Szendrei M, Singla A, Kong Y, János Kátai, Ágnes Zsuposné Oláh, Inubush K (2015)Development of four-column data storage model for data-manipulation of greenhouse gases and soil properties. Sustainable Agri Res 4 (4) : 115-121
- Singla A, Dubey SK, Ali MA, Inubushi K (2015) Methane flux from paddy vegetated soil: a comparison between biogas digested liquid and chemical fertilizer. Wetlands Ecol Manage 23 : 139-148
- Singh Alpana, Vishwakarma P, Adhya TK, Inubushi K, Dubey S K (2017) Molecular ecological perspective of methanogenic archaeal community in rice agroecosystem, Science of the Total Environment (mini review) 596-597: 136-146.
- Orsolya Gazdag, Ramona Kovacs, Istwan Paradi, Anna Fuzy, László Ködöböcz, Marton Mucsi, Szili-Kovacs Tibor, Kazuyuki Inubushi, Tunde Takacs, Density and Diversity of Microbial Symbionts

under Organic and Conventional Agricultural Management" in its current form for publication in the Microbes and Environments, Microbes and Environments, accepted (2019)

8. Faculty of Horticulture Seminar, Chiba University, July 31, 2004; July 10, 2018

1. Emission and uptake of methane and nitrous oxide in peat wetland and agricultural field in tropical and temperate Asia
2. Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI
3. Indonesia / Lambung Mangkurat University, President / Ir. Muhammad Rasmadi

   Indonesia / Lambung Mangkurat University, Faculty of Agriculture, Lecturer / Abdul Hadi

   Indonesia / Bogor Agricultural University / Daniel Murdiyarso, Iswandi Anas

   Indonesia / Makkasar University / Yusminah Hala

   Indonesia / Research Institute for Agroenvironment / Helena Lina Susilawati, Prihasto Setyanto

   China / Institute of Atmospheric Physics / Xu Xingkai

   Malaysia / Peat Research Institute / Lulie Melling

   Thailand / King Mongkut University / Amnat Chidthaisong

   India / Tamil Nadu Rice Research Institute / V Ravi

   Vietnam / Can Tho University / Tram Kim Tinh
4. 1998-
5. Methane emission from wetland is estimated as 20% of global but accuracy is very low and such estimate for nitrous oxide is not available. This study is to investigate these emissions and their controlling factors in tropical wetland and agricultural field.
6. The Ministry of Environment (via NIAES), JASSO, JSPS Kakennhi (via Miyazaki University)
7. Main results
   - Hadi, A., Inubushi, K., Purnomo, E., Razie, F., Yamakawa, K. and Tsuruta, H. (2000) Effect of land-use changes on nitrous oxide (N2O) emission from tropical peatlands, Chemosphere, 2, 347-358.
   - Hadi, A., Haridi, M., Inubushi, K., Purnomo, E., Razie, F. and Tsuruta, H. (2001) Effects of land-use change in tropical peat soil on the microbial population and emission of greenhouse gases, Microbes and Environments, 16 (2), 79-86
   - Hadi, A. and Inubushi, K. (2001) Applicability of method to measure organic matter decomposition in peat soils, Indonesian Journal of Agricultural Sciences, 1, 25-28
   - Hadi, A., K. Inubushi, E. Purnomo, and H. Tsuruta (2002): Effect of hydrological zone and land-use management on the emissions of N2O, CH4, and CO2 from tropical peatlands, Agroscientiae, 9, 53-60.
   - Xingkai, Xu and K. Inubushi (2004) Effects of N sources and methane concentration on methane uptake potential of a typical coniferous forest and its adjacent orchard soil, Biology and Fertility of Soils, 40, 215-221.
   - Hadi, A., Inubushi, K., Furukawa, Y., Purunomo, E., Rasmadi, M., and Tsuruta, H. (2004): Greenhouse gas emissions from tropical peatlands of Kalimantan, Indonesia, Nutrient Cycling in Agroecosystems, 71, 73-80.
   - Furukawa, Y., Inubushi, K., Ali, M., Itang, AM. and Tsuruta, H. (2005) Effect of changing groundwater levels caused by land-use changes on greenhouse gas emissions from tropical peatlands, Nutrient Cycling in Agroecosystems, 71,

81-91.

- Inubushi, K., Otake, S., Furukawa, Y., Shibasaki, N., Ali, M., Itang, AM. and Tsuruta, H. (2005) Factors influencing methane emission from peat soils: Comparison of tropical and temperate wetlands, Nutrient Cycling in Agroecosystems, 71, 93-99.
- Xu, Xingkai, and Inubushi, K. (2005) Mineralization of nitrogen and N2O production potentials in acid forest soils under controlled aerobic conditions, Soil Science and Plant Nutrition, 51 (5), 683-688.
- Oslan Jumadi, Yusminah Hala, and Inubushi, K. (2005) Production and emission of nitrous oxide and responsible microorganisms in upland acid soil in Indonesia, Soil Science and Plant Nutrition, 51 (5), 693-696
- Murakami, M., Furukawa, Y., and Inubushi, K. (2005) Methane production after liming to tropical acid peat soil, Soil Science and Plant Nutrition, 51 (5), 697-699.
- Ali, M., Taylor, D., and Inubushi, K. (2006) Effect of environmental variations on CO2 efflux from tropical peatland in eastern Sumatra, WETLANDS, 26(2), 612-618

  Zheng X, Zhou Z, Wang Y, Zhu J, Wang Y, Yue J, Shi Y, Kobayashi K, Inubushi K, Huang Y, Han S, Xu Z, Xie B, Butterbach-Bahl K, Yang L (2006) Nitrogen-regulated effects of free-air CO2 enrichment on methane emissions from paddy rice fields. Global Change Biology 12, 1717-1732
- Xu, X., Inubushi, K., and Sakamoto, K. (2006) Effect of vegetations and temperature on microbial biomass carbon and metabolic quotients of temperate volcanic forest soils, Geoderma, 136, 310-319
- Yasuhiko MURAMATSU and Kazuyuki INUBUSHI (2009) Financial Viability and its Analysis of CDM Projects for Mitigation of Methane Emissions from Paddy Fields in Indonesia: A cost-benefit simulation study, HortResearch, 63, 35-43
- Cheng, W., Inubushi, K., Hoque, M.M., Sasaki, H., Kobayashi, K., Yagi, K., Okada, M. and Hasegawa, T. (2008) Effect of elevated [CO2] on soil bubble and CH4 emission from a rice paddy: A test by 13C pulse-labeling under free-aid CO2 enrichment. Geomicrobiology Journal, 25(7-8)：396-403, 2008
- Yunsheng LOU*, Kazuyuki INUBUSHI , Takayuki MIZUNO, Toshihiro HASEGAWA, Yanhung LIN, Hidemitsu SAKAI, Weiguo CHENG and Kazuhiko KOBAYASHI (2008) CH4 emission with differences in atmospheric CO2 enrichment and rice cultivars in a Japanese paddy soil, Global Change Biology 14：2678–2687.
- Xu X and Inubushi K (2009): Responses of ethylene and methane consumption to temperature and soil pH in temperate volcanic forest soils, European Journal of Soil Science 60：489-498
- Xu X K,and Inubushi K. (2009) Ethylene oxidation, atmospheric methane consumption, and ammonium oxidation in temperate volcanic forest soils. Biology and Fertility of Soils, 45：265-271
- Xu X and Inubushi K (2009) Soil acidification stimulates the emission of ethylene from temperate forest soils, Advances in Atmospheric Sciences, 26(6), 1253-1261.
- Hadi A. and Inubushi K (2010) Comparison of greenhouse gas dynamics in sandy paddy soil and other soils, Seminar in Coastal Sandy Lands. Gajah Mada University, Indonesia, February 13-17, abstract.
- Inubushi K, Saito H, Nishitsuji J, Arai H, Iswandi A, Hadi A, Makarim K, Setyanto P, Suralta R, Constancio A (2010) Propaties regulating methane production in Southeast Asian paddy soils-1, JSSPN Annual Meeting

Abstract: 188

- Saito H, Nishitsuji J, Arai H, Inubushi K, Suphachai A, Smakgahn K, Patcharee S, Duangsamorn T, Amnat C (2010) Propaties regulating methane production in Southeast Asian paddy soils-2, JSSPN Annual Meeting Abstract：188
- Nishitsuji J, Saito H, Inubushi K, Thanh Nguyen Huu, Ha Tran Thi Le, Ha Pham Quang, Thang Vu, Cong Phan Thi, Quynh Nguyen Thi, Tinh Tran Kim (2010) Propaties regulating methane production in Southeast Asian paddy soils-3, JSSPN Annual Meeting Abstract：188
- Abdul Hadi, Luthfi Fatah, Dedi Nursyamsi Affandi, Rosenani Abu Bakar and Kazuyuki Inubushi (2012) Population and Genetic Diversities of Bacteria Related to Nitrous Oxide and Methane in Peat Soils of South Kalimantan, Indonesia, Malaysian J Soil Sci, 16, 121-135
- Abdul Hadi, Luthfi Fatah, Syaifuddin, Abdullah, Dedi Nursyamsi Affandi, Rosenani Abu Bakar and Kazuyuki Inubushi (2012) Greenhouse Gas Emissions from Peat Soils Cultivated to Rice Field, Oil Palm and Vegetable, J Trop Soils (Indonesia), 17, 2, 105-114
- Jumadi O and Inubushi K (2012) Methane and Nitrous Oxide Productions and Community Structure of Methanogenic Archaea in Paddy Soil of South Sulawesi, Indonesia, Microbiology Indonesia, 6(3), 98-106
- Jumadi Oslan, Alimuddin Ali, Yusminah Hala, Abd. Muis, Kazuyuki Yagi and Kazuyuki Inubushi (2012) Effect of controlled water level on CH4 and N2O emissions from rice fields in Indonesia, Tropical Agriculture and Development, 56(4), 129-138
- Arai, H., Hadi, A., Darung, U., Limin, S. H., Hatano, R. and Inubushi, K. (2014) A methanotrophic community in a tropical peatland is unaffected by drainage and forest fires in a tropical peat soil, Soil Science and Plant Nutrition 60: 577-585
- Yusminah HALA, Oslan JUMADI, Abd. MUIS, HARTATI and Kazuyuki INUBUSHI (2014) Development of urea coated with neem (Azadirachta indica) to increase fertilizer efficiency and reduce greenhouse gases emission , Jurnal Teknologi (Sciences and Engineering) (Indonesia), 69(5), 11-15
- Oslan JUMADI, St. Fatmah HIOLA, Yusminah HALA, Jeanette NORTON and Kazuyuki INUBUSHI (2014) Influence of Azolla (Azolla microphylla Kaulf.) compost on biogenic gas production, inorganic nitrogen and growth of upland kangkong (Ipomoea aquatic Forsk.) in a silt loam soil, Soil Science and Plant Nutrition 60: 722-730
- Sakata R, Shimada S, Arai, H, Yoshioka N, Yoshioka R, Aoki H, Kimoto N, Sakamoto A, Melling L, Inubushi K (2015) Effect of soil types and nitrogen fertilizer on nitrous oxide and carbon dioxide emissions in oil palm plantations, Soil Sci. Plant Nutr. 61: 48-60
- Hanpattanakit P, Leclerc M Y, Mcmillan A M S, Limtong P, Maeght J L, Panuthai S, Inubushi K, Chidthaisong A (2015) Multiple timescale variations and controls of soil respiration in a tropical dry dipterocarp forest, western Thailand. Plant and Soil, 390 : 167-181
- Susilawati H L, Setyanto P, Makarim A K, Ariani M, Ito K , Inubushi K (2015) Effects of steel slag applications on CH4, N2O and the yields of Indonesian rice fields: a case study during two consecutive rice-growing seasons at two sites. Soil Sci. Plant Nutr. 61: 704-718
- Arai H, Hosen Y, Hongvan N P, Nga T T, Chiem N H, Inubushi K (2015) Greenhouse gas emissions from rice straw

burning and straw-mushroom cultivation in a triple rice cropping system in the Mekong Delta. Soil Sci. Plant Nutr. 61 : 719-735

- Ali M A, Kim P J, Inubushi K (2015) Mitigating yield-scaled greenhouse gas emissions through combined application of soil amendments: A comparative study between temperate and subtropical rice paddy soils, Science of the Total Environment. 529 : 140-148
- Helena Lina Susilawati, Prihasto Setyanto, Miranti Ariani, Anggri Hervani & Kazuyuki Inubushi, Influence of water depth and soil amelioration on greenhouse gas emissions from peat soil columns, Soil Sci. Plant Nutr., 62: 57-68 (2016)
- Hironori Arai, Ryo Yoshioka, Syunsuke Hanazawa, Vo Quang Minh, Vo Quoc Tuan, Tran Kim Tinh, Truong Quoc Phu, Chandra Shekhar Jha, Suraj Reddy Rodda, Vinay Kumar Dadhwal, Masayoshi Mano & Kazuyuki Inubushi, Function of the methanogenic community in mangrove soils as influenced by the chemical properties of the hydrosphere, Soil Science and Plant Nutrition, 2016, 62:150-163, doi.org/10.1080/00380768.2015.1107459
- Sakata R, Shimada S, Yoshioka N, Yoshioka R, Aoki H, Kimoto N, Sakamoto A, Inubushi K (2016) Effect of topography on N_2O and CO_2 emissions and dissolved N_2O in oil palm plantation in Riau, Indonesia. Trop Agr Develop 60 (4) : 226-235
- Kazuyuki Inubushi, Hiroki Saito, Hironori Arai, Kimio Ito, Koichi Endoh and Miwa M. Yashima, Effect of oxidizing and reducing agents in soil on methane production in Southeast Asian paddies, *Soil Sci Plant Nutr.*, 64:1, 84-89.
- Hironori Arai, Wataru Takeuchi, Kei Oyoshi, Lam Dao Nguyen and Kazuyuki Inubushi (2018) Estimation of Methane Emissions from Rice Paddies in the Mekong Delta Based on Land Surface Dynamics Characterization with Remote Sensing, Remote Sens. 2018, 10, x; doi: www.mdpi.com/journal/remotesensing

8. Oze Award, June 2004

1. Methane and nitrous oxide production and consumption in tropical agriculture
2. Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI
3. Indonesia / Bogor Agricultural University / Daniel Murdiyarso / Iswandi Anas
   Indonesia / Makkasar State Ubiversity / Yusminah Hala / Oslan Jumadi
   Indonesia / Agroenvironmental Research Institute / Setyanto P, Makarim A K
   Thailand / King Mongkut'sUniversity / Amnat Chidthaisong
   China / Chinese Academy of Science, Institute of Atmospheric Physics / Xu Xingkai
   India / Tamil Nadu Agriculture University, Tamil Nadu Rice Research Institute / V. Ravi
4. 1998-
5. About 15% of global methane emission is derived from paddy field, but not so acculate estimated and no estimate available for N_2O emission. In this study, we aimed to measure these gas emissions and also investigated the effect of elevated CO2 concentration and ethylene, land-use change on the dynamics for these gasese in soil.
6. The Ministry of Environment (via NIAES and Nara Women's University), Grants-In-Aids (Foreign Researchers・Post

doctoral fellowship)

7. Main results

- Xingkai, Xu and K. Inubushi (2004) Effects of N sources and methane concentration on methane uptake potential of a typical coniferous forest and its adjacent orchard soil, Biology and Fertility of Soils, 40, 215-221.
- Furukawa, Y., Inubushi, K., Ali, M., Itang, AM. and Tsuruta, H. (2005) Effect of changing groundwater levels caused by land-use changes on greenhouse gas emissions from tropical peatlands, Nutrient Cycling in Agroecosystems, 71, 81-91.
- Inubushi, K., Otake, S., Furukawa, Y., Shibasaki, N., Ali, M., Itang, AM. and Tsuruta, H. (2005) Factors influencing methane emission from peat soils: Comparison of tropical and temperate wetlands, Nutrient Cycling in Agroecosystems, 71, 93-99.
- Xu, Xingkai, and Inubushi, K. (2005) Mineralization of nitrogen and N2O production potentials in acid forest soils under controlled aerobic conditions, Soil Science and Plant Nutrition, 51 (5), 683-688.
- Oslan Jumadi, Yusminah Hala, and Inubushi, K. (2005) Production and emission of nitrous oxide and responsible microorganisms in upland acid soil in Indonesia, Soil Science and Plant Nutrition, 51 (5), 693-696
- Murakami, M., Furukawa, Y., and Inubushi, K. (2005) Methane production after liming to tropical acid peat soil, Soil Science and Plant Nutrition, 51 (5), 697-699.
- Ali, M., Taylor, D., and Inubushi, K. (2006) Effect of environmental variations on CO2 efflux from tropical peatland in eastern Sumatra, WETLANDS, 26(2), 612–618
- Zheng X, Zhou Z, Wang Y, Zhu J, Wang Y, Yue J, Shi Y, Kobayashi K, Inubushi K, Huang Y, Han S, Xu Z, Xie B, Butterbach-Bahl K, Yang L (2006) Nitrogen-regulated effects of free-air CO2 enrichment on methane emissions from paddy rice fields. Global Change Biology 12, 1717-1732
- Xu, X., Inubushi, K., and Sakamoto, K. (2006) Effect of vegetations and temperature on microbial biomass carbon and metabolic quotients of temperate volcanic forest soils, Geoderma, 136, 310-319
- Lou, Yunsheng, Mizuno, T., Kobayashi, K., Okada, M., Hasegawa, T., Hoque, M.M., and Inubushi, K. (2006) CH4 production potential in a paddy soil exposed to atmospheric CO2 enrichment, Soil Sci. Plant Nutr., 52, 769-773
- Lou Yunsheng, Ren Lixuan, Li Zhongpei, Zhang Taolin and Inubushi, K. (2007) Effect of rice residues on carbon dioxide and nitrous oxide emissions from a paddy soil of subtropical China, Water Air Soil Pollution, 178, 157-167
- Xu X., Han, L., Wang, Y., and Inubushi, K. (2007) Influence of vegetation types and soil properties on microbial biomass carbon and metabolic quotients in temperate volcanic and tropical forest soils, Soil Sci. Plant Nutr., 53(4), 430-440
- Khalil, M.L. and Inubushi, K. (2007) Possibilities to reduce rice straw-induced global warming potential of a sandy paddy soil by combining hydrological manipulations and urea-N fertilizations, Soil Biol. Biochem., 39, 2675-2681
- Xu X and Inubushi K. (2007) Production and consumption of ethylene in temperate volcanic forest surface soils, European Journal of Soil Science, 58, 668–679
- Xu X., Inubushi, K. (2007) Effects of nitrogen sources and glucose on the consumption of ethylene and methane by temperate volcanic forest surface soils, Chinese Science Bulletin, 52 (23):3281-3291

- Oslan J., Yusminah H., Abd. M., Alumuddin A., Muhiddin P., Yagi, K. and Inubushi, K. (2008) Influences of chemical fertilizers and a nitrification inhibitor on greenhouse gas fluxes in a corn (Zea mays L.) field in Indonesia, Microbes Environ., 23(1), 29–34
- Cheng, W., Inubushi, K., Hoque, M.M., Sasaki, H., Kobayashi, K., Yagi, K., Okada, M. and Hasegawa, T. (2008) Effect of elevated [CO2] on soil bubble and CH4 emission from a rice paddy: A test by 13C pulse-labeling under free-aid CO2 enrichment. Geomicrobiology Journal, 25(7-8):396–403, 2008
- Yunsheng LOU*, Kazuyuki INUBUSHI , Takayuki MIZUNO, Toshihiro HASEGAWA, Yanhung LIN, Hidemitsu SAKAI, Weiguo CHENG and Kazuhiko KOBAYASHI (2008) CH4 emission with differences in atmospheric CO2 enrichment and rice cultivars in a Japanese paddy soil, Global Change Biology 14: 2678–2687.
- Xu X and Inubushi K (2009): Responses of ethylene and methane consumption to temperature and soil pH in temperate volcanic forest soils, European Journal of Soil Science 60： 489–498
- Xu X and K, Inubushi K. (2009) Ethylene oxidation, atmospheric methane consumption, and ammonium oxidation in temperate volcanic forest soils. Biology and Fertility of Soils, 45：265-271
- Xu X and Inubushi K (2009) Soil acidification stimulates the emission of ethylene from temperate forest soils, Advances in Atmospheric Sciences, 26(6), 1253-1261.
- Hadi A. and Inubushi K (2010) Comparison of greenhouse gas dynamics in sandy paddy soil and other soils, Seminar in Coastal Sandy Lands. Gajah Mada University, Indonesia, February 13-17, abstract.
- Jumadi O and Inubushi K (2012) Methane and Nitrous Oxide Productions and Community Structure of Methanogenic Archaea in Paddy Soil of South Sulawesi, Indonesia, Microbiology Indonesia, 6(3), 98-106
- Jumadi Oslan, Alimuddin Ali, Yusminah Hala, Abd. Muis, Kazuyuki Yagi and Kazuyuki Inubushi (2012) Effect of controlled water level on CH4 and N2O emissions from rice fields in Indonesia, Tropical Agriculture and Development, 56(4), 129-138
- Yusminah HALA, Oslan JUMADI, Abd. MUIS, HARTATI and Kazuyuki INUBUSHI, Development of urea coated with neem (Azadirachta indica) to increase fertilizer efficiency and reduce greenhouse gases emission , Jurnal Teknologi (Sciences and Engineering) (Indonesia), 69(5), 11-15 (2014)
- Oslan JUMADI, St. Fatmah HIOLA, Yusminah HALA, Jeanette NORTON and Kazuyuki INUBUSHI, Influence of Azolla (Azolla microphylla Kaulf.) compost on biogenic gas production, inorganic nitrogen and growth of upland kangkong (Ipomoea aquatic Forsk.) in a silt loam soil, Soil Science and Plant Nutrition 60: 722-730 (2014)
- Hanpattanakit P, Leclerc M Y, Mcmillan A M S, Limtong P, Maeght J L, Panuthai S, Inubushi K, Chidthaisong A (2015) Multiple timescale variations and controls of soil respiration in a tropical dry dipterocarp forest, western Thailand. Plant and Soil, 390 : 167-181
- Susilawati H L, Setyanto P, Makarim A K, Ariani M, Ito K , Inubushi K (2015) Effects of steel slag applications on CH4, N2O and the yields of Indonesian rice fields: a case study during two consecutive rice-growing seasons at two sites. Soil Sci. Plant Nutr. 61: 704-718
- Arai H, Hosen Y, Hongvan N P, Nga T T, Chiem N H, Inubushi K (2015) Greenhouse gas emissions from rice straw burning and straw-mushroom cultivation in a triple rice cropping system in the Mekong Delta. Soil Sci. Plant Nutr.

61 : 719-735

- Ali M A, Kim P J, Inubushi K (2015) Mitigating yield-scaled greenhouse gas emissions through combined application of soil amendments: A comparative study between temperate and subtropical rice paddy soils, Science of the Total Environment. 529 : 140-148
- Aung Zaw Oo, Shigeto Sudo, Kazuyuki Inubushi, Masayoshi Mano, Akinori Yamamoto, Keitsuke Ono, Takeshi Osawa, Sachiko Hayashida, Prabir K. Patra, Yukio Terao, P. Elayakumar, K. Vanitha, C. Umamageswari, P. Jothimani, V. Ravi, Methane and nitrous oxide emissions from conventional and modified rice cultivation systems in South India, Agriculture, Ecosystems and Environment, 252: 148-158 (2017)
- Oo, Aung, S. Sudo, K. Inubushi, U. Chellappan, A. Yamamoto, K. Ono, M. Mano, S. Hayashida, V.Koothan, T. Osawa, Y. Terao, J. Palanisamy, E. Palanisamy, R. Venkatachalam 2018, Mitigation Potential and Yield-Scaled Global Warming Potential of Early-Season Drainage from a Rice Paddy in Tamil Nadu, India. Agronomy. 8. 202. 10.3390/agronomy8100202 (2018)

8. Oze Award, June 2004

1. Paleoecosystem in "Arkaim" Ecopreserve and Protection of Boreal Ecosystem in Central South Ural, Russia and Alaska, USA
2. Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI, / Lecturer / Miwa YASHIMA
3. Russia / Institute of Physicochemical and Biological Problems in Soil Science (IPBPSS), Russian Academy of Sciences / Professor / PRIKHODKO, Valentina et al.

   Russia / Moscow State University / Scientific officer, Manakhov Dmitry Valentinovich et al.

   Russia / Chelyabisk State University / Professor, Zdanovich Gennady Borisovich et al.

   USA / Alaska State University / Yongwon Kim et al.
4. 2009-
5. Reconstruction of ecological conditions of unique civilization of Bronze Age and conservation of nature and soils and other natural components on the boundary of Europe and Asia. The project is devoted to solution of the fundamental problem – reconstruction of ecological conditions of Bronze Age, conservation of unique paleoworld, saving and recovery of soils and other natural components in reserve regime.
6. JSPS and RFBR (Russian Foundation of Basic Research) Joint Research Program 2009-2010, Kakennhi Challanging Fund 2016-2017
7. Main result
   - Susumu Okitsu, Valentina E. Prikhodko, Miwa Matsushima and Kazuyuki Inubushi (2009); Vegetation landscape in Arkaim and surround area, south Urals, The Soc Vegetation, Tottori.
   - Hirohiko Nagano, Ikumi Utsugi, Mai Adachi, Fumina Okubo, Satoshi Horaguchi, Miwa Matsushima, Susumu Okitsu, Valentina E. Prikhodko, Elena Manakhova, Gennady B.Zdanovich, Dmitry G. Zdanovich, So Sugihara, Shinya Funakawa, Masayuki Kawahigashi and Kazuyuki Inubushi (2010): Biological aspects of soils in Arkaim and surround area, south Urals, Russia, World Congress of Soil Science, Brisbane, , P-0926, Handbook: 70

- Nagano H, Sugihara S, Matsushima M, Prikhodko V,E, Manakhova E, Zdanovich G,B, Zdanovich D, G, Funakawa S, Kawaguchi M, Inubushi K (2010) Microbial biomass and greenhouse gas fluxes of Eurasian steppe soils with different land-use histories located in Arkaim of south Urals, Russia,. JSSPN Annual Meeting Abstract: 179
- Susumu Okitsu, Valentina E. Prikhodko, Miwa Matsushima, and Kazuyuki Inubushi (2011) Vegetation landscape around the Arkaim eco-preserve, southeastern Ural, Russia, HortResearch, 65, 97-101
- Hirohiko Nagano, Soh Sugihara, Miwa Matsushima, Susumu Okitsu, Valentina E. Prikhodko, Elena Manakhova, Gennady B. Zdanovich, Dmitry V. Manakhov, Igor V. Ivanov, Shinya Funakawa, Masayuki Kawahigashi, and Kazuyuki Inubushi (2012) Carbon and nitrogen contents and greenhouse gas fluxes of the Eurasian steppe soils with different land-use histories located in the Arkaim museum reserve of South Ural, Russia, Soil Sci. Plant Nutr., 58(2) 238-244
- Prikhodko, V.E., Ivanov, I.V., Zdanovich, D.G., Zdanovich, G.B., Manakhov, D.V. and Inubushi, K. (2014) The Bronze Age fortified settlement of the steppe Trans-Ural: soil-archaeological research. Institute of Physicochemical and Biological Problems in Soil Science RAS, Moscow, Typography RAAS, 4.2 pp.49-76, 6.4 pp.196-207
- Inubushi K, Prikhodko V E, Nagano Kh, Manakhov D V (2015) Carbon and nitrogen compounds and emission of greenhouse gases in ancient and modern soils of the arkaim reserve in the steppe trans-ural region. Eurasian Soil Sci. 48 (12) : 1306-1316
- Hirohiko NAGANO, Yongwon Kim, Bang-Yong Lee, Haruka Shigeta, Kazuyuki INUBUSHI, Laboratory examination of greenhouse gaseous and microbial dynamics during thawing of frozen soil core collected from a black spruce forest in Interior Alaska, *Soil Sci. Plant Nutr.*, 64(5) 793-801 (2018)

8. Joint Seminar；November 9, 2009 in Chiba University and November 11, 2009, in Nihon University

1. Ecophysiological diversity of water convolvulus (*Ipomoea aquatica* Forsk.) strains
2. Graduate School of Horticulture / Professor / Michiko Takagaki
3. Thailand / Faculty of Agriculture, Kasetsart University / Pariyanuj Chulaka
   Thailand / BIOTEC / C. Kirdmanee
4. From 2000 to date
5. An aquatic vegetable (*Ipomoea aquatica* Forsk.) is used in a tropical region for long time. There are a lot of uncertain points of the characteristic. There are inherited varieties among the strains; color of the stem or shape of the leaf. It is assumed that the color of the stem is green in the cultivation strains and red in the wild strains. There are a lot of unknown parts of the inherited difference and the characteristic

   From our current investigation, it has become clear that there are many cultivation methods of *Ipomoea aquatica* Forsk in Southeast Asia. In floating cultivation on the river or the canal, it has grown by minerals in water of river or canal. It can make a special mention of the high nutrient absorption ability of *Ipomoea aquatica* Forsk compared with other leafy vegetables. We collect many strains of *Ipomoea aquatica* Forsk in Thailand

   Differences of the physiological and ecological characteristic among strains are investigated. At the same time, selection of the strains which have high nutrient absorption ability or stress tolerance and analysis of genetic variability among strains are done

6. Heiwa Nakajima Foundation (Aids for the Academic Research in Asia Region), 2002

JSPS Grants-in-Aid for Scientific Research (B) 2006-2009.

7. 1) Cultivation methods of water convolvulus in Thailand. Jap. J. Tropic. Agric., 45 (ext.1) 11-12. 2001

2) The lowest limiting concentration of the nutrient solution that could be absorbed by the water convolvulus. Proceedings of annual meeting of the societies for Agricultural Environmental Engineering: 220. 2001

3) Genetic variability of water convolvulus (*Ipomoea aquatica* Forsk.) in Thailand, Jap. J. Tropic. Agric., 45 (ext.2) 105-106. 2001

4) Growth of *Ipomoea aquatica* Forsk. strains under different concentrate on of nutrient solution, Jap. J. Tropic. Agric., 45 (ext.2) 107-108. 2001

5) Relations between leaf color or N contents of *Ipomoea aquatica* Forsk. strains and mineral contents of water, Jap. J. Tropic. Agric., 45 (ext.2) 3-4 2002

6) Morphological variability of *Ipomoea aquatica* Forsk strains, J. Tropic. Agric., 46(ext.1) 1-2 2002

7) Flowering variability of *Ipomoea aquatica* Forsk strains, J. Tropic. Agric., 47(ext.1) 33-34 2003

8) In vitro selection of *Ipomoea aquatica* Forsk. strains, Proceedings of annual meeting of the societies for Agricultural Environmental Engineering：315. 2003

9) Variability of shoot growth rate under low temperature of *Ipomoea aquatica* Forsk. strains, J. Tropic. Agric., 48(ext. 2):49-50, 2004

10) Comparison of photoperiodic responsibility of water convolvulus (*Ipomoea aquatica* Forsk.) and sweet potato (Ipomoea batatas Poir.), The First Int. Symposium on Water Convolvulus, KU, Bangkok, Thailand, 27.2005

11) Geographical distribution of water convolvulus in west Africa, The First Int. Symposium on Water Convolvulus, KU, Bangkok, Thailand, 28. 2005

12) An effective in vitro selection of water spinach for NaCl-, KH_2PO_4- and temperature-stresses, Environ. Control in Biol. 44(4): 265-277, 2006

13) A rapid method for identifying salt tolerant water convolvulus (*Ipomoea aquatica* Forsk) under in vitro photoautotrophic conditions, Plant Stress, 1(2): 228-234, 2007

14) Improving Water Quality by Using Plants, with Water Convolvulus (*Ipomoea aquatica* Forsk.) as a Model, Acta Horticulturae, 797: 455-460, 2008

15) Foliar paclobutrazol application promotes photosynthetic abilities and growth performances and calcium ion levels, in salt-stressed water spinach (*Ipomoea aquatica*), Acta Hortic. 1206. ISHS 2017., 291-298, 2018

16) Growth and nutrient level of water spinach *(Ipomoea aquatica* Forssk.) in response to LED light quality in a plant factory, Acta Hortic., DOI: 10.17660/ActaHortic.2018.1227.83., 2018

17) Regulation on anthocyanins, α-tocopherol and calcium in two water spinach (*Ipomoea aquatica*) cultivars by NaCl salt elicitor, Scientia Horticultuae, 249:390-400, 2018

8. None

1. Nutrient dynamics of vegetable cropping systems around Bangkok.

2. Graduate School of Horticulture / Professor / Michiko Takagaki

3. Thailand / Faculty of Agriculture, Kasetsart University / Pariyanuj Chulaka, Spachai Aumka

4. From 2000 to date

5. After Green Revolution, amount of chemical or organic fertilizers applied to the vegetable fields in Tropical region is increased. Application amounts are too big and percentage of release to outside of field systems might be big. These are causes of water pollutions in river, canal or pond. Object of this project is to know N, P flow in field system. We select five cropping system in Supanburi province and collect data about field management and N, P contents in water and soil in the fields to know the environmental friendly system.

6. JSPS Aids for the Academic Research in Asia Region, 2002-04.

7. Main result

(1) The lowest limiting concentration of the nutrient solution that could be absorbed by the water convolvulus. Proceedings of annual meeting of the societies for Agricultural Environmental Engineering: 220. 2001.

(2) Growth of Ipomoea aquatica Forsk. strains under different concentration of nutrient solution, Jap. J. Tropic. Agric., 45 (ext.2) 107-108. 2001

(3) Relations between leaf color or N contents of Ipomoea aquatica Forsk. strains and mineral contents of water, Jap. J. Tropic. Agric., 45 (ext.2) 3-4、2002

(4) Effects of mineral contents of water on those of Ipomoea aquatica Forsk Strains leaves, J. Tropic. Agric., 47(ext.1) 31-32、2003

(5) Effect of Nitrogen Fertilizer Amount on Early Growth of Leafy Vegetable in Thailand, Jap. J. Tropic. Agric., 50(3):127-132., 2006.

(6) Effects of Controlled-Release Nitrogen Fertilizer Application on Nitrogen Uptake by a Leafy Vegetables (Brassica campestris L.), Nitrate Leaching and N2O Emission, , Jap. J. Tropic. Agric., 51(4):152-159, 2007.

(7) Tatsushi TSUBOI, Godfrey ASEA, Atsushi MARUYAMA, Shunsuke MATSUMOTO, Kisho MIYAMOTO, Akio GOTO, Ecaat S. JUSTIN, Kazuyuki INUBUSHI, Ryoichi IKEDA, Michiko TAKAGAKI, Atsushi YOSHIMURA, Masao KIKUCHI, Effects of Rainfall, Continuous Cropping, and Fertilizer on Yield and Yield Components of an Upland NERICA Variety: A Statistical Analysis of a Long-term Field Experiment in Uganda, Tropical Agriculture and Development, 62(2): 78-93 (2018)

8. None

1. Marketing Strategy for Sustainable Agri-tourism

2. Graduate School of Horticulture / Professor / Yasuo Ohe

3. Italy / Faculty of Agriculture / Professor Adriano Ciani

4. 1998-

5. Objectives: In the developed countries, environmental friendly and local resource-using agri-tourism has been advocated to cope with serious depopulation of rural areas. Since establishment of marketing strategy is a curial point for sustainable agri-tourism, we need to collaborate on this field to find effective measures for the sustainable rural development.

Details: Through bilateral exchange of researchers, optimum marketing strategy will be clarified and give future directions for Japanese agri-tourism.

Forms: Exchange of researchers, joint survey analysis, and joint presentation at international meetings, finally joint publication of the research output.

6. Grant aids to joint presentation in the 99 International Farm Management Congress, Durban, 1999.

Research fellowship from Japan Society for the Promotion of Science in 2000.

Grant-in-Aid for Scientific Research since 2001-2014.

Agriculture, Forestry and Fishery Policy Science Research Project since 2015-2017.

Grant-in-Aid for Scientific Research (A) since 2018-2022.

7. Main result

- Ohe, Y. and A. Ciani (1999): Activities of Farm Tourism and Attitudes of the Operators: Japan-Italy Comparison, P. Simms
- Eds. Proceedings of the 12th International Farm Management Congress, 801-811, Durban.

  Yasuo Ohe and Adriano Ciani, Characteristics and Activities of Agri-tourism farms in Umbria, Italy, Ixth European of Agricultural Economists, poster paper, 1999.
- Ohe, Y. and Ciani, A. (1999): Characteristics and Activities of Agri-tourism Farms in Umbria, Italy, Ixth European of Agricultural Economists, poster paper
- Ohe,Y and A. Ciani (2000): On-farm Tourism Activity and Attitudes of the Operations: A Hiroshima-Umbria Comparative Case Study, The Technical Bulletin of Faculty of Horticulture, Chiba University, No.54, 73-80.
- Ohe, Y. (2003): Multifunctionality and Farm Diversification: A Case of Rural Tourism, 14th International Farm Management Congress, Proceedings CD-ROM, 761-768.
- Ohe, Y. and A. Ciani (2003): Evolutionary Process of Agri-toursim in Cetral Italy, Umbria, Japanese Journal of Tourism Studies, 2, 11-18.
- Ohe, Y. and A. Ciani (2005): Evaluating diversification of agri-tourism in Umbria, Italy, Japanese Journal of Farm Management, 43(1), 124-127.
- Ohe, Y. and Ciani, A. (2010): The demand trend of Italian agritourism, Brebbia, C.A. & Pineda, F.D. (Eds), Sustainable Tourism IV, Southampton: WIT Press, 437-448.
- Ohe, Y. and Ciani, A. (2011): Evaluation of agritourism activity in Italy: facility based or local culture based? Tourism Economics, 17(3), 581-601.
- Ohe, Y. and Ciani, A. (2012): Accessing demand characteristics of Agritourism in Italy, Tourism and Hospitality Management, 18(2), 281-296.
- Ohe, Y. (2014) Accessing Revision of Agritourism Law in Italy, 106th Annual Conference of Japan Tourism Association Proceedings, 10-11.
- Ciani, A., Rocchi, L., Paolotti, L., Diotallevi, F., Guerra, J B., Fernandez, F. Suni, A., Edwin, G.A., Muthu, N., Ohe, Y., and Grigore, A.-M. (2014) Corporate Social Responsibility (CSR): A Cross-Cultural Comparison of Practices, R. Wolf, T. Issa and M. Thiel (Eds.) Empowering Organizations through Corporate Social Responsibility, IGI Global, 73-96.

8. Other important items to be stated

- Keynote and invited speakers at the International Seminar on Italian Agritourism in Tokyo in 2001.
- Invited speakers at Seminar on Agritourism in Italy organized by Italian Embassy in Japan in 2002.
- Invited speakers at Seminar on Sustainable Rural Development held at Tirana Agricultural University in Tirana, Albania.
- Invited speakers at Seminar on Multifunctionality and agri-tourism held at Perugia University, Italy in September, 2006.
- Invited speaker at the international conference 'Quale Strategia per Lo Sviluppo Sostenibile? , Perugia, Italy in5 September, 2009.
- Invited speaker at the 4th International Conference on Sustainable Tourism, New Forest, UK July 5-7, 2010. The title : The demand trend of Italian agritourism.'
- Invited speaker at International Summer School at Todi, Italy organized by A. Ciani, 11-14 September, 2011, 24 August- 2 September, 2012, 31 August-6 September, 2015.
- Invited speaker at Conference Sustainable Tourism: Why, What, Who? at Perugia, Italy organized by A. Ciani, 10 October, 2014.
- Invited speaker at 7th International Summer School at Montecasterilli, Italy organized A. Ciani, 10 September, 2017.
- Invited speaker at Conferenza Internationale Pace, Turismo, Sviluppo Sostenibile at Perugia, Italy Organized by A. Ciani, 4 September, 2018

1. Study on the physiological active substances and aroma volatile biosynthesis in fruit
2. Graduate School of Horticulture / Professor / Satoru Kondo
3. The United State of America / United State of Department of Agriculture / Senior Researcher / Dr. James Mattheis
4. 2004-
5. Aroma volatile is a kind of important factor to decide the fruit quality. Physiological active substances can promote or inhibit fruit ripening and aroma volatile production. However, the effects of physiological active substances on volatile compounds are unclear.
6. Grant-in-Aid for Scientific Research; Hiroshima Prefectural University
7. Main result
   - Kondo, S., J. P. Mattheis et al. 2005. Aroma volatile biosynthesis in apples affected by 1-MCP and methyl jasmonates. Postharvest Biol. Technol. 36:61-68.
   - Kondo, S., J. P. Mattheis et al. 2006. Aroma volatile emission and expression of 1-aminocyclopropane-1-carboxylate (ACC) synthase and ACC oxidase genes in pears treated with 2,4-DP. Postharvest Biol. Technol. 41:22-31.
   - Aroma volatile biosynthesis in apples at harvest or after harvest affected by jasmonates. 2006. Kondo, S.and J. Mattheis. Acta Hort. 712: 381-388.
8. Kondo S. Invited speaker at the international symposium on plant growth regulators in fruit production (Mexico, June, 2005)

1. Roles of jasmonates in fruit trees
2. Graduate School of Horticulture / Professor / Satoru Kondo

3. Italy / Bologna University / Professor / Dr. Guglielmo Costa; Dr. Patrizia Torrigiani
4. 2006-
5. Physiological active substance, jasmonates influence tree or fruit physiology including coloring of the skin, fruit ripening, flower bud formation, and dormancy. This study investigates the metabolism and physiology of jasmonates in the fruit and tree.
6. Bologna University
7. Main result
   - Ziosi, V..Torrigiani, P., G. Costa, S. Kondo et al. 2008. Jasmonates-induced transcriptional changes suggest a negative interference with the ripening syndrome in peach fruit. Journal of Experimental Botany 59:563-573.
   - Kondo, S. Roles of jasmonates in fruit ripening and environmental stress. 2010. Acta Hort.
   - Torigiani P, Fregola F, Ziosi V, Ruiz K, Kondo S, Costa G. 2012. Differential expression of allene oxide synthase (AOS), and jasmonate relationship with ethylene biosynthesis in seed and mesocarp of developing peach fruit. Postharvest Biology & Technology 63: 67-73.
   - Mancarella, S., Orsini, M. J., Van Oosten, R Sanoubar, C. Stanghelliini, S. Kondo, G. Gianquinto, A. Maggio. 2016. Leaf sodium accumulation facilitates salt stress adaptation and preserves photosystem functionality in salt stressed Ocimum basilicum. Environmental and Experimental Botany 130:162-173.
8. Other important items to be stated
   - Kondo S. Invited speaker at a seminar held in Bologna university (Bologna, Italy, May, 2006)
   - Kondo S. Invited speaker at the international symposium on plant growth regulation in fruit production (Italy, September, 2009)
   - Torigiani P, Fregola F, Ziosi V, Ruiz K, Kondo S, Costa G. 2012. Differential expression of allene oxide synthase (AOS), and jasmonate relationship with ethylene biosynthesis in seed and mesocarp of developing peach fruit. Postharvest Biology & Technology 63: 67-73.
   - Invited speaker at a seminar held in Graduate School of horticulture, Chiba university (Professor Costa, 2013, March)

1. Study on the postharvest physiology in tropical fruit
2. Graduate School of Horticulture / Professor / Satoru Kondo
3. Thailand / King Mongkut's University of Technology Thonburi / Associate Professor / Dr. Varit Srilaong
4. 2000-
5. Effects of physiological active substances on fruit physiology such as pigmentation, chilling injury and so on are investigated in subtropical and tropical fruit.
6. JASSO, JSPS postdoctoral fellowship for foreign researchers
7. Main result
   - Kondo, S., S. Kanlayanarat et al. (2001). Abscisic acid metabolism during development and maturation of rambutan fruit. J. Hort. Sci Biotech. 76: 235-241.
   - Kondo, S., S. Kanlayanarat et al. (2001). Changes in physical characteristics and polyamines during maturation and

storage of rambutan. Scientia Hort. 91: 101-109.

- Kondo, S., S. Kanlayanarat et al. (2002). Effects of chilling injury on cell wall metabolism during storage of rambutan fruit. J. trop. Agri. 46:259-264.
- Kondo, S., Kanlayanarat et al. (2002). Abscisic acid metabolism during fruit development and maturation of mangosteens. J. Amer. Soc. Hort. Sci. 127:737-741.
- Kondo, S. Kanlayanarat et al. (2002). Cell wall metabolism during development of rambutan fruit. J. Hort. Sci. Biotech. 77:300-304.
- Kondo, S., S. Kanlayanarat et al. (2003). Relationship between ABA and chilling injury in mangosteen fruit treated with spermine. Plant Growth regulat. 39:119-124.
- Kondo, S., Kanlayanarat et al. (2004). ABA catabolism during development and storage in mangoes: Influence of jasmonates. J. Hort. Sci. Biotech. 79:891-896.
- Kondo, S. et al. (2004). Relationship between jasmonates and chilling injury in mangosteens are affected by spermine. HortScience 39:1346-1348.
- Kondo, S., Kanlayanarat et al. (2004). Changes in jasmonates of mangoes during development and storage after varying harvest times. J. Amer. Soc. Hort. Sci. 129:152-157.
- Kondo, S., Kanlayanarat et al. (2005). Preharvest antioxidant activities of tropical fruit and the effect of low temperature storage on antioxidants and jasmonates. Post harvest Biol.Technol. 36:309-318.
- Kondo, S. et al. (2007). Effects of jasmonates differed at fruit ripening stages on ACC synthase and ACC oxidase gene expression in pears. J Amer. Soc. Hort. Sci. 132: 120-125.
- Kondo, S. (2007). Chilling-related browning of rambutan. Stewart Postharvest review. 3 (6). On line ISSN: 1945-9656.
- Kondo, S., Meemak, S., Ban, Y., Moriguchi, t., Harada, T. (2009). Effects of auxin and jasmonates on 1-aminocyclopropane-1-carboxylate (ACC) synthase and ACC oxidase gene expression during ripening of apple fruit. Postharvest Biol. Technol. 51: 281-284.
- Setha, S. and kondo, S. (2009). Abscisic acid levels and anti-oxidant activity are affected by an inhibitor of cytochrome P450 in apple seedlings. J. Hort. Sci. Biotech. 84: 340-344.
- Kondo, S., Sae-Lee, K. and Kanlayanarat, S. (2010). Xyloglucan and polyuronide in the cell wall of papaya fruit during development and storage. Acta Hort.
- Kammapana L, Kondo S, Srilaong V. (2014). Fruit developmental changes in abscisic and jasmonic acid contents of dragon fruit (Hylocereous undatus). International Food Res J. 21: 1095-1099.
- Changes in abscisic acid and antioxidant activity in sugar apples under drought conditions. 2015. Kowitcharoen L, Wong-Aree C, Setha S, Komkhuntod R, Srilaong V, Kondo S. Scientia Horticulturae 193:1-6.
- Lekkham, P., Srilaong V., Pongprasert, N., Kondo, S. 2016. Anthocyanin concentration and antioxidative activity in light-emitting diode (LED)-treated apples in a greenhouse environmental control system. (Corresponding author) Fruits. 71:269-274.
- L. Kowitcharoen, R. Komkhuntod, S. Kondo, C. Wongs-Aree, S. Setha and V. Srilaong. 2018. Pre-harvest drought

stress treatment improves antioxidant activity and sugar accumulation of sugar apple at harvest and during storage. Agriculture and Natural Resources. (In Press).

- S. Namsri, S. kondo, V. Srilaong. 2018. Effects of fluridone or 1-naphthaleneacetic acid on fruit drop and quality of longkong fruit after harvest. Acta Horticulturae 1206: 81-88.
- H. Nimitkeatkai, H. Ikeura, M. Shishido, S. Kondo. 2018. Aroma volatile emissions and expressions of aroma-related genes in jasmonates-treated apple infected by a pathogen. (Corresponding author). Acta Horticulturae. 1206: 89-95.
- L. Koicharoen, V. Srilaong, S. kondo. Changes of physico-chemical quality and antioxidant activity at harvest and during storage in sugar apple subjected to drought stress. Acta Horticuoturae. 1206..153-159.
- L. Kowitcharoen, V. Srilaong, S. Kondo. Dehydration tolerance in sugar apple is affected by the inhibition of Aba 8'-hydroxylase. Acta Horticuoturae. 1206. 271-277.

