The Chiba University International Collaborative Research
2015

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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)
1. Study on Russian Literature and Culture of Silver Age
2. Faculty of Letters / Associate Professor / Wakana Kono
3. Russia / Russian State University of Humanities / Professor Dina Makhmudovna Magomedova
4. 2002～
5. Reading the texts of Silver Age and 20-th Russian literature, and looking into the issues of religion, philosophy and culture.
6. Grants-in-Aid for Scientific Research
7. Main result

8. None

8. N.A.

**Faculty of Law, Politics and Economics**

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. Faculty of Law, Politics and Economics/ 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 University/Schulich 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, etc.

7. Main result

2011 年

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:

2013


2014


2015


2016

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

   2) The published academic article was selected to be a cutting-edge research by Nature Climate
Change in 2011.
For more details, please refer to

1. Comparative study on female labor and income disparity among child rearing households
2. Faculty of Law, Politics, and Economics/ Professor/ Akiko Oishi
3. Hong Kong/ City University of Hong Kong/ Raymond Chan
   Korea/ Chungnam National University/ Ju-Hyun Kim
   Taiwan/ National Taiwan University /Li-Rong Wang
4. 2014–
5. This study aims to explore how differences in women’s labor supply affect the income disparity and poverty among child rearing households from a comparative perspective. To highlight the characteristics of each society, family and labor market policies are studied.
6. Grant-in-Aid for Scientific Research (C)
8. Have organized an international symposium in December 2014 at National Taiwan University, Taiwan.

1. International study on migration, gender, and labour in East Asia
2. Faculty of Law, Politics, and Economics/ Professor/ Akiko Oishi
3. Hong Kong/ City University of Hong Kong/ Raymond Chan
   Korea/ Chungnam National University/ Ju-Hyun Kim
   Korea/ Sogang University/ Hong-Ju Park
   Taiwan/ National Taiwan University /Li-Rong Wang
   Taiwan/ National Yang-Ming University/ Li-Fang Liang
4. 2014–
5. The aim of this study is to examine policies concerning migrant care workers in East Asia (Japan, Korea, Taiwan, and Hong Kong) with a gender perspective and highlight the characteristics of each society and explore social and economic factors of policy development. In East Asia, where women were considered to be the main care-giver, an aging and shrinking population and rise in female labour market participation has brought up the issue of who and how care are to be provided. Introduction of migrant care workers is a popular policy option, however, the content and context of migrant care worker policy, especially those concerning citizenship rights, differ greatly in each society. Through a case study focusing on the relationship
between migrant care workers and host society, quality of care, gender, and social rights of migrant workers, the goal of this study is to provide a perspective on how “fairness” can be achieved in the global era of the 21st century.

6. Chiba University Leading Research Promotion Program
7. Have received a publishing offer from Palgrave. A book titled “Gender, Care, and Migration in East Asia” (tentative) is to be published in 2017.
8. Have organized an international symposium on migration, gender, and labour in East Asia on February 19th, 2016. More than 50 participants joined the symposium.

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**Graduate School of Humanities and Social Sciences**

1. Japan in East Asia
2. Graduate School for Humanities and Social sciences/ Professor/ MIYAKE, Akimasa
3. Germany/Heidelberg University/Professor Wolfgang Seifert/ Total 10 scholars in Germany, Belgium, United Kingdom and Japan.
4. Since 2013
5. Multilateral study on Modern Japan in East Asia

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1. Cultural Memories of Tsingtau/Quingdao and Yantai in Germany, Japan and China.
2. Graduate School of Humanities and Social Sciences /Professor/ Akiko MIYAKE.
3. China : Yantai University / Wenzhe LI, Ludon 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 in 1858 opened. We regard these cities as media of cultural memory and analyze architecture, journals, literature, photos, film, oral history, etc. from German, Japanese, and Chinese views.
6. Grant in Aid for Scientific Research B
7. Main result
1. International Academic study on Communication of In-service Teachers Emerged from A Centralized Training
2. Graduate School of Social Sciences and Humanities, Chiba University, 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 prolonged 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


8. Other important item to be stated

The best paper award:

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 (presentation on 27), At Lotus Hotel Png Suan Kaew: Chiangmai, Thailand.

- Outstanding Paper Award:

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**Faculty of Education**

1. Comparative study for brain cognition of mother and foreign languages between Japanese and Italian children
2. Faculty of Education / Professor / Katsuo Sugita
3. Italy / Tor Vergata University of Rome / Paolo Culatoro
4. 2010-
5. We perform phonological reaction time test to Italian primary school students who learn Japanese and compare the time differences between these students and native Japanese children. We study the brain mechanism and language-environment factors for cognition of language characters in children.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan
7. Main result
   - Sugita K, Uesaka T, Nomura J, Sugita Ki, Inagaki M. A family-based association study does not support DYSIC1 as a candidate gene in dyslexia in Japan. IMJ 2011, 18(2), 130-132
   - Torii M, Shimoyama I, Sugita K Phonemic and semantic working memory in information processing in children with high function pervasive developmental disorders IMJ Vol 17, No 1, 35-39, 2010
8. None

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1. Comparative Research about Health Promoting School in Asia
2. Education / Professor / Kanako OKADA
3. Partner abroad
   - South Korea, Wonju / Department of Health Administration, College of Health Sciences, Yonsei University (Sister University) / Eun Woo Nam,
   - Taiwan, Taichung / Department of Healthcare Administration, College of Health Science, & Director,
This study aims to show an overview and characteristics of Asian HPS and school health related organizational activities and collaboration. Investigations regarding HPS were conducted via literature review and observational studies of schools visited in Asia. The United graduate school of Education Tokyo Gakugei University 「Research Project」subvention in 2008-2009, COE start up subsidy in 2009, Model curricula development research for course of Teacher in 2010, 2011, Grant-in-Aid for Scientific Research B from the Ministry of Education, Culture, Sports, Science and Technology, Japan.

Main result

- Bulletin of the faculty of education, 58, 2010.3

Other important items to be stated

- Speaker/International Health Promoting School Symposium in Taipei (Taiwan) (2009.12)
- Special Lecture/International Health Promoting School Conference in Taipei (Taiwan) (2009.12) (2013.12)
- Speakers (Kanako OKADA, Daisuke Fujikawa, Satoshi Isobe & fumiko Sunagami) at Health Promoting School Seminar in Shanghai (Mainland China)
- International Symposium Planner, coordinator & speaker /The 2nd East Asian International Conference on Teacher Education Research
- WHO/WPRO Meeting (2012.2)
- International Symposium in Chiba University (2013.3)
The apparatus named PDL has the characteristics as: low cost, small space, ease of re-construction, portable.


7. **Main result**

   - **Materials developed:**

   - **Published paper:**

   - **Patent:**
     2) Patent application, 2005-368470: Apparatus for measurement of fluid density and the measurement method
     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**

   - Presidents prize award at open research exhibition (2006)
   - Good Practice (GP) project (2007-2010, MEXT)
   - 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. Perception of human emotional stimuli in Italy and Japan
2. Faculty of Education / Professor / Jun Nakazawa
3. Italy / University of Torento / Esposito,G., Venuti,P.
   U.S.A. / NIH / Bornstein,M.H.
4. 2010-
5. Funds, grants, etc.

(1) We compared perception of infant crying between Italian and Japanese adults. In both cultures, cries with higher fundamental frequency and shorter pause durations were judged more distressing and distressed, and observers perceived cries of children with Autism Disorder (AD) as more distressing and distressed than cries of typically developing children. It shows reactions to cries of children with AD might be universal.

(2) We compared perception of infant face and adult face of Japanese and Italian between Italian and Japanese adults. We found cognitive and physiological response to infant face was same, but response to adult face were differ depend on race of adult face.

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

7. Main result
Baby, You Light-up My Face: Culture-General Physiological Responses to Infants and Culture-Specific Cognitive Judgements of Adults. Plos One,9,(10), e106705.


8. None

1. International Comparative Study of Parenting and Children's social Development.
2. Faculty of Education / Professor / Jun Nakazawa
3. USA / Brighamyoung University / Craig H. Hart
4. 2012 ~
5. Effect of parenting on social development of young children among Japan, USA, Turkey, China and Taiwan.
6. Pacific Project of Brigham Young University
8. None

1. Family and Child Development in East Asia
2. Faculty of Education / Professor / Jun Nakazawa
3. USA / Southern Uta University / David W. Shwalb
   Korea / Seoul Theological University / Hyun, J-H.
4. 2012 ~
5. Examination for Same and differences among the family and child in EastAsia
6. None
7. Main result
Development of radiation learning program in the context of risk education

Faculty of Education / Professor / Katsuo Sugita

Faculty of Children and Learning, Institute of Education University of London/Dr. Ralph Levinson

2014~

We develop educational program for learning radiation risk in comparison with that of U.K.

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

Main result


Study of biological activity of specimen which extract from sponge-associated Bacteria

Faculty of Education / Professor / Jun Nomura

Indonesia / Bogor agricultural University / NAHROWI RAMLI

2013~

This study aim to identify several bioactive substances containing in extract of sponge-associated bacteria.

Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan (B), TWINCLE program

CYTOTOXICITY OF CRUDE EXTRACT FROM SPONGE-ASSOCIATED BACTERIA AGAINST MOLT4
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 / Associate Professor / Dr. 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.


7. Main result


   (d) “X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Improvement of Spectral Resolution at the Absorption Edges of 9 – 29 keV”,
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 / Associate Professor / Dr. Yasuo Izumi

3. Italy / CNR / Dr. Matteo Guidotti, 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.


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).


(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
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<td>(e) &quot;Development of Structural Analysis Technique for Nano-particles&quot; Yasuo Izumi, Polyfile, 45(528), 46 – 49 (2008).</td>
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8. None

1. Development of Environmental-benign Catalysts based on Nano/Meso Reaction Space
2. Department of Chemistry, Graduate School of Science / Associate Professor / Dr. 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.
7. Main result


(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).


8. None

1. Photoreduction of Carbon dioxide Utilizing Natural Light
2. Department of Chemistry, Graduate School of Science / Associate Professor / Dr. 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 purpose. 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,

(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).


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 result
8. N/A
1. Theoretical Study of Anomalous Properties of Strongly Correlated Electron Systems  
   Department of Physics / Professor / Yukinori Ohta  
   Germany / Karlsruhe Institute of Technology / Robert Eder  
   from 2003  
   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.

2. Grant-in-Aid for Scientific Research  

3. Main result  

4. Collaborations are made by sending graduate students to the relevant laboratories.

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1. DMRG Study of Strongly Correlated Electron Systems  
   Department of Physics / Professor / Yukinori Ohta  
   Germany / Leibniz Institute for Solid State and Materials Research Dresden / Satoshi Nishimoto  
   since 2001  
   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.

2. Grant-in-Aid for Scientific Research  
   in preparation.  

3. Collaborations are made by sending graduate students to the relevant laboratories.
1. Integral transforms in hyperfunctions and singularities
2. Graduate School of Science / Professor / Yasunori Okada
3. Republic of Italy / University of Bologna / Prof. Otto Liess (retired)
4. 2007 ~
5. The properties of integral transforms in hyperfunctions are deeply related to the properties of their kernels. We focus on their singularities, i.e., supports, singular supports and their microlocal variants.
6. JSPS Grant-in-Aid for Scientific Research (C),
   Programma Professori Visitatori GNAMPA/CNR,
   JSPS Invitation Fellowship Program.
7. Main result
   (1) O. Liess and Y. Okada, The kernel theorem in ultradistributions: microlocal regularity of the kernel,
   (4) O. Liess and Y. Okada, Analytic singular support properties for integral operators in hyperfunctions,
8. None

1. Algebraic analysis on coupling theory
2. Graduate School of Science / Professor / Yasunori Okada
3. French Republic / University of Strasbourg / Prof. Reinhard Schäfke (retired)
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).
7. Main result
   (1) Y. Okada, R. Schäfke and H. Tahara, Unique solvability of coupling equations in holomorphic functions,
       to appear in RIMS Kokyuroku Bessatsu
8. None

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 Ozeen
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

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.
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
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 has been visiting Shanghai Astronomical Observatory since August 2012 as a post doctoral fellow and working 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.

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.
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.
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
   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
   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, and US-Japan Workshop on Magnetic
   Reconnection MR2016 held at Napa, California, USA in March, 2016.

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.

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.

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); Grants-in-Aid for Scientific Research on Innovative Areas
8. None

1. **Brauer blocks theory in representation theory of finite groups**
2. Graduate School of Science / Professor / Shigeo Koshitani
3. United Kingdom / City University London / Markus Linckelmann, Radha Kessar
4. 2003~
5. Block theory which was developed by R. Brauer (1901–1977) in representation theory of finite groups. A notion “groups” is essentially a way to describe a sort of “symmetries” abstractly. Representation theory is a kind of a way to describe groups in terms of matrices 1. Brauer blocks theory in representations of finite
groups over fields which are something like sets of all real numbers, complex numbers, ....

6. Grant-in-Aid for Scientific Research(C) 17540010, 2005-2007,
   Oberwolfach Mathematical Institute in Germany.
   Grant-in-Aid for Scientific Research(C) 20540008, JSPS 2008-2010
   Grant-in Aid for Scientific Research(C) 23540007, JSPS 2011-2014
   Grant-in Aid for Scientific Research(C) 15K04776, JSPS 2015—2017
   Mathematics Institute of University of Aberdeen
   Canada, Banff International Research Station
   France, Central Institute of Research of Science (Luminy Mathematics Institute)

7. Main result

   (2) Conjectures of Alperin and Broue for 2-blocks with elementary abelian defect groups of order 8, Radha Kessar, Shigeo Koshitani, Markus Linckelmann, Journal fuer die reine und angewandte Mathematik (Crelle's Journal) 671 (2012), 85-130

8. Other important items to be stated

   ➢ Joint work with M.Linckelmann and R.Kessar, during 19 November-29 November 2006 in University of Aberdeen in the UK.
   ➢ Joint work with M.Linckelmann and R.Kessar during 7 December-15 December, 2008, in University of Aberdeen, UK.
   ➢ Joint work with M.Linckelmann and R.Kessar during 22 March-28 March, 2009, Oberwolfach Mathematical Institute in Germany.
- Joint work with R. Kessar and M. Linckelmann during 16-19 June, and 17-25 December, 2009, 21 Nov-7 Dec 2010,
- Talk on the joint work 7(2) above 17—18 March, 2011 in Banff International Research Station, Canada
- Joint work with R. Kessar and M. Linckelmann, during 26-31 March 2012, Oberwolfach Mathematical Institute in Germany.
- Joint work with R. Kessar and M. Linckelmann, during 18-28 March 2013, City University London UK.
- Joint work with R. Kessar and M. Linckelmann, during 17-22 October 2013, City University in London, UK.
- Joint work with M. Linckelmann, during 17-22 March 2014, Banff International Research Station, Canada
- Joint work with M. Linckelmann, during 21-26 September 2014, France Ceter of Institute of Research Science (Luminy Mathematics Institute)
- Joint work with R. Kessar and M. Linckelmann, during 20-28 November 2014, City University in London, UK.
- Joint work with M. Linckelmann, during 5-11 2015, Oberwolfach Mathematics Institute, Germany

1. Morita equivalences in blocks theory in representation theory of finite groups
2. Graduate School of Science / Professor / Shigeo Koshitani
3. USA / University of Illinois at Chicago / Morton E. Harris
4. 2002~
5. Block theory which was developed by R. Brauer (1901-1977) in representation theory of finite groups. A notion "groups" is essentially a way to describe a sort of "symmetries" abstractly. Representation theory is a kind of a way to describe groups in terms of matrices over fields. Here we study Morita equivalences appearing blocks of finite groups.
   Grant-in-Aid for Scientific Research(C) 23540007, JSPS 2011-2014
8. Other important items to be stated
   - Joint work with M.E. Harris during 23 September-2 October 2005, in University of Illinois at Chicago and University of Chicago
   - Joint work with M.E. Harris during 7 March-24 March 2007, in University of Illinois at Chicago and University of Chicago
1. Blocks theory in representation theory of finite groups
2. Faculty of Science / Professor / Shigeo Koshitani
3. Germany / University of Jena / Burkhard Kuelshammer
4. 1995～
5. Block theory which was developed by R. Brauer (1901-1977) in representation theory of finite groups. A notion "groups" is essentially a way to describe a sort of "symmetries" abstractly. Representation theory is a kind of a way to describe groups in terms of matrices over fields. Here we study blocks of finite groups.
   and the Mathematical Institute University of Jena Germany,
   Grant-in-Aid for Scientific Research(C) 20540008, JSPS 2008-2010
   Grant-in-Aid for Scientific Research(C) 23540007, JSPS 2011-2014
   Grant-in Aid for Scientific Research(C) 15K04776, JSPS 2015-2017
   Canada, Banff International Research Station
   DFG (Deutsche Forschungsgemeinschaft Scientific Priority Program SPP 1388)
   DFG (Deutsche Forschungsgemeinschaft Scientific Priority Program SPP 1489
   Oberwolfach Mathematical Institute
8. Other important items to be stated
   - Joint work with B.Kuelshammer during 1-8 April 2006, in University of Jena, Germany
   - Joint work with B.Kuelshammer during 6-13 April 2009, In University of Jena, Germany
   - Joint work with B.Kuelshammer during 29 August - 8 September 2012, Chiba University, Hamamatsu, Japan
   - Joint work with B.Kuelshammer during 20 –23 December 2013, in University of Jena, Germany
   - Joint work with B. Kuelshammer, 17—22 March 2014, Canada Banff International Research Station
   - Joint work with B.Kuelshammer during 14 December - 20 December 2014, in University of Jena, Germany
   - Joint work with B.Kuelshammer during 19 July - 25 July 2015, in University of Jena, Germany
   - Joint work with B.Kuelshammer during 19 January – 26 January 2016, in University of Jena, Germany

1. Frobenius-Schur indicators theory in representation theory of finite groups
2. Faculty of Science / Professor / Shigeo Koshitani
3. Ireland / National University of Ireland Maynooth / John Murray
4. 2006～
5. Block theory which was developed by R. Brauer (1901-1977) in representation theory of finite groups. A notion "groups" is essentially a way to describe a sort of "symmetries" abstractly. Representation theory is a kind of a way to describe groups in terms of matrices over fields. Here we study Schur-Frobenius indicators in character theory of finite groups.

