The Chiba University International Collaborative Research

2009

CONTENTS

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 20-th Russian literature, and looking into the issues of religion, philosophy and culture.

6．Grants-in-Aid for Scientific Reseach

7．KONO, Wakana. Khdozhestvennoe prostranstvo i personazhi v <Serebryanom golube> A
. Belogo i <Pesne Sud'by> A. Bloka // Problemy izucheniya khdozhestvennogo
proizvedeniya v shkole i vuze. Vyp.2: Prostranstvo i vremya v
khurozhestvennom proizvedenii. pp.135-139. Orenburg,2002.,
KONO, Wakana. Obraz lesa kak <russkoe prostranstvo> (<Serebryanyj golub'> A. Belogo v
kontekste <neonarodnichekoj> literatury nachala 20 v.) Bulletin of the
Japanese Association of Russian Scholars No.34Japanese Association of
Russian Scholars, 2002.pp.67-73,
KONO, Wakana. Zhizn'goroda i zhizn'cheloveka:Obraz Letnego sada v<Peterburge>A.Belogo//Japanese Slavic and East European Studies Vol.25.Japanese Society for Slavic and East European Studies, 2004.pp.53-70.
KONO, Wakana. Nauka i okkul'tizm. Glaz, vozrozhdayushij mir, v romane <Moskva> A.Belogo // The Frontier in Studies of Postmodern Literature (VII). Hokkaido: Slavic Research Center Hokkaido University, 2005. pp.18-40.
KONO, Wakana. Otnosheniya k miru v iskusstve russko-evrejskikh nonkonformistov // *Beyond the Empire: Images of Russia in the Eurasian Cultural Context. 21st Century COE Program Slavic Eurasian Studies Series*. No.17. (Ed. by Mochizuki Tetsuo). Hokkaido: Slavic Research Center Hokkaido University, 2008. C. 93-109.etc

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, Researcher Chiba University,　Zoya Viktrovna Efimova

4．2007-

5．Developing Transcription and Annotation System for Japanese-Russian Corpus

6．Grants-in-Aid for Scientific Reseach

7．Efimova, Zoya. Issues of referential structure annotation in corpus of spoken narratives. (Problemy razmetki referencial'noi struktury v korpuse ustnyh narrativov).// NTI. Moscow. pp.82-87. 2007

8．None

1．Regular meaning shifts in Japanese verbs

2．Faculty of Letters／Associate Professor／Wakana Kono

3．Russia／Institute of Oriental studies, Russian Academy of Sciences／Researcher, Researcher Chiba University, Anna Sergeyevna Panina

4．2008

5．Developing regular meaning shifts in Japanese and Russian verbs

6．Grants-in-Aid for Scientific Reseach

7．None

8．None

Graduate School of Humanities and Social Sciences

1．Shifting Re-creations of European and Asian 'Others' in East Asian Schoolbook

2．Graduate School of Humanities and Social Sciences／Professor／MIYAKE, Akimasa

3．Germany／Heidelberg University／Prof. Wolfgang Seifert, Prof. Gotelind Müller-Saini et.al.

4．2008-

5．We are interested in exploring recent tendencies of cross-national teams in establishing source books and textbooks in history from a multi-national and transnational perspective, i.e. by writing a common textbook for two or more Asian countries' pupils and students.

6．Heidelberg University

Faculty of Education

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 / Tor Vergata University of Rome / Paolo Culatoro

4. 2010-2012

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

7. Sugita K, Hatakeyama R, Narahashi S, Sugita K, Shimoyama I. "Meaning and meaningless Hiragana" and "Arabic numeral" phonological reaction time in children of Italian-Japanese bilinguals. IMJ Vol. 15、No. 3, 189-192, 2008

Miyuki Torii, Ichiro Shimoyama, Katsuo Sugita Phonemic and semantic working memory in information processing in children with high function pervasive developmental disorders IMJ Vol 17, No 1, 35-39, 2010

Sugita K, Suzuki N, Oi K, Allen-Tamai M, Sugita Ki, Shimoyama I. Cross-Sectional Analysis for Matching Words to Concepts in Japanese and English Languages. IMJ Vol 17, No 1, 41-45, 2010

8. None

1. Comparative Research about Health Promoting School in Asia

2. Education, Professor, Kanako OKADA

3. ・Mainland China , Shanghai／School of Public Health, Fudan University／F. Hua,

・South Korea, Wonju,／Department of Health Administration ,College of Health Sciences, Yonsei University／Eun Woo Nam,

・Taiwan, Taipei／Department of Health Promotion and Health Education, National Taiwan Normal University,／S. Y. Huang

4. 2008～

5. This study aims to show an overview and characteristics of Asian HPS and school health related organizational activities and collaboration. Investigations regarding HPS were conducted via literature review and observational studies of schools visited in Asia.

6. The United graduate school of Education Tokyo Gakugei University「Research Project」subvention in 2008-2009、COE start up subsidy in 2009、Model curricula development research for course of Teacher in 2010

7

・Yuuko Kamazuka etal. : Health Promoting Schools in Taiwan,

Journal of Educational Research,21,127-135,2010.3

・Kanako OKADA etal. : Health Promoting Schools in Hong Kong Special Administrative Region of China ,Journal of Educational Research,21,127-135,2010.3

Bulletin of the faculty of education,58 ,2010.3

・Megumi KAGOTANI,Yuko KAMAZUKA, Syusaku SASADA et.al.(2009): Three Policies for the Development of Health Promoting Schools in Japan, The First Asia-Pacific Conference on Health Promotion and Health Education, Makuhari, Japan.

・Kanako OKADA et.al. : CHARACTERISTICS OF HEALTH PROMOTING SCHOOLS IN ASIA:JAPAN, HONG KONG, CHINA,SOUTH KOREA AND TAIWAN 20th IUHPE World Conference on Health Promotion,11-15 July 2010, Geneva, Switzerland (発表予定)

8. Speaker／International Health Promoting School Symposium in Taipei (Taiwan) (2009.12)

・Lecture／International Health Promoting School Conference in Taipei (Taiwan) (2009.12)

・Speakers (Kanako OKADA, Daisuke Fujikawa, Satoshi Isobe＆fumiko Sunagami) at Health Promoting School Seminar in Shanghai (Mainland China)

Faculty of Law and Economics

1. Consumption and Industrial Change in South Asia : 1880-1950
2. Faculty of Law and Economics／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, Delhi, 2010)
6. Association for Asian Studies; Grant-in-Aid for Scientific Research
7. Haruka Yanagisawa, "The Growth of Small-scale Industries and Changing Consumption Patterns in India: 1920s to 1950s" (in Japanese), *Economic Journal of Chiba University*, Vol. 19, No. 3. Douglas E. Haynes, Abigail McGowan, Tirthankar Roy, and Haruka Yanagisawa eds., *Towards a History of Consumption in South India*, Oxford University Press, New, Delhi, 2010
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. Faculty of Law and Economics／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)

8， We organized a session on "The Changes in Consumption Patterns in India" at the Annual Conference of Japanese Association for South Asian Studies held at Kitakyushu City University on 3rd October 2009 and an international workshop in Tokyo on 11th October 2009.

1．Communities and Commons in Asia: Their Past and Present

2．Faculty of Law and Economics／Professor／Haruka Yanagisawa

3．Korea／University of Sungkyunkwan／Wooyoun Lee

India／Institute of Economic Growth／Amita Baviskar

India／Lady Shri Ram College, Delhi (Retired)／Minoti Chakravarty-Kaul

France／University of Grenoble／Kléber Bertrand Ghimire

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.

6．Grant-in-aid for Twenty-first Century COE Programme. Japan Foundation

7．Papers presented at International Conference, 'Tradition', Environment and Publicness in Asia and the Middle East' held at Chiba in 2006: Wooyoun Lee, "The Role of Government in Establishment of Communal Rule for Using Forest Resources: The Korean Experience before and after the Liberation"; Minoti-Chakravarty Kaul, "Self-Governance of Village Common Lands, Water and Forests in Northern India, 1803-2006: Lessons from a Sustainable Eco-Culture"; Haruka Yanagisawa, "Historical Changes in Village Common Lands in South India". Haruka Yanagisawa, "The Decline of Village Common Lands and Changes in Village Society: South India, c.1850-2000" *Conservation and Society*, Vol. 6, No. 4 (Dec. 2008), pp. 293-307; Haruka Yanagisawa, "Village Common Land, Manure, Fodder and the Intensification of Agricultural Practices: South Indian Agriculture since the Middle of the Nineteenth Century", presented at the XVth World Economic History Congress, held on 3-7 August 2009 at Utrecht; Haruka Yanagisawa, "South Indian Village Common Lands in Transition: The Decline of the Elite-dominant Managing System and Changes in the Role of Common Lands in Local Agricultural Production and in the Village Economy", presented at "Contemporary India Area Studies: The First International Workshop" held on 13th December 2009 at Kyoto University.

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.

Graduate School of Science

1．Molecular mechanisms of cellular and physiological functions of small GTPases and their target proteins

2．Graduate School of Science／Professor／Takeshi Endo

3．Germany／University of Saarland Medical Center／Gerald Thiel

4. 2006–

5. This project aims to elucidate molecular mechanisms of cellular and physiological functions of small GTPases and their target proteins, which we have identified.

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

7. Mayer, S. I., Rössler, O. G., Endo, T., Charnay, P., and Thiel, G. (2009) Epidermal growth factor-induced proliferation of astrocytes requires Egr transcription factors. *J. Cell Sci.* 122, 3340–3350.

8. None

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1. Polymer Formation by the sterile δ-motif (SAM) Domain of Diacylglycerol Kinase (DGK) δ1
2. Graduate School of Science／Professor／Fumio Sakane
3. United States of America／University of California, Los Angeles／Professor James U. Bowie
4. 2006~
5. Because SAM domain-mediated oligomerization of DGKδ1 is important to the localization and regulation of DGKδ1, we perform a biochemical and structural characterization of the DGKδ1 oligomers.
6. Grant-in-Aid for Scientific Research; grants from the Northern Advancement Center for Science and Technology of Hokkaido, Japan, the Japan Diabetes Foundation, the Suhara Memorial Foundation, the Novo Nordisk Pharma Ltd. (Japan), the Takeda Science Foundation, the Suzuken Memorial Foundation, the Akiyama Foundation, the Naito Foundation, the Hamaguchi Foundation for the Advancement of Biochemistry, and the Sankyo Foundation of Life Science
7. Harada, B. T., Knight, M. J., Imai, S., Qiao, F., Ramachander, R., Sawaya, M. R., Gingery, M., Sakane, F. and Bowie, J. U. Regulation of enzyme localization by polymerization: Polymer formation by the SAM domain of diacylglycerol kinase 1. *Structure* **16**, 380–387 (2008)
8. N/A

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1. Theoretical an Computational Study of High-Temperature Superconductors Including Cuprates
2. Department of Physics／Professor／Yukinori Ohta
3. Germany／Karlsruhe Institute of Technology／Robert Eder
4. from 2003
5. We use some theoretical and computational methods for correlated electron systems to study the electronic states and mechanisms of high-temperature superconductivity in, e.g., cuprate materials. Origins of a variety of anomalous electronic phenomena observed in experiment are thereby clarified and thus we can contribute to the elucidation of the mechanism of high-temperature superconductivity of these materials.
6. Grant-in-Aid for Scientific Research
7. In preparation
8. N/A

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1. Theoretical Study of Iron-Based High-Temperature Superconductivity
2. Department of Physics／Professor／Yukinori Ohta
3. Germany／Karlsruhe Institute of Technology／Robert Eder
4. from 2008
5. 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.
6. JST-TRIP, Grant-in-Aid for Scientific Research

7．In preparation

8．N/A

1．Computational Physics on Anomalous Electronic Properties of Strongly Correlated Electron Systems

2．Department of Physics／Professor／Yukinori Ohta

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

4．since 2001

5．We study the electronic states of low-dimensional strongly correlated electron systems such as transition-metal oxides and organic materials by means of recently developed computational techniques such as density-matrix renormalization group (DMRG) method. In particular, we aim at the construction of the theory that can explain experimental findings for novel quantum phase transitions such as charge ordering and anisotropic superconductivity.