8. Other important items to be stated

- Kondo S. Special seminar in King Mongkut's University Thonburi (Since 2000)
- Kondo S. International symposium publication (Southeast asia symposium on quality and safety of fresh and fresh cut produce) (Thailand, 2009, August)
- Satoru Kondo (2015) Dehydration tolerance in apple seedlings advanced by retarding ABA 8'-hydroxylase CYP707A.16th Golden Jubilee PhD program conference. P.112 (Invited speaker)
- Satoru Kondo (2015) Oxylipin, abscisic acid and ethylene against pathogen infection in postharvest fruit. Thai National Postharvest Conference.13th Thai National Postharvest Conference. P1 （Invited speaker)

1. ABA metabolism and water stress regulation
2. Graduate School of Horticulture / Professor / Satoru Kondo
3. Thailand / Mae Fah Luang University / Researcher / Assistant Professor, Sutthiwal Setha
4. 2007-
7. Main result

- Kondo S, Seata S. (2008). Abscisic acid levels and anti-oxidant activity are affected by an inhibitor of cytochrome P450 in apple seedlings. J. Hort. Sci. Biotech. 84: 340-344.
- Kongsuwan A, Kondo S, Kittikon M, Setha S. (2012). A novel approach of LED light radiation increases growth rate and antioxidant of apple seedlings. Food Inov Asia PD 113: 181-188.
- Kongsuwan A., Ikeura H., Saito t., Okawa K., Ohara H., Kondo S. 2016. Effects of pre-harvest application of ethephon or abscisic acid on 'Kohi' kiwifruit (Actinidia chinensis) ripening on the vine. Scientia Horticulturae. 209: 255-260.
- Konsuwan A., Saito t., Okawa K., Ohara H., Kondo S. 2017. Effects of pre-harvest application of ethephon or abscisic acid on Kohi kiwifruit ripening on the vine. Scientia Horticulturae 209: 255-260.
- Konsuwa A. Saito t., Okawa K., Ohara H., Kondo S. 2017. Effects of ethephon and abscisic acid application on ripening-related genes in Kohi kiwifruit on the vine. Horticultural Plant Journal. 2017. DOI: 10.1016/j.hpj.

2017.06.001.

- S. Sukuporn, S. Kondo, S. Setha. 2018. Application of pre-and postharvest salicylic acid on internal browning alleviation and postharvest quality of Phulae pineapple fruit. Acta Horticuoturae. 1206. 145-151.

8. Other importantitems to be stated

- Kondo S. Invited speaker at international symposium held in Mae Fah Luang University (The influence of the interaction between jasmonates, ethylene, and polyamines on fruit quality) (November, 2010, Chiang Rai, thailand)
- Kondo S. Invited speaker at international symposium held in Mae Fah Luang University (Bioactive Compounds in Fruits are Affected by Light Quality and Plant Growth Regulators) (November, 2014, Chiang Rai, Thailand)
- Kondo S. Invited speaker at international symposium held in Mae Fah Luang University (Interaction between ABA metabolism, ABA signal transduction and light quality on anthocyanin and sugar syntheses in grapes.) (November, 2018, Chaiang Rai, Thailand)

1. Relationship between phytohormones and low temperature storage in pineapples
2. Graduate School of horticulture / Professor / Satoru Kondo
3. Thailand / Faculty of Agriculture, Kasetsart university / Professor / Jingtair Siriphanich
4. 2010 April-
5. The inhibition of chilling injury of fruit by the regulation of abscisic acid and gibberellic acid metabolism
6. Kasetsart university scholarship, Graduate School of Horticulture PhD course
7. Main result

   (1) Pusittigul I, Kondo S, Siriphanich J. (2012). Internal broning of pineapple (Ananas comosus L) fruit and endogenous concentrations of abscisic acid and gibberellins during low temperature storage. Scientia Hort. 145: 45-51.

8. Kondo S. Seminar at the faculty of agriculture, Kasetsart university（June, 2014、Bangkok、Thailsnd）

1. Effects of plant hormones on fruit set and growth in fruit tree
2. Chiba University / Emeritus Professor / Hiroyuki Matsui

   Center for Environment, Health and Field Sciences / Professor / Hitoshi Ohara
3. USA / Michigan State University / Martin J. Bukovac
4. 1994-
5. The objectives of this project are to develop cultivation methods for steady fruit production and high-quality fruits production, through the following investigations, ①relationship between fruit set and growth, and plant hormones, and ② the factor that relates to the penetration of plant hormones from the fruit surface.
6. Michigan State University
7. Main result

   ① N-Substituted phthalimide-induced of parthenocarpy in sour cherry (Prunus cerasus L.'Montm-orency ') enhanced by auxin. 1994. 24th Inter. Hort. Congress,Abstracts 269.

   ② Gibberellins in immature seed of Prunus cerasus: Structure detarmination and synthesis of gibberellins, GA95 (1,2-didehydro-GA20. 1996. Phytochemistry,42(4):913-920.

   ③ GA95 is a genuine precoursor of GA3 in immature seed of Prunus cerasus L.. 1998. 16th Inter.

Conference on Plant Growth Substances,Abstracts 146.

④ Induction of fruit set and growth of parthenocarpic 'Hayward' kiwifruit with plant growth regulators. 1997. J. Japan. Soc. Hort. Sci. 66(3.4):467-473.

⑤ Endogenous gibberellin-induced parthenocarpy in grape berries. 2000. Acta Hort. 514:69-74.

⑥ Endogenous gibberellins in immature seeds of Prunus persica L.: identification of GA118, GA119, GA120, GA121, GA122 and GA126. 2001. Phytochemistry 57:749-758.

⑦ Effects of the combination of gibberellic acid and ammonium nitrate on the growth and quality of seedless berries in 'Delaware' grape. 2001. J. Japan. Soc. Hort. Sci. 72(5):366-371.

⑧ Effect of gibberellins on induction of parthenocarpic berry growth of three grape cultivars and their endoginous gibberellins. 2001. 52nd ASEV Annual Meeting, Technical Abstracts, 81.

⑨ Effects of gibberellin A3 and ammonium sulfate of growth and quality of seedless Delaware grapes. 2003. J. ASEV Jpn. 14(2):58-63.

⑩ Induction of parthenocarpic fruit growth with endogenous gibberellins of Loquat. 2004. Acta Hort. 653:67-70.

⑪ Production of seedless loquat fruits. 2004. Regulation of Plant Growth and Development. 39(1):106-113.

⑫ Effects of grape berry development stages on ammonium nitrate-enhanced penetration of gibberellin A3. 101st Abstracts ASHS Annual Conference, HortScience, 39(4):793.

8. None

1. Improvement of agricultural production in the arid area of China
2. Graduate School of Horticulture / Professor / Akihiro Isoda
3. China / Urmuqi Agricultural and Environmental Institute for Arid Area in Central Asia / Peiwu Wang
4. 1998-
5. The object of this project is to improve agricultural production and to develop new agricultural technologies in the arid area of China. The main subjects of this project are water saving irrigation, mechanism of drought tolerance and organic agriculture on large scale.
6. Grant-in-Aid for Scientific Research since 2016-2018, etc.
7. Main result

(1) Isoda et al. 2001. Dry matter production and physiological characteristics of cotton and soybean under different water conditions. Kanto Branch Jpn. J. Crop Sci., 16, 40-41.

(2) Isoda et al. 2001. Varietal differences in dry matter production of processing tomato in the arid area of China. Kanto Branch Jpn. J. Crop Sci., 16, 60-61.

(3) Isoda, A. and P. Wang, 2001. Effects of leaf movement on leaf temperature, transpiration and radiation interception in soybean under water stress conditions. Tech. Bull. Faculty Hort. Chiba Univ., 55, 1-9.

(4) Isoda, A. and P. Wang, 2002. Leaf temperature and transpiration of field grown cotton and soybean under arid and humid conditions. Plant Prod. Sci., 5: 224-228.

(5) Isoda et al. 2002. Yield and dry matter production of soybean in the arid area of China, Kanto Branch Jpn. J. Crop Sci., 17, 68-69.

(6) Wang, C., A. Isoda, P. Wang, and Z. Li, 2002. Varietal differences in leaf temperature and sap flow rate of field grown cotton, Kanto Branch Jpn. J. Crop Sci., 17, 76-77.

(7) Wang, C., A. Isoda, Z. Li and P. Wang, 2004. Transpiration and leaf movement in field grown cottons under arid conditions. Plant Prod. Sci., 7:266-270

(8) Wang, C., A. Isoda and P. Wang, 2004. Growth and yield performance of some cotton cultivars in Xinjiang, China, an arid area with short growing period. J. Agron. Crop Sci., 190: 177-183

(9) Isoda, A., M. Mori, S. Matsumoto, Z. Li and P. Wang, 2006. High Yielding Performance of Soybean in Northern Xinjiang, China. Plant Prod. Sci., 9: 401-407.

(10) Wang, C., A. Isoda, D. Wang, M. Li, M. Ruan and Y. Su, 2006. Canopy structure and radiation interception of cotton grown under high density condition in northern Xinjiang. Cotton Sci., 18: 223-227.

(11) Isoda, A., H. Konishi, P. Wang and Z. Li, 2007. Effects of different irrigation methods on yield and water use efficiency of sugar beet in the arid area of China. 2007. HortResearch 61: 7-10.

(12) Isoda, A., H. Mao, Z. Li and P. Wang, 2010. Growth of High-Yielding Soybeans and its Relation to Air Temperature in Xinjiang, China. 2010. Plant Prod. Sci., 13: 209-217.

(13) Miyauchi, Y., A. Isoda, Z. Li and P. Wang, 2012. Soybean cultivation in desert sand using drip irrigation with mulch. Plant Prod. Sci., 15：310-316.

(14) Miyauchi, Y., A. Isoda, Z. Li and P. Wang, 2012. Effects of foliar application on humic substance on growth and yield of soybean in arid areas of Xinjiang, China. Jpn. J. Crop Sci., 81: 259-266.

(15) Isoda, A., P. Wang and Z. Li, 2012. Improvement of crop yield in a changing climate: Experiments in Xinjiang, China, Invited lecture at International Conference on Climate Change: A Challenge for Agriculturists, Khyber Pakhtunkhwa Agricultural University, Pakistan.

(16) Park, S., K. Honda, S. Takahashi and A. Isoda. 2017. Paddy rice cultivation with drip irrigation and mulch in Japan. Abstracts of the Meeting of the CSSJ. p. 139.

(17) Fawibe,O.O., K. Honda, Y. Taguchi and A. Isoda. 2018. Greenhouse Gas Emissions from Rice Field Cultivation with Drip Irrigation and Plastic Film Mulch in Kanto Region of Japan. Abstracts of the Meeting of the CSSJ. p.87.

8. None.

1. Studies on the ancient gardens in Japan, China, and Korea
2. Chiba University / Emeritus Professor / Eijiro Fujii,
   Graduate School of Horticulture / Professor / Zhang Junhua
3. Korea / Chongnam Univ. / Jisong Baiku
4. 2000-
5. To clarify the characteristics of ancient gardens in each country of Japan, China, and Korea which have long and intimate relations from cultural and political points of view
6. Grant-in-aids for Scientific Research（Basic Research A）
7. A Historical Consideration on the Gumnanji of the Bekje Kingdom in Korea Based on the Results of Recent Excavations

- Kwangmin HAM, Ma JIA, Mingling KONG, Hiroki SUZUKI and Junhua ZHANG（2014）:Study on the Characteristics of Landscape Images of Changdeok Palace Rear Garden Described in the Poem “Sangrimshipkyeong”. Papers on Environmental Information Science, No.28, P.331~336.
- Kwangmin HAM, Mingliang KONG, Toru MITANI, Junhua ZHANG（2013）:A Comparative Study of Space Characteristics of Chinese Summer Palace and Korean Changdeokgung Palace Garden from the Aspect of Horizontal Tablet. Landscape Research Japan.VOL.76 NO.5, P.501~504.
- Kwangmin HAM, Yonghoon Son, Toru MITANI, Junhua ZHANG（2012）:The Study on the Characteristic of Garden Space with Horizontal Tablet at Changdeokgung of Korea. Papers on Environmental Information Science, No.26. P.393~398.
- Kwangmin HAM,Li, Shu-Hua.Zhang, Ya-Ping.Mitani, Toru.Zhang, Jun-Hua（2016）:A Study on the Appearance Characteristic of Landscape Elements and Symbolic Elements Implied in Tablets, Journal of the Korean Institute of Traditional Landscape Architecture 2016. 12. Volume 34 Number 4 Series No. 98.P.78-88.

8. Symposium on the ancient gardens in Japan and Korea, held at Nara National Institute of Cultural Heritage in 2000

1. A Study on Community Design in the Contest of Cultural Identity
2. Graduate School of Horticulture / Professor / Isami Kinoshita
3. USA / University of Washington / Associate Professor / Jeffrey Hou
4. 2002-
5. This collaborative research has been conducted to make clear the issue and its solution of the contest of cultural identit in community design. From the case studies of International District in Seattle and Kogane District in Matsudo city. One side there are many contests udner mult cultural society and the other side, in Japan, though it looks as mono cultural but there are invisible contests among generations and old and newcomers. However, the cultural difference should be made clear but not enforced so that the people share the experience of cultural difference for more understandable community development for the future. And the collaborative project reflect to the real improvement like the case of Kogane, which a pocket park was built stimulated by the Design/ Build after the joint students studio program of global classroom between both institutesions.
6. University Program, Pacific Rim Community Design conference organizer, Tojo Academic Promotion Council, etc.
7. Main result
   - Kinoshita, Isami (2010:.4) Niwa-roju-Private gardens serving the public realm, Jeffrey Hou ed. Insurgent Public Space Guerrilla Urbanism and the Remaking of Contemporary Cities , Routledge, 159-167
   - Hou, Jeffrey and Isami Kinoshita. 2007. Bridging Community Differences through Informal Processes: Reexamining Participatory Planning in Seattle and Matsudo. Journal of Planning Education and Research 26(3): 301-313.
   - Hou, Jeffrey, Isami Kinoshita and Sawako Ono. 2005. Design Collaboration in the Space of Cross-cultural Flows. Landscape Journal 24(2): 125-135.
   - Participatory Planning in Community of Differences: Comparative Case Studies from Japan and the U.S. , on submitting to JAPR, and a part was reported at the 5th Pacific Rim Community Design Conference in Seattle in Sep.2, 2004

- Kinoshita, Isami, Hou,Jeffery 2006, Building Sustainable Community through Intergenerational Participation: Cases of Community-university Partnerships in International District, Seattle and Kogane, Matsudo, International Symposium On Urban Planning 2006 Proceedings, Taiwan Institute of Urban Planning, 422-431,
- Hou,Jeffrey, Kinoshita, Isami, 2004, Negotiating Community Differences: Participatory Planning in International District, Seattle and Kogane District, Matsudo, (The 5th pacific Rim Conference on Participatory Community Design 2004 Seattle, Proceedings, (Re) Constructing Communities, Jeffrey Hou, Mark Francis, Nathan Brightbill ed.)
- Isami KINOSHITA, 2015, Cross Cultural Design Collaboration : Community Design by the International Collaboration of Students, PAYZAJ MIMARLIGI EGITIM ÖGRETIM CALISTAZI BILDIRILER KITABI, Akdeniz University, 47-66
- Effects of Participation in Community Activities on Self-Efficacy of Japanese Junior High School Students Global Journal of Community Psychology Practice, Vol.5, Issue 1, 1-12, 2014, (Mari Yoshinaga1,Yoshika Takeda2, Isami Kinoshita)
- Isami KINOSHITA (2017) Children's Exiting Neighborhood Exploration Event, David de la Pena, Diane Jones Allen, Randolph T. Hester Jr. Jeffrey Hou, Laura J. Lawson and Marcia J. McNally ed."Design As Democracy – Techniques for Collective Creativity' , Island Press 115-121
- Isami KINOSHITA, Toshiya YAMAMOTO, Tatsuya HATORI, Mika SHIGENE, Mitsunari TERADA (2016)
- Inter-generational Risk Communication through Evacuation Map Making for Creating Resilient Community Against Earthquake, Tsunami and Landslides Disaster in Japan, 10th CONFERENCE OF THE PACIFIC RIM COMMUNITY DESIGN NETWORK: AGENCY AND RESILIENCE, pp.399-409
- Aiko KIMURA,, Fumitoshi KATO, Takeyo KIMURA, Isami KINOSHITA (2016), 'Curry Caravan; A communicative placemaking approach for resilience of local communities', 10th CONFERENCE OF THE PACIFIC RIM COMMUNITY DESIGN NETWORK: AGENCY AND RESILIENCE, pp.380-392,
- 木下勇・江口亜維子（2017.12） 「食べられる景観（エディブル・ランドスケープ）を活用したプレイスメイキングによる予防的セーフティネットの構築」に関する研究、一般財団法人 第一生命財団 1-86

8. Global Chiba 2013 International Seminar and Symposium "University and Community Partnership under Globalization" 2013．3．18−20

   PLACEMAKING Symposium 2015.12.

   日本グッドデザイン賞受賞 2017.10

1. A Study on Area Management of Urban Redevelopment Projects from the Viewpoints of Sustainability and Identity
2. Graduate School of Horticulture / Professor / Isami Kinoshita
3. Switzerland / University of Applied Science of Bern / Hans Binder
4. 2005-
5. This study is aimed at making clear the direction of area management of redevelopment projects mainly applied at the post

heavy industrial sites from the viewpoints of sustainability and identity by the comparison of the cases in Switzerland and Japan.

6. JSPS Grant in Aid for Scientific Research

7. Main result

- Isami Kinoshita, Hans Binder (2011) About Identity and Sustainability by Area Management for Urban Regeneration Project at Industrial Site- A Report Focusing on the case of SulzerAreal, Switzerland
- City Planning Institute of Japan, City Planning Review No.46-1
- Isami Kinoshita, Hans Binder (2008.8) , A Study on Identity and Sustainability by Area Management of Urban Regeneration Projects～From Some Cases in Switzerland and Japan, Proceedings of International Symposium on City Planning 2008 (peer reviewed), Korea Planners Association, 408 -417
- Isami Kinoshita, Hans Binder (2007) A Study on Sustainable Area Management by Urban Regeneration Projects～From some cases in Japan & Switzerland, International Symposium of City Planning 2007 Proceedings, City Planning Institute of Japan pp.660-669

1. A Study on Children's Play Town and Children's Participation

2. Graduate School of Horticultur / Professor / Kinoshita, Isami

3. Deutsches Kindehilfs Werk e.V. / General Manager / Dr. Heide-Rose Brueckner
Alice Salomon University / Professor / Dr. Hartmut –Wedekind,

4. 2006-

5. Spielstadt has devemolped in Germany. This study is amed to make clear its background from the point of view of children's participaton. In Germany, especially it is linked with the governmental policies to promote children's participation for child friendly cities.

6. Housing Research Institute

7. Main result

- Kinoshita, Isami・Uzuki, Morio・Mie, Kenzo ed. Heide-Rose Brueckner etc. (2010) 『Children Build City』 Hobunsha
- Kinoshita, Isami, Uzuki, Morio, Sonoda, Takaaki, Tokeshi, Yasuko. Nakamura, Momoko, Nagashima, Kenichiro " The condition of children's participaton in the case of Children's play town learning from Mini Muenchen etc, Housing Research Institute Papers No.34 ,349-360 (2008 .3)
- Japanese Movements on Children's Participation and Child-friendly City. Isami Kinoshita, Human Rights Education in Asia-Pacific, 査読有, Vol.6, 13-26, 2015
- 木下勇(2017)子どもの貧困と遊びに関わる NPO の連携 － ドイツの事例から，日本学術会議 「学術の動向」Vol.22, No. 10 54−57

8. Other important items to be stated

- Dr. Heide-Rose Brueckner / Prof. Hartmut Wedekind, etc. Symposium 2006.6, Child Friendly Cities by Children's Participation learning from Geran Cases , Study Group of German Children's participation, Ichikawa Children's Culture Station

- Dr. Heide-Rose Brueckner / Prof. Hartmut Wedekind, etc. Summitt about Children's Play Town in 2009.8, Yokohama city

  Dr. Heide-Rose Brueckner / Prof. Hartmut Wedekind, 2012.7.25, Symposium "Lern Werkstatt (learning workshop" oriented children's subjectivity and chld friendly ciites in Germany. Japan UNICEF Council
- Dr. Heide-Rose Brueckner / Prof. Hartmut Wedekind, 2012.7.27, Symposium Reconstruction through children and youth participation ～learning from German advanced cases , Sendai Youth Culture Center , Children Vigour Smile Project, NPO Miyagi- Sendai/Miyagi Children's Hill .

1. International Compartive Research about Children's Independent Mobility
2. Graduate School of Horticultur / Professor / Kinoshita, Isami , Post Doctoral Researcher: Riela Provi Drianda
3. UK / Policy Studies Institute / Ben Watson, etc.

   Australia / West Sydney University / Professor / Karen Malone

   Finland / Aalto University / Marketta Kytta etc.
4. 2009-
5. Implementing the questionnair research based on the basic form to primary school and junior highschool, the research result would be shared in the world to check the difference and transformation of children's independent mobility, in about 16 countries.
6. One part from JST Children's safety bu community design approach.
7. Main result
   - Riela PROVI DRIANDA & Isami KINOSHITA, 2011, Danger from Traffic to fear of Monkeys: children's independent mobility in four diverse sites in Japan, Global Studies of Childhood, Vol.1. No.3, pp. 224-240,
   - Policy Studies Institute, UK , Children's Independent Mobility: An International Comparison, 29 July 2015, http://www.psi.org.uk/children_mobility
   - The Safe and Fun Children's Play Spaces: Evidences from Tokyo, Japan and Bandung, Indonesia, Drianda, R.P., Kinoshita, I ,The Journal of Urban Design,, Vol.20, DOI:10.1080/13574809.2015.1044507, Taylor and Francis, 437-460, 2015
   - Riela Provi Drianda1, Isami Kinoshita2 Fani Deviana, Perencanaan Lingkungan Perkotaan yang Aman dari Ancaman Kriminalitas Terhadap Anak: Sebuah Studi Kasus dari Negeri Jepang , Jurnal Perencanaan Wilayah dan Kota, Vol. 26, No.1, April 2015, ITB, 7-17
   - Drianda, R.P., Kinoshita.I, Said, I (2014) From the Irony of Gated Play Spaces to Triangle Park: A reflection on the impact of Bandung City's rapid development on children's independent mobility and friendly play environment'. Children and Society, 1-17, 2014
8. Other important items to be stated
   - Riela PROVI DRIANDA & Isami KINOSHITA, Toward a Safer Neighborhood for Children, 2nd International Conference Child Friendly Asia Pacific, Srakarta, 2011
   - Isami KINOSHITA, 2011 , Towards a Neighbourhood Paradise rather than Stranger Danger, 50th anniversary world conference of the International Play Association, 2011 Cardiff, Abstract , p 38

1. Inhabitants in Contexts / Place-based comparative research on ecosocially sustainable environments in Finland and Japan
2. Graduate School of Horticulture / Professor / Kinoshita, Isami, / Post Doctral Researcher / Omiya, Ichiro
3. Finland / Aalto University / Senior Research Fellow / Marketta Kytta
4. 2010-
5. Using Soft GIS system which Marketta Kytta and her team of Aalto University had created, the collaborative research aimed to evaluate children's environment at primary schools and junior high schools of Finland and Japan. This collaborative research has shown the possibility of the method of Soft GIS as an interactive research for children.
6. JSPS Two Countries Joing Research Grant, Tokyo University / Rikutaro Manabe as a chief etc.
7. None
8. Kytta, Marketta, 2012, coordinator Kinoshtia Isami " Educaiton in Finland and children's behavioral environments -from the theory of affordance and Soft GIS, The 9th Symposium of the Resarch Center for Educaitonal Facilities, Tokyo Institute of Technology

1. Joing Reaserach about Children's Play Environment at Post Disaster Area afte the Great East Japan Earthquake
2. Graduate School of Horticulture / Professor / Kinoshita, Isami
3. UK / Sheffield University / Helen Woolley
4. 2012-
5. After the disaster of Great East Japan Earthquake, children's play environment was strongly serious situation. This joint research had documented how the environment around children's living area had been not taken care. However there are advanced cases supported by volunteers. From the research several ideas were proposed.
   http://www.h.chiba-u.jp/tcp/ChildfriendlyCommunity/Welcome.html
6. Daiwa Foundation
7. Main result
   - Woolley Helen, Kinoshita, Isami, 2012, Children's Lost Landscape in Japan, 4th International Conference Book of Abstracts, Center for the Study of Childhood and Youth, 83-84
   - Kinoshtia, Isami, 2012, Children's Participation in Reconstruction after the Great East Japan Earthquake---Intergenerational Approach Towards Child Friendly Recovery, the 6th International Conference of Child in the City, Sep.26-28, 2012 Zagreb, pp.136-137
   - Woolley, Helen, Kinoshtia, Isami, 2012 Children's Lost Landscape in Past Disaster Japan, poster session at the 6th International Conference of Child in the City, Sep.26-28, 2012 Zagreb
   - Kinoshtia, Isami, Woolley, Helen, 2013 Children, outdoor play and disasters: an example from the Tohoku area in north east Japan following the triple disaster of March 2011, Children & Society
   - Space, People, Interventions and Time(SPIT): A Model for Understanding Children's Outdoor Play in Post-Disaster Contexts Based On a Case Study from the Triple Disaster Area of Tohoku in North-East Japan,, Children and Society, DOI:10.1111/chso.12072, 1-17, 2014 (Helen WOOLEY, Isami KINOSHITA)
   - Children's Play Environment after a Disaster: The Great East Japan Earthquake, Isami KINOSHITA, Helen WOOLEY, Children 2015,2, 査読有, Special Issue "The Role of Play in Children's Health and Development"

doi:10.3390/children2010039, 39-62, 2015

- Theresa Casey (UK), Sudeshna Chatterjee (India), Maria Assi (Lebanon) Isami Kinoshita(Japan) (2017) **Plenary Session: Unleashing the power of play… in situations of crisis,** IPA 20th Conference Calgary, 14. Sep.2017
- Isami KINOSHITA, Mitsunari TERADA , Kumi Tashiro, Mari Yoshinaga, Mitsunari Terada & Hitoshi Shimamura (2017) Access to play in crisis in the case of the Great East Japan Earthquake, IPA 20th Conference Calgary, 15. Sep.2017
- Mitsunari Terada, Isami Kinoshita (Japan) & Mariia Ermilova (Russia)　Why do we need adventure playgrounds in Japanese Rural Area? Revitalization project of Ishikawa Town, Fukushima, IPA 20th Conference Calgary, 15. Sep.2017

8. Global Chiba 2013 International Seminar and Symposium "University and Community Partnership under Globalization" 2013.3.18-20

---

1. 都市環境改善（特に住宅団地の低炭素化対策、水や廃棄物問題など）のための対策
2. Graduate School of Horticulture / Professor / Kinoshita, Isami
3. Hunan University / Professor / Liu Su、Associate Professor / Shen Yao
4. 2015-
5. 都市環境について東京圏地区の都市環境対策と中国の状況と対策について議論をする。
   1) エコハウスと住宅団地の低炭素化対策
   2) 都市の水と緑のシステムづくり（例えば LID：Low-Impact Development 技術の応用）
   3) 都市農業：植物工場・都市農園
   4) エコ都市基盤づくりに関する先進技術（例え：スマートシティの実践）
6. JST Japan-Asia Youth Exchange Program in Science" (SAKURA Exchange Program in Science)
7. Main result
   - Models and Approaches for Integrating Protected Areas with Their Surroundings: A Review of the Literature, Sustainability 2015, 7, 8151-8177; doi:10.3390/su7078151, Wenwu Du 1,2,*, Sofia M. Penabaz-Wiley 2, Anthony Murithi Njeru 2 and Isami Kinoshita 2
   - A GIS-Based Approach in Support of Spatial Planning for Renewable Energy: A Case Study of Fukushima, Japan, , Sustainability, 2087-2117; doi:10.3390/su6042087, 2014 (Qianna Wang, Martin Mwirigi MI'kiugu and Isami Kinoshita)
8. The Bottom Up Movement of Townscape Conservation in Japan, Proceedings of 2015 International Conference on Architectural History and Heritage Conservation Study, 199-207 China Architecture & building press School of Architecture Hunan University

---

1. 伝統的町並みおよび文化的景観における住民参加のまちづくり手法に関する研究
2. 大学院園芸学研究科／教授／木下勇
3. 中国／湖南農業大学講師／He Libo
   中国／湖南大学建築学院准教授／沈瑶

4. 平成 29 年度～
5. ①伝統的町並みや文化的景観の保全活用における住民の役割と行政の関係、②行政の役割としての制度・支援事業、③持続可能なまちづくり的展開へのマネジメントの体制またはその課題、について明らかにする。
6. 科学研究費補助金　特別研究員受け入れ助成
7. 主な成果

   木下勇(2017)　日本の歴史的町並み保全のまちづくり　　国際中国都市計画学会(IACP) 岳麓　　2017.6.20-21 湖南大学。
8. なし

---

1. 子どもにやさしいまちに関する研究
2. 大学院園芸学研究科／教授／木下勇
3. 中国／湖南大学建築学院准教授／沈瑶
4. 平成 29 年度～
5. UNICEF 子どもにやさしいまちのプログラムを推進するための、子どもにやさしいまちの要件を研究する。
6. JST さくらサイエンス事業など
7. 主な成果

   木下勇(2017)　日本における子どもにやさしいまちの取り組み、釜山市広域市児童親和都市フォーラム、2017.12.18,　25-49

   木下勇(2017)　日本および世界における子どもにやさしいまち、子どもにやさしいまち国際シンポジウム、長沙市 2017.9.20
8. 木下勇・沈瑶・卯月盛夫(2018) 子どもにやさしいまちとは何か、日中学術共同セミナー,早稲田大学, 2018.2.6

---

1. Comparative Study of Green Infrastructure Implementation for Adaptation to Climate Change in UK and Japan
2. Graduate School of Horticulture / Associate Professor / Kinoshita, Takeshi
3. United Kingdom / University of Sheffield / Professor / Hitchmough, James
4. 2016-
5. The purpose of this study is to clarify the common features and the specific situations on green infrastructure implementation in the urban areas of UK and Japan through comparing the actual conditions of green infrastructure implementation for the main purpose of adaptation to climate change (e.g. flood alleviation, urban heat island mitigation and carbon fixation, etc.).
6. Funds, grants, etc.

   JSPS Grant-in-Aid for Scientific Research (C) 2014-2016

   JSPS Grant-in-Aid for Scientific Research (C) 2017-2019
7. Main result
   - Takeshi Kinoshita and Kyungrock Ye (2017): Examples and the Characteristics of Green Infrastructure Implementation to Alleviate Flood Risk in England, Landscape Research 80(5), 695-700 (in Japanese).
   - Green Infrastructure Association(edited): Green Infrastructure, NIKKEI BP, 2017, co-author (in Japanese)
   - Green Infrastructure Planning and its Significanses in the UK's Queen Elizabeth Olympic Park, Takeshi Kinoshita,

Kyungrock Ye and Ayako Nagase, Landscape Research 81(5), 2018, 655-658 (in Japanese).

8. Incentive award of Japanese Institute of Landscape Architecture (research paper): Takeshi Kinoshita (2018): A study on the implementation method of green infrastructure in England

1. Characteristics of water cycle and water quality in the catchment effected by human activites
2. Graduate School of Horticulture / Professor / Changyuan Tang
3. China / Institute for Geography Science and Natural Resources / Prof. Song Xianfang
4. 2005-
5. Project outline

It is well known that there are serious problems about environment and population in the regions with rapid economic development. From the viewpoint of hydrology, we would like to make clear the effect of human activities on water cycle and water quality evolution in the catchment scale.

- Professor Liu Changming from the Institute for Geography Science and Natural Resources, CAS. Had a meeting in Tokyo t o discuss the cooperation with professor emeritus Shindo in April 9, 2007.
- Prof. Yu Jingjie from Institute for Geography Science and Natural Resources, CAS worked as a visiting Professor with Prof. Tang in the Faculty of Horticulture from June to September, 2007.
- Professor emeritus Shindo and Prof. Tang visited Institute for Geography Science and Natural Resources, CAS in Sept. 7, 2007.
- Prof. Tang and the scientists from the Institute for Geography Science and Natural Resources, CAS made a ten-days field surveying for water environment in the Huai River, China from Sept. 8, 2007.

  Prof. Liu Changming, Prof. Xia Jun and Prof. Song Xianfang attended Japan-China symposium on water environment in the Huai River in Oct. 25, 2007, and visited Faculty of horticulture to discuss about the cooperation researches the day next.
- From March 3 to 9, 2008, Prof. Kondo and Prof. Tang visited Beijing and attended Asian Groundwater symposium suppored by the Institute for Geography Science and Natural Resources, CAS. During the period, Prof. Tang had a field work for groundwater surveying in NCP.

6. Grant-in-aid for Science Research of Japanese Ministry of Education, Science and Culture (Leader: Prof. Tang Changuang, Chiba University)
7. Main result

- Shen YJ, Tang C, Xiao JY, Oki T, Kanae S. (2005): Effects of urbanization on water resource development and its problems in Shijiazhuang, China. IAHS Publ., No 293, 380-388.
- Xiao JY, Shen YJ, Ge JF, Tateishi R, Tang C, Liang YQ and Huang ZY. (2006) Evaluating urban expansion and land use change in Shijiazhuang, China, by using GIS and remote sensing, Landscape and Urban Planning, Vol.75, 69-80.
- Tang C., Chen JH., Kondo K. and Lu Y. (2006): Characteristics of soil water movements and water table at the Leizhou peninsula, Guangdong province, China. Advances in Geosciences, Vol. 4: Hydrol. Sci., World Scientific, 219-227.
- Chen JY., Tang C and Yu JJ. (2006): Use of 18O, 2H and 15N to identify nitrate contamination of groundwater in a

wastewater irrigated field near the city of Shijiazhuang, China. Jour. Hydrol., Vol.326, 367-378.

- Aji K., Tang C., Kondo K. Song, XF. and Sakura, Y. (2006): Environtmental isotopes of precipitation, groundwater and surface water in Yanshan Mountain, China. Advances in Geosciences, Vol. 4: Hydrol. Sci., World Scientific, 11-16.
- Liu XC, Xia J., Song XF., Yu JJ., Tang C. and Zhan CS (2006): A study of surface water and groundwater using isotopes in Huaishahe basin in Beijing, China. IAHS Publ., NO.302,106-114.
- Li Fadong, Song Xianfang, Tang Changyuan et al., (2007): Tracing infiltration and recharge using stable isotope in Taihang Mt., North China. Environmental Geology, 53:687–696 (DOI 10.1007/s00254-007-0683-0)

  Song Xianfang, Li Fadong, Liu Changming et al., (2007): Water cycle in Taihang Mt. and its recharge to groundwater in North China Plain. Journal of Natural Resources, 22(3): 398-408.
- Song Xianfang, Li Fadong, Yu Jingjie, Tang Changyuan et al. (2007): Characteristics of groundwater cycle using deuterium, oxygen-18 and hydrochemistry in Chaobai River Basin. Geographical Research. 26(1):11-21.
- Li Fadong, Tang Changyuan, Zhang Qiuying et al. (2008): Surface water-groundwater interactions in a Yellow River alluvial fan. Surface Water–Groundwater Interactions: Process Understanding, Conceptualization and Modelling (Proceedings of Symposium HS1002 at IUGG2007, Perugia, July 2007). IAHS Publ. 321, (in revision)
- Zhang Qiuying, Li Fadong, Tang Changyuan, et al. (2008): Effects of maize straw and gravel mulches on soil water content in Taihang Mt., northern China. Hydrology in Mountain Regions: Observations, Processes and Dynamics (Sponsor ICSIH with co-sponsorship of UCCS, ICRS, ICSW, ICCLAS, ICGW, PUB), IUGG 2007 Perugia. IAHS Publ. 3**, (in revision)
- Fadong Li, Xianfang Song, Changyuan Tang et al. (2008): Stable isotopic characterization in precipitation, soil water and groundwater in Taihang Mountain, North China. IAHS Publ. 319.
- Li Fadong, Pan Guoying, Tang Changyuan, et al. (2008): Recharge source and hydrogeochemical evolution of shallow groundwater in a complex alluvial fan system, southwest of North China Plain. Environmental Geology, DOI 10.1007/s00254-007- 1059-1 (online first).

8. None

1. Comparison of Natural Landscape Evaluation Between Japan and Russia
2. Graduate School of Horticulture / Professor / Katsunori Furuya
3. Russian Federation / Lomonosov Moscow State Univ. / Elena PETROVA

   Russian Federation / V.B. Sochava Institute of Geography SB RAS / Yuri SEMENOV

   Russian Federation / Vernadsky State Geological Museum of RAS / Yury MIRONOV

   Russian Federation / Institute of Orientalistic RAS / Anastasia PETROVA
4. 2008-
5. The purpose of this study is to compare the landscapes appreciation in Russia and Japan, in two countries with deep-rooted traditions of landscape appreciation. The photo database of landscapes both similar and unique for Russia and Japan was made using the same methods. The respondents in both countries are suggested to classify and group photo images of different landscapes according to their personal perception as well as to estimate the attractiveness of given landscapes

images.

6. 2008-2009 Joint Research Program in Bilateral Programs, JSPS and RFBR

7. Main result

- Elena Petrova, Yoji Aoki, Yury Mironov, Anastasia Petrova, Katsunori Furuya, Hajime Matsushima, Norimasa Takayama, Comparison of natural landscapes appreciation between Russia and Japan: methods of investigation, Monitoring and Management of Visitor Flows in Recreational and Protected Areas, Pisa (Italy), 198-202.
- Katsunori Furuya, Hajime Matsushima, Introduction of the natural landscape evaluation between Japan and Russia, International Seminar of Chiba University Expert Program, 2009.8.12
- Yoji AOKI, Elena PETROVA, Yury MIRONOV, Anastasia PETROVA, Katsunori FURUYA, Hajime MATSUSHIMA, Norimasa TAKAYAMA Toshihiro NAKAJIMA, Comparison of natural landscapes appreciation between Russia and Japan: photo selection, Special seminar at Moscow University, 2009.2.19
- Hirofumi Ueda, Toshihiro Nakajima, Norimasa Takayama, Elena Petrova, Hajime Matsushima, Katsunori Furuya, Yoji Aoki, Ways of Seeing the Forest -Landscape Image Sketches in Japan and Russia-, Monitoring and Management of Visitor Flows in Recreational and Protected Areas, Wageningen, 2010. 6.
- Katsunori Furuya ed., Summaries of technical reports of JAPAN-RUSSIA Joint Research Project and Scientific Seminar, Chiba University, 2009.8.12
- Hirofumi Ueda, Toshihiro Nakajima, Norimasa Takayama, Elena Petrova, Hajime Matsushima, Katsunori Furuya, Yoji AokiYui（2012）Landscape image sketches of forests in Japan and Russia，Forest Policy and Economics，Elsevier, 19　20−30
- Norimasa Takayama・Hajime Matsushima・Elena Petrova・Hirofumi Ueda・Toshihiro Nakajima・Katsunori Furuya・Yoji Aoki（2012）Differences in environmental attitudes between Russia and Japan, The 6th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas, 6, 404-405
- Elena G Petrova, Yury V Mironov, Yoji Aoki, Hajime Matsushima, Satoshi Ebine, Katsunori Furuya, Anastasia Petrova, Norimasa Takayama and Hirofumi Ueda (2015) Comparing the visual perception and aesthetic evaluation of natural landscapes in Russia and Japan: cultural and environmental factors, Progress in Earth and Planetary Science, Springer Open Journal, 2:6, 1-12, DOI 10.1186/s40645-015-0033-x
- Norimasa TAKAYAMA, Elena PETROVA, Hajime MATSUSHIMA, Katsunori FURUYA, Hirofumi UEDA, Yury MIRONOV, Anastasia PETROVA, Yoji AOKI (2015), Comparing the visual perception and aesthetic evaluation of natural landscapes in Russia and Japan: cultural and environmental factors, Urban and Regional Planning Review, 2: 2-6, http://doi.org/10.14398/urpr.2.438.

8. Chiba University International Seminar of Chiba University, August 12,2009

1. A Comparative Study on Landscape Evaluation Between Japan and Korea

2. Graduate School of Horticulture / Professor / Katsunori FURUYA
   The university of Tokyo / Assistant Professor / Yusuke MIZUUCHI

3. Korea / Seoul National University / Associate Professor / SON Yonghoon

4. 2012-

5. It is assumed that the human attitude toward environment depends on each culture and each country if the environment and culture differ according to geographical conditions and so on. In this study, focusing on the above common points and differences, it carrys out an international comparative study of the recognition and evaluation of the natural landscape. It takes mainly two approaches for resereaching in this study. The first is to figure out the abstract image of natural scenery that each culture or each ethnic group has. In order to understand the evaluation of the scene, the simple method is to let the respondets evaluate the same sceneny and to compare the result. Thus, it shows the taken photos to people of each country and lets them evaluate those photos. Also, it focuses on "forest" that is representive scenery people get close with at most, and lets the respondents draw or write about the image of "forest" they have. It reveals the way to evaluate sceneries that each country or each ethnic group has alalyzing those tests. The second approach is an international comparison of obvious landscape perceptions and evaluation on site. In this study, it tries to build the unprecedented new method to understand sceneries on site, that enables to understand the object and the object field at the same time by letting the respondents take the pictures of scenery for evaluation and taking the spatial geographic information using the GPS at the same time.

6. JSPS International Training Program（ITP）Oct-Dec,2012, Sep-Nov,2013

   2014-2016 Joint Research Program in Bilateral Programs, JSPS and NRF

7. Main result

   - MIZUUCHI Yusuke, FURUYA Katsunori, SON YongHoon (2014) : Landscape Evaluation Method by Visitor-Employed Photography with Usage of Cellphones- Case Study of Mount Gwanak, Korea : JpGU Meeting 2014 Yokohama, 2014: accept
   - Yusuke MIZUUCHI(2014)：A Study about Landscape Perception by the method of Visitor Employed Photography on Mt.Gwanak in Korea、The Japan - Korea sutudent seminar on Landscape studies 2014,Awaji,2014
   - Yusuke MIZUUCHI, YongHoon Son, Katsunori FURUYA (2013)：A Comparative Study on Forest Image Between Japan and Korea From the Perspective of Natural Resources：The First Asia Parks Congress,2013,Sendai,
   - MIZUUCHI Yusuke, FURUYA Katsunori, SON YongHoon (2013) :A Comparative Study on Landscape Evaluation Between Japan and Korea : JpGU Meeting 2013, Chiba, 2013

     MIZUUCHI Yusuke (2013) : Difference in the Landscape of Korea and Japan Among University Students in Korea：ITP Korea-Japan Student seminar program, Seoul, 2013
   - Yusuke MIZUUCHI, Yonghoon SON, Moonseok KANG, Katsunori FURUYA（2014）: Landscape Evaluation Method by Visitor-Employed Photography with Usage of Cell- phones - Case Study of Mount Gwanak, Korea, Japan Geoscience Union Meeting 2014, Yokohama, 2014
   - Yusuke MIZUUCHI, Yonghoon SON, Moonseok KANG, Katsunori FURUYA（2015）: Constructing a Survey Method for Landscape Evaluation Using Visitor Employed Photography and GPS, Landscape Research Japan Online, Vol. 8・1-7, http://doi.org/10.5632/jilaonline.8.1
   - Mizuuchi, Y., Nojima, T,. Furuya, K. (2016). A Study on Landscape Evaluation by Forest Trail Visitors in a Nature Park: A Case of Meiji no Mori Takao Quasi-National Park. Landscape Research Japan Online,9(0) 91-102

8. None

1. Possibility for ecotourism and protected areas of green space in Jakarta, Indonesia

2. Graduate School of Horticulture / Professor / Katsunori FURUYA

   Ibaraki University / Assistant Professor / Yui TAKASE

   Graduate School of Horticulture / Doctor student / Takako KOHORI

3. Indonesia / Bogor Agricultural University / Bambang Sulistyantara

   Indonesia / Bogor Agricultural University / Akhmad Arifin Hadi

   Indonesia / Bogor Agricultural University / Prita Indah Pratiwi

   Indonesia / Bogor Agricultural University / Hadi Susilo Arifin

4. 2012-

5. It carried out field survey and questionnaire survey. In the questionnaire survey, it asked about "awareness of eco-tourism" and "awareness of green space in Jakarta." for 210 students from Bogor Agricultural University. In the field survey, it had the visit to six green spaces in Jakarta where the respondents had visited many times, and analyzed its features.

   Most of green open spaces in Jakarta are easy to be changed into other land use. In fact, green open spaces in Jakarta have changed rapidly in recent years. It is necessary to increase protected area in the future. The objective of this study was to define students' attitude toward green space conservation activities and students' participation opinions. A survey was conducted with university students in Bogor Agricultural University (n=614).

   The population of Indonesia is 4th in the world ranking, and rapid economic growth has been observed based on this large population. Expansion of the city areas is progressing, especially around its capital Jakarta. The current issue is to develop and establish open space. In this study, alun-alun, which is Indonesia's traditional open space, has been set as a study subject. Alun-alun is a space where nothing other than lawns and several trees exist in a vast area. In recent years, with a government initiative, alun-alun have been converted to city gardens. A city garden can be defined as an open space where flowers and trees are planted. In this study, the objective has been set to compare people's impressions on alun-alun, between traditional ones and the ones which spatial structure has been changed.

6. JSPS International Training Program（ITP） 2013, 2014, 2015

7. Main result

   - Yui Takase, "Potential of protected area and Ecotourism in Green Open Space of Jakarta", The First Asia Parks Congress,2013,Sendai , p.308,
   - Yui Takase, Katsunori Furuya, Akhmad Arifin Hadi, Prita Indah Pratiwi, Bambang Sulistyantara, "Potential of Ecotourism and Environmental Education in Protected Areas of Indonesia", The First Asia Parks Congress, 2013, Sendai, p.226
   - Pratiwi Prita Indah, Katsunori FURUYA, Bambang Sulistyantara (2013) A Comparative Study on Landscape Evaluation Between Japan and Indonesia, : JPGU Meeting 2013 Japan Geoscience Union Meeting, Chiba
   - MATSUDA, Mikiya ; TAKASE, Yui1 ; PRATIWI, Prita indah ; SULISTYANTARA, Bambang ; FURUYA, Katsunori（2015） Survey about Bogor Agricultural University Students' Opinions of Green Space Conser- vation Activities, Japan Geoscience Union Meeting 2015, Makuhari,
   - Prita Indah Pratiwi1, Bambang Sulistyantara, Andi Gunawan, Katsunori Furuya (2014) A Comparative Study on The

Perception of Forest Landscape Using LIST Method Between University Students of Japan and Indonesia Journal of Tropical Forest Management, JMHT, XX, (3): 167-178 DOI: 10.7226/jtfm.20.3.167

- Prita Indah Pratiwi, Katsunori Furuya, dan Bambang Sulistyantara (2014) The Difference in People's Response Toward Natural Landscape Between University Students of Japan and Indonesia, Journal of People and Environment, J. MANUSIA DAN LINGKUNGAN, 21(2), 247-253
- MARISKI, Mariski; GUNAWAN, Andi; HADI, Akhmad arifin; FURUYA, Katsunori (2015) Study of People Perceptions about Four Parks in Jakarta, Japan Geoscience Union Meeting 2015, Makuhari
- KOHORI, Takako; FURUYA, Katsunori (2015) Impression by Spatial Structure At Indonesia's Traditional Open Space Alun-Alun — University Students As Study Subject, Japan Geoscience Union Meeting 2015, Makuhari
- HADI, Akhmad arifin; FURUYA, Katsunori; PRATIWI, Prita indah (2015) Study of Correlation between the Existences of Landscape Elements to People Preference of Landscape Quality, Japan Geoscience Union Meeting 2015, Makuhari
- MARISKI, Mariski; GUNAWAN, Andi; HADI, Akhmad arifin; FURUYA, Katsunori (2015) Study of People Perceptions about Four Parks in Jakarta, Japan Geoscience Union Meeting 2015, Makuhari
- Takako KOHORI, Katsunori FURUYA (2015) Study on the influences to student's recognition and activity by the change of alun-alun, Landscape Research Japan, Vol. 78(5), 573-578
- Hadi A A., Mizuuchi Y., Furuya K. (2016) : Exploring Attractive Landscape Elements and Sceneries of Bukit Kucing Forest Tanjungpinang by using Visitors-Employed Photography Method. The 7th Indonesia Japan Joint Scientific Symposium, P423-432
- Hadi, A. A., Mizuuchi, Y., Dwi, S., Honjo, T., & Furuya, K. (2017).Identifying Visitor Preferences for Locations and Features In Bogor Botanical Garden, Indonesia, using GPS Tracking and Geo-tagged Photos. Journal of Architecture & Environment 16(1) 27-40
- Hadi, A. A., Mizuuchi, Y., Honjo, T., Furuya, K. (2017). Identifying Impressive Landscape Objects Based on Geotagged Photographs (A Case Study of Self-Portraits and Ordinary Photos). Journal of Indonesian Tourism and Development Studies, 5(2), 73-80.

