The Chiba University International Collaborative Research
2008

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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)
Faculty of Letters

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 looking into the issues of religion, philosophy and culture.
6. Grants-in-Aid for Scientific Research
8. None

1. Developing Transcription and Annotation System for Japanese-Russian Corpus
2. Faculty of Letters／Associate Professor／Wakana Kono
3. Russia／Russian State University of Humanities／Lecturer, Zoya Viktrovna Efimova
4. 2007-
5. Developing Transcription and Annotation System for Japanese-Russian Corpus
6. Grants-in-Aid for Scientific Research
8. None

1. Cultural Contexts and motives in Russian Literature
2. Faculty of Letters／Associate Professor／Wakana Kono
3. Russia／Russian State University of Humanities／Professor Valerij Igorevich Tiupa
4. 2008
5. Cultural Contexts and motives in Russian Literature
6. JSPS. Invitation Fellowship Programs for Research in Japan
8. None
1. Consumption and Industrial Change in South Asia: 1880-1950
2. Graduate School of Humanities and Social Sciences/Professor/Haruka Yanagisawa
3. USA/Dartmouth College/Douglas E. Haynes
   UK/London School of Economics and Political Sciences (LSE)/Tirthankar Roy
   USA/University of Vermont/Abigail McGowan
4. From 2003
5. While literature on Europe, Japan and China has argued for the importance of consumption to processes of industrialization, there has been no similar tendency in scholarship about South Asia. The participants are all scholars who have contributed to highlighting the importance of handicrafts to India's economic development. In the process of their research each has become convinced that understanding consumer behavior and consumer preferences is crucial to comprehending the character of India's industrialization. We propose to bring consumption to a more central place in the understanding of South Asian industry by integrating perspectives from economic, social and cultural history. We have edited a volume titled Towards a History of Consumption in South Asia (Oxford University Press, forthcoming)
6. Association for Asian Studies: Grant-in-Aid for Scientific Research
8. Panel “Consumption and Industrial Change in South Asia: 1880-1950”, The Third International Convention of Asian Scholars, Singapore, held in August 2003. At Pune in December 2005, we held an International Workshop, “Towards a History of Consumption in South Asia: 1850-1950”, where thirteen papers were presented by the participants from Japan, India, UK, USA and Singapore.

1. Changes in Consumption Patterns and the Economic Growth in India, 1950-1980: With Special Reference to Lower and Middle Classes
2. Graduate School of Humanities and Social Sciences/Professor/Haruka Yanagisawa
3. India/Madras Institute of Development Studies/S. Anandhi
4. From 2007
5. The period between the 1950s and 1980s witnessed a steady change in consumption patterns among people in India. The every-day life style and daily consumption patterns by lower and middle classes also steadily changed. These changes were deeply connected with social changes in rural areas. The project is aimed at exploring these changes in consumption to test our hypothesis that the increase in consumption by lower classes formed an important factor that supported the economic growth accelerated in the 1980s.
6. Grant-in-Aid for Scientific Research (Japan)

1. Communities and Commons in Asia: Their Past and Present
2. Graduate School of Humanities and Social Sciences/Professor/Haruka Yanagisawa
3. Korea/University of Sungkyunkwan/Wooyoun Lee
4. From 2006

5. Though there have been a number of discussions on community and its common lands (commons) in the literature on environmental issues, very few works have so far done on the historical reality of village common lands in Asia. While Edo period Japan witnessed a typical case of commons, there would be some regions where historians can not find such type of natural-resource controlling system in their pre-modern periods. The project is an attempt to clarify historical changes in village communities and commons in various regions in Asia based on primary historical source materials. We are now editing a volume to publish the papers presented at Chiba conference in 2006 through a foreign publisher.


8. Eight papers relating to the project were presented at International Conference: ‘Tradition’, Environment and Publicness in Asia and the Middle East held on 15th & 16th December 2006 at Chiba University, Chiba, Japan.

Faculty of Letters

1. Investigation of the vocabulary of Nivkh and making of visual-audio materials

2. Faculty of Letters / Professor / Hiroshi NAKAGAWA

3. Russia / Peter the Great’s Museum of Anthropology and Ethnography / Director / Chuner M. Taksami

4. 2000-

5. The Aim is to make the educational materials for the maintenance and survival of Nivkh, which is one of the endangered languages spoken in Far East, by collecting the lexicon with visual and/or audio data

6. Grant-in-Aid for Scientific Research on Priority Areas (A)/(2)

7. Shiraishi, Hidetoshi / Lok, Galina D. eds. 2002: Sound Materials of the Nivkh Language 1 - Folktales Recited by V. F. Akiljak - Ivanova -. Endangered Languages of the Pacific Rim. A2-015. ELPR

Puxta, M.N./ Lok, Galina D./ Kaneko, Tohru eds.2002: Nivkh-Russian Conversation and Daily-Life Thesaurus. Endangered Languages of the Pacific Rim. A2-017. ELPR

8. None

Faculty of Education

1. ICT Development Programme for Supporting ICT Pilot Project in Rural Areas 2007

2. YOSHIDA Masami, Professor of Faculty of Education, Chiba University

3. Thailand, Ministry of Information and Communication Technology, ICT Usage

   Promotion and Development, Director, Dr. Ajin Jirachiefpattana

   Thailand, Ministry of Education, Commission on Higher Education, Thailand

   Cyber University Project, Director, Supannee Sombuntham

   Thailand, Ministry of Education, Commission on Higher Education, Inter

   University Network, Deputy Director, Dr. Panjai Tantatsanawong

- 3 -
4. Nov. 2007 -
5. This pilot project challenges to examine the effects of the long WiFi wireless link for south rural region in Thailand, and to promote ICT education of rural schools.
6. Asia Pacific Telecommunity
7. Project Progress reports
   Three reports were issued so far. We intend to report academic papers soon.
8. TCU, Ministry of Education, has a plan to have national conference in Bangkok from 7-9 Aug. with relating to this project.

1. Comparative study for brain cognition of mother and foreign language between Japanese and Italian children
2. Faculty of Education / Professor / Katsuo Sugita
3. Italy / Universita degli Studi di Napoli"L'Orientale"Tor Vergata University of Rome / Junichi Oue
4. 2007-
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 will prepare for more effective analysis for brain cognition of languages, such as Japanese characters and "Romaji" (Roman characters).
6. The Research Grant for Nervous and Mental Disorders from the Ministry of Health, Labour and Welfare
8. None

Graduate School of Science
1. Study on physiology, ecology and chemical constituents of marine organisms in the Pacific Ocean
2. Graduate School of Science / Professor / Tsukamoto, Sachiko
3. Indonesia / Sam Ratulangi University / Remy E. P. Mangindaan
4. 2006~
5. Physiology, ecology and chemical constituents of marine organisms in the Pacific Ocean were studied.
6. Grants-in-Aid for Scientific Research (No. 18032033)

1. Environmental change and the Indus civilization
2. Graduate School of Science / Professor / Takahiro Miyauchi
3. Prof. Kwarakwal of Rajastan University, India and Prof. Ajitprasad of Baroda Univesity, India
4. 2006~
Our project aims to understand the formation, development and decline of the Indus Civilization by means of an interdisciplinary approach. Especially, we attempt to evaluate the impact of environmental change on the subsistence economy and the trade network, which sustained the urban system. The Paleo-environment Research Group studies the environment surrounding the Indus Civilization.

Research Institute for Humanity and Nature, Japan


2007.6-11 RIHN Collaborative Seminar inviting Indian researchers

Theoretical Study of Iron-Based High-Temperature Superconductivity

Department of Physics/Professor/Yukinori Ohta

Germany/Forschungszentrum Karlsruhe/Robert Eder

from 2008

We study the correlated electronic structures of recently-discovered iron-based high-temperature superconductors on the basis of the variational cluster approximation (VCA) within the framework of the self-energy functional theory (SFT). From this study, we can clarify the effects of electron correlations on the electronic states of iron-based superconductors and thereby we can contribute to the elucidation of the mechanism of high-temperature superconductivity of this materials.

JST-TRIP, Grant-in-Aid for Scientific Research

In preparation

N/A

Computational Physics on Anomalous Electronic Properties 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.

Grant-in-Aid for Scientific Research


Charge and spin excitation spectra in the one-dimensional Hubbard model with next-nearest-neighbor hopping, S. Nishimoto, T.
1. Theoretical Study of Strongly Correlated Many-Body Systems by the Self-Energy Functional Theory
2. Department of Physics / Professor / Yukinori Ohta
3. Germany / University of Hannover / Tomonori Shirakawa
4. From 2008
5. We study strongly correlated many-body systems by the variational cluster approximation (VCA) based on the self-energy functional theory. In particular, we study the anomalous electronic properties of strongly-correlated electron systems such as organic materials and transition-metal oxides. We also study the anomalous properties of the two-dimensional solid helium-3 adsorbed on graphite surface. From these studies, we aim to construct the theory that can describe the experimental results on novel quantum phenomena such as charge ordering, anisotropic superconductivity, and supersolidity.
6. Grant-in-Aid for Scientific Research
8. N/A

1. Study on a microbial community and its effect on surface albedo on the Urumqi No.1 Glacier, Tien Shan Mountains, China.
2. Graduate School of Science / Associate Professor / Takeuchi, Nozomu
3. Dr. Li, Zhongqin, Director, Tian Shan Glaciological Station, Lanzhou Cold and Arid Regions Environment and Engineering Research Institute, China
4. FY2006-
5. This project aims to describe a microbial community on the Urumqi No.1 Glacier in China, and to evaluate its effect on glacial surface albedo. The Urumqi No.1 Glacier is the glacier that has longest record of glacial mass balance in the Asian high mountains. The glacier has shrunk significantly in last few decades as well as other glaciers in the world. Recently, it has been revealed that special microbes are living on snow and ice of glaciers and reduce the glacial surface albedo and accelerate melting of the glacier. In order to evaluate the effect of the microbes on melting on the Urumqi No.1 Glacier, a collaborative research between Tian Shan Glaciological Station and Chiba University will be carried our for 3 years from FY2006.
6. Grant-in-Aid for Young Scientists
8. 2007.6.22-27 Three of graduate and undergraduate students of Chiba University visited to the glacier for M.Sc and Graduate researchs.
2007.7.29-8.6 Collaborative fieldwork on the glacier.
1. On the study of electromagnetic phenomena associated crustal activity

2. Marine Biosystems Research Center / Associate Professor / Katsumi Hattori

3. Russia / Institute of Physics of the Earth / Dr. Oleg Molchanov

Russia / Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation (IZMIRAN) / Dr. Yuri Kopytenko

Russia / Geophysical Service Kamchatka Department / Dr. Evginii Gordeev

Ukraine / Lviv Center of Space Research / Dr. Varely Korepanov

4. 1998~

5. Recognizing the importance of ULF geomagnetic field changes among electromagnetic phenomena preceding large earthquakes, this project aims at researches on developments of sensors, observation, and methodology, clarification of physical mechanism, and establishing the monitoring and short-term prediction of crustal activity.

6. RIKEN (-2002)


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 inf 2003 year at Bosso Peninsula (Japan), 2004 Asia-Pacific Radio Science Conference Proceedings, p. 545, August 24-27, 2004, (Qingdao, China).


Kopytenko, Y., Ismaguilov, V., Molchanov, O., Kopytenko, E., Voronov, P., Hattori, K., Voronov, P, Hayakawa M., Zaitsev, D.,


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


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

November, 1998 : Visit to IZMIRAN in St. Petersburg and Institute of Physics of the Earth in Moscow to make technical and scientific discussions with Dr. Kopytenko and Dr. Molchanov, respectively.