6. Grant-in-Aid for Scientific Research(C) 17540010, 2005-2007, and National University of Ireland Maynooth, Grant-in-Aid for Scientific Research(C) 20540008, 2008-2010

7. In preparation

8. Other important items to be stated
   - Joint work with J. Murray during 8-16 April 2006, in National University of Ireland Maynooth, Ireland
   - Joint work with J. Murray during 18-23 August 2008, in National University of Ireland Maynooth, Ireland
   - Joint work with J. Murray during 21-25 June 2010, in EPFL, Switzerland
   - Joint work with J. Murray during 24-30 March, in Oberwolfach Mathematics Institute, Germany
   - Joint work with J. Murray during 25 August-6 September 2012, in Chiba University, Hamamatsu, Japan
   - Joint work with J. Murray during 2-6 September 2013, in Manchester University, United Kingdom

1. Block theory in representation theory of finite groups
2. Faculty of Science / Professor / Shigeo Koshitani
3. Germany / Jena University / Juergen Mueller, F. Noeske
4. 2007～

5. Block theory which was developed by R. Brauer (1901-1977) in representation theory of finite groups. A notion "groups" is essentially a way to describe a sort of "symmetries" abstractly. Representation theory is a kind of a way to describe groups in terms of matrices over fields. Here we study Schur-Frobenius indicators in character theory of finite groups.

   Grant-in-Aid for Scientific Research(C) 20540008, JSPS 2008-2010
   Grant-in-Aid for Scientific Research(C) 23540007, JSPS 2011-2014
   Grant-in Aid for Scientific Research(C) 15K04776, JSPS 2015—2017
   Canada Banff International Research Station
   DFG (Deutsche Forschungs Gemeinschaft Scientific Priority Program SPP 1388)
   DFG (Deutsche Forschungs Gemeinschaft Scientific Priority Program SPP 1489)
   Jena University

7. Main result
   2. Broue's abelian defect group conjecture holds for the sporadic simple Conway group Co3,
| (3) Broue's abelian defect group conjecture holds for the double cover of the Higman-Sims sporadic simple group, |
| (4) Broue's abelian defect group conjecture for the sporadic simple group J4 revisited, |

8. Other important items to be stated

- Joint work with J. Mueller and F. Noeske in RWTH Aachen University, Germany, during 28 March - 6 April, 19-23 June, 9-16 December 2009, in RWTH Aachen University, Germany
- 10-14 Nov 2010, in RWTH Aachen University, Germany
- 26 October-4 November 2011, 15-23 December 2011, in RWTH Aachen University, Germany
- 31 March-5 April 2012, 7-9 December 2012 in RWTH Aachen University, Germany
- 14 September-15 September 2013 in RWTH Aachen University, Germany
- Joint work with J. Mueller, 4 December-8 December 2013 in RWTH Aachen University, Germany.
- Joint work with J. Mueller, 17—22 March 2014, in Banff Institute Research Center
- Joint work with J. Mueller, 14—20 December 2014, in Jena University Germany
- Joint work with J. Mueller, 7—19 July 2015 in Jena University Germany
- Joint work with J. Mueller, 17—19 September 2015 in RWTH Aachen University Germany
- Joint work with J. Mueller, 19—26 January 2016, in Jena University Germany

1. Blocks of finite groups with abelian defect groups
2. Faculty of Science/Professor/Shigeo Koshitani
3. United Kingdom/University of Manchester/ Charles Eaton
4. 2011—
5. Research on blocks of finite groups, in particular on blocks with abelian defect groups
6. Grant-in Aid for Scientific Research(C) 23540007, JSPS 2011-2014
   Grant-in Aid for Scientific Research(C) 15K04776, JSPS 2015—2017
   University of Manchester, UK
   Canada Banff International Research Station
   Oberwolfach Mathematical Institute in Germany,
7. In preparation
8. Other important items to be stated

- Joint work with C. Eaton, during 17—18 March 2011, in Banff International Research Station
<table>
<thead>
<tr>
<th>Country</th>
<th>Collaboration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>Joint work with C. Eaton, during 10—14 February 2012, in Manchester University, UK</td>
</tr>
<tr>
<td></td>
<td>Joint work with C. Eaton, during 2—6 September 2013, in Manchester University UK</td>
</tr>
<tr>
<td></td>
<td>Joint work with C. Eaton, during 17—21 March 2014, Banff International Research Station Canada</td>
</tr>
<tr>
<td></td>
<td>Joint work with C. Eaton, during 5—11 April 2015, Oberwolfach Mathematics Institute Germany</td>
</tr>
</tbody>
</table>

1. **Reduction theory for McKay’s conjecture and Alperin’s conjecture**
2. Faculty of Science/Professor/Shigeo Koshitani
3. Germany/Kaiserslautern Technical University/Britta Spaeth
4. 2012—
5. Research on reduction theorems in order to apply them to McKay’s conjecture and Alperin’s conjecture in representation theory of finite groups
6. **Grant-in-Aid for Scientific Research (C) 23540007, JSPS 2011—2014**
   **Grant-in-Aid for Scientific Research(C) 15K04776, JSPS 2015—2017**
   Banff International Research Station Canada
   DFG Scientific Priority Program SPP 1388
   Technical University of Kaiserslautern
   Oberwolfach Mathematical Institute in Germany,
7. **Main result**
   (1) S. Koshitani, B. Spaeth, Clifford theory of characters in induced blocks, S. Koshitani and B. Spaeth, Proceedings of the American Mathematical Society 143 (2015), 3687—3702
   (2) S. Koshitani, B. Spaeth, The inductive Alperin-Mckay condition for 2-blocks with cyclic effect groups, Archiv der Mathematik 106 (2016), 107—116,
8. **Other important items to be stated**
   - Joint work with B. Spaeth, during 17—18 March 2011, Canada Banff International Research Station
   - Joint work with B. Speth, during 1—18 October and 20—21 December 2012, Technical University of Kaiserslautern
   - Joint work with B. Speth, during 9—11 December 2013, Technical University of Kaiserslautern
   - Giving a talk on the joint work 7.above, during 17—22 March 2014, in the Banff International Research Station on Canada
   - Joint work with B. Spaeth, during 27 September—5 October 2014, Technical University of Kaiserslautern
   - Joint work with B. Spaeth, during 5—11 April 2015, Oberwolfach Mathematical Institute in Germany
   - Joint work with B. Spaeth, during 17—23 May 2015, Technical University of Kaiserslautern

1. **Research on Endo-trivial modules of finite group algebras**
2. Faculty of Science/ Professor/ Shigeo Koshitani
3. Technical University of Kaiserslautern/ Germany/ Caroline Lassueur
4. 2013—
5. Structure of the abelian groups of endo-trivial modules in finite group algebras
6. Grant-in-Aid for Scientific Research (C) 23540007, JSPS 2011—2014
   Grant-in Aid for Scientific Research(C) 15K04776, JSPS 2015—2017
   Banff International Research Station Canada
   DFG Scientific Priority Program SPP 1388
   Technical University of Kaiserslautern
   Oberwolfach Mathematical Institute in Germany,
7. Main result
   (1) S. Koshitani, C. Lassueur Endo-trivial modules for finite groups with Klein-four Sylow 2-subgroups,
       Manuscripta Mathematik 148 (2015), 265—282
   (2) S. Koshitani, C. Lassueur, Endo-trivial modules for finite groups with dihedral Sylow 2-subgroups, In
       press in Journal of Group Theory
8. Other important items to be stated
   ➢ Joint work with C. Lassueur, during 2—15 March 2014, in Chiba Univeristy, and Kyoto University
   ➢ Joint work with C. Lassueur, during 17—22 March 2014, in Banff Institute of Research Station Canada
   ➢ Joint work with C. Lassueur, during 27 September—5 October 2014, in Technical University of
     Kaiserslautern
   ➢ Joint work with C. Lassueur, during 6—16 September 2015, in Technical University of Kaiserslautern

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.
7. Main result
   ➢ 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


8. Other important items to be stated

<table>
<thead>
<tr>
<th>Year</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007.6</td>
<td>Agreement concluded between Tienshan Glaciological Station and Chiba University.</td>
</tr>
<tr>
<td>2007.6.22-27</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2007.7.29-8.6</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2010.8.19-25</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2011.2.28-3.2</td>
<td>Seminar in the institute (CRRERI) in Lanzhou, China.</td>
</tr>
<tr>
<td>2011.6.28-6.30</td>
<td>Seminar in the institute (CRRERI) in Lanzhou, China.</td>
</tr>
<tr>
<td>2011.8.2-8.7</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2011.8.2-8.7</td>
<td>International Symposium of 50th anniversary of Tienshan Glaciological Station in Urumqi, China.</td>
</tr>
<tr>
<td>2012.8.23-8.30</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2013.1</td>
<td>Agreement re-concluded between Tienshan Glaciological Station and Chiba University.</td>
</tr>
<tr>
<td>2013.2.28-3.2</td>
<td>Seminar in the institute (CRRERI) in Lanzhou, China.</td>
</tr>
<tr>
<td>2013.7.5-9.1</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2014.1.10-3.30</td>
<td>A research scientist in CREERI visited Chiba University.</td>
</tr>
<tr>
<td>2014.2.23-3.1</td>
<td>Seminar in the institute (CRRERI) in Lanzhou, China.</td>
</tr>
<tr>
<td>2014.3.28-4.16</td>
<td>Six research scientists in CREERI visited Chiba University</td>
</tr>
<tr>
<td>2014.5.20-25</td>
<td>Visiting to the institute (CRRERI) in Lanzhou, China.</td>
</tr>
<tr>
<td>2014.8.21-9.3</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
<tr>
<td>2015.8.21-9.2</td>
<td>Collaborative investigation on Urumqi Glacier No.1, China</td>
</tr>
</tbody>
</table>

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. Partner abroad  
   - UK / Aberystwyth University, Centre of Glaciology / Dr. Tris Irvine-Fynn  
   - UK / Aberystwyth University, Biology / Dr. Arwyn Edwards  
   - UK / Bristol University / Dr. Alexandre M. Anesio
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


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 Geophysical 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
7. Main result


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

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


Letters. DOI: 10.1002/2015GL063217


8. Other important items to be stated

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
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<tbody>
<tr>
<td>2007.8</td>
<td>Ice core drilling on Grigoriev ice cap, Kyrgyzstan, Tien Shan Mountains.</td>
</tr>
<tr>
<td>2008.12.12-12.16</td>
<td>Project meeting in San Francisco, USA</td>
</tr>
<tr>
<td>2009.8.4-9.19</td>
<td>Ice core drilling on Fedchenko Glacier, Tajikistan Pamir.</td>
</tr>
<tr>
<td>2011.6.5-6.10</td>
<td>Project meeting at UCSB, Santa Barbara, USA.</td>
</tr>
<tr>
<td>2012.5.27-6.1</td>
<td>Project meeting at Dushanbe, Tajikistan.</td>
</tr>
</tbody>
</table>

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.
7. none
8. Other important items to be stated

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013.3.6-8</td>
<td>Meeting at workshop in Akita prefecture, Japan to organize the project.</td>
</tr>
<tr>
<td>2013.8.25-29</td>
<td>Experiment of snow-grain micro-structure observation at Paul Scherrer Institute (PSI), Switzerland.</td>
</tr>
</tbody>
</table>

35
1. Electromagnetic approach to monitor crustal activities such as earthquake and landslide and their modeling
2. Graduate School of Science / Professor / Katsumi Hattori
3. China / Peking University / Professor / Qinghua Huang
   China / University of Science and Technology of China / Researcher / Hengxin Ren
   China / China Earthquake Administration / Director / Xuhui Shen
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 result
   - 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
   - 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
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 visited 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 technical and 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 technical and 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, Vienna.

May 2009: Technical and Scientific discussion with Prof. Huang 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 doctoral student. December

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

February–March 2010: Hattori visited Prof. Huang to discuss scientific matters and make a seminar.

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

May 2010: Prof. Huang came to Hattori 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 short 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 visited Peking University and have a technical and scientific program.

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

January, 2013: Prof. Huang visited 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 a scientific 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 visited 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
On the study of electromagnetic phenomena associated crustal activity

Graduate School of Science / Professor / Katsumi Hattori

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. Evginii Gordeev
Russia / Space Research Institute, Russian Academy of Sciences / Dr. Sergey Pulinets
Ukraine / Lviv Center of Space Research / Dr. Varely Korepanov

1998 ~

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.

RIKEN (~2002)

Main result


- 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).


8. Other important items to be stated

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


Set up the electromagnetic sensors at Paratunka of Kamchatka Peninsula.

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.

Visit to Kamchatka station for maintenance of observation system.

Visit to Kamchatka station for maintenance of observation system.

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

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

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

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

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

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

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

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.

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

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

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

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 National Central University / Professor / Jann-Yenq Liu
   Taiwan National Central University / Professor / Lung-Chi J Tsai
   Taiwan National Chung Cheng University / Professor / Chiou-Fen Shieh
   Dahan Institute Technology / Professor / Hua-Hi Sheu
   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.
6. RIKEN (2001),
   Interchange Association, Japan (2004)
   NiCT R&D promotion scheme funding international joint research(2007-2010)
   Joint Research Program in Center for Environmental Remote Sensing, Chiba University (2015)
7. Main result


- Katsumi Hattori, ULF geomagnetic changes associated with large earthquakes, Terrestrial, Atmospheric and Oceanic Sciences, Vol.15, No.3, 329-360, 2004


8. 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)
<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion with Prof. Liu at National Central University</td>
<td>December 2005</td>
</tr>
<tr>
<td>Mr. Chieh-Hung Chen stayed at Chiba University for collaboration</td>
<td>March-April 2005</td>
</tr>
<tr>
<td>Discussion with Prof. Liu at National Central University</td>
<td>June, 2005</td>
</tr>
<tr>
<td>Discussion with Prof. Liu at National Central University</td>
<td>November, 2005</td>
</tr>
<tr>
<td>Install meteorological equipment at Dong-Hua University</td>
<td>December, 2005</td>
</tr>
<tr>
<td>International workshop on Earthquake Precursor was organized at National Central University, Taiwan</td>
<td>March, 2006</td>
</tr>
<tr>
<td>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.</td>
<td>May, 2006</td>
</tr>
<tr>
<td>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</td>
<td>August-September, 2006</td>
</tr>
<tr>
<td>System maintenance of stations at Taiwan (Chia-Yi, Hualien, NCU)</td>
<td>May, 2007</td>
</tr>
<tr>
<td>System maintenance of stations at Hualien.</td>
<td>July 2007</td>
</tr>
<tr>
<td>Prof. Liu came to Chiba University to give a talk and make technical and scientific discussions.</td>
<td>July, 2007</td>
</tr>
<tr>
<td>System maintenance of stations at Hualien.</td>
<td>August-September, 2007</td>
</tr>
<tr>
<td>Technical and scientific discussion at Sagamihara, Japan with Profs. Liu and Tsai.</td>
<td>March, 2008</td>
</tr>
<tr>
<td>Technical and scientific discussion at NCU, Chung-li, Taiwan with Prof. Liu.</td>
<td>June, 2008</td>
</tr>
<tr>
<td>Preliminarily observation of beacon radio wave form FORMOSAT-3 satellite at Aso with Prof. Tsai's group</td>
<td>July, 2008</td>
</tr>
<tr>
<td>Technical and scientific discussion at San Francisco, USA with Profs. Liu and Tsai.</td>
<td>August, 2008</td>
</tr>
<tr>
<td>Mr. Simpei Kon (B4 student at Chiba Univ.) visited NCU, Taiwan to participate Ionosphere School organize by Prof. Tsai</td>
<td>October, 2008</td>
</tr>
<tr>
<td>Prof. Tsai’s group installed the antenna system to observe beacon radio wave form FORMOSAT-3 satellite at Aso</td>
<td>October-November, 2008</td>
</tr>
<tr>
<td>Preliminarily field survey for beacon radio wave observation form FORMOSAT-3 satellite at Okinawa with Prof. Tsai</td>
<td>January 2009</td>
</tr>
<tr>
<td>Fieldwork at Taiwan (maintenance of stations inTaiwan)</td>
<td>February, 2009</td>
</tr>
<tr>
<td>International workshop (VESTO) at Chiba. Technical and scientific discussion with Profs. Liu</td>
<td>March, 2009</td>
</tr>
<tr>
<td>Preliminarily observation of beacon radio wave observation form FORMOSAT-3 satellite at Sesoko and Cape Heto, Okinawa with Prof. Tsai</td>
<td>May 2009</td>
</tr>
</tbody>
</table>
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 doctoral student Hirooka visited Prof. Liu’s Lab. under the shirt visit program for global human resource development program. (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, Austria

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 (Chapman 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 scientific discussion with Hattori.

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
4. Italy / Bascilicata University / Researcher / Nicola Genzano
5. 2003～
6. the statistical analysis of geomagnetic and geoelectric signals recorded in seismic areas
7. 2003-2004 JSPS Bilateral collaboration project between Japan and Italy (PI: Prof. M. Hayakawa (The University of Electro-Communications))
8. 2006 Research Foundation for the Electrotechnology of Chubu (REFEC), Chubu Electric Power Co. Inc.
9. 2007 JSPS project on Bilateral Seminar between Japan and Italy (CNR).
10. 2007 千葉大学国際会議助成金
11. 2007-2010 NiCT R&D promotion scheme funding international joint research.
12. Main result
   ➢ 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
13. Other important items to be stated
   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
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-electromagnetics. 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-electromagnetics. 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 Vienna, 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.

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 and scientific discussion with Prof. Tramutoli at AGU meeting.

1. Ground-based Monitoring of Seismo-Electromagnetic Signals in Indonesia
2. Graduate School of Science / Professor / Katsumi Hattori
3. Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Djedi Widarto
   Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Eddy Gaffar
   Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Adrin Tohari
   National Institute of Aeronautics and Space-LAPAN / Senior Researcher / Dr. Sarmoko Saroso
   Metrological Agency, Indonesia(BMKG / Director / Dr. Prih Harijadi)
   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


Guangjing Xu, Peng Han, Qinghua Huang, **Kataumi 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


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


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 there 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
  Visit to see the candidate of landslide station and VLF subionospheric 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
March, 2008: International Workshop (IWSLEC2008) at Sagamihara, Japan. Drs. Widarto and Hery Hariyono (LIPI) and Sarmoko (LAPAN), and Mastrjono (BMKG) joined it and made technical and scientific discussions.