8. None

1. Evolution of biodiversity with environmental changes in southern East Asia since the Neogene
2. Graduate School of Horticulture / Professor / Dr. Arata Momohara
3. China / Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences / Prof. Dr. Zhekun Zhou
   China / Kunming Institute of Botany, Chinese Academy of Sciences / Asis. Prof. Dr. Yong-Jiang, Huang
4. 2000-
5. The warm temperate zone in the area surrounded by the Hengduan, Namling, and Qinling Mountains in south East Asia has the highest species diversity of plant taxa in the temperate zone in the Northern Hemisphere. Many plants endemic to this area were once distributed in Japan in the Neogene and the research of the flora and vegetation is very important to clarify development process of modern Japanese flora. We study modern vegetation and fossil flora in this region to clarify evolution of diversity of east Asian flora and vegetation accompanied with a development of geomorphology and monsoon

climate by uplift of the Himalaya and Tibet since the Neogene.

6. JSPS Grant-in air for Scientific Research (Foreign Invited Researcher) 2017-2019

JSPS Grant-in aid for Scientific Research 2005-2006

JSPS Invitation Fellowship Programs for Researchers in Japan (Long term) 2005

7. Main result

- Huang, Y.J., Momohara, A., Wang, Y., 2018. Selective extinction within a Tertiary relict genus in the Japanese Pleistocene explained by climate cooling and species-specific cold tolerance. Review of Palaeobotany and Palynology, 258, 1-12.
- Wang, Y., Ito, A., Huang, Y.J., Fukushima, T., Wakamatsu, N., Momohara, A., 2018. Reconstruction of altitudinal transportation range of leaves based on stomatal evidence: An example of the Early Pleistocene Fagus leaf fossils from central Japan. Palaeogeography, Palaeoclimatology, Palaeoecology, 505, 317-325.
- Wang, Y., Momohara, A., Ito, A., Fukushima, T., Huang, Y.J., 2018. Warm climate under high CO2 level in the early Pleistocene based on a leaf fossil assemblage in central Japan. Review of Palaeobotany and Palynology, 258, 146-153
- Wang, Y., Momohara, A., Sun, M., Wang, L., Lebreton-Anberrée, J., and Zhou, Z., 2015. Climate change of central Japan during Pliocene to Pleistocene: evidence from stable carbon isotope and leaf morphology of fossil Metasequoia. Quaternary Sciences, 35(3), 767-775
- Wang, Y., Momohara, A., Wang, L., Lebreton-Anberrée, J., and Zhou, Z., 2015. Evolutionary history of atmospheric CO2 during the Late Cenozoic from fossilized Metasequoia needles. PLoS ONE, 10(7): e0130941
- Momohara, A., Saito, T., Huang YJ., Zhou, ZK., 2011, Forests dominated by Fagus lucida and Fagus longipetiolata on Mt. Fanjing, northeastern Guizhou, China. Japanese Journal of Historical Botany, 20(2), 55-56.
- Oginuma, K., Chen, S.T., Zhou, Z.K., Peng, C.I., Momohara, A., and Setoguchi, H., 2007. Intraspecific polyploidy of Houttuynia cordata and chromosome number evolution in Saururaceae. Chromosome Botany, 2, 87-91.
- Uehara, K., Tanaka, N., Momohara, A., and Zhou, Z.K, 2006. Genetic diversity of an endangered aquatic plant, Potamogeton lucens subspecies sinicus. Aquatic Botany, 85, 350-354.
- Momohara, A., Zhou, Z.K., Li, X.X., and Setoguchi, H., 2006. Cenozoic flora with Quercus sect. Heterobalanus in the western Yunnan Province, southwestern China. Japanese Journal of Historical Botany, 14, 43-44.
- Zhou, Z.K. and Momohara, A., 2005. Fossil history of some endemic seed plants of East Asia and its phytogeographical significance. Acta Botanica Yunnanica, 27(5), 449-470.

8. Invited by JSPS Invitation Fellowship Programs for Researchers in Japan (Long term) in 2005 (Mar. - Dec.).

Symposium in IPC/IOPC meeting 2012 Uplift of the Himalaya and its impact on the climatic and biodiversity changes in East Asia. 2012.8.29, Chuo University, Tokyo

1. Ecological research on Tertiary relict trees in China
2. Graduate School of Horticulture / Professor / Dr. Arata Momohara
3. China / Yunnan University / Prof. Dr. Cindy Q. Tang

China / Chongqing University / Prof. Dr. Yongchuang Yang

4. Collaborative servey of vegetation including Tertiary relict trees are conducted to clarify their relictic process and develop conservation strategies.
5. 2011-
6. JSPS Grant-in air for Scientific Research
7. Main result
   - Tang C.Q., Matsui T., Ohashi H., Dong YF., Momohara A.,..,Qian S., Yang Y., Ohsawa M.et al., 2018. Identifying long-term stable refugia for relict plant species in East Asia. Nature Communications, 9, 4488.
   - Quang, S., Yang Y., Tang, C.Q., Momohara, A., Yi, SR., and Ohasawa, M., 2015. Effective conservation measures are needed for wild Cathaya argyrophylla populations in China: Insights from the population structure and regeneration characteristics Forest Ecology and Management, 361, 358-367.
   - Tang, C.Q., Yang Y., Ohasawa, M., Momohara, A., Yi, SR., Robertson, K., Song, K., Zhang, SQ., and He LY., 2015. Community structure and survival of Tertiary relict Thuja sutchuenensis (Cupressaceae) in the subtropical Daba Mountains, Southwestern China. PLoS ONE, 10(4): e0125307.
   - Tang, C.Q., Yang Y., Ohasawa, M., Momohara, A., Mu, J., and Robertson, K., 2013. Survival of a Tertiary relict species: Liriodendron chinense (Magnoliaceae) in southern China, with special reference to village fengshui forests. American Journal of Botany, 100(10), 2112-2119.
   - Tang, C.Q., Yang Y., Ohasawa, M., Yi, S.R., Momohara, A., Su, W.H., Wang, H.C., Zhang, Z.Y., Peng, M.C., and Wu, Z.L., 2012. Evidence for the persistence of wild Ginkgo biloba (Ginkgoaceae) populations in the Dalou Mountains, southwestern China. American Journal of Botany, 99(8), 1408-1414.
   - Tang, C.Q., Yang Y.C., Ohsawa, M., Momohara, A., Hara, M., Cheng, S.L., and Fan, S.G., 2011. Population structure of relict Metasequoia glyptostroboides and its habitat fragmentation and degradation in south-central China. Biological Conservation, 144, 279-289.

1. Circadian clock-dependent signaling between higher plant organelles
2. Graduate School of Horticulture / Professor / Mitsumasa Hanaoka
3. United Kingdom / University of Bristol / Dr. Antony Dodd
4. 2010-
5. In higher plants, it is well known that the circadian clock is responsible for photosynthetic and metabolic activities. However, how the timing signal is communicated with chloroplasts is yet to be clarified. In this collaborative study, signal transduction between organelles in plant cells will be understood.
6. International Joint Project, The Royal Society
7. Main result
   - Zeenat B. Noordally, Kenyu Ishii, Kelly A. Atkins, Sarah J. Wetherill, Jelena Kusakina, Eleanor J. Walton, Maiko Kato, Miyuki Azuma, Kan Tanaka, Mitsumasa Hanaoka and Antony N. Dodd (2013) Circadian control of chloroplast transcription by a nuclear-encoded timing signal. Science 339, 1316-1319.
   - Antony N. Dodd, Jelena Kusakina, Anthony Hall, Peter D. Gould and Mitsumasa Hanaoka (2014) The circadian regulation of photosynthesis. Photosynth. Res. 119, 181-190.

8. Other important items to be stated

- Press release(Chiba-nippo, Mar 15, 2013)
- Presentation in the International Symposium on Plant Photobiology (UK, 2013)
- Awarded by Daiwa Adrian Prizes for Scientific Collaboration 2013

---

1. Examination of plant food digestibility using in vitro simulated digestion technique
2. Graduate School of Horticulture / Associate Professor / Yukiharu Ogawa
3. New Zealand / Riddet Institute, Massey University / Dr Jaspreet Singh, Dr Lovedeep Kaur
4. 2011-
5. To elucidate relationships between structural characteristics and digestibility of plant food, starch digestibility of cooked rice is examined using in vitro simulated digestion technique in this project.
6. 2012, Program to Support Sending Graduate Students Abroad, Chiba University, 2014, Program to Support Sending Graduate Students Abroad, Chiba University, JSPS Joint Research Project
7. Main result
   - Masatsugu Tamura, Jaspreet Singh, Lovedeep Kaur, Yukiharu Ogawa, Relationships between starch digestibility and gelatinization degree of cooked rice with structural change, Journal of Food and Agricultural Technology, 1, 54-57, 2015.
   - Masatsugu Tamura, Jaspreet Singh, Lovedeep Kaur, Yukiharu Ogawa, Evaluation of digestibility of cooked rice grain using in vitro digestion technique, CIGR Journal, Special issue 2015, 268-273, 2015.
   - Masatsugu Tamura, Jaspreet Singh, Lovedeep Kaur, Yukiharu Ogawa, Impact of the degree of cooking on starch digestibility of rice - an in vitro study, Food Chemistry, 191, 98-104, 2016.
   - Masatsugu Tamura, Jaspreet Singh, Lovedeep Kaur, Yukiharu Ogawa, Impact of structural characteristics on starch digestibility of cooked rice, Food Chemistry, 191, 91-97, 2016.
   - Masatsugu Tamura, Yumi Okazaki, Chisato Kumagai, Yukiharu Ogawa, The importance of an oral digestion step in evaluating simulated in vitro digestibility of starch from cooked rice grain, Food Research International, 94, 6-12, 2017.
   - Yukiharu Ogawa, Natthawuddhi Donlao, Sukanya Thuengtung, Jinhu Tian, Yidi Cai, Florencio C. Reginio Jr., Sunantha Ketnawa, Nami Yamamoto, Masatsugu Tamura, Impact of food structure and cell matrix on digestibility of plant-based food, Current Opinion in Food Science, 19, 36–41, 2018.
   - Jinhu Tian, Yidi Cai, Wei Qin, Yoshitaka Matsushita, Xingqian Ye, Yukiharu Ogawa, Parboiling reduced the crystallinity and in vitro digestibility of non-waxy short grain rice, Food Chemistry, 257, 23-28, 2018.
   - Masatsugu Tamura, Jaspreet Singh, Lovedeep Kaur, Yukiharu Ogawa, Effect of post-cooking storage on texture and in vitro starch digestion of japonica rice, Journal of Food Process Engineering, 2019;42:e12985, 1-12. (10.1111/jfpe.12985)
8. None

---

1. Studies on the effect of lighting and gas conditions on preservation of fresh-cut vegetables
2. Graduate School of Horticulture / Associate Professor / Yukiharu Ogawa

3. U.S.A. / Department of Food Science and Technology, The University of Georgia / Professor Yen-Con Hung
4. 2013-
5. To examine the effect of lighting and gas conditions on preservation of fresh-cut vegetables.
6. JSPS Grant-in-Aid for Challenging Research (Exploratory) 2017～2019
7. Yukiharu Ogawa, Mika Hashimoto, Yoshiharu Takiguchi, Toshiyuki Usami, Phunsiri Suthiluk, Kyoichiro Yoshida, Nami Yamamoto, Yen-Con Hung, Effect of decontamination treatment on vitamin C and potassium attributes of fresh-cut bell pepper at post-washing stage, Food and Bioprocess Technology, 11, 1230-1235, 2018 (10.1007/s11947-018-2096-3)
8. None

1. Bamboo Pavilion · Garden: The 1st BFU International Garden-making Festival, 2018
2. Landscape Architecture Field of Landscape Design / Prof. / ZHANG Junhua;
   Landscape Architecture Field of Landscape Planning / Assoc.Prof. / SHIMODA Ryosuke
3. China / Beijing Forestry University / School of Landscape Architecture
4. 2018.9.20-2018.10.7
5. Project outline:

2018.9.20-2018.10.7, Beijing Forestry University hosted the 1st BFU International Garden-making Festival with the theme "Bamboo Pavilion: Garden." The festival had five phases, including the design competition and review, the preparation of the construction documents and the feasibility negotiation, the on-site construction, the awards voting, and the exhibition.

Since the call for entry to the design competition in January 2018, the festival has attracted wide attention. By April 15 of 2018, 203 teams— a total of 1677 people from 112 colleges and universities— signed up for the design competition. After several rounds of review, the winning entries of seven construction awards and twelve honor awards were selected. The winners of the construction awards then prepared their construction documents and built their gardens at BFU together with another eight invited teams from top universities around the world. All these fifteen gardens, each occupying an area of 16 square meters, used potted plant materials.

The teams participating in the on-site construction came from fifteen institutions, including Beijing Forestry University, Southeast University, Nanjing Forestry University, Chiba University, Tsinghua University, Kyung Hee University, Tongji University, Central Academy of Fine Arts, Chu Hai College of Higher Education, Tianjin University, South China Agricultural University, Zhejiang A&F University. With bamboo and flower as major materials, these teams completed the onsite construction by themselves within 3.5 days.

The voting committee of this festival was comprised of sixteen scholars from countries like China, Netherland, the United Kingdom, the United States, Germany, South Korea, and Japan. The committee did an onsite review before the opening ceremony of the festival and announced the voting results.

The three winning entries of the Outstanding Awards were Chiba University's Look Upon the Moon, Beijing Forestry University's A Handscroll of Flower-and-Bird, and Tsinghua University's After Review. The five winning entries of the Award of Excellence were Tianjin University's Dancing in the Forest, Central Academy of Fine Arts' Winding River & Flowing Mountain, Tsinghua University and Beijing Forestry University's Weaving in Array, Beijing Forestry University's Commensalism & Betty, and Beijing Forestry University's Waiting for the Rain. The seven winning entries of the Honor

Award were Tongji University's Echoing Roam, Southeast University's The Cube, Nanjing Forestry University's Travel in the Infinite, Zhejiang A&F University's Gulliver's Corner Garden, Chu Hai College of Higher Education's Bamboo View Finder, Kyung Hee University's Falling Bamboo, and South China Agricultural University's Open and Closed.

6. Travel expenses and construction materials costs of all faculties and students.
7. Main result: NO.1 Outstanding Award《Look upon the Moon, Chiba University》
8. Other important items to be stated（awards received, symposiums attended, etc）

Chiba University's Look Upon the Moon entried as NO.1 of the three Outstanding Awards, which the other two universities were Beijing Forestry University's A Handscroll of Flower-and-Bird, and Tsinghua University's After Review

2018.9.23-2018.10.7, it was exhibited for the general public

This year's Garden Festival is part of the "international academic exchange week of gardens". During the same period, 4 major academic activities will be held, including the 2018 International Landscape Architecture Symposium, the 2018 Young Landscape Architects Roundtable Forum and the Sixth University Landscape Architecture Joint Forum on Architectural Planning, 2018 "Beijing Green Corridors" Theme Exhibition and Theme Forum, which will invite many experts, scholars, representatives of teachers and students from China, the Netherlands, the United Kingdom, the United States, Germany, South Korea, Japan and other countries and regions to conduct in-depth discussions and exchanges on themes in various fields.

Graduate School of Medicine

1. Urinary creatinine project
2. Graduate School of Medicine / Professor / Yasushi Suwazono
3. Sweden / Karolinska Institutet, The Institute of Environmental Medicine, Unit of Metals and Health / Agneta Åkesson

   Sweden / Karolinska Institutet, The Institute of Environmental Medicine, Unit of Metals and Health / Marie Vahter
4. 2003-
5. We assessed how much urinary creatinine and urinary cadmium was affected by potential factors, such as age, weight and meat intake and to assess to what extent creatinine adjustment of urinary cadmium introduce errors in the dose estimate, comparing urinary cadmium adjusted to specific gravity.
6. Yoshida Scholarship Foundation
7. Main result

1） Suwazono Y, Åkesson A, Alfvén T, Kobayashi E, Nogawa K, Nakagawa H, Järup L, Vahter M. The effect of factors related to urinary creatinine excretion when evaluating creatinine adjusted urinary cadmium concentrations. 10th International Congress of Toxicology. Tampere Finl and. Toxicology and Applied Pharmacology, 197: 189, 2004.

2） Suwazono Y, Åkesson A, Alfvén T, Järup L, Vahter M. Creatinine versus specific gravity adjusted urinary cadmium concentrations. Biomarkers. 2005;10:117-126

8. None.

1. Benchmark dose estimation for Cadmium-induced health effects in humans
2. Graduate School of Medicine / Professor / Yasushi Suwazono

3. Sweden / Karolinska Institutet, The Institute of Environmental Medicine / Agneta Åkesson
   Sweden / Karolinska Institutet, The Institute of Environmental Medicine / Marie Vahter
   Sweden / Karolinska Institutet, The Institute of Environmental Medicine / Annette Engström
4. 2004-
5. We estimated the benchmark dose of urinary cadmium for cadmium-induced tubular, glomerular and other health effects in an environmentally exposed population, using the hybrid approach.
6. The Swedish Research Council/Medicine, Institute of Environmental Medicine, Yoshida Scholarship Foundation, Medical Faculty of Lund University, Karolinska Institutet, The National Swedish Environmental Protection Agency, The Swedish Foundation for Strategic and Environmental Research, The Swedish Society of Medicine, Primary Care, R&D, County Council of Skåne, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, Swedish Council for Working Life and Social Research and the European Union.
7. Main result

1) Suwazono Y, Sand S, Vahter M, Filipsson AF, Skerfving S, Lidfeldt J, Åkesson A. Benchmark dose for cadmium-induced renal effects in humans. Environ Health Perspect. 2006 Jul;114(7):1072-6
2) Suwazono Y, Uetani M, Åkesson A. Estimation of benchmark dose for Cd-induced renal effects in humans. Reverse Brain Drain Project (RBD-NSTDA) Special Conference. Cadmium in Food and Human Health &Technologies for Environmental Restoration and Rehabilitation. Phitsanulok, Thailand, 2010.
3) Suwazono Y, Sand S, Vahter M, Skerfving S, Lidfeldt J, Åkesson A. Benchmark dose for cadmium-induced osteoporosis in women. Toxicol Lett. 2010 197:123-27.
4) Engström A, Michaëlsson K, Suwazono Y, Wolk A, Vahter M, Åkesson A. Long-term cadmium exposure and the association with bone mineral density and fractures in a population-based study among women. J Bone Miner Res. 2011(Mar) 26:486-95.

8. Reverse Brain Drain Project (RBD-NSTDA) Special Conference. Cadmium in Food and Human Health &Technologies for Environmental Restoration and Rehabilitation. Phitsanulok, Thailand, 2010.

1. Study on biomarker of cerebral infarction
2. Department of Neurological Surgery / Graduate School of Medicine/Specially Appointed Associate Professor / Takaki Hiwasa
3. China / Jinan University / Hao Wang
4. 2014-
5. Search for serum antibody markers for cerebral infarction
6. Research grants from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan, the Ministry of Health, Labour and Welfare of Japan, the Japan Agency for Medical Research and Development, Japan Science and Technology Agency, Toka-Donghua Educational and Cultural Exchange Foundation, Setsuro Fujii Memorial, the Osaka Foundation for Promotion of Fundamental Medical Research, and Industry-University Joint Research.
7. Major results

1) Wang H, Zhang XM, Tomiyoshi G, Nakamura R, Shinmen N, Kuroda H, Kimura R, Mine S, Kamitsukasa I, Wada T,

Aotsuka A, Yoshida Y, Kobayashi E, Matsutani M, Iwadate Y, Sugimoto K, Mori M, Uzawa A, Muto M, Kuwabara S, Takemoto M, Kobayashi K, Kawamura H, Ishibashi R, Yokote K, Ohno M, Chen PM, Nishi E, Ono K, Kimura T, Machida T, Takizawa H, Kashiwado K, Shimada H, Ito M, Goto K, Iwase K, Ashino H, Taira A, Arita E, Takiguchi M, Hiwasa T (2018) Association of serum levels of antibodies against MMP1, CBX1, and CBX5 with transient ischemic attack and cerebral infarction. Oncotarget 9: 5600-5613. PMID: 29464021

2) Yoshida Y, Wang H, Hiwasa T, Machida T, Kobayashi E, Mine S, Tomiyoshi G, Nakamura R, Shinmen N, Kuroda H, Takizawa H, Kashiwado K, Kamitsukasa I, Shin H, Wada T, Aotsuka A, Nishi E, Ohno M, Takemoto M, Yokote K, Takahashi S, Zhang XM, Takiguchi M, Iwadate Y (2018) Elevation of autoantibody level against PDCD11 in patients with transient ischemic attack. Oncotarget 9(10): 8836-8848. PMID: 29507658

3) Zhang XM, Wang H, Mine S, Takemoto M, Yokote K, Kitamura K, Kobayashi Y, Machida T, Kobayashi E, Yoshida Y, Matsutani T, Iwadate Y, Tomiyoshi G, Nakamura R, Shinmen N, Kuroda H, Hiwasa T (2017) Association of serum anti-prolylcarboxypeptidase antibody marker with atherosclerotic diseases accompanied by hypertension. J Mol Biomark Diagn 8: 361. doi: 10.4172/2155-9929.1000361

4) Sugimoto K, Tomiyoshi G, Mori M, Kuwabara S, Hirano S, Sawai S, Beppu M, Muto M, Uzawa A, Kitamura K, Takemoto M, Hattori A, Yamamoto M, Kobayashi K, Kawamura H, Ishibashi R, Yokote K, Mine S, Machida T, Kobayashi E, Yoshida Y, Matsutani T, Iwadate Y, Kobayashi Y, Nakamura R, Shinmen N, Kuroda H, Wang H, Zhang XM, Hiwasa T (2017) Identification of serum anti-GADD34 antibody as a common marker of diabetes mellitus and Parkinson disease. J Alzheimers Dis Parkinsonism 7: 358. doi: 10.4172/2161-0460.1000358

5) Hiwasa T, Tomiyoshi G, Nakamura R, Shinmen N, Kuroda H, Kunimatsu M, Mine S, Machida T, Sato E, Takemoto M, Hattori A, Kobayashi K, Kawamura H, Ishibashi R, Yokote K, Kitamura K, Ohno M, Chen PM, Nishi E, Ono K, Kimura T, Takizawa H, Kashiwado K, Kamitsukasa I, Wada T, Aotsuka A, Sunami K, Kobayashi E, Yoshida Y, Matsutani T, Iwadate Y, Mori M, Uzawa A, Muto M, Sugimoto K, Kuwabara S, Iwata Y, Kobayashi Y, Terada J, Matsumura T, Sakao S, Tatsumi K, Ito M, Shimada H, Zhang XM, Kimura R, Wang H, Iwase K, Ashino H, Taira A, Arita E, Goto K, Kudo T, Doi H (2017) Serum SH3BP5-specific antibody level is a biomarker of atherosclerosis. Immunome Res 13(2): 132. doi: 10.4172/17457580.1000132

6) Nakamura R, Tomiyoshi G, Shinmen N, Kuroda H, Kudo T, Doi H, Mine S, Machida T, Kamitsukasa I, Wada T, Aotsuka A, Kobayashi E, Yoshida Y, Matsutani T, Iwadate Y, Mori M, Uzawa A, Muto M, Sugimoto K, Kuwabara S, Takemoto M, Hattori A, Kobayashi K, Kawamura H, Ishibashi R, Yokote K, Iwata Y, Harada J, Kobayashi Y, Terada J, Matsumura T, Sakao S, Tatsumi K, Ohno M, Chen PM, Nishi E, Ono K, Kimura T, Kitamura K, Takizawa H, Kashiwado K, Shimada H, Ito M, Goto K, Zhang XM, Kimura R, Wang H, Taira A, Arita E, Ashino H, Iwase K, Hiwasa T (2017) An anti-deoxyhypusine synthase antibody as a marker of atherosclerosis-related cerebral infarction, myocardial infarction, diabetes mellitus, and chronic kidney disease. SM Atheroscler J 1(1): 1001. doi: http://smjournals.com/atherosclerosis/in-press.php#x

7) Hiwasa T, Machida T, Zhang XM, Kimura R, Wang H, Iwase K, Ashino H, Taira A, Arita E, Mine S, Ohno M, Chen PM, Nishi E, Kitamura K, Yamazoe R, Takizawa H, Kashiwado K, Kamitsukasa I, Wada T, Aotsuka A, Kobayashi E, Matsutani T, Iwadate Y, Saeki N, Mori M, Uzawa A, Muto M, Sugimoto K, Kuwabara S, Iwata Y, Nakayama T, Harada

J, Kobayashi Y, Takemoto M, Kobayashi K, Kawamura H, Ishibashi R, Sakurai K, Fujimoto M, Yokote K, Goto K, Matsumura R, Sugiyama T, Hayashi H, Hasegawa R, Shimada H, Ito M, Kudo T, Doi H, Nakamura R, Tomiyoshi G, Shinmen N, Kuroda H (2015) Elevated levels of autoantibodies against ATP2B4 and BMP-1 in sera of patients with atherosclerosis-related diseases. Immunome Res 11: 097. doi.org/10.4172/1745-7580.1000097

8) Hiwasa T, Zhang XM, Kimura R, Machida T, Kitamura K, Yamazoe R, Kunimatsu M, Mine S, Kobayashi E, Iwadate Y, Saeki N, Takemoto M, Kobayashi K, Kawamura H, Ishibashi R, Sakurai K, Fujimoto M, Yokote K, Iwata Y, Nakayama T, Harada J, Kobayashi Y, Ohno M, Chen PM, Nishi E, Yokota M, Kamitsukasa I, Wada T, Aotsuka A, Mori M, Uzawa A, Muto M, Sugimoto K, Kuwabara S, Goto K, Matsumura R, Sugiyama T, Takizawa H, Shimada H, Ito M, Wang H, Taira A, Arita E, Iwase K, Kudo T, Doi H, Nakamura R, Tomiyoshi G, Shinmen N, Kuroda H (2015) Association of serum antibody levels against TUBB2C with diabetes and cerebral infarction. Integ Biomed Sci 1(2): 49-63. doi: 10.18314/gjbs.v1i2.27

8. None

1. In vivo assessment of human axonal ion channel function
2. Department of Neurology, Graduate School of Medicine / Professor / Satoshi Kuwabara
3. London, UK / Sobell Department of Neurophysiology, Institute of Neurology / Prof. Hugh Bostock
   Australia / Brain and Mind Research Institute, University of Sydney / Prof. Matthew Kiernan
4. 2008-
5. Development of methods to assess human peripheral nerve ion channel function in vivo
6. Grant-in-Aid for Scientific Research C (2011-2013; 2014-2016)
7. Main result

1） Shahrizaila N, Sobue G, Kuwabara S, Kim SH, Birks C, Fan DS, Bae JS, Hu CJ, Gourie-Devi M, Noto Y, Shibuya K, Goh KJ, Kaji R, Tsai CP, Cui L, Talman P, Henderson RD, Vucic S, Kiernan MC. Amyotrophic lateral sclerosis and motor neuron syndromes in Asia. J Neurol Neurosurg Psychiatry. 2016 Apr 19. pii: jnnp-2015-312751. doi: 10.1136/jnnp-2015-312751.

2） Bae JS, Yuki N, Kuwabara S, Kim JK, Vucic S, Lin CS, Kiernan MC. Guillain-Barré syndrome in Asia. J Neurol Neurosurg Psychiatry. 2014 Aug;85(8):907-13.

3） .Fujimaki Y, Kanai K, Misawa S, Shibuya K, Isose S, Nasu S, Sekiguchi Y, Ohmori S, Noto Y, Kugio Y, Shimizu T, Matsubara S, Lin CS, Kuwabara S. Differences in excitability between median and superficial radial sensory axons. Clin Neurophysiol. 2012 Jul;123(7):1440-5.

8. None

1. Development of new electrodiagnostic criteria of Guillain-Barre syndrome
2. Department of Neurology, Graduate School of Medicine / Professor / Satoshi Kuwabara
3. Italy / Department of Neuroscience and Imaging / University “G. D’Annunzio” / Prof. A Uncini
4. 2008-
5. Development of new electrodiagnostic criteria of Guillain-Barre syndrome
6. The Health and Labour Sciences Research Grant on Intractable Diseases (Neuroimmunological Diseases) from the Ministry of Health, Labour and Welfare of Japan

7. Main result

1) Uncini A, Kuwabara S. Nodopathies of the peripheral nerve: an emerging concept. J Neurol Neurosurg Psychiatry 2015 Nov;86(11):1186-95.

2) Kuwabara S, Uncini A. Multiple mechanisms for distal axonal loss in Guillain-Barré syndrome. Clin Neurophysiol. 2013;124:821-2.

3) Uncini A, Kuwabara S. Reply to "Serial electrodiagnostic studies increase the diagnostic yield of axonal Guillain-Barré syndrome". Clin Neurophysiol. 2013;124:212-3.

4) Uncini A, Kuwabara S. Electrodiagnostic criteria for Guillain-Barrè syndrome: a critical revision and the need for an update. Clin Neurophysiol. 2012;123:1487-95.

5) Yuki N, Kokubun N, Kuwabara S, Sekiguchi Y, Ito M, Odaka M, Hirata K, Notturno F, Uncini A. Guillain-Barré syndrome associated with normal or exaggerated tendon reflexes. J Neurol. 2012 Jun;259:1181-90.

6) Sekiguchi Y, Uncini A, Yuki N, Misawa S, Notturno F, Nasu S, Kanai K, Noto Y, Fujimaki Y, Shibuya K, Ohmori S, Sato Y, Kuwabara S. Antiganglioside antibodies are associated with axonal Guillain-Barré syndrome: a Japanese-Italian collaborative study. J Neurol Neurosurg Psychiatry. 2012;83:23-8.

8. None.

---

1. Genetic and environmental factors in multiple sclerosis and neuromyelitis optica
2. Department of Neurology, Graduate School of Medicine / Professor / Satoshi Kuwabara
3. Germany / Department of Hematology / Charite Medical School / Prof. Friedemann Paul Dispenzieri
4. 2017-
5. Comparison of MS/NMO in Japan and Germany
6. The Health and Labour Sciences Research Grant on Intractable Diseases from the Ministry of Health, Labour and Welfare of Japan
7. Main result

   1) Mori M, Kuwabara S, Paul F. Worldwide prevalence of neuromyelitis optica spectrum disorders. J Neurol Neurosurg Psychiatry. 2018 Feb 7. pii: jnnp-2017-317566. doi: 10.1136/jnnp-2017-317566.

8. None

---

1. Title: Genetic Analysis of Cystinuria Patients in Asia
2. Department of Urology, Graduate School of Medicine / Assistant Professor / Shinichi Sakamoto
3. Collaboration with

   Korea / Department of Pediatrics, Seoul National University Children's Hospital / Prof. Hae Il Cheong

   Malaysia / Department of Urology, Malaya University / Prof. Ong Teng Aik, Senior Lecturer. Lim Jasmine

   Thai / Department of Urology, Chulalongkorn University / Dr. Manint Usawachintachit

   Thai / Mahidol Universtiy faculty of Science / Associate Prof. Arthit Chairoungdua

   China / Urology, Department of Surgery, Prince of Wales Hospital, The Chinese University of Hong Kong. / Assistant Prof. Jeremy Yuen-Chun, Prof. Anthony C.F. Ng

4. Periods: January 2012-December 2021

5. Contents:Study the similarity or difference in genetic mutations between Japanese and Asian Cystinuria Patients.
6. Funding:None
7. Result:We have identified that Korean Cystinuria patients also possessed mutation(P482L) that we have previously thought specific for Japanese patients.

   Shinichi Sakamoto, Hae Il Cheong, Yukio Naya, Yasuhiro Shigeta, Masa-aki Fujimura,Kazuo Mikami, Naoki Nihei, Takeshi Ueda, Koichiro Akakura, Motoyuki Masai,Tomohiko Ichikawa Genetic difference between Korean and Japanese Cystinuria Patients 2013 August 31 22nd Annual Meeting of Japanese Society on Urolithiasis Research12:68,2012
8. Invited lecture
   - Annual meeting of Korean Society for Nephrology Shinichi Sakamoto 2013 年 10 月 19 日 Characteristic feature of urolithiasis in Japan Korean Society for Nephrology(Seoul)Korean Society for Nephrology, 2013
   - Seminar/Department of Urology, Malaya Univesrity/14th March 2018
   - Seminar/Faculty of Science, Mahidol University/15th March 2018
   - Seminar/Department of Urology, Chulalongkorn University/16th March 218

1. Molecular mechanism of bacterial toxins in host cells
2. Graduate School of Medicine / Associate Professor / Kinnosuke Yahiro
3. United State of America / National Institutes of Health, NHLBI / Dr. Joel Moss.
4. From 2008
5. We are investigating the effect of various bacterial toxins on host cells.
6. Grants-in-Aid for Scientific Research. Chiba university young research-oriented faculty member development program. Japan Agency for Medical Research and Development (AMED). The Joint Usage / Research Center on Tropical Disease, Institute of Tropical Medicine, Nagasaki University. Takeda Science Foundation
7. Main achievements
   1) N. Morinaga, K. Yahiro, G. Matsuura, J. Moss, M. Noda, Subtilase cytotoxin, produced by Shiga-toxigenic Escherichia coli, transiently inhibits protein synthesis of Vero cells via degradation of BiP and induces cell cycle arrest at G1 by downregulation of cyclin D1. Cellular Microbiology 10, 921-929 (2008)
   2) Nakayama, J. Hisatsune, E. Yamasaki, H. Isomoto, H. Kurazono, M. Hatakeyama, T. Azuma, Y. Yamaoka, K. Yahiro, J. Moss, T. Hirayama, Helicobacter pylori VacA-induced Inhibition of GSK3 through the PI3K/Akt Signaling Pathway. Journal of Biological Chemistry 284, 1612-1619 (2009)
   3) Y. Terasaki, K. Yahiro, G. Pacheco-Rodriguez, W. K. Steagall, M. P. Stylianou, J. F. Evans, A. M. Walker, J. Moss, Effects of Prolactin on TSC2-Null Rat Cells and in Pulmonary Lymphangioleiomyomatosis. American Journal of Respiratory and Critical Care Medicine 182, 531-539 (2010)
   4) K. Yahiro, M. Satoh, N. Morinaga, H. Tsutsuki, K. Ogura, S. Nagasawa, F. Nomura, J. Moss, M. Noda, Identification of Subtilase Cytotoxin (SubAB) Receptors Whose Signaling, in Association with SubAB-Induced BiP Cleavage, Is Responsible for Apoptosis in HeLa Cells. Infection and Immunity 79, 617-627 (2011)
   5) K. Yahiro, M. Satoh, M. Nakano, J. Hisatsune, H. Isomoto, J. Sap, H. Suzuki, F. Nomura, M. Noda, J. Moss, T.

Hirayama, Low-density Lipoprotein Receptor-related Protein-1 (LRP1) Mediates Autophagy and Apoptosis Caused by Helicobacter pylori VacA. Journal of Biological Chemistry 287, 31104-31115 (2012)

6） K. Yahiro, H. Tsutsuki, K. Ogura, S. Nagasawa, J. Moss, M. Noda, DAP1, a Negative Regulator of Autophagy, Controls SubAB-Mediated Apoptosis and Autophagy. Infection and Immunity 82, 4899-4908 (2014)

7） K. Yahiro, Y. Akazawa, M. Nakano, H. Suzuki, J. Hisatune, H. Isomoto, J. Sap, M. Noda, J. Moss, T. Hirayama, Helicobacter pylori VacA induces apoptosis by accumulation of connexin 43 in autophagic vesicles via a Rac1/ERK-dependent pathway. Cell Death Discovery 1,15035 (2015)

8） H. Tsutsuki, K. Yahiro, K. Ogura, K. Ichimura, S. Iyoda, M. Ohnishi, S. Nagasawa, K. Nagasawa, J. Moss, M. Noda, Subtilase cytotoxin produced by LEE-negative Shiga-toxigenic Escherichia coli induces stress granule formation. Cellular Microbiology 8(7), 1024-40 (2016)

9） M. Nakano, K. Yahiro, E. Yamasaki, H. Kurazono, J. Akada, Y. Yamaoka, T. Niidome, M. Hatakeyama, H. Suzuki, T. Yamamoto, J. Moss, H. Isomoto, T. Hirayama, Helicobacter pylori VacA, acting through receptor protein tyrosine phosphatase α, is crucial for CagA phosphorylation in human duodenum carcinoma cell line AZ-521. Dis Model Mech. 9(12), 1473-1481(2016)

10） K. Ogura K, Y. Terasaki, T. Miyoshi-Akiyama, M. Terasaki, J. Moss, M. Noda, Y. Yahiro K, Vibrio cholerae Cholix toxin-induced HepG2 cell death is enhanced by tumor necrosis factor-alpha through ROS and intracellular signal-regulated kinases. Toxicol Sci 156 (2), 455-468 (2017)

11） K. Yahiro, T. Hirayama, J. Moss, M. Noda, 2016. New Insights into VacA intoxication mediated through its cell surface receptors. Toxins (Review), 8, 152; doi: 10.3390 / toxins 8050152

12） K. Yahiro, S. Nagasawa, K. Ichimura, H. Takeuchi, K. Ogura, H. Tsutsuki, T. Shimizu, S. Iyoda, M. Ohnishi, H. Iwase, J. Moss, M. Noda, Mechanism of inhibition of Shiga-toxigenic Escherichia coli SubAB cytotoxicity by steroids and diacylglycerol analogues. Cell Death Discovery (2018) doi:10.1038/s41420-017-0007-4

13） Yahiro, K. Ogura, Y. Terasaki, M. Satoh, S. Miyagi, M. Terasaki, E. Yamasaki, J. Moss. Cholix toxin, an eEF2 ADP-ribosyltransferase, interacts with Prohibitins and induces apoptosis with mitochondrial dysfunction in human hepatocytes. Cellular Microbiology (2019) In press.

8. Others

2010 年度　日本細菌学会黒屋奨学賞

2013 年度　第 19 回日本ヘリコバクター学会小林六造記念賞

1. Development of a SMaRT-mediated cancer therapy targeting cancer-type OATP1B3
2. Department of Pharmacology, Graduate School of Medicine / Senior Lecturer / Tomomi Furihata
3. Austria / EB haus / Josefina Piñón Hofbauer & Christina Guttmann-Gruber
4. 2014
5. We have identified cancer-type OATP1B3 (ct-OATP1B3) that shows a cancer-specific expression profile in various types of solid cancer. Thus, ct-OATP1B3 is a promising target for cancer molecular therapy. In this study, by taking advantage of the SMaRT technology, which is developed through a collaboration work with Austrian experts, we aim to develop a new modality-based molecular cancer therapy targeting ct-OATP1B3 with the expectation that it will become a highly-effective

and well-tolerated therapeutic method in various solid cancer treatments.

6. JSPS Kakenhi

7.

- Morio H, Sun Y, Harada M, Ide H, Shimozato O, Zhou X, Higashi K, Yuki R, Yamaguchi N, Hofbauer JP, Guttmann-Gruber C, Anzai N, Akita H, Chiba K, Furihata T. Cancer-Type OATP1B3 mRNA in Extracellular Vesicles as a Promising Candidate for a Serum-Based Colorectal Cancer Biomarker. Biol Pharm Bull. 2018;41(3):445-449.
- Sun Y, Woess K, Kienzl M, Leb-Reichl VM, Feinle A, Wimmer M, Zauner R, Wally V, Luetz-Meindl U, Mellerio JE, Fuentes I, South AP, Bauer JW, Reichelt J, Furihata T, Guttmann-Gruber C, Piñón Hofbauer J. Extracellular Vesicles as Biomarkers for the Detection of a Tumor Marker Gene in Epidermolysis Bullosa-Associated Squamous Cell Carcinoma. J Invest Dermatol. 2017, in press.
- Sun Y, Piñón Hofbauer J, Harada M, Wöss K, Koller U, Morio H, Stierschneider A, Kitamura K, Hashimoto M, Chiba K, Akita K, Anzai N, Reichelt J, Bauer JW, Gruber CG, Furihata T. Cancer-type organic anion transporting polypeptide 1B3 is a target for cancer suicide gene therapy using RNA trans-splicing technology. In revision.

8. Patent： JP5901046, US9115405B2

Best presentation award @ 136th Kanto Regional Meeting of the JPS, 2nd Kuroshio Conference

---

1. Studies of molecular epidemiology and anti-helmintic resistance of Haemonchus species in Nigeria and Japan
2. Department of Infection and Host Defense, Graduate School of Medicine / Assistance Professor / Kenji Hikosaka
3. Nigeria / Department of Veterinary Parasitology, Faculty of Veterinary Medicine, University of Abuja / Associate Professor Simon Malang Kawe
4. 2017
5. We aimed to study the molecular epidemiology and control the spread of anti-helmintic resistance against haemonchosis in Nigeria and Japan.
6. Grants-in-aid for scientific research from the GOHO Life Science Foundation Japan.
7. 論文執筆中
8. 確認中

---

1. Pathophysiological role of p38 mitogen-activated protein kinase
2. Graduate School of Medicine / Associate Professor / Yoshitoshi Kasuya
3. U.S.A / University of California San Diego, Faculty of Medicine, Department of Pharmacology / Prof. Michael Karin
4. 2002-
5. Mitogen-activated protein kinases (MAPK) family which transduces a variety of extracellular signals to the transcriptional machinery via a cascade of protein phosphorylation plays a crucial role in a variety of cell responses, i.e. growth, differentiation, transformation, survival and apoptosis. There are three genetically distinct MAPKs in mammals, consisting of extracellular signal-regulated kinase (Erk), c-Jun N-terminal kinase (JNK) and p38 MAPK. Among them, p38 MAPK activated with extracellular stress like cytokines, UV and osmolarity shock is thought to be a critical molecule in inflammation and vascular formation. To elucidate the pathophysiological role of p38 MAPK, we use p38 MAPK knockout mice.

6. The Cosmetology Research Foundation / The NISSAN Science Foundation / The Hamaguchi Foundation for the Advancement of Biochemistry / The Takeda Science Foundation for Visionary Research / Grant-in-aid for scientific research from the Ministry of Education, Science, Sports, and Culture of Japan / Collaborative study with Ube Ind. for "Development of therapeutic drugs against inflammatory diseases"

7. Main result

1) Takanami-Ohnishi Y, Amano S, Kimura S, Asada S, Utani A, Maruyama M,Osada H, Tsunoda H, Irukayama-Tomobe Y, Goto K, Karin M, Sudo T, and Kasuya Y. : Essential Role of p38 Mitogen-activated Protein Kinase in Contact Hypersensitivity. J. Biol. Chem. 2002, 277, 37896-37903

2) Sakurai K, Matsuo Y, Sudo T, Takuwa Y, Kimura S and Kasuya Y. Role of p38 Mitogen-activated Protein Kinase in Thrombosis. J. Recept. Signal Transduct. 2004, 24, 283-296

3) Matsuo Y, Amano S, Furuya M, Namiki K, Sakurai K, Nishiyama M, Sudo T, Tatsumi K, Kuriyama T, Kimura S, and Kasuya Y: Involvement of p38α Mitgen-activayed Protein Kinase in Lung Metastasis of Tumor Cells. J. Biol. Chem. 2006, 281, 36767-36775

4) Namiki K, Nakamura A, Furuya M, Mizuhashi S, Matsuo Y, Tokuhara N, Sudo T, Hama H, Kuwaki T, Yano S, Kimura S, and Kasuya Y: Involvement of p38α in Kainate-induced Seizure and Neuronal Cell Damage. J. Recept. Signal Transduct. 2007, 27, 99-111

5) Kasuya Y, Hagihara M and Sudo T: p38 inhibitor. Folia Pharmacologica Japonica 2009, 133, 357-359

6) Namiki K, Matsunaga H, Yoshioka K, Tanaka K, Murata K, Ishida J, Sakairi A, Kim J, Tokuhara N, Shibakawa N, Shimizu M, Wada Y, Tokunaga Y, Shigetomi M, Hagihara M, Kimura S, Sudo T, Fukamizu A, and Kasuya Y: Mechanism for p38α-mediated experimental autoimmune encephalomyelitis. J. Biol. Chem. 2012, 287, 24228-24238

7) Kasuya Y: p38 inhibitor. Nippon Rinsho 2014, 72 (Special Issue 3), 525-529

8) Amano H, Murata K, Matsunaga H, Tanaka K, Yoshioka K, Kobayashi T, Ishida J, Fukamizu A, Sugiyama F, Sudo T, Kimura S, Tatsumi K, and Kasuya Y: p38 mitogen-activated protein kinase accelerates emphysema in mouse model of chronic obstructive pulmonary disease. J. Recept. Signal Transduct. 2014, 34, 299-306

9) Kasuya Y: Trends in functions and inhibitors of p38. Folia Pharmacologica Japonica 2015, 145, 21-26

10) Yoshioka K, Namiki K, Sudo T, Kasuya Y: p38α controls self–renewal and fate decision of neurosphere –forming cells in adult hippocampus. FEBS Open Bio. 2015, 5, 437-444

11) Umezawa H, Naito Y, Tanaka K, Yoshioka K, Suzuki K, Sudo T, Hagihara M, Hatano M, Tatsumi K, and Kasuya Y: Genetic and Pharmacological Inhibition of p38α Improves Locomotor Recovery after Spinal Cord Injury. Front. Pharmacol. 2017, 8, Article 72

12) Kasuya Y, Umezawa H, Hatano M. Stress-Activated Protein Kinases in Spinal Cord Injury: Focus on Roles of p38, Int. J. Mol. Sci. 2018, 19, Article 867

8. Other important items to be stated

1) Invited speaker in the 55th Annual Assembly and Scientific Meeting of the Japan College of Rheumatology (at Kobe Portopia Hotel , 2011 July)

2) Invited speaker in the 57th Annual Assembly and Scientific Meeting of the Japan College of Rheumatology (at Kyoto

International Conference Center, 2013 April)

1. Role of GATA3 transcriptional factor network in T cell development
2. Graduate School of Medicine / Professor / Tomoaki Tanaka
3. United States of America / California Institute of Technology / Ellen V. Rothenberg
4. From April 2016* to date
5. We have examined the functional role of transcription factor PU.1 complexes and revealed its underlying mechanisms in the regulation of early T cells development through repression and activation of gene expression profile via novel theft theory of PU.1-RUNX1 interaction. *
6. AMED-CREST
7. Hosokawa H, Romero-Wolf M, Yui A M, Ungerbäck J, Quiloan M, Matsumoto M, Nakayama I. K, **Tanaka T**. Rothenberg V. E. Bcl11b defines pro-T identity by site-specific cofactor recruitment and by repressing Id2 and Zbtb16. ***Nature Immunology***. 19(12):1427-144, (2018, Dec.)