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

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

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

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

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

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

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

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

1. Monitoring of Earthquake activity with use of electromagnetic approach in Taiwan,
2. Marine Biosystems Research Center / Associate Professor/ Katsumi Hattori
3. Taiwan National Central University / Professor / Jann-Yenq Liu
   Taiwan National Chung Cheng University / Professor / Chiou-Fen Shieh
   Dahan Institute Technology / Professor / Hua-Hi Sheu
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)
   Katsumi Hattori, ULF geomagnetic changes associated with large earthquakes, Terrestrial, Atmospheric and Oceanic Sciences, Vol.15, No.3, 329-360, 2004


8. Install electromagnetic sensor in Chia-Yi (September, 2001)
Filed survey around Hualien (March, 2002)
Invited talk in the kick off meeting of project of National Central University entitled integrated Search for Taiwan Earthquake Precursors” (2002 International Workshop on Earthquake Precursor iSTEP ) (June, 2002)
Install electromagnetic sensor in Hualien (September, 2002)
Install electromagnetic sensor in Fuli (March, 2003)
Profs. Jann-Yenq Liu and Yi-Ben Tsai came to Chiba University and gave talks (December, 2003)
International workshop was organized at National Central University, Taiwan (March, 2004)
Install electromagnetic sensor in Donghua University (October, 2004)
Discussion with Prof. Liu at National Central University (December 2005)
Mr. Jay-hong Chen stayed at Chiba University for collaboration (March-April 2005)
Discussion with Prof. Liu at National Central University (June, 2005)
Discussion with Prof. Liu at National Central University (November, 2005)
Install meteorological equipment at Dong Hua University (December, 2005)
International workshop on Earthquake Precursor was organized at National Central University, Taiwan (March, 2006)
Prof. Liu came to Chiba University to see the observation network for seismo-electromagnetic and to give a seminar. And we make technical and scientific discussions. (May, 2006)
Masahide Nishihashi who is a Ph. D student visited the Prof. Liu’s laboratory at National Central University, Taiwan to have a collaboration on ionospheric disturbances associated with earthquakes (August-September, 2006)
System maintenance of stations at Taiwan (Chia-Yi, Hualien, NCU) (May, 2007)
System maintenance of stations at Hualien. (July 2007)
Prof. Liu came to Chiba University to give a talk and make technical and scientific discussions. (July, 2007)
System maintenance of stations at Hualien. (August-September, 2007)
Technical and scientific discussion at Bandung, Indonesia with Prof. Liu. (November, 2007)

1. Ground-based and satellite geophysical monitoring and modeling of seismotectonic structure
2. Marine Biosystems Research Center / Associate Professor/ Katsumi Hattori
3. Istituto di Metodologie per l’Analisi Ambientale, CNR C.da S.Loja / Prof. Vincenzo Lepenna
   Istituto di Metodologie per l’Analisi Ambientale, CNR C.da S.Loja / Research Scientist / Dr. Luciano Telesca
4. 2003 ~
5. the statistical analysis of geomagnetic and geoelectric signals recorded in seismic areas
6. 2003–2004 JSPS Bilateral collaboration project between Japan and Italy (PI: Prof. M. Hayakawa (The University of Electro-Communications))
   2006 Research Foundation for the Electrotechnology of Chubu (REFEC), Chubu Electric Power Co. Inc.
   2007 JSPS project on Bilateral Seminar between Japan and Italy (CNR).
Ground-based Monitoring of Seismo-Electromagnetic Signals in Indonesia

Marine Biosystems Research Center / Associate Professor / Katsumi Hattori

Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Djedi Widarto

National Institute of Aeronautics and Space-LAPAN / Senior Researcher / Dr. Sarmoko Saroso

2005～

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.

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 NiCT R&D promotion scheme funding international joint research.


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

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

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

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

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

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

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

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


1. Brauer blocks theory in representation theory of finite groups
2. Graduate Shool of Science / Professor / Shigeo Koshitani
3. United Kingdom / University of Aberdeen / Markus Linckelmann
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, 2008--2010


Joint work with M.Linckelmann during 19 November – 29 November 2006 in University of Aberdeen in the UK.
Joint work with M. Linckelmann during 27 May – 2 June, 2007 Lumiyn Mathematics Institute in France.
Joint work with M. Linckelmann during 21 August – 2 September, 2007, in Chiba University and Kyoto University.
Joint work with M. Linckelmann and R.Kessar during 7 December – 15 December, 2008, in University of Aberdeen, UK
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
7. In preparation
8. Joint work with J. Murray during 8–16 April 2006, in National University of Ireland Maynooth

1. Electronic structure examination of nanocarbons using electron spin resonance
2. Faculty of Science / Associate Professor / Hirofumi Kanoh
3. USA / Pennsylvania State University / Professor Iushisa R. Radovic
4. FY2005 ~
5. The chemistry of the edge of a graphene (polyaromatic hydrocarbon) layer is now a major stumbling block toward further molecular engineering of carbon surfaces, be they in conventional materials such as activated carbons and graphite nanofibers or the novel carbon nanotubes. The edges are now known to be neither saturated with very strong C–H bonds nor free radical sites. The most likely alternative candidates are carbene-type σ–π electron pairs. This hypothesis will be subjected to scrutiny by performing electron spin resonance (ESR) experiments.
6. The Invitation Fellowship for Research in Japan (JSPS), Funds of Graduate School of Sci. and Tech., and also of Director General of Chiba University
7. International Workshop on Frontier Science and Technology of Nanoporous Systems 2 (FSTNS2) was held with support from the Graduate School of Sci. and Tech. of Chiba University.
8. None

1. Expression analysis of Duox gene in the ascidian endostyle
2. Faculty of Science / Research Associate / Michio Ogasawara
3. England / University of Reading / Dr. Francoise Mazet
4. 2004 ~
8. None

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. CNRS, France / 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.


8. None

1. Application of Metal Nanoparticle Catalysts Modified with Tin to Fine Chemicals Synthesis and In-situ Monitoring of the Active Structure Transformation

2. Department of Chemistry, Graduate School of Science, Associate Professor, Dr. Yasuo Izumi

3. CNR, Italy, Dr. Laura Sordelli, Dr. Matteo Giudotti, 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.


| 1. | Creation of Hybrid Catalysts utilizing Both Nanoparticles and Ordered Mesoporous Space |
| 2. | Graduate School of Science / Associate Professor / Yasuo Izumi |
| 3. | Henan University of Science and Technology, People's Republic of China, Associate Professor Shuge Peng |
| 4. | 2007 to Present |
| 5. | Nanoparticles and mesoporous space are independent essential topics for research and development. This international joint project tries to synthesize hybrid catalysts controlling particle size and spatial distribution of nanoparticles in ordered mesoporous space. Further, the designed hybrid nanomaterials are applied to highly-efficient catalysis of fuel cell, etc. |
| 6. | Research Grant for Basic Science from Sumitomo Foundation. The fee for travel and stay in Japan of Dr. Shuge Peng is based on Henan University of Science and Technology (Yen Loan from the Government of Japan). |
| 7. | Research papers have not published yet because this project just started very recently. |
| 8. | None |

1. Creation of Ordered Mesoporous Photo-catalysts
2. Department of Chemistry, Graduate School of Science, Associate Professor, Dr. Yasuo Izumi
3. Henan University of Science and Technology, People's Republic of China, 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.
7. (a) "Site Structure and Photocatalytic Role of Sulfur or Nitrogen-Doped Titanium Oxide with Uniform Mesopores under Visible Light",
(b) "Specific Oxidative Dehydrogenation Reaction Mechanism over Vanadium(IV/III) Sites in TiO2 with Uniform Mesopores under Visible Light",
(c) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectroscopy. Monitoring of Vanadium Site in Mesoporous Titania Excited under Visible Light by Selective Detection of the Vanadium K-α fluorescence",
(d) "Photo-oxidation over mesoporous V-TiO2 catalyst under visible light monitored by vanadium K-α2-selecting XANES spectroscopy",
1. Topological orbit equivalence of minimal equivalence relations on Cantor sets
2. Graduate School of Science / Associate Professor / Hiroki Matui
3. Canada / University of Ottawa / Thierry Giordano
   Canada / University of Victoria / Ian F. Putnam
   Norway / Norwegian University of Science and Technology / Christian F. Skau
4. from 2005
5. Suppose that a discrete abelian group acts on a Cantor set by homeomorphisms. This action is said to be minimal, if it has no nontrivial closed invariant sets. We would like to classify such actions up to topological orbit equivalence. This research is the topological analogue of the classification theory of ergodic equivalence relations up to measure theoretical orbit equivalence.
6. Grant-in-Aid for Young Scientists (B)
8. None

1. Cooperative research by Japan, Korea and Russia for structure and tectonics of Japan Sea and Shikbote-allin area, and its relationship to evolution of Japanese islands
2. Faculty of Science / Professor / Nobuhiro Isezaki
3. Russia/Pacific Oceanological Institute of Academy of Science of Russia(POI)/R.Kulinich
   Korea/ Korea Ocean Research and Development Institute(KORDI)/C.H.Park
4. 1996-
5. Investigations in the Japan Sea and Shikuhote-Allin area have been done last 5 years. For the Japan Sea Survey, R/V Gagarinsky of POI was used in the Russian EEZ Japan Basin and the Tsushima Basin and R/V Tansui-marui of Ocean Research Institute of Tokyo University was used in the Japanese EEZ area. Magnetic, gravity, reflection seismic and eco sounding surveys have been conducted for cruising and Ocean Bottom Seismometer (OBS) and Ocean Bottom Electro-magnetometer (OBEM) surveys for stay. The scientific main objective is to study the structure of the Japan Basin and during this project, the distribution of oceanic crustal structure in the Japan Sea has been revealed. This project has been granted by Mombusho from 1996 to 2004.
   From 2001 to 2003: Grants in-Aid for Scientific Research B
   From 2004 to 2005: Research fund


8. None.

1. Crustacean Biogeography in Equatorial area of Southeast Asia (Survey at the Borneo Island, Malaysia)

2. Marine Biosystems Research Center / Professor / Toshiyuki Yamaguchi

3. Indonesia / National Jenderal Soedirman University / R.E. Rrabowo,
   Indonesia / National Riau University / Dr. Ida Ayu Puspasari,
   Vietnam / Vietnam National University / Professor P.N. Hong,
   USA / Scripps Institution of Oceanography / Professor W.A. Newman,
   Thailand / National Songkura University / Dr. Saowapa Angsupanich,
   Bangladesh / Dhaka University / Dr. Rowshan Ara Begum

4. 2003 (continued since 1998)

5. Research on species composition, biogeography, and its history of establishment in Southeast Asia between Pacific and Indian Oceans


8. None

1. Phylogeny, Biogeography and Origin of the most primitive barnacles found in the deep-sea hydrothermal vent

2. Marine Biosystems Research Center / Professor / Toshiyuki Yamaguchi

3. USA / Scripps Institution of Oceanography / Professor W.A. Newman
   New Zealand / Auckland University of Technology / Professor J.S. Buckeridge

4. 2003 (continued since 1988)

5. Study on the barnacles found at the deep-sea hydrothermal vents of East Pacific Rise, Northwest Pacific (including Japanese water), Southwest Pacific, Indian Oceans from the viewpoint of phylogeny, biogeography and their origin.