6．Grant-in-Aid for Scientific Research

7．Disorder and Superconductivity in Doped Semiconductor Nanotubes, T. Shirakawa, S. Nishimoto, Y. Ohta, and H. Fukuyama, J. Phys.: Conf. Ser. **150**, 052238/1-4 (2009).

8．N/A

1．On the study of electromagnetic phenomena associated crustal activity

2．Graduate School of Science／Professor／Katsumi Hattori

3．Russia / Institute of Physics of the Earth / Dr. Oleg Molchanov
Russia / Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation (IZMIRAN) / Dr. Yuri Kopytenko
Russia / Geophysical Service Kamchatka Department / Dr. Eviginii Gordeev
Ukraine / Lviv Center of Space Research / Dr. Varely Korepanov

4．1998～

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

6．RIKEN (-2002)
JSPS Grants-in Aid for Scientific Research(2001-2003)
JSPS Grants-in Aid for Scientific Research(2004-2006)

7．7．Mezentsev, A. Y., Hayakawa, M., and Hattori, K., Fractal ULF signature related to seismic process, Journal of Atmospheric Electricity, 29, 81-93, 2009.

Ismaguilov, V.S., Kopytenko, Y. A., Hattori, K., and Hayakawa, M., Gradients and phase velocities of ULFggeomagnetic disturbances used to determine the source of an impending strong earthquake, Geomagnetism and Aeronomy 46, 403-410, 2006.

Y. Kopytenko, V. Ismaguilov, K. Hattori and M. Hayakawa, Determination of hearth position of a forthcoming strong EQ using gradients and phase velocities of ULF geomagnetic disturbances, Physics and Chemistry of the Earth, 31, 292-298, 2006.

A. Schekotov, O. Molchanov, K. Hattori, E. Fedorov, V. Gladyshev, G. Belyaev, V. Chebrov, V. Sinitsin, E. Gordeev and M. Hayakawa, Seismo-ionospheric depression of the ULF geomagnetic fluctuations at Kamchatka and Japan, Physics and Chemistry of the Earth, 31, 313-318, 2006.

Yu. A. Kopytenko, V. S. Ismaguilov, K. Hattori, and M. Hayakawa, Determination of hearth position of forthcoming strong EQ using gradients and phase velocities of ULF geomagnetic disturbances, Extended Abstracts of 2005 International

Workshop on Seismo Electromagnetics, pp. 166-169, 15-17 March, 2005, Chofu, Tokyo

Kopytenko Yu.A., Ismaguilov V.S., Hattori K., Hayakawa M., Gradients and Phase Velocities of ULF magnetic disturbances (F=0.1-0.4Hz) before and during strong earthquakes inf 2003 year at Bosso Peninsula (Japan), 2004 Asia-Pacific Radio Science Conference Proceedings, p. 545, August 24-27, 2004, (Qingdao, China).

Molchanov, O.A.; Schekotov, A.Ju.; Hattori, K.; Solovieva, M.S.; Fedorov, E.N.; Chebrov, V.; Saltikov, D.; Hayakawa, M., Near-seismic effects in ULF fields and seismo-acoustic emission : statistics and explanation, European Geosciences Union 1st General Assembly (CD-ROM), April 25-30, 2004, Nice, France

Gotoh, K., Hayakawa, M., Smirnova, N., and Hattori, K., Fractal analysis of seismogenic ULF emissions, Physics and Chemistry of the Earth, 29, 419-424, 2004.

M. Hayakawa, K. Hattori, A. P. Nickolaenko, and L. M. Rabinowicz, Relation between the energy of earthquake swarm and the Hurst exponent of random variations of the geomagnetic field, Physics and Chemistry of the Earth, 29, 379-387, 2004.

Hattori, K., Takahashi, I., Yoshino, C., Isezaki, N., Iwasaki, H., Harada, M., Kawabata, K., Kopytenko, E., Kopytenko, Y., Maltsev, P., Korepanov, V., Molchanov, O., Hayakawa, M., Noda, Y., Nagao, T., Uyeda, S., ULF geomagnetic field measurements in Japan and some recent results associated with Iwateken Nairiku Hokubu Earthquake in 1998, Physics and Chemistry of the Earth., 29, 481-494, 2004.

Ismaguilov, V., Kopytenko, Y., Hattori, K., and Hayakawa, M., 2003: Variations of phase velocity and gradient values of ULF geomagnetic disturbances connected with the Izu strong earthquake, Natural Hazards and Earth System Sciences, **3**, 211-215,2003.

Kopytenko, Y., Ismaguilov, V., Molchanov, O., Kopytenko, E., Voronov, P., Hattori, K., Voronov, P., Hayakawa M., Zaitsev, D., Investigation of ULF magnetic disturbances in Japan during acive seismic period, Journal of Atmospheric Electricity, 22, 3, 207-215, 2002.

Uyeda, S., Hayakawa, M., Nagao, T., Molchanov, O., Hattori, K., Orihara, Y., Gotoh, K., Akinaga, Y., Tanaka, H., Electric and Magnetic phenomena observed before the volcano-seismic activity 2000 in the Izu islands region, Japan, Proceedings of the US National Academy of Science, 99, 7352-7355, 2002.

Gorbatikov, A., Molchanov, O., Hayakawa, Uyeda, S., M., Hattori, K., Nagao, T., Tanaka, H., Nikolaev V., Maltsev, P., Acoustic emission possibly related to earthquakes, observed at Matsushiro, Japan and its implications, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 1-10, Terrapub, 2002.

Kopytenko, Y., Ismaguilov, V., Hattori, K., Voronov, P., Hayakawa M., Molchanov, O., Kopytenko, E., Zaitsev, D.. Monitoring of the ULF electromagnetic disturbances at the Station network before EQ in seismic zones of Izu and Chiba Peninsulas, Seismo-Electromagnetics: Lithosphere-Atmosphere- Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 11-18, Terrapub, 2002.

Yagova, N., Yumoto, K., Pilipenko, V., Hattori, K., Nagao, T., Saita, K., Local variations of geomagnetic ULF noises and their relation to seismic activity, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 45-48, Terrapub, 2002.

Uyeda, S., Nagao, T., Hattori, K., Noda, Y., Hayakawa, M., Miyaki, K., Molchanov, O., Gladychev, V., Baransky, L., Schekotov, A., Belyaev, G., Fedorov, E., Pokhotelov, O., Andreevsky, S., Rozhnoi, A., Khabazin, Y., Gorbatikov, A., Gordeev, E., Chevrov, V., Lutikov, A., Yunga, S., Kasarev, G., Surkov, V., Russian-Japanese complex geophysical observatory in Kamchatka for monitoring of phenomena connected with seismic activity, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 413-420, Terrapub, 2002.

Gladychev, V., Baransky, L., Schekotov, A., G., Fedorov, E., Pokhotelov, O., Andreevsky, S., Rozhnoi, A., Khabazin, Belyaev, G., Gorbatikov, A., Gordeev, E., Chevrov, V., Sinitsin, V., Gorbatikov, A., Gordeev, E., Chevrov, V., Molchanov, O., Hayakawa,

M., Uyeda, S., Nagao, T., Hattori, K., Noda, Y.., "Some preliminary results of seismo-electromagnetic research at complex geophysical observatory, Kamchatka, Seismo Electromagnetics: Lithosphere-Atmosphere-Ionosphere coupling, edited by M. Hayakawa and O. Molchanov, 413-420, Terrapub, 2002

Ismaguilov, V., Kopytenko Y., Hattori, K., Voronov, M., Molchanov, O., Hayakawa, M., ULF magnetic emissions connected with under sea bottom earthquakes, Journal of Natural Hazards and Earth System Science, 1, 23-31, 2001.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1．Monitoring of Earthquake activity with use of electromagnetic approach in Taiwan,

2．Graduate School of Science／Professor／Katsumi Hattori

3．Taiwan National Central University / Professor / Jann-Yenq Liu

Taiwan National Central University / Professor / Lung-ChiJ Tsai

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）

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

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

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

NiCT R&D promotion scheme funding international joint research(2007-2009)

7．

Liu, J. Y., Chen, Y. I., C. H. Chen, Liu, C. Y., Chen, C. Y., Nishihashi, M., Li, J. Z., Xia, Y. Q., Oyama, K. I., Hattori, K., and Lin, C. H., Seismo-ionospheric Anomalies Observed before the 12 May 2008 Mw7.9 Wenchuan Earthquake, J. Geophys. Res., doi:10.1029 /2008JA013698, 2009.

Nishihashi, M., Hattori, K., Jhuang, H. K., and Liu, J. Y., Spatial distribution of ionospheric GPS-TEC and NmF2 anomalies during the 1999 Chi-Chi and Chia-Yi Earthquakes in Taiwan, Terrestrial, Atmospheric and Oceanic Sciences, 20, 779-789, 2009.

Chen, C. H., Liu, J. Y., Yang, W. H., Yen, H. Y., Hattori, K., Lin, C. R., and Yeh, Y. H., SMART analysis of geomagnetic data observed in Taiwan, Physics and Chemistry of the Earth, 34, 350-359, 2009.

Yumoto, K., Ikemoto, S., Cardinal, M. G., Hayakawa, M., Hattori, K., Liu, J. Y., Saroso, S., Ruhimat, M., Husni, M., Widarto, D., Ramos, E., D. McNamara, R. E. Otadoy, G. Yumul, R. Ebora, and N. Servando, A new ULF wave analysis for Seismo-Electromagnetics using CPMN/MAGDAS data, Physics and Chemistry of the Earth, 34, 360-356, 2009.

Saroso, S., Liu, J. Y., Hattori, K., and Chen, C. H., Ionospheric GPS TEC Anomalies and M>5.9 Earthquakes in Indonesia during 1993-2002, Terrestrial, Atmospheric and Oceanic Sciences, 19, 481-488, 2008.