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 wit BMKG and LIPI.

May, 2008: EMC test at Kotabumi station.


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 supported by INPEX foundation.

October-November, 2008: Hattori visited bandung to participate in HAGI meeting. Maintenance 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: 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: Participate 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. Bambang (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.

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.

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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. and 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)
Co-organize 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 Francisco, US

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

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

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

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


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. Tsutsumi stayed the Ouzounov Lab. from Oct. 30 to Dec. 7 to analyze satellite data.

December, 2013: Prof. Hattori visited Chapman 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 (Chapman 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 Dr. 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 and scientific discussion with Dr. 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.

1. Study on Mathematical and Informatical Structure for LDPC codes
2. Graduate School of Science / Associate Professor / Manabu HAGIWARA
3. USA / University of Hawaii / James B. Nation
4. 2013 ~
5. Study on modern coding theory from points of view of mathematics and informatics.
   Sep.25-Oct.2, 2015, Organize an international workshop at University of Hawaii.

1. Kanto Asperity Project
2. Graduate School of Science/ Professor / Toshinori Sato,
3. Casey J. Moore, Univ. California, Santa Cruz, USA
   Daniel Curewitz, Syracuse U., USA
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.
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,

8. The 3rd International Workshop on the Kanto Asperity Project was held at Chiba University in February, 2008.

1. Geometric R-matrix, networks and cluster algebras
2. Faculty of Science/Associate professor/Rei Inoue
3. Minnesota University/USA/Pavlo Pylyavskyy
   Michigan University/USA/Thomas Lam
4. 2013—
5. The R-matrix is a notion related to a generalization of the symmetric group. We consider what called
   'geometric R-matrix' from the viewpoint of combinatorics as networks and cluster algebras, and study
   integrable structure or quantization.
6. Grant-in-Aid for Young Scientific Research (B) 22740111, JSPS 2010—2013
   Grant-in-Aid for Scientific Research (C) 26400037, JSPS 2014—2017
7. Rei Inoue, Thomas Lam, Pavlo Pylyavskyy, Toric networks, geometric R-matrices and generalized discrete
   Toda lattices
8. Other important items to be stated
   ➢ Joint work with Thomas Lam and Pavlo Pylyavskyy, during 16—23 February 2013, in Minnesota
     University
   ➢ Joint work with Thomas Lam, during 1—4 August 2013, in Colorado State University
   ➢ Joint work with Thomas Lam and Pavlo Pylyavskyy, during 7—17 January 2016, in Minnesota
     University

1. Understanding the mechanism of giant piezoelectricity on PbZrTiO3
2. Department of Physics, Graduate School of Science/Assistant Professor/Hiroko Yokota
3. U.K./University of Oxford/Prof. Mike Glaser, U. K./Warwick University/Prof. Pam Thomas, China/
   Xi’an Jiaotong University/Dr. Nan Zhang
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


“The Missing phase boundary in the phase diagram of PbZr1-xTixO3”

(2) 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”

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

“Neutron powder diffraction refinement of PbZr1-xTixO3”

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

“Crystal Structure Determinations of Zr Rich-PbZr1-xTixO3”


“Single Crystal Study of Competing Rhombohedral and Monoclinic Order in Lead Zirconate Titanate”

(6) 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”

8. Other important items to be stated

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

(2) 20th Annual Meeting of MRS-J  Best paper award  (2010)

(3) 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/Assistant 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
Experimental approach towards domain boundary engineering

1. Department of Physics, Graduate School of Science/ Assistant Professor/Hiroko Yokota
2. France/Ecole Centrale Paris/ Dr. Jean-Michel Kiat, France/Paris Sud University/ Dr. Raphael Haumont
3. 2013～
4. 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 bulk 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, 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”

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/ Assistant 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 phenomena 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”
(2) G. Geneste, J-M. Kiat, H.Yokota, Y. Uesu, F. Porcher
       “Polar clusters in impurity-doped quantum paraelectric K1-xLixBaO3”
(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”

(4) Y. Uesu, H. Yokota, J. M. Kiat, and C. Malibert
“Is K(1-x)LixTaO3 a Real relaxor?”

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)

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
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.


7. Main result


1. Analysis of the expression and function of spermatogenic specific glycolytic enzyme.
Analysis of human maternal-fetal placental transfer of chemicals

2. Graduate School of Medicine / Professor / Chisato Mori

3. USA / U.S. National Institute of Environmental Health Science, National Institutes of Health (NIH)
USA / U.S. Division of Personalized Nutrition & Medicine, NCTR/FDA

4. 2007～

5. We have performed analysis for spermatogenesis-related genes. We are carrying out toxicogenomic analysis of endocrine disruptors on male reproductive organs. The purpose of this project is to accumulate the toxicological data internationally, and to develop a new risk evaluation method for chemicals. We have also investigated about the effects of human fetal exposure to chemicals and the mechanism of maternal-fetal placental transfer of chemicals.

6. Trust Account for Department of Bioenvironmental Medicine of Chiba University

7. Main result

   (1) Mori C, Nakamura N, Todaka E, Fujisaki T, Matsuno Y, Nakaoka H and Hanazato M  Correlation


8. For item 3; USA / U.S. National Institute of Environmental Health Science, National Institutes of Health (NIH) 「Completion」

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
7. Main result
8. None

1. Development of new electrodiagnostic criteria of Guillain-Barré syndrome
2. Development of new electrodiagnostic criteria of Guillain-Barre syndrome

3. The Health and Labour Sciences Research Grant on Intractable Diseases (Neuroimmunological Diseases) from the Ministry of Health, Labour and Welfare of Japan

4. Main result
<table>
<thead>
<tr>
<th></th>
<th>Role of Notch signaling in mouse cerebral cortical development</th>
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<tbody>
<tr>
<td>1</td>
<td>Graduate School of Medicine / Associate Professor / Motoo Kitagawa</td>
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<td>2</td>
<td>USA / Memorial Sloan-Kettering Cancer Center / Song-Hai Shi, PhD</td>
</tr>
<tr>
<td>3</td>
<td>2013~</td>
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<tr>
<td>4</td>
<td>Importance of Notch signaling in nervous system has been well established. In this study, we focus on analyses of its roles in the cerebral cortical development using genetically modified mice.</td>
</tr>
<tr>
<td>5</td>
<td>President discretion expense of Chiba University</td>
</tr>
<tr>
<td>6</td>
<td>None</td>
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<td>None</td>
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<tr>
<th></th>
<th>Genetic Analysis of Cystinuria Patients in Japan and Korea</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Department of Urology, Graduate School of Medicine / Assistant Professor / Shinichi Sakamoto</td>
</tr>
<tr>
<td>2</td>
<td>Korea / Department of Pediatrics, Seoul National University Children's Hospital / Prof. Hae Il Cheong</td>
</tr>
<tr>
<td>3</td>
<td>2012</td>
</tr>
<tr>
<td>4</td>
<td>Study the similarity or difference in genetic mutations between Japanese and Korean Cystinuria Patients.</td>
</tr>
<tr>
<td>5</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>We have identified that Korean Cystinuria patients also possessed mutation(P482L) that we have previously thought specific for Japanese patients.</td>
</tr>
<tr>
<td>7</td>
<td>None</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Role of chemokines in the T cell response to ocular toxoplasmosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Department of Infection and Host Defense, Graduate School of Medicine / Associate Professor / Kazumi Norose</td>
</tr>
<tr>
<td>2</td>
<td>Department of Pathobiology, University of Pennsylvania / Professor / Christopher A. Hunter</td>
</tr>
<tr>
<td>3</td>
<td>2008~</td>
</tr>
<tr>
<td>4</td>
<td>Analysis of the roles of chemokines in the T cell response to ocular toxoplasmosis</td>
</tr>
<tr>
<td>5</td>
<td>Talent promotion for establishing the new biological frontier to the infectious phenomenon, Grants-in-Aid for Scientific Research 20592071, from the Japanese Science Promotion Society.</td>
</tr>
<tr>
<td>6</td>
<td>Main result</td>
</tr>
<tr>
<td>7</td>
<td>End</td>
</tr>
</tbody>
</table>
| 8 | Establishment of diagnostic methods and treatments for parasitic diseases,
2. Analysis of pathogenesis of parasitic diseases

3. Department of Infection and Host Defense, Graduate School of Medicine / Associate Professor / Kazumi Norose
   Department of Parasitology, Minia University, Egypt / Assistant Professor / Ekhlas Hamed Abdel-Hafeez and Usama S. Belal

4. 2011～

5. Establishment of more sensitive and lower cost diagnostic methods and therapy for parasitic diseases
   Analysis of pathogenesis of parasitic diseases


7. Main result

8. None

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

7. Main result
   (1) Takanami-Ohnishi Y, Amano S, Kimura S, Asada S, Utani A, Maruyama M, Osada H, Tsunoda H,


(7) Kasuya Y: p38 inhibitor. Nippon Rinsho 2014, 72 (Special Issue 3), 525-529


(10) Yoshioka K, Namiki K, Sudo T, Kasuya Y: p38alpha controls self-renewal and fate decision of neurosphere – forming cells in adult hippocampus. FEBS Open Bio 2015 in press. DOI: 10.1016/j.fob.2015.05.001

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)


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


5. Adenovirus or Sendai virus 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

1. Therapeutic application of c-myc gene transcriptional repressor via its apoptotic function for cancer and malignant mesothelioma treatment
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
5. Elevated expression of c-myc has been detected in a broad range of human cancers, indicating a key role for this oncogene in tumor development. Recently, an interaction between FIR (FBP Interacting Repressor) and TFIIH/p89/XPB helicase was found to repress c-myc transcription and so might be important for suppressing tumor formation. In this study, we showed that enforced expression of FIR induced apoptosis. Deletion of FIR's amino terminal repression domain rescued the cells from apoptosis, as did co-expression of c-Myc with FIR; thus repression of myc mediates FIR-driven apoptosis. Surprisingly, a splicing variant of FIR unable to repress c-myc nor to drive apoptosis was frequently discovered in human primary colorectal cancers, but not in the adjacent normal tissues. Coexpression of this splicing variant with repressor-competent FIR, not only abrogated c-Myc suppression but inhibited apoptosis. These results strongly suggest the expression of this splicing variant promotes tumor development by disabling FIR-repression to sustain high levels of c-Myc and oppose apoptosis in colorectal cancer.
6. 1) Supported by Grants from Ministry of Education and Science of Japan
    2) Supported by Grants from JST (Japan Science and Technology Agency)
7. References


293x37
Apr 11.


8. So far, our group made presentation at twelve meetings.

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 the induction of asthma

72
1. Crucial role of CD8α 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 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)


8. None
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


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. Regulation of Th2 cell function by TSLP
2. Graduate School of Medicine / Professor / Toshinori Nakayama
3. United States of America / University of Washington / Steven Ziegler
4. 2010～
5. We investigate a role for TSLP in the modulation of Th2 cell function by TSLP, and found that TSLP enhance Th2 cell function directly.
7. Main result


(2) Masayuki Kitajima Hai-Chon Lee, Toshinori Nakayama and Steven F.Ziegler. TSLP enhances the function of helper type2 cells, EJI41:1862-1870 (2011)
8. None
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)

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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

---

1. Role of different STATs in CD4 T cells
2. Graduate School of Medicine / Professor / Toshinori Nakayama
   Graduate School of Medicine / Adjunct 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

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<tr>
<td>5.</td>
<td>None</td>
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<tr>
<td>6.</td>
<td>KANAE FOUNDATION FOR THE PROMOTION OF MEDICAL SCIENCE</td>
</tr>
<tr>
<td>8.</td>
<td>None</td>
</tr>
<tr>
<td>1.</td>
<td>MicroRNA expression in HBV infection</td>
</tr>
<tr>
<td>2.</td>
<td>Department of Medicine, Graduate School of Medicine / Associate Prof. / Tatsuo Kanda</td>
</tr>
<tr>
<td>3.</td>
<td>Runu Chakravarty, PhD, Professor, ICMR Virus Unit, Kolkata, ID &amp; BG Hospital Campus, Kolkata, India</td>
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<td>2011~</td>
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<td>5.</td>
<td>None</td>
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<td>6.</td>
<td>None</td>
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<td>8.</td>
<td>None</td>
</tr>
<tr>
<td>1.</td>
<td>Hepatitis A virus infection and severe liver diseases</td>
</tr>
<tr>
<td>2.</td>
<td>Chiba University, Graduate School of Medicine/Associate Professor/Tatsuo Kanda, M.D.</td>
</tr>
<tr>
<td>3.</td>
<td>Korea/ Seoul National University Bundang Hospital/Prof. Sook-Hyang Jeong</td>
</tr>
<tr>
<td>4.</td>
<td>2008~</td>
</tr>
<tr>
<td>5.</td>
<td>Hepatitis A virus infection and severe liver diseases</td>
</tr>
<tr>
<td>6.</td>
<td>Japan Agency for Medical Research and Development (AMED)</td>
</tr>
<tr>
<td>7.</td>
<td>Main result</td>
</tr>
</tbody>
</table>

1. Hepatitis B virus infection and microRNAs |
2. Chiba University, Graduate School of Medicine/Associate Professor/Tatsuo Kanda, M.D.
3. India/ Vaccine and Infectious Disease Research Center and Translational Health Science and Technology Institute/Arup Banerjee, PhD
4. 2008-
5. The roles of microRNAs in hepatitis B virus infection
6. KANAE FOUNDATION FOR THE PROMOTION OF MEDICAL SCIENCE
7. Main result


1. Development of bronchofiberscopy equipped with endo-bronchial ultrasound (EBUS) and individualized treatments for patients with lung cancer using a needle aspiration sample by EBUS
2. Department of General Thoracic Surgery / Professor / Ichiro Yoshino
3. Canada / Toronto General Hospital, University of Toronto / Kazuhiro Yasufuku
4. 2010
5. EBUS is a novel diagnostic tool for mediastinal and hilar diseases even in outpatient clinic. In this study, the quality of ultrasound image is upgraded, and it is investigated whether the new device improve the diagnostic accuracy of metastatic node in lung cancer patients. Furthermore, micro samples obtained by the biopsy under the new EBUS are subjected to biomarker analysis in aim for establishment of individualized strategy of lung cancer.
6. Self-funding
7. Main result


(4) Nakajima T, Yasufuku K, Suzuki M, Hiroshima K, Nakatani Y, Fujisawa T, Yoshino I. Thymidylate synthase, dihydropyrimidine dehydrogenase, thymidone phosphorlyase, orotate phosphoribosyltransferase mRNA expression in lung cancer metastatic lymph node samples obtained


8. Other important items to be stated
   (1) Young Investigator Award, CHEST 2010 Vancouver (American College of Chest Physician), 2010
   (2) 2012 American Thoracic Society Travel Award Grant (Granted by Clinical Problems Committee), 2012
   (3) 2nd Canadian Thoracic Society (CTS) poster competition award, 2012
   (4) 日本呼吸器内視鏡学会池田賞（日本呼吸器内視鏡学会）, 2012
   (5) Outstanding Abstract Award by the interventional chest/diagnostic procedure network, CHEST 2012 Atlanta (American College of Chest Physician), 2012
   (6) Young Investigator Award. AATS 2014, Toronto (American Association for Thoracic Surgery).

1. Overcome of rejection reaction in transplanted lung by immunomodulation
2. Department of General Thoracic Surgery / Professor / Ichiro Yoshino
3. Suizerland / Zurich University / Professor / Walter Wedar
4. 2015
5. To control rejection reaction against transplanted lung, co-stimulatory signal via CD26 was blocked by using monocle antibody in murine fully allogeneic combination model, and promising results were obtained. Further investigation is planned for large animal models, and aimed for clinical trials.
6. Self-funding
7. Main result
8. Other important items to be stated

1. The technical assistance of national tuberculosis prevalence survey in Mongolia.
2. Department of Respirology, Graduate School of Medicine, Dr. Yasunori Ichimura.
3. World Health Organization (WHO) headquarter (HQ): (Geneva, Switzerland), WHO Mongolia country office: (Ulaanbaatar, Mongolia), Mongolia Ministry of Health (MOH): (Ulaanbaatar, Mongolia), the National Centre for Communicable Diseases (NCCD): (Ulaanbaatar, Mongolia)
4. 2012~
5. Summary of this project: Main targets of this project are as follows:
   (1) To provide technical support for preparation and capacity building of TB prevalence survey
   (2) To provide technical support in conducting survey for TB prevalence survey
   (3) To support technical working group in reviewing, revising and incorporating any comments provided by the Steering Committee to survey procedures.
   The main impact targets for global TB control, set within the MDGs and by the Stop TB Partnership, are to ensure that the TB incidence rate is falling by 2015, and that TB prevalence (the number of cases
of TB in the population at a given point in time) and death rates are halved by 2015 compared with their level in 1990. Achieving the impact targets set for 2015 is now the focus of national and international efforts to control TB.

TB is remaining one of the pressing issues of public health problems in Mongolia. Mongolia is one of the 7 countries with high TB burden among 37 countries of the Western Pacific Region and in our country, TB is considered as 6th leading cause for population mortality and the disease is number one cause of mortality due to communicable diseases.

The prevalence of TB is not declining considerably although the country has been achieving better TB detection, improvement in treatment outcome and shortness of treatment duration as a result of introduction of DOTS since 1994.

In 2011, the Government of Mongolia has approved a “National program for combating Communicable diseases” and the action plan for implementation of this program includes for conducting “Survey for determining TB prevalence among the population” as to find ways for improving the implementation of the program.

WHO has supported Mongolian national tuberculosis prevalence survey through dispatch of technical consultants. According to the operational feasibility including huge country area and severe winter season, this survey schedule is divided into two phases as following: Phase 1, the survey in the major cities such as Ulaanbaatar, the capital city of Mongolia; Phase 2, the survey in the rural areas. For the targets mentioned above, I have provided technical assistance in establishment of protocol, SOPs, survey planning as WHO consultant. I joined the pilot survey in October 2013, and supported the beginning of actual survey in cluster 1, 2 in April 2014, and visited there for monitoring and evaluation in the midway of Phase 1 survey. After the completion of the survey operation in December 2014, I and Dr. Farid, the Indonesian statistician, reviewed and analyzed the survey results and reported it to the vice minister of health and sports in Mongolia. Phase 2 survey will be started in the beginning of June 2015, therefore I will continue to advise on and support the survey.