8. None

1. Molecular phylogeny of barnacles

2. Marine Biosystems Research Center / Professor / Toshiyuki Yamaguchi

3. Indonesia / National Jenderal Soedirman University / R.E. Rrabowo,
   Indonesia / Riau University / Dr. Ida Ayu Puspasari,
   Bangladesh / Dhaka University / Dr. Rowshan Ara Begum

4. 2003 (continued since 1996)

5. Study on molecular phylogeny of barnacles based on nucleotide sequences of a mitochondrial genes.

6. Grant-In-Aid for Scientific Research A2 (from 1999 to 2001), C1 (from 1999 to 2001), and B1 (from 2002 to 2005)

Rowshan Ara Begum, K. Tsuchida, T. Yamaguchi, M. Nishida and S. Watabe (印刷中) Complete mitochondrial genome of the sessile barnacle Tetractiia japonica. Special MBC 2003 Proceedings Issue of Marine Technology,

8. None

1. Study on the Deep-sea Hydrothermal Vent and Cold-seep Barnacles
2. Graduate School of Sciences / Professor / Toshiyuki Yamaguchi
3. USA / Scripps Institution of Oceanography, University California, San Diego / Professor William A. Newman
   United Kingdom / Marine Biological Association of United Kingdom / Professor Alan J. Southward
4. Since 2005
5. Check list of the Deep-sea Hydrothermal Vent and Cold-seep Barnacles
7. None.

1. Phylogeny of Cirripedia (Crustacean) collected from the deep-sea hydrothermal vent and seep
2. Marine Biosystems Research Center/Professor/Toshiyuki Yamaguchi
3. United States of America/Scripps Institution of Oceanography, University of California, San Diego/ Arnold Ross, Dr.
4. 2002
5. Phylogeny of Cirripedia (Crustacean) collected from the deep-sea hydrothermal vent and seep
6. Oversea Research Program of the Ministry of Education, Culture, Sports, Science and Technology

1. Changes of water environment in the tropical humid region evaluated from the view point of environmental hydrogeology
2. Faculty of Science/Professor/Yasuo Sakura
3. Indonesia
4. 2000 –
5. Both of Japan and Indonesia is volcanic island, but those climatic conditions such as precipitation and air temperature are different. In Indonesia, groundwater is important as water resources and its exploitation results in the groundwater problems. From the view point of comparative hydrology, we aim to carry out basic studies for continuing sustainable use of water with quality and quantity.

Our relation to Indonesia began to participate in IGC1992, in Kyoto to present the results of Bali Project supported by Monbusyou. After that, we have received some students from Indonesia. Following the earnest invitation by Research Center for Geotechnology, Prof. Y. Sakura visited there and discussed the academic exchange program in 2000. Official agreement for academic exchange and cooperation between two institutions started when Dr. Jan Sopaheluwakan, Director of Research Center for Geotechnology had visited in Chiba University, 2001. After that we have carried out our exchange programs as follows,


In 2002, Faculty of Science, Chiba University received Mr. Robert M, Delinom as a Research Scholar funded from JSPA from

In 2003, Mr. Robert M. Delinom, Senior researcher visited in Sapporo and presented our research results.

In 2004, Faculty of Science, Chiba University received Mr. Fajar Luibis, Researcher as a Research Student. He was a graduate student in Graduate School of Science and Technology, Chiba University from 2005 to 2008.

In 2006, Mr. Robert M. D. submitted his PhD thesis “The Groundwater Flow System of Bandung Basin, West Jawa, Indonesia” and got a PhD.

In 2008, Mr. Fajar. L. submitted his PhD thesei “Groundwater Study using Thermal Information as Flow Tracer in Jakarta Groundwater Basin” and got a Doctor of Science.

6. In 2002, Japanese partner used the Fund due to Personal Donation (Leader: Yasuo Sakura, Chiba University). From 2002 to 2003, Indonesia partner used the Fund of JSPS (Host Scientist: Yasuo Sakura).


8. None


8. None

1. Comparative proteome analysis of human metaphase chromosomes
2. Faculty of Science / Associate Professor / Sumiko Kimura
3. Germany / University Hospital Mannheim/ Siegfried Labeit, USA / Washington State University / Henk L. Granzier,
4. 2003 –
5. Quantitative proteome analysis of human metaphase chromosomes was performed. One hundred eighty nine proteins were identified by mass/spec. The absence of >500 kDa species such as connectin- and nebulin-like proteins was indicated by proteome analysis of ultra-high molecular weight region.
6. Grant-in-Aid for Scientific Research C
1. Molecular systematics of Lathyrus (Leguminosae)
2. Faculty of Science / Associate Professor / Tadashi Kajita
3. United Kingdom/Royal Botanic Garden Edinburgh/ Gregory J. Kenicer
4. 2001 -
5. Molecular systematic study of genus Lathurus (Leguminosae) using molecular data of chloroplast and nuclear DNA.
6. Daiwa Anglo-Japanese Foundation; Grants-in-Aid for Scientific Research (B):
   Grant-in-Aid for Young Scientists (B)
8. None

1. Study of the biodiversity and ecosystem functioning of tropical seagrass beds
2. Graduate school of Science and Technology / Associate professor / Masahiro NAKAOKA
3. Thailand / Faculty of Fisheries, Kasetsart University / Prof. Khanjanapaj Lewmanomont
   Thailand / Faculty of Fisheries, Kasetsart University / Assoc. Prof. Chittima Aryuthaka
4. 2001 -
5. Seagrass beds are among the major components of coastal ecosystems of the tropics. We investigate biodiversity and ecosystem function of tropical seagrass ecosystems in Thailand in order to establish effective conservation and management plans. We are specially focusing on the interrelationship among environmental conditions, biodiversity and ecosystem functioning of seagrass beds by comparing several sites with different natural and human impacts. Based on collected data, we aim to develop evaluation methods of health of coastal ecosystems using biodiversity as indicator.
Thailand seagrass bed. Ecological Research 17: 625-638


8. We organized a symposium entitled 'Interactions between terrestrial and oceanic ecosystems' held in Ocean Research Institute, University of Tokyo in October, 2001.


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

2. Graduate School of Science / Associate Professor / Hitoshi Nakada


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 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)


8. None
| 1. | Crystallization of recombinant motor domain construct of Chara corallina myosin |
| 2. | Faculty of Science/Professor/Keiichi Yamamoto |
| 3. | Germany/Hannover Medical School/Dietmar J. Manstein |
| 4. | From 2003 |
| 5. | For crystallization of motor domain construct of Chara corallina myosin, cDNA of motor domain is introduced in Dictyostelium cells and expressed in it. |
| 8. | None |

| 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. | Theoretical and Numerical Studies of Black Hole Accretion Flows |
| 2. | Graduate School of Science/Professor/Ryoji Matsumoto |
| 3. | China/Shanghai Astronomical Observatory/Professor/Feng Yuan |
| 4. | 2008 – |
| 5. | The aim of this collaboration is to study the structure, time variability and radiation spectra of black hole accretion flows by means of theoretical modeling and magnetohydrodynamic simulations |
| 6. | JSPS, Grants in Aid for Scientific Research (2008) |
| 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 |

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**Graduate School of Medicine**

| 1. | *In vivo* assessment of human axonal ion channel function |
| 2. | Department of Neurology, Graduate School of Medicine · Professor, Satoshi Kuwabara |
| 3. | Sobell Department of Neurophysiology, Institute of Neurology, London, UK, Prof. Hugh Bostock |
| 4. | Department of health Science, Neurophysiology, University of Sydney, Prof. David Burke |
| 5. | From 2000 to date |
| 6. | Development of methods to assess human peripheral nerve ion channel function in vivo |
| 7. | 1) Nakata M, Kuwabara S, Kanai K, Misawa S, Tamura N, Sawai S, Hattori T, Bostock H. Distal excitability changes in |


8. None

1. Search for candidate compounds with anti-cancer activity from the plants growing in China and comparative evaluation of characteristics of environmental water between Japan and China

2. Department of Environmental Biochemistry, Graduate School of Medicine • Associate Professor, Kazuko Kita

3. Faculty of Forensic Medicine, the School of Basic Medical Science, Hebei Medical University, China, Associate Professor, Mei Dong

4. From April, 2005

5. Many chemical compounds have been purified from the plants growing in China in Dr. Dong's laboratory. Among those compounds, we are searching for chemicals with growth-inhibitory effect on cancer cells. We also investigate the mechanisms of the growth-inhibitory effect of some candidate compounds.


2) Anticancer agents containing cyatane-derivative form, JPN patent application number 2006-108075
<table>
<thead>
<tr>
<th>8.</th>
<th>None</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Urinary creatinine project</td>
</tr>
<tr>
<td>2.</td>
<td>Graduate School of Medicine / Associate professor / Yasushi Suwazono</td>
</tr>
<tr>
<td>3.</td>
<td>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</td>
</tr>
<tr>
<td>4.</td>
<td>From 2003 to date</td>
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<tr>
<td>5.</td>
<td>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.</td>
</tr>
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<td>6.</td>
<td>Yoshida Scholarship Foundation</td>
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<td>8.</td>
<td>None</td>
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<th>8.</th>
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<tbody>
<tr>
<td>1.</td>
<td>Benchmark dose estimation for Cadmium-induced health effects in humans</td>
</tr>
<tr>
<td>2.</td>
<td>Graduate School of Medicine / Associate professor / Yasushi Suwazono</td>
</tr>
<tr>
<td>4.</td>
<td>From 2004 to date</td>
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<tr>
<td>5.</td>
<td>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.</td>
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<td>None</td>
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<th>8.</th>
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<tbody>
<tr>
<td>1.</td>
<td>Analysis of the expression and function of spermatogenic specific glycolytic enzyme.</td>
</tr>
<tr>
<td>2.</td>
<td>Graduate School of Medicine / Professor / Chisato Mori</td>
</tr>
<tr>
<td>3.</td>
<td>USA/U.S. National Institute of Environmental Health Science, National Institutes of Health (NIH)</td>
</tr>
<tr>
<td>4.</td>
<td>2000-</td>
</tr>
<tr>
<td>5.</td>
<td>Using DNA microarray technique, 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.</td>
</tr>
</tbody>
</table>
6. Grant-in-aid for Department of Bioenvironmental Medicine of Chiba University


8. None

1. Analysis of the role of NAAG in the nociceptive transmission

2. Department of Anesthesiology, Graduate School of Medicine / Associate Professor / Tatsuo Yamamoto

3. USA / Department of Biology, Georgetown University / Professor Joseph H Neale

4. We began this project at 2001 and this project is still going.

5. We have characterized the N-acetylaspartylglutamate (NAAG) and found the peptide inhibits transmitter release by activation of mGluR3 receptors at presynaptic endings. To learn more about the synaptic activity of NAAG, we have synthesized a series of novel compounds that are potent inhibitors of brain NAAG peptidase activity as well as the activity of cloned human and rat glutamate carboxypeptidase II (GCPII), an enzyme that was believed to be solely responsible for inactivation of NAAG following synaptic release. We tested two of these compounds in models of chronic and neuropathic pain and found them to be anti-nociceptive. We have produced and characterized a strain of CGPII knock-out mice and discovered a residual NAAG peptidase activity in the brains and spinal cords. They appear quite similar to their wild type littermates in terms of growth, reproduction, basic neurological features, acute pain threshold, rotor rod and open field behavior, and NAAG, glutamate, and mGluR3 mRNA levels. These data support the hypothesis that one or more uncharacterized enzymes may be involved in the inactivation of this peptide. We have found several differences between the NAAG peptidase activity found in the knock-out versus wild type brain membranes, including differential sensitivity to the peptidase inhibitor 2-PMPA. The cloning of an additional gene(s) coding for nervous system NAAG peptidase and the development of selective inhibitors of NAAG peptidase activity have the potential to contribute to understanding the role of NAAG in excitotoxicity and chronic pain perception.