J.Y. Liu, C.H. Chen, Y.I. Chen, H.Y. Yen, K. Hattori and K. Yumoto, Seismo-geomagnetic anomalies and $M \geqslant 5.0$ earthquakes observed in Taiwan during 1988–2001, Physics and Chemistry of the Earth, 31, 215-222, 2006.

M. Nishihashi, Y. Suzuki, K. Hattori, J-Y. Liu, D. Widarto, Analysis of GPS-TEC variation associated with large earthquakes using GAMIT, Abstract of Asia Oceania Geosciences Society 3rd Annual Meeting, CDROM, July 2006, Singapore..

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

Masashi Kamogawa, Jann-Yenq Liu, Hironobu Fujiwara, Yu-Jung Chuo, Yi-Ben Tsai, Katsumi Hattori, Toshiyasu Nagao, Seiya Uyeda, and Yoshi-Hiko Ohtsuki, Atmospheric field variations before the March 31, 2002 M6.8 earthquake in Taiwan, Terrestrial, Atmospheric and Oceanic Sciences, Vol.15, 397-412, September 2004.

Hattori, K., Takahashi, I., Yoshino, C., Nagao, T., Liu, J.Y., Shieh, C.F., ULF Geomagnetic and Geopotential Measurement at Chia-Yi, Taiwan, Journal of Atmospheric Electricity, 22, 3,217-222, 2002.

K. Hattori, Y. Akinaga, K.Gotoh, C. Yoshino, Y. Kopytenko, M. Hayakawa, K. Yumoto, T. Nagao, S. Uyeda, J. Y. Liu, C. H. Shieh, ULF Geomagnetic Anomalies Associated with Earthquakes and Observations in Taiwan, 2002 International Workshop on Earthquake Precursor iSTEP integrated Search for Taiwan Earthquake Precursors, p.96—97, 2002.

Y. Akinaga, M. Hayakawa, J.Y. Liu, K. Yumoto, K. Hattori, “A precursory signature for Chi-Chi earthquake in Taiwan”, Natural Hazards and Earth System Sciences, 1, 33-36, 2001.

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

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

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

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

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

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

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

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

System maintenance of stations at Hualien. (July 2007)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1．Ground-based and satellite geophysical monitoring and modeling of seismotectonic structure

2．Graduate School of Science／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) .

2007 千葉大学国際会議助成金

2007-2009 NiCT R&D promotion scheme funding international joint research.

7．

Hattori, K., and Telesca, L., Editors, Electromagnetics in Seismic and Volcanic Areas (Proceedings of Bilateral Seminar Italy-Japan, July 25-27, 2007), Yuubunsya Pub., pp. 226, 2008

Telesca, L., Lapenna, V., Macchiato, M., and Hattori, K., Investigating non-uniform scaling behavior in Ultra Low Frequency (ULF) earthquake-related geomagnetic signals, Earth and Planet. Sci. Lett., 268, 219-224, 2008.

L. Telesca and K. Hattori, Non-uniform scaling behavior in Ultra Low Frequency (ULF) earthquake-related geomagnetic signals,Physica A, 384, 522-528, 2007.

G. Colangelo, K .Hattori, V. Lapenna,L. Telesca, and C. Yoshino, Extraction of extreme events in geoelectrical signals; an application in a seismic area of Japan, Extended Abstracts of 2005 International Workshop on Seismo Electromagnetics, pp. 93-96, 15-17 March, 2005, Chofu, Tokyo.

Luciano Telesca, Gerardo Colangelo, Katsumi Hattori, Vincenzo Lapenna, Principal component analysis of geoelectrical signals measured in the seismically active area of Basilicata Region (southern Italy), Natural Hazards and Earth System Sciences, **4**, 663-667, 2004

服部克巳，吉野千恵，芹田亜矢，高橋一郎，Geraldo Colangelo, Luchiano Telesca, ULF 帯の電磁場データの主成分解析，電気学会研究会資料, EMT-04-101, p65-69，2004 年 9 月

8．October-November 2003, Visit to Istituto di Metodologie per l'Analisi Ambientale, CNR and discuss and analyze geoelectrical potential difference data recorded in seismic areas, southern Italy.

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

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

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

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

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

October-November, 2006, Visit Istituto di Metodologie per l'Analisi Ambientale, CNR and set up the collaborative landslide monitoring station at Picerno, Potenza, in the southern Italy with CNR.

July, 2007, Visit Istituto di Metodologie per l'Analisi Ambientale, CNR and give a seminar on seismo-elecromagnetics.

Technical and Scientific discussion on landslide and seismo-electromagnetics have been done.

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

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

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

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

1．Elecromagnetic approach to monitor crustal activities such as earthquake and landslide and their modeling

2．Graduate School of Science／Professor／Katsumi Hattori

3．Peking Universtiy / Profssor/ Qinghua Huang

4．2004～

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

6．2007-2009 NiCT R&D promotion scheme funding international joint research.

2009-2012 JSTJapan(JST)-China(DOIC)-Korea(NRF) Cooperative Research Projects

7．

Hirano, T C. Yoshino, K. Hattori, and Q. Huang, Direction finding of ULF/ELF geomagnetic field data possibility associated with the 2004 Sumatra-Andaman earthquake, 2009 International Workshop on Validation of Earthquake Precursors by Satellite, Terrestrial and other Observations (VESTO).Case studies of the recent Asian events, P10,Chiba University, March 2009

8．

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

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

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

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

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

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

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

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

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

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

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

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

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

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

1. Ground-based Monitoring of Seismo-Electromagnetic Signals in Indonesia
2. Graduate School of Science／Professor／Katsumi Hattori
3. Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Djedi Widarto
   Research Center for Geotechnology, Indonesian Institute of Science / Senior Researcher / Dr. Eddy Gaffar
   National Institute of Aeronautics and Space-LAPAN / Senior Researcher / Dr. Sarmoko Saroso
   Metrological Agency, Indonesia(BMKG / Director / Dr. Prih Harijadi)
4. 2005～
5. The project aims at clarification of the physical mechanism of electromagnetic phenomena preceding earthquakes and realizing of monitoring and short-term prediction of large earthquake in Indonesia.
6. 2005-2007　JSPS　Bilateral collaboration project between Japan and LIPI, Indonesia (PI: Dr K. Hattori (Chiba University)
   2007-2009 JSPS Grants-in Aid for Scientific Research B
   2007-2009　NiCT R&D promotion scheme funding international joint research.
   2009-2010 JSPS Japan-East Asia Network of Exchange for Students and Youths (JENESYS) Programme (PI Dr. K. Hattori)
7.

Yumoto, K., Ikemoto, S., Cardinal, M. G., Hayakawa, M., Hattori, K., Liu, J. Y., Saroso, S., Ruhimat, M., Husni, M., Widarto, D., Ramos, E., D. McNamara, R. E. Otadoy, G. Yumul, R. Ebora, and N. Servando, A new ULF wave analysis for Seismo-Electromagnetics using CPMN/MAGDAS data, Physics and Chemistry of the Earth, 34, 360-356, 2009.

Widarto, D., Mogi, T., Tanaka, Y., Nagao, T., Hattori, K., and Uyeda, S., Co-seismic Geoelectrical Potential Changes Associated with the June 4, 2000's Earthquake (Mw 7.9) in Bengkulu, Indonesia, Physics and Chemistry of the Earth, 34, 373-379, 2009.

Saroso, S., Hattori, K., Ishikawa, H., Ida, Y., Shirogane, R., Hayakawa, M., Yumoto, K., Shiokawa, K., and Nishihashi, M., ULF geomagnetic anomalous changes possibly associated with 2004-2005 Sumatra earthquakes, Physics and Chemistry of the Earth, 34, 343-349, 2009.

Saroso, S., Liu, J. Y., Hattori, K., and Chen, C. H., Ionospheric GPS TEC Anomalies and M>5.9 Earthquakes in Indonesia during 1993-2002, Terrestrial, Atmospheric and Oceanic Sciences, 19, 481-488, 2008.

S. Saroso, J. Y. Liu, K. Hattori, and C. H. Chen, Ionospheric GPS TEC Anomalies and M>5.9 Earthquakes in Indonesia during 1993-2002, Terrestrial, Atmospheric and Oceanic Sciences, 2007 (accepted).

K. Hattori, "Space and Lithosphere Environment Changes in Indonesia", Preparatory Meeting for the 7th Science Council of Asia (SCA) Conference, March 20, 2007, Science Council of Japan, Tokyo.

K. Yumoto and K. Hattori, Environmental Changes in Space and Lithosphere in Indonesia, 21st Pacific Science Congress, no abstract, June 12-18, 2007, Okinawa Convention Center, Okinawa, Japan.

M. Nishihashi, Y. Suzuki, K. Hattori, J-Y. Liu, D. Widarto, Analysis of GPS-TEC variation associated with large earthquakes using GAMIT, Abstract of Asia Oceania Geosciences Society 3rd Annual Meeting, CDROM, July 2006, Singapore..

Katsumi Hattori, Ichiro Takahashi, Masashi Hayakawa, Nobuhiro Isezaki, Kiyohumi Yumoto, Toshiyasu Nagao, and Seiya Uyeda, RIKEN's Int'l Frontier Research on Earthquakes 1997-2002 and Recent Progress on ULF Geomagnetic Changes Associated with Crustal Activity, Mini-Workshop on Seismo Electromagnetic Precursors of Earthquakes: State of the Art and Research Progress, LIPI Campus, Bandung, Indonesia, September 5, 2005

Djedi Widrto, T. Mogi, Y. Tanaka, T. Nagao, K. Hattori, JY. Liu, and S. Uyeda, Seismo-Electromagnetic signatures possibly

associated with the earthquakes in southern Sumatra, Indonesia, , Mini-Workshop on Seismo Electromagnetic Precursors of Earthquakes: State of the Art and Research Progress, LIPI Campus, Bandung, Indonesia, September 5, 2005

Sarmoko Saroso1 , K. Hattori2, J. Y. Liu3, M. Hayakawa4, K. Shiokawa5, and K. Yumoto6, ULF Geomagnetic Anomaly and TEC Perturbation Related With the Aceh Earthquake of December 26, 2004, Mini-Workshop on Seismo Electromagnetic Precursors of Earthquakes: State of the Art and Research Progress, LIPI Campus, Bandung, Indonesia, September 5, 2005.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

May 2008, EMC test at Kotabumi station.

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

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

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

October-November 2008: Hattori visited bandung to participate in HAGI meeting. Maintenace of PLRatu station also has been performed.