   Hosokawa H, Ungerbäck J, Wang X, Matsumoto M, Nakayama I. K, Cohen M. S, **Tanaka T**, Rothenberg V. E. Transcription factor PU.1 represses and activates gene expression in early T cells by redirecting partner transcription factor binding. ***Immunity,*** 48(6):1119-1134. (2018)
8. None

1. Elucidation of underlying mechanisms of tumor suppressor p53 and its regulators
2. Graduate School of Medicine / Professor / Tomoaki Tanaka
3. United States of America / Columbia University / Carol Prives
4. From April 2010 to date
5. We have examined the multi-faceted functions of tumor suppressor p53 to exert the wide variety of cellular outcomes including apoptosis, ferotosis, cellular senescence, and stem cell regulation and metabolic regulation, and revealed its underlying mechanisms in the regulation of tumorigenesis and cancer development through mevalonate pathways and/or p53-induycible lncRNAs using human stem cells and organoids culture system. *
6. AMED-CREST, KB, Donated research fund for next-generation hormone academy
7. Nagano H, Hashimoto N, Nakayama A, Suzuki S, Miyabayashi U, Yamato A, Higuchi S, Fujimoto M, Sakuma I, Beppu M, Yokoyama M, Suzuki Y, Sugano S, Ikeda K, Tatsuno I, Manabe I, Yokote K, Inoue S, Tanaka T*. p53-Inducibe DPYSL4 Associates with Mitochondrial Supercomplexes and Regulates Energy Metabolism in Adipocytes and Cancer Cells. Proc. Natl. Acad. Sci. USA., 115 (33) 8370-8375, (2018)

   Suzuki S*, Tanaka T*, (*Co-first author), Poyurovsky MV, Nagano H, Mayama T, Ohkubo S, Lokshin M, Hosokawa H, Nakayama T, Suzuki Y, Sugano S, Sato E, Nagao T, Yokote K, Tatsuno I, Prives C. Phosphate-activated glutaminase (GLS2), a p53-inducible regulator of glutamine metabolism and reactive oxygen species. Proc Natl Acad Sci USA.107(16):7461-7466. (2010)
8. None

1. Elucidation of underlying molecular pathophysiology of NASH/NAFLD and its insulin resistance
2. Graduate School of Medicine / Professor / Tomoaki Tanaka

3. United States of America / Yale University / Gerald I. Shulman
4. From December 2018 to date
5. We have examined the molecular pathophysiology of NASH/NAFLD and its insulin resistance, particularly focusing on *in vivo* metabolic regulation as well as organ cross-talk using genome-editing techniques and flux-analysis. We found that FDXR, a key regulator for iron metabolism in mitochondria, are deeply involved in the regulation of hepatic insulin resistance and thereby systemic glucose metabolism, possibly via insulin-signal dependent hepatic gluconeogenesis, FOXO and oxidative stress.
6. AMED-CREST, KB, Donated research fund for next-generation hormone academy
7. Masanori Fujimoto, Tomoaki Tanaka. Hepatic Type 2 Innate Lymphoid Cells Suppress Gluconeogenesis via the IL-33/GATA3/IL-13 Axis. sAmerican Diabetes Association's 79th Scientific Sessions
8. None

---

1. Role of CD69 in immune responses
2. Graduate School of Medicine / Professor / Toshinori Nakayama
3. United States of America / University of Washington / Steven Ziegler
4. from April 2001 to date
5. We are investigating the role of CD69 in Asthma induction using CD69-deficient mice. We have found that CD69 molecules are essential for theinduction of asthma
6. Ministry of Education, Science, Sports, Culture and Technology of Japan(Grant in aid for Scientific Research B)
7. Miki, H. T., Hasegawa, A., Iwamura, C., Shinoda, K., Tofukuji, S., Watanabe, Y., Hosokawa, H., Motohashi, S., Hashimoto, K., Shirai, M., Yamashita, M., and Nakayama, T.: CD69 controls the pathogenesis of allergic airway inflammation. J. Immunol. 183:8203-8215 (2009).
8. Done

---

1. Crucial role of CD8αα for T cell memory survive.
2. Graduate School of Medicine / Professor / Toshinori Nakayama
   RIKEN Center for Integrative Medical Sciences, Laboratory for Lymphocyte Differentiation / Research Scientist / Ryo Shinnakasu
3. USA / La Jolla Institute for Allergy & Immunology / Dr. Hilde Cheroutre
4. 2008-
5. A hallmark of immune T cell memory is that repeated infections with a pathogen are met with more rapid and enhanced protective immunity against that organism. On the other hand, Allergy responses are caused by abnormally immunoresponse for antigens which are non-pathogen originally.
   Effector memory T cells are located at various tissues and have a heightened and immediate effector function. By contrast, central memory T cells reside within lymphoid tissues and require proliferation and differentiation to become effector cells. It becomes clear from our past study gradually that CD8 □□ serve as key components for maintain the effector memory T cells and now I am starting the analysis from a molecule level about the mechanism
6. Ministry of Education, Science, Sports, Culture and Technology of Japan(Grant in aid for Scientific Research B)

7. Mucida, D., Husain, M. M., Muroi, S., van Wijk, F., Shinnakasu, R., Naoe, Y., Reis, S. B., Huang, Y., Lambolez, F., Docherty, M., Attinger, A., Shui, J.-W., Kim, G., Lena, J. C., Sakaguchi, S., Miyamoto, C., Wang, P., Atarashi, K., Park, Y., Nakayama, T., Honda, K., Ellmeier, W., Kronenberg, M., Taniuchi, I., and Cheroutre, H.: Transcriptional reprogramming of mature CD4+ helper T cells generates distinct MHC class II-restricted cytotoxic T lymphocytes. Nat. Immunol. 14(3): 281-289 (2013).
8. Done

1. In vivo microenvironment in immunological memory
2. Graduate School of Medicine / Professor / Toshinori Nakayama
3. Germany / German Rheumatism Research Centre / Andreas Radbruch, Koji Tokoyoda
4. 2008-
5. Understanding immunological memory leads to developing a treatment of autoimmune disease and allergy by suppressing the harmful “memory” and of cancer and infectious disease by enhancing efficient “memory”. Especially, focusing on memory CD4 T cells which work as a key component in immunological memory, we have so far clarified the maintenance mechanism of memory CD4 T cells as a pioneer in the world. We are now analyzing the molecular mechanisms for maintenance of memory CD4 T cells and for the secondary immune response in vivo, which is the most important reaction of immunological memory. We believe that clarifying the cellular and molecular mechanisms of memory CD4 T cells in vivo provides the understanding of immunological memory.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan(Grant-in-Aid for Young Scientists (Start up))
7. Main result

1) Tokoyoda K., Hauser, A.E., Nakayama, T., Radbruch, A. Organization of immunological memory by bone marrow stroma. Nat. Rev. Immunol. 10:193-200, 2010.
2) Tokoyoda, K., Zehentmeier, S., Radbruch, A. Organisation and maintenance of immunological memory by stroma niches. Eur. J. Immunol. 39:2095-2099, 2009.
3) Tokoyoda, K., Zehentmeier, S., Hegazy, A.N., Albrecht, I., Grün, J.R., Löhning, M., Radbruch, A. Professional memory CD4+ T lymphocytes preferentially reside and rest in the bone marrow. Immunity 30:721-730, 2009.
4) Shinoda, K., Tokoyoda, K., Hanazawa, A., Hayashizaki, K., Zehentmeier, S., Hosokawa, H., Iwamura, C., Koseki, H., Tumes, J. D., Radbruch, A., and Nakayama, T.: Type II membrane protein CD69 regulates the formation of resting T-helper memory. Proc. Natl. Acad. Sci. USA 109:7409-7414 (2012)
5) Hanazawa, A., Hayashizaki, K., Shinoda, K., Yagita, H., Okumura, K., Löhning, M., Hara, T., Tani-ichi, S., Ikuta, K., Eckes, B., Radbruch, A., Tokoyoda, K., and Nakayama, T.: CD49b-dependent establishment of T helper cell memory. Immunol. Cell Biol. 91:524-531 (2013).

8. The award of the Post-doctorate Prize 2010 of the Robert-Koch Foundation (November 2010)
   The 5th JSI Young Investigator Award (December 2010)

1. Role of GATA3 in the development of Innate Lymphoid cells
2. Graduate School of Medicine / Professor / Toshinori Nakayama
   Graduate School of Medicine / Project Associate Professor / Ryoji Yagi

3. United States of America / National Institutes of Health / Jinfang Zhu
4. from 2013
5. Transcription factor GATA3 is expressed in all of Innate Lymphoid cells. GATA3 is critical for the development of all IL-7Rα-expressing ILCs. Conditionally Gata3-deficient mice fail to develop lymph node structure. Genome-wide analysis indicates that GATA3 regulates Th2-cell-related genes in ILC2s.
6. Ministry of Education, Culture, Sports, Science and Technology (Grant-in-Aid for Research Activity Start-up)
7. Yagi, R., Zhong, C., Northrup, D. L., Yu, F., Bouladoux, N., Spencer, S., Hu, G., Barron, L., Sharma, S., Nakayama, T., Belkaid, Y., Zhao, K., and Zhu, J.: The transcription factor GATA3 is critical for the development of all IL-7R -expressing innate lymphoid cells. Immunity 40(3): 378-388 (2014).
8. None

1. Role of ROG in immune response
2. Graduate School of Medicine / Professor / Toshinori Nakayama
3. United States of America / Memorial Sloan-Kettering Cancer Center / Joseph C. Sun
4. From April 2014 to date
5. We are investigating the role of ROG in NK cells during viral infection.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan (Grant in aid for Scientific Research S), CREST
7. Beaulieu, A. M., Zawislak, C. L., Nakayama, T., and Sun, J. C.: The transcription factor Zbtb32 controls the proliferative burst of virus-specific natural killer cells responding to infection. Nat. Immunol. 15(6):546-553 (2014).
8. None

1. Role of different STATs in CD4 T cells
2. Graduate School of Medicine / Professor / Toshinori Nakayama
   Graduate School of Medicine / Associate Professor / Kiyoshi Hirahara
3. United States of America / National Institutes of Health / John J. O' Shea
4. From April 2014 to date
5. Interleukin-6 (IL-6) and IL-27 signal through a shared receptor subunit and employ the same downstream STAT transcription proteins, but yet are ascribed unique and overlapping functions. To evaluate the specificity and redundancy for these cytokines, we quantified their global transcriptomic changes and determined the relative contributions of STAT1 and STAT3 using genetic models and chromatin immunoprecipitation-sequencing (ChIP-seq) approaches.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan (Grant in aid for Scientific Research S) CREST
   Ministry of Education, Science, Sports, Culture and Technology of Japan (Grant in aid for Research Activity Start-up)
7. Hirahara K, Onodera A, Villario AV, Bonelli M, Sciumè G, Laurence A, Sun HW, Brooks RS, Vahedi G, Shih HY, Gtierrez-Cruz G, Iwata S, Suzuki R, Mikami Y, Okamoto Y, Nakayama T, Holland S, Hunter CA, Kanno Y, and O'Shea JJ.: Asymmetric action of STAT transcription factors drive transcriptional outputs and cytokine specificity. Immunity 42(5):877-889 (2015).
8. Hirahara K, Nakayama T, Hollnad S, Hunter C, Kanno Y, O'Shea JJ. Asymmetry of STAT action in driving IL-27 and IL-6

transcriptional outputs and cytokine specificity. Keystone Symposia Mechanisms of Pro-Inflammatory Diseases (Z4) 4/19-24 2015. Olympic Valley, CA. (O/P)

1. Role of Ezh2 in NKT-dependent immune responses
2. Graduate School of Medicine / Professor / Toshinori Nakayama
3. Australia / South Australian Health and Medical Research Institute / Damon Tumes
4. from April 2015 to date
5. We are investigating the role of Ezh2 in NKT cell dependent immune responses using Ezh2-deficient mice. We have found that Ezh2 molecule is crucial for the certain immune responses.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan(Grant in aid for Scientific Research S), AMED-CREST
7. Tumes, D., Hirahara, K., Papadopoulos, M., Shinoda, K., Onodera, A., Kumagai, J., Yip, K. H., Pant, H., Kokubo, K., Kiuchi, M., Aoki, A., Obata-Ninomiya, K., Tokoyoda, K., Endo, Y., Kimura, M. Y., and Nakayama, T.: Ezh2 controls development of natural killer T cells that cause spontaneous asthema-like pathology. J. Allergy Clin. Immunol. in press. .
8. None.

1. Mechanism that minimizes lineage fate errors during MHC-I positive selection in the thymus
2. Graduate School of Medicine / Professor / Toshinori Nakayama
   Graduate School of Medicine / Associate Professor / Motoko Y. Kimura
3. United States of America / National Institutes of Health / Alfred Singer
4. From January 2014 to date
5. MHC-I dependent positive selection gives rise to CD8+ T cells, whereas MHC-II dependent positive selection gives rise to CD4+ T cells, the event called "lineage choice". Lineage choice in the thymus is almost error-free and we have studied the mechanism of error-free linage choice.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan
   (Grant in aid for Scientific Research S, Scientific Research C, Research Activity Start-up)
7. Kimura, M. Y., Thomas, J., Tai, X., Guinter, T. I., Shinzawa, M., Etzenperger, R., Li, Z., Love, P., Nakayama, T., and Singer, A.: Timing and duration of MHC I positive selection signals are adjusted in the thymus to prevent lineage errors. Nat. Immunol. 17(12):1415-1423 (2016).
   Kimura, M. Y., Igi, A., Hayashizaki, K., Mita, Y., Shinzawa, M., Kadakia, T., Endo, Y., Ogawa, S., Yagi, R., Motohashi, S., Singer, A., and Nakayama, T.: CD69 prevents PLZFhi innate precursors from prematurely exiting the thymus and aborting NKT2 cell differentiation. Nat. Commun. 9(1):3749 (2018).
8. None

1. Metabolomics of breast milk
2. Graduate School of Medicine / Professor / Naoki Shimojo
3. Canada / Departments of Pediatrics, Obstetrics & Gynecology, School of Public Health, University of Alberta, Edmonton, Alberta AB T6G 1C9 / Professor Kozyrskyj AL
4. 2016-

5. Studies on Human milk composition in different areas in the world
6. None
7. Main result Gay MCL, Koleva PT, Slupsky CM, Toit ED, Eggesbo M, Johnson CC, Wegienka G, Shimojo N, Campbell DE, Prescott SL, Munblit D, Geddes DT, Kozyrskyj AL; InVIVO LactoActive Study Investigators. Worldwide Variation in Human Milk Metabolome: Indicators of Breast Physiology and Maternal Lifestyle? Nutrients. 2018 Aug 23;10(9). pii: E1151.

1. A role of PLOD2 (LH2) in human oral squamous cell carcinoma
2. Department of Oral Science, Graduate School of Medicine / Professor / Hideki Tanzawa
3. USA / Department of Oral and Craniofacial Health Sciences, University of North Carolina at Chapel Hill / Mitsuo Yamauchi
4. Since 2015
5. To investigate the relevance of PLOD2 in oral squamous cell carcinoma (OSCC).
   To generate PLOD2 knock out mouse model and apply to cancer biology.
6. JSPS KAKENHI Grant Number JP18K09717
7. a)
   Aberrant Collagen Cross-linking in Human Oral Squamous Cell Carcinoma.
   Saito T, Uzawa K, Terajima M, Shiiba M, Amelio AL, Tanzawa H, Yamauchi M.
   J Dent Res. 2019 Feb 20:22034519828710.
   b)
   Deficiency of lysyl hydroxylase 2 in mice causes systemic endoplasmic reticulum stress leading to early embryonic lethality.
   Kasamatsu A, Uzawa K, Hayashi F, Kita A, Okubo Y, Saito T, Kimura Y, Miyamoto I, Oka N, Shiiba M, Ito C, Toshimori K, Miki T, Yamauchi M, Tanzawa H.
   Biochem Biophys Res Commun. 2019 Mar 21.
8. None

Graduate School of Pharmaceutical Sciences

1. Study on self-resistance of secondary metabolites
2. Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki
3. Thailand / Faculty of Sciences, Chulalongkorn University / Associate Professor Supaart Sirikantaramas
4. 2014-
5. In this project, we are investigating the molecular mechanism of self-resistance to toxic plant secondary metabolites in producing plants.
6. Grant-in-Aids for Scientific Research (A)

(1) Strategic priority research promotion grogram “Phytochemical Plant Molecular Science”

7. Supaart Sirikantaramas, Arthitaya Meeprasert, Thanyada Rungrotmongkol, Hideyoshi Fuji, Tyuji Hoshino, Hiroshi Sudo, Mami Yamazaki, and Kazuki Saito: Structural insight of DNA topoisomerases I from camptothecin-producing plants revealed by molecular dynamics simulations. Phytochemistry, 113, 50-56 (2015)

1. Study on Thai Medicinal plants
2. Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki
3. Thailand / Faculty of Pharmaceutical Sciences, Chulalongkorn University / Associate Professor Suchada Sukrong
4. 2007-
5. In this project, we are screening medicinal plants producing compounds exhibiting specific bioactivity.
6. Grant-in-Aids for Scientific Research on Innovative from the Ministry of Education, Science, Sport, Culture and Technology, Japan etc.
7. Varalee Viraporn, Mami Yamazaki, Kazuki Saito, Jessada Denduangboripant, Kongkanda Chayamarit, Taksina Chuanasa and Suchada Sukrong: Correlation of camptothecin-producing ability and phylogenetic relationship in the genus Ophiorrhiza. Planta medica. 77, 759-64 (2011)

1. Molecular evolution of lysine –derived alkaloid biosynthesis
2. Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki
3. Thailand / Faculty of Pharmaceutical Sciences, Mahidol University / Somnuk Bunsupa
4. 2015-
5. Molecular evolution of specialized metabolism is studied.
6. Grant-in-Aids for Scientific Research on Innovative from the Ministry of Education, Science, Sport, Culture and Technology, Japan etc.
7. Somnuk Bunsupa, Kosuke Hanada, Akira Maruyama, Kaori Aoyagi, Kana Komatsu, Hideki Ueno, Madoka Yamashita, Ryosuke Sasaki, Akira Oikawa, Kazuki Saito, and Mami Yamazaki: Molecular evolution and functional characterization of a bifunctional decarboxylase involved in Lycopodium alkaloid biosynthesis. Plant Physiol., 171, 2432-2444, doi:10.1104/pp.16.00639 (2016)

1. Examination of the roles of prostanoids and their receptors on cancer cells
2. Graduate School of Pharmaceutical Sciences / Professor / Toshihiko Murayama
   Graduate School of Pharmaceutical Sciences / Associate Professor / Hiroyuki Nakamura
3. United States of America / The University of Arizona / Professor, John W. Regan
4. 2005-
5. Elucidating the mechanisms of prostanoids and their receptors signaling(s) on cellular malignancy and/or cellular development in cancer cells will be able to help estimating the molecular target(s) for novel anti-cancer therapeutics.
6. Partially from the Grants-in-Aids for Scientific Research (C).
7. Main result
   (1) Cellular density-dependent down-regulation of EP4 prostanoid receptors via the up-regulation of hypoxia-inducible factor-1α in HCA-7 human colon cancer cells. Otake S, Yoshida K, Seira N, Sanchez CM, Regan JW, Fujino H, Murayama T. Pharmacol Res Perspect. 2015;3:e00083.

(2) A novel indole compound, AWT-489, inhibits prostaglandin D2-induced CD55 expression by acting on DP prostanoid receptors as an antagonist in LS174T human colon cancer cells. Oyama S, Fujino H, Yamazaki R, Okura I, Regan JW, Awata A, Arai T, Murayama T. Arch Biochem Biophys. 2014;541:21-9.

(3) Induction of cyclooxygenase-2 expression by prostaglandin E2 stimulation of the prostanoid EP4 receptor via coupling to Gαi and transactivation of the epidermal growth factor receptor in HCA-7 human colon cancer cells. Yoshida K, Fujino H, Otake S, Seira N, Regan JW, Murayama T. Eur J Pharmacol. 2013;718:408-17.

(4) Prostaglandin E_2 regulates cellular migration via induction of vascular endothelial growth factor receptor-1 in HCA-7 human colon cancer cells. Fujino H, Toyomura K, Chen XB, Regan JW, Murayama T. Biochem Pharmacol. 2011;81:379-87.

(5) Assessment of constitutive activity in E-type prostanoid receptors. Fujino H, Murayama T, Regan JW. Methods Enzymol. 2010;484:95-107.

8. The Pharmaceutical Society of Japan Award for Divisional Scientific Promotions (4B), Kobe, Japan 2015. 3. 25

---

1. Mechanisms of substrate recognition by AAA+ proteases, ClpXP and Lon
2. Graduate School of Pharmaceutical Sciences / Associate professor / Akiko Takaya
3. Canada, University of Toronto / Professor / Walid Houry
4. 2005-
5. Biochemical approaches and bioinformatics to reveal the mechanism of recognition of novel substrates proteins for AAA+ proteases, ClpXP and Lon.
6. Grants-in-Aids from the Ministry of Education, Science, Sport, Culture and Technology, Japan
7. Main result

(1) Takaya A., Kubota Y., Isogai E., Yamamoto T. Degradation of the HilC and HilD regulator proteins by ATP-dependent Lon protease leads to downregulation of Salmonella pathogenicity island 1 gene expression. Mol. Microbiol. 55: 839-852. (2005)

(2) Takaya A., Matsui M., Tomoyasu T., Kaya M., Yamamoto T. The DnaK chaperone machinery converts the native FlhD2C2 hetero-tetramer into a functional transcriptional regulator of flagellar regulon expression in Salmonella. Mol. Microbiol. 59:1327-1340 (2006)

8. 2008, The 91st Japanese Society for Microbiology General Meeting Kanto Branch

---

1. Molecular mechanisms of Salmonella Pathogenesis
2. Graduate School of Pharmaceutical Sciences / Associate professor / Akiko Takaya
3. UK / Imperial college London / Professor / David Holden
4. 2008-
5. Molecular mechanisms of Salmonella-host interaction are studied.
6. Grants-in-Aids from the Ministry of Education, Science, Sport, Culture and Technology, Japan
7. Main result

(1) Takaya A., Suzuki A., Kikuchi Y, Eguchi M., Isogai E., Tomoyasu T., Yamamoto T. Depression of Salmonella pathogenicity island 1genes within macrophages leads to rapid apoptosis via capase-1-and caspase-3-dependent

pathways. Cell. Microbiol. 7:79-90 (2005)

(2) Matsui M., Takaya A., Yamamoto T. σ32-mediated negative regulation of Salmonella pathogenicity island 1 expression. J. Bacteriol. 190:6636-6645 (2008)

(3) Kitagawa R., Takaya A., Ohya M., Mizunoe Y., Takade A., Yoshida S., Isogai E., Yamamoto T. Biogenesis of Salmonella enterica serovar Typhimurium membrane vesicles provoked by induction of pagC. J. Bacteriol. 192:5645-5656 (2010)

8. 2011, Japanese Society for Microbiology Award

1. Chemical studies on indole alkaloids from Rubiaceous plants growing in Yunnan Province, China.
2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama
3. China / Kumming Medical College / Professor / Rongping Zhang
4. 2006-
5. Isolation, structure elucidation and biological evaluation of indole alkaloids from Kopsia plant (Rubiaceae) growing in Yunnan Province, China.
6. Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science, The Uehara Memorial Foundation.
7. Main result

(1) Two Novel Indole Alkaloids, Kopsiyunnanines A and B, from a Yunnan Kopsia. Y. Wu, M. Kitajima, N. Kogure, R. Zhang, H. Takayama. Tetrahedron Lett., 49, 5935-5938 and 6596 (2008).

(2) Rhazinilam and Quebrachamine Derivatives from Yunnan Kopsia arborea. Y. Wu, M. Suehiro, M. Kitajima, T. Matsuzaki, S. Hashimoto, M. Nagaoka, R. Zhang, and H. Takayama. J. Nat. Prod., 72, 204-209 (2009).

(3) Kopsiyunnanines F and Isocondylocarpines: New Tubotaiwine-type Alkaloids from Yunnan Kopsia arborea. Y. Wu, M. Kitajima, N. Kogure, Y. Wang, R. Zhang, and H. Takayama. J. Nat. Med., 63, 283-289 (2009).

(4) Two New Aspidosperma Indole Alkaloids from Yunnan Kopsia arborea. Y. Wu, M. Kitajima, N. Kogure, Y. Wang, R. Zhang, and H. Takayama. Chem. Pharm. Bull., 58, 961-963 (2010).

(5) Chemical Conversion of Strychnine into Kopsiyunnanine-I, a New Hexacyclic Indole Alkaloid from Yunnan Kopsia arborea. N. Kogure, Y. Suzuki, Y. Wu, M. Kitajima, R. Zhang, and H. Takayama. Tetrahedron Lett., 53 (48), 6523-6526 (2012).

(6) Asymmetric Total Synthesis of Novel Pentacyclic Indole Alkaloid, Kopsiyunnanine E, Isolated from Kopsia arborea. M. Kitajima, Y. Murakami, N. Takahashi, Y. Wu, N. Kogure, R. Zhang, and H. Takayama. Org. Lett., 16 (19), 5000-5003 (2014).

(7) Kopsiyunnanines J1 and J2, New Strychnos-type Homo-Monoterpenoid Indole Alkaloids from Kopsia arborea. M. Kitajima, T. Koyama, Y. Wu, N. Kogure, R. Zhang, and H. Takayama. Nat. Prod. Commun., 10 (1), 49-51 (2015).

(8) Asymmetric Total Synthesis of Kopsiyunnanine K, a Monoterpenoid Indole Alkaloid with a Rearranged Skeleton. R. Tokuda, Y. Okamoto, T. Koyama, N. Kogure, M. Kitajima, and H. Takayama. Org. Lett., 18 (14), 3490-3493 (2016).

(9) Kopsiyunnanines L and M, Strychnos-related Monoterpenoid Indole Alkaloids from Yunnan Kopsia arborea. M. Kitajima, M. Nakazawa, Y. Wu, N. Kogure, R. Zhang, and H. Takayama. Tetrahedron, 72 (42), 6692-6696 (2016).

(10) Asymmetric Total Synthesis of Pentacyclic Indole Alkaloid Andranginine and Absolute Configuration of Natural Product Isolated from Kopsia arborea. S. Tooriyama, Y. Mimori, Y. Wu, N. Kogure, M. Kitajima, and H. Takayama. Org. Lett., 19 (10), 2722-2725 (2017).

8. None

---

1. Chemical studies on indole alkaloids from Ophiorrhiza plants (Rubiaceae).
2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama
3. Thailand / Faculty of Pharmacy, Chiang Mai University / Professor Dammrong Santiarworn
4. 2013-
5. Isolation and structure elucidation of indole alkaloids from Ophiorrhiza pltans (Rub
6. Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science
7. Main result

(1) β-Carboline-type Indole Alkaloid Glycosides from Ophiorrhiza trichocarpon. M. Kitajima, S. Ohara, N. Kogure, D. Santiarworn, and H. Takayama. Tetrahedron, 69 (45), 9451-9456 (2013).

(2) A Cyclopeptide and a Tetrahydroisoquinoline Alkaloid from *Ophiorrhiza nutans*. T. Onozawa, M. Kitajima, N. Kogure, N. Peerakam, D. Santiarworn, and H. Takayama. J. Nat. Prod., 80 (7), 2156-2160 (2017).

8. None

---

1. Chemical studies on alkaloids from Lycopodium plants
2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama
3. Thailand / Faculty of Pharmacy, Chulalongkorn University / Professor Sumphan Wongseripipatana
4. 2016-
5. Isolation, structure elucidation and biological evaluation of alkaloids from Lycopodium plants growing in Thailand.
6. Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science
7. Main result

(1) New Lycopodine-type Alkaloids from Lycopodium carinatum. N. Kogure, M. Maruyama, S. Wongseripipatana, M. Kitajima, and H. Takayama. Chem. Pharm. Bull., 64 (7), 793-799 (2016).

8. None

---

1. Development of a new 99mTc radiopharmaceutical for sentinel lymph node identification.
2. Graduate School of Pharmaceutical Sciences / Professor / Yasushi Arano
3. Greece / Institute of Radioisotopes and Radiodiagnostic Products, NCSR Demokritos
4. 2007-
5. The development of a new 99mTc-radiopharmaceutical useful for identification of sentinel lymph node.
6. 2007 – 2011: International Atomic Energy Agency

   2012 – : None
7. Main result

(1) New 99mTc(CO)3 Mannosylated Dextran Bearing D-Derivatized Cysteine Chelator for Sentinel Lymph Node Detection. Pirmettis, I., Arano, Y., Tsotakos, T., Yamaguchi, A., Uehara, T., Morais, M. Correia, J.D.G., Santos, I.,

Martins, M., Pereira, S., Triantis, C., Kyprianidou, P., Pelecanou, M., Papadopoulos, M.
Mol. Pharmaceutics 9, 1681-1692, 2012.

(2) Injection Site Radioactivity of 99mTc-Labeled Mannosylated Dextran for Sentinel Lymph Node Mapping.
Yamaguchi, A., Hanaoka, H., Pirmettis, I., Uehara, T., Tsushima, Y., Papadopoulos, M., Arano, Y.
Mol. Pharmaceutics 12, 514-519, 2015.

8. None

---

1. Search for bioactive natural products from plants of Bangladesh
2. Graduate School of Pharmaceutical Sciences / Professor / Masami Ishibashi
3. Bangladesh / Khulna University / Professor Samir K. Sadhu
4. 2007-
5. In this project, we are investigating isolation and structure elucidation of new bioactive natural products from plants of Bangladesh
6. Grants-in-Aids for Scientific Research
7. Main result

(1) Taniguchi, K.; Funasaki, M.; Kishida, A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.; Ohsaki, A. "Two new coumarins and a new xanthone from the leaves of *Rhizophora mucronata*" *Bioorg. Med. Chem. Lett.* **2018**, *28*, 1063-1066

8. None

---

1. Search for bioactive natural products from plants of Thailand
2. Graduate School of Pharmaceutical Sciences / Professor / Masami Ishibashi
3. Thailand / Mahasarakham University / Associate Professor Prapairat Seephonkai
4. 2016-
5. In this project, we are investigating isolation and structure elucidation of new bioactive natural products from plants of Thailand
6. Matsumae International Foundation
7. Main result

(1) Seephonkai, P.; Ishikawa, R.; Arai, M. A.; Kowithayakorn, T.; Koyano, T.; Ishibashi, M. "New flavanol dimers from the bark of *Celtis tetranda* and their TRAIL resistance-overcoming activity" *Nat. Prod. Commun.* **2018**, *13*, 427-430

8. None

---

1. Mechanism for antimony toxicity in mammalian cells
2. Graduate School of Pharmaceutical Sciences / Professor / Yasumitsu Ogra
3. Chile / Faculty of Chemistry, Valparaiso Pontifical University of Catholic / Associate Professor Waldo Emerzon Quiroz Venegas
4. 2015-
5. We evaluate the toxicity of inorganic antimony compounds by advanced hyphenated techniques and molecular biology.
6. Grant for Ph.D. candidates from Chilean Ministry of Education
7. M. Verdugo, Y. Ogra, and W. Quiroz: Mechanisms underlying the toxic effects of antimony species in human embryonic

kidney cells (HEK-293) and their comparison with arsenic species. J. Toxicol. Sci. (2016) 41, 783-792

8. None

1. Development of Synthetic Methods for Pharmaceutical Organic Molecules
2. Graduate School of Pharmaceutical Sciences / Professor / Tetsuhiro Nemoto
3. Finland / Aalto University / Dr. Robert Franzén
4. 2017-
5. Development of Synthetic Methods for Pharmaceutical Organic Molecules Based on Dearomatization Reactions
6. Grant-in-Aids for Scientific Research (B)
7. Acid-Promoted Cascade Cyclization to Produce 2-(4'-Alkoxyaryl)-3,4-Fused Tricyclic Dihydrobenzopyrans via a para-vinylidene quinone methide intermediate. Dongil Choi, Naoki Shiga, Robert Franzén, and Tetsuhiro Nemoto. Eur. J. Org. Chem. **2018**, 1785–1788.
8. None

1. Development of Synthetic Methods for Pharmaceutical Organic Molecules
2. Graduate School of Pharmaceutical Sciences / Professor / Tetsuhiro Nemoto
3. Germany / Bielefeld University / Prof. Harald Gröger
4. 2017-
5. Development of Synthetic Methods for Pharmaceutical Organic Molecules Based on Chemo- and Bio-catalytic Processes
6. Grant-in-Aids for Scientific Research (B)
   Japan-Germany Research Cooperative Program
7. None
8. None

Graduate School of Nursing

1. Development of scenario-based learning materials obtained from collaboration with residents in order to train for nursing personnel who takes on the role of community-based integrated care
2. Graduate Scool of Nursing / Professor / Mina Ishimaru
3. Ireland / UCD School of Social Policy, Social Work and Social Justice / Naonori Kodate
4. 2017-2018
5. Our project focuses on integrated care in Ireland and Japan. We were particularly interested in the roles of public health nurses and the required competencies beyond their scope of practice at unit and organizational level.
   We identified that public health nurses in Ireland perceived their scope of practice as incorporating assessment criteria deriving from the social determinants, which affect individuals' home lives and coordinating access of community residents, particularly vulnerable people to healthcare and social welfare services.
6. MEXT/JSPS KAKENHI Grant Number JPI 17H04464
7. Main result
   Mina Ishimaru and Naonori Kodate: The role and competency of public health nurses in association with integrated care in

the Republic of Ireland, Journal of School of Nursing, Chiba University41, 83-92, 2019.

8. None

1. Exploring ethical challenges in research, development and implementation of home-care robots for older people
2. Graduate School of Nursing / Professor / Sayuri Suwa

   Graduate School of Nursing / Associate Professor / Mayuko Tsujimura

   Graduate School of Nursing / Professor / Mina Ishimaru

   Center for Frontier Medical Engineering / Professor / Wenwei Yu

   Faculty of Letters / Associate Professor / Erika Takahashi
3. Finland / Seinäjoki University of Applied Sciences / Helli Kitinoja, Jaakko Hallila, Marika Toivonen

   Finland / Pargas City / Camilla Bergman-Kärpijoki

   Ireland / University College Dublin / Naonori Kodate, Sarah Donnelly
4. 2016- (Ireland), 2017- (Finland)
5. In the present study, we conduct a questionnaire survey among older people requiring care, family caregivers, and home-care professionals in Japan, Ireland, and Finland – countries that are committed to taking steps against dementia – to understand their perceptions of ethical issues surrounding home-care robots and sensors to watch over older people living at home.
6. Chiba University Leading Research Promotion Program, Grants-in-Aid for Scientific Research (Scientific Research(B)), Grants-in-Aid for Scientific Research (Scientific Research(C)), Pfizer Health Research Foundation
7. Main result

1) Suwa S, Tsujimura M, Ishimaru M, Shimamura A, Ide H, Yu W, Kodate N: How do people perceive home-care robots? A questionnaire study with the elderly, family caregivers, and care professionals in Japan. 65th Annual and Scientific Meeting of the Irish Gerontological Society, Age and Aging，46(Supplement 3)，iii5，2017.
2) Tsujimura M, Suwa S, Ishimaru M, Shimamura A, Ide H, Yu W, Kodate N : Developing a questionnaire to understand perceptions towards home-care robots among the elderly who receive home-care, family caregivers, and home-care professionals．65th Annual and Scientific Meeting of the Irish Gerontological Society, Age and Aging，46(Supplement 3)，iii23，2017.
3) Tsujimura M, Suwa S, Shimamura A, Ishimaru M, Ide H, Yu W, Kodate N: What are the desired functionalities of home-care robots? A cross-sectional survey among older people, family caregivers, and home-care professionals in Japan. The 7th Hong Kong International Nursing Forum Concurrent Sessions Abstracts, 2017.
4) Kodate N, Suwa S, Tsujimura M, Shimamura A, Ishimaru M, Ide H, Yu W: Policy-driven innovation or technology-driven policy? What a questionnaire tells us about robotics-aided care in Japan. ESPANet (European Network for Social Policy Analysis), Vilnius, Lithuania, 2018.
5) Kodate N, Suwa S, Tsujimura M, Ishimaru M, Shimamura A, Ide H, Yu W: What are the key criteria for decision-making concerning the use of home-care robots? Findings from a questionnaire study in Japan. 66th Annual and Scientific Meeting of the Irish Gerontological Society, Age and Aging，47 (Supplement 5)，v14，2018.
6) Suwa S, Tsujimura M, Kodate N, Donnelly S, Kitinoja H, Ishimaru M, Ide H, Shimamura A, Takahashi E, Hallila J,

Toivonen M, Yu W: Developing a questionnaire on user needs and decision-making regarding home-care robots for older people in Japan, Ireland and Finland. 66th Annual and Scientific Meeting of the Irish Gerontological Society, Age and Aging, 47 (Supplement 5), v16, 2018.

8. In May 2018, Suwa, Tsujimura, Yu, Kodate, and Donnelly visited Seinäjoki University of Applied Sciences in Finland and hold a research seminar.

---

1. Development of an Original Chinese Version "Scale for Evaluating Nursing Lectures" and "Self-Evaluation Scale on Role Model Behaviors of Nursing Faculty" : Toward Enriching Development of Nursing Faculty
2. Graduate School of Nursing / Professor Emeritus / Naomi Funashima
   Graduate School of Nursing / Professor / Toshiko Nakayama
3. China / Harbin Medical University, School of Nursing / Zao Qui-li
4. 2009-
5. Japanese and Chinese nurses have deepened mutual understanding for many years. To deepen further cultural exchanges, each nursing faculty in Japan and China has to know each current status of educational activities and its features.

   So, the purpose of this research project is to develop two scales for evaluating "The Scale for Evaluating Nursing Lectures", Chinese original version (ENL-C), and "Self-Evaluation Scale on Role Model Behaviors of Nursing Faculty", Chinese original version.

   The Scale for Evaluating Nursing Lectures, Japanese original version (ENL-J) was developed to measure the quality of the teaching-learning process of nursing lectures by graduate school of nursing, Chiba University. At first, to reveal the evaluation point by students about the quality of the teaching-learning process of nursing lectures in China, data were collected from nursing students in China and were translated into Japanese. The second, the data were analyzed inductively. In the result, criteria which nursing students evaluate the teaching-learning process of nursing lectures were identified. The third, the items of the scale were made based on qualitative and inductive research findings. An ENL-C had 36 items with a 5-point Likert scale. Content validity of the scale was established by a panel of experts. The forth, it was confirmed that the ENL-C had high internal consistency, construct validity and criterion-related validity through analyzing the data of a survey about 6 lectures which Chinese nursing faculty give. Now, we are preparing to submit an original article in an academic journal overseas.

   To develop the Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty, Chinese original version has been developed to measure the quality of the role model behaviors of nursing faculty in China, our project, at first, has collected data from students in China. From now on, through analyses, we will clarify student's perception of their faculty's role model behaviors in China, and develop the scale on the result of the qualitative research, well established validity and reliability.
6. None

---

1. Continuing Education in Nursing for Patient Safety Ensuring; Offering Continuing Education Programs Which Japanese and Chinese Nurses Plan in Cooperation to Ensure Patient Safety
2. Graduate School of Nursing / Professor Emeritus / Naomi Funashima
   Graduate School of Nursing / Professor / Toshiko Nakayama

3. China / Harbin Medical University, School of Nursing / Zao Qui-li

4. 2015-

5. Recently medical malpractice occurs frequently. Healthcare professionals in all countries need to prevent medical malpractice and to ensure patients safety. Japanese and Chinese hospital nurses will be able to plan educational programs for patient safety ensuring in cooperation through calling upon a great amount of expertise. The outcome of the research project lead to resolve common issues about patient safety facing both countries and to reduce medical malpractice.

So, the purpose of this research project is to clarify the common issues and inherent issues for Japanese and Chinese hospital nurses about patient safety to plan the educational programs reflect features of the issues in both countries.

The progress of the research project is following procedure. A Self-Evaluation Scale of Patient Safety Behavior for Ward Nurses, Japanese original version (SPSBW-J), which has 40 items into 8 subscales, was developed to measure the quality of the patient safety behavior by Graduate School of Nursing, Chiba University. At first, The Self-Evaluation Scale of Patient Safety Behavior for Ward Nurses, Chinese version (SPSBW-C), was developed by using the back-translation technique with cooperation from Chinese hospital nurses. To utilize the SPSBW-J for Japanese nurses in nursing practice widely, the scale was published in Japanese books in 2015.

Next, we clarified current status of the quality of the patient safety behavior of Japanese hospital nurses and shared it among co-researchers.

Then in 2016, we modified the SPSBW-C into 7 subscales to adapt the circumstances surrounding the Chinese hospital nurses, and conducted a survey subjected to 1662 nurses from four university hospitals in China. One thousand six hundred forty-six valid responses were analyzed statistically and current status of the quality of the patient's safety behavior of Chinese hospital nurses were clarified.

In 2017, commonalities and differences between the quality of patient safety behavior of Japanese and Chinese nurses were clarified through comparing data obtained from them. As for the commonalities, "the quality of anticipating risks for patients and coping with them immediately" was high, while "the quality of caring ones' own health" was low. As for the differences, "quality of communication and sharing information necessary for maintaining patient's safety" was high for Japanese nurses, while it was relatively low for Chinese. It was suggested that the salary systems in addition to social factors specific to China affected the quality of the patient safety behavior and the importance of the improvement of transparency in patient safety activities in workplaces was emphasized.

In 2018, the significance of our study being a Cross-Cultural Research was shared at a meeting held at Harbin Medical University in May. Also, results of our study were published in three nursing journals in China.

6. None

7. Main result

- Funashima N.: A Collection of Scales to Utilize in Nursing Practice and Education, third ed., IGAKU-SHOIN Ltd, 2015.
- Funashima N.: Planning, Conducting and Evaluating of In-service Education Programs, second ed., IGAKU-SHOIN Ltd, 2015.

1. Cross-Cultural Research：A Comparison of the quality of teaching-learning process in Japan and China using “The Scale for Evaluating Teaching and Learning Process in Master’s Programs in Nursing (SETLPM)” with a view to improving quality of courses
2. Graduate School of Nursing / Professor Emeritus / Naomi Funashima
   Graduate School of Nursing / Professor / Toshiko Nakayama
3. China / Harbin Medical University, School of Nursing / Zao Qui-li
4. 2018～
5. Postgraduate education in Japan is expected to play a leading role in Asia. Among Asian universities, the Chinese are particularly seeking to introduce knowledge or experiences about this field accumulated in Japan into their education system. Although, many Chinese students studying in Japan are benefiting from Japanese education, some are struggling with education provided in the Japanese style.

   This project aims at developing “The Scale for Evaluating Teaching and Learning Process in Master’s Programs in Nursing, Chinese version (SETLPM-C)” based on the original Japanese version to improve the quality of the teaching-learning process of courses provided to Chinese students studying at graduate schools of nursing in Japan.

   The purpose of this study and the research plans were confirmed with co-researchers in 2018. “The Scale for Evaluating Teaching and Learning Process in Master’s Programs in Nursing, Original Japanese version (SETLPM-J)” was developed to measure the quality of the teaching-learning process of postgraduate nursing courses at the Graduate School of Nursing, Chiba University. Because SETLPM reflects criteria contributing to students’ perception of their outcomes, it is useful for faculty to improve students’ outcomes based on the results of evaluation using this scale. The original scale was translated into Chinese by Chinese researchers and then back translated by bilingual researchers or professionals. This process will be continued until the equivalence of the Chinese version of the scale is ensured.
6. None

1. End-of-life care competency in long-term care facilities: A cross-cultural study of Korea, Thailand, and Japan
2. Graduate School of Nursing / Associate Professor / Sumie Ikezaki
   Graduate School of Nursing / Associate Professor / Mayuko Tsujimura
   Graduate School of Nursing / Associate Professor / Mariko Masujima
   Graduate School of Nursing / Associate Professor / Naho Sato
3. United Kingdom / Ulster University / Kieko Iida
   Korea / Seoul National University / Sunghee Tak
   Thailand / Khon Kaen University / Busaba Somjaivong
   Thailand / Chulalongkorn University / Siriphan Sasat, Wasinee Wisesrith
4. 2017～
5. The aging society and growing needs for residential care for older people, including those on end-of-life care (EOLC), are matters of concern in many Asian countries where family caregiving has been the common practice. To provide quality EOLC for residents, it is important that care workers are competent and confident in delivering care. This study aims to develop an Asia-oriented EOLC educational program for staff working in residential facilities for older people in Japan,

Korea, and Thailand Japan, Korea, and Thailand. A competency model will firstly be developed by tailoring frameworks currently used in western societies to the Japanese, Korean, and Thailand settings. This will be followed by iterative discussions among international EOLC researchers to identify similarities and differences between these models in residential care facilities in each of the three Asian countries, in order to inform the development of a suitable competency-based EOLC educational program for each country.

6. Pfizer Health Research Foundation International Collaborative Research Grant 2016
   The Toyota Foundation Research Grant Program 2016 (A) Joint Research Grant
7. Kieko Iida, Sumie Ikezaki, Mayuko Tsujimura and Mariko Masujima. Fraility and End-of-Life Care for Community-Dwelling Older People in Japan: From Nursing Perspective. The 3rd Asian Conference for Fraility and Sarcopenia (invited), Oct.27-28, 2017: Seoul, Korea.
8. None

1. Evaluation of cultural ability of nurses in Asia and international comparative research on ability development and clinical application
2. Graduate School of Nursing / Professor / Ariko Noji
3. USA / University of San Diego, University of Washington, University of Utah, 1 other institution
   Thailand / Khon Kaen University, Khon Kaen Regional Hospital, Nampong Community Hospital, 2 other institution
   Korea / Seoul National University, Seoul National University, Center University Hospital, 3 other institution
   Australia / Victoria,Health and Human Services
   Finland / Lappeenranta University of Technology
4. FY2015-2018
5. At what level are nurses' cultural ability (cultural competence: ability to cope with different cultures, ability to people with different backgrounds) at Japanese hospitals from the viewpoint of nursing management, It is to clarify the actual situation through comparison with Asian countries. Based on these data, we aim to construct and evaluate a development program and clinical application model to improve cultural competnce, taking into consideration the characteristics of Japan.
6. Grants-in-Aid for Scientific Research (Scientific Research(A))
7. ・This study aims at clinical application for problem solution based on the fact that nurses are in trouble in dealing with foreign patients from internationalization of hospitals in Japan and measurement of cultural competence of nurses. Was implemented. As an international comparison, we made comparisons with Asian countries such as Thailand and Korea, Australia, and the United States.
   ・Analysis of hospital surveys in Japan conducted in fiscal 2014 (581 cases for nursing department manager, 195 cases collected: 33.6%) showed that the attitude of the institution to accept foreign patients was not positive, and the number of specialized departments was 85.1. There was no%. Problems in nursing foreign patients included multiple answers (30.8%), religious considerations (30.3%), discharge instructions (24.1%), and hospitalization and hospitalization procedures (21.5%). Next, among the 195 hospitals, when we recruited hospitals participating in the cultural competence survey of nurses, we got participation from 19 hospitals. The questionnaire created a Japanese version of Caffrey Cultural Competence Health Services 28 items. It was distributed to 9,140 people, and 7,494 people (91.3% female, average age

32.6 years old) obtained valid responses. Statistically verified the reliability and validity. The CCCHS is a 5-level Likert scale, and those with higher scores by assessment are assessed as having higher cultural competence. The average of 28 items in this study participant was 1.85 (SD 0.52), which was shown to be lower compared to prior studies in the United States. There were 5,430 people (72.5%) who had received foreign patients, and 4,738 (63.2%) were found to be free to complain. By the text mining analysis, 74 categories were generated, and 4 areas were raised as necessary areas for nursing skill development. Since we started developing applications that contribute to clinical application using this scale, we will continue research on social implementation and achieve fundamental research results that aim for the cultural competence of Japanese nurses to become the core of the organization I got.

8. 【symposium】

Presenter:Ariko Noji, Julia Puebla Fortier, Lidia Horvat, Heeseung Choi, Pakvilai Srisaeng, Mihoko Tabata, Mayuko Tsujimura, Yuki Mochizuki, Jun Yamashita

Title: Bringing Cultural Competence into the Mainstream

Academic name : The 3rd International Symposium of ANCC(Invitation lecture)

March, 13th, 2016, Chiba, Japan.

【Seminar】

Presenter: Noel Chrisman, Mei-Feng Lin,

Title: A Novel Approach to Patient Care: Transcultural Nursing by Dr. Noel Chrisman

While Cultural Competence Care Be Facilitated by Emotion-Focused Communication in Clinical Encounters by Dr. Mei-Fang Lin.

May 23, 2018, St. Luke's International University

1. Research on guidelines for Global Health and Nursing Care: the world's leading inbound medical care
2. Graduate School of Nursing / Professor / Ariko Noji
3. USA / University of San Diego, University of Washington, University of Utah, 1 other institution

   Thailand / Khon Kaen University, Khon Kaen Regional Hospital, Nampong Community Hospital, 4 other institution

   Korea / Seoul National University, Seoul National University, Center University Hospital, 3 other institution

   Australia / Victoria,Health and Human Services

   Finland / Lappeenranta University of Technology
4. FY2017-2021
5. The nursing internationalization guidelines based on the results of "Cultural assessment and development of skills of nurses in Asia. It is research aimed at development. The purpose of this study is 1) to improve the nursing competence from the point of 2015, and 2) to develop and conduct clinical evaluation of nursing internationalization guidelines based on AGREE II from the viewpoint of nursing management..
6. Grants-in-Aid for Scientific Research (Scientific Research(A))
7. ・In 2017, a kickoff international symposium will be held, co-sponsored by the Japan Medical Care Function Evaluation Organization, and GRADE developer Holger J. Schünemann and other domestic and foreign experts will be welcomed, and an organization for nursing internationalization guideline development in Japan Promoted the creation of strategic and

theoretical bases. We organized five research groups by the assigned researchers, and held a general meeting regularly to report and share information. The results of each research group are: Implementation of the international symposium, 2. Reviewing dictionary words for apps from J-CCCHS questionnaire as development of educational modules, 3. Conducting foreigner interviews for foreigner care pass development In SR of Nursing Internationalization Guidelines, select 400 articles for continuous analysis, 5. We conducted a survey of nursing quality assessment of Japanese hospitals from the perspective of foreigners staying in Japan regarding clinical assessment. From 17 hospitals certified as foreign patients accepted, 35 copies of foreigners and 41 copies of Japanese were analyzed. Question items were translated into English, Chinese, and Japanese from the Individualized Care Scale (ICS). The average age of respondents is 49.1 years for foreigners, 58.2 years for Japanese (P = .02), and the independence degree during hospitalization is 31.3% for foreigners who can "by themselves", 70.3% for Japanese (P = .00). The ICS total score was 138.1 for foreigners and 126.1 for Japanese (P = .02), and it was felt that foreigners received nursing that emphasized individuality more than Japanese. Items where foreigners have higher ICS scores than Japanese are "noticing changes in patient mood," "feelings of emotions," "questions about previous hospitalization experiences," "family care participation," "life Consideration to "," "help to be able to express an opinion", "sufficient information provision" etc. The total ICS score was significantly positively related (R2) to the degree of independence during hospitalization (β = .31), foreigner acceptance (β = .50), and being foreigner (β = .45) =. 41).