6. The Grant for Dispatch of Student Abroad of Chiba University. 2013
   WHO-HQ Global TB Programme (GTB), The Tuberculosis Technical Assistance Mechanism (TBTEAM)

7. Paper : co-author
   PROTOCOL OF THE SURVEY TO DETERMINE TB PREVALENCE AMONG POPULATION OF MONGOLIA (Ulaanbaatar, Mongolia, 2014)
   TB PREVALENCE SURVEY AMONG POPULATION OF MONGOLIA: “STANDARD OPERATION GUIDELINE” (Ulaanbaatar, Mongolia, 2014)

8. I conducted CXR training for CXR reader/technicians at NCCD in April 2014

1. The technical support for the establishment of chest X-ray (CXR) guideline for the tuberculosis diagnosis in Mongolia.

2. Department of Respirology, Graduate School of Medicine, Dr. Yasunori Ichimura.
Summary of this project: Main targets of this project are as follows:

1. To provide technical support for the establishment of CXR guideline for the tuberculosis diagnosis in Mongolia
2. To provide technical support for the analysis of CXR images of smear positive-/bacteriological positive-cases in Phase 1 of Mongolia nationwide tuberculosis prevalence survey

The Government of Mongolia has conducted the nationwide tuberculosis prevalence survey since 2012 under the strong support from WHO-HQ, WHO-CO and the Global Fund to Fight AIDS, Tuberculosis and Malaria. According to the operational feasibility including huge country area and severe winter season, this survey schedule is divided into two phases as following: Phase 1, the survey in the major cities such as Ulaanbaatar, the capital city of Mongolia; Phase 2, the survey in the rural areas. The screening method was the combination of symptom and CXR, following the WHO task force guideline. They already completed Phase 1 survey by the beginning of December 2014, and plan to start Phase 2 survey in June 2015. Phase 1 survey detected 142 bacteriological cases in total (44 smear positive cases, 98 smear-negative culture-positive cases). The Chest Radiology Unit was established under the Mongolian Radiological Society in 2015, and they focus on the establishment of CXR guideline based on the CXR images obtained in Phase 1 survey. I will continue to support the analysis of the CXR images of detected tuberculosis cases and the establishment of CXR guideline for the tuberculosis diagnosis in Mongolia in collaboration with NCCD and MOH in Mongolia.

Paper: co-author

PROTOCOL OF THE SURVEY TO DETERMINE TB PREVALENCE AMONG POPULATION OF MONGOLIA (Ulaanbaatar, Mongolia, 2014)

TB PREVALENCE SURVEY AMONG POPULATION OF MONGOLIA: “STANDARD OPERATION GUIDELINE” (Ulaanbaatar, Mongolia, 2014)

CXR training for CXR reader/technicians at NCCD in April 2014

Review meeting for CXR images of tuberculosis detected cases in Phase 1 of Mongolia nationwide tuberculosis prevalence survey
Summary of this project: Main targets of this project are as follows:

1. To provide technical support for the establishment of CXR guideline for the tuberculosis diagnosis in Mongolia.

2. To provide technical support for the analysis of CXR images of smear positive/bacteriological positive cases in Phase 1 of Mongolia nationwide tuberculosis prevalence survey.

In Mongolia, tuberculosis is still a social problem, and tuberculosis control is one of the focused issues for the Ministry of Health and Sports of Mongolia. NCCD is the national infection control center under MOHS, has a plan to create the new national anti-Tuberculosis strategy for next five years from 2016 to 2020, for the new Sustainable Development Goals (SDGs). DOTS strategy has already been implemented since 1994, and Global Fund and WHO has assisted TB control in Mongolia with financial and technical support. Considering the current situation in Mongolia with the stable tuberculosis notification in these ten years, the current strategy has a limitation to control and eliminate tuberculosis from the community. Therefore, the introduction of new technologies is mostly encouraged for the new strategies. This project aims to learn the present state of high technology in Japan, which includes the establishment of tuberculosis surveillance system, and to utilize this knowledge for future strategies in Mongolia.

6. The Japan Science and Technology Agency / Japan-Asia Youth Exchange Program in Science” (SAKURA Exchange Program in Science)

7. Paper: co-author

   PROTOCOL OF THE SURVEY TO DETERMINE TB PREVALENCE AMONG POPULATION OF MONGOLIA (Ulaanbaatar, Mongolia, 2014)

   TB PREVALENCE SURVEY AMONG POPULATION OF MONGOLIA: “STANDARD OPERATION GUIDELINE” (Ulaanbaatar, Mongolia, 2014)

8. CXR training for CXR reader/technicians at NCCD in April 2014
   Review meeting for CXR images of tuberculosis detected cases in Phase 1 of Mongolia nationwide tuberculosis prevalence survey

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**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 / Hans Agren, Professor / Mikael Landen and Professor / Keiko Funa, 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


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 / Chengge Gao
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


8. None
3. China / Department of Psychiatry, The First Hospital, College of Medicine, Xi’an Jiaotong University / Professor / Chengge Gao, Shanghai Mental Health Center, Shanghai Jiaotong University / Professor / Min Zhao
4. 2011～
5. We study the evaluation of reliability and validity in Chinese psychiatric disorders using Cogstate Schizophrenia Battery.
6. Scholarship Donation etc.
7. Main result
8. None
We reported the papers on the pathophysiology and case reports of psychiatric disorders.

Main result


Biomarkers for elderly depression

Center for Forensic Mental Health / Professor / Kenji Hashimoto

USA / Nathan Kline Smith Institute, NY / Professor / Nunzio Pomara

2014~

We have been developing the novel biomarkers for elderly depression.

KAKENHI, Scholarship Donation etc


Mechanisms of ketamine’s antidepressant effects

Center for Forensic Mental Health / Professor / Kenji Hashimoto
### Role of soluble epoxide hydrolase in psychiatric disorders

**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


**8.** None

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### A study on risk assessment of the sex offender -Using the physiological tools-

**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
Graduate School of Pharmaceutical Sciences

1. Regulation of sulfur assimilation and secondary metabolisms in higher plants
2. Graduate School of Pharmaceutical Sciences / Professor / Kazuki Saito
3. Germany / Max Planck Institute / Rainer Hoefgen, Alisdair R. Fernie, Takayuki Tohge, Mutsumi Watanabe
4. 2009 ~
5. In this project, we are investigating the cellular and molecular regulation of sulfur transport, assimilation, and metabolism, and flavonoid biosynthesis in plants.
6. Grant-in-Aids for Scientific Research on Innovative Areas from the Ministry of Education, Science, Sport, Culture and Technology, Japan
8. None

1. Study on self-resistance of secondary metabolites
2. Graduate School of Pharmaceutical Sciences / Professor / Kazuki Saito
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 on Innovative Areas from the Ministry of Education, Science, Sport, Culture and Technology, Japan
8. None

<table>
<thead>
<tr>
<th>Study on Thai Medicinal plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki</td>
</tr>
<tr>
<td>Thailand / Faculty of Pharmaceutical Sciences, Chulalongkorn University / Associate Professor Suchada Sukrong</td>
</tr>
<tr>
<td>2007～</td>
</tr>
</tbody>
</table>
5. In this project, we are screening medicinal plants producing compounds exhibiting specific bioactivity.
6. Grant-in-Aids for Scientific Research (C) from the Ministry of Education, Science, Sport, Culture and Technology, Japan etc.
8. None

<table>
<thead>
<tr>
<th>Molecular evolution of lysine–derived alkaloid biosynthesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki</td>
</tr>
<tr>
<td>Thailand / Faculty of Pharmaceutical Sciences, Mahidol University / Somnuk Bunsupa</td>
</tr>
<tr>
<td>2015～</td>
</tr>
</tbody>
</table>
5. Molecular evolution of specialized metabolism is studied.
6. Grant-in-Aids for Scientific Research (C) from the Ministry of Education, Science, Sport, Culture and Technology, Japan etc.
7. None
8. None

<table>
<thead>
<tr>
<th>Metabolomics: Advancing the Scientific Promise to Better Understand Plant Specialized Metabolism for a Low-Carbon Society</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate School of Pharmaceutical Sciences / Associate professor / Mami Yamazaki</td>
</tr>
<tr>
<td>United States of America / The Samuel Roberts Noble Foundation / Professor / Lloyd Sumner, United States of America / North Texas University / Professor / Richard Dixon, United States of America / Iowa State</td>
</tr>
</tbody>
</table>

89
4. 2011～

5. Metabolomics is a revolutionary systems biology tool for understanding plant metabolism and elucidating gene function, however, its full scientific promise has not yet been realized due to multiple technical challenges. To address these issues, a synergistic international team of plant metabolomics was constructed and technical development will be enforced to understand carbon sequestration and allocation in relationship to energy and a low carbon society.


   Research Field: Metabolomics for a low carbon society

   Grant-in-Aids for Scientific Research on Innovative Areas from the Ministry of Education, Science, Sport, Culture and Technology, Japan

7. By integration of metabolomics and transcriptomics, genes and metabolites were annotated in several mutant Arabidopsis plants expressing heterogenous regulatory genes.


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1. Examination of the roles of prostanoids and their receptors on cancer cells

2. Graduate School of Pharmaceutical Sciences / associate professor / Hiromichi Fujino

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


8. The Pharmaceutical Society of Japan Award for Divisional Scientific Promotions (4B), Kobe, Japan 2015.

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. 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

6. The 91st Japanese Society for Microbiology General Meeting Kanto Branch
7. Main result


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


(3) Kitagawa R., Takaya A., Ohy a M., Mizuno e Y., Takade A., Yoshida S., Isogai E., Yamamoto T. Biogenesis of Salmonella enterica serovar Typhimurium membrane vesicles provoked by induction of
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

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1. Chemical studies on the alkaloidal constituents in the Pandanus plants (Pandanaceae) native to the tropical area.
2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama
3. Philippines / Santo Tomas University / Professor / Maribel G. Nonato
4. 2000～
5. Isolation, structure elucidation, synthetic study, and pharmacological investigation of the alkaloidal constituents in the Pandanus plants (Pandanaceae) native to the tropical area. Isolation of secondary metabolites of endophytic fungus isolated from Pandanus species.
6. None
7. Main result
   (1) Isolation and Structure Elucidation of Two New Alkaloids, Pandamarilactonine-C and -D, from


8. None
6. JASSO Follow-up Research Fellowship

7. Main result


8. None

1. Chemical studies on indole alkaloids from Thai Rubiaceae plants.

2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama

3. Thailand / Faculty of Pharmacy, Chulalongkorn University / Professor / Sumphan Wongseripipatana

4. 2014~

5. Isolation, structure elucidation and biological evaluation of indole alkaloids from *Kopsia* plant (Rubiaceae) growing in Thailand.

6. Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science

7. Main result


8. None

1. Studies on the cellular toxicology of mitragynine, alkaloid of *Mitragyna speciosa*.

2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama

3. U. K. / Imperial College London / Professor / Nigel J. Gooderham

4. 2015

5. Cellular toxicological studies of mitragynine, the dominant alkaloid of the narcotic-like herb, *Mitragyna speciosa*.

6. None

7. Main result


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.
   2012 ~ : None
7. Main result
   (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.
8. None

1. Functions of the trophinin and its related gene products
2. Graduate School of Pharmaceutical Sciences / Professor / Naoto Yamaguchi
3. The United States of America / Sanford-Burnham Medical Research Institute / Professor Michiko N. Fukuda
4. 2005 ~
5. Study of the structure, localization, and signal transduction of trophinin and magphinin, which are cell adhesion molecules involved in embryo implantation.
6. Grants-in-aid for Scientific Research from the Japanese Ministry of Education, Culture, Sports, Science and Technology; Takeda Science Foundation; National Institutes of Health Grant; US Army prostate cancer IDEA Grant, etc.
7. Main result

8. None

1. Functional analysis of ATF and JDP2
2. Graduate School of Pharmaceutical Sciences / Professor / Naoto Yamaguchi
3. Taiwan / Graduate Institute of Medicine, College of Medicine, Kaohsiung Medical University / Professor Kazunari K. Yokoyama
4. 2009~
5. Study of signal transduction through and Activating Transcription Factor (ATF) and Jun Dimerization Protein 2 (JDP2)
7. Main result
| 1. | Analysis of apoptotic activities of the extract from *Moringa oleifera* leaves on human colon cancer cells |
| 2. | Graduate School of Pharmaceutical Sciences / Professor / Naoto Yamaguchi |
| 3. | Thailand / Faculty of Pharmacy, Silpakorn University / Professor / Perayot Pamonsinlapatham, Auayporn Apirakaramwong |
| 4. | 2014~ |
| 5. | Investigation of the anti-proliferative activity present in the methanol extract from *M. oleifera* leaves toward human HCT116 colon cancer cells |
| 6. | Grants from the Excellent International Student Scholarship between Chiba University and Silpakorn University, the Thailand Research Fund (TRF) |
| 7. | Main result |
| 8. | Ms Jintana Tragulpakseerojn, a Silpakorn University graduate student, was selected in the Double Degree Program between the Graduate School of Pharmaceutical Sciences, Chiba University and the Faculty of Pharmacy, Silpakorn University, and conducted research in Graduate School of Pharmaceutical Sciences, Chiba University in 2014. |

| 1. | Artificial oxygen carrier with cobalt-substituted myoglobin. |
| 2. | Graduate School of Pharmaceutical Sciences / Professor / Saburo Neya |
| 3. | USA / Department of Biophysics, Medical School, University of Pennsylvania / Professor Takashi Yonetani |
| 4. | 2014 |
| 5. | Development of artificial oxygen carrier with the myoglobin containing cobalt heme group. |
| 6. | Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science. |
| 8. | Not available |

| 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. None
8. None

<table>
<thead>
<tr>
<th>1. Speciation of trace elements in food by mass spectrometry</th>
<th>2. Graduate School of Pharmaceutical Sciences / Professor / Yasumitsu Ogra</th>
<th>3. Spain / Faculty of Chemistry, Complutense University of Madrid / Professor Yolanda Madrid Albarran</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. 2015~</td>
<td></td>
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<tr>
<td>5. We evaluate the effects of trace elements in foods, food additives and food containers in terms of toxicology and nutritional chemistry.</td>
<td></td>
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<tr>
<td>6. Invitation Fellowship for Research in Japan (Short-term), JSPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. None</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Environmental Water in China

1. Investigation of chemical species of antimony in environmental water in Eastern and Mid-Southern China
2. Graduate School of Pharmaceutical Sciences / Professor / Yasumitsu Ogra
3. China / School of Medicine and Public Health, Zhejiang University / Professor Hua Naranmandura
4. 2015~
5. We intend to clarify the relationship between the chemical species and toxicological effects of antimony compounds in environmental water in the antimony mining area of China.
6. Grant-in-Aid for Scientific Research (B), MEXT and JSPS
7. None
8. None

### School of Nursing

2. Naomi Funashima / Chiba University, Graduate School of Nursing / Professor
3. Zao Qui-li / Hefei Medical University, School of Nursing / China
4. 2007~
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 explore the similarities and differences in the quality of the teaching-learning process of nursing lectures in Japan and China, toward enriching nursing faculty development by both countries’ collaboration.

   The progress of the research project is following procedure. 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, The Scale for Evaluating Nursing Lectures, Chinese version (ENL-C) was developed by using the back-translation technique and had well established validity and reliability. The second, we clarified the quality of teaching-learning process in Japan. The third, we clarified the quality of teaching-learning process in China. The fourth, we compared the quality of teaching-learning process in Japan and China, and clarified the similarities and differences. Now, we are exploring the factors related to each quality of teaching-learning process in Japan and China. Furthermore, we will conduct another qualitative research for the development of Scale for Evaluating Nursing Lectures, Chinese original version. An ENL-C was addressed in a specialized book which Zao Qui-li published in China.

6. Nothing

7. Main result


1. Cross-Cultural Research: A Comparison of Role Model Behaviors of Nursing Faculty in Japan and China, Toward Enriching Development of Nursing Faculty
2. Naomi Funashima / Chiba University, Graduate School of Nursing / Professor
3. Zao Qui-li / Herbin Medical University, School of Nursing / China
4. 2007～
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 explore the similarities and differences between role model behaviors of nursing faculty in Japan and China, toward enriching nursing faculty development by both countries’ collaboration.

The focus of this research project is role model behaviors of nursing faculty. It was defined as behaviors
which reflect the attitude of nursing professionals to perform various functions, students observe their faculty's teaching activities and their nursing practice, and sympathize and identify with them as their ideal status.

Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty, Japanese original version (RMBNF-J) was developed to measure the quality of the role model behaviors of nursing faculty by Graduate School of Nursing, Chiba University. At first, Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty, Chinese version (RMBNF-C) was developed by using the back-translation technique and had well established validity, reliability and equality with RMBNF-J. In The second, we clarified the current status of role model behaviors of nursing faculty in BSN programs in China, compared the quality of role model behaviors of nursing faculty between China and Japan, and clarified the similarities and differences. In addition, we had a presentation about this research at the nursing congress in China, and an original article appeared in an academic journal in China. An RMBNF-C was addressed in a specialized book which Zhao Qui-li published in China.

Now, the nursing faculty in the United States and Thailand has participated in our research project, so we will compare the role model behaviors of nursing faculty in four countries. Furthermore, the nursing faculty in Colombia and Panama will participate in our research.

6. Nothing

7. Main result

- Funashima N., Sadahiro W., Kameoka T., and Suzuki M.: Development of Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty—Based on the Qualitative Research Findings—. Journal of School of Nursing, Chiba University, 24, 2003.


- Zhao Qiu-Li et al: Role Model Behaviors for Nursing Faculty in Sahaliyan ula, China. Journal of Nursing Administration in China, 2010


1. Cross-Cultural Research: A Comparison of Role Model Behaviors of Nursing Faculty in Japan and Thailand.
Toward Enriching Development of Nursing Faculty

2. Naomi Funashima, Chiba University, Graduate School of Nursing, Professor
3. Areewan K. Chiang Mai University, Thailand
4. 2009～
5. To deepen cultural exchange between Japan and Thailand, each nursing faculty in both countries has to know each current status of educational activities and its features.