6. This study was supported in part by a Grant-in-Aid for Scientific Research (B) 12470315, Japan.


8. None

1. Development of novel opioid analgesics

2. Graduate School of Medicine / Assistant Professor / Megumi Shimoyama

3. U.S.A. / Cornell University Medical College / Hazel H. Szeto

4. From 1998 to date
5. Opioid analgesics currently available such as morphine, although effective, have many problems including side effects, development of tolerance and dependence, and ineffectiveness to certain pain conditions. In order to develop novel opioid analgesics with more ideal characteristics, we are examining newly synthesized opioids such as dermorphin analogs by characterizing the analgesic and side effect profiles of the compounds. Furthermore, by investigating the mechanisms by which they differ from morphine, we aim to define targets for future development of opioid analgesics.

6. Grant-in-Aid for Cancer Research, Ministry of Health and Welfare, Japan


8. None.
### Molecular interaction between hyaluronan and hyaladherins in inflammation and cancer

1. Graduate School of Medicine / Professor and Director / Kenichi Harigaya MD & PhD
2. Austria / Boehringer Ingelheim Austria, R&D Vinna / Dr. Frank Hilberg Associate Director
3. 2000~

Hyaladherin CD44 is a transmembrane protein and plays a role of a linker between extracellular matrix proteins and actin cytoskeleton. It has been accumulated a lot of clinical reports about the role of CD44 in the modulation of acute and chronic inflammation and cancer metastasis. However, the molecular analysis of CD44 remains in enigma. This study aims to elucidate the molecular mechanism of CD44 function by using CD44-deficient mice and to develop the novel strategy of molecular therapy in acute and chronic inflammation and cancer metastasis.


CD44 Suppresses TLR-Mediated Inflammation. The Journal of Immunology. 180, 4235-4245, 2008

### Hereditary Prostate Cancer in Japanese Population

1. Graduate School of Medicine / Associate Professor / Hiroyoshi Suzuki
2. U.S.A. / Johns Hopkins University / Prof. William B. Isaacs
3. 1999-

Recent several reports have revealed the presence of Hereditary Prostate Cancer (HPC) genes by linkage analyses. This investigator joined HPC project at Johns Hopkins until 1998 and have collaborations with their group now. To select high-risk group for prostate cancer, this research project is collecting HPC families in Japan and analyzing their genomic information.


### Establishment of dendritic cell targeting gene vaccine against toxoplasmosis

1. Graduate School of Medicine / Associate Professor / Fumie Aosai
2. Cuba / Department of Reference National Laboratory Toxoplasma Institute of Tropical Medicine “Pedro Kouri” / Martha Solangel Rodrigues Pena M.D., PhD
3. From 2004 to date
5. Dendritic cell-mediated Gene vaccine using TgHSP70 has been established.

6. The Matsumae International Foundation


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. From 2002 to date

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 / Grant-in-aid for scientific research from the Ministry of Education, Science, Sports, and Culture of Japan


8. None.

1. Molecular Analysis of atherosclerosis

2. Graduate School of Medicine / Professor / Yasushi Saito

Graduate School of Medicine / Professor / Hideaki Bujo

3. Austria / University of Vienna / Dr. W. J. Schneider

4. From 2000 to date

5. In order to clarify the mechanism of atherosclerosis using the cell and molecular biology on the functional analysis of lipoprotein receptors

6. None


8. None
1. Molecular Analysis of atherosclerosis
2. Graduate School of Medicine / Professor / Yasushi Saito
   Graduate School of Medicine / Professor / Hideaki Bujo
3. USA / University of Emory / Dr. Lah JJ
4. From 2004 to date
5. In order to clarify relationship between Alzheimer’s disease and the LDL receptor family
6. None
8. None

---

1. Smad3 signaling in formation of atherosclerosis
2. Graduate School of Medicine / Assistant Professor / Koutaro Yokote
3. USA / National Cancer Institute / Anita B. Roberts
4. 2004~
5. Investigate the role of TGF-β/Smad signal transduction in formation of atherosclerotic vascular disease by use of mice genetically targeted for Smad3 gene.
8. 1) 2004 Japan Heart Foundation, Research award on Cardiovascular disease
   2) Keystone symposia, “The role of TGF-β in disease pathogenesis: Novel therapeutic strategies (March 28-April 2, 2005)”. Our study introduced at the session by Anita Roberts, an organizer of the meeting.
   4) Young Investigator Award. 2005 Japanese Society of Diabetes complication.

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1. Cell lineage analysis of dorsal neurons in the spinal cord
2. Graduate School of Medicine / Professor / Tetsuichiro Saito
3. United States of America / University of Texas / Jane E. Johnson
4. 2004–
5. We have shown that a proneural bHLH transcription factor, Math1, directly activates the Mbh1 gene, thereby controlling commissural neuron identity in the developing spinal cord.
6. Grants-in-Aids for Scientific Research from Japan Society for the Promotion of Science, and from Ministry of Education, Culture, Sports, Science and Technology
8. None

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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 Arthritis induction using CD69-deficient mice. We have found that CD69 molecules are essential for the induction of collagen-induced arthritis.

6. Ministry of Education, Science, Sports, Culture and Technology of Japan (Grant in aid for Scientific Research B)


8. None.

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1. Role of NKT cells in allergic asthma.

2. Graduate School of Medicine/Professor/Toshinori Nakayama

3. USA/Harvard University/Dale T. Umetsu

4. From April 2005 to date

5. We are investigating the role of NKT cells in the pathogenesis of allergic asthma using NKT cell-deficient mice. We have found that NKT cells play a critical role in the pathogenesis of asthma.

6. Ministry of Education, Science, Sports, Culture and Technology of Japan (Grant in aid for Scientific Research B)


8. None.

---

1. Methylation analysis of suppressor genes in lung cancer

2. Graduate school of medicine / Professor / Takehiko Fujisawa

3. USA / UT Southwestern medical center at Dallas / Adi F Gazdar

4. From 2000

5. Tumor suppressor genes are down regulated by mutation, deletion / insertion, or methylation of promoter region. This study is aimed that the analysis of DNA methylation patterns of suppressor genes in lung cancer could become a powerful tool for carcinogenesis, and accurate and early cancer diagnosis.

6. Supported by an Early Detection Research Network Grant (5U01CA8497102)

   Grant-in-Aid for Scientific Research from the Ministry of Education of Japan (C)

   Emphasis Research Project by expenditure at the discretion of the president of The Chiba University in 2005.

   Grant from the Smoking Research Foundation


   5) Makoto Suzuki, Chang Hao, Takao Takahashi, Hisayuki Shigematsu, Narayan Shivapurkar, Ubaradka G. Sathyanarayana,


8. None

1. The analysis of the mechanism of the differentiation of cardiomyocyte
2. Issei Komuro, Department of Cardiovascular Science and Medicine, Chiba University Graduate School of Medicine
3. Prof. Eggen BJ, Groningen Biomolecular Sciences and Biotechnology Institute, Groningen University, Netherlands
4. 2005–
5. The analysis of the mechanism and the detection of the essential factor of the differentiation of cardiomyocytes using cardiomyocytes differentiation model (mouse embryonic carcinoma P19CL6 cells.
6. Grant in aid from Ministry of Education, Science, Sports, Culture and Technology of Japan(Grant in aid for Scientific Research A, 2006), Naito foundation, Tokyo seikagakukenkyukai, Takeda foundation, Mitsubishi foundation
8. None

1. Physiological functions of endothelin
2. Graduation School of Medicine / Professor / Tomoyuki Kuwaki
3. USA / Dept of Molecular Genetics, Texas Univ / Masashi Yanagisawa
4. From 1995 to date
5. To reveal roles of endothelin-1, -2, -3, endothelin receptors-A, -B, and endothelin converting enzyme-1, -2 in the cardiorespiratory regulation, development of the cardiorespiratory system, and pain processing using genetically engineered
mice.


   Coceani F. et al., J. Cardiovasc. Res. 36: S75-7 '00
   Nakamura A. et al., Resp. Physiol. 124: 1-9 '00
   Kuwaki T. et al., Clin. Sci. 103: 485-52 '02
   Hasue F. et al., Neurosci. 130: 349-58 '05

8. None

Center for Forensic Mental Health

1. Molecular study of psychiatric diseases

2. Center for Forensic Mental Health/Professor/Kenji Hashimoto and Director/Professor/Masaomi Iyo

3. Department of Psychiatry, The Johns Hopkins University School of Medicine, USA · Professor Akira Sawa

4. From April, 2004

5. We measured levels of amino acids associated with NMDA receptor function using postmortem human brain sample. Also, we studied the role of PICK1 gene in the pathophysiology of schizophrenia and methamphetamine abuse.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan

7. Publication


8. None

1. Molecular study of psychiatric diseases
2. Center for Forensic Mental Health/Professor/Kenji Hashimoto and Director/Professor/ Masaomi Iyo
3. Department of Physiology and Pharmacology, Karolinska Institute, Sweden · Professor, Goran Engberg
4. From April, 2004
5. We measured levels of amino acids associated with NMDA receptor function using human CSF sample.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan
7. Publication


8. None

1. Molecular mechanism of neuropeptide S in biological system
2. Center for Forensic Mental Health/Professor/Kenji Hashimoto, Director/Professor/ Masaomi Iyo, and Assistant Professor/ Naoe Okamura
3. Department of Pharmacology, University of California at Irvine, USA · Professor, Rainer Reinscheid
4. From April, 2004
5. We studied the association of NPS gene and psychiatric disorders.
6. Ministry of Education, Science, Sports, Culture and Technology of Japan
7. Publication


8. None

1. Biological role of alpha-7 nicotinic receptors in the pathophysiology of schizophrenia
2. Center for Forensic Mental Health/Professor/Kenji Hashimoto, Director/Professor/ Masaomi Iyo,
3. Department of Psychiatry, University of Colorado Health Science Center, USA · Professor, Robert Freedman and Professor Karen
Stevens

4. From April, 2004
5. We studied the effects of tropisetron on auditory sensory gating P50 deficits in schizophrenic patients. Furthermore, we found that tropisetron improved auditory sensory gating N20/P40 deficits in DBA/2 mice.

6. Ministry of Education, Science, Sports, Culture and Technology of Japan

7. Publication

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8. None

1. Biological marker of bipolar disorders

2. Center for Forensic Mental Health/Professor/Kenji Hashimoto, Director/Professor/ Masaomi Iyo

3. Department of Psychiatry, Gothenburg University, Sweden • Professor, Hans Agren and Prof. Keiko Funa

4. From March, 2009

5. We will study the development of biological markers in bipolar disorders.

6. None

7. Publication: none

8. None

---

1. Development of the novel SPECT radioligand

2. Center for Forensic Mental Health/Professor/Kenji Hashimoto, Director/Professor/ Masaomi Iyo

3. Department of Nuclear Medicine, Pekin University, China • Professor, Rong Fu Wang

4. From December, 2008

5. We will develop the novel SPECT radioligand for nicotinic receptors.

6. None

7. Publication: none

8. None

---

1. Methamphetamine abuse and neuroinflammation: a PET study with [11C] (R)PK-11195

2. Center for Forensic Mental Health/Associate Professor/Yoshimoto Sekine


U.S.A/ Department of Psychiatry, University of Florida College of Medicine/ Mark S. Gold

4. From April, 2005

5. We investigates on 12 abstinent methamphetamine abusers and 12 age-, gender-, and education-matched control subjects who underwent positron emission tomography using a radiotracer [11C](R)-PK11195, in order to evaluate the possible extendibility of the neuroinflammation in the living brains of methamphetamine abusers.