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

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

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

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

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

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

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

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

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

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

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

1．Block theory in representation theory of finite groups

2．Faculty of Science / Professor / Shigeo Koshitani

3．Germany / RWTH Aachen University/ Juergen Mueller, F.Noeske

4．2007--

5．Block theory which was developed by R. Brauer (1901--1977) in representation theory of finite groups. A notion "groups" is essentially a way to describe a sort of "symmetries" abstractly. Representation theory is a kind of a way to describe groups in terms of martrices 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

Grant-in-Aid for Scientific Research(C) 20540008, 2008—2010

7．In preparation

8．Joint work with J.Mueller and F.Noeske during 28 March - 6 April, 19- 23 June, 9 – 16 December 2009, in RWTH Aachen University of Ireland Germany

1．Frobenius-Schur indicators theory in representation theory of finite groups

2．Faculty of Science / Professor / Shigeo Koshitani

3．Ireland / National University of Ireland Maynooth / John Murray

4．2006--

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

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

Grant-in-Aid for Scientific Research(C) 20540008, 2008--2010

7．In preparation

8．Joint work with J.Murray during 8 - 16 April 2006, in National University of Ireland Maynooth, Ireland

Joint work with J.Murray during 18- 23 August 2009, in National University of Ireland Maynooth, Ireland

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 matirices 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

７．The indecomposability of a certain bimodule given by the Brauer construction, S.Koshitani and M.Linckelmann, Journal of Algebra 285(2005), 726--729

８．Joint work with M.Linckelmann during 17 March--17 April 2005, in EPFL Lausanne Switzerland, during 9 --19 June 2005,　in EPFL Lausanne Switzerland, during 20 November -- 1 December 20005, in University of Aberdeen in the UK, and during 26 March--1 April 2006, Oberwolfach Mathematical Institute in Germany.

Joint work with M.Linckelmann during 19 November – 29 Nobember 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

Joint work with M.Linckelmann and R.Kessar during 22 March – 28 March, 2009, Oberwolfach Mathematical Institute in Germany

Joint work with M.Linckelmann and R.Kessar during 8 – 15 June, 2009, in the institute in Isle Skye in Scotland, UK.

Joint work with R.Kessar during 18- 24 October, 2009, Luminy Mathematics Institute in France.

Joint work with R.Kessar and M.Linckelmann during 16-19 June, and 17—25 December, 2009, in University of Aberdeen in the UK.

１．Morita equivalences in blocks theory in representation theory of finite groups

２．Graduate School of Science / Professor / Shigeo Koshitani

３．USA / University of Illinois at Chicago / Morton E. Harris

４．2002--

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

６．Grant-in-Aid for Scientific Research(C) 17540010,2005--2007

７．An extension of Watanabe's theorem for the Isaacs-Horimoto-Watanabe corresponding blocks, M.E.Harris and S.Koshitani, Journal of Algebra 296(2006), 96--109

８．Joint work with M.E.Harris during 23 September--2 October 2005, in University of Illinois at Chicago and University of Chicago

Joint work with M.E.Harris during 7 March-- 24 March 2007, in University of Illinois at Chicago and University of Chicago

1．Blocks theory in representation theory of finite groups

2．Faculty of Science / Professor / Shigeo Koshitani

3．Germany / University of Jena / Burkhard Kuelshammer

4．1995--

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

6．Grant-in-Aid for Scientific Research(C) 17540010, 2005--2007
and the Mathematical Institute University of Jena Germany,
Grant-in-Aid for Scientific Research(C) 20540008, 2008--2010

7．In preparation

8・Joint work with B.Kuelshammer during 1 --8 April 2006, in University of Jena, Germany
Joint work with B.Kuelshammer during 6—13 April 2009, In University of Jena, Germany

1．Nanostructured Carbon Monoliths for Storage and Conversion of Methane

2．Graduate School of Science/Professor/Katsumi Kaneko

3．Spain/University of Alicante/Professor/Francisco Rodriguez-Reinoso

4．2009 –

5．The object of this project is to promote the application of clean energy sources, such as methane and hydrogen, to mobile engine systems such as automobiles.

6．JST, “Strategic Japanese-Spanish Cooperative Program (ANNEX I)” (2009-)

7．None

8．Prof. Rodriguez-Reinoso visited Chiba Univ. in January 2010 and Prof. Kanoh, one of the Japanese side members visited Univ. Alicante in March 2010.

1．Selective CO_2 separation using Elastic Layer-structured MOFs (ELMs)

2．Graduate School of Science/Professor/Hirofumi Kanoh

3．USA/University of Michigan/Professor/Christian Lastoskie

4．2009 –

5．The aim of this collaboration is to study the selective separation of CO_2 using ELMs with experimental methods and simulations

6．JSPS, Grants in Aid for Scientific Research (2007-)

7．None

8．Prof. Lastoskie was invited to the conference in Chiba organized by Prof. Kanoh and his colleagues.

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.

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

7. (a) "State-sensitive Monitoring of Active and Promoter Sites. Applications to Au/titania and Pt-Sn/silica Catalysts by XAFS Combined with X-ray Fluorescence Spectrometry",

Yasuo Izumi, Dishad Masih, Jean-Pierre Candy, Hideaki Yoshitake, Yasuko Terada, Hajime Tanida, and Tomoya Uruga, "*X-Ray Absorption Fine Structure 13th International Conference*", Hedman, B., Pianetta, P. Eds., AIP Conference Proceedings Vol. 882, 588 – 590 (2007).

(b) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Part 18. Tin Site Structure of Pt-Sn Catalyst",

Yasuo Izumi, Dilshad Masih, Eric Roisin, Jean-Pierre Candy, Hajime Tanida, and Tomoya Uruga, *Materials Letters*, **61(18)**, 3833 – 3836 (2007).

(c) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Improvement of Spectral Resolution at the Absorption Edges of 9 – 29 keV (Correction)",

Yasuo Izumi, Hiroyasu Nagamori, Fumitaka Kiyotaki, Dilshad Masih, Taketoshi Minato, Eric Roisin, Jean-Pierre Candy, Hajime Tanida, and Tomoya Uruga, *Analytical Chemistry*, **78(6)**, 2075 (2006).

(d) "X-ray Absorption Fine Structure Combined with X-ray Fluorescence Spectrometry. Improvement of Spectral Resolution at the Absorption Edges of 9 – 29 keV",

Yasuo Izumi, Hiroyasu Nagamori, Fumitaka Kiyotaki, Dilshad Masih, Taketoshi Minato, Eric Roisin, Jean-Pierre Candy, Hajime Tanida, and Tomoya Uruga, *Analytical Chemistry*, **77(21)**, 6969 – 6975 (2005).

(e) "Development of Structural Analysis Technique for Nano-particles"

Yasuo Izumi, *Polyfile*, **45(528)**, 46 – 49 (2008).

(f) "Synthesis and Site Structure of a Replica Platinum-Carbon Composite Formed Utilizing Ordered Mesopores of Aluminum-MCM-41 for Catalysis in Fuel Cells",

Kazuki Oka, Yoshiyuki Shibata, Takaomi Itoi, and Yasuo Izumi, *Journal Physical Chemistry C*, **114**(2), 1260 – 1267 (2010).

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.
6. Grant-in-Aid for Scientific Research B and C from the Ministry of Education, Culture, Sports, Science, and Technology. Research Grant for Basic Science from Sumitomo Foundation.
7. (a) "Tin K-edge XAFS of Pt-Sn/MgO Catalyst Combined with the X-ray Fluorescence Spectrometry",

Yasuo Izumi, Laura Sordelli, Sandro Recchia, Rinaldo Psaro, and Dilshad Masih, *SPring-8 User Experiment Report 2004A*, **13**, 169 (2004).

(b) "Tin K-edge XAFS study of supported Ir-Sn/SiO_2 bimetallic catalysts for selective propane dehydrogenation",
Yasuo Izumi, Dilshad Masih, Laura Sordelli, Matteo Guidotti, and Rinaldo Psaro, *Photon Factory Activity Report 2005*, **23B**, 38 (2006).
(c) "Tin K-edge XAFS study of supported Ir-Sn/SiO_2 catalysts utilizing brilliant X-ray beam at 29 keV from PF-AR",
Yasuo Izumi, Kazushi Konishi, Laura Sordelli, Matteo Guidotti, and Rinaldo Psaro, *Photon Factory Activity Report 2006*, **24B**, 16 (2007).
(d) A. Gallo, L. Sordelli, G. Peli, L. Garlaschelli, R. Della Pergola, V. Dal Santo, R. Psaro, Y. Izumi, Characterization of supported Ir-Sn nanoparticles catalysts for dehydrogenation of propane; *XXXV Congress of Inorg. Chem.*, (2007), 9月, Milano (Domestic Conference in Italy).
(e) "Development of Structural Analysis Technique for Nano-particles"
Yasuo Izumi, *Polyfile*, **45(528)**, 46 – 49 (2008).

8．None

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.

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

7．(a) "Site Structure and Photocatalytic Role of Sulfur or Nitrogen-Doped Titanium Oxide with Uniform Mesopores under Visible Light",
Yasuo Izumi, Takaomi Itoi, Shuge Peng, Kazuki Oka, and Yoshiyuki Shibata, *Journal of Physical Chemistry C*, **113**(16), 6706 – 6718 (2009).
(b) "Site Structure and Photocatalytic Role of Sulfur or Nitrogen-Doped Titanium Oxide with Uniform Mesopores under Visible Light." (Erratum),
Yasuo Izumi, Takaomi Itoi, Shuge Peng, Kazuki Oka, and Yoshiyuki Shibata, *Journal of Physical Chemistry C*, **113**(29), 12926

(2009).

(c) "Specific Oxidative Dehydrogenation Reaction Mechanism over Vanadium(IV/III) Sites in TiO_2 with Uniform Mesopores under Visible Light", Yasuo Izumi, Kazushi Konishi, and Hideaki Yoshitake, *Bulletin of Chemical Society of Japan*, **81(10)**, 1241 – 1249 (2008).

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

(e) "Photo-oxidation over mesoporous V-TiO_2 catalyst under visible light monitored by vanadium $K\beta_{5,2}$-selecting XANES spectroscopy",
Yasuo Izumi, Kazushi Konishi, Tomohisa Miyajima, and Hideaki Yoshitake, *Materials Letters*, **62**(6/7), 861 – 864 (2008).

8. None

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1. Theoretical study on nuclear level densities by the shell model Monte Carlo methods
2. Graduate School of Science / Professor / Hitoshi Nakada
3. U. S. A. / YALE UNIVERSITY / Yoram Alhassid
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)
7. ①H. Nakada and Y. Alhassid, Physical Review Letters 79, pp.2939-2942 (1997)
   ②H. Nakada and Y. Alhassid, Physics Letters B436, pp.231-237 (1998)
   ③Y. Alhassid, S. Liu and H. Nakada, Physical Review Letters 83, pp.4265-4268 (1999)
   ④Y. Alhassid, G. F. Bertsch, S. Liu and H. Nakada, Physical Review Letters 84, pp.4313-4316 (2000)
   ⑤H. Nakada and Y. Alhassid, Nuclear Physics A718, pp.691c-693c (2003)
   ⑥Y. Alhassid, S. Liu and H. Nakada, Physical Review Letters 99,162504 (2007)
   ⑦Y. Alhassid, L.Fang and H. Nakada, Physical Review Letters 101, 082501 (2008)
   ⑧H. Nakada and Y. Alhassid, Physical Review C 78, 051304(R) (2008)
8. None

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1. Theoretical and Numerical Studies of Quasi-Periodic Oscillations Observed in Accreting Objects
2. Graduate School of Science/Professor/Ryoji Matsumoto
3. Sweden/Goteborg University/Professor/Marek Abramowicz
4. 2006 –
5. The aim of this collaboration is to explain the origin of quasi-periodic oscillations (QPOs) observed in accreting objects such as black hole candidates by means of theoretical modeling and magnetohydrodynamic simulations.
6. Grants in Aid for Scientific Research (2006,2008-), Yukawa Institute for Theoretical Physics
7. None

8．Matsumoto chaired the international workshop “Quasi-periodic Oscillations and Time Variabilities of Accretion Flows” held at Yukawa Institute for Theoretical Physics in Nov. 20-22, 2007. Prof. Marek Abramowicz was invited to Japan from Nov. 18 to Nov. 23.