So, the purpose of this research project is to explore the similarities and differences between role model behaviors of nursing faculty in Japan and Thailand, toward enriching nursing faculty development by both countries' collaboration.

The focus of this research project is role model behaviors of nursing faculty. It was defined as behaviors which reflect the attitude of nursing professionals to perform various functions, students observe their faculty's teaching activities and their nursing practice, and sympathize and identify with them as their ideal status.

Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty, Japanese original version (RMBNF-J) was developed to measure the quality of the role model behaviors of nursing faculty by Graduate School of Nursing, Chiba University. Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty, Thai version (RMBNF-T) is being developed by using the back-translation technique, and had well established validity, reliability and equality with RMBNF-J. The second, we clarified the current status of role model behaviors of nursing faculty in BSN programs in Thailand. The third, we clarified the similarities and differences through comparison of the quality of role model behaviors of nursing faculty between Thailand and Japan, an original article appeared in an academic journal overseas.

Now, we are preparing to develop a Chinese Original Version “Self-Evaluation Scale on Role Model Behaviors of Nursing Faculty”.

6. Nothing
7. Main result
   - Funashima N., Sadahiro W., Kameoka T.,and Suzuki M.: Development of Self-Evaluation Scale on Role Model Behaviors for Nursing Faculty—Based on the Qualitative Research Findings—.Journal of School of Nursing, Chiba University, 24, 2003.
   - Klunklin,A., Funashima.N., Kameoka,T., Nomoto,Y., Nakayama,T: Role Model Behaviors of Nursing Faculty Members in Thailand. Nursing and Health Sciences, 13, 84-87, 2011.
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

Naomi Funashima / Chiba University, Graduate School of Nursing / Professor

Zao Qui-qi / Herbin Medical University, School of Nursing / China

2009～

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.

Continuing Education in Nursing for Patient Safety: Offering Continuing Education Programs Which Japanese and Chinese Nurses Plan in Cooperation to Ensure Patient Safety

Naomi Funashima / Chiba University, Graduate School of Nursing / Professor

Zao Qui-qi / Herbin Medical University, School of Nursing / China

2015～

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 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) 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. Now, we will conduct a survey of about eight-hundred Chinese nurses by using the SPSBW-C to clarify current status of the quality of the patient safety behavior of Chinese hospital nurses.

6. Nothing

7. Main result

| 1. | An examination of home care team activities that enable elderly living alone or with dementia to live in a familiar community. |
| 2. | Graduate School of Nursing / Professor / Sayuri Suwa |
| 3. | Finland / Seinäjoki University of Applied Sciences / Helli Kitinoja |
| 4. | 2013~ |
| 5. | The purpose of this study is to clarify the state of activities conducted by home care teams that enable elderly to live in a familiar community with a focus on elderly with dementia and elderly living alone, whose numbers are expected to increase in Japan in the future. Specifically, we explore circumstances in Finland regarding matters such as family support, pharmacotherapy for elderly with dementia, and difficulties in performance of daily living activities to gain suggestions for home care and dementia care in Japan. |
| 6. | Grants-in-Aid for Scientific Research (Scientific Research(B)), Grants-in-Aid for Scientific Research (Grant-in-Aid for Young Scientists(B)) |
| 7. | Main result |

1) Sayuri Suwa, Mayuko Tsujimura, Atsuko Shimamura, Helli Kitinoja, Jaakko Kontturi, Minori Tokui, Ayano Inuyama: Providing assistance in drug administration to elderly with dementia and their
families in Finland and the UK. Journal of Graduate School of Nursing, Chiba University, 38, 1-10, 2016.

(2) Mayuko Tsujimura, Sayuri Suwa, Atsuko Shimamura, Tomoko Iwasaki: Coping with elderly with dementia in Finnish communities: Based on interviews with experts on elderly care that utilized fictional cases. Journal of Graduate School of Nursing, Chiba University, 36, 11-19, 2014.


8. Not available

Graduate School of Engineering

1. Symbiosis Building of PLUS50
2. Graduate School of Engineering / Professor / Hideki Kobayashi, Assistant Professor / Jung Ji-Young
3. Korea / Korea Institute of Construction Technology / Ph.D. Kim, Soo-Am
4. 2007～
5. The legal system and policies of open building
6. R&D program (Korea Institute of Construction Technology)
7. We are preparing the first joint paper.
8. None

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, Muhammad 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.


*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 / Associate 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
   (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
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
3. Viet Nam / Hanoi University of Science and Technology / Dr. TRINH Quang Duc
   Indonesia/Bandung Institute of Technology/Prof. DEDDY Kurniadi
   Malaysia/National University of Malaysia/Prof. MOHD SOBRI Takriff
   Malaysia/ University Technology Malaysia/ Dr. Maziah binti Mohamad

4. 2015~

5. Vietnam, Malaysia, Indonesian university students who want to enter the graduate school of engineering Chiba University are encouraged to study the tomography technology that is indispensable to the field of mechanical, medical and energy equipment design in order to make the opportunity of studying the highest technology in Japan for the excellent international students.

6. JST Japan-Asia Youth Exchange Program in Science

7. None

8. Other important items to be stated
   - The bilateral research collaboration with Dr. TRINH Quang Duc, Hanoi University of Science and Technology was accepted by JSPS 2015 Bilateral program (MOST).
   - Mr.Ahmad Azahari Bin Hamzah of Malaysian National University which participated in this project entered in the doctoral course of graduate school engineering graduate course Chiba University in April, 2016.

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
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<tr>
<td>1.</td>
<td>Reconstruction of unsteady and three-dimensional density field by background oriented schlieren (BOS) technique</td>
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<td>2.</td>
<td>Graduate School of Engineering / Associate Professor / Masanori Ota</td>
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<td>3.</td>
<td>France / French-German Research Institute of Saint-Louis (ISL) / Dr. Friedrich Leopold</td>
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<tr>
<td>4.</td>
<td>2015 ~</td>
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<tr>
<td>5.</td>
<td>Reconstruction of density field by Background Oriented Schlieren (BOS) technique and its application to various experiments.</td>
</tr>
<tr>
<td>6.</td>
<td>Japan Society for the Promotion of Science (JSPS) bilateral joint research projects (SAKURA program)</td>
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<td>7.</td>
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**Graduate School of Advanced Integration Science**

1. Electronic structure of organic semiconductor interfaces
| 1. | Electron spectroscopic investigation of electronic structure in low-dimensional organic semiconductor thin films |
| 2. | Graduate School of Advanced Integration Science / Research fellow / Nobuo Ueno |
| 3. | Indian Institute of Technology (IIT@Madras) / Prof. A. Patnaik |
| 4. | 2002~ |
| 5. | Low-dimensional electronic states in organic semiconductor thin films and local electronic structure at molecule-electrode contact are studied. |
| 6. | JSPS Invitation fellowship program for research in Japan (long term), 21 Century COE program etc. |
| 7. | Main result |
| 8. | None |

### Reference

- **Electronic structure of functional organic thin films are studied by using high resolution ultraviolet photoelectron spectroscopy.**
- **Century COE program and Global COE Program and Grant-in-Aid for Scientific Research (A) etc.**
- **Main result**
2. G-COE, Graduate School of Advanced Integration Science / Research fellow / Nobuo Ueno

3. Sweden / Linkoeping University / Prof. William E. Salaneck
   Sweden / Linkoeping University / Dr. Rainer Friedlein
   USA / Georgia Institute of Technology / Prof. G-L. Bredas

4. Continued from 2003

5. Band dispersion of angle-resolved UPS based on quantitative analysis of the UPS intensity.

6. Grant-in-Aid for Creative Scientific Research of JSPS, 21 Century COE program, Grant-in-Aid for Scientific Research (A) and Global COE Program, research grant.

7. Main result


1. Interface electronic states of single-molecular devices and organic devices

2. G-COE, Graduate School of Advanced Integration Science / Research fellow / Nobuo Ueno

3. Israel / Weizmann Inst. Science / Prof. David Cahen
   USA / Princeton University / Antoine Kahn
   Germany / Universität Würzburg / Prof. E. Umbach and Prof. A. Schoell

4. Continued from Nov. 2005

5. Electronic structure of the molecule-metal link in a single molecular device is studied.

6. Grant-in-Aid for Creative Scientific Research of JSPS,21st Century COE program, Grant-in-Aid for Scientific Research (A) and Global COE Program, research grant, etc.

7. Main result
1. Electronic states of organic-related interfaces

2. USA / Princeton University / Antoine Kahn

3. Continued from April 2001

4. Electronic structure of the molecule-metal interface in organic devices is studied.

5. Grant-in-Aid for Creative Scientific Research of JSPS, 21st Century COE program and Global COE Program, research grant, etc.

6. Main result


7. January, every year. Chiba University, Joint discussion meeting.

1. Studies of structure and electronic states at well-characterized organic interfaces

2. Germany / Humboldt University (Berlin) / Prof. N. Koch

3. Germany / Tuebingen University / Prof. F. Schreiber

4. Continued from September 2004

5. Interface structure and molecular-orientation dependent electronic structure of organic-metal interfaces are studied

6. 21st Century COE program and Global COE Program and Grant-in-Aid for Scientific Research (A), research grant.

7. Main result


1. Interfaces electronic states of organic-based devices

2. G-COE, Graduate School of Advanced Integration Science / Research fellow / Nobuo Ueno

3. Singapore / National University of Singapore / Prof. A. Wee and Dr. W. Chen

4. Continued from April 2009

5. Electronic structure of the molecule-metal interface in organic devices is studied.

6. JSPS program, Grant-in-Aid for Scientific Research (A) and G-COE, research grant.

7. Main result

   (1) Yu Li Huang, Rui Wang, Tian Chao Niu, Satoshi Kera, Nobuo Ueno, Jens Pflaum, Andrew Thye Shen Wee, and Wei Chen, One Dimensional Molecular Dipole Chain Arrays on Graphite via Nanoscale Phase Separation, Chem. Commun. 46 (47), 9040 – 9042 (2010).

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(4) Yu Li Huang, Yunhao Lu, Tian Chao Niu, Han Huang, Satoshi Kern, Nobuo Ueno, Andrew Thye Shen Wee, and Wei Chen, Reversible Single-Molecule Switching in an Ordered Monolayer Molecular Dipole Array, Small, 8(9), 1423–1428 (2012).


(8) Yu Li Huang, Elisabeth Wruss, David A. Egger, Satoshi Kera, Nobuo Ueno, Wissam A. Saidi, Tomas Bucko, Andrew T. S. Wee, Egbert Zojer, Understanding the adsorption of CuPc and ZnPc on noble metal surfaces by combining quantum-mechanical modelling and photoelectron spectroscopy, Molecules 19, 2969-2992 (2014).

8. None

1. Power-scaling of a diode-pumped Nd doped solid-state lasers with a bounce amplifier geometry
2. Graduate School of Advanced Integration Science / Professor / Takashige Omatsu
3. UK / Imperial College London / Prof. M. J. Damzen
4. Feb. 1997-present
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.
   ► 102 conference 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 Advanced Integration Science / Professor / Kazuyuki Sakamoto
3. Sweden / Linköping University / Professor R.I.G. Uhrberg
4. From 2002 (continuing)
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.
7. Main result
1. Inverse photoemission study of spin-polarized unoccupied surface states originated from strong spin-orbit coupling

2. Graduate School of Science and Technology / Professor / Kazuyuki Sakamoto

3. Germany / Munster University / Prof. M. Donath

4. From 2010 (continuing)

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.


7. Main result


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8. None

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<tbody>
<tr>
<td>1.</td>
<td>Physical properties of novel materials with spin-polarized surface states</td>
</tr>
<tr>
<td>2.</td>
<td>Graduate School of Science and Technology / Professor / Kazuyuki Sakamoto</td>
</tr>
<tr>
<td>3.</td>
<td>Germany / Wurzburg University / Prof. F. Reinert</td>
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<td>4.</td>
<td>From 2009 (continuing)</td>
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<td>5.</td>
<td>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.</td>
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<td>7.</td>
<td>Main result</td>
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<td>(4)</td>
<td>“The Rashba-split surface state of Sb2Te3(0001) and its interaction with bulk states”, C. Seibel, H. Maas, H. Bentmann, J. Braun, K. Sakamoto, M. Arita, K. Shimada, J. Minář, H. Ebert, and F. Reinert,</td>
</tr>
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8. None


2. Graduate School of Advanced Integration 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


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

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

   (4) Excess Partial Molar Entropy of Alkane-mono-ols in Aqueous Solutions at 298 K.
   Y. Koga, P. Westh and K. Nishikawa

   (5) The Effects of Na2SO4 and NaClO4 on the Molecular Organization of H2O.
   Y. Koga, P. Westh and K. Nishikawa

   (6) “Icebergs” or No “Icebergs” in Aqueous Alcohols?: Composition-dependent Mixing Schemes.
   Y. Koga, K. Nishikawa and P. Westh

   (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
8. None

1. Interaction mechanism in singlet excited dye/photoacid generator photosensitive system
2. Graduate School of Advanced Integration Science / Professor / Shigeru Takahara
3. France / Department of Photochemistry, Universite de Haute Alsace / Prof. Xavier Allonas
4. France / Department of Photochemistry, Universite de Haute Alsace / Prof. Jean-Pierre Fouassier
5. 2004.7.16 ~
6. 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.
7. Gift of money for research and education
8. Main result
   ➢ COMMUNICATIONS AND PAPERS
      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
1. Electronic structures of organic / metal interfaces studied by photoemission spectroscopy

2. Center for Frontier Science / Professor / Hisao Ishii

   Graduate School of Advanced Integration Sciences / Assistant professor / Yasuo Nakayama

8. None

| ➢ BOOK |
| ➢ CONTRIBUTIONS TO CONFERENCE |
3. Taiwan / National Tsing Hua University / Shu-Jung Tang
4. FY2010
5. The electronic structures of organic / metal interfaces of various system which attracts interest are investigated by photoemission spectroscopy. The target system is interfaces between organic semiconductor films and quantum wells where free electrons are confined in nano-scale ultra thin metal film.
6. Global COE Program, KAKENHI (Grant-in-Aid for scientific research A), Sasagawa Scientific Research Grant of the Japan Science Society, “Summer Visiting Program” of Interchange Association, Japan, “International Shuttle Program” of Japan Student Services Organization, KAKENHI (Grant-in-Aid for scientific research B), Chiba University COE program.
7. Original papers:
   Conference contributions:
   中山泰生, Meng-Kai Lin, Chih-Hao Pan, Tun-Wen Pi, S.-J. Tang, 石井 久夫, 「誘電体分子の表面吸着に伴う Ag 超薄膜の量子化エネルギー変化」第60回応用物理学関係連合講演会 神奈川工業大学（2013年3月28日）[28aG13-9] (in Japanese)
8. Dr. Y. Nakayama, a lecturer (specially appointed) of Center of Frontier Science, visited National Taiwan University, National Tsing Hua University, and National Synchrotron Radiation Research Center with two graduate students to promote Japan-Taiwan international collaboration under the “Summer Visiting Program” of Interchange Association, Japan. A graduate student, Mr. Meng-Kai Lin, of National Tsing Hua University also visited to this department to proceed collaborating works. In Dec 2013, Under collaboration between the division of nanoscience of AIST and the department of physics of NTHU, Taiwan-Japan International Workshop on Spectroscopy and Surface Science was held. In 2014, MOD between Chiba University and NTHU was contracted in 2014.
5. The ordered structure of organic layer on clean organic single crystal surface are prepared, and the properties of the heterointerfaces are investigated by scanning probe microscope.

6. Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST), JSPS “Institutional Program for Young Researcher Overseas Visits” (Frontier science international training program for young researchers leading in materials science and computational science (Graduate School of Advanced Integration Science)), KAKENHI (Grant-in-Aid for Young Scientists B), KAKENHI (Grant-in-Aid for scientific research B)

7. Original paper:

Conference contributions:


Yasuo Nakayama, Shin’ichi Machida, Jens Niederhausen, Hiroumi Kinjo, Yuli Uragami, Antje Vollmer, Norbert Koch, Hisao Ishii, “Photoemission Observation of Hetero-interfaces Formed onto the Rubrene Single Crystal as the Model Interfaces of an Organic Field Effect Transistor”, The 2012 International Conference on Flexible and Printed Electronics (ICFPE2012); Tokyo, Japan, Sep./6/2012. (Session Invited Talk)

5th International Symposium on Flexible Organic Electronics (ISFOE12); Thessaloniki, Greece, Jul./3/2012.

8. None
1. Properties of charge accumulation at organic heterointerfaces and the device performance
2. Center for Frontier Science / Professor / Hisao Ishii (Assistant Prof. / Yutaka Noguchi)
3. Germany / University of Augsburg / Wolfgang Bruetting
4. FY 2010～
5. Functions of organic semiconductor devices often originate from heterointerfaces in the device. We investigated the relations between charge accumulation mechanisms at the interfaces and the device performances using several experimental techniques, especially focusing on the role of orientation polarization. We have been conducting a good collaborating works including mutual people exchange.
6. JSPS "Institutional Program for Young Researcher Overseas Visits" (Frontier science international training program for young researchers leading in materials science and computational science(Graduate School of Advanced Integration Science)), Chiba University COE start-up Program, Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST), KAKENHI (Grant-in-Aid for scientific research B)
7. Main result
   - Paper
     2) Yuya Tanaka, Yutaka Noguchi, Michael Kraus, Wolfgang Bruetting, Hisao Ishii, "Displacement current measurement of a pentacene metal-insulator-semiconductor device to investigate both quasi-static and dynamic carrier behavior using a combined waveform", Organic Electronics, 12(9), (2011)1560-1565.
   - Conference
     2) Yukimasa Miyazaki, Yutaka Noguchi, Yasuo Nakayama, Wolfgang Bruetting, Hisao Ishii, "Charge accumulation mechanisms at organic hetero interfaces: the effects of interface charges and
orientation polarization”, 9th International Conference on Nano-Molecular Electronics (ICNME 2010), Dec 15 2010, Kobe, Japan.

3) Yutaka Noguchi, Yukimasa Miyazaki, Yuya Tanaka, Yasuo Nakayama, Wolfgang Bruetting, Hisao Ishii, Carrier behaviors at organic heterointerfaces studied by displacement current measurement and impedance spectroscopy, 6th international conference on Molecular and Bioelectronics (M&B6), (March 2011) “The conference itself was cancelled due to the earthquake, but the abstract book has been published.