6. Ministry of Education, Science, Sports, Culture and Technology of Japan

7. Publication

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1. Methamphetamine dependence and genetic study
2. Center for Forensic Mental Health/Associate Professor/Yoshimoto Sekine and Director/Professor/Masaomi Iyo
4. From April, 2004
5. We describe Genome-wide association in 2 samples (i.e., Chinese and Japanese) of methamphetamine-dependent and control individuals.
7. Publication


8. None

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### University Hospital

1. Skin vasodilator response to local heating in neurological disorders.
2. University Hospital/associate professor/Masato Asahina
3. U.K./London University/C J Mathias
4. 2006-
5. Local heating of non-glabrous skin increases the skin blood flow (SkBF) in two phases. The initial peak is mediated by a sensory axon reflex and plateau phase by local production of substances including nitric oxide. In addition, autonomic outflow may mediate this response. We evaluated SkBF response to local heating in neurological disorders with autonomic failure to reveal roles of autonomic nervous system in this response. Our results showed autonomic nervous system plays an important role in the skin vasodilation response to local heating.
6. None
8. None

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1. A study on differential diagnosis of multiple system atrophy and pure autonomic failure by physiological and pharmacological tests
2. University Hospital/Research Associate/Masato Asahina
3. U.K./London University/Christopher J Mathias
4. 2002-
5. Multiple system atrophy (MSA) is one of representative autonomic disorders as well as pure autonomic failure (PAF). The prognosis for life in PAF is good, while MSA usually has a miserable course. However, it is difficult to distinguish between MSA and PAF at an early stage. Therefore, we evaluated differences in physiological and pharmacological findings between MSA and PAF.
6. None
<table>
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<th>8</th>
<th>Asahina M, Young T, Bleasdale-Barr K, Mathias CJ. Overshoot of blood pressure after head-up tilt in two groups of patients with chronic autonomic failure: pure autonomic failure and multiple system atrophy. 19th Meeting of the Clinical Autonomic Research Society. 2002.12.5-6, Birmingham, UK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A study on skin autonomic function in human chronic spinal cord injury</td>
</tr>
<tr>
<td>2</td>
<td>University Hospital / Research Associate / Masato Asahina</td>
</tr>
<tr>
<td>3</td>
<td>U.K. / London University / Christopher J Mathias</td>
</tr>
<tr>
<td>4</td>
<td>2002 –</td>
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<td>5</td>
<td>Autonomic control in patients with spinal cord injury (SCI) is disrupted, as all autonomic pathways transverse the spinal cord. The aim of this study is to investigate whether skin autonomic involvements relate to lesion levels in patients with spinal cord injury.</td>
</tr>
<tr>
<td>6</td>
<td>This study was supported by the International Spinal Research Trust</td>
</tr>
<tr>
<td>8</td>
<td>This study won the EFAS 2003 poster prize.</td>
</tr>
</tbody>
</table>

| 1 | The role of type V collagen in the alloimmune and autoimmune lung disease |
| 2 | University Hospital / Assistant Professor / Shigetoshi Yoshida |
| 3 | USA / Indiana University School of Medicine / David S. Wilkes |
| 4 | 1999 – |
| 5 | Type V collagen [col(V)] as is a target of alloimmunie response during lung transplant rejection in rats. We have reported oral administration of col(V) is induced donor specific immunologic tolerance in rat allograft model. Adoptive transfer of lymphocytes from col(V)-immunized rats induce rejection-like pathology in fresh and well-healed isograft lung transplants. We hypothesize that immunity to col(V) may be final common pathway to development of autoimmune and alloimmune lung disease. |
| 6 | Grant from the National Institute of Health(RO1 grant) |
| 8 | None |

| 1 | Therapeutic application of c-myc gene transcriptional repressor via its apoptotic function for cancer and malignant mesothelioma treatment |
| 2 | Department of Molecular Diagnosis/Genome Research/Disease Proteomics Center/Research associate/Kazuyuki Matsushita |
| 3 | USA/National Institute of Health/David Levens |
| 4 | Since 2000. |
| 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 TFIH/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


8. None

1. Study on Thai Medicinal plants
2. Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki
3. Thailand / Faculty of Pharmaceutical Sciences, Chulalongkorn University / Associate Professor Suchada Sukrong
   Thailand / Faculty of Pharmaceutical Sciences, Chulalongkorn University / Associate Professor Nijsiri Ruangrungsi
4. 2007~
5. In this project, we are screening medicinal plants producing compounds exhibiting specific bioactivity.
6. JSPS Core University Program
7. None
8. None

1. Molecular regulation of plant secondary metabolism
2. Graduate School of Pharmaceutical Sciences / Professor / Kazuki Saito
3. UK / John Innes Centrte / Cathie Martinn
   UK/ Institute of Food Research / Anthony J. Michael
4. 2006~
5. In this project, we are investigating the cellular and molecular regulation of secondary metabolism in plants.
8. None

1. Regulation of sulfur assimilation in higher plants
2. Graduate School of Pharmaceutical Sciences / Professor / Kazuki Saito
3. Germany / University of Heidelberg / Ruediger Hell
4. 2005~
5. In this project, we are investigating the cellular and molecular regulation of sulfur transport, assimilation, and metabolism in plants.
8. None
3. Germany / Max-Planck-Institute / Jonathan Gershenzon  
   Germany / University of Hannover / Jutta Papenbrock  

4. 2005~  

5. In this project, we are investigating the cellular and molecular regulation of secondary metabolism in plants.


8. None

1. Study on secondary metabolism in Pueraria plants  
2. Graduate School of Pharmaceutical Sciences / Associate Professor / Mami Yamazaki  
3. Thailand / Faculty of Pharmaceutical Sciences, Mahidol University / Sompop Prathanturarug  

4. 2004~  

5. In this project, we are understanding the control mechanism of bio-production in plants.

6. JSPS Core University Program, Royal Golden Jubilee (RGJ) for PhD Program

7. None

8. None

1. Regulation of sulfur assimilation in higher plants  
2. Graduate School of Pharmaceutical Sciences / Professor / Kazuki Saito  
3. USA / University of Florida / Andrew D. Hanson  

4. 2002~  

5. In this project, we are investigating the cellular and molecular regulation of sulfur transport, assimilation, and metabolism in plants.


8. None

1. Molecular regulation of plant secondary metabolism  
2. Graduate School of Pharmaceutical Sciences / Professor / Kazuki Saito  
3. Germany / GSF-National Research Center for Environment and Health / Anton R. Schaeffner  

4. 2001~  

5. In this project, we are investigating the cellular and molecular regulation of secondary metabolism in plants.


8. None
1. Regulation of sulfur assimilation in higher plants

2. Graduate School of Pharmaceutical Sciences/Professor/Kazuki Saito

3. Australia/CSIRO Plant Industry, Long Pocket Laboratory/Frank W. Smith

4. 1998–

5. In this project, we are investigating the cellular and molecular regulation of sulfur transport, assimilation, and metabolism in plants.


8. None

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1. Identification of Biologically Active Principles from Thai Medicinal Plants

2. Graduate School of Pharmaceutical Sciences / Professor / Tsutomu Ishikawa

3. Thailand / Faculty of Pharmaceutical Sciences, Chulalongkorn University / Associate Professor Chaiyo Chaichantipyuth

4. From 2004

5. Identification of Biologically active principles from Thai medicinal plants for the discovery of important lead compounds, mainly focusing on anti-tumor activity, inhibition activities to lipase and nitric oxide.

6. JSPS Core University Program, Royal Golden Jubilee (RGJ) Ph D Program (Thai) etc


8. Under RGJ Program Ms Mayuree Kanlayavattanakul was successfully given a Ph D degree from Chulalongkorn University, Thai, on May, 2005.

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1. Chemical and pharmacological studies on the analgesic alkaloids in the rubiaceous plant, Mitragyna speciosa, growing in Thailand.

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

3. Thailand / Chulalongkorn University / Associate Professor Dhavadee Ponglux

4. 2005

5. 7-Hydroxymitragynine, an indole alkaloid in the Thai medicinal plant (Mitragyna speciosa), and its synthetic derivatives were proven to exhibit potent analgesic activity through the opioid receptors in in vitro and in vivo experiments using mice.

6. Grant-in-Aid from the Ministry of Education, Science, Sport, Culture and Technology, Japan, and Uehara Memorial Foundation


(2) Chemistry of Indole Alkaloids Related to the Corynanthe-Type from Uncaria, Nauclea and Mitragyna Plants. H. Takayama, M. Kitajima, N. Kogure, Current Org. Chem., 9, 1445-1464 (2005),


(4) Antinociception, tolerance and withdrawal symptoms induced by 7-hydroxymitragynine, an alkaloid from the Thai

1. Pharmacological studies on the NMDA-receptor activity of the indole alkaloid, corymine.
2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama
3. Thailand / Prince of Songkla University / Associate Professor Pathama Leewanich
4. 2005
5. An indole alkaloid corymine, isolated from Thai Apocynaceae plant, was proven to potentiate NMDA-induced currents in Xenopus oocytes expressing NR1a/NR2B glutamate receptors.
6. None
8. None

2. Graduate School of Pharmaceutical Sciences / Professor / Hiromitsu Takayama
3. Thailand / Chulalongkorn University / Associate Professor Rapepol Bavovada
4. 2005
5. A new oleanane-triterpene with potent cytotoxic activity was isolated from Thai medicinal plant, Siphonodon celastrineus (Celastraceae).
6. None
8. None

1. Chemical studies on the alkaloidal constituents in the Pandanus plants (Pandanaceae) native to the tropical area.
2. Graduate School of Pharmaceutical Sciences/ Associate Professor/ Hiromitsu Takayama
3. Philippines / Santo Tomas University/ Associate 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.
6. None
8. None

1. Chemical and pharmacological studies on the analgesic indole alkaloids derived from Malaysian medicinal plants.
2. Graduate School of Pharmaceutical Sciences/ Associate Professor/ Hiromitsu Takayama
3. Malaysia / Universiti Kebangsarn Malaysia / Professor Ikram M. Said
4. 1998~
5. Chemical and pharmacological studies on the analgesic indole alkaloids isolated from the Thai-Malaysian traditional folk medicine, Mitragyna speciosa, were performed to develop new opioid agonistic drugs.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan
8. None

2. Graduate School of Pharmaceutical Sciences/Professor/Hirotsu Takayama
3. Thailand/Chulalongkorn University/Assistant Professor/Sumphan Wongseripipatana
4. 2007
5. A new oxindole alkaloid, isomitraphyllinol, was isolated from the leaves of Thai *Mitragyna hirsuta*, together with five known oxindole alkaloids.
6. Grant-in-Aid for Scientific Research from the Ministry of Education, Science, Sport, Culture and Technology, Japan, Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science, and grant from the Japan Health Sciences Foundation.
8. None

1. Chemical studies on the biologically active secondary metabolites in Hedyotis plant (Rubiaceae) in Malaysia.
2. Graduate School of Pharmaceutical Sciences / Associate Professor / Mariko Kitajima
3. Malaysia / Universiti Putra Malaysia / Professor Nordin H. Lajis
4. 2005
5. Investigation of the new biologically active anthraquinones in the medicinal plant, Hedyotis capitellata (Rubiaceae), native to Malaysia.
6. None
8. None

1. Mechanism of protein degradation by ClpXP protease
2. Graduate School of Pharmaceutical Sciences / Professor / Tomoko Yamamoto
3. UNESCO / Department of Molecular Biology, International Institute of Molecular and Cell Biology / Professor, Maciej Zylicz
4. 2001-
5. We found a master regulator protein complex, FlhD/FlhC, for Salmonella flagellum biogenesis as a novel substrate for the ATP-dependent ClpXP protease. To reveal the mechanism of degradation of the FlhD/FlhC by the ClpXP, we are trying to reconstitute the in vitro system for the degradation.
6. None
   (3) Yamamoto T, Sashinami H, Takaya A, Tomoyasu T, Matsui H, Kikuchi Y, Hanawa T, Kamiya S, Nakane A. Disruption of