・Based on the questionnaire survey data of 10,000 nurses, we developed and printed “Nursing care for people with foreign connections, encounter map with people from different cultures”, and distributed it to the nursing departments of survey participating hospitals nationwide. We conducted group work with participants at the information exchange of the Japan Society of Nursing Management and examined how to use it. The above-mentioned map and the inbound development in Japan were invited to the International Executive Meeting sponsored by the Government of India and made a presentation.

・A presentation using the above map was conducted at Charity Medical University Hospital and the Health and Nursing Graduate School, and a new international joint research with Charity Medical University was launched.

【International symposium】

■ Theme: 2017 kickoff international symposium "trajectory and future of medical nursing guidelines" “Why and How” of trustworthy clinical practice guidelines

■ Date and time: September 23, 2017 (Sat, congratulation) 10 o'clock to 17 o'clock

■ Place: St. Luke’s International University Hinohara Hall(Omura Susumu, Mieko Memorial St. Luke's Clinical Science Center, B1 floor)Https://university.luke.ac.jp/access.html

■ Co-hosted by: Japan Health Care Evaluation Organization Medical Information Service (Minds)

■ Program:Holger Schunemann “Why and How” of trustworthy clinical practice guidelines

Patraporn Tungpunkom Clinical practice Guidelines: Now and then

Naoto Yamaguchi Past, present and future of EBM promotion business Minds

Takeo Nakayama Guidelines now and in the future

Ariko Noji Towards the development of guidelines for providing care that takes into consideration cultural diversity

Panel discussion

【Invited lecture】

Presenter: Ariko Noji, Akiko Nosaki, Dale Glaser, Lucia GonzalesPresentation

Title: Classification of cultural competence among clinical nurses in Japan using Latent Profile AnalysisConference

Name: International Healthcare and Patient Safety Conference

Date of presentation: November 6, 2017

Place of presentation: Dubai, UAE

【Invited lecture】

Presenter: Ariko Noji,

Title: Inbound Health Care and Cultural Competence Training for Clinical Nurses in Japan

Name: 1st Maharashtra Health and Wellness Tourism Conference (MHWTC) 2018

Date of presentation: June 30, 2018

Place of presentation: Mumbai, India

---

1. Development of ELNEC educational program in public hospital
   （ELNEC: End of Life Nursing Education Consortium）
2. Graduate School of Nursing / Professor / Ariko Noji
3. U.S.A. / University of San Diego Project Professor and San Diego Veterans Hospital Nursing Administrator and ELNEC Development Member / Roger Strong
4. FY2016-FY2019
5. With the background of rising interest in end-of-life nursing science, this project examines an educational program on this subject in a public hospital, making use of the characteristics of the training program for the university hospital nursing manager at the center. It is a project started for The center is the ELNEC Education Program, with Dr. Roger Strong, who is a member of ELNEC development in the United States, as a co-researcher, and a project researcher consisting of co-researchers who have received an ELNEC leader's approval from US headquarters. The With the permission of US headquarters, we translated and examined the case of the ELNEC Elderly Edition module.
6. Graduate School Nursing Practice Research Guidance Center Joint research promotion expenses
7. ・The case of ELNEC elderly edition module was translated and put together in the report. An example is 37 cases combining modules 1-9.
   This report is expected to be widely used, such as training for nursing managers in university hospitals, nursing education, and universal education “thinking about living”.
   In 2018, the case study was conducted as a class of Chiba University universal education "thinking about life" with the above report as a text.
   The students did not conduct case studies in other classes, and received feedback such as when they were considered specifically.

---

1. Practice of international joint education for "the future of nursing"
2. Graduate School of Nursing / Professor / Ariko Noji
3. U.S.A. / University of San Diego, Korea / Seoul National University, Thailand / Khon Kaen University

4. FY2016-2019

5. In recent years, we have been focusing on consortiums in the Asian region, as we have been working in all directions with an eye on the world in the international development of Chiba University. At Chiba University Graduate School of Nursing, we have been studying nursing universities that will be partners in nursing education and research in Asia. Based on mutual visits of students and teachers and academic exchange results, we concluded an academic exchange agreement (MOU: Memorandum of Understanding) with the Faculty of Nursing, Seoul National University of Korea, and the Khon Kaen University of Thailand, and five years of MOU academic exchange agreement We examined the action plan based on the contract. As a result, in order to construct an education and research platform in the Asian region that promotes global human resource development, we decided to jointly hold an international symposium aimed at supporting young teachers, graduate students and undergraduate students.

6. Minako Kotakane Nursing Education Research Grant

7. ・It is known that the promotion of international exchange often starts with the personal connection of teachers and students, etc., but the need for organizational efforts is also raised The contents to be included in the MOU between university departments will be decided by discussions among relevant university departments depending on the purpose of promoting international exchange. In response to the adoption of the "Super Global Universities, etc." program of Chiba University (2014, Ministry of Education, Culture, Sports, Science and Technology), the Graduate School concluded an MOU after 2014 for the purpose of fostering global human resources for teachers, students and administrative staff. We conducted an MOU evaluation systematically with two universities in Asia, formulated an action plan, and jointly held an international symposium. The purpose is to select topics related to nursing problems in Asia, create opportunities to present young researchers and graduate students from each university, and support the development of international joint research centered on young people. The graduate school also provided undergraduate students with the opportunity to attend an international conference and a presentation, and the participating students were given feedback on the learning effect with regard to challenging experiences. It was suggested that educational outreach to global human resource development can be implemented from an early stage by fully implementing prior support and organizational support. In this process, with the support of the International Planning Division of the Academic International Division at the university headquarters, we were able to clarify the position of this project. As an organizational approach, it is also necessary to describe and evaluate the process of creating an education and research platform through international collaboration with exchange exchange schools. In addition to student learning through the implementation of joint education, exchanges between students at both universities and between teachers are also promoted, and its ripple effect is expected.

In 2018, Deputy Dean for International Exchange, professor, and director of the International Division came from San Diego University, and examined the next year's plan of international joint education in the department of headquarters courtesy and nursing department. We exchanged opinions on the mutual exchange of graduate students.

8. 【Paper】

Ariko Noji, Shinobu Okada, Nobue Nakamura, Misako Miyazaki, Harue Masaki Heeseung Choi, Ju Young Yoon, Kim Sungjae, JaHyun Kang, Pakvilai Srisaeng, Saunwamas Khunlan, Theunnadee: Establishing an education and research

platform in Asia that promotes global human resource development - Joint holding of an international symposium by three academic exchange agreement schools-,Journal of Graduate School of Nursing Chiba University, 40, 67-71, 2018.

1. Grobal health & Nursing(Dubai study)
2. Graduate School of Nursing / Professor / Ariko Noji
3. UAE / Gulf Medical University / Dr. Anil Bankar
4. FY2017-2018
5. The university was adopted in 2014 as a Type B globalization driven type of “Super Global University etc.” project by the Ministry of Education, Culture, Sports, Science and Technology. At the university hospital, too, we are working on internationalization in all departments centering on the International Medical Center, and it has also been recognized as a recommended hospital for Medical Excellence of Japan (MEJ). Internationalization of medical care is being tackled as one of the pillars of healthy Japanese recovery. In addition, the participation of Chiba Prefecture and the role of Chiba University are expected as venues for the 2020 Tokyo Olympics and Paralympic Games. In such a university, it is interdisciplinary to invite the young global leader Dr. Anil Bankar, who is researched and educated to study the internationalization of medical care, and to hold seminars at the Graduate School of Nursing and affiliated hospitals. Contributing to the establishment of an academic foundation for global healthcare development in medical care and undergraduate and postgraduate education, as well as continuing education for nursing managers at the Nursing Practice Research and Guidance Center at the Graduate School of Nursing.

   The purpose of this invitation was to obtain a suggestion from the practice in Dubai that introduced a medical special zone in 2002, especially the UAE that is leading the global health worldwide at seminar 1, and the seminar 2 The educational program developed by Dr. Anil Bankar (currently with the Faculty of Nursing), which has been established as an academic subject, provides concrete suggestions for the internationalization reform program at our university.
6. Chiba University Diversity research environment realization initiative (collaborative type) "Foreign researcher seminars, etc. Invitation support system"

   Sponsored by: Chiba University Hospital International Medical Center
7. In Japan's current situation where the concept of Medical Tourism has not taken root, the seminar has been held with pioneering impact. An opportunity to think about New treatment trend and future medicine that how nursing practice is still important and how to improve the quality of nursing care, while scrutinizing energetic efforts and global trends in UAE Dubai since 2012 It became (from the participant's impression). Medical Tourism is not an option for the wealthy, but an international trend towards a sustainable society, where linkages with regional medicine are strongly required, and wellness has also been focused (from questions and answers). In Medical Tourism, too, there is a gap between Industry (industry etc.) and Academic (eg university etc.), and needs assessment is necessary. The lecturer practiced curriculum development and education on Medical Tourism for medical students including nursing students at Gulf Medical University, and also described the study content and evaluation including management studies in undergraduate and graduate schools. The development of internationalization guidelines for nursing care, and the development of a curriculum for nurses and students regarding cultural competence and diversity, recognized the effects that brought about the spread and depth of the structural axis of the global international position. In 2020, the International Trade Fair (World

Expo) will be held in Dubai, which will lead to continued international comparative joint research.

8. 【paper】

1) Ariko Noji, Akiko Nosaki, Anil Bankar, Tomoko Fukuda, Daisuke Sumitani, Noriko Oshima, Aya Yoneda: Trends in medical tourism and major issues in nursing education, Journal Graduate School of Nursing, Chiba University 41, 67-73, 2019

2) Ariko Noji, Akiko Nosaki, Daisuke Sumitani, Noriko Oshima, Aya Yoneda: Medical Tourism Trends and Academic Outlook-Hold a seminar to learn the experience of Dubai, UAE-, Journal of the Japanese Society of Health Sciences, 34 (4), 227-233, 2018

1. Charité・IPIKA – CHIBA(Charite multicultural ability research project)
2. Graduate School of Nursing / Professor / Ariko Noji
3. Germany / Charité Medical University / Heepe Head of Nursing, Head of Graduate School of Health and Nursing / Prof. Ewers, Dr.Aykac,

   Chiba University Berlin office / Visiting researcher Makoto Kashiwabara
4. FY2018-2021
5. Chiba University was adopted in 2014 as a type B globalization driven type of "Super Global University etc." project by the Ministry of Education, Culture, Sports, Science and Technology, and has been working in all directions with an eye on the world in international development. The Charité University of Medical Science has opened the Chiba University Berlin Campus, and this project team started to interact in 2018. Germany has an immigration policy, and Charité Medical University Hospital (3,000 beds) has also begun to address the diversity of foreign patients and nurses. Therefore, based on the mutual understanding of issues and measures in both countries, we promote joint research on multicultural skills development, and in the process, increase opportunities for young teachers and students to study at Charité Medical University, and to the next generation. Aim to build a connected platform. November 2018 Prof. Noji and lecturer Nosaki visited to create a foundation for interaction. At that time, we also held a meeting with the multicultural skills training group at Charite, and scheduled to participate in the workshop in March 2019, and revisited as planned and promoted joint research. On March 16-21, 2019, Dr. Heepe was invited to Chiba University, and after deputy president of the department and director of the Graduate School of Nursing, she received German nursing and multicultural correspondence and patient safety in the Graduate School of Nursing. The seminar was held, and Mr. Chisato Mori , the director of the campus also introduced Charité, and students and teachers participated. There were also requests from young teachers for their hopes of studying abroad in Sabbatical. In 2019, in order to provide support for studying abroad, we applied for the International Education Division's organized educational research and research exchange support program with the International Division. Dr. Aykac, scheduled to be invited in 2019. Also, there is a graduate school, but since preparation for the establishment of a nursing department, Prof. Ewers, head of the Graduate School of Health and Nursing, would like to come to visit nursing education at Chiba University.
6. Graduate School Nursing Practice Research Guidance Center Joint research promotion expenses

   Grants-in-Aid for Scientific Research (Scientific Research(A))
7. March 16-March 21, 2019 Heepe Director of Nursing was invited to Graduate School of Nursing at Chiba University, and

a courtesy call to the Head Office, Graduate School, Preventive Medicine Center, University Hospital Nursing Department and Director of Hospital, and seminar Carried out.

8. 【Seminar】

The 2nd Global Health & Nursing

1) About Charité Medical University introduction and cooperation with Chiba University

2) Nursing in Germany

3) Intercultural Competence Training

4) Patient Safety in Germany

University Hospital

1. Preclinical activity of a novel EZH2 inhibitor in multiple myeloma
2. Department of Transfusion Medicine and Cell Therapy, Chiba University Hospital / Assistant Professor / Naoya Mimura
3. USA / Icahn School of Medicine at Mount Sinai / Jian Jin, Professor
4. Since 2014
5. The aim of this project: To elucidate the efficacy of UNC1999, a novel EZH2 inhibitor, on multiple myeloma, using in-vitro and in-vivo models.
6. KAKENHI (Grant-in-Aid for Scientific Research C)
7. Rizq O, Mimura N, Oshima M, Saraya A, Koide S, Kato Y, Aoyama K, Nakajima-Takagi Y, Wang C, Chiba T, Ma A, Jin J, Iseki T, Nakaseko C, Iwama A. Dual Inhibition of EZH2 and EZH1 Sensitizes PRC2-Dependent Tumors to Proteasome Inhibition.

   Clin Cancer Res. 2017 Aug 15;23(16):4817-4830.
8. Chiba Medical Society Award in 2016

---

1. Intracellular signaling molecules as therapeutic targets for glioblastoma
2. Graduate School of Medicine, Neurological Surgery / Professor / Yauso Iwadate
3. USA / Ludwig Institute for Cancer Research / Paul S Mischel
4. 2013-
5. Abberation of epidermal growth factor receptor (EGFR) and activation of mTOR kinase are important for glioblastoma initiation and progression. We are searching for a new strategy to enhance the molecular targeting therapy against the pathway.
6. None
7. Zanca C, Villa GR, Benitez JA, Koga T, Ikegami S, Mischel PS, et al. Glioblastoma cellular cross-talk converges on NF-kB to attenuate EGFR inhibitor sensitivity. **Genes Dev. 2017, 31, 1212-1227**
8. None

---

1. Development of novel diagnostic and treatment procedures for intractable cancers by c-myc gene transcriptional repressor, FBP-interacting repressor (FIR).
2. Department of Molecular Diagnosis & Division of Clinical Genetics and Proteomics, Graduate School of Medicine, Chiba

University / Associate Professor / Kazuyuki Matsushita

3. USA / National Institute of Health / David Levens
4. Since 2000
5. Adenovirus or Sendaivirus FIR expression induces apoptosis in cancers in vitro and in vivo as pre-clinical study. We are planning to apply FIR gene therapy to clinical trials near future.
6. Supported by Grants from Ministry of Education and Science of Japan
7. Development of novel diagnostic and treatment procedures for intractable cancers by home-brew gene therapy in Japan.
8. Chiba University Nanohana Prise (2006). UK-JAPAN Gene Therapy Synposium in 2007 at UK Embassy (Tokyo).

1. Brain morphology on congenital disorders
2. Chiba University Hospital / Assistant Professor / Tadashi Shiohama
3. USA / Division of Newborn Medicine, Department of Medicine, Boston Children's Hospital, Harvard Medical School / Assistant Professor Emi Takahashi
4. 2018.6-
5. Studies on brain morphology of congenital disorders using in vivo and ex vivo brain MRI
6. None
7. Main result

   1) Vasung L, Charvet CJ, Shiohama T, Gagoski B, Levman J, Takahashi E. Ex vivo fetal brain MRI: Recent advances, challenges, and future directions. Neuroimage. 2019 Mar 21. pii: S1053-8119(19)30223-X. doi: 10.1016/j.neuroimage.2019.03.034. [Epub ahead of print] PMID: 30905833.

   2) Shiohama T, Levman J, Takahashi E. Surface- and voxel-based brain morphologic study in Rett and Rett-like syndrome with MECP2 mutation. Int J Dev Neurosci. 2019 Apr;73:83-88. doi:10.1016/j.ijdevneu.2019.01.005. Epub 2019 Jan 25. PMID: 30690146

   3) Shiohama T, Levman J, Baumer N, Takahashi E. Structural MRI-based brain morphology study in infants and toddlers with Down syndrome; the effect of comorbidities. Pediatric Neurology 2019 in press.
8. None

Center for Environmental Remote Sensing

1. Remote sensing study of the atmosphere
2. Center for Environmental Remote Sensing / Professor / Hiroaki Kuze
3. China / Anhui Institute of Optics and Fine Mechanics (AIOFM), Chinese Academy of Sciences / Dr. Liu Wenqin / Director
4. From 1997
5. A wide range of collaboration activity has been made in the field of atmospheric remote sensing, including the differential optical absorption spectroscopy (DOAS), lidar and satellite observations, through visiting/staying at both institutes (CEReS and AIOFM) for various occasions such as participation to the workshop/international conferences and relatively long stay as visiting scientists.
6. COE fund, donated funds, support from CAS, etc.

7. Main result

- Si Fuqi, Hiroaki Kuze, Yotsumi Yoshii, Masaya Nemoto, Nobuo Takeuchi, Toru Kimura, Toyofumi Umekawa, Taisaku Yoshida, Tadashi Hioki, Tsuyoshi Tsutsui, Masahiro Kawasaki, Measurement of regional distribution of atmospheric NO2 and aerosol particles with flashlight long-path optical monitoring, Atmospheric Environment, 39 (27) (September 2005) 4959-4968.
- Si Fuqi, Liu Jianguo, Xie Pinghua, Zhang Yujun, Liu Wenqing, Hiroaki Kuze, Liu Cheng, Nofel Lagrosas and Nobuo Takeuchi, Determination of aerosol extinction coefficient and mass extinction efficiency by DOAS with a flashlight source, Chinese Phys. 14(11), (November 2005) 2360-2364.
- Si Fuqi, Liu Jianguo, Xie Pinghua , Zhang Yujun, Liu Wenqing , Hiroaki Kuze, Nofel Lagrosas and Nobuo Takeuchi, Correlation study between suspended particulate matter and DOAS data, Advances in Atmospheric Sciences (Science Press, co-published with Springer-Verlag GmbH, ISSN 0256-1530), Vol. 23, No.3: DOI 10.1007/s00376- 006-0461-z, (May 2006) 461-467.
- Si Fuqi, Liu Jianguo, Xie Pinhua, Zhang Yujun, Liu Wenqing, Hiroaki Kuze, Liu Cheng, Nobuo Takeuchi, Determination of Aerosol Optical Thickness and Atmospheric Visibility by Differential Optical Absorption Spectroscopy, Acta Optica Sinica, 2006-07
- Hiroaki Kuze, Masashi Miyazaki, Daisuke Kataoka, Ippei Harada, Measurement of NO2 and SPM in the lower troposphere by means of DOAS method based on white flashlight sources, The 4th DOAS International Workshop for Environmental Research and Monitoring, March 30-April 3, 2008 (Anhui).
- Si FQ, Xie PH, Liu JG, Zhang YJ, Liu WQ, H. Kuze, N. Takeuchi, Determination of the retrieval arithmetic of aerosol size distribution measured by DOAS, Spectroscopy and spectral analysis, vol.28 (10), pp. 2417-2420, 2008.
- Wenqing Liu, Pinhua Xie, Jianguo Liu, Yihuai Lu, Min Qin, Fuqi Si, Ang Li, Liang Xu, Dexian Wu, Tianshu Zhang, Xuesong Zhao, Air quality study in Beijing during Olympics with optical measurements, CEReS Colloquium, March 13, 2009 (CEReS).
- Hiroaki Kuze, Optical remote sensing of atmospheric aerosol and trace gases in Chiba, Japan, AIOFM Seminar, November 9, 2015..

8. None

1. Atmospheric remote sensing and its application to various environmental studies
2. Center for Environmental Remote Sensing / Professor / Hiroaki Kuze
3. Indonesia / Hasanuddin University / Dr. Syamsir Dewang / Associate Professor
4. From 1999
5. Collaboration activities are made on the application of remote sensing methods, including visible to infrared as well as microwave data, to environmental monitoring through the communication of researchers, particularly accepting students to the graduate course of Chiba University.
6. COE fund, scholarships from both Japanese and Indonesian governments
7. Main result

- Bannu, Josaphat Tetuko Sri Sumantyo, Musali Knishnaiah, Hiroaki Kuze, Study on interannual variation of sea

surface temperature anomalies in the Indo-Pacific region and Indonesian rainfall variability, 3rd Indonesia Japan Joint Scientific Symposium (Chiba University) 9-11 September, 2008.

- Bannu, Josaphat Tetuko Sri Sumantyo, Musali Knishnaiah, Hiroaki Kuze, The impact of El Nino and the positive Indian Ocean Dipole on rainfall variability in the Indo-Pacific region, The 14th CEReS International Symposium, pp.107-110 (Chiba University) 13-14 November 2008.
- Merna Baharuddin, Prilando Rizki Akbar, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, Development of circularly polarized synthetic aperture radar sensor mounted on unmanned aerial vehicle, ISRS2008, Korea Institute of Geoscience and Mineral Resources (KIGAM), Daejeon, Korea, Oct. 29-31, 2008.
- Merna Baharuddin, Victor Wissan, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, Equilateral triangular microstrip antenna for circularly-polarized synthetic aperture radar, Progress in Electromagnetics Research C (PIERC) 8, page 107-120, 2009.
- Merna Baharuddin, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, Microstrip Antenna Subarray for Circularly-polarized Synthetic Aperture Radar, March 22-26, The 27th Progress in Electromagnetics Research Symposium (PIERS) (Xi'an, China).
- Yuhendra, Ilham Alimuddin, Josaphat Tetuko Sri Sumantyo, Hiroaki Kuze, Assessment of pan-sharpening methods applied to image fusion of remotely sensed multi-band data, International Journal of Applied Earth Observation and Geoinformation Volume 18, August 2012, Pages 165-175.
- Ilham Alimuddin, Tomoaki Tanaka, Hiroshi Hara, Yusaku Mabuchi, Naohiro Manago, Tatsuya Yokota, Hiroaki Kuze, Direct sunlight-DOAS measurement of aerosol and NO2 using a non-scanning fiber sensor, The 17th CEReS International Symposium Microwave Remote Sensing for Environmental Diagnosis, 2012.
- Ilham Alimuddin, Luhur Bayuaji1, Josaphat Tetuko Sri Sumantyo, Hiroaki Kuze, Integrated analysis of Quickbird and JERS-1 SAR data for land subsidence study in The City of Makassar, The 17th CEReS International Symposium Microwave Remote Sensing for Environmental Diagnosis, 2012.
- Ilham Alimuddin, Luhur Bayuaji, Haeruddin C. Maddi, Josaphat Tetuko Sri Sumantyo, Hiroaki Kuze, Development tropical landslide susceptibility map using DInSAR technique of JERS-1 SAR data, International Journal of Remote Sensing and Earth Sciences (IJReSES), Vol 8, (2011).
- Yuhendra, Alimuddin I, Tetuko Sri Sumantyo J, Kuze H, Spectral quality evaluation of pixel-fused data for improved classification of remote sensing images, Geoscience and Remote Sensing Symposium (IGARSS), 2011 IEEE International.
- Kuze H. Goto Y, Mabuchi Y, Saitoh H, Alimuddin I, Bagtasa G, Harada I, Ishibashi T, Tsujimoto T, Kameyama S, Urban air pollution monitoring using differential optical absorption spectroscopy (DOAS) and wind lidar, Geoscience and Remote Sensing Symposium (IGARSS), 2012 IEEE International.
- Ilham Alimuddin, Hayato Saito, Yusaku Mabuchi, Naohiro Manago, Hiroshi Hara, Hiroaki Kuze, Development of a non-scanning fiber sensor for direct sunlight-DOAS measurement of nitrogen dioxide, IJJSS2014, Gaja Mada University, Yogyakarta, Indonesia, October 29-30, 2014.
- Ilham Alimuddin, R. Langkoke, B. Rochmanto, J.S.T Sumantyo,Hiroaki Kuze, Coastline changes monitoring using

satellite images of Makassar Coastal Areas, IJJSS2014, Gaja Mada University, Yogyakarta, Indonesia, October 29-30, 2014.

- Ilham Alimuddin, A.R. Rasyid, Purwanto, N.P. Bhandary, Ryuichi Yatabe, J.T.S. Sumantyo and H. Kuze, Landslide susceptibility mapping using DInSAR and statistic model in Bawakaraeng mountain, Sulawesi, Indonesia, The 23rd CEReS International Symposium, Keyaki Hall, December 1-2, 2015.

8. None

---

1. Project for Biomass measurement on Mongolian grassland
2. Center for Environmental Remote Sensing / Associate Professor / Yoshiaki Honda
3. Mongolia / National Remote Sensing Center / Mr. S.Khudulmur
4. 2002-
5. Establishment for the grassland biomass measurement method using satellite data. The results can be used for desertification monitoring and estimation of plant productivity.
6. Japan Aerospace Exploration Agency
7. None
8. None

---

1. Cooperative research program of the variation of solar and terrestrial radiation over the East Asian region
2. Center for Environmental Remote Sensing / Associate Professor / Hitoshi Irie
3. China / Institute of Atmospheric Physics, Chinese Academy of Sciences / Guang-yu SHI(Academician of CAS)
4. From 1996
5. The object of this research program is to estimate radiative effects of aerosols and clouds over the East Asian region using solar and terrestrial radiation observation data. In addition, variations of the radiation field is investigated in detail by combining satellite and ground observation data.
6. Grants-in-Aid for Scientific Research(2002-2004), Japan-China joint research program(1999-2001), Japan Aerospace Exploration Agency, MEXT-GEOSS program(2006-2010)
7. Main result
   - G. -Y.Shi, T.Nakajima, T.Takamura, T.Hayasaka, L.Xu, B. Wang, X. Jin, X. -B. Fan, R. -m. Hu, P. Zhang, L.-S. Zhang X. -H. Wang, and H. Zhang, Observational Study on the Radiative Properties of Atmosphere Aerosols over China. CEReS International Symposium on Atmospheric Correction of Satellite Data and its Application to Global Environment, p.280-283, Chiba, Jan.21-23, 1998.
   - T. Takamura, I. Okada, N. Takeuchi, G-Y. Shi, T. Nakajima, 2001 : Estimation of surface solar radiation from satellite data and its validation using SKYNET data, P2-37, p536-541, Proceedings of the Fifth International Study Conference on GEWEX in Asia and GAME, Oct. 3-5,2001, Aichi Trade Center, Nagoya, Japan.
   - T. Takamura, I. Okada, T. Nakajima, G-Y Shi, J. Zhou, 2001: SKYNET aerosol / radiation observation network in the East Asia, 55-61,, Proceedings of Nagasaki Workshop on Aerosol-Cloud Radiation Interaction and Asian Lidar Network, 27-29 Nov. 2001, Nagasaki.
   - T.Takamura,A.Arao, H. Fukushima, G.Shi, N.Sugimoto(Editors), 2001: Proceedings of Nagasaki Workshop on

Aerosol-Cloud Radiation Interaction and Asian Lidar Network, pp.119.

- Bi J.R., J.P. Huang, Y.Z. Liu, Z.W. Huang, G.Y. Shi, and T. Takamura, 2010: Aerosol Optical Characteristics Observed by Sky Radiometer over Loess Plateau in China. Proceedings of the 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, p91-94, Oct. 21-23, 2010, Okinawa, Japan.
- Bi.Jianrong, Yuzhi Liu, Jianping Huang, Guanyu Shi, Tamio Takamura, Zhong wei Huang, Pradeep Khatri, Jinsen Shi, Tianhe Wang, Xin Wang, Beidou Zhang, 2010: Characteristics of Dust Aerosol derived from sky-radiometer over Loess Plateau of Northeast China. Proceedings of the 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, p95-100, Oct. 21-23, 2010, Okinawa, Japan.

8. Other important items to be stated
   - Nagasaki Workshop on Aerosol-Cloud Radiation Interaction and Asian Lidar Network, 27-29 Nov. 2001, Nagasaki University, Nagasaki.
   - CEReS International Symposium and SKNET workshop on ”Remote Sensing of the Atmosphere for Better Understanding of Climate Change”, 13-14, Nov. 2008, Chiba University
   - The 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, Nago/Okinawa, Oct. 2010.（日本学術振興会支援を、一部受ける）

1. Cooperative research program of the climate effect of suspended particles at the SKYNET Hefei site
2. Center for Environmental Remote Sensing / Associate Professor / Hitoshi Irie
3. China / Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences / Jun Zhou(Professor), Dong Liu(Assoc. Prof.)
4. From 1997
5. The objectives of this program are to perform collaborative measurements of atmospheric components at the SKYNET Hefei site and to analyze their data for climate research. The acquired data are made open to the public or research community through the SKYNET web system in CEReS of Chiba University before 2006 and also by AIOFM researchers after 2007.
6. Japan Aerospace Exploration Agency, MEXT-GEOSS program
7. Results
   - Jun Zhou, Guming Yu, Chuanjia Jin, Fudi Qi, Dong Liu, Huanling Hu, Zhiben Gong,Guangyu Shi, Teruyki Nakajima, and Tamio Takamura, Lidar Observations of Asian Dust over Hefei, China in the Spring of 2000, Journal of Geophysical Research, 107(2002), No.D15, AAC 5-1 – 5-8.
   - Zhen-zhu Wang, J. Zhou, Chao Li, T. Takamura, and N. Sugimoto, Studies on net long-wave radiation on clear days in Hefei region, Proceedings of the 14th CEReS Int’l Symposium and SKYNET Workshop on “Remote Sensing of the Atmosphere for Better Understanding of Climate Change”, 65-68, Nov. 13-14 2008, Keyaki-Hall, Chiba University.
   - Wang, Zhenzhu, Dong Liu, Yingjian Wang, Pradeep Khatri, Jun Zhou, Guangyu Shi, Tamio Takamura, 2010:

Aerosol radiative properties over Hefei during 2007-2010. Proceedings of the 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, p125-131, Oct. 21-23, 2010, Okinawa, Japan.

8. Other important items to be stated

- The 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, Nago/Okinawa, Oct. 2010.(Partly supported by JSPS.)
- Prof. Takamura has been a visiting professor of Anhui Institute of Optics and Fine Mechanics during 2011.6 to 2012.5.

1. Cooperative research program for the climate effect of suspended particles at the SKYNET Pune site(India).
2. Center for Environmental Remote Sensing / Associate Professor / Hitoshi Irie
3. India / Indian Institute of Tropical Meteorology / Pandithurai Govindan(Scientist D)
4. From 2004
5. The objective of this program is to observe aerosols, clouds, and radiation at the SKYNET/Pune site in India, and then to analyze data for studying climate effects. Pune is one of major cities near Mumbai in India, located in urbanized areas under a typical monsoon climate condition. Pune can be a representative site for South Asia.
6. MEXT-GEOSS program, Japan Society for the Promotion of Science
7. Results

- G. Pandithurai, R.T. Pinker, T. Takamura, and P.C.S. Devara, 2004: Aerosol radiative forcing over a tropical urban site in India, Geophys. Res. Lett., 31(2004), L12107.
- Pandithurai, G., R.T. Pinker, P.C.S. Devara, T. Takamura, and K.K. Dani, 2007: Seasonal asymmetry in diurnal variation of aerosol optical characteristics over Pune, western India, Journal of Geophysical Research, 112, D08208, doi:10.1029/2006JD007803.
- Panicker, A. S., G. Pandithurai, T. Takamura, and R. T. Pinker (2009), Aerosol effects in the UV-B spectral region over Pune, an urban site in India, Geophys. Res. Lett., 36, L10802, doi:10.1029/2009GL037632.
- G. Pandithurai, T. Takamura, J. Yamaguchi, K. Miyagi, T. Takano, Y. Ishizaka and A. Shimizu, 2009: Aerosol effect on cloud droplet size as monitored from surface remote sensing over East China Sea region, Geophysical Research Letters, VOL.36, L13805, doi:10.1029/2009 GL038451, 2009.
- G. Pandithurai, J. Yamaguchi, T. Takano, Y. Ishizaka, A. Shimizu, T. Takamura, Aerosol indirect effect studies at Cape Hedo during spring campaign-2008, Proceedings of the 14th CEReS Int'l Symposium and SKYNET Workshop on "Remote Sensing of the Atmosphere for Better Understanding of Climate Change", 53-56, Nov. 13-14 2008, Keyaki-Hall, Chiba University
- Panicker, A.S., G. Pandithurai, T. Takamura, Dong-In Lee, 2010: Shortwave versus longwave aerosol radiative forcing over an urban environment. Proceedings of the 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, p47-150, Oct. 21-23, 2010, Okinawa, Japan.
- Pandithurai, G., S. Dipu and T. Takamura, 2010: Aerosol-cloud interactions derived from remote sensing and in-situ aircraft measurements. Proceedings of the 16th CEReS International Symposium on Climate Change Studies through Activities of

SKYNET and Virtual Laboratory for Climate Diagnostics, p133-135, Oct. 21-23, 2010, Okinawa, Japan.

8. Others

Dr. Pandithurai Govindan has had a cooperative research at the CEReS, Chiba University during 2008.5 to 2009.2, as a visiting faculty member of the CEReS, Chiba University.

---

1. The cooperative research program for the climate effect of particles suspended in the atmosphere of Korea.
2. Center for Environmental Remote Sensing / Associate Professor / Hitoshi Irie
3. South Korea / Seoul National University / B.J. Sohn(Professor)

   South Korea / Yonsei University / Jhoon Kim (Professor)
4. From 2005
5. The objective of this program is to analyze SKYNET network data for estimating the climate effect of aerosols in Korea and its surrounding areas. The estimate of radiative forcing using shared SKYNET data is one of the most interesting targets for both sides.
6. JST/CREST program, MEXT-GEOSS program
7. Results
   - Do-Hyeong Kim, Byung-Ju Sohn, Teruyuki Nakajima, Tamio Takamura, Toshihiko Takemura, Byonung-Cheol Choi, and Soon-Xhang Yoon, 2004: Aerosol optical properties over east Asia determined from ground-based sky radiation measurements, J. Geophys. Res., 109, D02209.
   - Do-Hyeong Kim, Byung-Ju Sohn, Teruyuki Nakajima and Tamio Takamura, 2005: Aerosol radiative forcing over east Asia determined from ground-based solar radiation measurements, J. Geophys. Res., 110, D10S22, doi:10.1029/2004JD004678,2005.
   - Takamura, T., N. Sugimoto, A. Shimizu, A. Uchiyama, A. Yamazaki, K. Aoki, T. Nakajima, B. J. Sohn, and H. Takenaka (2007), Aerosol radiative characteristics at Gosan, Korea, during the Atmospheric Brown Cloud East Asian Regional Experiment 2005, J. Geophys. Res., 112, D22S36, doi:10.1029/2007JD008506.
   - Hyun-Sung Jang, Hwan-Jin Song, Hyoung-Wook Chun, Byung-Ju Sohn, and Tamio Takamura,2011: Validation of MODIS-derived Aerosol Optical Thickness Using SKYNET Measurements over East Asia, Journal of Korean Earth Sciences Society, 32(1), 21-32, doi:10.5467/JKESS.2011.32.1.21.(In Korean)
   - Mok, J., N. Krotkov, O. Torres, H. Jethva, Z. Li, J. Kim, J.-H. Koo, S. Go, H. Irie, G. Labow, T. Eck, B. Holben, J. Herman, R. Loughman, E. Spinei, S. S. Lee, P. Khatri, and M. Campanelli, Comparisons of spectral aerosol absorption in Seoul, South Korea, Atmospheric Measurement Techniques, accepted, March 29, 2018
8. Others

   CEReS/Chiba University team has attended the ABC EAREX2005(Atmosopheric Brown Cloud East Asian Regional Experiment 2005) at the Cheju-island in South Korea during March to April, 2005, supported and operated by Seoul National University and Korean Meteorological Agency.

---

1. Study on Environmental Conscious & Sustainable Agricultural System through Food Security Concept
2. Center for Environmental Remote Sensing / Associate Professor / Chiharu Hongo
3. Indonesia / Udayana University(with Agreement of Academic Cooperation) / Prof. Dr. Ketut Suastika

Indonesia / Bogor Agricultural University (with Agreement of Academic Cooperation) / Prof. Dr. Barus Baba

Indonesia / Padjadjaran University(with Agreement of Academic Cooperation) / Prof. Dr. Zulrizuka Iskandar

Indonesia / Regional Office of Food crop service of west Jawa Province / Director Mr. Diden Trisnadi

4. From 2009

5. Concept of this study is to conduct both research and education on basis of two 'wheels' : science and utilization, and these research and education should be closely connected and coordinated to each other. This study is not stand-alone but should be a part of the community sharing the environmental, agricultural and other special information, and then the study provides pertinent information useful for improvement of base for food production through analysis and diagnosis of all related spatial information to be collected and shared under global information network. Final goal of the study is to contribute to realize the food security for sustainable food production and environment conservation.

6. Grant-in-aid- for Scientific Research by the Ministry of Education, Science, Sports and Culture (Fundamental Research (B))

   The Environment Research and Technology Development Fund by the Ministry of the Environment, Government of Japan

7. Main result

   - Chiharu Hongo, Tomonobu Tsuzawa, Kazuhisa Tokui, Eisaku Tamura: Development of damage assessment method of rice crop for agricultural insurance using satellite data, Journal of Agricultural Science, Vol. 7, No. 12, 59-71, November 2015
   - Chiharu Hongo, Gunardi Sigit, Ryohei Shikata, Eisaku Tamura, Estimation of water requirement for rice cultivation using satellite data, DOI:10.1109/IGARSS.2015.7326868 , Publisher:IEEE,p4660-4663, 2015
   - Chiharu Hongo, Gunardi Sigit, Ryohei Shikata, Katsuhisa Niwa and Eisaku Tamura, The Use of Remotely Sensed Data for Estimating of Rice Yield Considering Soil Characteristics, Journal of Agricultural Science; Vol. 6, No. 7,172-184, 2014
   - Chiharu Hongo, A. A. A. Mirah Adi,I. G. A. A. Ambarawati,Eisaku Tamura, Estimation of rice yield and utilization of rice straw for bioethanol using satellite data, IEEE Geoscience and Remote Sensing Society, July 13-18, 2014
   - I Gusti Agung Ayu Ambarawati, Chiharu Hongo, A.A. Ayu Mirah Adi, Eisaku Tamura, Agriculture insurance: Adaptation to vulnerability of climate change in Bali, Indonesia, AGU Fall meeting, 15-19 December, 2014
   - Chiharu Hongo, Eisaku Tamura and Gunardi Sigit, Evaluation of nitrogen nutritional conditions by analyzing hyperspectral data, 9th European Conference on Precision Agriculture, p23, 2013
   - Chiharu Hongo, Gunardi Sigit and Ryohei Shikata, Estimation of rice production on regional scale and individual field scale, Proceedings of The International Symposium on Remote Sensing, P123, 15-17 May, 2013
   - Ryohei Shikata, Chiharu Hongo and Gunardi Sigit, Analysis of relationship between the estimated rice yield and the irrigation water system in West Java, Proceedings of The International Symposium on Remote Sensing, P303-306, 15-17 May, 2013
   - Koshi Yoshida1, Issaku Azechi, Ryunosuke Hariya, Kenji Tanaka, Keigo Noda,Kazuo Oki, Chiharu Hongo, Koki Honma, Masayasu Maki and Hiroaki Shirakawa, Future Water Availability in the Asian Monsoon Region:A Case Study in Indonesia, Journal of Developments in Sustainable Agriculture 8: 25-31, 2013

- Chiharu Hongo, Gunardi Sigit, Koshi Yoshida, Masayasu Maki,Koki Honma, Kazuo Oki, Hiroaki Shirakawa and Takaaki Furukawa, Estimation of rice production based on LAI images by MODIS data in West Java, Proceedings of the 18rd CEReS International Symposium on Remote Sensing, 2013
- Chiharu Hongo, Gunardi Sigit and Takaaki Furukawa, Estimation of rice yield from remotely sensed data, ACES and Ecosystem Markets 2012, 127,2012
- Chiharu Hongo, Takaaki Furukawa, Gunardi Sigit, Masayasu Maki, Koki Honma, Koshi Yoshida, Kazuo Oki, Hiroaki Shirakawa, Estimation of rice yield from MODIS data in West Jawa,Indonesia, The 11th International conference on Precision Agriculture, 2012.7.15-18, P164
- Kanae Miyaoka, Masayasu Maki, Junichi Susaki, Koki Homma, Koshi Yoshida, Chiharu Hongo, DETECTION OF RICE PLANTED AREA USING MULTI-TEMPORAL ALOS/PALSAR DATA, FR3.10.2 6777-6780., IGARSS 2012
- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Rice Yield Estimation Using Landsat ETM+ Data and Field Observation, Journal of Agriculture Science, Canada, Vol.4, No.3, 36-45, 2012
- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Dede Mahardika, Using variance analysis of multitemporal MODIS images for rice field mapping in Bali Province, Indonesia, International Journal of Remote Sensing, Vol.33, No.17, 5402-5417, 2012
- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Relationship between Rice Spectral and Rice Yield Using Modis Data, Journal of Agriculture Science, Canada, Vol.3, No.2, 80-88, 2011
- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Spectral characteristic comparison of rice plants under healthy and water deficient conditions using Landsat RTM+ data, 写真測量とリモートセンシング、Vol.50, No2, 66-79, 2011
- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Spectral characteristics and mapping of rice plants using multi-temporal Landsat data, Journal of Agriculture Science, Canada, Vol.3, No.1, 54-67, March.2011
- Chiharu hongo, Gunardi Sigit, Koki Honma, Koshi Yoshida, Masayasu Maki, Handarto, The use of remotely sensed data for estimating of rice yield, International Conference on Space, Aeronautical and Navigational Electronics, No. 239, 185-189, 2011
- Masashi Kasuya, Chiharu Hongo, Gunardi Sigit, Koshi Yoshida, Masayasu Maki, Koki Honma, Handarto, Kazuo Oki, Hiroaki Shirakawa, Evaluation of ASTER GDEM data as the input factor of USLE model ,International Conference on Space, Aeronautical and Navigational Electronics, No. 239, 191-194, 2011
- Ritsuko Hara, Chiharu Hongo, Mitsuo Kanbayashi, Koki Homma ,The possibilities to evaluate crop productivity on the basis of remote sensing of plant canopy temperature, International Conference on Space, Aeronautical and Navigational Electronics, No. 239, 179-184, 2011
- I.W. Nuarsa, F. Nishio and C. Hongo, Rice yield estimation using MODIS data, Proceeding of the 2nd CReSOS International symposium on south east Asia environmental problems and satellite remote sensing, Indonesia, 121-126, 2011
- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Modification of input images for improving the accuracy of rice

field claasification using MODIS data, International Journal of Remote sensing and Earth Science, Vol.7, 36-52, 2010

- Nuarsa I Wayan, Fumihiko Nishio, Chiharu Hongo, Development of the empirical model for rice field distribution mapping using multi-temporal LANDSAT ETM+ data:Case study in Bali Indonesia, International Archives of the Photogrammetry, Remote Sensing and Spatial Information Science, Volume XXXVIII, Part 8, 482-487, 2010.9
- Masashi Kasuya, Chiharu Hongo、Analysis of rice production and irrigation system in Cianjur, Indonesia 、Proceedings of the 15rd CEReS International Symposium on Remote Sensing, p 78-79,2009

8. Center on Food Availability for Sustainable Improvement (CFASI) was established for global research and education on food security at Udayana University in 2014
   - Workshop on Reduce Risks in Agriculture through Agricultural Insurance for Food Security, Bogor Agricultural University, Feb. 22, 2016
   - 2nd CFASI International Workshop“Agriculture Insurance as Adaptation to Climate Change toward the Sustainable Society”, Udayana University, March 12, 2015
   - Workshop on Food Availability for Sustainable Improvement 2014, Udayana University, March 3, 2014

1. Research and Development for Reducing Geo-Hazard Damage in Malaysia caused by Landslide & Flood
2. Center for Environmental Remote Sensing / Professor / Josaphat Tetuko Sri Sumantyo
3. Malaysia / Multimedia University / Dr. Koo voon Chet / Professor
4. From 2010 to 2016
5. Historical land deformation of Malaysian area and the impact will be analysed using time series satellite data, i.e. JERS-1, ALOS, ASTER etc, then create disaster map of this area. We hold join research with Multimedia University (MMU) to develop CP-SAR onboard unmanned aerial vehicle. We also develop some methods to retrieve disaster area using satellite data and spatial data that match with the environmental conditions of Malaysian area.
6. Science and Technology Research Partnership for Sustainable Development fund from JST and JICA ,alaysian Government Research funds, etc
7. Main result
   - Josaphat Tetuko Sri Sumantyoand Koo Voon Chet, “Development of Circularly Polarized Synthetic Aperture Radar onboard UAV for Earth Diagnosis,” Session C.4. Implementation of Multi-modal SAR Technology in Agriculture, Forestry & Aquaculture plus Natural Disaster Assessment in South, East & Pacific Asia, The 9th European Conference on Synthetic Aperture Radar (EUSAR 2012), 23-26 April 2012, Nurnberg, Germany.
   - Koo Voon Chet and Josaphat Tetuko Sri Sumantyo, “Development of a Miniaturized C-band UAVSAR,” Session C.4. Implementation of Multi-modal SAR Technology in Agriculture, Forestry & Aquaculture plus Natural Disaster Assessment in South, East & Pacific Asia, The 9th European Conference on Synthetic Aperture Radar (EUSAR 2012), 23-26 April 2012, Nurnberg, Germany.
   - J.T. Sri Sumantyo and Koo Voon Chet, “Development of Unmanned Aerial Vehicle for Synthetic Aperture Radar ” Joint Project workshop, 2013, Research Institute of Electrical Communication, Tohoku University(IEEE-GRSS), (February 2013).