4) Yuya Tanaka, Yutaka Noguchi, Michael Kraus, Wolfgang Bruetting, Hisao Ishii, “Impedance spectroscopy for pentacene field-effect transistor channel formation process in transistor operation”, SPIE Optics+Photonics; San Diego, CA, Aug./2011

5) 野口裕, 宮崎行正, 田中有弥, Wolfgang Bruetting, 石井久夫, 「分子のダイポールモーメントと有機ヘテロ界面の電荷蓄積」, 第 12 回有機 EL 論壇会; 日本科学未来館 みらい CAN ホール, Jun./30/2011 (S3-2)

6) 野口裕, 宮崎行正, 田中有弥, Wolfgang Bruetting, 石井久夫, 「分子の永久双極子に起因する有機/有機界面の電荷蓄積現象」, 第 72 回応用物理学会学術講演会; 山形大学, Aug./30/2011 (30a-Q-26)

7) 野口裕, 宮崎行正, 田中有弥, Wolfgang Bruetting, 石井久夫, "有機半導体デバイス内部の電界分布と電荷蓄積現象"（依頼講演）, 日本学術振興会 情報科学用有機材料第 142 委員会 A 部会 第 121 回, B 部会 第 113 回, C 部会 第 48 回 合同研究会, 東京理科大学東戸記念館, Oct./28/2011

8) Yutaka Noguchi, Yukimasa Miyazaki, Yuya Tanaka, Takamitsu Tamura, Kyung Jun Kim, Yasuo Nakayama, Wolfgang Bruetting, Hisao Ishii "Interface Charges in Organic Light-Emitting Diodes: The Origin and Impacts on Device Properties", Fifth International Conference on Optical, Optoelectronic and Photonic Materials and Applications (ICOOPMA2012); Nara, 5Jun./2012 (2A1-1)

9) 田中有弥, 野口裕, Michael Kraus, Wolfgang Brütting, 石井久夫, 「3 端子容量 - 電圧測定によるペンタセン電界面効果トランジスタのチャネル形成過程の観測」, 第 59 回応用物理学会関係連合講演会; 早稲田大学, 16Mar./2012 (16p-F9-11)

10) H.S. Lim, 宮崎行正, 磯島隆史, 伊藤英輔, 原正彦, WheeWon Chin, Jinwook Han, Wolfgang Brütting, 中山泰生, 野口裕, 石井久夫, 「Alq3誘導体蒸着膜の逆極性の逆極解とデバイス特性」, 第 60 回応用物理学会春季学術講演会; 神奈川工科大学, Mar./29/2013. (29a-G13-1)

8. Other important items to be stated

(1) Assist. Prof. Yutaka Noguchi recieved a presentation award from “Yuki EL Touron-kai” (2012.11.21)

(2) COE Start-up International Workshop "Organic Semiconductors Towards the Next", Nov 11 2010, was chaired, in which Prof. Bruetting was invited.

1. Elucidation of electronic properties based on direct observations of frontier density of states in organic semiconductors

2. Center for Frontier Science / Professor / Hisao Ishii (Garauate School of Advanced Integration Scence/
3. Germany / University of Augsburg / Wolfgang Bruetting
4. FY 2009
6. KAKENHI (Grant-in-Aid for scientific research A)
7. Main result
   - Paper
   - Conference
     None

1. Study on carrier injection in organic electronics
2. Center for Frontier Science / Professor / Hisao Ishii (Graduate School of Advanced Integration Science/ Assistant professor/ Yasuo Nakayama)
3. USA / University of Minnesota / Daniel Frisbie
4. FY2013
5. Research to improve the carrier injection properties of organic electronics
6. Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST), KAKENHI (Grant-in-Aid for scientific research B)
8. None

1. Ultrafast Dynamics in Ionic Melts and Related Solutions.
2. Graduate School of Advanced Integration 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 including inter- and intramolecular vibrations and orientational
dynamics of eutectic melts, such as acetamide/[KSCN+NaSCN] and acetamide/[LiNO3+LiBr], and ionic liquid mixtures with water by means of femtosecond Raman-induced Kerr effect spectroscopy.

6. Program of Center for Frontier Science, Chiba University and Grant-in-Aids for Young Scientists (A)

7. Main result


8. RB gave some seminars (Center for Frontier Science and Department of Chemistry) at Chiba University.

1. Liquid Structure of Ionic Liquids.

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

3. USA / Department of Chemistry and Chemical Biology, Rutgers University / Prof. Edward W. Castner, Jr.

4. Italy / Istituto di Struttura della Materia, Consiglio Nazionale delle Ricerche / Dr. Alessandro Triolo.

5. We investigate the liquid structure of some ionic liquids by means of x-ray scattering.

6. Grant-in-Aids for Young Scientists (A)

7. Main result


8. Coauthor papers of 12 were written with EWC since 2000, because HS worked with EWC at Rutgers. EWC and HS organized Ionic Liquids session at 6th IDMRCS (Rome, 2009) and 7th IDMRCS (Barcelona, 2013).


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

3. Poland / Institute of Physics, University of Silesia / Prof. Lukasz Hawelek.

4. Poland / Institute of Physics, University of Silesia / Prof. Marian Paluch.

5. We perform the high pressure crystallization of ionic liquids and determine the crystalline structure.

6. Grant-in-Aids for Young Scientists (A)


2. Graduate School of Advanced Integration Science / Associate Professor / Hideaki Shirota
3. Poland / Institute of Physics, University of Silesia / Prof. Marian Paluch.
   Italy / Dipartimento di Fisica, CNR-IPCF / Dr. Kia L. Ngai.
4. December 2010 ~
5. We investigate the dielectric relaxation process of some ionic liquids near glass transition temperature.
6. Grant-in-Aids for Young Scientists (A)
8. KLN is an organizer of 7th IDMRCS (2013, Barcelona) and HS is a session organizer of ionic liquids

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2. Graduate School of Advanced Integration Science / Associate Professor / Hideaki Shirota
3. UK / School of Chemistry, University of East Anglia / Prof. Stephen R. Meech.
4. September 1995 ~
5. We investigate the low-frequency mode of benzoic acid dimer in solution.
6. Grant-in-Aids for Young Scientists (A)
7. Main result
8. SRM gave a lecture in an intensive course at Chiba University in 2010.

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1. Theory of X-ray absorption spectroscopy and development of multiple scattering method
2. Graduate School of Advanced Integration Science / 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.


7. Main result


1. Spectroscopic investigation of electronic structure of titanium oxide nanostructures for solar cell applications.

2. Graduate School of Advanced Integration Science / Professor / Peter Krüger

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


8. None

1. STM study of electronic spin properties of nanomagnets

2. Graduate School of Advanced Integration Science / Associate Professor /Toyo Kazu Yamada

3. Germany /Karlsruhe Institute of Technology / Prof. W. Wulfhekel
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.

Main result


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.
2. Graduate School of Advanced Integration Science / Professor / Hiroo Sekiya
3. China / Xiangtan University / Pei Tingrui and Li Zhetao
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 actual WSNs at the main campus of Xiangtan University for environment remote sensing.
6. 
7. Main result
   (3) 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. Accepted.
8. None

**Center for Frontier Science**

1. Electronic structures of organic / metal interfaces studied by photoemission spectroscopy
2. Center for Frontier Science / Professor / Hisao Ishii
   Graduate School of Advanced Integration Science / Assistant professor / Yasuo Nakayama
3. Taiwan / National Tsing Hua University / Shu-Jung Tang
4. FY2010
5. The electronic structures of organic / metal interfaces of various system which attracts interest are investigated by photoemission spectroscopy. The target system is interfaces between organic semiconductor films and quantum wells where free electrons are confined in nano-scale ultra thin metal film
6. Global COE Program, KAKENHI (Grant-in-Aid for scientific research A), Sasagawa Scientific Research
Grant of the Japan Science Society, "Summer Visiting Program" of Interchange Association, Japan, “International Shuttle Program” of Japan Student Services Organization, KAKENHI (Grant-in-Aid for scientific research B), Chiba University COE program

7. Original papers:


Conference contributions:


中山泰生, Meng-Kai Lin, Chih-Hao Pan, Tun-Wen Pi, S.-J. Tang, 石井 久夫, 「誘電体分子の表面吸着に伴う Ag 超薄膜の量子化エネルギー変化」 第60回応用物理学関係連合講演会 神奈川工業大学（2013年3月28日）[28aG13-9] (in Japanese)

8. Dr. Y. Nakayama, a lecturer (specially appointed) of Center of Frontier Science, visited National Taiwan University, National Tsing Hua University, and National Synchrotron Radiation Research Center with two graduate students to promote Japan-Taiwan international collaboration under the "Summer Visiting Program" of Interchange Association, Japan. A graduate student, Mr. Meng-Kai Lin, of National Tsing Hua University also visited to this department to proceed collaborating works. In Dec 2013, Under collaboration between the division of nanoscience of AIST and the department of physics of NTHU, Taiwan-Japan International Workshop on Spectroscopy and Surface Science was held. In 2014, MOD between Chiba University and NTHU was contracted in 2014.

1. Properties of new interfaces built-up on ordered organic single crystal surfaces

2. Center for Frontier Science / Professor / Hisao Ishii (Graduate School of Advanced Integration Science / Assistant professor / Yasuo Nakayama)

3. Germany / Humboldt University (Berlin) / Prof. N. Koch

4. FY2010

5. The ordered structure of organic layer on clean organic single crystal surface are prepared, and the properties of the heterointerfaces are investigated by scanning probe microscope.

6. Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST), JSPS "Institutional Program for Young Researcher Overseas Visits" (Frontier science international training program for young researchers leading in materials science and computational science (Graduate School of Advanced Integration Science)), KAKENHI (Grant-in-Aid for Young Scientists B), KAKENHI

130
7. Original paper:


Conference contributions:


Yasuo Nakayama, Shin’ichi Machida, Jens Niederhausen, Hiroumi Kinjo, Yuli Uragami, Antje Vollmer, Norbert Koch, Hisao Ishii, "Photoemission Observation of HeteroInterfaces Formed onto the Rubrene Single Crystal as the Model Interfaces of an Organic Field Effect Transistor", The 2012 International Conference on Flexible and Printed Electronics (ICFPE2012); Tokyo, Japan, Sep./6/2012. (Session Invited Talk)

5th International Symposium on Flexible Organic Electronics (ISFOE12); Thessaloniki, Greece, Jul./3/2012.

8. None

1. Properties of charge accumulation at organic heterointerfaces and the device performance
2. Center for Frontier Science / Professor / Hisao Ishii (Assistant Prof./ Yutaka Noguchi)
3. Germany / University of Augsburg / Wolfgang Bruetting
4. FY 2010～
5. Functions of organic semiconductor devices often originate from heterointerfaces in the device. We investigated the relations between charge accumulation mechanisms at the interfaces and the device performances using several experimental techniques, especially focusing on the role of orientation polarization. We have been conducting a good collaborating works including mutual people exchange.
6. JSPS "Institutional Program for Young Researcher Overseas Visits" (Frontier science international training program for young researchers leading in materials science and computational science(Graduate School of Advanced Integration Science)), Chiba University COE start-up Program, Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST), KAKENHI (Grant-in-Aid for scientific research B)
7. Main result
   ➢ Paper
   (2) Yuya Tanaka, Yutaka Noguchi, Michael Kraus, Wolfgang Bruetting, Hisao Ishii, "Displacement current measurement of a pentacene metal-insulator-semiconductor device to investigate both quasi-static and dynamic carrier behavior using a combined waveform", Organic Electronics, 12(9), (2011)1560-1565.
   ➢ Conference
   (2) Yukimasa Miyazaki, Yutaka Noguchi, Yasuo Nakayama, Wolfgang Bruetting, Hisao Ishii, "Charge accumulation mechanisms at organic hetero interfaces: the effects of interface charges and orientation polarization", 9th International Conference on Nano-Molecular Electronics (ICNME 2010), Dec 15 2010, Kobe, Japan.
   (3) Yutaka Noguchi, Yukimasa Miyazaki, Yuya Tanaka, Yasuo Nakayama, Wolfgang Bruetting,
Hisao Ishii, Carrier behaviors at organic heterointerfaces studied by displacement current measurement and impedance spectroscopy, 6th international conference on Molecular and Bioelectronics (M&BE6), (March 2011) *The conference itself was cancelled due to the earthquake, but the abstract book has been published.

(4) Yuya Tanaka, Yutaka Noguchi, Michael Kraus, Wolfgang Bruetting, Hisao Ishii, “Impedance spectroscopy for pentacene field-effect transistor channel formation process in transistor operation”, SPIE Optics+Photonics; San Diego, CA, Aug./2011

(5) 野口 裕, 宮崎行正, 田中裕弥, Wolfgang Bruetting, 石井久夫, 「分子のダイボールモーメントと有機ヘテロ界面の電荷蓄積」, 第 12 回有機 EL 討論会; 日本科学未来館 みらい CAN ホール, Jun./30/2011 (S3-2)

(6) 野口 裕, 宮崎行正, 田中裕弥, Wolfgang Bruetting, 石井久夫, 「分子の永久双極子に起因する有機/有機界面の電荷蓄積現象」, 第 72 回応用物理学会学術講演会; 山形大学, Aug./30/2011 (30a-Q-26)

(7) 野口 裕, 宮崎行正, 田中 裕弥, Wolfgang Bruetting, 石井 久夫, "有機半導体デバイス内部の電界分布と電荷蓄積現象" (依頼講演), 日本学術振興会 情報科学研究用有機材料第 142 委員会 A 部会 第 121 回, B 部会 第 113 回, C 部会 第 48 回 合同研究会, 東京理科大学森戸記念館, Oct./28/2011

(8) Yutaka Noguchi, Yukimasa Miyazaki, Yuya Tanaka, Takamitsu Tamura, Kyung Jun Kim, Yasuo Nakayama, Wolfgang Bruetting, Hisao Ishii "Interface Charges in Organic Light-Emitting Diodes: The Origin and Impacts on Device Properties", Fifth International Conference on Optical, Optoelectronic and Photonic Materials and Applications (ICOOPMA2012); Nara, 5/Jun./2012 (2A1-1)

(9) 田中裕弥, 野口裕, Michael Kraus, Wolfgang Brütting, 石井 久夫, 「3 端子容量 - 電圧測定によるベンゼン電界効果トランジスタのチャネル形成過程の観測」, 第 59 回応用物理学関係連合講演会; 早稲田大学, 16/Mar./2012 (16p-F9-11)

(10) H.S. Lim, 宮崎行正, 戦島隆史, 伊藤英輔, 原正彦, WheeWon Chin, Jinwook Han, Wolfgang Brütting, 中山泰生, 野口裕, 石井久夫, 「Alq3 誘導体蒸着膜の逆極性の配向分極とデバイス特性」, 第 60 回応用物理学会春季学術講演会; 神奈川工科大学, Mar./29/2013. (29a-G13-1)

8. Other important items to be stated

(1) Assist. Prof. Yutaka Noguchi received a presentation award from “Yuki EL Touron-kai” (2012.11.21)

(2) COE Start-up International Workshop "Organic Semiconductors Towards the Next", Nov 11 2010, was chaired, in which Prof. Bruetting was invited.

1. Elucidation of electronic properties based on direct observations of frontier density of states in organic semiconductors
2. Center for Frontier Science / Professor / Hisao Ishii (Garauate School of Advanced Integration Science/ Assistant professor/Yasuo Nakayama, Assistant Prof./Yutaka Noguchi)
3. Germany / University of Augsburg / Wolfgang Bruetting
4. FY 2009
6. KAKENHI (Grant-in-Aid for scientific research A)
7. Main result
   - Paper
   - Conference
     None
8. None

1. Study on carrier injection in organic electronics
2. Center for Frontier Science / Professor / Hisao Ishii (Graduate School of Advanced Integration Science/ Assistant professor / Yasuo Nakayama)
3. USA / University of Minnesota / Daniel Frisbie
4. FY2013
5. Research to improve the carrier injection properties of organic electronics
6. Funding Program for World-Leading Innovative R&D on Science and Technology (FIRST), KAKENHI (Grant-in-Aid for scientific research B)
8. None

1. Study on the numerical methods to solve the moment equations of the radiative transfer
2. Center for Frontier Science / Professor / Tomoyuki Hanawa
3. France / Maison de la Simulation / Edouard Audit
4. FY 2013
5. We are studying the moment equations of the radiative transfer which provide us a good approximation. In the fiscal year 2013, we analyzed the M1 model which describe the radiation field by the 0th and 1st moments. The M1 model is found to be identical to the hydrodynamical equations of ultra-relativistic particles. The analysis provides us some useful and practical information for applying the M1 model to
relativistic flow and achieving higher order accuracy in the numerical solutions. The result is published in Journal of Quantitative Spectroscopy and Radiative Transfer and is given as an oral talk at the Annual Spring Meeting of the Japanese Astronomical Society of Japan.

6. No specific grant.

7. Main Result

- Reformulation of the M1 model of radiative transfer, Tomoyuki Hanawa, Edouard Audit
  
- http://dx.doi.org/10.1016/j.jqsrt.2014.04.014

8. No items warranting special mention

-- Graduate School of Horticulture

1. A comparative study of soil microbial biomass dynamics and survival strategies in Northern European and Japanese soils

2. Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI

3. UK / AFRC Arable Crop Research Institute Rothamsted Experimental Station / Philip C Brookes

4. China / Zhejiang University

5. Since 1986 (Continued)

6. 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

7. Main result


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
   - Malaysia / Putra Malaysia University / Dr. Rosenani Abu Bakar
   - Hungary / Szent István University / Dr. Peter Simandi / Debrecen University / Prof. Katai Yanos

4. Since 1995 (Continued)

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, Grants-In-Aids (Foreign Researchers \ Invited Short-term), Nakajima Fundation, JASSO, Hungarian Academy of Sciences

7. Main result


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


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, 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 Zsaposné Oláh, Yuhua Kong, Hirohiko Nagano (2014) Effect of agroecological impacts on carbon and nitrogen dynamics in cropland in...