8. None

1. Studies on the control of Salmonella SPI2
2. Graduate School of Pharmaceutical Sciences / Professor / Tomoko Yamamoto
3. Universität München / Professor / Michael Hesel
4. 2001
5. We have recently found novel regulatory genes to control the expression of SPI2 genes and Salmonella pathogenicity and now are studying control mechanism of the Salmonella SPI2 gene expression.
6. None
7. None
8. None

1. Search for bioactive natural products from plants of Thailand
2. Graduate School of Pharmaceutical Sciences / Professor / Masami Ishibashi
3. Thailand / Khon Kaen University / Professor Thaworn Kowithayakorn
   Thailand / Khon Kaen University / Associate Professor Srisomporn Preeprame
4. 2007~
5. In this project, we are investigating isolation and structure elucidation of new bioactive natural products from plants of Thailand
8. None

1. Search for bioactive natural products from plants of Bangladesh
2. Graduate School of Pharmaceutical Sciences / Professor / Masami Ishibashi
3. Bangladesh / Khulna University / Associate Professor Samir K. Sadhu
4. 2007~
5. In this project, we are investigating isolation and structure elucidation of new bioactive natural products from plants of Bangladesh
7. (1) Sadhu, S. K.; Khatun, A.; Phattanawasin, P.; Ohtsuki, T.; Ishibashi, M. "Lignan glycosides and flavonoids from Saraca asoca...
School of Nursing

1. Mental health support for rural women in Anhui, China: Building support upon wisdom embedded in women’s everyday life

2. Yayoi IWASAKI, Chiba University School of Nursing, Professor

3. Huaxia LIU, Taishan Medical University School of Nursing, Professor, Dean

Pin Xian HUANG, Shanghai University of Chinese Traditional Medicine, Associate Professor (November, 2007 - October, 2008)

4. November, 2007 - October, 2009 (2 years)

In rural China, women’s mental health problems such as suicide and domestic violence are growing. The absence of mental health resources in rural China, however, necessitates the development of mental health support applicable in rural areas with limited resources. This qualitative study aims to describe mental health of Chinese rural women through elucidating strength and wisdom of rural women in Anhui, China and to develop mental health support built on their strength and wisdom. Objectives of the study include: identification of women’s coping skills and social ties in their everyday living; and exploration of sociocultural factors associated with mental health of rural women. Based on the understanding of everyday life and strength of rural women, a new type of mental health support, which is applicable in the area with scarce resources, will be proposed.

1. Empowering the Elderly through Development of Mutually Supportive Caring Networks in Local Communities

2. Faculty of Nursing / Professor / Misako Miyazaki

3. Finland / Seinajoki Polytechnic / Helli Kitinoja

4. 2003～

5. The purpose of this study is to describe the efficient nursing practice to empower the elderly residents and their families developing mutually supportive caring network in the local communities.

This study will explore the preventive nursing knowledge and also the culturally appropriate care in the community.

6. 21st Century COE Program

7. The 9th Conference on Japan Academy of Community Health Nursing, July, 2006

8. The Symposium invited Finish partners was held on July 21, 2007.

Graduate School of Engineering, Graduate School of Advanced Integration Science

1. Research on evaluation methods for interaction between electromagnetic waves and the human body

2. Graduate School of Engineering / Professor / Koichi Ito

3. England / Queen Mary, University of London / Xiaodong Chen

4. From 2003 to 2006
5. Recently it has become quite important to evaluate accurately the interaction between electromagnetic waves and the human body. Under the equal collaboration, both universities are studying and developing the evaluation methods. Prof. Chen’s group at Queen Mary are pursuing a study on various numerical analysis techniques and Prof. Ito’s group are pursuing a study on experimental evaluation techniques.

6. None


8. In March 2007, Prof. Koichi Ito discussed with Prof. Xiaodong Chen on the international conference held in UK.


(6). Koichi Ito, Nozomi Haga, Masaharu Takahashi, and Kazuyuki Saito, “Electric field distributions around the human body with a small antenna in the frequency range of 2.5 MHz to 2.5 GHz,” Proceedings of the International Workshop on Antenna Technology 2008 (iWAT2008), Special Session 6-5, Santa Monica, USA, Mar. 2009.


8. Prof. Koichi Ito discussed with Prof. Yang Hao on the IEEE AP-S AdCom meeting at US (Feb. 2009), on the iWAT2009 held in US (Mar. 2009), and on the EuCAP2009 held in Germany (Mar. 2009).

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

CONTRIBUTIONS TO CONFERENCE
Shota Suzuki, Xavier Allonas, Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, and Tsuguo Yamaoka, Photosensitization of Photoacid Generators by Pyrromethene Dyes, XXIst IUPAC SYMPOSIUM ON PHOTOCHEMISTRY, 2006 (Kyoto).


8. None

1. Symbiosis Building of PLUS50
2. Graduate School of Engineering / Professor / Hideki Kobayashi
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. Symbiosis Building of PLUS50
2. Graduate School of Engineering / Assistant Professor / Jung Ji-Young
3. Korea / BAHO Architects & Associates / Director of Laboratory Kim, Sun-Jick
4. 2007-
5. The developing technologies of open building (in control of maintenance)
6. R&D program (Korea Institute of Construction Technology)
7. We are preparing the first joint paper.
8. None

1. Electronic structure of organic semiconductor interfaces
2. Graduate School of Advanced Integration Science / Professor / Nobuo Ueno
3. China / Department of Physics and Materials Science, City University of Hong Kong / Prof. S. T. Lee
   China / Department of Physics and Materials Science, City University of Hong Kong / Prof. C. S. Lee
   China / Department of Physics and Materials Science, City University of Hong Kong / Dr. J. Tang
4. From Oct.2005
5. Electronic structure of functional organic thin films are studied by using high resolution ultraviolet photoelectron spectroscopy.
6. 21 Century COE program and Global COE program
7. We are preparing the first joint paper.

8. None

1. Electronic states of single-molecular devices
2. Graduate School of Advanced Integration Science / Professor / Nobuo Ueno
3. Sweden / Linkoeping University / Prof. William E. Salaneck
   Sweden / Linkoeping University / Dr. Rainer Friedlein
4. Continued from July, 2004
5. The hole-vibration coupling in organic semiconductors is studied using high-resolution UPS.
6. JSPS(Invitation program), Grant-in-Aid for Creative Scientific Research of JSPS , 21 Century COE program
   and Global COE program
7. Hole-vibration coupling of the highest occupied state in pentacene thin films, H. Yamane, S. Nagamatsu, H. Fukagawa, S. Kera,
8. None

1. Electronic states of single-molecular devices
2. Graduate School of Advanced Integration Science / Professor / Nobuo Ueno
3. Israel / Weizmann Inst. Science / Dr. David Cahen
   USA / Princeton University / Antoine Kahn
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 and Global COE program
7. We have succeeded to obtain the best data in the world.
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. 7 journal papers have been published.
   10 conference papers have been published.
   1 book has been published.

1. Reliability on loads and actions for structural design
2. Graduate School of Engineering / Professor / Toru Takahashi
3. U.S.A./ Georgia Institute of Technology / Bruce R. Ellingwood
4. Nov. 2000 to present
5. Discussion on evaluation of loads and actions for structural design and its international harmonization.
6. YAMASHITA Taro Fellowship


8. None

1. Rheology Control of Printing Inks and Evaluation of Printability
2. Faculty of Engineering / Professor / Yasufumi Otsubo
3. Korea / Pukyong National University / Professor Su Yong Nam
4. 2001~present
5. Analysis of relations between rheological properties and printability of printing inks and establishment of control method for industrial applications
6. None
7. (1) 『Rheological Behavior during Phase Separation Induced by UV Curing』 Su Yong NAM, Mikihiro SAKAI, and Yasufumi OTSUBO, Material Science Research International, 8, 9-13(2002)
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
* There are some publications and oral presentations in Japanese (not shown here).
8. None.
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.


Oxygen adsorption is a typical system to study in order to learn about the fundamental properties of the reactions of diatomic molecules on surfaces. Together with this scientific interest, the question how oxygen molecules react on surfaces should be important for applications, such as metal oxides in heterogeneous catalysis and semiconductor oxides in device technology. By paying attention to the metastable chemisorbed and physisorbed oxygen species, we are trying to understand the oxidation process on an atomic level.


8. None
2. Graduate School of Advanced Integration Science / Professor / Keiko Nishikawa
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.
7. 1) A Thermodynamic Study of Aqueous Acetonitrile: Excess Chemical Potentials, Partial Molar
   Enthalpies, Entropies and Volumes, and Fluctuations.
   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
   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

Graduate School of Horticulture

1. A comparative study of soil microbial biomass dynamics and survival strategies in Northern European and Japanese soils
2. Faculty of Horticulture / Professor / Kazuyuki INUBUSHI
3. UK / AFRC Arable Crop Research Institute Rothamsted Experimental Station / Philip C Brookes
4. Since 1986 (Continued)
5. Soil microorganisms play important roles in nutrient turnover and food production and even survivals of all livings on the
   Earth. This study is aimed to evaluate soil microbial biomass and their dynamics in bioelements’ turnover by the methods
   commonly applicable to Northern European and Japanese soils
6. British Council, Grants-In-Aids (Basic Research (B), 1999-2001)
   Science and Plant Nutrition, 62, 79-84
aerobic and anaerobic soils by the fumigation-extraction method, Soil Biology and Biochemistry, 23, 737-741


8. Chiba University International Symposium, July 6, 2001

1. Composting of unutilized plant materials and their impacts on soil microbial, chemical and physical properties

2. Faculty of Horticulture / Professor / Kazuyuki INUBUSHI

3. Nepal / Consultant (Agricultural, Environmental Microbiology) / Dr. Shashi S. Rajbanshi

   India / Haryana Agricultural University / Dr. Sneh Goyal

   India / Haryana Agricultural University / Prof. K.K.Kaper

   Malaysia / Putra Malaysia University / Dr. Rosenani Abu Bakar

   Hungary / Tessedik Samuel College / Dr. Peter Simandi

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 Foundation, JASSO


composts in soils, Soil Science and Plant Nutrition, 49(1), 61-68.


1. Emission and uptake of methane and nitrous oxide in peat wetland and agricultural field in tropical Asia
2. Faculty 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
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)
   Xu, Xingkai, and Inubushi, K. (2005) Mineralization of nitrogen and N₂O production potentials in acid forest soils under


8. Oze Award, June 2004

1. Ecophysiological diversity of water convolvulus (Ipomoea aquatica Forsk.) strains.
2. Faculty of Horticulture / Associate Professor / Michiko Takagaki
3. Thailand / Faculty of Agriculture, Kasetsart University / Pariyanuj Chulaka
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.
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


8. None

1. Nutrient dynamics of vegetable cropping systems around Bangkok.
2. Faculty of Horticulture / Associate Professor / Michiko Takagaki
3. Thailand / Faculty of Agriculture, Kasetsart University / Sutevee Sukprakan, 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. 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. Faculty 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 crucial 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.

Yasuo Ohe and Adriano Ciani, Characteristics and Activities of Agri-tourism farms in Umbria, Italy, IXth European of Agricultural Economists, poster paper, 1999.
Ohe, Y. and Ciani, A. (1999): Characteristics and Activities of Agri-tourism Farms in Umbria, Italy, IXth European of Agricultural Economists, poster paper

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.