- Koo Voon Chet, Thayalan Aruna, Josaphat Tetuko Sri Sumantyo, Helmut Essen, Chuah Hean Teik and Tunku Abdul Rahman, "Spatio-Temporal Change Detection of Belum-Temengor Forested Area using SAR," The 6th International Workshop on Science and Applications of SAR Polarimetry and Polarimetric Interferometry, ESA-ESRIN, 28 January – 1 February 2013 (Italy : Frascati)
- J.T. Sri Sumantyo and Koo Voon Chet,"Development of Unmanned Aerial Vehicle for Synthetic Aperture Radar Sensor" ICICE General Conference 2013, Comunication Technology and Application of Unmanned Aerial Systems, Gifu University,(March 2013).
- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Robertus Heru Triharjanto, "Development of Circularly Polarized Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," WE1.T04.1 : SAR Polarimetry : Theory and Application I Session, Wednesday, July 24, 2013 : 08:20-10:00, International Geoscience and Remote Sensing Symposium (IGARSS 2013), 21-26 July 2013 (Melbourne : Japan)
- Koo Voon Chet, Helmut Essen, Josaphat Tetuko Sri Sumantyo, Lim Tien Sze, Chan Yee Kit and Habibah Lateh, "Development of A Ground-based Synthetic Aperture Radar for Land Deformation Monitoring," 2013 Asia Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 23-27 September 2013 (Tsukuba : APSAR)
- Koo Voon Chet, Helmut Essen, Josaphat Tetuko Sri Sumantyo, Lim Tien Sze, Chan Yee Kit and Habibah Lateh, "Development of A Ground-based Synthetic Aperture Radar for Land Deformation Monitoring," 2013 Asia Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 23-27 September 2013 (Tsukuba : APSAR)
- Josaphat Tetuko Sri Sumantyo and Koo Voon Chet, "Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle", 2013 Asia Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 23-27 September 2013 (Tsukuba : APSAR)
- Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Cheaw Wen Guey, and Koo Voon Chet,"FPGA Based Multiple Preset Chirp Pulse Generator for Synthetic Aperture Radar Onboard Unmanned Aerialvehicle System," Symposium on Microsatellites for Remote Sensing (SOMIRES 2013), P07, 8-9 August 2013 (Chiba : CEReS-RISH).
- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, "Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," TU1.R2.4, Special Session : Polarimetric SAR Methods and Applications I, 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 24 September 2013 (Tsukuba : IEEE).
- Koo Voon Chet, Helmut Essen, Josaphat Tetuko Sri Sumantyo, Lim Tien-Sze, Chan Yee-Kit, and Habibah Lateh, "Development of a Ground-based Synthetic Aperture Radar for Land Deformation Monitoring," TH2.R4.5, Advanced and Innovative SAR Concepts and Ground Based Systems, 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 26 September 2013 (Tsukuba : IEEE).
- Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Cheaw Wen Guey, Koo Voon Chet, "FPGA Variable Base Chirp Pulse Generator for Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," The 34th Asian Conference on Remote Sensing (ACRS 2013), pp. SC01 230 – 235, 20 – 24 October 2013 (Bali : AARS) ISBN: 978-602-9439-33-5
- Lim Tien-Sze, Koo Voon-Chet, Chua Ming Yam, Chan Yee-Kit, and Josaphat Tetuko Sri Sumantyo, "Unmanned Aerial Vehicle Synthetic Aperture Radar for Disaster Monitoring," International Seminar on Landslide Research Malaysia – Japan (JICA Landslide Seminar), 16 November 2013 (Penang : USM)

- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Robertus Heru Triharjanto, "Development of Circularly Polarized Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," WE1.T04.1 : SAR Polarimetry : Theory and Application I Session, Wednesday, July 24, 2013 : 08:20-10:00, International Geoscience and Remote Sensing Symposium (IGARSS 2013), 21-26 July 2013 (Melbourne : Japan)
- Koo Voon Chet, Helmut Essen, Josaphat Tetuko Sri Sumantyo, Lim Tien Sze, Chan Yee Kit and Habibah Lateh, "Development of A Ground-based Synthetic Aperture Radar for Land Deformation Monitoring," 2013 Asia Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 23-27 September 2013 (Tsukuba : APSAR)
- Josaphat Tetuko Sri Sumantyo and Koo Voon Chet, "Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle", 2013 Asia Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 23-27 September 2013 (Tsukuba : APSAR)
- Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Cheaw Wen Guey, and Koo Voon Chet,"FPGA Based Multiple Preset Chirp Pulse Generator for Synthetic Aperture Radar Onboard Unmanned Aerialvehicle System," Symposium on Microsatellites for Remote Sensing (SOMIRES 2013), P07, 8-9 August 2013 (Chiba : CEReS-RISH).
- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, "Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," TU1.R2.4, Special Session : Polarimetric SAR Methods and Applications I, 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 24 September 2013 (Tsukuba : IEEE).
- Koo Voon Chet, Helmut Essen, Josaphat Tetuko Sri Sumantyo, Lim Tien-Sze, Chan Yee-Kit, and Habibah Lateh, "Development of a Ground-based Synthetic Aperture Radar for Land Deformation Monitoring," TH2.R4.5, Advanced and Innovative SAR Concepts and Ground Based Systems, 2013 Asia-Pacific Conference on Synthetic Aperture Radar (APSAR 2013), 26 September 2013 (Tsukuba : IEEE).
- Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Cheaw Wen Guey, Koo Voon Chet, "FPGA Variable Base Chirp Pulse Generator for Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," The 34th Asian Conference on Remote Sensing (ACRS 2013), pp. SC01 230 – 235, 20 – 24 October 2013 (Bali : AARS) ISBN: 978-602-9439-33-5
- Lim Tien-Sze, Koo Voon-Chet, Chua Ming Yam, Chan Yee-Kit, and Josaphat Tetuko Sri Sumantyo, "Unmanned Aerial Vehicle Synthetic Aperture Radar for Disaster Monitoring," International Seminar on Landslide Research Malaysia – Japan (JICA Landslide Seminar), 16 November 2013 (Penang : USM)
- Invited Talk : Josaphat Tetuko Sri Sumantyo, Koo Voon Chet and Robertus Heru Triharjanto, "Development of Circularly Polarized Synthetic Aperture Radar Onboard Unmanned Aerial Vehicle and Microsatellite", Polarimetry Session, The 9th ASAR Workshop, John H. Chapman Space Centre, October 15-18, 2013 (the Canadian Space Agency – CSA)
- Josaphat Tetuko Sri Sumantyo, "Group 1. Construction of Analysis System for Temporal Change and Real Time Condition of Surface Environment by Using RS/GIS Technologies," JICA-JST Program SATREPS JCC Meeting, Multimedia University, Cyberjaya, Kualalumpur, 6 March 2014.
- Book : Autonomous Control Systems and Vehicles : Intelligent Unmanned Systems, Editors : Nonami, K.; Kartidjo, M.; Yoon, K.-J.; Budiyono, A., Josaphat Tetuko Sri Sumantyo, Series: Intelligent Systems, Control and Automation: Science and Engineering, IX, 315 p. 210 illus., 160 illus. in color., ISBN 978-4-431-54275-9, Chapter 12 : Circularly

Polarized Synthetic Aperture Radar onboard Unmanned Aerial Vehicle, Vol. 65, 2013,

- Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, M. Y. Chua and W. G. Cheaw, "Development of SAR Baseband Signal Processor using Low Cost FPGA and onboard PC," International Symposium on Remote Sensing (ISRS 2014), A9, 16-18 April 2014 (Busan : Pukyong University)
- Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Voon Chet Koo, Ming Yam Chua and Wen Guey Cheaw, "Development of SAR Baseband Signal Processor using FPGA and Onboard PC," MOP.R.130, SAR Techniques Session, IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2014) and 35th Canadian Symposium on Remote Sensing (35th CSRS), 14 July 2014 (Quebec : Canada).
- Zafri Baharuddin, Kyohei Suto, Josaphat Tetuko Sri Sumantyo, Hiroaki Kuze, Tien Sze Lim, Kuo Shen Jason, Wen Guey Cheaw, and Koo Voon Chet, "Development of a Semi-Automated SAR Test Bed", IEEE The 2nd International Symposium on Telecommunication Technologies (ISTT 2014), Session 3-3 : Special Track on Disaster Management 2, Langkawi, Malaysia, 24-26 November 2014.
- Prilando Rizki Akbar, Josaphat Tetuko Sri Sumantyo, Voon Chet Koo, and Hiroaki Kuze, "Estimation of Data Memory Capacity for Circularly Polarized Synthetic Aperture Radar onboard Unmanned Aerial Vehicle Platform (CP-SAR UAV)," International Journal of Remote Sensing and Earth Sciences (IReSES), Vol.7, pp.24-35, 2010 (Jakarta : Lapan)
- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Lim Tien Sze, Takafumi Kawai, Takuji Ebinuma, Yuta Izumi, Mohd Zafri Baharuddin, Steven Gao and Koichi Ito, "Development of circularly polarized synthetic aperture radar onboard UAV JX-1," International Journal of Remote Sensing, Special Issue Papers on Drones, UAVs, RPASs for Environmental Research, Vol. 38, No. 8-10, pp.2745-2756, online 8 December 2016, printed July 2017 (DOI : 10.1080/01431161.2016.1275057)
- Bambang Setiadi, Good Fried Panggabean, Josaphat Tetuko Sri Sumantyo, and Koo Voon Chet, "Development of raw data processing system for JX-2 UAV using mobile heterogenenous computing," Journal of Unmanned System Technology, 23 July 2016 – In press
- Chua Ming Yam, Koo Voon Chet, Lim Heng Siong, Chan Yee Kit, and Josaphat Tetuko Sri Sumantyo, "Phase Coded Stepped Frequency Linear Frequency Modulated Waveform Synthetis Technique for Ultra-Wideband Synthetic Aperture Radar," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P168, 20-24 November 2016 (Chiba : IJJSS),

8. Chiba University Open Research 2013 – Chiba University President Award, Josaphat Tetuko Sri Sumantyo, "Development of Advance Technology on Microsatellite and Large Scale Unmanned Aerial Vehicle in Chiba Prefecture," Chiba University, 25 November 2013.

   Best Paper Award, Chua Ming Yam, "Phase Coded Stepped Frequency Linear Frequency Modulated Waveform Synthesis Technique for Ultra-Wideband Synthetic Aperture Radar," The 7th Indonesia Japan Joint Scientific Symposium, The 24th CEReS International Symposium, the 1st Symposium on Innovative Microwave Remote Sensing, The 4th Symposium on Microsatellites for Remote Sensing, 21-24 November 2016

1. Observation and model simulation in atmospheric remote sensing

2. Center for Environmental Remote Sensing / Professor / Hiroaki Kuze
3. Philippines / University of the Philippines / Dr. Gerry Bagtasa
4. From 2007
5. Dr. Gerry Bagtasa obtained his Dr.Sc. degree from the Graduate School of Chiba University in 2006. From September 2011 to September 2012, he stayed at CEReS, with the financial support from the Hitachi Foundation as well as the budget for CEReS COE researcher. His original affiliation is Institute of Environmental Science and Meteorology, the University of the Philippines, and he is continuing cooperative research with CEReS in the field of atmospheric observation and meteorological model simulation of the atmosphere.
6. The Hitachi Scholarship Foundation, Expenditure for COE researcher
7. Main result
   - Urban air pollution monitoring using differential optical absorption spectroscopy (DOAS) and wind lidar, Hayato Saito, Yutaro Goto,Yusaku Mabuchi, Ilham Alimuddin, Gerry Bagtasa, Naohiro Manago,Hitoshi Irie, Ippei Harada, Toshihiko Ishibashi, Kazunori Yashiro,Shumpei Kameyama, Hiroaki Kuze, Open Journal of Air Pollution, Vol. 3,No.1, pp. 20-32 (March 2014). DOI: 10.4236/ojap.2014.31003
   - Kuze H. Goto Y, Mabuchi Y, Saitoh H, Alimuddin I, Bagtasa G, Harada I, Ishibashi T, Tsujimoto T, Kameyama S, Urban air pollution monitoring using differential optical absorption spectroscopy (DOAS) and wind lidar, Geoscience and Remote Sensing Symposium (IGARSS), 2012 IEEE International
   - Gerry Bagtasa, Nobuo Takeuchi, Hiroaki Kuze, Wavelet Denoising Applied to Cloud Base Height Determination from Portable Automated Lidar Data, Conference on Lasers and Electro-Optics/Pacific Rim Sydney, Australia August 28, 2011
   - Gerry Bagtasa, Yutaro Goto, Yasuka Mabuchi1, Hayato Saito, Ippei Harada, Shumpie Kameyama, Hiroaki Kuze, Characterization of urban NO2 transport with a Coherent Doppler Lidar and WRF-Chem model, The 30th LSS, 2012
8. None

1. The cooperative research program for the climate effects of clouds and aerosols in the tropical areas
2. Center for Environmental Remote Sensing / Associate Professor / Hitoshi Irie
3. Thai / Chulalongkorn University / Thanawat Jarupongsakul
4. From 2005
5. The objective of this collaborative program is to assess climatic effects of aerosols and clouds by analyzing data observed at the Phimai observation site. The main target is to better understand their radiative forcing.
6. MEXT-GEOSS program, JST/CREST program
7. Results
   - Takamura, T., S. Karasuyama, T. Nakajima , T. Kato and Y. Miyake, 2005: PAR and Aerosol Observation with a Newly Developed Instrument. Air Pollution and Climate Change Study Workshop, Apr.26-28 2005, BRRAA Phimai Observatory, Phimai Thailand. (Hosted by Chulalongkon Univ. and Univ. Tokyo)
   - Yu Cui*, Yasushi Mitomi* and Tamio Takamura,2006: An Empirical Anisotropy Correction Model for Estimating

Albedo at surface for Radiation Budget and Climate Studies, 2nd Asia-Pacific Radiation Symposium (APRS 2006), Kanazawa (JAPAN), August 1, 2006

- T. Takamura, H. Takenaka, Y. Cui, T.Y. Nakajima, A. Higurashi, S. Fukuda, N. Kikuchi, T. Nakajima, I. Sano and R. Pinker, 2008: Estimation of radiation budget using GLI, and Construction of aerosol and cloud validation system based on SKYNET observations, GLI workshop at ATAMI, Jan.22-24, 2008
- H. Tsuruta, J. Chotpitayasunon, B. Thana, P. Khatri, T. Takamura, T. Hyasaka, and T. Nakajima, Characterization of atmospheric aerosols at the observatory for atmospheric research at Phimai, Thailand, a station of SKYNET, Proceedings of the 14th CEReS Int'l Symposium and SKYNET Workshop on "Remote Sensing of the Atmosphere for Better Understanding of Climate Change", 22-25, Nov. 13-14 2008, Keyaki-Hall, Chiba University.
- Thana, B., T. Sudjai, J. Chotpitayasunon, H. Tsuruta, T. Takamura, and T. Nakajima, 2010: Characteristics of atmospheric aerosols at the Observatory for Atmospheric Reaserch at Phimai, Thailand, a station of SKYNET. Proceedings of the 16th CEReS International Symposium on Climate Change Studies through Activities of SKYNET and Virtual Laboratory for Climate Diagnostics, p57-60, Oct. 21-23, 2010, Okinawa, Japan.
- Khatri, P. and T. Takamura, 2012: Aerosol climatology of the East Asia region studied by using ground-based remote sensor data of SKYNET network, Proc. of the 18th CEReS Int'l. Symposium –Asian Network for Environmental Monitoring and Related Studies, Chiba, Japan, 12-29.
- Hoque, H. M. S., H. Irie, and A. Damiani, First MAX-DOAS observations of formaldehyde and glyoxal in Phimai, Thailand, Journal of Geophysical Research, submitted, February 3, 2018.
- Kumharn, W., K. Intisaen, H. Irie, N. Kumon, and S. Janjai, Aerosol size distribution using Thailand ground based instruments, Journal of Aerosol Science, submitted, 2018.

8. Others

SKYNET Phimai site, which is operated by the collaborative frame work, is registered to the ABC/UNEP.

1. Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle and Microsatellite
2. Center for Environmental Remote Sensing / Professor / Josaphat Tetuko Sri Sumantyo
3. Korea / Ajou University (with Agreement of Academic Cooperation) / Prof. Kim Jae-Hyun / Professor
4. From 2013 to 2018
5. Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle and Microsatellite Development for Earth observation
6. Korea Government – Korean Aerospace Research Institute (KARI), Japanese Government – MEXT etc
7. None
8. Other important items to be stated

- Heein Yang, Jae-Hyun Kim, Bambang Setiadi, and Josaphat Tetuko Sri Sumantyo, "Development of CP-SAR (Circularly Polarized Synthetic Aperture Radar) System, International Symposium on Remote Sensing (ISRS 2014), Poster Session I, P288, 16-18 April 2014 (Busan : Pukyong University)
- Heein Yang, Bambang Setiadi, Josaphat Tetuko Sri Sumantyo, and Jae Hyun Kim, "Image Quality Comparasion of LP and CP-SAR," AFC Forum C2: Environmental Remote Sensing, The 2nd Asia Future Conference (AFC 2014),

The 2nd Symposium on Microsatellites for Remote Sensing (SOMIRES 2014), and The 21th CEReS International Symposium, 22 August 2014 (Bali : AFC 2014)

- Heein Yang, Jae-Hyun Kim, and Josaphat Tetuko Sri Sumantyo, "Circular Polarization Implementation on Synthetic Aperture Radar," Workshop 3 : Wireless & Satellite Communication 2, W-5.2, 24 October 2014 11:00-12:40, International Conference on ICT Convergence (ICTC 2014), Paradise Hotel, Busan, Korea.
- Heein Yang, Josaphat Tetuko Sri Sumantyo, Jin-Hong An, Hae Won Jung, and Jae Hyun Kim, "Phase Error Compensation Method using Polynomial Model for a Direct Digital Synthesizer Based Chirp Signal Generator," IEEE IGARSS 2015, MOP.PP.9, July 26-31, 2015, Milan, Italy.
- Yuta Izumi, Josaphat Tetuko Sri Sumantyo, Heein Yang, and Agus Hendra, "Development of Low Memory Size Chirp Generator for Synthetic Aperture Radar using FPGA," B24, Abstracts of The 59th Autumn Conference of The Remote Sensing Society of Japan, Ryojun Matsumoto Auditorium, Nagasaki University, Japan, November 26-27, 2015.
- Yuta Izumi, Mohd Zafri Bin Baharuddin, Josaphat Tetuko Sri Sumantyo, Ghozali Suhariyanto Hadi, Yudi Isvara, Agus Hendra, and Heein Yang, "Experiment of L-Band Synthetic Aperture Radar System Using ISAR Method in Anechoic Chamber," The 3rd Symposium on Microsatellites for Remote Sensing (SOMIRES 2015), 2A-3, 1 December 2015 (SOMIRES : Chiba)
- Heein Yang, Josaphat Tetuko Sri Sumantyo, Good Fried Panggabean, Agus Hendra, Babag Purbantoro, Cahya Edi Santosa, Kaihei Nakamura, and Kyeong Rok Kim, "Conceptual Design of Unmanned Aerial Vehicle (UAV) on-board X-Band Synthetic Aperture Radar (SAR)," the 23rd CEReS International Symposium, 4B-7, 2 December 2015 (CEReS : Chiba)
- K. Nakamura, Josaphat Tetuko Sri Sumantyo, Yuto Osanai, Heein Yang, and Cahya Edi Santosa, "Design and Fabrication of X Band Antenna for Wideband Synthetic Aperture Radar," the 23rd CEReS International Symposium, P7, 1 December 2015 (CEReS : Chiba)
- Heein Yang, Agus Hendra Wahyudi, Yuta Izumi, and Josaphat Tetuko Sri Sumantyo, "Signal-to-Noise Ratio Estimation for Unmanned Aerial Vehicle on-board Synthetic Aperture Radar," International Symposium on Remote Sensing 2016 (ISRS 2016), Room 301, 21 April 2016 (ISRS : Jeju, Korea).
- 泉佑太、Demirch Shevket、Mohd. Zafri Baharuddin、楊熙仁、Josaphat Tetuko Sri Sumantyo、"円偏波フルポラリメトリック合成開口レーダの標準リフレクタを用いた直線インバース SAR 実験"、SAR セッション、第 60 回（平成 28 年度春季）学術講演会日本リモートセンシング学会、日本大学津田沼キャンパス、2016 年 5 月 12 日
- 泉佑太, 渡邊智郎, Zafri Baharuddin, Sevket Demirci, Heein Yang, Josaphat Tetuko Sri Sumantyo, "地上型円偏波合成開口レーダを用いた稲の観測", 電子情報通信学会 2016 年ソサイエティ大会, B-1 アンテナ・伝搬 A, B-1-21, 北海道大学
- Yuta Izumi, T Watanabe, Mohd Zafri Baharuddin, Sevket Demirci, Heein Yang, Josaphat Tetuko Sri Sumantyo, "Long term monitoring of paddy rice using full polarimetric ground-based circularly polarized SAR," Abstract Proceedings of the 61th Autumn Conference of The Remote Sensing Society of Japan, B9, November 1-2, 2016

(Niigata : Niigata Tersa)

- Agus Hendra Wahyudi, Josaphat Tetuko Sri Sumantyo, Heein Yang, Matsumura Kohei, and Yuta Izumi, "Network Based Data Acquisition and Control System for Circular Polarization SAR (CP-SAR) Sensor on UAV," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P130, 20-24 November 2016 (Chiba : IJJSS)
- Yuta Izumi, Sevket Demirci, Mohd Zafri Baharuddin, Josaphat Tetuko Sri Sumantyo, and Heein Yang, "Analysis of Circular Polarization Backscattering and Target Decomposition using GB-SAR," Progress in Electromagnetics Research B (PIER B), Vol. 73, 17-29, February 2017 ISSN: 1937-6472
- Heein Yang, Yuta Izumi, Agus Hendra, and Josaphat Tetuko Sri Sumantyo, "Novel Chirp Phase Error Compensation Algorithm using Polynomial Chirp Modelling for High Resolution Synthetic Aperture Radar," Synthetic Aperture Radar Instrumentation and Calibration, FRP1.PA.5, 2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017), Fort Worth, Texas, USA, 28 July 2017
- Heein Yang, Josaphat Tetuko Sri Sumantyo, "Novel Phase Error Compensation Algorithm for Direct Digital Synthetizer Chirp Generator in Synthetic Aperture Radar, Journal of Unmanned System Technology, February 2019

【Awards】:

- Outstanding Paper Award, Heein Yang, Dal-Guen Lee, Tu-Hwan Kim, Josaphat Tetuko Sri Sumantyo, and Jae-Hyun Kim, "Semi-automatic coastline extraction method using synthetic aperture radar images" IEEE The 16th International Conference on Advanced Communication Technology (ICACT 2014), Paper ID 20140473, Phoenix park, Republic of Korea, 16-19 February 2014.
- Award of Excellent Contestant – Student Award Paper Competition, Heein Yang, Agus Hendra Wahyudi, Yuta Izumi, and Josaphat Tetuko Sri Sumantyo, "Signal-to-Noise Ratio Estimation for Unmanned Aerial Vehicle on-board Synthetic Aperture Radar," International Symposium on Remote Sensing 2016, International Convention Center Jeju, 20-22 April 2016.
- Best Poster Award, Min-Wook Heo and Heein Yang, "Implementation On Reduction Lut Memory Size In Chirp Signal Generation For Satellite On-board SAR," The 7th Indonesia Japan Joint Scientific Symposium, The 24th CEReS International Symposium, the 1st Symposium on Innovative Microwave Remote Sensing, The 4th Symposium on Microsatellites for Remote Sensing, 21-24 November 2016

1. Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle and Microsatellite
2. Center for Environmental Remote Sensing / Professor / Josaphat Tetuko Sri Sumantyo
3. Indonesia / Indonesian Aerospace Agency (LAPAN) / Robertus Heru Trihardjanto / Head of Satellite Technology Division
4. From 2013-
5. Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle and Microsatellite for Earth monitoring
6. Indonesian Government - Lapan, Japanese Government MEXT, etc
7. Main result

- Josaphat Tetuko Sri Sumantyoand Robertus Heru Triharjanto, "Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," System Session., B2, The 52nd Spring Conference of the Remote Sensing Society of

Japan, May 23-24, 2012, Institute of Industrial Science, the University of Tokyo, Japan.

- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Robertus Heru Triharjanto, "Development of Circularly Polarized Synthetic Aperture Radar onboard Unmanned Aerial Vehicle," WE1.T04.1 : SAR Polarimetry : Theory and Application I Session, Wednesday, July 24, 2013 : 08:20-10:00, International Geoscience and Remote Sensing Symposium (IGARSS 2013), 21-26 July 2013 (Melbourne : Japan)
- K. Nakamura, Josaphat Tetuko Sri Sumantyo, Yuto Osanai, Heein Yang, and Cahya Edi Santosa, "Design and Fabrication of X Band Antenna for Wideband Synthetic Aperture Radar," the 23rd CEReS International Symposium, P7, 1 December 2015 (CEReS : Chiba)
- Heein Yang, Josaphat Tetuko Sri Sumantyo, Good Fried Panggabean, Agus Hendra, Babag Purbantoro, Cahya Edi Santosa, Kaihei Nakamura, and Kyeong Rok Kim, "Conceptual Design of Unmanned Aerial Vehicle (UAV) on-board X-Band Synthetic Aperture Radar (SAR)," the 23rd CEReS International Symposium, 4B-7, 2 December 2015 (CEReS : Chiba)
- Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, and Robertus Heru Trihardjanto, "Development of Circularly Polarized SAR onboard UAV, Aircraft and Microsatellite," Innovative SAR Concept, CEOS SAR Calibration and Validation Workshop 2016, 9 September 2016 (Tokyo : Tokyo Denki University)
- Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, and Robertus Heru Triharjanto,"Development of Synthetic Aperture Radar onboard Aircraft and Microsatellite for Global Land Deformation Obervation," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P062, 20-24 November 2016 (Chiba : IJJSS)
- Cahya Edi Santosa, Mohd Zafri Baharuddin, Asif Awaludin, Josaphat Tetuko Sri Sumantyo, "Circularly Polarized Microsatrip Antenna with Eye-slot for X-Band Synthetic Aperture Radar Application," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P043, 20-24 November 2016 (Chiba : IJJSS)
- Kaihei Nakamura, Josaphat Tetuko Sri Sumantyo, Cahya Edi Santosa, and Asif Awaludin, "Study of 6-module X-Band Array Antenna for Airborne CP-SAR Application," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P133, 20-24 November 2016 (Chiba : IJJSS)
- Heein Yang, Agus Hendra Wahyudi, Yuta Izumi, and Josaphat Tetuko Sri Sumantyo, "Signal-to-Noise Ratio Estimation for Unmanned Aerial Vehicle on-board Synthetic Aperture Radar," International Symposium on Remote Sensing 2016 (ISRS 2016), Room 301, 21 April 2016 (ISRS : Jeju, Korea)

- Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, and Robertus Heru Trihardjanto, "Development of Circularly Polarized SAR onboard UAV, Aircraft and Microsatellite," Innovative SAR Concept, CEOS SAR Calibration and Validation Workshop 2016, 9 September 2016 (Tokyo : Tokyo Denki University)
- Cahya Edi Santosa, Mohd Zafri Baharuddin, Asif Awaludin, Josaphat Tetuko Sri Sumantyo, "Circularly Polarized Microsatrip Antenna with Eye-slot for X-Band Synthetic Aperture Radar Application," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P043, 20-24 November 2016 (Chiba : IJJSS)
- Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, and Robertus Heru Triharjanto,"Development of Synthetic Aperture Radar onboard Aircraft and Microsatellite for Global Land Deformation Obervation," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P062, 20-24 November 2016 (Chiba : IJJSS)

- Babag Purbantoro, Jamrud Aminuddin, Naohiro Manago, Koichi Toyoshima, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, "Cloud Retrieval and Cloud Type Detection from Himawari-8 Satellite Data Based on The Split Window Algorithm," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P110, 20-24 November 2016 (Chiba : IJJSS)
- Babag Purbantoro, Jamrud Aminuddin, Naohiro Manago, Koichi Toyoshima, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, "Cloud Retrieval and Cloud Type Detection from Himawari-8 Satellite Data Based on The Split Window Algorithm," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P110, 20-24 November 2016 (Chiba : IJJSS)
- Agus Hendra Wahyudi, Josaphat Tetuko Sri Sumantyo, Heein Yang, Matsumura Kohei, and Yuta Izumi, "Network Based Data Acquisition and Control System for Circular Polarization SAR (CP-SAR) Sensor on UAV," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P130, 20-24 November 2016 (Chiba : IJJSS)
- Kaihei Nakamura, Josaphat Tetuko Sri Sumantyo, Cahya Edi Santosa, and Asif Awaludin, "Study of 6-module X-Band Array Antenna for Airborne CP-SAR Application," The 7th Indonesia Japan Joint Scientific Symposium (IJJSS 2016), P133, 20-24 November 2016 (Chiba : IJJSS)
- Asif Awaludin, Josaphat Tetuko Sri Sumantyo, Cahya Edi Santosa, Mohd Zafri Baharuddin, "Axial Ratio Enhancement of Equilateral Triangular-Ring Slot Antenna using Coupled Diagonal Line Slots," Progress In Electromagnetics Research C (PIERC), Vol. 70 > pp. 99-109, 7 December 2016 ISSN 1937-8718, DOI:10.2528/PIERC16102508
- Asif Awaludin, Josaphat Tetuko Sri Sumantyo, Koichi Ito, Steven Gao, Achmad Munir, Mohd Zafri Baharuddin, and Cahya Edi Santosa, "Equilateral Triangular Slot Antenna For Communication System And GNSS RO Sensor Of GAIA-I Microsatellite", IEICE Transactions on Communications, Vol.E101-B,No.3,pp.-,Mar. 2018, 1 September 2017 DOI http://doi.org/10.1587/transcom.2017EBP3183
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Koichi Ito, Hiroaki Kuze, and Steven Gao, "Patch Antenna using Rectangular Centre Slot and Circular Ground Slot for Circularly Polarized Synthetic Aperture Radar (CP-SAR) Application," Progress in Electromagnetics Research (PIER), Vol. 160, pp. 51-61
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Steven Gao, Ito Koichi, and Cahya Edi Santosa, "Square Shaped Feeding Truncated Circularly Polarized Slot Antenna," IET Microwaves, Antennas & Propagation, Accepted 10 January 2018
- Cahya Edi Santosa, Josaphat Tetuko Sri Sumantyo, Katia Urata, Chua Ming Yam, Koichi Ito, and Steven Gao, "Development of a Low Profile Wide-Bandwidth Circularly Polarized Microstrip Antenna for C-Band Airborne CP-SAR Sensor," Progress In Electromagnetics Research C, Vol.81, pp.77-88, 2018
- Josaphat Tetuko Sri Sumantyo, Katia Nagamine Urata, Nobuyoshi Imura, Koichi Ito, Steven Gao, Robertus Heru Triharjanto, and Shunsuke Onishi, "Development of L Band Circularly Polarized SAR onboard Microsatellite," E9 – SAR Processing, International Symposium on Remote Sensing (ISRS 2017), 17-19 May 2017, Toyoda Auditorium / Symposion, Noyori Conference Hall, Nagoya University, Japan.
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Gunawan Setryo Prabowo, and Achmad Munir, "Wide

Bandwidth Left-handed Circularly Polarized Printed Antenna with Crescent Slot," PIERS (Progress In Electromagnetics Research Symposium), Spring PIERS 2017, 22-25 May 2017. St Petersburg, Russia

- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Achmad Munir, "Wideband LHCP Truncated-Circularly-Shape Microstrip Antenna for SAR Application," TUP-A1.9P.1, p.126, The 2017 IEEE International Symposium on Antennas and Propagation, 9-14 July 2017 (IEEE : San Diego)
- Cahya Edi Santosa and Josaphat Tetuko Sri Sumantyo, "Broadband Circularly Polarized Microstrip Antenna for Airborne X Band CP-SAR," TUP-A1.9P.5, p.126, The 2017 IEEE International Symposium on Antennas and Propagation, 9-14 July 2017 (IEEE : San Diego)
- Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, Shunsuke Onishi, Tetsuo Yasaka, Robertus Heru Triharjanto, Koichi Ito, Steven Gao, Kazuteru Namba, Katsumi Hattori, Fumio Yamazaki, Chiharu Hongo, Akira Kato, and Daniele Perissin, "L Band Circularly Polarized SAR onboard Microsatellite," Advances in SAR Instrumentation and Calibration I, FR3.L4.2, 2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2017), Fort Worth, Texas, USA, 28 July 2017
- Asif Awaludin, Josaphat Tetuko Sri Sumantyo, Koichi Ito, Steven Gao, Achmad Munir, Mohd Zafri Baharuddin, and Cahya Edi Santosa, "Equilateral Triangular Slot Antenna For Communication System And GNSS RO Sensor Of GAIA-I Microsatellite", IEICE Transactions on Communications, Vol.E101-B,No.3,pp.-,Mar. 2018
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Koichi Ito, Hiroaki Kuze, and Steven Gao, "Patch Antenna using Rectangular Centre Slot and Circular Ground Slot for Circularly Polarized Synthetic Aperture Radar (CP-SAR) Application," Progress in Electromagnetics Research (PIER), Vol. 160, pp. 51-61, 2017
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Steven Gao, Ito Koichi, and Cahya Edi Santosa, "Square Shaped Feeding Truncated Circularly Polarized Slot Antenna," IET Microwaves, Antennas & Propagation, Vol.12, pp.1279-1286, 4 July 2018
- Josaphat Tetuko Sri Sumantyo, Nobuyoshi Imura, Katia Nagamine Urata, Robertus Heru Triharjanto, and Steven Gao, "Multiband Circularly Polarized Synthetic Aperture Radar (CP-SAR) onboard Microsatellite Constellation," IEEE International Geoscience and Remote Sensing Symposium (IGARSS 2018), Valencia, Spain, 24 July 2018
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Peberlin Parulian Sitompul, Gunawan Setyo Prabowo, Agus Aribowo, and Atik Bintoro, "Comparison Design of X-band Microstrip Antenna for SAR Application", Innovative Microwave Remote Sensing, 2P1, Progress in Electromagnetics Research Symposiums (PIERS 2018), 1-4 August 2018, Toyama
- Cahya Edi Santosa and Josaphat Tetuko Sri Sumantyo, "Gain Enhancement of C Band Linearly-polarized Microstrip Antenna with Square Parasitic Patch for Airborne LP-SAR Sensor," Innovative Microwave Remote Sensing, 2P1, Progress in Electromagnetics Research Symposiums (PIERS 2018), 1-4 August 2018, Toyama.
- Peberlin Parulian Sitompul, Josaphat Tetuko Sri Sumantyo, Farohaji Kurniawan, Cahya Edi Santosa, Timbul Manik, Asif Awaludin, and Ming Yam Chua, "Dual-band Circularly-polarized Microstrip Antenna for Nano Satellite," Innovative Microwave Remote Sensing, 2P1, Progress in Electromagnetics Research Symposiums (PIERS 2018), 1-4 August 2018, Toyama

- Agus Hendra Wahyudi, Josaphat Tetuko Sri Sumantyo, Ari Sugeng Budiyanta, and Achmad Munir, "3D Printed Wideband Circularly Polarized Pyramidal Horn Antenna," Innovative Microwave Remote Sensing, 2P1, Progress in Electromagnetics Research Symposiums (PIERS 2018), 1-4 August 2018, Toyama.
- Asif Awaludin, Cahya Edi Santosa, and Josaphat Tetuko Sri Sumantyo, "Unidirectional Radiation and Gain Enhancement of Circularly Polarized Printed Slot Antenna by Several Shapes of Reflector," Innovative Microwave Remote Sensing, 2P1, Progress in Electromagnetics Research Symposiums (PIERS 2018), 1-4 August 2018, Toyama
- Cahya Edi Santosa, Josaphat Tetuko Sri Sumantyo, Katia Urata, Chua Ming Yam, Koichi Ito, and Steven Gao, "Development of a Low Profile Wide-Bandwidth Circularly Polarized Microstrip Antenna for C-Band Airborne CP-SAR Sensor," Progress In Electromagnetics Research C, Vol.81, pp.77-88, 2018
- Farohaji Kurniawan, J.T. Sri Sumantyo, Y. A. Nugroho, G. S. Prabowo , A. Munir," Novel Technique to Develop Circular Polarized Broadband Microstrip Antenna with Square Ring Slot (SRS) for SAR Application". IEEE CAMA, Sweden, September 2018
- Babag Purbantoro, Jamrud Aminuddin, Naohiro Manago, Koichi Toyoshima, Nofel Lagrosas, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, "Comparison of Cloud Type Classification with Split Window Algorithm Based on Different Infrared Band Combinations of Himawari-8 Satellite," Advances in Remote Sensing, Vol.7, pp.218-234, DOI: 10.4236/ars.2018.73015 21 September 2018
- Cahya Edi Santosa, Josaphat Tetuko Sri Sumantyo, Chua Ming Yam, Katia Urata Nagamine, Koichi Ito, and Steven Gao, "Subarray Design for C-Band Circularly-Polarized Synthetic Aperture Radar Antenna onboard Airborne," Progress In Electromagnetics Research, Vol. 163, pp.107-117, 2018
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, Y. Prabowo, G. S. Prabowo, "Development Circularly Polarized Microstrip Antenna with Triangular Truncation for Data Communication of SAR System," The 8th Indonesia Japan Joint Scientific Symposium (IJJSS 2018), University of Indonesia, Jakarta, Indonesia, 9-11 October 2018
- Cahya Edi Santosa, Josaphat Tetuko Sri Sumantyo, and Asif Awaludin,"Design of 128 Elements Microstrip Array Antenna for C Band Hinotori-C2 CP-SAR onboard CN235 aircraft," The 8th Indonesia Japan Joint Scientific Symposium (IJJSS 2018), University of Indonesia, Jakarta, Indonesia, 9-11 October 2018
- Farohaji Kurniawan, Josaphat Tetuko Sri Sumantyo, A. S. Budianta, D. Hidayat, Yohandri. "Effect of Bended Feeding Line to the Axial Ratio on Circular Patch Antenna with Triangle Truncated", IEEE TENCON. Jeju-Korea, 28-31 October 2018
- Agus Hendra Wahyudi, Cahya Edy Santosa, Josaphat Tetuko S. Sumantyo, "Development of Broadband LHCP Pyramidal Horn Antenna With Septum Gaussian Profile Polarizer for CP-SAR Sensor Onboard Microsatellite," Open Journal of Antennas and Propagation, Scirp.org, Vol.6, No.4, December 2018
- Agus Hendra Wahyudi, Farohaji Kurniawan, Peberlin Sitompul, Josaphat Tetuko S. Sumantyo "Wideband LHCP 3D Printed Pyramidal Horn Antenna with Poisson Distribution Profile Polarizer for CP-SAR Sensor Onboard Microsatellite," Journal of Instrumentation, Automation and Systems, Unsys Digital, March 2019

8. None

1. Development of C Band Synthetic Aperture Radar (CB-SAR) for Unmanned Aerial Vehicle Platform
2. Center for Environmental Remote Sensing / Professor / Josaphat Tetuko Sri Sumantyo
3. Indonesia / Bhimasena Research, Technology and Development / Dr. Aris Budiyarto
4. From 2015
5. The purpose of this activity is developing C band Synthetic Aperture Radar (CB-SAR) for Unmanned Aerial Vehicle (UAV) platform for vegetation covered land surface remote sensing. The CB-SAR system utilizes advanced SAR sensor using FPGA to realize lightweight and compact system to onboard the sensor of medium class of UAV in order to penetrate dense vegetation covered area. The research aims to perform organized activities amongst the research teams in Japan and in the Indonesia. The team members will visit each other to find and fit together the missing pieces for a successful program to realize single polarization of CB-SAR onboard UAV that could be operated in height less than 2,000m for remote sensing.
6. Bhimasena Research, Technology and Development
7. Main result

➢ Conference :

(1) Heein Yang, Josaphat Tetuko Sri Sumantyo, Jin-Hong An, Hae Won Jung, and Jae Hyun Kim, "Phase Error Compensation Method using Polynomial Model for a Direct Digital Synthesizer Based Chirp Signal Generator," IEEE IGARSS 2015, MOP.PP.9, July 26-31, 2015, Milan, Italy.

(2) ヨサファット　テトォコ スリ スマンティヨ、"環境・災害監視用無人航空機・航空機・小型衛星用の合成開口レーダの開発"、千葉エリア産学官連携オープンフォーラム 2015,　日本大学生産工学部・津田沼キャンパス、2015 年 9 月 11 日

(3) Yuta Izumi, Josaphat Tetuko Sri Sumantyo, Heein Yang, and Agus Hendra, "Development of Low Memory Size Chirp Generator for Synthetic Aperture Radar using FPGA," B24, Abstracts of The 59th Autumn Conference of The Remote Sensing Society of Japan, Ryojun Matsumoto Auditorium, Nagasaki University, Japan, November 26-27, 2015.

(4) Yuta Izumi, Mohd Zafri Bin Baharuddin, Josaphat Tetuko Sri Sumantyo, Ghozali Suhariyanto Hadi, Yudi Isvara, Agus Hendra, and Heein Yang, "Experiment of L-Band Synthetic Aperture Radar System Using ISAR Method in Anechoic Chamber," The 3rd Symposium on Microsatellites for Remote Sensing (SOMIRES 2015), 2A-3, 1 December 2015 (SOMIRES : Chiba)

(5) Mohd Zafri Bin Baharuddin, Yuto Osanai and Josaphat Tetuko Sri Sumantyo, "Suppressed Side-Lobe Beam Steered C Band Circularly Polarized Array Antenna for Synthetic Aperture Radar Measurements," The 3rd Symposium on Microsatellites for Remote Sensing (SOMIRES 2015), 2A-4, 1 December 2015 (SOMIRES : Chiba)

(6) K. Nakamura, Josaphat Tetuko Sri Sumantyo, Yuto Osanai, Heein Yang, and Cahya Edi Santosa, "Design and Fabrication of X Band Antenna for Wideband Synthetic Aperture Radar," the 23rd CEReS International Symposium, P7, 1 December 2015 (CEReS : Chiba)

(7) Masaru Bunya, Kazuteru Namba, and Josaphat Tetuko Sri Sumantyo, "CP-SAR Processing System on FPGA for Multiple Image Size," the 23rd CEReS International Symposium, P22, 1 December 2015 (CEReS : Chiba)

(8) Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Lim Tien Sze, Takafumi Kawai, Takuji Ebinuma, Yuta Izumi, Mohd Zafri Baharuddin, Steven Gao and Koichi Ito, "Development of circularly polarized synthetic aperture radar onboard UAV JX-1," International Journal of Remote Sensing, Special Issue Papers on Drones, UAVs, RPASs for Environmental Research, Vol. 38, No. 8-10, pp.2745-2756, online 8 December 2016, printed July 2017 (DOI : 10.1080/01431161.2016.1275057)

- Invited Talks :

(1) Josaphat Tetuko Sri Sumantyo and Zafri Baharuddin, "Earth observation using the GAIA-1 and GAIA-2 satellite platforms," MIS02-04, Interdisciplinary studies on pre-EQ, Japan Geoscience Union Meeting 2015 (JpGU 2015), Makuhari, Japan, 26 May 2015, 09:45 – 10:00.

(2) Josaphat Tetuko Sri Sumantyo, "Development of GNSS-RO and EDTP Sensors onboard Microsatellite for Ionosphere Monitoring," International Workshop on Earthquake Preparation Process 2015 (IWEP 2015) – Observation, Validation, Modelling and Forecasting, Chiba, Japan, 30 May 2015, 09:00-09:30

(3) Josaphat Tetuko Sri Sumantyo, "Development of Microwave Sensors onboard UAV and Microsatellites for Visualization of Earth Environmental and Its Applications," Main Symposium : Symposium and Workshop on Muon-Optics-Geoneutrino-Radar and Photonics for Earth Studies (MUOGRAPHERS 2015), Tokyo Prince Hotel, 9 June 2015 (Tokyo University)

(4) Invited Talk : Josaphat Tetuko Sri Sumantyo, "Development of Microsatellites for Profiling Lithosphere & Atmosphere Characteristics to Support Human Life and Sustainable Environment," the 14th International Conference on QIR (Quality in Research), Mataram, Lombok, Indonesia, 11 August 2015

(5) Josaphat Tetuko Sri Sumantyo, "Development on Synthetic Aperture Radar onboard Unmanned Aerial Vehicle, Aircraft and Microsatellites," the 11th International Conference on Intelligent Unmanned Systems (ICIUS 2015), Bali, Indonesia, 26 August 2015.

(6) Josaphat Tetuko Sri Sumantyo, "Analysis of Land Deformation Velocity using PSI ALOS PALSAR : Impact of Coastal Sedimentation to Future Jakarta Giant Sea Wall and Waterfront City," The 5th Asia-Pasific Conference on Synthetic Aperture Radar (APSAR 2015), Singapore," 1-4 September 2015.

(7) Josaphat Tetuko Sri Sumantyo, "Development of Advanced Microwave Sensors onboard UAV, Aircraft and Microsatellite for Earth Monitoring – Experience How to Build Laboratory and to be Researcher – ", The 8th Conference of Indonesian Student Association in Korea (CISAK 2015), Daejeon, Korea, 5-6 September 2015.

(8) Josaphat Tetuko Sri Sumantyo, "合成開口レーダ搭載小型衛星の開発：海洋学への応用"、日本海洋学会ナイトセッションＢ 「海洋学は小型衛星をどう使う？」、2015 年 9 月 29 日（火） 16：30～19：00、愛媛大学 共通教育講義棟 3 階 講 32 教室

(9) Josaphat Tetuko Sri Sumantyo, "Development of Synthetic Aperture Radar onboard UAV, Aircraft and Microsatellite," The 10th Advanced Synthetic Aperture Radar Workshop (ASAR 2015), John H. Chapman Space Centre 6767 route de l'Aéroport Saint-Hubert, Quebec J3Y 8Y9, Canada, 20-22 October 2015

(10) Josaphat Tetuko Sri Sumantyo, "Potentionality of Aerospace and Aeronautics Smart Technology Development for Maritime Support in Indonesia," International Seminar on Aerospace Science and Technology (ISAST 2015), Kuta, Bali, Indonesia, 27-28 October 2015

(11) Josaphat Tetuko Sri Sumantyo, "Industry and University Cooperation in Innovation on Remote Sensing Technology between Indonesia and Japan," The 3rd Japan Indonesia Rector's Conference, 5 November 2015, Sapporo, Hokkaido

(12) Josaphat Tetuko Sri Sumantyo, "Development of Synthetic Aperture Radar onboard UAV, Aircraft and Microsatellite," IEEE Workshop on Geoscience and Remote Sensing 2015 (IWGRS 2015), Universiti Teknologi Malaysia, Kualalumpur, July 6-7, 2015

(13) Josaphat Tetuko Sri Sumantyo, "Development of Synthetic Aperture Radar onboard UAV, Aircraft and Microsatellite," The 23 CEReS International Symposium, 1 December 2015 (CEReS : Chiba)

(14) Invited Talk : Josaphat Tetuko Sri Sumantyo, "Advanced Microwave Remote Sensing Technologies for Global Maritime Axis," OISAA Asia – Oceania Symposium 2016, University of Hongkong, 9 April 2016

(15) Invited lecture : Josaphat Tetuko Sri Sumantyo, "Application of Synthetic Aperture Radar onboard Aircraft and Microsatellite on Disaster Monitoring," National Chiao Tung University, Taiwan (Prof Tian Yuan Shih), Department of Civil Engineering, 5 December 2017

8. Other important items to be stated

- Josaphat Tetuko Sri Sumantyo, Lembaga Prestasi Indonesia – Dunia (LEPRID) No.105, Josaphat Tetuko Sri Sumantyo, PENEMU RADAR SATELIT PENGAMATAN BUMI BERBASIS MICROWAVE REMOTE SENSING DAN MOBILE SATELLITE COMMUNICATIONS, DAN PEMILIK PATEN DI 118 NEGARA, Jakarta, 15 December 2015
- Josaphat Tetuko Sri Sumantyo, Lembaga Prestasi Indonesia – Dunia (LEPRID) No.106, Josaphat Tetuko Sri Sumantyo, PENEMU CIRCULARLY POLARIZED SYNTHETIC APERTURE RADAR UNTUK PESAWAT TANPA AWAK, PESAWAT BERAWAK DAN MICROSATELLITE, Jakarta, 15 December 2015

1. Airborne SAR Development for Disaster Monitoring
2. Center for Environmental Remote Sensing / Professor / Josaphat Tetuko Sri Sumantyo
3. Taiwan / National Space Organization / Dr. Allen Shie
4. From 2016
5. The purpose of this activity is developing C band Synthetic Aperture Radar (CB-SAR) for aircraft for disaster monitoring. The CB-SAR system utilizes advanced SAR sensor using FPGA to realize lightweight and compact system to onboard the sensor of small aircraft in order to monitor land deformation, i.e landslide. The research aims to perform organized activities amongst the research teams in Japan and in the Taiwan. The team members will visit each other to find and fit together the missing pieces for a successful program to realize single polarization of CB-SAR onboard small aircraft that could be operated in height less than 2,000m for remote sensing.
6. National Space Organization
7. Main result

- Invited Lecture : Josaphat Tetuko Sri Sumantyo, "Development of Synthetic Aperture Radar onboard UAV and Microsatellites," Taiwanese National Space Organization (NSPO), 3 September 2014 (Hsinchu : NSPO)
- Invited Lecture : Josaphat Tetuko Sri Sumantyo, "Develoment of Synthetic Aperture Radar onboard UAV," Taiwanese National Space Organization (NSPO), 4 September 2014 (Hsinchu : NSPO)
- Invited Lecture : Josaphat Tetuko Sri Sumantyo, "The 14th Workshop on SAR Image Signal Processing", Taiwanese National Space Organization (NSPO), Hsinchu, Taiwan, 21 May 2015
- Invited Lecture : Josaphat Tetuko Sri Sumantyo, "Application of Synthetic Aperture Radar Image Processing", Taiwanese National Space Organization (NSPO), Hsinchu, Taiwan, 22 May 2015
- Mohd Zafri Baharuddin, Josaphat Tetuko Sri Sumantyo and Hiroaki Kuze, "Suppressed Side-lobe, Beam Steered, C-band Circularly Polarized Array Antenna for Airborne Synthetic Aperture Radar", Journal of Unmanned System Technologies, 31 May 2016 – In press
- Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Lim Tien Sze, Takafumi Kawai, Takuji Ebinuma, Yuta Izumi, Mohd Zafri Baharuddin, Steven Gao and Koichi Ito, "Development of circularly polarized synthetic aperture radar onboard UAV JX-1," International Journal of Remote Sensing, Special Issue Papers on Drones, UAVs, RPASs for Environmental Research, Vol. 38, No. 8-10, pp.2745-2756, online 8 December 2016, printed July 2017 (DOI : 10.1080/01431161.2016.1275057)
- Keynote Speak : Josaphat Tetuko Sri Sumantyo, "Development of Synthetic Aperture Radar on Board Aircraft and Microsatellite for Disaster Monitoring," Remote Sensing Satellite Technology Workshop (RSSTW 2017), National Space Organization (NSPO), Hsinchu, Taiwan, 5 December 2017
- Josaphat Tetuko Sri Sumantyo, Chua Ming Yam, Cahya Edi Santosa, 張志立(Chih-Li Chang), 徐銘煌(Allen Shie) "Development of Aircraft C band Synthetic Aperture Radar" the UP3 to Space International Symposium, 6-9 November 2018, Tainan Taiwan

8. None

1. The Project for the Development and Implementation of New Damage Assessment Process in Agricultural Insurance as Adaptation to Climate Change for Food Security
2. Center for Environmental Remote Sensing / Associate Professor / Chiharu Hongo
3. Indonesia / Bogor Agricultural University (with Agreement of Academic Cooperation) / Prof. Dr. Barus Baba
   Indonesia / Udayana University(with Agreement of Academic Cooperation) / Prof. Dr. A. A. A. Mirah Adi
   Indonesia / West Java Provincial Agriculture Office / Director Mr. Hendi Jatnika
   Indonesia / Badung District Agriculture Office in Bali Province / Director Mr. I Nyoman Suasa
4. From 2016
5. Goal of the project is that the agricultural insurance for rice crop, which shall have the new damage assessment process to be developed in this project and improved thereafter, shall be implemented widely in Indonesia as the adaptation to climate change and natural disasters for food security.
   Purpose of this project is to develop new damage assessment process for rice crop on the basis of innovative technologies including the remote sensing technology and is to implement the developed process in selected areas in Indonesia.