8. Faculty of Horticulture Seminar, Chiba University, July 31, 2004

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
   China / Institute of Atmospheric Physics / Xu Xingkai
   Malaysia / Peat Research Institute/ Lulie Melling
   Thailand / King Mongkut University / Amnat Chidthaisong
4. Since 1998 (Continued)
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)
7. Main result
- 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.
- 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
- 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


8. Oze Award, June 2004

1. Paleoecosystem in “Arkaim” Ecopreserve and Protection of Boreal Ecosystem in Central South Ural, Russia
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 Valentinoivich et al.
Russia / Chelyabisk State University, Professor, Zdanovich Gennady Borisovich et al.
4. Since 2009 (Continued)
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
7. Main result

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


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
4. 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.
   JSPS Grants-in-Aid for Scientific Research (B) 2006-2009.

7. Main result
   (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.
   (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
   (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
   (15) Effect of light quality and intensity on flower-bud formation and plant hight in Water Spinach (Ipomoea aquatica Forsk.)

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.
   (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
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. Since 1998 (on going)
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.
Research fellowship from Japan Society for the Promotion of Science in 2000.
Grant-in-Aid for Scientific Research since 2001-2014.
Grant-in-Aid for Scientific Research since 2016-2018.

7. Main result

➢ Ohe, Y. and A. Ciani (1999): Activities of Farm Tourism and Attitudes of the Operators: Japan-Italy Comparison, P. Simms
Yasu Ohe and Adriano Ciani, Characteristics and Activities of Agri-tourism farms in Umbria, Italy, 1xth European of Agricultural Economists, poster paper, 1999.
➢ Ohe, Y. and Ciani, A. (1999): Characteristics and Activities of Agri-tourism Farms in Umbria, Italy, 1xth European of Agricultural Economists, poster paper

8. Other important items to be stated

➢ 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 in 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.'


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. Since 2004 (Continued)
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
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. Since 2006 (Continued)
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


8. Other important items to be stated

(1) Kondo S. Invited speaker at a seminar held in Bologna university (Bologna, Italy, May, 2006)

(2) Kondo S. Invited speaker at the international symposium on plant growth regulation in fruit production (Italy, September, 2009)


(4) 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. Since 2000 (Continued)

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


(6) Kondo, S., S. Kanlayanarat et al. (2003). Relationship between ABA and chilling injury in mangosteen


8. Other important items to be stated

1. Kondo S. Special seminar in King Mongkut's University Thonburi (Since 2000)

(2) Kondo S. International symposium publication (Southeast asia symposium on quality and safety of fresh and fresh cut produce) (Thailand, 2009, August)

(3) 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)


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. Since 2007 (Continued)

7. Main result

8. Other important items 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)

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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
8. Kondo S. Seminar at the faculty of agriculture, Kasetsart university (June, 2014, Bangkok, Thailand)

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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, ① relationship 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. Montmorency

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150


3) GA95 is a genuine precursor of GA3 in immature seed of Prunus cerasus L. 1998. 16th Inter. Conference on Plant Growth Substances, Abstracts 146.


8. None

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Improvement of agricultural production in the arid area of China</td>
</tr>
<tr>
<td>2.</td>
<td>Graduate School of Horticulture / Professor / Akihiro Isoda</td>
</tr>
<tr>
<td>3.</td>
<td>China / Shihezi Agricultural and Environmental Institute for Arid Area in Central Asia / Peiwu Wang</td>
</tr>
<tr>
<td>4.</td>
<td>From 1998</td>
</tr>
<tr>
<td>5.</td>
<td>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.</td>
</tr>
<tr>
<td>6.</td>
<td>None.</td>
</tr>
<tr>
<td>7.</td>
<td>Main result</td>
</tr>
<tr>
<td></td>
<td>(3) Isoda, A. and P. Wang. 2001. Effects of leaf movement on leaf temperature, transpiration and</td>
</tr>
</tbody>
</table>


8. None.

1. Studies on the ancient gardens in Japan, China, and Korea
2. Chiba University / Emeritus Professor / Eijiro Fujii,
3. Graduate School of Horticulture / Professor / Zhang Junhua
4. Korea / Chongnam Univ. / Jisong Baiku
5. from 2000
6. 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
7. Grant-in-aid for Scientific Research (Basic Research A)
8. Historical Consideration on the Gumnanji of the Bekje Kingdom in Korea Based on the Results of Recent Excavations
9. 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 identity in community design. From the case studies of International District in Seattle and Kogane District in Matsudo city. One side there are many contests under 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 institutions.
6. University Program, Pacific Rim Community Design conference organizer, Tojo Academic Promotion Council, etc.
   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
   Hou,Jeffrey, Kinoshita, Isami, 2004, Negotiating Community Differences: Participatory Planning in International District, Seattle and Kogane District, Matsudo, (The 5th pacific Rim Conference on
Isami KINOSHITA, 2015, Cross Cultural Design Collaboration : Community Design by the International Collaboration of Students, “PAYZAJ MIMARLIGI EĞITIM ÖĞRETİM CALISTAZI BILDIRILER KITABI, Akdeniz University, 47-66


PLACEMAKING Symposium 2015.12.

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. 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

1. A Study on Children’s Play Town and Children's Participation
2. Graduate School of Horticulture / Professor / Kinoshita, Isami
3. Deutsches Kindehilfs Werk e.V. / General Mange / 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. Kinoshita, Isami · Uzuki, Morio · Mie, Kenzo ed. Heide-Rose Brueckner etc. (2010) 『Children Build City』 Hobunsha


8. 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 child friendly cites 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_mobiility
1. Inhabitants in Contexts / Place-based comparative research on ecosocially sustainable environments in Finland and Japan
2. Graduate School of Horticulture / Professor / Kinoshita, Isami
3. Post Doctoral Researcher / Omiya, Ichiro
4. Finland / Aalto University / Senior Research Fellow / Marketta Kytta
5. 2010～
6. 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.
7. JSPS Two Countries Jointing Research Grant, Tokyo University / Rikutaro Manabe as a chief

| 1. Joining Research about Children’s Play Environment at Post Disaster Area after 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 |

8. Other important items to be stated

- Rielia 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
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


- Woolley, Helen, Kinoshita, 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

- Kinoshita, 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)


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


- A GIS-Based Approach in Support of Spatial Planning for Renewable Energy: A Case Study of

1. International Comparative Studies on the Roles of Green Environment for Urban Regeneration
2. Faculty of Horticulture / Associate Professor / Takeshi KINOSHITA, PhD
   Graduate School of Horticulture / Associate Professor / Kyungrock YE
3. China / Institute of Natural and Environmental Sciences, Himeji Institute of Technology / Yue SHEN
   China / Shan-tong Agricultural University / Eikichi Boku
   United States of America / Harvard University Graduate School of Design / Ryosuke Shimoda
   United Kingdom / AA School Landscape Urbanism / Taku Suzuki
4. 2002~continued
5. This project is the advanced research works based on the international comparative studies titled "The Roles of Traditional Gardens for Conservation of Historic Cities and Towns", which had been conducted 1999 to 2001. This research project aims to discuss on the ideal way of environmental regeneration and landscape planning.
6. No (own expense)
7. Yue SHEN, Yohei SAITO, Takeshi KINOSHITA, Kyungrock YE and Akira MOCHIZUKI, Formation of Greenery Space in the Vacant Lot of the Former Athletes' Village of the Tokyo Olympic Games · From Athletes' Village to Forest Park · The 5th International Landscape Architectural Symposium of China, Japan and Korea, p.86-91, 2002 Beijing, China.
   Takeshi KINOSHITA, Ryosuke SHIMODA, Taku SUZUKI and others, How should we face to “Urbanism”, The National Meeting of the Japanese Institute of Landscape Architecture 2003, Chiba, Japan.
8. Cooperative Studies by the three countries' researchers

1. Characteristics of water cycle and water quality in the catchment effected by human activities
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 to 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.


- 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.


7. Main result


- Song Xianfang, Li Fadong, Yu Jingjie, Tang Changyuan et al. (2007): Characteristics of groundwater


8. None

1. Comparison of Natural Landscape Evaluation Between Japan and Russia
2. Graduate School of Horticulture / Associate 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. Since 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
<table>
<thead>
<tr>
<th>Publication</th>
<th>Authors</th>
<th>Title</th>
<th>Details</th>
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<tbody>
<tr>
<td>1.</td>
<td>Aoki, Yoji; Petrova, Elena; Mironov, Yury</td>
<td>Comparison of natural landscapes appreciation between Russia and Japan: photo selection</td>
<td>Special seminar at Moscow University, 2009.2.19</td>
</tr>
<tr>
<td>2.</td>
<td>Ueda, Hirofumi; Nakajima, Toshihiro; Takayama, Norimasa; Petrova, Elena; Matsushima, Hajime; Furuya, Katsunori</td>
<td>Ways of Seeing the Forest -Landscape Image Sketches in Japan and Russia-</td>
<td>Monitoring and Management of Visitor Flows in Recreational and Protected Areas, Wageningen, 2010. 6.</td>
</tr>
<tr>
<td>4.</td>
<td>Ueda, Hirofumi; Nakajima, Toshihiro; Takayama, Norimasa; Petrova, Elena; Matsushima, Hajime; Furuya, Katsunori; Aoki, Yoji</td>
<td>Landscape image sketches of forests in Japan and Russia</td>
<td>Forest Policy and Economics, Elsevier, 19 20−30</td>
</tr>
<tr>
<td>5.</td>
<td>Takayama, Norimasa; Matsushima, Hajime; Petrova, Elena; Ueda, Hirofumi; Nakajima, Toshihiro; Furuya, Katsunori; Aoki, Yoji</td>
<td>Differences in environmental attitudes between Russia and Japan</td>
<td>The 6th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas, 6, 404-405</td>
</tr>
</tbody>
</table>

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 / Associate Professor / Katsunori FURUYA
   Graduate School of Horticulture / JSPS Research Fellow / Yusuke MIZUUCHI
3. Korea / Seoul National University / Associate Professor / SON Yonghoon
4. Since 2012 (continued)
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 carries out an international comparative study of the recognition and evaluation of the natural landscape. It takes mainly two approaches for researching 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 respondents evaluate the same scenery 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 representative 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 analyzing 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.

2014-2016 Joint Research Program in Bilateral Programs, JSPS and NRF

7. Main result

   - 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 (2013) : Difference in the Landscape of Korea and Japan Among University Students in Korea : ITP Korea-Japan Student seminar program, Seoul, 2013

8. None

1. Possibility for ecotourism and protected areas of green space in Jakarta, Indonesia
2. Graduate School of Horticulture / Associate Professor / Katsunori FURUYA
   Graduate School of Horticulture / JSPS Research Fellow / 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
4. Since 2012 (continued)

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.


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,
- 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 Conservation Activities, 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

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


8. None

1. Cooperative protection and grassland management in CMR Dauru international protected area
2. Graduate School of Horticulture / Associate Professor / Katsunori FURUYA
   Graduate School of Horticultur / Doctor student / Han Guorong
3. China, Inner Mongolia Autonomous Region / Bureau of Dalai Lake National Nature Reserve / Song-tao LIU
4. Since 2013 (continued)
5. Natural area does not exist in isolation, but connects with the surrounding areas through ecological and ethnic groups. However, the natural environment even in the same ecological area will be changed by the different management methods and administrators. Dauru glassland ecological area is wide range and faces three countries: China, Mongolia and Russia. The locals have lived in harmony with nature for a long time. CMR Dauria International Protected Area was born in this area with the agreement concluded by China, Mongolia and Russia. Following situations differs among those three areas: regulation of resource and land use, natural environment conservation, public welfare of local people, cooperation by locals. These difference influence natural environment, landscape and ecological system. This study aims at next three points: 1) it reveals the current status and formation of CMR Dauria International Protected Area and the situation of cooperation among three countries. 2) Moreover, it finds the agendas of grassland management in protected area comparing the transition of glassland use and the glassland management in three countries. 3) Lastly, it compares the cooperation with locals among three countries and reveals the approaches for cooperative protection by locals. These studies promote the solution for agendas of CMR Dauria International Protected Area and the approaches of natural conservation by locals and would help the partnership with the neighbor protected area holding extensive biodiversity.
6. Self, JT scholarship, AGSST domestic workshop participation and presentation support program 2013

7. Main result

- Guorong Han, Katsunori Furuya (2013): Regional Cooperation for Protected Areas-Dalai Lake National Nature Reserve in China : The First Asia Parks Congress, 2013, Sendai
- Guorong Han, Katsunori Furuya (2014): Analysis of Scenery Transition and Residents’ Opinion in Dalai Lake Nature Reserve : JpGU Meeting 2014 Japan Geoscience Union Meeting,
- Guorong Han, Katsunori Furuya (2013): The Russia-Mongolia-China Dauria International Protected Area (DIPA) : Proceeding of The 31th Kanto Branch Meeting of Japanese Institute of Landscape Architecture, p. 145.

8. None

1. Application of plant biotechnology for breeding of horticultural and medicinal plants
2. Graduate School of Horticulture / Professor Emeritus / Masahiro Mii
3. Thailand / Mahidol University / Kanyaratt Supaibulwatana
4. Since 1997 Continued
5. Plant biotechnology is now expected to apply for the breeding of useful plants such as horticultural and medicinal plants. In our collaborative study, we have conducted various basic studies to develop the necessary biotechnologies for this purpose, such as establishment of plant regeneration system from tissue cultures, establishment of protoplast culture method and its utilization for the somatic hybridization through protoplast fusion, isolation of female gametophytes, and development of genetic transformation system for the useful transgenic plants, in important floricultural crops such as lily, petunia and agapanthus, and medicinal plants such as *Artemisia annua* which is an important source for anti-malarial substance, artemisinin.

6. None

7. Main result

1. Quaternary climatic and vegetation changes in Kathmandu Basin, Nepal
2. Graduate School of Horticulture / Associate Professor / Dr. Arata Momohara
3. Nepal / Central Department of Geology, Tribhuvan University / Dr. Khum Narayan Paudayal
4. 2005～
5. Vegetation and flora in Nepal situated in southern part of the Himalaya have been greatly influenced by change of Asian monsoon with the Quaternary glacial and interglacial climatic fluctuations and tectonic changes with uplift of the Himalaya. We study pollen and plant macrofossils from sediments in the Kathmandu Basin to clarify relationships between climatic changes and vegetation changes in the Quaternary.
7. Main result
1. Evolution of biodiversity with environmental changes in southern East Asia since the Neogene

2. Graduate School of Horticulture / Associate Professor / Dr. Arata Momohara

3. China / Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences / Prof. Dr. Zhekun Zhou

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.


7. JSPS Invitation Fellowship Programs for Researchers in Japan (Long term) 2005

8. Main result


8. Invited by JSPS Invitation Fellowship Programs for Researchers in Japan (Long term) in 2005 (Mar. - Dec.).

Symposium in IFC/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. Solving the role of inducible glutamate dehydrogenase isoenzyme by 15N NMR

2. Graduate School of Horticulture / Associate Professor / Masami Watanabe

3. UK / University of Oxford / Professor / R. George Ratcliffe

4. Since 2007

5. Glutamate dehydrogenase isoenzyme patterns change after isolation of protoplasts. This project focused on the role of the inducible isoenzyme 7 in protoplasts and showed that the isoenzyme deaminated glutamate by using 15N NMR.

6. The Naito Foundation Fellowship (Sabbatical Leave)

7. Main result
   - Masami Watanabe, Ohnishi Yumi, Yasuhiro Itoh, Kaori Yasuda, Kazunari Kamachi, R. George Ratcliffe
   - Solving the role of inducible glutamate dehydrogenase isoenzyme 7 in Brassica napus leaf protoplasts
   - Nitrogen 2010, 1st International Symposium on the Nitrogen Nutrition of Plants, P32
   - Masami Watanabe, Ohnishi Yumi, Yasuhiro Itoh, Kaori Yasuda, Kazunari Kamachi, R. George Ratcliffe
   - Deamination role of inducible glutamate dehydrogenase isoenzyme 7 in Brassica napus leaf protoplasts
     Phytochemistry 72 (2011) 587–593

8. None

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1. Circadian clock-dependent signaling between higher plant organelles

2. Graduate School of Horticulture / Associate Professor / Mitsumasa Hanaoka

3. United Kingdom / University of Bristol / Dr. Antony Dodd

4. Since 2010 (continued)

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


8. Other important items to be stated
   - Press release(Chiba-nippo, Mar 15, 2013)
   - Presentation in the International Symposium on Plant Photobiology (UK, 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. Since 2011 (continued)
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
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


- 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 Knishaiah, Hiroaki Kuze, The impact of El Nino and


- 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.


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.
7. Main result
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.（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


2008, Keyaki-Hall, Chiba University.


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


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)  
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
8. Others
   - CEReS/Chiba University team has attended the ABC EAREX2005 (Atmospheric 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.


   The Environment Research and Technology Development Fund by the Ministry of the Environment, Government of Japan

7. Main result
   - Chiharu Hongo, Gunardi Sigit, Ryoei Shikata, Eisaku Tamura, Estimation of water requirement for rice cultivation using satellite data, DOI:10.1109/IGARSS.2015.7326868 , Publisher:IEEE,p4660-4663, 2015
   - 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


- 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


- 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


- 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, 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


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 von Chet / Professor

4. From 2010

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, Malaysian Government Research funds, etc

7. Main result

- 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


on Landslide Research Malaysia – Japan (JICA Landslide Seminar), 16 November 2013 (Penang : USM)


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
(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

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
   - Thana, B., T. Sudaj, J. Chotpitayasunon, H. Tsuruta, T. Takamura, and T. Nakajima, 2010: Characteristics of atmospheric aerosols at the Observatory for Atmospheric Research 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,
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.

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 / Prof. Kim Jae-Hyun / Professor
4. From 2013
5. Development of Synthetic Aperture Radar onboard Unmanned Aerial Vehicle and Microsatellite
Development for Earth observation
7. None
8. Other important items to be stated

Josaphat Tetuko Sri Sumantyo, Koo Voon Chet, Robertus Heru Trihardjanto, “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)

Josaphat Tetuko Sri Sumantyo (Chiba University), Koo Voon Chet (MMU Malaysia), and


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, 日本大学生活工学部・津田沼キャンパス, 2015 年 9 月 11 日
     (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


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)

Invited Talks :


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


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
Other important items to be stated


3. UK / University of Liverpool / Prof. Geoff A. Parker  
Canada / University of Toronto / Prof. Peter A. Abrams  
USA / Evolutionary Programming / Dr. John L. Bartelt

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

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.  