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
8. Invited speaker at the international symposium on plant growth regulators in fruit production (Mexico, June, 2005)
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**
8. Invited speaker at a seminar held in Bologna university (Bologna, Italy, May, 2006)

<table>
<thead>
<tr>
<th>1. Study on the postharvest physiology in tropical fruit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Graduate School of Horticulture/ Professor/ Satoru Kondo</td>
</tr>
<tr>
<td>3. Thailand/ King Mongkut's University of Technology Thonburi/ Associate Professor/ Dr. Sirichai Kanlayanarat</td>
</tr>
<tr>
<td>4. Since 2000 (Continued)</td>
</tr>
<tr>
<td>5. Effects of physiological active substances on fruit physiology such as pigmentation, chilling injury and so on are investigated in subtropical and tropical fruit.</td>
</tr>
<tr>
<td>6. <strong>JASSO, JSPS postdoctoral fellowship for foreign researchers</strong></td>
</tr>
<tr>
<td>8. Special seminar in King Mongkut's University Thonburi (Since 2000)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1. Effects of plant hormones on fruit set and growth in fruit tree</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Faculty of Horticulture/ Professor/ Hiroyuki Matsui</td>
</tr>
<tr>
<td>Associate/ Hitoshi Ohara</td>
</tr>
</tbody>
</table>
3. USA/Michigan State University/Martin J. Bukovac

4. 1994~

5. The objectives of this project are to develop cultivation methods for steady fruit production and high-quality fruits production, through the following investigations, ①relationship between fruit set and growth, and plant hormones, and ②the factor that relates to the penetration of plant hormones from the fruit surface.

6. Michigan State University


③GA₉₀ 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

1. Improvement of stability in biological control effect on plant pathogens

2. Department of Bioproduction Science, Faculty of Horticulture/ Associate professor /Masahiro Shishido, Ph. D.

3. USA/Oregon State University/Department of Botany and Plant Pathology/Professor Kenneth B. Johnson

4. From April 2004

5. This research project aims at improving the stability of biological control effect on plant pathogens. We focus on not short-term effects of disease reduction but long-term stable activity of biological control agents by analyzing their ecological traits. Most of the researches relevant to biological control of plant pathogens have attempted to search for more effective agents and unveil the mechanisms involved in the control; however, few models to illustrate biological control of plant pathogens has been achieved. Therefore, we will develop ecological models to describe relationships between beneficial microorganisms and plant pathogens so that we can elucidate ecological factors influencing efficiency of biological control. The models will be useful for sustainable crop production by evaluating long-term efficiency of biological control.

6. Grants-in-Aid for Scientific Research (14560037) by the Japan Society for the Promotion of Science

1. Improvement of agricultural production in the arid area of China
2. Faculty of Horticulture / Associate Professor / Akihiro Isoda
3. China / Shihezi Agricultural and Environmental Institute for Arid Area in Central Asia / Peiwu Wang
4. From 1998
5. The object of this project is to improve agricultural production and to develop new agricultural technologies in the arid area of China. The main subjects of this project are water saving irrigation, mechanism of drought tolerance and organic agriculture on large scale.
6. None.
8. None.

1. Studies on the ancient gardens in Japan, China, and Korea
2. Faculty of Horticulture / Associate Professor / Eijiro Fujii
3. China / Tsinghua Univ. / Zhang Junhua
   Korea / Chongnam Univ. / Jisong Baiku
4. from 2000
5. To clarify the characteristics of ancient gardens in each country of Japan, China, and Korea which have long and intimate relations from cultural and political points of view
6. Grant-in-aids for Scientific Research  （Basic Research A）
7. A Historical Consideration on the Gumnanji of the Bekje Kingdom in Korea Based on the Results of Recent Excavations
8. Symposium on the ancient gardens in Japan and Korea, held at Nara National Institute of Cultural Heritage in 2000

1. Longitudinal Study of Village Economy and Household Behavior under Economic Development in the Philippines
2. Graduate School of Horticulture(Development of Economics)/Associate Professor/Nobuhiko Fuwa
3. USA/University of California at Berkeley/James N. Anderson
4. 2000-present
5. This study intends to extend the longitudinal study of a village in Pangasinan Province in the Philippines initiated by Prof. James N. Anderson in the early 1960s, by constructing a panel data spanning over a 40 year period. It focuses on the long-term changes in the livelihood of the village residents and other aspects of the village economy. The study pays a particular attention to the effects of the dramatic expansion in the village of international labor migration opportunities after the 1980s on intrahousehold resource allocation behavior.


8. None

1. Impact Evaluation of the Female Secondary School Stipend Program in Bangladesh

2. Graduate School of Horticulture (Development of Economics)/Associate Professor/Nobuhiko Fuwa

3. USA/World Bank/Shahidur R. Khandker

4. 1999-present

5. The study attempts to measure the impact of the Female Secondary Stipend Program initiated in 1994 in Bangladesh in an attempt to close the gender gap in the school enrolment at the secondary school level. It focuses on quantifying the program impact on the enrollment of both male and female students at the secondary school level based on the project Management and Information System database maintained by the World Bank funded Female Secondary School Assistance Project, and intends to inform both the donors and the government of Bangladesh regarding the future design of the program.

6. World Bank


8. None

1. A study on Agricultural Productivity and Poverty Dynamics in Rain-fed Rice Producing Farmers in Eastern India

2. Graduate School of Horticulture (Development of Economics)/Associate Professor/Nobuhiko Fuwa

3. India/Indian Statistical Institute (Agricultural Science Unit)/Pabitra Banik

USA/East-West Center/Christopher M. Edmonds

4. 2001-present

5. The small scale rice farmers in the Bihar Plateau in Eastern India face severe natural conditions that constrains their agricultural production and have high incidence of poverty. The plateau is also known for its relatively high proportion of ethnic minority groups living in the area. Initial data collection was conducted in 1998 and the second round is planned for 2004-2005. The study intends to identify the crucial constraints, both natural and socioeconomic, on their rice production and to inform
policy makers for suitable interventions for poverty reduction in the area.

6. International Rice Research Institute, East-West Center, Indian Statistical Institute


8. None

1. History of Rural Development Policies in the Philippines and Lessons for Poverty Reduction Policies

2. Graduate School of Horticulture (Development of Economics) / Associate Professor / Nobuhiko Fuwa

3. Philippines / University of the Philippines at Diliman, School of Economics / Arsenio M. Balisacan

4. 1999-present

5. The study starts with a historical review of the rural development outcomes (e.g., agricultural growth, income growth, poverty incidence) in the Philippines and of government policies (development strategies, industrialization policies, agricultural policies, trade policies, land reform, etc.) that likely affected such outcomes. It also investigate the political background behind those policies adopted by the government. Based on a provincial-level dataset on the income growth and the rate of poverty reduction to identify the main determinants of those outcomes through econometric analyses. The goal of the study is to draw implications for policy makers for developing poverty reduction strategies.


8. None

1. Changes in Rural Economies in the Philippines and Poverty Dynamics

2. Graduate School of Horticulture (Development of Economics) / Associate Professor / Nobuhiko Fuwa

3. Philippines / International Rice Research Institute (IRRI) / Mahabub Hossain

4. 2002-present
5. International Rice Research Institute (IRRI) has conducted a longitudinal village-level study in the early 1990s focusing on 4 villages in different ecosystems in the Philippines. A combined qualitative and quantitative data collection through detailed interviews in the villages was carried out in 2003-2004, and this study intends to consolidate the findings on the changes in the livelihoods and the wellbeing of village residents as well as institutional aspects of the four villages over the past decades. It also focuses on the poor households in an attempt to identifying the difference between those who escape from poverty and those who do not. The study aims to inform policy makers for effective policy reduction strategies suited for different ecosystems.

6. International Rice Research Institute (IRRI)

7. None

8. None
6. No (own expense)


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

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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.


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).

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


8. None

| 1. Characterization of atmospheric aerosols and clouds using lidar remote sensing |
| 2. Center for Environmental Remote Sensing / Professor Hiroaki Kuze |
| 3. India/ S. Venkateswara University / Professor Musali Krishnaiah |
| 4. From 2008 |

5. Prof. Krishnaiah has made lidar and radar remote sensing of the tropical atmosphere in a wide range from troposphere, stratosphere to mesosphere. His knowledge and expertise in this field has greatly contributed to enhancing the research activity of Kuze laboratory regarding the comprehensive analysis of tropospheric phenomena, from the viewpoint of the radiation transfer and climate change studies.

6. JSPS fellowship (2008.5 - 2009.2)


Y. Bhavani Kumar, M. Krishnaiah, H. Kuze, High altitude cloud observations using Dual polarization Raman lidar technique, The 14th CEReS International Symposium, November 13-14, 2008 (Chiba University).

Y. Bhavani Kumar, M. Krishnaiah, H. Kuze, Comparing water vapor mixing ratio profiles using Indo-Japanese lidar in Raman mode of operation with GPS radiosondes, The 14th CEReS International Symposium, November 13-14, 2008 (Chiba University).

Y Bhavani Kumar, Bannu, M. Krishnanaih, H. Kuze, High altitude cloud observations using ground based lidar and simultaneous comparison with satellite lidar observations, The 14th CEReS International Symposium, November 13-14, 2008 (Chiba University).

Musali Krishnaiah, Y. Bhavani Kumar, H. Kuze, Portable lidar observations of aerosol layers over a tropical site Gadanki (13.5°N, 79.2°E), The 26th Laser Sensing Symposium, September 11-12, 2008 (Fukuoka).

Musali Krishnaiah, Padmavathikulkarni, Y. Bhavani Kumar, H. Kuze, Lidar and satellite observations of cirrus climatology over a tropical station Gadanki India, The 26th Laser Sensing Symposium, September 11-12, 2008 (Fukuoka).

8. None
1. Global/continental land cover mapping and monitoring by remote sensing
2. Center for Environmental Remote Sensing/Professor/Ryutaro Tateishi
3. Mongolia/National University of Mongolia/Renchin Tsolmon
   Russia/Institute of Ecology and Evolution/Peter Gunin
   Indonesia/Institute of Bundong Technology/Ketut Wikantika
   Indonesia/BBPT/Muhamad Sadly
4. From 2001 to date
5. The objective of this project is to map global land cover and tree cover of global area. For this objective the following research is being carried out.
   - development of global land cover ground truth data base
   - expedition for ground truth collection
   - preprocessing of global satellite data
   - classification and information extraction
   - validation of land cover product
   Tateishi,R., Y.Shimazaki, and P.D.Gunin, Spectral and temporal linear mixing model for vegetation classification, Int. J. of
Remote Sensing, vol.25, no. 20, pp.4203-4218, 2004


Josaphat Tetuko Sri Sumantyo and Ryutaro Tateishi, A technique to analyse scattered waves from forest fire scars and its application to estimate its scars thickness in central Borneo using a SAR data, Journal of Japan Society of Photogrammetry and Remote Sensing, vol.43, no.6, pp.48-61, January 2005


The data products produced by this project are published from CEReS website as follows.

http://www.cr.chiba-u.jp/databaseGGL.htm

GG-1 Twenty-year Global 4-minute AVHRR NDVI Dataset

GG-5 Global MODIS 2003

GG-6 Global Map – Global Land Cover (GLCNMO)

GG-7 Land cover training data used for the production of GLCNMO

GG-8 Existing maps used for the production of GLCNMO

GG-9 Global Map – Percent Tree Cover

GA-1 AARS Asia 30-second Land Cover Data Set with Ground Truth Information

GA-2 Desertification Map of the Drylands of Asia

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 Science and Technology Corporation(JST)/Solution Oriented Research for Science and Technology(SORST)
7. None
8. None

1. Solar and terrestrial radiation monitoring on climate change in the East Asia
2. Center for Environmental Remote Sensing/professor/Tamio TAKAMURA
3. China/Institute of Atmospheric Physics/Chinese Academy of Sciences/G-U Shi
4. 1996 -
5. The object of this project is to make clear the effect of aerosol and cloud to the radiation environment in the East Asia, especially in China. In this program, there are two parts, one of which is to observe some radiative parameters at the ground and analyze them, and the other to estimate the global or regional surface radiation from the satellite images, such as GMS. The combined analysis for both data is useful for understanding the effect of aerosol and cloud to climate


1. A study on environment change on East Asia using satellite observation
2. Center for Environmental Remote Sensing / Associate Professor / Yoshiaki Honda
3. China / The Institute of Remote Sensing Application ,Chinese Academy of Sciences (IRSA/CAS) / Prof. Liu Jiyuan
4. 1998-
5. • Establish the collaborative relationship on research activities that are useful for both countries.
   • Sharing the basic concept and the results of ground truth measurement set the joint research activities.
   • Develop the environmental change monitoring method by using satellite observation, especially for carbon dioxide circulation and land cover / land use change caused by the change of land vegetation.
6. Japan Science and Technology Corporation(JST)/ Cooperative research on the global mapping of carbon cycle and its advancement (trust study)
7. None
8. None

1. Study on Water Problems and Environment Problems in China
2. Center for Environmental Remote Sensing/Professor/KONDOH, Akihiko
3. China/Inst. Of Geographic Sciences and Natural Resources Research, CAS/Song, Xianfang
4. 1998-
5. Chinese economic development causes various water problems and environmental problems. This project was established in 1997 to deal with such problems. We got research funds after 1998, and carry over many research projects.