6. Science and Technology Research Partnership for Sustainable Development (SATREPS)

7. Main result

- Chiharu Hongo, Chikako Ogasawara, Eisaku Tamura and Gunardi Sigit, Estimation of rice yield affected by drought and relation between rice yield and TVDI, AGU Fall meeting, 12-17 December, 2016 (San Francisco)
- Chiharu Hongo, Chikako Ogasawara, Eisaku Tamura and Gunardi Sigit, Use of satellite data to improve damage assessment process for agricultural insurance scheme in Indonesia, 13rd The international conference of precision agriculture, July31-August 4, 2016(St. Louis)
- Chiharu Hongo, Eisaku Tamura, I. G. A. A. Ambarawati, I. Made Anom Wijaya and A. A. A. Mirah Adi, Evaluation of Potential for Ethanol Production from Rice Straw Using Satellite Data, Journal of Agricultural Science; Vol. 9, No. 6; p22-36, doi:10.5539/jas.v9n6p22, 2017（査読付き）
- Koshi Yoshida, Kenji Tanaka, Keigo Noda, Koki Homma, Masayasu Maki, Chiharu Hongo, Hiroaki Shirakawa, Kazuo Oki, Quantitative Evaluation of Spatial Distribution of Nitrogen Loading in the Citarum River Basin, Indonesia, Journal of Agricultural Meteorology, 73(1):31-44, 2017
- Chiharu Hongo, TakumichiTosa, EisakuTamura,Gunardi Sigit and Baba Barus, Identification of transplanting stage of rice using S　entinel-1 data, AGU Fall meeting,Dec. 11-15, New Orleans, 2017
- Chiharu Hongo, Yusuke Takahashi, Gunardi Sigit and Eisaku Tamura , Evaluation of bacterial leaf blight of rice using hyperspectral data, 7th Asian‐Australasian Conference on Precision Agriculture, Oct. 16-18, Hamilton, New Zealand, 2017
- Chiharu Hongo(Chiba University), Chikako Ogasawara, Eisaku Tamura and Gunardi Sigit ,Damage assessment of rice yield affected by drought utilizing remote sensing in Indonesia, The 11th European Conference on Precision Agriculture, July 16-20, Edinburgh,2017

8. 受賞：小笠原千香子・本郷千春・田村栄作・Gunardi Sigit・A. A. Ayu Mirah Adi・Annie Ambarawati：「日本リモートセンシング学会優秀論文発表賞」インドネシアにおける水稲生産量の地域特性と水管理手法の関係、2016 年 5 月 12 日

Marine Biosystems Research Center

1. Evolution of reproductive strategies and the environmental conditions of habitats in marine green algae
2. Marine Biosystem Research Center / Professor / Tatsuya Togashi Ph.D
3. UK / University of Liverpool / Prof. Geoff A. Parker
   Canada / University of Toronto / Prof. Peter A. Abrams
   Australia / University of Sydney / Dr. Jussi Lehtonen
4. From 2002
5. We are studying the evolution of reproductive strategies and the environmental conditions of habitats in marine green algae based on laboratory observations and theoretical approaches.
6. JSPS Scientific research funds
7. Main result

- Yusuke Horinouchi and Tatsuya Togashi. 2018. Within-clutch variability in gamete size arises from the size variation in gametangia in the marine green alga *Monostroma angicava*. Plant Reproduction 31(2), 193-200. DOI:10.1007/s00497-018-0323-8
- Maica Krizna A. Gavina, Takeru Tahara, Kei-ichi Tainaka, Hiromu Ito, Satoru Morita, Genki Ichinose, Takuya Okabe, Tatsuya Togashi, Takashi Nagatani, and Jin Yoshimura. 2018.
  Multi-species coexistence in Lotka-Volterra competitive systems with crowding effects.
  Scientific Reports (Sci. Rep.) **8,** 1198; DOI:10.1038/s41598-017-19044-9
- Togashi, T., Y. Horinouchi, H. Sasaki and J. Yoshimura. 2015.
  Evidence for equal size cell divisions during gametogenesis in a marine green alga, *Monostroma angicava* .Scientific Reports (Sci. Rep.) 5, 13672; DOI:10.1038/srep13672
- Togashi, T., H. Sasaki and J. Yoshimura. 2014.
  A geometrical approach explains Lake Ball (Marimo) formations in the green alga, Aegagropila linnaei.
  Scientific Reports (Sci. Rep.) 4, 3761; DOI:10.1038/srep03761
- Togashi T., K. Sakakibara, M. Nozawa and P.A. Cox. 2012
  Sexual fusion of protoplasts in a marine green alga, Bryopsis plumose
  Sexual Plant Reproduction **25**: 71-76.
- Togashi T., J.L. Bartelt, J. Yoshimura, K. Tainaka and P.A. Cox. 2012
  Evolutionary trajectories explain the diversified evolution of isogamy and anisogamy in marine green algae.
  Proceedings of the National Academy of Sciences of the United States of America (PNAS) **109**: 13692-13697.
- Togashi, T. and J.L. Bartelt. 2011.
  Evolution of anisogamy and related phenomena in marine green algae In: Togashi, T. and P.A. Cox (eds) *The Evolution of Anisogamy*: *A Fundamental Phenomenon Underlying Sexual Selection* (Cambridge University Press) pp. 194-242.

8. We have received the Ecological Research Award 2005 and organized an international symposium at the International Botanical Congress 2005 in Vienna, Austria.

Medical Mycology Research Center (MMRC)

1. The Project for the Establishment of a Research and Reference Collaborative System for the Diagnoses of Fungal Infections including Drug-Resistant Ones both in Brazil and Japan
2. Medical Mycology Research Center / Professor / Katsuhiko Kamei
3. Brazil / School of Medicine, Sao Paulo State University of Campinas / Professor / Maria Luiza Moretti
4. From 2009-
5. Project outline

This project was started as a part of JST-JICA, Science and Technology Research Partnership for Sustainable Development (SATREPS). The project was completed in 2013, and was highly evaluated (score A+). After the projcet, the collaboration between the universities has remained active publishing many scientific papers, and the new SATREPS project was started

in FY2016. Considring the increase of antifungal-resistant fungi primarily in Europe and other countries, the main object of this new project was focused on the development of rapid diagnostic tools to detect the resistant fungi and to reveal epidemiological status in Brazil. Our final goal is to establish the clinical strategy for fungal infections in Brazil, and to intensify the capability of University of Campinas as a centerpiece of clinical reference system and research network of fungal infection. This project also aims to contribute to the development of research and clinical reference system for fungal infections in Japan as a serious threat.

6. AMED/JICA SATREPS

7. Main result

(1) Muraosa Y, Schreiber AZ, Trabasso P, Matsuzawa T, Taguchi H, Moretti ML, Mikami Y, Kamei K: Development of cycling probe-based real-time PCR system to detect Fusarium species and Fusarium solani species complex (FSSC). Int J Med Microbiol 304: 505-511, 2014.

(2) De Luca Ferrari M, Ribeiro Resende M, Sakai K, Muraosa Y, Lyra L, Gonoi T, Mikami Y, Tominaga K, Kamei K, Zaninelli Schreiber A, Trabasso P, Moretti ML: Visual analysis of DNA microarray data for accurate molecular identification of non-albicans Candida isolates from patients with candidemia episodes. J Clin Microbiol 51(11): 3826-3829, 2013.

(3) de Souza M, Matsuzawa T, Lyra L, Busso-Lopes AF, Gonoi T, Schreiber AZ, Kamei K, Moretti ML, Trabasso P: Fusarium napiforme systemic infection: case report with molecular characterization and antifungal susceptibility tests. Springerplus 3: 492, 2014.

(4) Sakai K, Trabasso P, Moretti ML, Mikami Y, Kamei K, Gonoi T: Identification of fungal pathogens by visible microarray system in combination with isothermal gene amplification. Mycopathologia 178(1-2): 11-26, 2014.

(5) Fagnani R, Resende MR, Trabasso P, Mikami Y, Schreiber AZ, Lopes AF, Muraosa Y, Kamei K, Moretti ML: Mortality related to candidemia and risk factors associated with non-Candida albicans. Infect Dis (Lond) 47(12): 930-931, 2015.

(6) Trabasso P, Matsuzawa T, Fagnani R, Muraosa Y, Tominaga K, Resende MR, Kamei K, Mikami Y, Schreiber AZ, Moretti ML: Isolation and drug susceptibility of Candida parapsilosis sensu lato and other species of C. parapsilosis complex from patients with blood stream infections and proposal of a novel LAMP identification method for the species. Mycopathologia 179(1-2): 53-62, 2015.

(7) Reichert-Lima F, Busso-Lopes AF, Lyra L, Peron IH, Taguchi H, Mikami Y, Kamei K, Moretti ML, Schreiber AZ: Evaluation of antifungal combination against Cryptococcus spp. Mycoses 59(9): 583-93, 2016.

(8) de Souza M, Matsuzawa T, Sakai K, Muraosa Y, Lyra L, Busso-Lopes AF, Levin AS, Schreiber AZ, Mikami Y, Gonoi T, Kamei K, Moretti ML, Trabasso P: Comparison of DNA Microarray, Loop-Mediated Isothermal Amplification (LAMP) and Real-Time PCR with DNA Sequencing for Identification of Fusarium. spp. Obtained from Patients with Hematologic Malignancies. Mycopathologia 182(7-8): 625-632, 2017.

(9) Sturaro LL, Gonoi T, Busso-Lopes AF, Tararam CA, Levy CE, Lyra L, Trabasso P, Schreiber AZ, Kamei K, Moretti ML: Visible DNA microarray system as an adjunctive molecular test in the identification of pathogenic fungi directly from a blood culture bottle. J Clin Microbiol 56(5): e01908-17, 2018.

(10) Moretti ML, Busso-Lopes AF, Tararam CA, Moraes R, Muraosa Y, Mikami Y, Gonoi T, Taguchi H, Lyra L, Reichert-Lima F, Trabasso P, de Hoog GS, Al-Hatmi AMS, Schreiber AZ, Kamei K: Airborne transmission of invasive fusariosis in patients

with hematologic malignancies. PLoS One 13(4): e0196426, 2018.

8. None

1. Electron microscopy of pathogenic fungi
2. Medical Mycology Research Center / Grand fellow / Masashi Yamaguchi
3. Russia / Professor Stepanova
4. 2013-
5. Ultrastructures of pathogenic fungi are studied with electron microscopy
6. None
7.

(1) Yamaguchi M, Shimizu K, Kawamoto S, Stepanova AA, Vasiyeva NV: Dynamics of cell components during budding of Cryptococcus albidus yeast cells. Problems in Medical Mycology 16: 29-35, 2014.

(2) Yamaguchi M, Shimizu K, Kawamoto S, Stepanova AA, Vasiyeva NV: Ultrastructural observation of cell components during budding in yeast Malassezia pachydermatis. Problems in Medical Mycology Vol. 16, No. 4: 13-18, 2014.

(3) Yamaguchi M., Shimizu K., Kawamoto S., Stepanova A.A., Vasilyeva N.V. Electronmicroscopic investigation of the mother cell of the Rhodotorula minuta // VII Kashkin Reading, Saint-Petersburg, 2014, 9-11 April, in Problems in Medical Mycology – 2014. – Vol. 16, №2. – P. 153.

(4) Stepanova AA, Vasilyeva NV, Yamaguchi M, Shimizu K, Kawamoto S: Electron microscopy of autopsy material from the human brain Cryptococcosis and AIDS. Problems in Medical Mycology 17: 35-40, 2015.

(5) Stepanova AA, Vasilyeva NV, Yamaguchi M, Chibana H, Bosak IA: The Aspergillus fumigatus penetration through the cells of murine tracheobronchial epithelium cells. Problems in Medical Mycology 17: 45-50, 2015.

(6) Stepanova AA, Vasilyeva NV, Yamaguchi M, Chibana H, Bosak IA: Ultrastructural aspects of the interactions between the murine lung macrophages and the Aspergillus fumigatus hyphal cells. Problems in Medical Mycology 18 (No. 1): 20-25, 2016.

(7) Stepanova AA, Yamaguchi M, Chibana H, Vasilyeva NV: Ultrastructural aspects of cell components migration during budding in the yeast Cryptococcus leurentii. Problems in Medical Mycology 18 (No. 3): 24-29, 2016.

(8) Stepanova AA, Vasilyeva NV, Yamaguchi M, Chibana H: Ultrastructure of senescent and desiccated cells of Cryptococcus neoformans. Problems in Medical Mycology 18 (No. 4): 47-52, 2016.

(9) Stepanova A.A., Vasilyeva N.V., Yamaguchi M., Chibana H., Bosak I.A.: Ultrastructural investigations of early stages of transformation of yeast from hyphal in *Cryptococcus neoformans* var. *grubii* in vivo. Problems in Medical Mycology 19 (No. 2): 19-24, 2017.

(10) Stepanova AA, Yamaguchi M, Chibana H, Vasilyeva NV, Shulgina MV: Comparative ultrastructural analysis of the *in vitro* growing hyphal cells of *Scedosporium aurantiacum*. Problems of Medical Mycology 19: 18-25, 2017.

(11) Stepanova A, Vasilyeva N, Yamaguchi M, Chibana H, Bosak, Filippova L: Ultrastructural patterns of interactions between murine lung macrophages and yeast cells of *Cryptococcus neoformans* strains with different virulence. Med Mycol J 59E: E1-E6, 2018

(12) Stepanova AA, Vasilyeva NV, Yamaguchi M, Chibana H, Chilina GA, Bosak LA: Cytological investigations of cell

components migration dynamics during budding in the yeast *Cryptococcus neoformans*. Problems in Medical Mycology 20: 34-39, 2018.

8. None

1. The Project for the Establishment of a Research and Reference Collaborative System for the Diagnoses of Fungal Infections including Drug-Resistant Ones both in Brazil and Japan
2. Division of Clinical Research, Medical Mycology Research Center / Asociate Professor / Akira Watanabe
3. Brazil / University of Campinas / Prof. Maria Luiza Moretti
4. From 10/June/2016 to 30/June/2022
5. We will perform the studies regarding antifungal-resistant fungi, including the epidemiology, resistant mechanism and development of rapidly detection methods.
6. SATREPS (AMED/JICA)
7. Emerg Infect Dis 24:1889-1897, 2018
8. A part of the results were presenteted on The 7th Global Network Forum on Inectionand Immunity.

Institute of Management and Information Technologies

1. PDE-based numerical image analysis
2. Institute of Management and Information Technologies / Professor / Atsushi IMIYA
3. Partner abroad
   (1) Germany / Institute of Mathematics and Computer Science, Universitaet des Saarlands / Professor / Dr. Joachim Weickert
   (2) Kingdome of the Netherlands / Dept. of Biomedical Engineering, Techniches Universtaet Einthoven / Professor / Dr. Ing Bart ter Haar Romeny
   (3) Canada / Computer Science Department, University of Western Ontario / Professor / John Barron
4. Implementation period
   (1) 2000-
   (2) 2003-
   (3) 1998-
5. For the construction of temporal atrs of human being, design of the motion of normalized beating is a fundamental problem. In this research we are focusing on the detection nand computation of motion form beating heart form gated MRI image sequence using PDE-based image analysis technique.
6. None
7. Dagatuhl Seminar was organised October 2015
8. None

1. Digital and Discrete Geometry and their Applications
2. Institute of Management and Information Technologies / Professor / Atsushi IMIYA
3. Partner abroad

(1) USA / State University of New York / Professor / Valentin Brimkov

(2) Kingdom of Sweden / CBA, University of Uppsala / Professor / Gunilla Borgefords

(3) New Zealand / Dept. Computer Science, Auckland Institute of Technology/ Professor / Dr. Reinhard Klette

(4) France / ESIEE / Professor / Yukiko Kenmochi

4. Implemetation period

(1) 2005-

(2) 2003-

(3) 1997-

(4) 2005-

5. In the project, we are focusing of the geometrical and topological treatment of voxels data in the higher-dimensional discrete space as a tool for topological analysis of MRI high-resolution brain imaging

6. None

7. In 2nd International Symposium on Visual Computing November 2006, Nevada, USA, we will organise Special Track: Discrete and Computational Geometry and their Applications in Visual Computing.

8. None

---

1. Algebraic analysis on coupling theory

2. Institute of Management and Information Technologies / Professor / Yasunori Okada

3. French Republic / University of Strasbourg / Prof. Reinhard Schäfke (Professor Emeritus)

4. 2014-

5. The coupling theory is a theory of transformations for complex nonlinear partial differential equations.

We extend the coupling theory using algebraic analytic methods, in collaboration with Prof. Reinhard Schäfke and Prof. Hidetoshi Tahara.

6. JSPS Grant-in-Aid for Scientific Research (C), JSPS International Fellowships for Research in Japan.

7. None

8. Invited Prof. Schäfke by JSPS International Fellowships for Research in Japan, 2018/05.

Center for Frontier Science

1. Representation theory of finite groups and algebras

2. Center for Frontier Science / Specially Appointed Professor (Full time) / Shigeo KOSHITANI

3. Germany / Department of Mathematics, Technical University of Kaiserslautern / Caroline Lassueur

4. 2012 --

5. The aim of this project is to get a new results on representation theory of finite groups and representation theory, especially to get structural theorem of endo-trivial modules for finite group algebras

6. Japan Society for Promotion of Science (JSPS) Grant-in-Aid for Scientific Research(C) 15K04776, Camada Bamff International Research Center (BIRS), German Research Council (DFG) DFG Scientific Priority Program SPP 1388, Gemany Oberwolfach Mathematical Institute (MFO), Germany Eichstaett Cathoric University, Swizerland ETH-Lausannne

(EPFL), USA University of Carifornia Berkeley MSRI, Germany Hannover University, Chiba University

7. Four Joint papers

(1) Shigeo Koshitani, Caroline Lassueur: Endo-trivial modules for finite groups with Klein-four Sylow 2-subgroups: Manuscripta Mathematica, 148 (2015), 265—282

(2) Shigeo Koshitani, Caroline Lassueur: Endo-trivial modules for finite groups with dihedral Sylow 2-subgroups, Journal of Group Theory 19 (2016), 635—660

(3) Shigeo Koshitani, Caroline Lassueur: Splendid Morita equivalences for principal 2-blocks with dihedral defect groups, Mathematische Zeitschrift, To appear(In press)

(4) Shigeo Koshitani, Caroline Lassueur, Simple modules in the Auslander-Reiten quivers of principal blocks with abelian defect groups, Nagoya Mathematical Journal, To appear(In press)

8.

(1) October 1-10, 2012 Joint work in Kaiserslautern Technical University, Germany

(2) March 2-15, Joint work in Chiba University and Kyoto University.

(3) March 17-22, Joint work in Banff International Research Center (BIRS), Canada

(4) September 27-October 5, Joint work in Kaiserslautern Technical University, Germany

(5) April 5-10, 2015, Joint work in Oberwolfach Mathematical Institute, Germany.

(6) September 6-16, 2015 ,Joint work in Kaiserslautern Technical University, Germany

(7) April 7-9, 2016, Joint work in Kaiserslautern Technical University, Germany

(8) July 16-31, August 27-September 25 and December 2-21 2016, Joint work in EPFL (ETH Lausanne), Switzerland

(9) November 16-20 2016, Joint work in Kaiserslautern Technical University, Germany

(10) May 8-14 2017, Joint work in Kaiserslautern Technical University, Germany

(11) August 21-30, Joint work in Kaiserslautern Technical University, Germany

(12) October 15-20 2017, Joint work in Banff International Research Center (BIRS), Canada

(13) November 10-12 2017, Joint work in Eichstaett Cathoric University, Germany

(14) April 9-11 2018, Joint work in University of California Berkeley (MSRI).

(15) September 12-16 2018, Joint work in Hannover University, Germany

(16) November 19-27 2018, Joint work in Kaiserslautern Technical University, Germany

(17) March 24-30, 2019, Joint work in Oberwolfach Mathematical Institute, Germany.

Center for Frontier Medical Engineering

1. Fusion and Enrichment of Medical Images for High Quality Diagnosis and Treatment (FERMI)

   (Some sub-subjects of this project are conducted as international collaboration research)

2. Center for Frontier Medical Engineering / Professor / Hideaki Haneishi

3. Partner abroad

   France / Universite de Rennes 1 / Prof. Pierre Jannin

   Finland / University of Eastern Finland / Prof. Markku Hauta-Kasari

Thailand / Thammasat University / Prof. Stanislav S. Makhanov

4. Start year of collaboration

France FY 2016

Finland FY2017

Thailand FY2017

5. Technological innovation in medical imaging engineering from multiple perspectives is crucial in order to improve the quality of diagnosis and treatment. In this research area, we are focused particularly on the research and development of novel technologies for increasing the dimensionality and definition of medical images, the new acquisition of various in vivo physical and physiological quantities and improvement in quantitative performance, and the merging of multiple medical images.

6. Funds, grants, etc.

Strategic priority research promotion program, Chiba University

MEXT Grant (A) 16H01855

JSPS Core-to-Core Program

7. Main result

[Original paper]

(1) Takayuki Okamoto, Takashi Ohnishi, Hiroshi Kawahira, Olga Dergachyava, Pierre Jannin, Hideaki Haneishi : Real-Time Identification of Blood Regions for Hemostasis Support in Laparoscopic Surgery, Signal, Image and Video Processing, (2018.9) (DOI：10.1007/s11760-018-1369-7)

(2) Yoko Kurabuchi, Kina Murai, Kazuya Nakano, Takashi Ohnishi, Toshiya Nakaguchi, Markku Hauta‐Kasari, Hideaki Haneishi: Optimal design of illuminant for improving intraoperative color appearance of organs, Journal of Artificial Life and Robotics, Published online, (2018.6) (DOI:10.1007/s10015-018-0438-x)

[International conference proceedings]

(3) T. Ohnishi, S. Kashio, T. Ogawa, K. Ito, S. S. Makhanov, T. Yamaguchi, Y. Iwadate, H. Haneishi: Modality Conversion from Pathological Image to Ultrasonic Image Using Convolutional Neural Network, MICCAI COMPAY 2018 Workshop, LNCS 11039, pp. 103-111, Granada, Spain (2018.9.16-20)

8. Other important items to be stated

International Workshop on Chiba University COE Startup program: HALIDAT-GC

1st. March 8th, 2012, Chiba University (Invited Prof. Stefan Weber, U. Bern, etc)

2nd March 8th, 2013, Chiba University (Invited Prof. Nobuhiko Hata, Harvard/BWH, etc)

3rd, March 14th, 2014, Keisei Hotel Miramare, (Invited Prof. Hiro Yoshida, Harvard/BWH, etc)

4th, March 6th, 2015, Chiba University (Invited Prof. Pierre Jannin, U. Renne, etc)

International Symposium on Multimodal Medical Engineering

1st, Mar 3rd, 2017 Chiba University (Invited Prof. Makanov, Thammasat Univ., Dr. Roman, UEF, etc)

2ns, Jan 18, 2018 Chiba University (Invited Prof. Makanov, Thammasat Univ., Prof. Hauta-Kasari, UEF, etc)

3rd, Jan 29, 2019 Chiba University (Invited Prof. Makanov, Thammasat Univ., Prof. Hauta-Kasari, UEF, etc)

Award

Yoko Kurabuchi, FY2017 Best Master Thesis Award

Yoko Kurabuchi, JAMIT2016, Best Paper Award

Sending faculty staff and students to partner institutes

FY2017, two master course students stayed for three months in UEF.

FY2017, an assistant processor stayed for two months in Thammasat University.

FY2017, an assistant processor stayed for two months in UEF.

1. Development the quantitative evaluation system of liver disease using high-frequency ultrasound
2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi
3. USA / Riverside Research / Dr. Jonathan Mamou, Dr. Jeffrey Ketterling, Dr. Ernest Feleppa,
4. 2012
5. The aim of this research is elucidation of the biological changes in the physical properties of liver by several diseases by using ultrasound that has higher frequency than clinical use.
6. 2019 Chiba University Support Program for International Research Network Formation (Global Prominent Research)

   2019 Chiba University Mid- and young researchers overseas dispatch program (Global Prominent Research)

   2017 Chiba University research support program “Invitation Fellowship”

   2014 Chiba University Invitation Fellowship program

   2013 Chiba University research support program "application support for Kakenhi"

   2012 Chiba University research support program "application support for Kakenhi"

   KAKENHI, Grant-in-Aid for Scientific Research（B）

   KAKENHI, Grant-in-Aid for Scientific Research on Innovative Areas
7. Main result

   [Papers]

   - Effects of Signal Saturation on QUS Parameter Estimates Based on High-Frequency-Ultrasound Signals Acquired From Isolated Cancerous Lymph Nodes, Kazuki Tamura, Jonathan Mamou, Alain Coron, Kenji Yoshida, Ernest J Feleppa, Tadashi Yamaguchi, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control,Vol. 64, Issue10, pp. 1501-1513 (2017.10)
   - Acoustic impedance analysis with high-frequency ultrasound for identification of fatty acid species in the liver: Kazuyo Ito, Kenji Yoshida, Hitoshi Maruyama, Jonathan Mamou, Tadashi Yamaguchi, Ultrasound in Medicine and Biology, Volume 43, Lssue 3, pp.700-711 (2017.3)
   - Microscopic Acoustic Properties Analysis of Excised Rat Livers using Ultra-high Frequency Ultrasound: Kazuyo Ito, ZhiHao Deng, Kenji Yoshida, Jonathan Mamou, Hitoshi Maruyama, Tadashi Yamaguchi, Medical Imaging Technology, Vol.35, no. 1, pp. 51-62 (2017.1)
   - Speed of sound in diseased liver observed by scanning acoustic microscopy with 80 MHz and 250 MHz: So Irie, Kenta Inoue, Kenji Yoshida, Jonathan Mamou, Kazuto Kobayashi, Hitoshi Maruyama, Tadashi Yamaguchi, J. Acoust. Soc. Am., vol. 139, Issue 1, pp. 512-519 (2016.1)

- Estimation of scatterer size and acoustic concentration in sound field produced by linear phased array transducer: Takuma Oguri, Kazuki Tamura, Kenji Yoshida, Jonathan Mamou, Hideyuki Hasegawa, Hitoshi Maruyama, Hiroyuki Hachiya, Tadashi Yamaguchi, Japanese Journal of Applied Physics, vol. 54, no. 7S1, 07HF14 (2015.7)
- Verification of Ultrasonic Image Fusion Technique for Laparoscopic Surgery: Satoki Zenbutsu, Tatsuo Igarashi, Jonathan Mamou, Tadashi Yamaguchi: Japanese Journal of Applied Physics, Vol. 51, No. 7, 07GF04 (2012.7)

[Invited Lectures]

- Analysis of Acoustic Properties of Liver Organelles Including NASH: Tadashi Yamaguchi,16th World Federation for Ultrasound in Medicine and Biology Congress in 2017 (Taipei, Taiwan) ,T7-16-IN05, (2017.10)
- Speed of sound of fatty and fibrosis liver measured by 80-MHz and 250-MHz scanning acoustic microscopy: Tadashi Yamaguchi: Jonathan Mamou, Kazuto Kobayashi, Yoshifumi Saijo: ICA2013, the journal of the Acoustical society of America, Vol. 133, No. 5, p.3260, Montreal, Canada (2013.7)

  Acoustic characteristics measurement of rat liver by multi-frequency ultrasound microscopy: Tadashi Yamaguchi, Kenta Inoue, Yoshifumi Saijo, Kazuto Kobayashi, Jonathan Mamou,: Acoustics 2012 in Hong Kong, Hong King, pp.376 (2012.5)

8. Other important items to be stated

- Invited Dr. Ketterling in two weeks from Riverside Research (USA) (2018).
- Dispatched two graduate students in one month each to Riverside Research and New York University (USA) (2018).
- Excellent Shotgun Communication Award, Ultrasonics 2018.
- Dispatched a PhD student in threee months to Riverside Research (USA) (2017).
- Dispatched a master degree student in one month to Riverside Research (USA) (2017).
- Dispatched a master degree student in one month to Riverside Research (USA) (2013).
- Invited Dr. Mamou in two weeks from Riverside Research (USA) (2012).
- Invited Dr. Ketterling and Dr. Mamou in two weeks from Riverside Research (USA) in each (2012).

1. Development of ultrasonic metastasis evaluation system for lymph nodes
2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi
3. USA / Riverside Research / Dr. Jonathan Mamou, Dr. Ernest Feleppa

   USA / University of Hawaii / Prof. Junji Machi

   France / Centre national de la recherche scientifique (CNRS/Sorbonne University) Biomedical Imaging Lab. / Dr. Pascal Laugier, Dr. Alain Coron
4. 2012
5. In order to realize a system for evaluating the cancer metastasis to lymph nodes in a non-invasive, we are developing a quantitative ultrasonic tissue evaluation system of changes in the biological tissue structure by cancer metastasis.
6. 2019 Chiba University Mid- and young researchers overseas dispatch program (Global Prominent Research)

   NIH/NBIB grant JSPS Invitation Fellowship

   KAKENHI Grant-in-Aid for Exploratory Research

The Canon Foundation Research Grant

7. Main result

[Papers]

- Effects of Signal Saturation on QUS Parameter Estimates Based on High-Frequency-Ultrasound Signals Acquired From Isolated Cancerous Lymph Nodes, Kazuki Tamura, Jonathan Mamou, Alain Coron, Kenji Yoshida, Ernest J Feleppa, Tadashi Yamaguchi, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control,Vol. 64, Issue10, pp. 1501-1513 (2017.10)
- Local Transverse-Slice-Based Level-Set Method for Segmentation of 3D, High-Frequency Ultrasonic Backscatter from Dissected Human Lymph Nodes: Thanh M. Bui, Alain Coron, Jonathan Mamou, Emi Saegusa-Beecroft, Tadashi Yamaguchi, Eugene Yanagihara, Junji Machi, S. Lori Bridal, and Ernest J. Feleppa, IEEE Transactions on Biomedical Engineering, doi:10.1109/TBME.2016.2614137(2016.9)
- Quantitative-ultrasound detection of cancer in human lymph nodes based on support vector machines: Jonathan Mamou, Daniel Rohrbach, Alain Coron, Emi Saegusa-Beecroft, Thanh Minh Bui, Michael L. Oelze, Eugene Yanagihara, Lori Bridal, Tadashi Yamaguchi, Junji Machi, Ernest J. Feleppa, J. Acoust. Soc. Am. vol.136, pp. 2123 (2014.4)
- Modeling the envelope statistics of three-dimensional high-frequency ultrasound echo signals from dissected human lymph nodes: Thanh Minh Bui, Alain Coron, Jonathan Mamou, Emi Saegusa-Beecroft, Tadashi Yamaguchi, Eugene Yanagihara, Junji Machi, S. Lori Bridal, Ernest J. Feleppa, Japanese Journal of Applied Physics, vol. 53, no. 7, 07KF22 (2014.7)
- Three-dimentional high-frequency quantitative ultrasound for detecting lymph-node metastases: Emi Saegusa-Beecroft, Junji Machi, Jonathan Mamou, Masaki Hata, Alain Coron, Eugene Yanagihara, Tadashi Yamaguchi, Michael L. Oelze, Pascal Laugier, Ernest Feleppa: Journal of Surgical Research, vol. 183, no. 1, pp. 258-269 (2013.7)
- Modeling the envelope statistics of three-dimensional high-frequency ultrasound echo signals from dissected human lymph nodes: Thanh Minh Bui, Alain Coron, Jonathan Mamou, Emi Saegusa-Beecroft, Tadashi Yamaguchi, Eugene Yanagihara, Junji Machi, S. Lori Bridal, Ernest J. Feleppa, Japanese Journal of Applied Physics, vol. 53, no. 7, 07KF22 (2014.7)

8. Other important items to be stated

- Dispatched one graduate student in one month to Sorbonne University (France) (2018).
- The 32th Symposium of Ultrasonic Electronics, Young Investigator Award "Three-dimensional Quantitative High-frequency Characterization of Freshily-excized Human Lymph Nodes", Jonathan Mamou, Masaki Hata, Alain Coron, Eugene Yanagihara, Tadashi Yamaguchi, Michael L. Oelze, Pascal Laugier, Ernest Feleppa (2012.11)
- Invited Dr. Coron in two months from CNRS (France) as JSPS invited fellowship researcher (2013).
- Dispatched a master degree student in one month to Riverside Research (USA) (2013).
- Invited Dr. Coron in two weeks from CNRS (France) (2015).
- Dispatched a master degree student in two weeks to Riverside Research (USA) (2015).

1. Study of the relationship of the acoustic characteristics and tisue structure of the liver cancer tissue
2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi
3. France / Centre national de la recherche scientifique (CNRS), Aix-Marseille University, Mechanics and Acoustics Lab. / Dr. Emilie Franceshini
4. 2015
5. The relationship between the scattering characteristics and the acoustical characteristics of liver cancer tissues will be confirmed in micro scale. The scattering characteristics will be estimated by mathematical analysis if backscattered signal. The acoustical characteristics will be computed from observation results by scanning acoustic microscopy.
6. 2019 Chiba University Mid- and young researchers overseas dispatch program (Global Prominent Research)
   JSPS invited fellowship program
7. Main result
   [Conferences]
   - Verification of frequency dependence and accuracy in backscatter coefficient analysis of fatty liver: Yamada Atsuko, Kazuki Tamura, Emilie Franceschini, Kenji Yoshida, Tadashi Yamaguchi, IEEE International, Ultrasonics Symposium 2018(Kobe, Japan), P1-C10-7 (2018.10)
   - Backscatter coefficient analysis of fatty liver considering of micro tissue structure: Atsuko Yamada, Kazuki Tamura, Emilie Franceschini, Kenji Yoshida, Tadashi Yamaguchi, The 39th Symposium on Ultrasonic Electronics, Kyoto, 3P5-6 (2018.10)
   - Relationship between ultrasound scattering and acoustic impedance maps in sparse and dense random media: Jonathan Mamou, Kazuki Tamura, Daniel Rohrbach, Tadashi Yamaguchi, Emilie Franceschini, 174th Meeting Acoustical Society of America,2aBA4,J. Acoust. Soc. Am., Louisiana , U SA, Vol. 142, No. 4, Pt. 2, p.25-36(2017.12)
   - Structure factor model-based approach for analyzing two-dimensional impedance map and studying scattering from polydisperse dense media:Kazuki Tamura, Emilie Franceschini, Jonathan Mamou, Tadashi Yamaguchi: IEEE International Ultrasonics Symposium 2017(Washington D.C., USA), P1-A10-4 (2017.9)
8. Other important items to be stated
   - Concluded joint research agreement between laboratories (2018)
   - Dispatched a graduate student in one month to Aix-Marseille University (France) (2018).
   - Dispatched a Ph.D student in one month to CNRS/Aix-Marseille University (France) (2017).
   - Dispatched a Ph.D student in one month to CNRS/Aix-Marseille University (France) (2016).
   - Invited Dr. Franceshini in one month from CNRS (France) as JSPS invited fellowship researcher (2015).

1. Creation of ophthalmic disease diagnostic technology based on high-frequency ultrasonic measurement
2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi
3. USA / Ophthalmic Science, Columbia University Medical Center / Prof. Ronald H. Silverman
   USA / Department of Radiology / Department of Pathology, New York School of Medicine, Prof. Daniel H. Turnbull
   USA / Riverside Research / Dr. Jonathan Mamou, Dr. Daniel Rohrbach, Dr. Ernest Feleppa

4. 2015

5. To realyze the early diagnosis of keratoconus, acoustic impedance, attenuation, and speed of sound of the corneal epithelium and stroma were independently measured using a scanning acoustic microscope (S

6. 2019 Chiba University Support Program for International Research Network Formation (Global Prominent Research)

7. [Papers]

Material Properties of Human Ocular Tissue at 7-μm Resolution: Daniel Rohrbach, Kazuyo Ito, Harriet O. Lloyd, Ronald H. Silverman, Kenji Yoshida, Tadashi Yamaguchi, Jonathan Mamou, Ultrasonic Imaging 2017,Vol. 39(5), pp.313-325 (2017.7)

[Conferences]

Enhancement of bandwidth and SNR with ultra-high-frequency ultrasound using chirps for acoustic microscopy: Kazuyo Ito, Jonathan Mamou, Kazuki Tamura, Daniel Rohrbach, Kenji Yoshida, Tadashi Yamaguchi, IEEE International, Ultrasonics Symposium 2018(Kobe, Japan), P1-B9-5 (2018.10)

8. Other important items to be stated

- Invited Dr. Mamou in two weeks from Riverside Research (USA) (2018).
- Invited Dr. Rohrbach and Dr. Mamou in two weeks each from Riverside Research (USA) (2015).
- Dispatched a master degree student in one month to New York School of Medicine (USA) (2016).
- Dispatched a Ph.D student in two weeks to Riverside Research (USA) (2016).
- Dispatched a master degree student in one month to Columbia University (USA) (2015).

1. Development of ultrasonic metastasis evaluation system for lymph nodes

2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi

3. France / Centre national de la recherche scientifique (CNRS), Paris 6 University, Biomedical Imaging Lab. / Dr. Alain Coron, Fr. Lori Bridal

4. 2015

5. To characterize the skin ulcer for bacterial infection, quantitative ultrasound (QUS) parameters were estimated by multiple statistical analysis of the echo amplitude envelope. It was possible to detect the typical tissue characteristics such as infection by focusing on the relationship of estimated QUS parameters, and indicate the characteristic difference that were consistent with the scatterer structure.

6. KAKENHI Grant-in-Aid for Exploratory Research

Toyohashi-shi Innovation support program.

7. Tissue characterization of skin ulcer for bacterial infection based on multiple statistical analysis of echo amplitude envelope, Masaaki Omura1, Kenji Yoshida, Masushi Kohta, Takabumi Kubo, Toshimichi Ishiguro, Kazuto Kobayashi, Naohiro Hozumi, Tadashi Yamaguchi, Japanese Journal of Applied Physics, vol. 55, no. 7S1, 07KF14 (2016.6)

Mutual interpretation between B-mode image and cross-sectional acoustic microscopy: Naohiro Hozumi, Wei-Chean Tan, Sachiko Yoshida, Yuki Ogura, Kazuto Kobayashi, Tadashi Yamaguchi, J. Acoust. Soc. Am., Vol.140, No.4, 3185 (2016.11) - invited -

8. Dispatched a master degree student in one month to CNRS/Paris 6 University (France) (2016).

1. Ultra-high-speed quantitative diagnostic method using plane wave ultrasound
2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi
3. Canada / Laboratory on Innovative Technology in Medical Ultrasound, University of Waterloo / Prof. Alfred Yu
4. 2017
5. In order to solve the effects of minute body movement, etc., which is a problem in quantitative evaluation of tissue properties in living tissues by ultrasound, apply a method of observing the tissue at a high frame rate with ultra-high speed using plane waves are considering.
6. JSPS Core to Core rogram
7. International Symposium on Medical Ultrasonics in University of Watrerloo(2018.10)
8. Other important items to be stated

   Dispatched a Ph.D student in six month to University of Waterloo (Canada) (2018).

---

1. Study on Image Processing Technology for Assisting Endoscopic Surgery
2. Center for Frontier Medical Engineering / Professor / Toshiya Nakaguchi
3. Egypt / Menofia University / Ahmed Afifi
4. 2010
5. We aim to develop a novel navigation system for visually assisting endoscopic surgery by projecting patient's anatomical image onto patient's body directly to realize a virtually transparent surgery. In order to capture the highly accurate inner body structure intraoperatively, we currently study to propose a new measurement method by fusing volumetric data taken pre-operatively and endoscopic image data taken intraoperatively.
6. Egyptian Government Scholarship, JSPS Invitation Fellowships for Research in Japan
7. Main result
   - Journal paper: Hiroyuki Watabe, Toshiya Nakaguchi, Toshiyuki Natsume, Hiromichi Aoyama, Hiroshi Kawahira, Ahmed Afifi, Norimichi Tsumura, "Computer-Assisted System for Detecting Infiltration of Gastric Cancer" Journal of Signal Processing, Vol.15, No.4, pp.307-310, July, 2011
   - Journal paper: Ahmed Afifi, Toshiya Nakaguchi, Norimichi Tsumura, Yoichi Miyake, "A Model Optimization Approach to the Automatic Segmentation of Medical Images" IEICE Trans. on Information and Systems, Vol.E93-D, No.4, pp.882-889, Apr. 2010
   - Journal paper: Ahmed Afifi, Toshiya Nakaguchi, Norimichi Tsumura, Yoichi Miyake, "Shape and Texture Priors for Liver Segmentation in Abdominal Computed Tomography Scans Using the Particle Swarm Optimization Algorithm", Medical Imaging Technology, Vol.28, No.1, pp.53-62, 2010
   - International conference: Chisato Takada, Toshiyuki Suzuki, Ahmed Afifi, Toshiya Nakaguchi "An Enhanced Hybrid Tracking-Mosaicking Approach for Surgical View Expansion" The 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'17), pp.3692-3695, Jeju Island, Korea, July, 2017
   - International conference: Chisato Takada, Toshiyuki Suzuki, Ahmed Afifi, Toshiya Nakaguchi, "Hybrid Tracking and Matching Algorithm for Mosaicking Multiple Surgical Views," MICCAI 2016 Workshop on Computer-Assisted and Robotic Endoscopy(CARE), pp.26-37, Athens, Greece, Oct., 2016

- International conference: Ahmed Afifi, Toshiya Nakaguchi "A Knowledge-based Liver Segmentation Approach using Graph Cuts," Proc. of MICCAI 2012, We-2-AG-07, Nice, France, 3 Oct. 2012
- International conference: Hiroyuki Watabe, Toshiya Nakaguchi, Toshiyuki Natsume, Hiromichi Aoyama, Hiroshi Kawahira, Ahmed Afifi, Norimichi Tsumura, "Computer-Assisted System for Detecting Infiltration of Gastric Cancer," 2011 RISP International Workshop on Nonlinear Circuits, Communications and Signal Processing (NCSP'11), Tianjin, China, (Mar. 2011)
- International conference: Ahmed Afifi, Toshiya Nakaguchi, Norimichi Tsumura, "A liver segmentation approach in contrast-enhanced CT images with patient specific knowledge," SPIE Medical Imaging, P.7962-109, Orlando, U.S.A. (Feb. 2011)
- International conference: Ahmed Afifi, Toshiya Nakaguchi, Norimichi Tsumura, "Segmentation of Deformable Organs from Medical Images Using Particle Swarm Optimization and Nonlinear Shape Priors" SPIE Medical Imaging 2010, 7623-153, SanDiego, U.S.A., Feb., 2010
- International conference: Ahmed Afifi, Toshiya Nakaguchi and Norimichi Tsumura, "Shape Prior Segmentation of Medical Images Using Particle Swarm Optimization," 2nd International Conference on Agents and Artificial Intelligence (ICAART2010), vol.1, pp.291-297, Rome, Italy, Jan., 2010

8. Other important items to be sataed
   - Award: Student Paper Award at NCSP 2011, Computer-Assisted System for Detecting Infiltration of Gastric Cancer, March 2011
   - Award: "Cum Laude" poster award at SPIE Medical Imaging 2010 Segmentation of Deformable Organs from Medical Images using Particle Swarm Optimization and Nonlinear Shape Priors, Feb. 2010

1. Study on tongue imaging method applying spectroscopic image processing and fluorescent imaging technique
2. Center for Frontier Medical Engineering / Professor / Toshiya Nakaguchi
3. Finland / University of Eastern Finland / Marccu Hauta-Kasari
4. 2017
5. The moss that adheres to the tongue surface varies depending on the physical condition. Therefore, an imaging technique for quantitatively recording the adhesion distribution of moss and its thickness is required. In this research, we will research and develop a tongue imaging method applying spectroscopic image processing and fluorescent imaging technique.
6. None
7. International conference: Yudai Ota, Toshiya Nakaguchi, Vladmir Bochko, Pauli Fält, Markku Hauta-Kasari, "Tongue coating analysis via machine learning using texture and color features", Int'l Journal of Computer Assisted Radiology and Surgery (CARS2018), vol.13, suppliment 1, S212-213, 2018

   In FY2017, one master course student studied in University of Eastern Finland for 3 months

1. Development of medical image diagnosis support system
2. Center for Frontier Medical Engineering / Professor / Toshiya Nakaguchi
3. China / Zhengzhou University / Huiqin Jiang

4. 2015

5. Comprehensively research and develop various medical image diagnosis support systems. For example, we are working on the development of cerebral aneurysm detection method by automatic processing from MRA image aiming at early detection of cerebral aneurysm. We implemented a candidate area detection process that combines thinning processing and shape description features and a system that presents the location of aneurysm occurrence by identification processing using a Random Forest learning method.

6. None

7. International Conference: Junfang Liang, Huiqin Jiang, Ling Ma, Yumin Liu, Toshiya Nakaguchi "A New Boundary Correction Method for Lung Parenchyma" 2016 8th International Conference on Graphic and Image Processing (ICGIP2016), IP 53, Oct., 2016

In FY2018, one Chinese doctoral course student enters the graduate school of science and engineering.

---

1. Development of fundamental techniques for non-invasive functional brain imaging of awake babies

2. Center for Frontier Medical Engineering / Professor / Seiji Nakagawa

3. USA / University of Washington / Prof. Patricia Kuhl, Prof. Toshiaki Imada

4. FY2016

5. The number of children with developmental disorders is increasing rapidly. To assess the developmental stage objectively and to elucidate the mechnisms of the central nervous systems associated with such disorders, non-invasive measurements on awake babies are essential. In this project, fundamental techniques to carry out non-invasive functional brain imaging on awake babies will be developed.

6. Funds, grants, etc.

(1) JSPS Kakenhi (B)

(2) Research Grants in the Natural Sciences, The Mitsubishi Foundation

(3) Grantt for VBL Research Project, Chiba University

7. Main result

(1) Nakagawa S, Assessment of temporal resolution of bone-conducted ultrasonic hearing using neuromagnetic measurement Acoustical Science and Technology, 40, 2019 (in press).

(2) Nakagawa S, Doi K, Ogino R, Otsuka S, Propagation characteristics of amplitude-modulated bone-conducted ultrasounds distantly presented to the neck, trunk and arms, Jpn. J. Appli. Phys., 58(7), 2019 (in press)

(3) Ogino R, Otsuka S, Nakagawa S, Measurements of vibration in the external auditory meatus caused by distantly presented bone-conducted ultrasonic hearing, Submitted to Jpn. J. Appli. Phys., 58(7), 2019 (in press)

(4) Nakagawa S, Ogino R, Otsuka S, Assessment of detection threshold and temporal resolution of distal-presented bone-conducted ultrasonic hearing, Jpn. J. Appli. Phys., 57, 07LD22:1-6, 2018.