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

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

2．Graduate School of Science/Professor/Ryoji Matsumoto

3．USA/Harvard University/Professor/Ramesh Narayan

4．2009 –

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

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

7．None

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

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

Department of health Science, Neurophysiology, University of Sydney, Prof. David Burke

4．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 motor axons in amyotrophic lateral sclerosis. Clin Neurophysiol. 2006 Jul;117(7):1444-8..

2）2: Kanai K, Kuwabara S, Misawa S, Tamura N, Ogawara K, Nakata M, Sawai S, Hattori, T, Bostock H. Altered axonal excitability properties in amyotrophic lateral sclerosis: impaired potassium channel function related to disease stage. Brain. 2006 Apr;129(Pt 4):953-62.

3）Kuwabara S, Bostock H, Ogawara K, Sung JY, Misawa S, Kitano Y, Mizobuchi K, Lin CS, Hattori T. Excitability properties of human median axons measured at the motor point. Muscle Nerve. 2004 Feb;29(2):227-33.

4）Sung JY, Kuwabara S, Kaji R, Ogawara K, Mori M, Kanai K, Nodera H, Hattori T, Bostock H. Threshold electrotonus in chronic inflammatory demyelinating polyneuropathy: correlation with clinical profiles. Muscle Nerve. 2004 Jan;29(1):28-37.

5）Kuwabara S, Bostock H, Ogawara K, Sung JY, Kanai K, Mori M, Hattori T, Burke D. The refractory period of transmission is impaired in axonal Guillain-Barré syndrome. Muscle Nerve. 2003 Dec;28(6):683-9.

6）Kuwabara S, Ogawara K, Sung JY, Mori M, Kanai K, Hattori T, Yuki N, Lin CS, Burke D, Bostock H. Differences in membrane properties of axonal and demyelinating Guillain-Barresyndromes. Ann Neurol 2002;52:180-7.

7）Kuwabara S, Kanai K, Sung JY, Ogawara K, Hattori T, Burke D, Bostock H. Axonal hyperpolarization associated with acute hypokalemia: multiple excitability measurements as indicators of the membrane potential of human axons. Muscle Nerve. 2002;26:283-7.

8）Cappelen-Smith C, Lin CS, Kuwabara S, Burke D. Conduction block during and after ischaemia in chronic inflammatory demyelinating polyneuropathy. Brain. 2002;125:1850-8.

9）Lin CS, Kuwabara S, Cappelen-Smith C, Burke D. Responses of human sensory and motor axons to the release of ischaemia and to hyperpolarizing currents. J Physiol 2002;541:1025-39

１０）Kuwabara S, Cappelen-Smith C, Lin CS, Mogyoros I, Burke D. Effects of voluntary activity on the excitability of motor axons in the peroneal nerve. Muscle Nerve 2002;25:176-84.

１１）Lin CS, Mogyoros I, Kuwabara S, Cappelen-Smith C, Burke D. Differences in responses of cutaneous afferents in the human median and sural nerves to ischemia.Muscle Nerve. 2001 Nov;24(11):1503-9.

１２）Cappelen-Smith C, Kuwabara S, Lin CS, Mogyoros I, Burke D. Membrane properties in chronic inflammatory demyelinating polyneuropathy. Brain. 2001 Dec;124(Pt 12):2439-47.

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.

６．Goho Life Science International Fund, Japan China Medical Association

７．

1) Dong M, Chen S, Kita K, Ichimura Y, Guo W, Lu S, Sugaya S, Hiwasa T, Takiguchi M, Mori N, Kashima A, Morimura K, Hirota M, Suzuki N. Anti-proliferative and apoptosis-inducible activity of Sarcodonin G from *Sarcodon scabrosus* in HeLa cells. Int. J. Oncol., 2009, 34:201-7.

2) Anticancer agents containing cyatane-derivative form, JPN patent application number 2006-108075

８．None

１．Urinary creatinine project

２．Graduate School of Medicine / Associate professor / Yasushi Suwazono

３．Sweden / Karolinska Institutet, The Institute of Environmental Medicine, Unit of Metals and Health / Agneta Åkesson
Sweden / Karolinska Institutet, The Institute of Environmental Medicine, Unit of Metals and Health / Marie Vahter

４．From 2003 to date

５．We assessed how much urinary creatinine and urinary cadmium was affected by potential factors, such as age, weight and meat intake and to assess to what extent creatinine adjustment of urinary cadmium introduce errors in the dose estimate,

comparing urinary cadmium adjusted to specific gravity.

6．Yoshida Scholarship Foundation

7．Suwazono Y, Åkesson A, Alfvén T, Kobayashi E, Nogawa K, Nakagawa H, Järup L, Vahter M. The effect of factors related to urinary creatinine excretion when evaluating creatinine adjusted urinary cadmium concentrations. 10th International Congress of Toxicology. Tampere Finland. Toxicology and Applied Pharmacology, 197: 189, 2004.

Suwazono Y, Åkesson A, Alfvén T, Järup L, Vahter M. Creatinine versus specific gravity adjusted urinary cadmium concentrations. Biomarkers. 2005;10:117-126

8．None.

1．Benchmark dose estimation for Cadmium-induced health effects in humans

2．Graduate School of Medicine / Associate professor / Yasushi Suwazono

3．Sweden / Karolinska Institutet, The Institute of Environmental Medicine / Agneta Åkesson

Sweden / Karolinska Institutet, The Institute of Environmental Medicine / Marie Vahter

Sweden / Karolinska Institutet, The Institute of Environmental Medicine / Annette Engström

4．From 2004 to date

5．We estimated the benchmark dose of urinary cadmium for cadmium-induced tubular, glomerular and other health effects in an environmentally exposed population, using the hybrid approach.

6．The Swedish Research Council/Medicine, Institute of Environmental Medicine, Yoshida Scholarship Foundation, Medical Faculty of Lund University, Karolinska Institutet, The National Swedish Environmental Protection Agency, The Swedish Foundation for Strategic and Environmental Research, The Swedish Society of Medicine, Primary Care, R&D, County Council of Skåne, The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning, Swedish Council for Working Life and Social Research and the European Union.

7．Suwazono Y, Sand S, Vahter M, Filipsson AF, Skerfving S, Lidfeldt J, Åkesson A. Benchmark dose for cadmium-induced renal effects in humans. Environ Health Perspect. 2006 Jul;114(7):1072-6

Suwazono Y, Uetani M, Åkesson A. Estimation of benchmark dose for Cd-induced renal effects in humans. Reverse Brain Drain Project (RBD-NSTDA) Special Conference. Cadmium in Food and Human Health &Technologies for Environmental Restoration and Rehabilitation. Phitsanulok, Thailand, 2010.

8．None.

1．Analysis of the expression and function of spermatogenic specific glycolytic enzyme.

2．Graduate School of Medicine / Professor / Chisato Mori

3．USA /U.S. National Institute of Environmental Health Science, National Institutes of Health (NIH)

4．2000-

5．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.

6．Grant-in-aid for Department of Bioenvironmental Medicine of Chiba University

7．Nakamura N, Miranda-Vizuete A, Miki K, Mori C and Eddy EM. Cleavage of disulfide bonds in mouse spermatogenic cell-specific type 1 hexokinase isozyme is associated with increased hexokinase activity and initiation of sperm motility. Biology of Reproduction. 79:537-545,2008

Nakamura N, Shibata H, O'Brien D A., Mori C and Eddy EM. Spermatogenic cell-specific type 1 hexokinase is predominant hexokinase in sperm. Molecular Reproduction and Development. 75:632-640,2008

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-aceytlaspartylglutmate (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.

7. Ramadan, E., Bacich, D.J., O'Keefe, D.S., Heston, W.D.W., Bukhari, N., Wegorzewska, I., Bzdega, T., Wroblewska, B., Wroblewski, J.T., Kozikowski, A., Yamamoto, T., Neale, J.T. (2002) Probing the functions of NAAG via NAAG peptidases and mGluR3. 33rd Annual Meeting of the American Society for Neurochemistry June 22-26, 2002 (West Palm Beach, Florida)

   Yamamoto, T., Hirasawa, S., Wroblewska, B., Grajkowska, E., Zhou, J., Kozikowski, A., Wroblewski, J., Neale, J.H. (2004) Antinociceptive Effects of N-Acetylaspartylglutamate (NAAG) peptidase inhibitors ZJ-11, ZJ-17 and ZJ-43 in the tat formalin test and in the rat neuropathic pain model. Eur. J. Neurosci. 20, 483-494

   Kozikowski, A.P., Zhang, J., Nan, F., Petukhov, P.A., Grajkowska, E., Wroblewski, J.T., Yamamoto, T., Bzdega, T., Wroblewska, B., Neale, J.H. (2004) Synthesis of urea-based inhibitors as active site probes of glutamate carboxypeptidase II: efficacy as analgesic agents. J. Med. Chem. 47, 1729-38

   Saito, O., Aoe, T., Kozikowski, A., Sarva, J., Neale,J.H., Yamamoto, T. (2006) Ketamine and N-acetylaspartylglutamate peptidase inhibitor exert analgesia in the bone cancer pain. Can J Anesth in press

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

7. a) Shimoyama, M., Shimoyama, N., Zhao, G.-M., Schiller, P.W., Szeto, H.H., Antinociceptive and respiratory effects of

intrathecal H-Tyr-D-Arg-Phe-Lys-Nh2 (DALDA) and [DMT1]DALDA, J Pharmacol Exp Ther 297:364-371,2001

b) Zhao, G.-M., Wu, D, Soong, Y., Shimoyama, M., Schiller, P.W. and Szeto, H.H., Profound spinal tolerance after repeated exposure to a highly selective μ-opioid peptide agonist: role of δ-opioid receptors, J. Pharmacol. Exp. Ther. 302:188-196, 2002

c) Shimoyama, M., Kuwaki, T., Nakamura, A., Fukuda, Y., Shimoyama, N., Schiller, P.W. and Szeto, H.H., Differential respiratory effects of [Dmt[1]] DALDA and morphine, Eur. J. Pharmacol. 511 (2005) 199-206.

8．None.

1．Regulation of growth arrest and differentiation of cells by the transcription factor C/EBPa

2．Graduate School of Medicine / Professor / Masaki Takiguchi

3．USA / Baylor College of Medicine / Gretchen J. Darlington

4．From 1998 to date

5．C/EBPa is a transcription factor which couples growth arrest and differentiation of cells. We demonstrated that in the parotid gland of C/EBPa knockout mice expression of arginase, a differentiation marker of the gland, was decreased, and that expression of proliferating cell nuclear antigen (PCNA), a marker for cell growth, was increased.