8. Acceptance of Chinese students

Medical Mycology Research Center (MMRC)

1. Molecular characterization of pathogenic fungi in Brazil

2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami

3. Brazil / State University of Campinas (UNICAMP) / Professor Maria Luiza Moretti-Branchini and Professor Vilela MMS

4. From 2002-

5. Molecular characterization of pathogenic fungus Cryptococcus neoformans was studied and drug susceptibility patterns of the fungus against various antifungal agents were also studied

6. JICA, National BioResource Project (NBRP)


8. Agreement for Academic Exchange Cooperation between Campinas University and Chiba University. New agreement was
1. Genetic analysis of pathogenic actinomycetes and fungi isolated from clinical samples in Thailand
2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami
3. Thailand / National Institute of Health, Department of Medical Sciences / Dr. N. Poonwan
4. From 1999
5. Molecular classification of pathogenic actinomycetes and fungi isolated from clinical specimens in Thailand was conducted. New species of Nocardioida isolated from Thailand were proposed in these studies.
8. Agreement for Academic Exchange Cooperation between Department of Medical Sciences, Ministry of Public Health, Thailand and our Research Center was contracted in 2002. New agreement was started from December, 2007.

1. Genetic analyses of Cryptococcus neoformans
2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami
3. Australia / The University of Sydney / Associate Professor W. Meyer
4. From 2001
5. Sequencing of the internal transcribed spacer (ITS9 region including the 5.8 S rRNA gene delineated seven genotypes within the three varieties of Cryptococcus neoformans via specific combinations of eight nucleotide differences located at positions, 10, 11, 15, 19, 108(ITS1), 221(5.8s), and 298 (ITS2). Simple and reliable identification method using the ITS sequence information was proposed
8. None

1. Studies on drug susceptibility profile and genotyping of pathogenic fungi from AIDS patients
2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami
3. India / University of Madras / Professor M. Thangam
4. From 2004
5. Drug susceptibility of Candida albicans or related fungi, and their molecular epidemiological studies
   (2) Kumar G, Prabu D, Mitani H, Mikami Y, Thangam M: Environmental isolation of Cryptococcus neoformans and Cryptococcus gattii from living trees in Guindy National Park, Chennai, South India.

8. Foreigner examiner of PhD thesis
1. Classification of pathogenic Nocardia

2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami

3. Germany / DSMZ Culture Collection Centre / Professor Reiner M. Kroppenstedt

4. From 2003-

5. Several new Nocardia species were proposed


8. None

1. Molecular epidemiological studies on pathogenic fungi in China

2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami

3. China / Guiyang Medical College / Professor Wang He

4. From 2005-

5. Identification and classification of pathogenic fungi in University Hospital


8. None

1. Phylogenetic studies of keratinophilic fungi isolated from muddy soil in Cairo vicinities

2. Medical Mycology Research Center, Chiba University / Professor / Yuzuru Mikami

3. Egypt / AinSham University / Lecture SM Zaki
   Egypt / AinSham University / Professor AA E-Din

4. From 2005–

5. Phylogenetic positions of keratinophilic fungal strains isolated from muddy soil in Cairo vicinities were studied by analyzing the ITS region sequences, and based on the information, their new taxonomic positions were proposed.


(3) Zaki SM, Ibrahim N, Aoyama K, Shetia YM, Abdel-Ghabt K, Mikami Y: Dermatophytes infections in Cairo, Egypt.
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Characterization of novel antibiotic resistance mechanisms in <em>Nocardiopsis</em> and related bacteria</td>
</tr>
<tr>
<td>2.</td>
<td>Medical Mycology Research Center, Chiba University / Professor Y. Mikami</td>
</tr>
<tr>
<td>3.</td>
<td>South Africa / the University of Witwatersrand / Professor E.R. Dabbs</td>
</tr>
<tr>
<td>5.</td>
<td>New drug resistance mechanisms such as amikacin resistance were proposed, and developments of new shuttle vector were conducted.</td>
</tr>
<tr>
<td>6.</td>
<td>JSPS-NRF Joint Research Project</td>
</tr>
<tr>
<td>7.</td>
<td>Manuscript is in preparation</td>
</tr>
<tr>
<td>8.</td>
<td>Foreign researcher exchange program supported by African government</td>
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</tbody>
</table>

### Institute of Media and Information Technology

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>PDE-based numerical image analysis</td>
</tr>
<tr>
<td>2.</td>
<td>Institute of Media and Information Technology / Professor / Atsushi IMIYA</td>
</tr>
<tr>
<td>3.</td>
<td>1) Germany / Institute of Mathematics and Computer Science, Universitaet des Saarlands / Professor Dr. Joachim Weickert</td>
</tr>
<tr>
<td>2)</td>
<td>Kingdom of the Netherlands / Dept. of Biomedical Engineering, Techniches Universtaet Einthoven / Professor Dr. Ing Bart ter Haar Romeny</td>
</tr>
<tr>
<td>3)</td>
<td>Canada / Computer Science Department, University of Western Ontario / Professor John Barron</td>
</tr>
<tr>
<td>4.</td>
<td>1) 2000-</td>
</tr>
<tr>
<td>5.</td>
<td>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.</td>
</tr>
<tr>
<td>6.</td>
<td>None</td>
</tr>
<tr>
<td>7.</td>
<td>Some results will appear at Dagstuhl Seminar on June 2006</td>
</tr>
<tr>
<td>8.</td>
<td>None</td>
</tr>
</tbody>
</table>

| 1. | Digital and Discrete Geometry and their Applications |
| 2. | Institute of Media and Information Technology / Professor / Atsushi IMIYA |
| 3. | 1) USA / State University of New York / Professor Valentin Brimkov |
| 4. | 1) 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 |

| 1. | Substructural Logic and Lambda Calculus |
| 2. | Institute of Media and Information Technology / Professor / Yuichi Komori |
| 3. | Austria / Vienna University of Technology / Agata Ciabattoni |
| 4. | 2004- |
| 5. | A study of Substructural Logic and the system of Substructural Logic with lambda calculus |
| 6. | the Grant-in-Aid for Scientific Researches (C(2)) of Japan Society for the Promotion of Science |
| 8. | Spring Seminar on Lambda Calculas and Logic (at Kusatsu Seminar House) 2005.3 and 2006.3 |

Center for Frontier Science

1. Control of radiation fields using photonic crystals and diffraction gratings
2. Center for Frontier Science / Professor / Kazuo Ohtaka
3. Various optical processes such as laser oscillation and Smith-Purcell radiation in periodic systems will be the target of this research program, with an intention to compare the efficiency of photonic crystals and diffraction gratings. Both, we and Belgian teach, are theoretical groups which have been working in various fields of optical properties of solids. Our experience in photonic crystals and that of the Belgian group in diffraction gratings are combined to make a comparison of the light manipulations in two systems. The collaboration has already led to a theoretical prediction on the possibility of superradiance taking place in a multilayer system, in the wavelength region much shorter than the visible range. An extension of the work to photonic crystals is now under way.

4. Promotion of Science and Technology (Ministry of Education, Sports, Culture, Science and Technology of Japan)


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Marine Biosystems Research Center

1. Evolution of reproductive strategies and the environmental conditions of habitats in marine green algae

2. Marine Biosystem Research Center / Associate Professor/ Tatsuya Togashi Ph.D

3. US National Tropical Botanical Garden / Prof. Paul Alan Cox and 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. JST Scientific research funds


8. We have received the Ecological Research Award 2005 and organized an international symposium at the International Botanical Congress 2005 in Vienna, Austria.

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Center for Environment, Health and Field Sciences

1. Neuropharmacological study on neurotoxic non-protein amino acids in some Lathyrus species

2. Center for Environment, Health and Field Sciences / Professor / Fumio Ikegami

3. Belgium / Faculty of Medicines and Health Sciences, Ghent University / Professor Fernand Lambein

4. From 1996 to date

5. Lathyrus sativus is cultivated as a drought tolerant food crop in rainfed areas of India, Bangladesh and Ethiopia, but unfortunately the presence of high levels of the neuroactive amino acid can cause the crippling human disease neurolathyism.
This project is concerned with the mechanism of neurological action of these neurotoxins in *Lathyrus* species, and can open a possible though difficult path towards a solution to the problem of human neurolathyrism.

6. Academic Expense


8. None

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1. Phytochemical study for bioactive constituents in Asian medicinal plants and traditional medicine

2. Center for Environment, Health and Field Sciences / Professor / Fumio Ikegami

3. Thailand / Faculty of Pharmaceutical Sciences, Chulalongkorn University / Associate Professor Nijsiri Ruangrungsi:

   Thailand / Faculty of Pharmacy, Chiang Mai University / Associate Professor Siriporn Okonogi

4. From 1996 to date

5. Our current interest in the chemical constituents of some Asian medicinal plants and crude drugs led to the isolation of several new bioactive compounds, such as gastrol (relaxant) from Gastrodia elata and ardisiphenols A-C (antioxidant) from Ardisia colorata. The results would tend to explain their uses as traditional medicines in Thailand or in China.

6. Academic Expense


8. None

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1. Effects of plant hormones on fruit set and growth in fruit tree

2. Faculty of Horticulture / Professor / Hiroyuki Matsui

   Center for Environment, Health and Field Sciences / Associate 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


   ③ GA_95 is a genuine precursor of GA_9 in immature seed of *Prunus cerasus* L. 1998. 16th Inter. Conference on Plant Growth Substances, Abstracts 146.


8. None

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### Research Center for Frontier Medical Engineering

| 1. | Spectral Imaging and Its Application Prof. Arto KAARNA |
| 2. | Director of Research Center for Frontier Medical Engineering/Professor/Yoichi MIYAKE |
| 3. | Finland/Lappeenranta University of Technology, Department of Information Technology |
| 4. | May 6, 2004 – |
| 6. | Finland, Academy of Finland · SA |
| 7. | Association of International Color Science Multispectral imaging |
| 8. | Workshop-Medical Imaging- May 14, 2004 at Chiba university |

| 1. | Spectral Imaging and Its Application Prof. Jussi Parkkinen |
| 2. | Director of Research Center for Frontier Medical Engineering/Professor/Yoichi MIYAKE |
| 3. | Finland/Joensuu University, Department of Computer Science |
| 4. | October 1, 2007 |
| 5. | Color Medical Image Processing. |
| 6. | Chiba University |
| 7. | MTF measurement based on the BRDF |
| 8. | Discussion on the Global COE Planning and future research of medical image processing |