8. We have received the Ecological Research Award 2005 and organized an international symposium at the International Botanical Congrese 2005 in Vienna, Austria.
1. The Project for New Diagnostic Approaches in the Management of Fungal Infections in AIDS and Other Immunocompromised Patients
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. Mycosis is a serious threat to immunocompromised or aged people causing low Quality of Life (QOL) and sometimes results in fatal outcome of the patients. The situation is even worse for the patients in Brazil, where highly virulent endemic mycoses are prevalent. This project covers a wide range of activities including studies on local epidemiology and the development of new diagnostic and identification methods such as a newly designed DNA chip system and the genetic analysis of causative fungi. Based on these studies, this project aims to control mycosis among immunocompromised patients including AIDS patients not only in Brazil but also in Portuguese-spoken African countries, Central and South American countries, and Japan.
6. This project was started as a part of JST-JICA, Science and Technology Research Partnership for Sustainable Development (SATREPS). The project was highly evaluated (score A+) and was completed in 2013. The collaboration between the universities still continues publishing scientific paper, which is to be further enhanced in FY2016 with a new project.
7. Main result

8. None

1. Three-dimensional observation of deep-sea microorganisms
2. Medical Mycology Research Center／Grand fellow／Masashi Yamaguchi
3. Bangladesh／Professor Uddin
4. 2013～2016
5. To visualize three-dimensional ultrastructure of deep-sea microorganisms, the specimens were freeze-substituted, thick sections were cut, and observed with high-voltage electron microscopy tomography
6. Japan Society for the Promotion of Science
8. None

| 1. | Cell biology of cytoskeletons of fungi |
| 2. | Medical Mycology Research Center／Grand fellow／Masashi Yamaguchi |
| 3. | Czech Republic／Professor Kopecka |
| 4. | 2004～2016 |
| 5. | We analyzed cytoskeletons of pathogenic yeast with electron microscopy and fluorescent microscopy |
| 6. | None |
| 7. | Main result |


8. None
Ultrastructures of pathogenic fungi are studied with electron microscopy

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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) Kingdom of the Netherlands / Dept. of Biomedical Engineering, Technischen Universitaet Eindhoven / Professor / Dr. Ing Bart ter Haar Romeny
   (3) Canada / Computer Science Department, University of Western Ontario / Professor / John Barron
4. Implementation period
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 and computation of motion form beating heart form gated MRI image sequence using PDE-based image analysis technique.

6. None

7. Some results will appear at Dagatuhl Seminar on June 2006

| 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, The University of Auckland / Professor / Dr. Reinhard Klette |
| (4) | France / ESIEE / Professor / Gilles Bertrand |

4. Implementation 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


8. None

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**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

   | (1) | Switzerland, University of Bern, Prof. Stefan Weber |
   | (2) | USA, Harvard Medical School / Massachusetts General Hospital, Dr. Yukako Yagi |
   | (3) | Germany, Technische Universität München, Prof. Nassir Navab |
4. Start year of collaboration
   1. U Bern, FY 2012
   2. Harvard/MGH FY2012
   3. TUM, FY2014
   4. Thailand, FY2014

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.
   1. U Bern, FY2012 Travel support of students’ stay by Chiba University COE Startup program
   2. Harvard/MGH MEXT grant, Challenging Exploratory Research, Three dimensional reconstruction of pathological images and fusion with MRI for multimodal analysis of brain tumor, FY2013-2015, 3,000KYen (1,200, 900, 900), 25560189

7. Main result
   - Takashi Ohnishi, Yuya Takano, Takayuki Okamoto, Hideyuki Kato, Yoshihiko Ooka, Nassir Navab, Hideaki Haneishi: Automated Respiratory Phase Classification For Generating of Respiration Synchronized DSA Using Random Forest, CARS 2015, Barcelona
   - Chanya Lueangwattana, Toshiaki Kondo, Hideaki Haneishi: A comparative study of video signals for non-contact heart rate measurement, 12th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, Hua Hian.
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)

- We have communication with Sirindhorn International Institute of Technology (SIIT), Thammasat University as follows
  
  - Our visit
    Feb. 2014, meet the director of SIIT
    Jan. 2015 Workshop at SIIT
    Nov. 2015 We sent six students based on Super global program
  
  - Acceptance
    Apr. 2014 lecture and meeting for future exchange
    May to July 2014 Acceptance of internship student and collaboration research

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. 2012 Chiba University research support program "application support for Kakenhi"
    2013 Chiba University research support program "application support for Kakenhi"
    2014 Chiba University Invitation Fellowship program
    KAKENHI, Grant-in-Aid for Scientific Research (B)
    KAKENHI, Grant-in-Aid for Scientific Research on Innovative Areas
7. Main result
   - Speed of sound in diseased liver observed by scanning acoustic microscopy with 80 MHz and 250 MHz:
   - Verification of Ultrasonic Image Fusion Technique for Laparoscopic Surgery: Satoki Zenbutsu, Tatsuo

- 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. 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).
- Dispatched a master degree student in one month to Riverside Research (USA) (2013).

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) 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. NIH/NBIB grant  JSPS Invitation Fellowship
   KAKENHI Grant-in-Aid for Exploratory Research
   The Canon Foundation Research Grant
7. Main result

- 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.


8. Other important items to be stated

- 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 tissue structure of the liver cancer tissue
2. Center for Frontier Medical Engineering / Professor / Tadashi Yamaguchi
3. France / Centre national de la recherche scientifique (CNRS) 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. 7. JSPS invited fellowship program
8. Other important items to be stated

- Invited Dr. Franceshini in one month from CNRS (France) as JSPS invited fellowship researcher (2015).
- Will dispatched a master degree student in one month to CNRS (France) (2016).

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
4. USA / Riverside Research / Dr. Jonathan Mamou, Dr. Daniel Rohrbach, Dr. Ernest Feleppa 4. 2015
5. To realize 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. Two papers were submitted.
8. Other important items to be stated
   - Invited Dr. Rohrbach and Dr. Mamou in two weeks each from Riverside Research (USA) (2015).
   - Dispatched a master degree student in one month to Columbia University (USA) (2015).
   - Will dispatched a Ph.D student in two weeks to Riverside Research (USA) (2016).

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4. 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) 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. Toyohashi-shi Innovation support program.
8. Will Dispatched a master degree student in one month to CNRS (France) (2016).

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4. 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


Other important items to be stated:
- 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

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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.)


(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.


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.

Main result

Papers


(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


Books


(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


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. KAKENHI, Grant-in-Aid for Young Scientists (B) (26870101)
7. Main result
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. KAKENHI, Grant-in-Aid for Young Scientists (B) (26870101)
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, ASAP. DOI: 10.1021/acs.orglett.6b00790
Shanghai Jiao Tong University and Chiba University International Cooperative Research Center (SJTU-CU ICRC)

1. Creation of International and Interdisciplinary Education Hub for Bio-inspired Engineering

2. Shanghai Jiao Tong University and Chiba University International Research Center / Professor / Hao Liu

3. China / Shanghai Jiao Tong University / Lixu Gu, Professor
   China / Shanghai Jiao Tong University / Tao Han, Professor
   China / Shanghai Jiao Tong University / Xiaobo Gong, Associate Professor
   China / Shanghai Jiao Tong University / Wenrong u, Associate Professor
   China / Shanghai Jiao Tong University / Lu Shi, Associate Professor
   China / Shanghai Jiao Tong University / Fuyou Liang, Associate Professor
   China / Shanghai Jiao Tong University / Xiaohai Zhuang, Associate Professor

4. 2011~present

5. We aim to bring inspiration and innovation to bio-robotics/mechanics engineering and medical engineering by exploring highly-diverse physical phenomena of biological systems. We bring together faculty, researchers, and graduate students from Chiba University and Shanghai Jiao Tong University to conduct cutting-edge academic researches and university-industry collaborative research and development. We also promote fostering of young talented researchers and international interaction of academic researches.

6. Funds, grants, etc.
   - Chiba University : ICRC Special expenses(2011-2013)
   - Shanghai Jiao Tong University: ICRC Special expenses(2011-2013)
   - Competitive Research Funds
     - MITI Funding Program for International Standardization, International Standardization of Sensor Using Piezoelectric Devices" (Ken-ya Hashimoto, Principal Investigator)
     - JSPS Grant-in-Aid for Scientific Research (B), Development of Individual Adaptive Interface for Bimanual Cooperation between Shoulder Prostheses and Their Users, 2014-2016 (Wenwei Yu, Principal Investigator)
     - JSPS Grant-in-Aid for Scientific Research (B), Investigation of novel mechanisms involving blood cell motion, deformation, activation and break-down with a fluid-structure interaction mechanical model, 2015-2017 (Ken-ichi Tsubota, Principal Investigator)
     - JSPS Grant-in-Aid for Scientific Research on Innovative Areas, Selected Research Group, Research on decision-making algorithm for game-playing robots based on prediction of opposing player's motions, 2014-2015 (Akio Namiki, , Principal Investigator)
• International Cooperation on Sensory Feedback for Low-Invasive Surgery Support Robotic Systems, [NSFC (The National Natural Science Foundation of China)-JSPS (Japanese Society for Promotion of Science), Bilateral Cooperation Project], 2013 - 2015 (Wenwei YU, Principal Investigator)

• JSPS Grant-in-Aid for Scientific Research on Innovative Areas, “Bio-inspired Mechanical System,” 2012-2016 (Hao Liu, Principal Investigator)

• “Development of Bio-inspired Flexible Robust Rotary Wings”, Tough Robotics Challenge - Impulsing Paradigm Change through Disruptive Technologies Program (Cabinet Office, Government of Japan), Japan Science and Technology Corporation (JST) 2015-2017 (Hao Liu, Principal Investigator)

• Interchange Association Japan Summer Program, “High Performance Acoustic Wave Devices Using Phononic Structures.” (Ken-ya Hashimoto, Principal Investigator)

• JSPS Grant-in-Aid for Young Scientists(S), Research of the Next Generation of High-speed Advanced Robot Hand System (Akio Namiki, Principal Investigator)

➢ University-Industry Cooperative Research

• Cooperative Research (Maruyasu Kogyo), “Development of SAW Simulation Tools” (Ken-ya Hashimoto, Principal Investigator)

• Cooperative Research (MAYEKAWA MFG. CO., LTD.), Research of autonomous recognition on Meat processing, 2014-2015 (Akio Namiki, Principal Investigator)

• Cooperative Research (NSK), Research of devices for object recognition and grasp motion, 2014-2015 (Akio Namiki, Principal Investigator)

• Cooperative Research (Sumitomo Mining), “Evaluation of Piezoelectric Properties of New MaterialsTBD” (Ken-ya Hashimoto, Principal Investigator)

• Chiba University and Teral Cooperative Research Course “Bioinspired Fluid Machinery,” 2012-2016, (Hao Liu, Principal Investigator)

• Cooperative Research (Citizen Holding), “SAW Wireless Sensors” (Ken-ya Hashimoto, Principal Investigator)

• Cooperative Research (Sumitomo Electric Industries), “Evaluation of Temperature Compensated SAW Devices” (Ken-ya Hashimoto, Principal Investigator)

• Cooperative Research (Murata Manufacturing), “High Speed and Accurate SAW Device Simulation Technologies” (Ken-ya Hashimoto, Principal Investigator)

• Cooperative Research (Taiyo Yuden), “Performance Enhancement of Acoustic Wave Devices” (Ken-ya Hashimoto, Principal Investigator)

• Cooperative Research (Panasonic), “Visualization of SAW Field Distribution” (Ken-ya Hashimoto, Principal Investigator)

7. Main result
International Journals


- Oliver Faust, Wenwei Yu, U. Rajendra Acharya, The role of real-time in biomedical science: A meta-analysis on computational complexity and speedup, Computers in Biology and Medicine, accepted


- Faust, CW Yan, MRK Mookiah, UR Acharya, EYK Ng, W Yu, Formal Design and Development of an Anterior Segment Eye Disease Classification System, Image Analysis and Modeling in Ophthalmology, 245, accepted


- Jose Gomez-Tames, Jose Gonzalez and Wenwei Yu, Geometric Representations of the Volume Conductor on Nerve Activation during Electrical Stimulation, Mathematical Methods in Medicine, Accepted


- LH Shan, O Faust, W Yu, Data Mining Framework for Breast Cancer Detection in Mammograms:


- Faust, UR Acharya, EYK Ng, TJ Hong, W Yu, Application of infrared thermography in computer aided diagnosis, Infrared Physics & Technology, 66, 160-175, 2014


- X. Zhang, S. Noda, R. Himeno, H. Liu, Cardiovascular disease-induced thermal responses during


- K. Tsubota, S. Wada and H. Liu, “Elastic behavior of a red blood cell with the membrane’s nonuniform natural state: Equilibrium shape, motion transition under shear flow, and elongation


F. Liang, S. Takagi, R. Himeno, H. Liu, “A computational model of the cardiovascular system coupled with an upper-arm oscillometric cuff and its application to studying the suprasystolic cuff...


- Satoshi Kido, Yasuhiro Nakajima, Tomoaya Miyasaka, Yasuke Maeda, Toshiaki Tanaka, Wenwei Yu, Hiroshi Maruoka, Kiyomi Takayanagi, “Effects of Combined Training with Breathing


Domestic Journals


• S. Sakamoto, T. Itakura, K. Kashiwa, N. Go, T. Ohomori, K. Hashimoto and M. Yamaguchi,


Books and Chapters


8. Other important items to be stated

- University Exchange Agreement
  - June 8, 2013, University Exchange Agreement between Chiba University and Hong Kong University of Science and Technology.

- Awards
  - JSME, Robotics and Mechatronics Division, Certificate of Merit for ROBOMEC Outstanding Research Activity (Akio Namiki, Associate Professor)
  - Myagmarbayar Nergui, Yuki Yoshida, Nevrez Imamoglu, Jose Gonzalez, Masashi Sekine, Wenwei Yu, The Second EvAAL (Evaluating Ambient Assisted Living) Evaluating AAL Systems through Competitive Benchmarking, the 3rd place
  - 2012 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, Best Jubilee Video Award (Akio Namiki, Associate Professor)
  - Symposium and Workshop
  - April 25, 26, 2013, Joint Scientific Symposium of The Hong Kong University of Science and Technology, Shanghai Jiao Tong University and Chiba University (JSSHSC2013) Advances in Bioinspired Engineering and Biomedical Engineering in The Hong Kong University of Science and Technology, China.

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**Center for General Education**

1. International Labor Migration and Well-being: Effect on Indonesian Candidates of Care Workers and their Family

2. Center for General Education/Associate Professor/Ayako Sasaki

3. Indonesia / University of Indonesia / Fentiny Nugroho

4. 2014

5. Based on outcomes of the “International joint research on the Indonesian migration and community transformation,” explored how migrant families and communities in Indonesia have been transformed or
affected by international migration of Indonesians, the study will focus on Indonesian care workers under the EPA (including candidates), examine their economic, psychological, and social well-beings. Also it will consider its effects and transformation of their family and community in Indonesia.

6. Grant-in-Aid for Young Scientists (B)


8. Invited Dr. Nugroho in November 2013 to Chiba University and conducted a joint research meeting, “Effects of Indonesian Migration on Their Family, Community, and Society,” with assistant professor Fukuda at Graduate School of Humanities and Social Sciences, Chiba University. Also, presented outcomes of the past two years as “Indonesian Care Workers’ Career Path: Global Career Education in Japanese Care Work,” in the special session titled “Considering Employment of Foreign Workers and International Cooperation in Care Work,” heled in the 62th Fall Conference of the Japanese Society for the Study of Social Welfare. Will present outcomes of the fiscal year of 2015 on the 13th East Asian Social Policy annual conference (will be held in Ehwa Women’s University in South Korea).

### 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. Jian Jin, Professor, Icahn School of Medicine at Mount Sinai, New York, NY, USA
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)
8. Research grant from the KANAE foundation in 2015

1. Intracellular signaling molecules as therapeutic targets for glioblastoma
2. Yauso Iwadate, Associate Professor, Neurological Surgery, Chiba University Graduate School of Medicine.
3. Paul S Mischel, Ludwig Institute for Cancer Research, CA, USA
4. Since 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.
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**Safety and Health Organization**

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<tr>
<td>1.</td>
<td>Study of the association between white matter properties and clinical symptoms in patients with chronic and first episode schizophrenia.</td>
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<tr>
<td>2.</td>
<td>Safety and Health Organization / Associate Professor / Toshiyuki Ohtani</td>
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<td>3.</td>
<td>U.S.A. / Psychiatry Neuroimaging Laboratory, Harvard Medical School / Professor / Martha E. Shenton</td>
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<td>4.</td>
<td>U.S.A. / Psychiatry Neuroimaging Laboratory, Harvard Medical School / Associate Professor / Marek Kubicki</td>
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<td>5.</td>
<td>2008 -</td>
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<td>6.</td>
<td>In this project, we are investigating the white matter properties of patients with chronic and first episode schizophrenia using stochastic tractography methodology. Furthermore, we also analyze the association between white matter properties and the severity of patients' clinical symptoms.</td>
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<td>7.</td>
<td>Main result</td>
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<td>1.</td>
<td>Study of gray matter volumes in the prefrontal cortex and the association between gray matter volumes and clinical symptoms in patients with chronic schizophrenia, first-episode schizophrenia and affective psychosis.</td>
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<td>2.</td>
<td>Safety and Health Organization / Associate Professor / Toshiyuki Ohtani</td>
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<td>3.</td>
<td>U.S.A. / Department of Psychiatry, Harvard Medical School / Professor / Robert W McCarley</td>
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<td>4.</td>
<td>U.S.A. / Department of Psychiatry, Harvard Medical School / Associate Professor / James J Levitt</td>
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<td>5.</td>
<td>2009 -</td>
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<tr>
<td>6.</td>
<td>In this project, we are investigating the gray matter volumes of the prefrontal cortex regions of interest</td>
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using manual parcellation and Freesurfer. Furthermore, the association between gray matter volumes and clinical symptoms' severity in patients with chronic schizophrenia, first-episode schizophrenia and affective psychosis are also examined.

6. None.

7. Main result


- We are preparing one more paper for submission.

8. None.