6．The Hamaguchi Foundation for the Advancement of Biochemistry, and the Yamada Science Foundation

7．Akiba, T., Kuroiwa, N., Shimizu-Yabe, A.,, Iwase, K., Hiwasa, T., Yokoe, H., Kubosawa, H., Kageyama, R., Darlington, G.J., Mori, M., Tanzawa, H., and Takiguchi, M. (2002) Expression and regulation of the gene for arginase I in mouse salivary glands: requirement of CCAAT/enhancer-binding protein alpha for the expression in the parotid gland. J. Biochem. 132, 621-627

8．None

1．Effects of the focal adhesion kinase (FAK) activities on the formation of fibronectin matrix

2．Graduate School of Medicine / Assistant Professor / Yuji Shino

3．USA / Department of Stomatology, University of California San Francisco / Dusko Ilic

4．1998-

5．Focal adhesions are sites where cells interact with extracellular matrix (ECM) through integrin receptors. The glycoprotein fibronectin (FN) is a major component of ECM. FAK is both a structural and an enzymatic component of the focal adhesions. Integrins binding to ECM results in activation of FAK. Once activated, FAK, in turn, can stimulate multiple intracellular signaling pathways. Integrin binding to ECM is not only required for transduction of signals from matrix to cells but also initiates responses within the cell that make it possible for the cell to organize a fibrillar FN matrix. This is the first report to approach the inside-out signaling from FAK to FN through integrins: using FAK-null cells to determine how the absence of FAK affects the FN matrix.

6．None

7．J Cell Sci. 2004 Jan 15; 117(Pt 2):177-87. Epub 2003 Dec 02. FAK promotes organization of fibronectin matrix and fibrillar adhesions.Ilic D, Kovacic B, Johkura K, Schlaepfer DD, Tomasevic N, Han Q, Kim JB, Howerton K, Baumbusch C, Ogiwara N, Streblow DN, Nelson JA, Dazin P, Shino Y, Sasaki K, Damsky CH.

8．None

1．Molecular interaction between hyaluronan and hyaladherins in inflammation and cancer

2．Graduate School of Medicine / Professor and Director / Kenichi Harigaya MD & PhD

3．Austria / Boehringer Ingelheim Austria, R&D Vinna / Dr. Frank Hilberg Associate Director

4．2000～

5．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.

6. Grants-in-Aid for Scientific Research on priority Areas 12215018 and 15024210, from the Ministry of Education, Culture, Sports, Science and Technology of Japan(to K. Harigaya), Grants-in-Aid for Scientific Research 13670163 and 15390122, from Japan Society for the Promotion of Science (to K. Harigaya).

7. Kawana H, Karaki H, Higashi M, Miyazaki M, Hilberg F, Kitagawa M, Harigaya K.
CD44 Suppresses TLR-Mediated Inflammation. The Journal of Immunology. 180, 4235-4245, 2008

8. None

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1. Hereditary Prostate Cancer in Japanese Population
2. Graduate School of Medicine / Associate Professor / Hiroyoshi Suzuki
3. U.S.A. / Johns Hopkins University / Prof. William B. Isaacs
4. 1999-
5. 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.
6. The Japanese Urological Association (2000), Japanese Society of Strategies for Cancer Research and Treatment (2001) and Haraguchi Memorial Fund and the Ministry of Health, Labour and Welfare (Aid for Cancer Research).
7. 1) Wilkens,E.P., Freije, D., Xu, J., Nusskern,D.R.,Suzuki,H., et al.: No evidence for a role of BRCA1 or BRCA2 mutations in Ashkenazi Jewish families with hereditary prostate cancer. Prostate 39: 280-284, 1999.
2) Xu, J., Zheng, S.L., Komiya, A., Mychaleckyj, J., Isaacs, S.D., Faith, D.A., Hu, J.J., Sterling, D., Lange, E., Hawkins, G.A., Turner, A., Ewing, C.M., Johnson, J.R., Suzuki, H., et al.: Germline mutations of the Macrophage Scavenger Receptor 1 gene are associated with prostate cancer risk in Caucasian and African American men. Nat. Genet., 32: 321-325, 2002.
3) Takahashi, H., Lu, W., Watanabe, M., Furusato, M., Katoh, T., Tsukino, H., Nakao, H., Sudo, A., Suzuki, H., et al.: Ser217Leu polymorphism of the HPC2/ELAC2 gene associated with prostatic cancer in Japanese men. Int. J. Cancer, 107,224-228,2003
8. The Japanese Urological Association (2000), Japanese Society of Strategies for Cancer Research and Treatment (2001).

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1. Establishment of dendritic cell targeting gene vaccine against toxoplasmosis
2. Graduate School of Medicine / Associate Professor / Fumie Aosai
3. Cuba / Department of Reference National Laboratory Toxo-plasma Institute of Tropical Medicine “Pedro Kouri” / Martha Solangel Rodrigues Pena M.D., PhD
4. From 2004 to date
5. Dendric cell-mediated Gene vaccine using TgHSP70 has been established.
6. The Matsumae International Foundation
7. Aosai, F., Norose, K., Chen, M., Hata, H., Tagawa, Y., Iwakura Y., Byun, D-S., Yano,A. (2000)
Aosai F, Rodriguez Pena MS, Mun HS, Fang H, Mitsunaga T, Norose K, Kang HK, Bae YS, Yano A. (2006)
Toxoplasma gondii-derived heat shock protein 70 stimulates maturation of murine bone marrow-derived dendritic cells via Toll-like receptor 4. Cell Stress Chaperones. Spring; 11(1):13-22.
8. None.

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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

7．1) Takanami-Ohnishi Y, Amano S, Kimura S, Asada S, Utani A, Maruyama M,Osada H, Tsunoda H, Irukayama-Tomobe Y, Goto K, Karin M, Sudo T, and Kasuya Y. : Essential role of p38 mitogen-activated protein kinase in contact hypersensitivity. J. Biol. Chem. 2002, 277, 37896-37903

2) Sakurai K, Matsuo Y, Sudo T, Takuwa Y, Kimura S and Kasuya Y. Role of p38 mitogen-activated protein kinase in thrombosis. J. Receptor Signal Transduction 2004 24, 283-296

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

7．1) Zhu Y, Bujo H, Yamazaki H, Hirayama S, Kanaki T, Takahashi K, Shibasak M, Schneider WJ, and Saito Y. Enhanced expression of LDLR family member LR11 increases migrationof smooth muscle cells in vitro. Circulation 2002; 105: 1830-6.

2) Tanaga K, Bujo H, Zhu Y, Kanaki T, Hirayama S, Takahashi K, Inoue M, Mikami K, Schneider WJ, Saito Y. LRP1B attenuates the migration of smooth muscle cells by reducing membrane localization of urokinase and PDGF receptors. Arterioscler Thromb Vasc Biol. 2004; 24:1422-8

3) Zhu Y, Bujo H, Yamazaki H, Ohwaki K, Jiang M, Hirayama S, Kanaki T, Shibasaki M, Takahashi K, Schneider WJ, Saito Y. LR11, an LDL receptor gene family member, is a novel regulator of smooth muscle cell migration. Circ Res. 2004; 94:752-8

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

7．Scherzer CR, Offe K, Gearing M, Rees HD, Fang G, Heilman CJ, Schaller C, Bujo H, Levey AI, Lah JJ. Loss of apolipoprotein E

receptor LR11 in Alzheimer disease. Arch Neurol. 2004 Aug; 61(8):1200-5.

8．None

1．Smad3 signaling in formation of atherosclerosis

2．Graduate School of Medicine / Professor / Koutaro Yokote

3．USA / National Cancer Institute / Anita B. Roberts

4．2004～

5．Investigate the role of TGF-ß/Smad signal transduction in formation of atherosclerotic vascular disease by use of mice genetically targeted for Smad3 gene.

6．2004, 2005 Grant-in-Aids, Ministry of Education, Culture, Sports, Science and Technology

7．Kobayashi K, Yokote K, Fujimoto M, Yamashita K, Sakamoto A, Kitahara M, Kawamura H, Maezawa Y, Asaumi S, Tokuhisa T, Mori S, Saito Y. Targeted Disruption of TGF-ß-Smad3 Signaling Leads to Enhanced Neointimal Hyperplasia With Diminished Matrix Deposition in Response to Vascular Injury. Circ Res. 2005

Yokote K, Kobayashi K and Saito Y. (2006) Role of TGF-ß/Smad3 signaling in response to vascular injury. Trends Cardiovasc Med, in press (2006).

8．1) 2004 Japan Heart Foundation, Research award on Cardiovascular disease

2) Keystone symposia, "The role of TGF-ßin disease pathogenesis: Novel therapeutic strategies (March 28-April 2, 2005)". Our study introduced at the session by Anita Roberts, an organizer of the meeting.

3) Yokote K. Role of TGF-ßin atherosclerotic vascular diseases. American Association of Cancer Research Special Conference: TGF-ßin cancer and other diseases, La Jolla. Invited speaker.

4) Young Investigator Award. 2005 Japanese Society of Diabetes complication.

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

7．Saba, R., Johnson, J.E. and Saito, T. (2005) Commissural neuron identity is specified by a homeodomain protein, Mbh1, that is directly downstream of Math1. Development 132, 2147-2155.

8．None

1．Role of CD69 in immune responses

2．Graduate School of Medicine/ Professor/Toshinori Nakayama

3．United States of America/ University of Washington/Steven Ziegler G-COE Fellow/Masayuki Kitajima

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 theinduction of collagen-induced arthritis.

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

7．Murata, K., Inami, M., Hasegawa, A., Kubo, S., Kimura, M., Yamashita, M.,Hosokawa H., Nagao, T., Suzuki, K., Hashimoto, K., Shinkai, H., Koseki, H.,Taniguchi, M., Ziegler, S. F., and Nakayama, T.: CD69-null mice protectedfrom arthritis induced with anti-Type II collagen antibodies. Int.Immunol.8:987-992, 2003.

8．None.

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)

7．Meyer, E. H., Goya, S., Akbari, O., Berry, G. J., Savage, P. B., Kronenberg, M., Nakayama, T., DeKruyff, R. H., and Umetsu, D. T.: Glycolipid activation of invariant T cell receptor+ NKT cells is sufficient to induce airway hyperreactivity independent of conventional CD4+ T cells. Proc. Natl. Acad. Sci. USA 103:2782-2787 (2006).

8．None

1．Crucial role of CD8αα for T cell memory survive.

2．Graduate School of Medicine/Professor/Toshinori Nakayama /G-COE Fellow/Ryo Shinnakasu

3．USA／La Jolla Institute for Allergy & Immunology／Dr. Hilde Cheroutre

4．From 2008 to date

5．A hallmark of immune T cell memory is that repeated infections with a pathogen are met with more rapid and enhanced protective immunity against that organism. On the other hand, Allergy responses are caused by abnormally immunoresponse for antigens which are non-pathogen originally.