(5) Yap GS, Otsuka S, Yumoto M, Nakagawa S, Assessment of temporal resolution of cartilage-conduction hearing using neuromagnetic and psychophysical measurement, The 21st International Conference on Biomagnetism, 2018.7 (accepted)

(6) Yap GS, Otsuka S, Yumoto M, Nakagawa S, Temporal resolution of cartilage conduction perception: Objective evaluation by mismatch field measurements, The Spring Meetng of the Acoustical Society of Japan, 2018.3

(7) Yap GS, Otsuka S, Yumoto M, Nakagawa S, Objective assessments of cartilage conduction perception by MEG, Young Researcher Symposium of the Kanto Branch, Japanese Society for Medical Engineering, 2017.11.

(8) Nakagawa S, Imada T, Hosoi H, Meltzoff AN, Kuhl PK, Development of an infant-friendly flat-panel earphone for non-invasive functional brain imaging on awake babies using cartilage conduction, The 55th Annual Meeting of the Japanese Society of Medical and Biological Engineering, Toyama, Japan, 2016.5.

(9) Nakagawa S, Imada T, Hosoi H, Meltzoff AN, Kuhl PK, Development of an infant-friendly flat-panel earphone for non-invasive functional brain imaging on awake babies using cartilage conduction The 39th Annual Midwinter Research Meeting of the Association for Research in Otolaryngology, San Diego, CA, USA, 2016.2.

(10) Nakagawa S, Imada T, Hosoi H, Meltzoff AN, Kuhl PK, Development of an infant-friendly flat-panel earphone for MEG on awake babies using cartilage conduction The 5th Biennual Meeting of the International Society for Advancement of Clinical Magnetoencephalography, Helsinki, Finland, 2015.6.

(11) Nakagawa S, Imada T, Hosoi H, Meltzoff AN, Kuhl PK, Development of an infant-friendly earphone for MEG using cartilage conduction, The 30th Annual Meeting of the Japan Biomagnetism and Bioelectromagnetics Society, Asahikawa, Japan, 2015.5.

8. Other important items to be stated

(1) Student Paper Award, Ogino Riki, The Spring Meeting of the Acoustcal Society of Japan, Chofu, Tokyo, Japan, 2019.3

(2) Student Paper Award, Doi Koichiro, the Young Researchers Meeting of Kanto Branch, Japan Society for Medical and Biological Engineering., Tokyo, Japan, 2018.12

(3) Best Paper Award First Prize, Ogino Riki, Sho Otsuka, Seiji Nakagawa, IS 3T-in-3A, Taiwan, 2018.11.

(4) Best Paper Award, Yap Gaik Sean, GP Symposium, Chiba Japan, 2018.11

1. Further Improvement of Magnetic Resonance Electrical Property Tomography for Medical Application
2. Center for Frontier Medical Engineering / Professor / Wenwei YU
3. Singapore / Singapore University of Technology and Design / Prof. ShaoYing Huang
   Netherlands / Medical Center Utrecht, Utrecht University / Dr. Stefano Mandija
4. FY2016
5. MREPT (Magnetic Resonance Electrical Property Tomography) is an important technology in various areas in medicine and biology. The constructed EP (permittivity and electrical conductivity) map can show the anatomical structure of the human body by the high contrast of EPs between different tissues. In this joint research joint, our motivation is to enable high accuracy of EP retrievals for tissues in small compartments shown by combing both analytic and numerical calculation methods.
6. Singapore Ministry of Education (MOE) Tier 1 project, Advance low-field MRI by frontier electromagnetic concepts - targeting on improving SNR
7. Main result

- Journal: S. Y. Huang, Z. H. Ren, S. Obruchkov, J. Gong, R. Dykstra, W. Yu, Portable Low-cost MRI System based on Permanent Magnets/Magnet Arrays, Investigative Magnetic Resonance Imaging (iMRI), accepted 2019
- Journal: S.Y.Huang, Z. Ma, W. Luo, W. Yu, and T. J. Vaughan, Fast Full-Wave Calculation of Electromagnetic Fields

Based on Weak-Form Volume Integral Equation (VIE) for MRI Applications, IET the Journal of Engineering, doi: 10.1049/joe.2018.0122, 2018

- Journal: Changyou Li, Wenwei Yu, Shaoying Huang, An MR-based viscosity-type regularization method for electrical property tomography, Tomography, DOI: 10.18383/j.tom.2016.00283, Volume 3, Issue 1: 50-59, March 2017
- Conference: Garcia Inda Adan Jafet, Shao Ying Huang, Stefano Mandija, Wenwei Yu, Linear versus non-linear dimensionality reduction for MREPT, 2nd International workshop on MR-based electrical properties mapping (IMEP 2018), Utrecht, Netherlands, March, 2019
- Conference: Adan Garcia, Shaoying Huang, Wenwei Yu, Region-specific regularization of MREPT can improve the accuracy and noise-tolerance of EP restoration, ISMRM 2018, Study Group Award

8. None

---

1. International Cooperation on Sensory Feedback for Low-Invasive Surgery Support Robotic Systems and Rehabilitation
2. Center for Frontier Medical Engineering / Professor / Wenwei YU
3. China / Shanghai Jiaotong University, Med-X / Prof. Le Xie
4. FY2013
5. The sensory feedback technology is crucial for bothe low-invasive surgery support, and rehabilitation robotics. In this joint project, we aimed to develop the sensors, and learning scheme for sensory feedback for both systems.
6. JSPS Bilateral Cooperation Joint Research/Seminar 2013-2015
7. Main result

- Journal: Wenwei Yu, Keigo Nakahata, GuangHao Sun, Akio Namiki, Sayuri Suwa, Mayuko Tsujimura, Le Xie, Jinwu Wang, Shao Ying Huang, Efficient Active Sensing with Categorized Further Explorations for a Home-behavior, Journal of Healthcare engineering, vol. 2017, Article ID 6952695, 16 pages, 2017. doi:10.1155/2017/6952695.
- Hailong Yu, Le Xie, Chao Lv, Wei Shao, Yuan Wang, Jinwu Wang, Wenwei Yu, A system for upper limb rehabilitation and motor function evaluation, Journal of mechanics in medicine and biology, Vol. 15, No. 1, DOI: 10.1142/S0219519415500104, 19 pages, Feb. 2015
- Masashi Sekine, Le Xie, Kazuya Kawamura and Wenwei Yu, Improvement and Quantification of Spatial Accessibility and Disturbance Responsiveness of Shoulder Prosthesis, International Journal of Advanced Robotic Systems, DOI: 10.5772/60031, Vol. 12, No. 11, Feb. 2015
- Jun Jiang, Le Xie, Hailong Yu, Wenwei Yu, Bo Wu, Development of a six-dimensional sensor for minimally invasive robotic surgery, Journal of mechanics in medicine and biology, Vol. 14, No.5, DOI: 10.1142/S0219519414500742, Oct. 2014

8. None

---

1. International cooperation on development of care support robots
2. Center for Frontier Medical Engineering / Professor / Wenwei YU
3. Ireland / UCD School of Social Policy, Social Work and Social Justice, University College Dublin / Lecturer, Naonori Kodate
4. FY2016
5. The goal of this research is to realize home care support robots that can be used in both Japan and some other European

countries, which need an integrative approach The main objectives of the joint project are (i) to identify common issues and challenges in health and social care in a rapidly ageing society, and learn from each other's experiences; and (ii) to identify gaps in the current research and find opportunities for further institutional collaboration and beyond.

6. ISCA (International Strategic Cooperation Award) Japan

   Joint Research：iMedix Corp.：Development of Dementia Care Support System

7. Main result

- Invited talk: Wenwei YU, The Ageing Care Crisis – Is there a role for robotics-based solutions, Open Multi-disciplinary Seminar on Future Healthcare and Connected Health, organized by Japan-Ireland International Strategic Cooperation Award (ISCA), University College of Dublin, Chiba University, Nov. 17, 2016, Dublin, Ireland
- Conference proceedings: Sayuri Suwa, Mayuko Tsujimura, Mina Ishimaru, Atsuko Shimamura, Hiroo Ide, Wenwei Yu, Naonori Kodate, How Do People Perceive Home-care Robots? A Questionnaire Study with Older People, Family Caregivers, and Care Professionals in Japan, Age and Ageing, Volume 46, Issue Suppl_3, 1 September 2017, Pages iii1–iii12, https://doi.org/10.1093/ageing/afx145.21, Published: 18 September 2017
- Conference proceedings: Mayuko Tsujimura; Sayuri Suwa; Atsuko Shimamura; Mina Ishimaru; Hiroo Ide; Wenwei Yu; Naonori Kodate, Developing a Questionnaire to Understand Perceptions towards Home-care Robots among Older People who Receive Home-care, Family Caregivers, and Home-care Professionals, Age and Ageing, Volume 46, Issue Suppl_3, 1 September 2017, Pages iii13–iii59, https://doi.org/10.1093/ageing/afx144.103, Published: 18 September 2017
- Workshop: Wenwei Yu (invited), Developing Home Monitoring and Care Supporting Systems, International Workshop on Multimodal Medical Engineering -3, Tamasaat University, Thailand, December 12, 2018.
- Workshop: Wenwei Yu (invited), Developing care support robotics systems, Seinäjoki University of Applied Sciences - Chiba University Joint Workshop on Care Support Technology, May 8, 2018

8. None

Center for Environment, Health and Field Sciences

1. Effects of plant hormones on fruit set and growth in fruit tree
2. Center for Environment, Health and Field Sciences / Professor / Hitoshi Ohara

   Faculty of Horticulture / Professor emeritus / Hiroyuki Matsui
3. USA / Michigan State University / Martin J. Bukovac, Distinguished Professor emeritus
4. 1994-
5. The objectives of this project are to develop cultivation methods for steady fruit production and high-quality fruits production, through the following investigations, relationship between fruit set and growth and plant hormones.
6. Academic Expense
7. Main result

   (1) N-substituted phthalimide-induced of parthenocarpy in sour cherry (Prunus cerasus L. ‘Montm-orency') enhanced by auxin. 1994. 24th International Horticultural Congress, Abstracts: 269.

   (2) Gibberellins in immature seed of Prunus cerasus: Structure determination and synthesis of gibberellins, GA95

(1,2-didehydro-GA20). 1996. Phytochemistry, 42(4): 913–920.

(3) GA95 is a genuine precursor of GA3 in immature seed of Prunus cerasus L.. 1998. 16th International Conference on Plant Growth Substances, Abstracts: 146.

(4) Induction of fruit set and growth of parthenocarpic 'Hayward' kiwifruit with plant growth regulators. 1997. J. Japan. Soc. Hort. Sci. 66(3, 4): 467–473.

(5) Endogenous gibberellin-induced parthenocarpy in grape berries. 2000. Acta Hortic. 514: 69–74.

(6) Endogenous gibberellins in immature seeds of Prunus persica L.: identification of GA118, GA119, GA120, GA121, GA122 and GA126. 2001. Phytochemistry 57: 749–758.

(7) Effects of the combination of gibberellic acid and ammonium nitrate on the growth and quality of seedless berries in 'Delaware' grape. 2001. J. Japan. Soc. Hort. Sci. 72(5): 366–371.

(8) Effect of gibberellins on induction of parthenocarpic berry growth of three grape cultivars and their endogenous gibberellins. 2001. 52nd ASEV Annual Meeting, Technical Abstracts: 81.

(9) Effects of gibberellin A3 and ammonium sulfate of growth and quality of seedless Delaware grapes. 2003. J. ASEV Jpn. 14(2): 58–63.

(10) Induction of parthenocarpic fruit growth with endogenous gibberellins of loquat. 2004. Acta Hortic. 653: 67–70.

(11) Production of seedless loquat fruits. 2004. Regulation of Plant Growth and Development 39(1): 106–113.

(12) Effects of grape berry development stages on ammonium nitrate-enhanced penetration of gibberellin A3. 2004. 101st Abstracts ASHS Annual Conference, HortScience 39(4): 793.

(13) Effects of applications of exogenous gibberellins, forchlorfenuron, streptomycin and endogenous gibberellin-like substances on induction of seedless berries in Koshu grapes. 2005. J. ASEV Jpn. 16(2): 68–79.

(14) Induction of seedlessness in Koshu, Concord and Niagara grapes. 2006. J. ASEV Jpn. 17(1): 14–20.

(15) Effect of ethychlozate in combination with ammonium nitrate on fruit thinning in 'Takabayashi-wase' satsuma mandarin (Citrus unshu Marc.). 2006. 27th International Horticultural Congress, Abstracts: 310.

(16) Effect of application of gibberellins in combination with forchlorfenuron (CPPU) on induction of seedless fruit set and growth in triploid loquat. 2006. Acta Hortic. 727: 263–267.

(17) Techniques for induction of seedlessness in seeded grape cultivars. 2008. J. ASEV Jpn., 19(3): 119–126.

(18) Effects of application of exogenous plant growth substances on induction of seedless berries in Concord and Niagara grapes. 2012. J. ASEV Jpn. 23(2): 74–75.

(19) Effect of streptomycin in combination with gibberellin A3 and forchlorfenuron on induction of seedless Concord and Niagara grape berries. 2014. J. ASEV Jpn. 24(2): 71–72.

8. None

1. Physiological effects of nature therapy
2. Center for Environment, Health and Field Sciences / Professor / Yoshifumi Miyazaki
3. Korea / Chungnam National University / Bom-Jin Park(Associate Professor)
4. From 2011
5. The purpose of this study was conducted to clarify the physiological effect of nature therapy. It is widely believed that

coming into contact with forest environments is somehow beneficial to human comfort. The subjects are male university students in their twenties. For the clarify the physiological effect of nature therapy, we measure prefrontal cortex activity, heart rate variability (HRV), heart rate, blood pressure and saliva cortisol concentration in this study.

6. Academic Expense

7. Main result

➢ Papers

(1) D. Joung, Y.H. Choi, C.W. Kwoun, D. Yoem, G.W. Kim, K.N. Kang, Y.T. Kim, D.H. Ji, Y. Miyazaki, B.J. Park (2013) Effect of thermal environment of forest and grass area on human physiological response -Focused on the university students at Keumkang Arboretum- Korean Institute of Forest Recreation, 17(4): 143-148

(2) J. Lee, Y. Tsunetsugu, N. Takayama, B.J. Park, Q. Li, C.R. Song, M. Komatsu, H. Ikei, L. Tyrväinen T. Kagawa and Y. Miyazaki (2013) Influence of forest therapy on cardiovascular relaxation in young adults. Evidence-Based Complementary and Alternative Medicine 2014; 2014: 834360

(3) C.R. Song, D. Joung, H. Ikei, M. Igarashi, M. Aga, B.J. Park, M. Miwa, M. Takagaki and Y.Miyazaki. (2013) Physiological and psychological effects of walking on young males in urban parks in winter. Journal of PHYSIOLOGICAL ANTHROPOLOGY 32:18

(4) M.S. Lee, B.J. Park, J. Lee, K.T. Park, J.H. Ku, J.W. Lee, K.O. Oh and Y. Miyazaki. (2013) Physiological relaxation induced by horticultural activity: transplanting work using flowering plants. Journal of PHYSIOLOGICAL ANTHROPOLOGY 32:15

(5) C.R. Song, H. Ikei, J. Lee, B.J. Park, T. Kagawa and Y. Miyazaki. (2013) Individual differences in the physiological effects of forest therapy based on Type A and Type B behavior patterns. Journal of PHYSIOLOGICAL ANTHROPOLOGY 32:14

(6) Y.H. Choi, H.J. Lim, G.W. Kim, D.W. Joung, J.D. Lee, Y. Miyazaki and B.J. Park. (2013) Optimum walk speed for health promotion in forest road -Target heart rate control to use walk speed- Korean Institute of Forest Recreation. 17(1) 27-32 2013

(7) Yuko TSUNETSUGU, Juyoung LEE, Bum-Jin PARK, Liisa TYRVÄINEN, Takahide KAGAWA, Y. MIYAZAKI (2013)
Physiological and psychological effects of viewing urban forest landscapes assessed by multiple measurements. Landscape and Urban Planning, 113 90-93

(8) S. Goto, B.J. Park, K. Herrup, Y. Miyazaki (2013) The Effect of Garden Designs on Mood States and Heart Rate in Older Adults Residing in an Assisted Living Facility. Health Environments Research & Design Journal, DOI:10.1016/j.landurbplan.2013.01.014.

(9) Hyunju Jo, Susan Rodiek, Eijiro Fujii, Y. Miyazaki, Bum-Jin Park, and Seoung-Won Ann (2013) Physiological and Psychological Response to Floral Scent. HortScience, 48(1) 82-88.

(10) H. Kobayashi, B.J. Park, Y. Miyazaki (2012) Normative References of Heart Rate Variability and Salivary Alpha-Amylase in a Healthy Young Male Population. J. PHYSIOLOGICAL ANTHROPOLOGY 31(9), doi: 10. 1186/1880-6805-31-9

(11) J. Y. Lee, K. T. Park, M. S. Lee, B. J. Park, J. H. Ku, J. W. Lee, K. O. Oh, K. W. An and Y. Miyazaki (2011) Evidence-based field research on health benefits of urban green area. Journal of the Korean Institute of Landscape Architecture 39(5), 111-118.

(12) C.R. Song, J. Y. Lee, B. J. Park, M. S. Lee, N. Matsuba and Y. Miyazaki (2011) Psychological effects of walking in the urban forest - Results of field tests in Shinjuku-gyoen, Japan. Journal of Korean Forestry Society, 100(3), 111-118 (in Korean)

(13) K. Matsunaga, B.J. Park, H. Kobayashi, Y. Miyazaki (2011) Physiologically Relaxing Effect of a Hospital Rooftop Forest on Elderly Women Requiring Care. Journal of the American Geriatrics Society, 59(11), 2162-2163.

(14) B.J. Park, K. Furuya, T. Kasetani, N, Takayama. T. Kagawa and Y. Miyazaki (2011) Relationship between psychological responses and physical environment in forest settings. Landscape and Urban Planning, 102, 24-32.

(15) J. Lee, B.J. Park, Y. Tsunetsugu, T. Ohira, T. Kagawa and Y. Miyazaki (2011) Effect of forest bathing on physiological and psychological responses in young Japanese male subjects. Public Health, 125 93-100.

- Books

(1) H. Ikei, C. Song, J. Lee, B-J Park, T. Kagawa, and Y. Miyazaki. (2013) Inhibitory effect of anger in a forest environment and its individual differences. Psychology of Anger: New Research Nova Science Publishers, NY, pp.133-142

(2) J. Lee, Q. Li, L. Tyrväinen, Y. Tsunetsugu, B.J. Park, T. kagawa, Y. Miyazaki (2012) Nature therapy and preventive medicine. In: Public Health－social and Behavioral Health. Ed by J. Maddock. InTech publisher. in press

(3) B.J. Park, T. Kagawa and Y. Miyazaki (2011) Psychological evaluations of forest environment and the physical variables. In: Forest Medicine. Ed by Q. Li. Nova science publishers, 35-51.

(4) B.J. Park, Y. Tsunetsugu, J. Lee, T. Kagawa and Y. Miyazaki (2011) Effect of the forest environment on physiological relaxation -Using the Results of Field Tests at 35 Sites throughout Japan. In: Forest Medicine. Ed by Q. Li. Nova science publishers, 55-65.

(5) Y. Tsunetsugu, B.J. Park and Y. Miyazaki (2011) Physiological effects of visual, olfactory, auditory, and tactile factors of forest environments. In: Forest Medicine. Ed by Q. Li. Nova science publishers, 169-181.

(6) J. Lee, B.J. Park, Y. Tsunetsugu and Y. Miyazaki (2011) Forests and human health - recent trends in Japan. In: Forest Medicine. Ed by Q. Li. Nova science publishers, 243-257.

(7) Y. Miyazaki, B.J. Park, J. Lee (2011) Nature therapy. In: Designing our future: Perspectives on bioproduction, ecosystems and humanity (Sustainability Science Vol. 4). Eds.by M. Osaki, A. Braimoh and K. Nakagami. United Nations University Press 407-412.

8. None

1. Synthetic studies towards strictamine
2. Center for Environment, Health and Field Sciences / Assistant Professor / Natsuko Kagawa
3. USA / The University of Chicago / Prof. Viresh H. Rawal
4. 2014
5. Development of the molecular synthesis using chemical methods for the sake of identifying a phytochemical, strictamine,

that possesses antidepressant properties.

6. Funds, grants, etc.

(1) KAKENHI, Grant-in-Aid for Young Scientists (B),

(2) The Strategic Priority Research Promotion Program, Phytochemical Plant Molecular Sciences, Chiba University

7. Main result

(1) N. Kagawa, A. E. Nibbs, V. H. Rawal, One-carbon homologation of primary alcohols to carboxylic acids, esters, and amides via Mitsunobu reactions with MAC reagents. Organic Letters 2016, 18, 2363-2366.
DOI: 10.1021/acs.orglett.6b00790

(2) T. D. Montgomery, Y. Zhu, N. Kagawa, V. H. Rawal, Palladium-catalyzed decarboxylative allylation and benzylation of *N*-alloc and *N*-cbz indoles. Organic Letters 2013, 15, 1140-1143.

(3) N. Kagawa, J. P. Malerich, V. H. Rawal, Palladium-catalyzed β-allylation of 2,3-disubstituted indoles. Organic Letters 2008, 10, 2381-2384.

8. Postdoctoral Research Fellowship in Synthetic Organic Chemistry 2006 (Merck & Co., Inc.)
Organic Chemistry Portal: http://www.organic-chemistry.org/abstracts/lit5/421.shtm

Center for Forensic Mental Health

1. Biological marker of bipolar disorders

2. Center for Forensic Mental Health / Professor / Kenji Hashimoto

3. Sweden / Department of Psychiatry, Gothenburg University / Professor / Mikael Landen
Sweden / Karolinska Institute / Prof. Mikael Landen

4. 2009-

5. We will study the development of biological markers in bipolar disorders.

6. KAKENHI, etc

7. Main result

- Södersten, K., Pålsson, E., Beneroso, K.L.F., Ishima, T., Landén, M., Funa, K., Hashimoto, K., and Ågren, H. (2014) Abnormality in serum levels of mature brain-derived neurotrophic factor (BDNF) and its precursor proBDNF in mood-stabilizing patients with bipolar disorder: A study from two independent sets. J. Affect. Dis. 160, 1-9.
- Pålsson, E., Jakobsson, J., Södersten, K., Fujita, Y., Sellgren, C., Ekman, C.J., Ågren, H., Hashimoto, K., and Landén, M. (2015) Markers of glutamate signaling in cerebrospinal fluid and serum from patients with bipolar disorder and healthy controls. Eur. Neuropsychopharmacol.25, 133-140.
- Yoshimi, N., Futamura, T., Kakumoto, K., Salehi, A.M., Sellgren, C., Holmén-Larsson, J., Jakobsson, J., Pålsson, E., Landén, M., and Hashimoto, K. (2015) Blood metabolomics identifies abnormalities in the citric acid, urea cycle, and amino acid metabolim in bipolar disorder. BBA Clinical 5, 151-158.
- Yoshimi, N., Futamura, T., Bergen, S.E., Iwayama, Y., Ishima, T., Sellgren, C., Ekman, C.J., Jakobsson, J., Pålsson, E., Kakumoto, K., Ohgi, Y., Yoshikawa, T., Landén, M., and Hashimoto, K. (2016) Cerebrospinal fluid metabolomics identifies a key role of isocitrate dehydrogenase in bipolar disorder: Evidence in support of mitochondrial dysfunction hypothesis.

Mol. Psychiatry 21, 1504-1510.

8. None

1. Basic and clinical research in major depression.
2. Center for Forensic Mental Health / Professor / Kenji Hashimoto
3. China / Department of Psychiatry, The First Hospital, College of Medicine, Xi'an Jiaotong University / Professor / Xian-cang Ma
4. 2011-
5. In this study, we 1) research the relationship between cognitive function and biomarkers in Chinese major depressive disorder; 2) develop novel therapies of major depression in animal model.
6. Scholarship Donation etc.
7. Main result

- Ma XC, Jiang D, Jiang WH, Wang F, Jia M, Wu, J., Hashimoto K, Dang YH, Gao CG. (2011) Social isolation-induced aggression potentiates anxiety and depressive-like behaviors in male mice subjected to unpredictable chronic mild stress. PLoS One 6 (6): e2095.
- Ma XC, Dang YH, Jia M, Ma R, Wang F, Wu J, Gao GG, Hashimoto K (2013) Long-lasting antidepressant action of ketamine, but not glycogen synthase kinase-3 inhibitor SB216763, in the chronic mild stress model of mice. PLoS One 8 (2): e56053.
- Zhong, N., Jiang H., Wu, J., Chen, H., Lin, S., Zhao, Y., Du, J., Ma, X.C., Chen, C., Gao, C., Hashimoto, K., and Zhao, M. (2013) Reliability and validity of the CogState battery Chinese language version in schizophrenia. PLoS ONE 8, e74258.
- Chen, C., Jiang, W.H., Wang, W., Ma, X.C., Li, Y., Wu, J., Hashimoto, K., and Gao, C.G. (2018) Impaired visual, working, and verval memory in first-episoide, drug-naïve patients with major depressive disorder in a Chinese population. PLoS One in press.

8. None

1. Role of glutamatergic system in psychiatric diseases
2. Center for Forensic Mental Health / Professor / Kenji Hashimoto
3. Israel / Department of Psychiatry, Hebrew University / Professor / Uriel Heresco-Levy
4. 2012-
5. We discussed the role of glutamatergic markers for psychistric disorders.
6. KAKENHI、Scholarship Donation etc
7. Main result

- Ermilov, M., Gelfin, E., Levin, R., Lichtenberg, P., Hashimoto, K., Javitt, D.C., and Heresco-Levy, U. (2013) A pilot cdouble-blind comparison of D-serine and high-dose olanzapine in treatment-resistant patients with schizophrenia. Schizophrenia Res.150, 604-605.
- Levin, R., Abarbanel, A., Edelman, S., Durrant, A.R., Hashimoto, K., Javitt, D.C., and Heresco-Levy, U. (2015) Behavioral and cognitive effects of the N-methyl-D-aspartate receptor co-agonist D-serine in healthy humans. J. Psychiatry Res. 61, 188-195.

8. None

1. Biomarkers for elderly depression
2. Center for Forensic Mental Health / Professor / Kenji Hashimoto
3. USA / Nathan Kline Smith Institute, NY / Professor / Nunzio Pomara
4. 2014-
5. We have been developing the novel biomarkers for elderly depression.
6. KAKENHI、Scholarship Donation etc
7. Main result

- Hashimoto, K., Bruno, D., Nierenberg, J., Marmar, C.R., Zetterberg, H., Blonnow, K., and Pomara, N. (2016) Abnormality in glutamine-glutamate cycle in the cerebrospinal fluid of cognitively intact elderly individuals with major depressive disorder: 3-year follow-up study. Transl. Psychiatry 6, e744.
- Bruno D, Nierenberg J, Cooper TB, Marmar CR, Zetterberg H, Blennow K, Hashimoto K, Pomara N (2017) The recency ratio is associated with reduced CSF glutamate in late-life depression. Neurobiol. Learn. Mem. 141, 14-18.
- Hashimoto, K., Ishima, T., Sato, Y., Bruno, D., Nierenberg, J., Marmar, C.R., Zetterberg, H., Blennow, K., and Pomara, N. (2017) Increased levels of ascorbic acid in the cerebrospinal fluid of cognitively intact elderly patients with major depression: a preliminary study. Sci. Rep. 7, 3485.

8. None

1. Mechanisms of ketamine's antidepressant effects
2. Center for Forensic Mental Health / Professor / Kenji Hashimoto
3. China / Department of Anesthesiology, Zhengzhou University / Professor / Jian-Jun Yang
4. 2014-
5. We discussed the mechanisms of ketamine's antidepressant effects.
6. KAKENHI、Scholarship Donation etc
7. Main result

1) Yang, J.J., Wang, N., Yang, C., Shi, J.Y., Yu, H.Y., and Hashimoto, K. (2015) Serum interleukin-6 is a predictive biomarker for ketamine's antidepressant effect in treatment-resistant patients with major depression. Biol. Psychiatry 77, e19-e20.
2) Liu, W.X., Wang, J., Xu, N., Xie, Z.M., Zhang, G.F., Jia, M., Zhou, Z.Q., Hashimoto, K., and Yang, J.J. (2016) Regulation of glutamate transporter via BDNF-TrkB signaling plays a role in the anti-apoptotic and antidepressant effects of ketamine in chronic unpredictable stress model of depression. Psychopharmacology 233, 405-415.
3) Sun, H.L., Zhou, Z.Q., Zhang, G.F., Yang, C., Wang, X.M., Shen, J.C., Hashimoto, K., and Yang, J.J. (2016) Hippocampal p11 plays a role in the sustained antidepressant effect of ketamine in the chronic unpredictable mild stress model. Transl. Psychiatry 6, e741.
4) Xie, Z.M., Wang, X.M., Xu, N., Wang, J., Pan, W., Tang, Z.Q., Hashimoto, K., and Yang, J.J. (2017) Alterations in the inflammatory cytokines and brain-derived neurotrophic factor contribute to depression-like phenotype after spared nerve injury: improvement by ketamine. Sci. Rep. 7, 3124

8. None

1. Role of soluble epoxide hydrolase in psychiatric disorders
2. Center for Forensic Mental Health / Professor / Kenji Hashimoto
3. USA / UC Davis, CA / Professor / Bruce Hammock
4. 2014-
5. We discussed the role of sEH in psychiatric disorders
6. KAKENHI、Scholarship Donation etc
7. Main result

- Ren, Q., Ma, M., Ishima, T., Morisseau, C., Yang, J., Wagner, K., Zhang, J.C., Yang, C., Yao, W., Dong, C., Han, M., Hammock, B.D., and Hashimoto, K. (2016) Gene deficiency and pharmacological inhibition of soluble epoxide hydrolase confers resilience to repeated social defeat stress. Proc. Natl. Acad. Sci. USA 113, E1944-E1952.
- Ren, Q., Ma, M., Yang, J., Nonaka, R., Yamaguchi, A., Ishikawa, K., Kobayashi, K., Murayama, S., Hwang, S.H., Saiki, S., Akamatsu, W., Hattori, N., Hammock, B.D., and Hashimoto, K. (2018) Soluble epoxide hydrolkase plays a key role in the pathogenesis of Parkinson's disease: A novel therapeutic target. Proc. Natl. Acad. Sci. USA 115, E5815-E5823
- Ma, M., Ren, Q., Yang, J., Zhang, K., Xiong, Z., Ishima, T., Pu, Y., Hwang, S.H., Toyoshima, M., Iwayama, Y., Hirano, Y., Yoshikawa, T., Hammock, B.D., and Hashimoto, K. (2019) Key role of soluble epoxide hydrolase in the neurodevelopmental disorders of offspring after maternal immune activation. Proc. Natl. Acad. Sci. USA 116, 7083-7088.

8. None

1. Mechanisms of ketamine's antidepressant effects
2. Center for Forensic Mental Health / Professor / Kenji Hashimoto
3. China / Department of Anesthesiology, Tongji Medical College, Huazhong University of Science and Technology / Associate Professor / Chun Yang
4. 2017-
5. We discussed the mechanisms of ketamine's antidepressant effects.
6. KAKENHI、Scholarship Donation etc
7. Main result

- Li, S., Yang, C., Fang, X., Zhan, G., Yang, N., Gao, J., Xu, H., Hashimoto, K., and Luo, A. (2018) Role of Keap1-Nrf2 signaling in anhedonia symptoms in a rat model of chronic neuropathic pain: improvement with sulforaphane. Front. Pharmacol. 9, 887.
- Huang, N., Hua, D., Zhan, G., Li, S., Zhu, B., Jiang, R., Yang, L., Bi, J., Xu, H., Hashimoto, K., Luo, A., and Yang, C. (2019) Role of *Actinobacteria* and *Coriobacteriia* in the antidepressant effects of ketamine in an inflammation model of depression. Pharmacol. Biochem. Behav. 176, 93-100.
- Yang, C., Fang, X., Zhan, G., Huang, N., Li, S., Bi, J., Jiang, R., Yang, L., Miao, L., Zhu, B., Luo, A., and Hashimoto, K. (2019) Key role of gut microbiota in anhedonia-like phenotype in rodents with neuropathic pain. Transl. Psychiatry 9, 57

8. None

1. A study on risk assessment of the sex offender -Using the physiological tools-.
2. Center for Forensic Mental Health / Assistant Professor / Aika Tomoto

3. NY, USA / Columbia University College of Physicians &Surgeons / Associate Clinical Professor of Psychiatry, Richard Krueger, M.D.
4. From 2012
5. We will study the risk assessment of psychological tool (PPG and Reaction time) in sex offenders
6. SYAKAI ANZEN ZAIDAN
7. Publication：none
8. None

1. A study of Recidivism Prevention and Mental Health
2. Center for Forensic Mental Health / Assistant Professor / Aika Tomoto
3. NY, USA / Columbia University College of Physicians &Surgeons / Associate Clinical Professor of Psychiatry, Richard Krueger, M.D.
4. From 2014
5. We study the recidivism prevention programs for offenders
6. Grant-in-Aid for Challenging Exploratory Research
   Grant-in-Aid for Scie.ntific Research (C)
7. Publication：Tomoto. A, Mental Health and Treatment Program of Inmates. Japanese Journal of Forensic Mental Health, 12(1), 90-95, 2017
8. Tomoto A., Mental Health and Treatment Program of Inmates., SymposiumⅢ, The 12th Annual Conference of the Japanese Society of Forensic Mental Health, Chiba, 2016

1. A study of protective Factors for violence risk in prison
2. Center for Forensic Mental Health / Assistant Professor / Aika Tomoto
3. Netherlands / Van der Hoeven Kliniek / Michiel de Vries Robbé, Ph. D.
4. From 2014
5. We will study inmates on protective factors of violence.
6. Management Expenses Grants
7. Publication：Kashiwagi. H., Tomoto. Ikeda. M., Introduction to the SAPROF (Structured Assessment of PROtective Factors for violence risk) : Guidelines for the assessment of protective factors for violence risk., Psychiatry 25 (3) , 337-341, 2014
8. Michiel de Vries Robbé,, Kashiwagi H., Tomoto A., Workshop: SAPROF（The Structured Assessment of Protective Factors for Violence Risk）The 12th Annual Conference of the Japanese Society of Forensic Mental Health, Chiba, 2016
   Tomoto A., Shina A., Nishinaka H., Workshop: SAPROF（The Structured Assessment of Protective Factors for Violence Risk）Center for Forensic Mental Health, Chiba University, Chiba, 2017，2018

Center for Preventive Medical Sciences

1. Analysis of PCBs in maternal and fetal serum in Taiwan
2. Center for Preventive Medical Sciences / Director / Chisato Mori
   Center for Preventive Medical Science / Assistant Professor / Akifumi Eguchi

3. Taiwan / Joint-appointed Investigator Division of Environmental Health and Occupational Medicine, National Taiwan University / Chang-Chuan Chan
4. 2018-
5. In order to elucidate the route of exposure of chemical substances including PCBs, it is necessary to compare the exposure in various countries. Therefore, in this study, PCBs concentration and their congener profiles in maternal serum / umbilical cord serum were compared between bilateral countries using common analytical method of PCB.
6. The Environment Research and Technology Development Fund.
7. None

---

1. Evaluation of effects of environmental factors on fetus using umbilical cord DNA methylation analysis
2. Center for Preventive Medical Sciences / Director / Chisato Mori
   Center for Preventive Medical Science / Associate Professor / Kenichi Sakurai
   Center for Preventive Medical Science / Assistant Professor / Akifumi Eguchi
3. U.S.A. / Center for Cancer Research, Massachusetts General Hospital and Harvard Medical School / Toshi Shioda
4. 2017-
5. To explore the feasibility to examine umbilical cord epigenome by deep sequencing, we determined CpG methylation profiles of human umbilical cord by reduced representation bisulfite sequencing. We also examined the association between DNA methylation profile and maternal blood level of folate to evaluate the effects of maternal nutrition on fetus.
6. KAKENHI（Grant-in-Aid for Scientific Research (A))
7. DNA methylome of human neonatal umbilical cord: Enrichment of differentially methylated regions compared to umbilical cord blood DNA at transcription factor genes involved in body patterning and effects of maternal folate deficiency or children's sex. PLOS One (in press)

---

1. Comparison of relationship of fetal environment with child telomere length between USA and Japan
2. Center for Preventive Medical Sciences / Director / Chisato Mori
   Center for Preventive Medical Science / Professor / Emiko Todaka
   Center for Preventive Medical Science / Associate Professor / Kenichi Sakurai
   Center for Preventive Medical Science / Assistant Professor / Akifumi Eguchi
   Center for Preventive Medical Science / Assistant Professor / Midori Yamamoto
3. U.S.A. / University of California, San Francisco / Janet Wojcicki
4. 2018-
5. To explore the influence of fetal environmental factors in child health, we examine the association between human umbilical cord telomere length and maternal factors during pregnancy and cord blood levels of persistent organic pollutants.
6. KAKENHI（Grant-in-Aid for Scientific Research (A))
7. None

---

1. JAGES（Japan Gerontological E v aluation Study)
2. Center for Preventive Medical Sciences / Professor / Katsunori Kondo

3. UK / Department of Epidemiology and Public Health, University College London / Noriko Cable
UK / Department of Epidemiology and Public Health, University College London / Paola Zaninotto
UK / Department of Epidemiology and Public Health, University College London / Georgios Tsakos
UK / Department of Epidemiology and Public Health, University College London / Michael G. Marmot
UK / Department of Epidemiology and Public Health, University College London / Richard G. Watt
USA / Harvard School of Public Health, Department of Social and Behavioral Sciences, Boston / Ichiro Kawachi
4. 2010
5. The Japan Gerontological Evaluation Study (JAGES) aims to build a scientific backbone from the viewpoint of preventive medicine to establish a society of healthy longevity. We have been collaborating with 40 municipalities all over Japan to investigate the living conditions of approximately 300,000 adults aged 65 and above. More than 30 researchers from colleges, universities, and national institutions in Japan are currently conducting a wide variety of studies using our data. JAGES is funded by the Japanese and the US government agencies, including the Ministry of Education, Culture, Sports, Science and Technology (Japan), the Ministry of Health, Labour and Welfare (Japan), and the National Institutes of Health (US).
6. This study was supported by a grant of the Strategic Research Foundation Grant-aided Project for Private Universities from the Ministry of Education, Culture, Sport, Science, and Technology, Japan (MEXT, http://www.mext.go.jp/en/), 2009–2013, for the Center for Well-being and Society, Nihon Fukushi University, Grants-in-Aid for Scientific Research (22330172, 22390400, 22390400, 22592327, 23243070, 23590786, 23790710, 24390469, 24530698, 24653150, 24683018, 25253052, 25870573, 25870881, 26285138, 26882010, 15H04781, 15H01972, 16H05556, 16K19267) from the Japan Society for the Promotion of Science (http://www. jsps.go.jp/english/). The study was also supported by a Health and Labour Sciences Research Grant, and grants for Comprehensive Research on Aging and Health (H22-Choju-Shitei-008, H24-Junkankitou-Ippan-007, H24-Chikyukibo-Ippan-009, H24-ChojuWakate-009, H25-Kenki-Wakate-015, H25-Irryo-Shitei-003 [Fukkou], H26-Choju-Ippan-006, H27-Ninchisyou-Ippan-001, H28-Choju-Ippan-002) from the Ministry of Health, Labour and Welfare, Japan (http://www.mhlw.go.jp/english/), the Research and Development Grants for Longevity Science from AMED (Japan Agency for Medical Research and development, http://www. amed.go.jp/en/program/), the Personal Health Record (PHR) Utilization Project from AMED, World Health Organization Centre for Health Development (WHO Kobe Centre, http://www.who. int/kobe_centre/en/) (WHO APW 2017/713981), Japan Foundation for Aging and Health Research Support Grant (https://www. tyojyu.or.jp/en/), a grant from The Health Care Science Institute (http://www.iken.org/en/index.html), as well as grants from National Center for Geriatrics and Gerontology (http://www.ncgg. go.jp/english/). The research funding bodies had no role in the study design, data collection, data analysis, data interpretation, writing, or submitting of the report.
7. Aida J, Cable N, Zaninotto P, Tsuboya T, Tsakos G, Matsuyama Y, Ito K, Osaka K, Kondo K, Marmot MG, Watt RG: Social and Behavioural Determinants of the Difference in Survival among Older Adults in Japan and England. Gerontology 2018. DOI:10.1159/000485797.
Honjo, K.; Tani, Y.; Saito, M.; Sasaki, Y.; Kondo, K.; Kawachi, I.; Kondo, N., Living alone or with others and depressive symptoms, and effect modification by residential social cohesion among older adults in Japan: JAGES longitudinal study.

Journal of Epidemiology & Community Health 2018,

Sato, K.; Viswanath, K.; Hayashi, H.; Ishikawa, Y.; Kondo, K.; Shirai, K.; Kondo, N.; Nakagawa, K.; Kawachi, I., Association between exposure to health information and mortality: Reduced mortality among women exposed to information via TV programs. Soc Sci Med 2019, 221, 124-131.

R, L. H.; Tsuji, T.; Kondo, K.; Y, I., Development of a risk score for the prediction of incident dementia in older adults using a frailty index and health checkup data: The JAGES longitudinal study. Preventive medicine 2018.

Sasaki, I.; Kondo, K.; Kondo, N.; Aida, J.; Ichikawa, H.; Kusumi, T.; Sueishi, N.; Imanaka, Y., Are pension types associated with happiness in Japanese older people?: JAGES cross-sectional study. PLoS One 2018, 13 (5), e0197423.

Tsuji T, Amemiya A, Shirai K,Stenholm S, Pentti J, Oksanen T, Vahtera J, Kondo K :Association between education and television viewing among older working and retired people: a comparative study of Finland and Japan.BMC Public Health. 2018 Jul 25;18(1):917. doi: 10.1186/s12889-018-5860-4.

8. 日本老年学的評価研究機構設立記念シンポジウムが開催されました（2018.7.30）。

健康長寿や共生社会に学術的立場から貢献

第７７回公衆衛生学会総会に発表しました（2018.10.25）。

「データ活用と組織連携における市町村—研究者協働の効果：JAGES 準実験研究」

1. Iwanuma Study（Impact of social cohesion on functional recovery after earthquake and tsunami）
2. Center for Preventive Medical Sciences / Professor / Katsunori Kondo
3. USA / Department of Social and Behavioral Sciences, Harvard T.H. Chan School of Public Health, Boston / Xiaoyu Li, Orfeu M. Buxton, Hiroyuki Hikichi, Ichiro Kawachi

   UK / Division of Sleep and Circadian Disorders, Departments of Medicine and Neurology, Brigham and Women’s Hospital, Boston / Orfeu M. Buxton, Xiaoyu Li

   USA / Department of Biobehavioral Health, Pennsylvania State University, University Park / Orfeu M. Buxton

   UK / Division of Sleep Medicine, Harvard Medical School, Boston / Orfeu M. Buxton

   USA / Department of Biostatistics, Harvard T.H. Chan School of Public Health, Boston / Sebastien Haneuse
4. 2013
5. Collaborating with Iwanuma City (enormously damaged by GEJE) in Miyagi Prefecture, the Iwanuma Study was established with the objective to investigate the role of social caption in promoting disaster resilience among older survivors of the March 11, 2011 earthquake and tsunami in northeastern Japan. The strength of the study is the collection of individual data both pre-dating and post-dating the 2011 Tohoku disaster. Therefore, it is possible to investigate both the risk factors and protective factors under disaster condition. Iwanuma Study is funded by the Japanese and the US government agencies, including the National Institutes of Health (US). Ministry of Education, Culture, Sports, Science and Technology (Japan) and WHO et.al.
6. This study was supported by a grant of Department of Health and Human Services, National Institutes of Health, National Institute on Aging Research (Grant Number 1R01AG042463-01A1), Grants-in-aid for Scientific Research of Japan Society For the Promotion of Science (Fostering Joint International Research (B), Grant Number 18KK0057) and World Health Organization. Agreement for Performance of Work (APW)

7. Li, X.; Buxton, O. M.; Hikichi, H.; Haneuse, S.; Aida, J.; Kondo, K.; Kawachi, I., Predictors of Persistent Sleep Problems among Older Disaster Survivors: A Natural Experiment from the 2011 Great East Japan Earthquake and Tsunami. Sleep 2018, 41 (7)..

Hikichi H, Aida J, Matsuyama Y, Tsuboya T, Kondo K, Kawachi I: : Community-level social capital and cognitive decline after a natural disaster: A natural experiment from the 2011 Great East Japan Earthquake and Tsunami. Soc Sci Med. 2018 Sep 28. pii: S0277-9536(18)30553-7. doi:

Inoue Y, Andrew S, Yazawa A, Aida J, Kawachi I, Kondo K, Fujiwara T: Adverse childhood experiences, exposure to a natural disaster and posttraumatic stress disorder among survivors of the 2011 Great East Japan earthquake and tsunami. Epidemiol Psychiatr Sci. 2019;28(1):45-53.

Hikichi H,Aida J,Kondo K,Tsuboya T,Kawachi I:Residential relocation and obesity after a natural disaster: A natural experiment from the 2011 Japan Earthquake and Tsunami. Sci Rep. 2019 Jan 23;9(1):374. doi: 10.1038/s41598-018-36906-y.

Shiba K,Hikichi H,Aida J,Kondo K,Kawachi I : Long-term Associations Between Disaster Experiences and Cardiometabolic Risk: A Natural Experiment From the 2011 Great East Japan Earthquake and Tsunami.Am J Epidemiol. 2019 Mar 15. pii: kwz065. doi: 10.1093/aje/kwz065. [Epub ahead of print]

8. 岩沼シンポジウム（2019.2.27）が開催されました。

毎日新聞（2018.3.8）に紹介されました。

「友だち付き合い」で震災後死亡リスクが半減東日本大震災７年ーー岩沼プロジェクトから（1）震災前後のデータを比較した「岩沼プロジェクト」「友人との交流」が健康に良いことを裏付け日本歯科新聞中國新聞（2018.3.25）に紹介されました。

「震災後の高齢者調査　人のつながり　健康守る」

朝日新聞（2018.5.3）に紹介されました。

「たまたま震災前に調査、注目集める岩沼プロジェクト」「震災前後の心身、詳細に分析　高齢者を追跡「岩沼プロジェクト」に注目」

Safety and Health Organization

1. The study of brain structure and cognitive performance in healthy subjects.
2. Safety and Health Organization / Associate Professor / Toshiyuki Ohtani
3. U.S.A. / Department of Psychology, University of Massachusetts / Professor / Paul G Nestor
4. 2011-
5. In this project, we are investigating the gray matter volumes and white matter properties in frontal brain area, and analyzing the association between the gray matter volumes or white matter properties and the cognitive performance of healthy subjects.
6. None.
7. Main result
   - Ohtani T, Nestor PG, Bouix S, Saito Y, Hosokawa T, Kubicki M. Medial frontal white and gray matter contributions

to general intelligence. *PLoS One*. 2014; 9(12): e112691.

- Nestor PG, Ohtani T, Bouix S, Hosokawa T, Saito Y, Newell DT, Kubicki M. Dissociating prefrontal circuitry in intelligence and memory: neuropsychological correlates of magnetic resonance and diffusion tensor imaging. *Brain Imaging Behav.* 2015; 9(4): 839-47.
- Nestor PG, Ohtani T, Levitt JJ, Newell DT, Shenton ME, Niznikiewicz M, McCarley RW. Prefrontal Lobe Gray Matter; Cognitive Control and Episodic Memory in Healthy Cognition. *AIMS Neuroscience* 2016; 3(3): 338-355.
- Ohtani T, Nestor PG, Bouix S, Newell D, Melonakos ED, McCarley RW, Shenton ME, Kubicki M. Exploring the neural substrates of attentional control and human intelligence: Diffusion tensor imaging of prefrontal white matter tractography in healthy cognition. *Neuroscience.* 2017; 341: 52-60.

8. None.

1. The study of the longitudinal changes in brain structures, symptoms' severity, and cognitive performances caused by cognitive behavioral therapy.
2. Safety and Health Organization / Associate Professor / Toshiyuki Ohtani
3. U.S.A. / Psychiatry Neuroimaging Laboratory, Harvard Medical School / Professor / Martha E. Shenton
   U.S.A. / Department of Psychology, University of Massachusetts / Professor / Paul G Nestor
4. 2015-
5. Longitudinal changes in brain structures, symptoms' severity, and cognitive performances brought by cognitive behavioral therapy on patients with social anxiety disorder are being examined and analyzed.
6. Grants-in-Aid for Scientific Research (C) (General) (15K09857), Ministry of Education、Culture、Sports、Science and Technology.
7. None
8. None