Effector memory T cells are located at various tissues and have a heightened and immediate effector function. By contrast, central memory T cells reside within lymphoid tissues and require proliferation and differentiation to become effector cells.

It becomes clear from our past study gradually that CD8 αα serve as key components for maintain the effector memory T cells and now I am starting the analysis from a molecule level about the mechanism

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

7．None

8．None

1．*In vivo* microenvironment in immunological memory

2．Graduate School of Medicine／Assistant Professor/Koji Tokoyoda

3．Germany／German Rheumatism Research Centre／Andreas Radbruch

4．From 2008 to date

5．Understanding immunological memory leads to developing a treatment of autoimmune disease and allergy by suppressing the harmful “memory” and of cancer and infectious disease by enhancing efficient “memory”. Especially, focusing on memory CD4 T cells which work as a key component in immunological memory, we have so far clarified the maintenance mechanism of memory CD4 T cells as a pioneer in the world. We are now analyzing the molecular mechanisms for maintenance of memory CD4 T cells and for the secondary immune response *in vivo*, which is the most important reaction of immunological memory. We believe that clarifying the cellular and molecular mechanisms of memory CD4 T cells *in vivo* provides the understanding of immunological memory.

6．Ministry of Education, Science, Sports, Culture and Technology of Japan(Grant-in-Aid for Young Scientists (Start up))

7．①Tokoyoda K., Hauser, A.E., Nakayama, T., Radbruch, A. Organization of immunological memory by bone marrow stroma. **Nat. Rev. Immunol.** 10:193-200, 2010.

②Tokoyoda, K., Zehentmeier, S., Radbruch, A. Organisation and maintenance of immunological memory by stroma niches. **Eur. J. Immunol.** 39:2095-2099, 2009.

③Tokoyoda, K., Zehentmeier, S., Hegazy, A.N., Albrecht, I., Grün, J.R., Löhning, M., Radbruch, A. Professional memory $CD4^+$ T lymphocytes preferentially reside and rest in the bone marrow. **Immunity** 30:721-730, 2009.

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 Jsapan(C)
Emphasis Research Project by expenditure at the discretion of the president of The Chiba University in 2005.
Grant from the Smoking Research Foundation

7．1) Suzuki M, Toyooka S, Miyajima K, Iizasa T, Fujisawa T, Bekele NB, Gazdar AF. Alterations in the mitochondrial D loop in lung cancers. Clinical Cancer Research 2003 Nov 15; 9(15):5636-5641.

2) Makoto Suzuki, Noriaki Sunaga, David S. Shames, Shinichi Toyooka, Adi F. Gazdar, and John D. Minna. RNAi-mediated Knockdown of DNMT1 Leads to Promoter Demethylation and Gene Re-expression in Human Lung and Breast Cancer Cells. Cancer Res. 2004 May 1; 64(9):3137-3143.

3) Makoto Suzuki, Hisayuki Shigematsu, Takao Takahashi, Narayan Shivapurkar, Ubaradka G. Sathyanarayana, Toshihiko Iizasa , Takehiko Fujisawa , Adi F. Gazdar. Aberrant methylation of Reprimo in lung cancer. Lung Cancer. 2005 Mar; 47(3):309-314.

4) Makoto Suzuki, Shinichi Toyooka, Narayan Shivapurkar, Hisayuki Shigematsu, Kuniharu Miyajima, Takao Takahashi, Victor Stastny, Andrea L. Zern, Takehiko Fujisawa, Harvey I. Pass, Michele Carbone, Adi F. Gazdar. Aberrant Methylation Profile of Human Malignant Mesotheliomas and Its Relationship to SV40 infection. Oncogene. 2005 Feb 10; 24(7):1302-8.

5) Makoto Suzuki, Chang Hao, Takao Takahashi, Hisayuki Shigematsu, Narayan Shivapurkar, Ubaradka G. Sathyanarayana, Toshihiko Iizasa, Takehiko Fujisawa, Kenzo Hiroshima, Adi F. Gazdar. Aberrant methylation of SPARC in human lung cancers. Br J Cancer. 2005 Mar 14; 92(5):942-8.

6) Makoto Suzuki, Hisayuki Shigematsu, Kenzo Hiroshima, Toshihiko Iizasa, Yukio Nakatani, John D. Minna, Adi F. Gazdar, Takehiko Fujisawa. Epidermal Growth Factor Receptor Expression Status in Lung Cancer Correlates with Its Mutation. Human Pathology 2005 Oct 36 (10):1127-34.

7) Makoto Suzuki, Hisayuki Shigematsu, Davids S. Shames, Noriaki Sunaga, Takao Takahashi, Narayan Shivapurkar, Toshihiko Iizasa, Eugene P. Frenkel, John D. Minna, Takehiko Fujisawa, Adi F. Gazdar. DNA Methylation-associated Inactivation of TGFß-related Genes, DRM/Gremlin, RUNX3, and HPP1 in Human Cancers. British Journal of Cancer 2005 93: 1029-37.

8) Makoto Suzuki, Hisayuki Shigematsu, Toshihiko Iizasa, Kenzo Hiroshima, Yukio Nakatani, John D. Minna, Adi F. Gazdar, Takehiko Fujisawa. Exclusive mutation in EGFR, HER2, and KRAS, and synchronous methylation of non –small cell lung cancer. Cancer 2006 May 15; 106(10):2200-7.

9) Makoto Suzuki, Hisayuki Shigematsu, Narayan Shivapurkar, Jyotsna Reddy, Kuniharu Miyajima, Takao Takahashi, Adi F. Gazdar and Eugene P. Frenkel. Methylation of apoptosis related genes in the pathogenesis and prognosis of prostate cancer.

Cancer Letters (in press).

10) Makoto Suzuki, Hisayuki Shigematsu, David S. Shames, Noriaki Sunaga, Takao Takahashi, Narayan Shivapurkar, Toshihiko Iizasa, John D. Minna, Takehiko Fujisawa, Adi F. Gazdar. Methylation and gene silencing of the Ras-related GTPase gene in lung and breast cancers. Annals of Surgical Oncology (in press).

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, GroningenUniversity, Ntherland

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 seikagakukenkyuukai, Takeda foundation, Mitsubishi foundation

7．1). van den Boom V, Kooistra SM, Boesjes M, Geverts B, Houtsmuller AB, Monzen K, Komuro I, Essers J, Drenth-Diephuis LJ, Eggen BJ. UTF1 is a chromatin-associated protein involved in ES cell differentiation. J Cell Biol. 2007;178:913-24.

2). Wang Y, Morishima M, Zheng M, Uchino T, Manzen K, Takahashi A, Nakaya Y, Komuro I, Ono K. Transcription factors Csx/Nkx2.5 and GATA4 distinctly regulate expression of Ca2+ channels in neonatal rat heart. J Mol Cell Cardiol. 2007;42:1045-53.

3). Naito AT, Akazawa H, Takano H, Minamino T, Nagai T, Aburatani H, Komuro I. Phosphatidylinositol 3-kinase-Akt pathway plays a critical role in early cardiomyogenesis by regulating canonical Wnt signaling. Circ Res. 2005;97:144-51.

4). Naito AT, Shiojima I, Akazawa H, Hidaka K, Morisaki T, Kikuchi A, Komuro I. Developmental stage-specific biphasic roles of Wnt/beta-catenin signaling in cardiomyogenesis and hematopoiesis. Proc Natl Acad Sci U S A. 2006;103:19812-7.

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
Italy / Scuola Superiore S. Anna / Flavio Coceani

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, cand pain processing using genetically engineered mice.

6．Grants-in Aid for Scientific Research from the Ministry of Education, Science, Culture and Sports, Japan, Naito Foundation, Takeda Foundation

7．Ohuchi T. et al., Am. J. Physiol. 276: R1071-7 '99
Coceani F. et al., Am. J. Physiol. 277: H1521-31 '99
Kuwaki T. et al., Clin. Exp. Pharmacol. Physiol. 26: 989-94 '99
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: 48S-52 '02
Hasue F. et al., Neurosci. 130: 349-58 '05

8．None

1．Physiological functions of orexin

2．Graduation School of Medicine / Professor / Tomoyuki Kuwaki

3．USA / Dept of Molecular Genetics, Texas Univ / Masashi Yanagisawa

4．From 2000 to date

5．To reveal roles of orexin in the central neural regulation of the cardiorespiratory system using genetically engineered mice.

6．Grants-in Aid for Scientific Research from the Ministry of Education, Science, Culture and Sports, Japan, Shimadzu Science Foundation, Yamanouchi Foundation, Mitsui Life Social Welfare Foundation

7．Kayaba Y. et al., Am. J. Physiol. 285: R581-93 '03
Watanabe S, et al., Neuroreport 16: 5-8 '05
Kuwaki T. et al., Autonom. Nerv. Syst. 42: 113-9 '05
Nakamura A. et al., J. Appl. Physiol. 102: 241-8 '07
Deng BS. et al., J. Appl. Physiol. 103: 1772-9 '07
Terada J. et al., J Appl. Physiol. 104: 499-507 '08

8．Distinguished Poster Award (International Symposium on the Study of Brain Functions, 2002)

1．Gating mechanism of aquaporin water channels.

2．Graduate School of Medicine / Assistant Professor / Takehiko Ogura

3．USA / Department of Molecular Pharmacology and Biological Chemistry, Northwestern University Medical School／Professor Kunihiko Goto

4．From 2007 to date

5．To reveal details of the filter open-close mechanism of water channels, we are performing molecular dynamics simulation of bovine AQP0 and human AQP1.

6．None

7．None

8．None

1．Role of chemokines in the T cell response to ocular toxoplasmosis

2．Department of Infection and Host Defense, Graduate School of Medicine/ Assistant Professor/ Kazumi Norose

3．Department of Pathobiology, University of Pennsylvania, Professor Christopher A. Hunter

4．2008 ~

5．Analysis of the roles of chemokines in the T cell response to ocular toxoplasmosis

6．Talent promotion for establishing the new biological frontier to the infectious phenomenon, Grants-in-Aid for Scientific Research 20592071, from the Japanese Science Promotion Society.

7．None

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 & Division of Clinical Genetics and Proteomics
Graduate School of Medicine, Chiba University/Associate Professor/Kazuyuki Matsushita

3．USA/National Institute of Health/David Levens

4．Since 2000.

5．Elevated expression of *c-myc* has been detected in a broad range of human cancers, indicating a key role for this oncogene in tumor development. Recently, an interaction between FIR (FBP Interacting Repressor) and TFIIH/p89/XPB helicase was found to repress *c-myc* transcription and so might be important for suppressing tumor formation. In this study, we showed that enforced expression of FIR induced apoptosis. Deletion of FIR's amino terminal repression domain rescued the cells from apoptosis, as did co-expression of c-Myc with FIR; thus repression of myc mediates FIR-driven apoptosis. Surprisingly, a splicing variant of FIR unable to repress *c-myc* nor to drive apoptosis was frequently discovered in human primary colorectal cancers, but not in the adjacent normal tissues. Coexpression of this splicing variant with repressor-competent FIR, not only

abrogated c-Myc suppression but inhibited apoptosis. These results strongly suggest the expression of this splicing variant promotes tumor development by disabling FIR-repression to sustain high levels of c-Myc and oppose apoptosis in colorectal cancer.

6. 1. Supported by Grants from Ministry of Education and Science of Japan

2. Supported by Grants from JST (Japan Science and Technology Agency)

7. References

(1) Hoshino I, Matsubara H, Akutsu Y, Nishimori T, Yoneyama Y, Matsushita K, Ochiai T. Tumor suppressor Prdx1 is a prognostic factor in esophageal squamous cell carcinoma patients. ***Oncol Rep.*** 2007 Oct;18(4):867-71

(2) Hoshino I, Matsubara H, Akutsu Y, Nishimori T, Yoneyama Y, Murakami K, Komatsu A, Sakata H, Matsushita K, Ochiai T.. Gene expression profiling induced by histone deacetylase inhibitor, FK228, in human esophageal squamous cancer cells. ***Oncol Rep.*** 2007 Sep;18(3):585-92.

(3) Shimada H, Okazumi S, Matsubara H, Shiratori T, Akutsu Y, Nabeya Y, Tanizawa T, Matsushita K, Hayashi H, Isono K, Ochiai T. Long-term Results after Dissection of Positive Thoracic Lymph Nodes in Patients with Esophageal Squamous Cell Carcinoma. ***World J Surg.*** 2008 Feb;32(2):255-61. Epub 2007 Dec 7.

(4) Shimada H, Matsushita K, Tagawa M. Recent advances in esophageal cancer gene therapy. ***Ann Thorac Cardiovasc Surg.*** 2008 Feb;14(1):3-8.

(5) Seimiya M, Tomonaga T, Matsushita K, Sunaga M, Oh-ishi M, Kodera Y, Meda T, Takano S, Togawa A, Yoshitomi H, Otuka M, Yamamoto M, Nakano M, Miyazaki M, Nomura F. Identificaton of novel immunohistochemical markers for primary hepatocellular carcinoma; clathrin heavy chain and formiminotransferase cyclodeaminase. ***Hepatology.*** 2008 Aug;48(2):519-30.

(6) Hoshino I, Matsubara H, Akutsu Y, Nishimori T, Yoneyama Y, Murakami K, Sakata H, Matsushita K, Komatsu A, Brooks R, Ochiai T. Role of histone deacetylase inhibitor in adenovirus-mediated p53 gene therapy in esophageal cancer. ***Anticancer Res.*** 2008 Mar-Apr;28(2A):665-71.

(7) Hoshino I, Matsubara H, Komatsu A, Akutsu Y, Nishimori T, Yoneyama Y, Murakami K, Sakata H, Matsushita K, Miyazawa Y, Brooks R, Yoshida M, Ochiai T. Combined Effects of p53 Gene Therapy and Leptomycin B in Human Esophageal Squamous Cell Carcinoma. ***Oncology***. 2008 Sep 11;75(1-2):113-119.

(8) Shimada H, Shiratori T, Takeda A, Matsushita K, Okazumi S, Akutsu Y, Matsubara H, Nomura F, Ochiai T. Perioperative Changes of Serum p53 Antibody Titer is a Predictor for Survival in Patients with Esophageal Squamous Cell Carcinoma. ***World J Surg.*** (2009) Feb;33(2):272-7.

(9) Matsushita K, Tomonaga T, Kajiwara T, Shimada H, Itoga S, Hiwasa T, Kubo S, Ochiai T, Matsubara H, Nomura F *c-myc* suppressor FBP-interacting repressor for cancer diagnosis and therapy. ***Frontiers in Bioscience*** (2009) 14, 3401-3408, January 1

(10) Hattori N, Oda S, Sadahiro T, Nakamura M, Abe R, Shinozaki K, Nomura F, Tomonaga T, Matsushita K, Kodera Y, Sogawa K, Satoh M, Hirasawa H. YKL-40 identified by proteomic analysis as a biomarker of sepsis. ***Shock.*** (2009) Feb 2. [Epub ahead of print]

(11) Kawahira H, Matsushita K, Shiratori T, Shimizu T, Nabeya Y, Hayashi H, Ochiai T, Matsubara H and Shimada H. Viral shedding after *p53* adenoviral gene therapy in 10 cases of esophageal cancer. ***Cancer Science***. 2010 Jan;101(1):289-91.

(12) Murakami K, Matsubara H, Hoshino I, Akutsu Y, Miyazawa Y, Matsushita K, Sakata H, Nishimori T, Usui A, Kano M, Nishino N, Yoshida M. CHAP31 Induces Apoptosis Only via the Intrinsic Pathway in Human Esophageal Cancer Cells. ***Oncology.*** 2010 Mar 6;78(1):62-74.

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 postnmortem 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

1) Matsuzawa, D., Hashimoto, K., Miyatake, R., Shirayama, Y., Shimizu, E., Maeda, K., Suzuki, Y., Mashimo, Y., Sekine, Y., Inada, T., Ozaki, N., Iwata, N., Harano, M., Komiyama, T., Yamada, M., Sora, I., Ujike, H., Hata, A., Sawa, A. and Iyo, M. (2007) Identification of functional polymorphisms in the promoter region of the human PICK1 gene and their association with methamphetamine psychosis. Am. J. Psychiatry 164, 1105-1114.

2) Hashimoto, K., Sawa, A. and Iyo, M. (2007) Increased levels of glutamate in brains from patients with mood disorders. Biol. Psychiatry 62, 1310-1316.

3) Hikida, T., Mustafa, A.K., Maeda, K., Fujii, K., Barrow, R.K., Saleh, M., Oby, L., Huganir, R.L., Snyder, S.H., Hashimoto, K. and Sawa, A. (2008) Modulation of D-serine levels in brains of mice lacking PICK1. Biol. Psychiatry 63, 997-1000.

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

1) Hashimoto, K., Engberg, G., Shimizu, E., Nordin, C., Lindstrom, L.H. and Iyo, M. (2005) Elevated glutamine/glutamate ratio in cerebrospinal fluid of first episode and drug naive schizophrenic patients. BMC Psychiatry 5, 6.

2) Hashimoto, K., Engberg, G., Shimizu, E., Nordin, C., Lindstrom, L.H. and Iyo, M. (2005) Reduced D-serine to total serine ratio in the cerebrospinal fluid of drug naive schizophrenic patients. Prog. Neuropsychopharmacol. Biol. Psychiatry 29, 767-769.

8. None

1. Molecular mechanism of neuropeptide S in thbiological 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

1) Okamura, N., Hashimoto, K., Iyo, M., Shimizu, E., Dempfle, A., Friedel, S., Reinscheid, R.K. (2007) Gender-specific association of a functional coding polymorphism in the neuropeptide S receptor gene with panic disorder but not with schizophrenia or attention-deficit/hyperactivity disorder. Prog. Neuropsychopharmacol. Biol. Psychiatry 31, 1444-1448.

8. None

1. Biological role of alpha-7 nicotinic receptors in the pathopsysiology of schiophrenia

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 decifits 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

1) Koike, K., Hashimoto, K., Takai, N., Shimizu, E., Komatsu, N., Watanabe, H., Nakazato, M., Okamura, N., Stevens, KE, Freedman, R. and Iyo, M. (2005) Tropisetron improves deficits in auditory P50 suppression in schizophrenia. Schizophrenia Res. 76, 67-72.

2) Hashimoto, K., Iyo, M., Freedman, R. and Stevens, K.E. (2005) Tropisetron improves deficient inhibitory auditory processing in DBA/2 mice: role of α7 nicotinic acetylcholine receptors. Psychopharmacol. 183, 13-19.

8. None

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1. Biologiacl 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

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1. Development of the novel SPECT radioliagand

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

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

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

3. U.S.A／National Institute of Drug Abuse, National Institutes of Health／Jean L. Cadet
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

1） Sekine Y., Ouchi Y., Sugihara G., Takei N., Yoshikawa E., Nakamura K., Iwata Y., Tsuchiya K.J., Suda S., Suzuki K., Kawai M., Takebayashi K., Yamamoto S., Matsuzaki H., Ueki T., Mori N., Gold M.S., Cadet J.L. (2008)

Methamphetamine causes microglial activation in the brains of human abusers. J. Neurosci. 28, 5756-5761.

8. None

1. Methamphetamine dependence and genetic study
2. Center for Forensic Mental Health/ Professor/Yoshimoto Sekine and Director/Professor/Masaomi Iyo
3. U.S.A／National Institute of Drug Abuse, National Institutes of Health／George R. Uhl
4. From April, 2004
5. We describe Genome-wide association in 2 samples (i.e., Chinese and Japanese) of methamphetamine-dependent and control individuals.
6. Ministry of Health, Labour and Welfare of Japan
7. Publication
   1） Uhl G.R., Drgon T., Liu Q.R., Johnson C., Walther D., Ujike H., Komiyama T., Harano M., Sekine Y., Inada T., Ozaki N., Iyo M., Iwata N., Yamada M., Sora I., Chen C.K., Liu H.C., Lin S.K. (2008) Genome-wide association for methamphetamine dependence. Convergent results from two samples. Arch. Gen. Psychiatry 65, 345-355.
8. None

University Hospital

1．Skin vasodilator response to local heating in neurological disorders.
2．University Hospital／associate professor／Masato Asahina
3．UK／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
7．Yamanaka Y, Asahina M, Mathias CJ, Akaogi Y, Koyama Y, Hattori T. Skin vasodilator response to local heating in multiple system atrophy. Mov Disord. 2007 (in press).
8．None

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
7．Asahina M, Young TM, Bleasdale-Barr K, Mathias CJ. Related Differences in overshoot of blood pressure after head-up tilt in

two groups with chronic autonomic failure: pure autonomic failure and multiple system atrophy. J Neurol. 2005; 252(1):72-77.

8. 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

1. A study on skin autonomic function in human chronic spinal cord injury
2. University Hospital／Research Associate／Masato Asahina
3. U.K. / London University / Christopher J Mathias
4. 2002 –
5. 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.
6. This study was supported by the International Spinal Research Trust
7. Asahina M, Young TM, Bleasdale-Barr K, Mathias CJ. Related Differences in overshoot of blood pressure after head-up tilt in two groups with chronic autonomic failure: pure autonomic failure and multiple system atrophy. J Neurol. 2005; 252(1):72-77.
8. This study won the EFAS 2003 poster prize.

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)
7. Yoshida S, Haque A, Mizobuchi T, Iwata T, Chiyo M, Webb TJ, Baldridge LA, Heidler KM, Cummings OW, Fujisawa T, Blum JS, Brand DD, Wilkes DS. Anti-type V collagen lymphocytes that express IL-17 and IL-23 induce rejection pathology in fresh and well-healed lung transplants. Am J Transplant 2006. 6(4): 724-735

   Yoshida S, Iwata T, Chiyo M, Smith GN, Foresman B, Mickler E, Heidler KM, Cummings OW, Fujisawa T, Brand DD, Baker A, Wilkes DS. Metalloproteinase inhibition has differential effects on alloimmunity, autoimmunity, and histopathology in the transplanted lung. Transplantation 2007. 83(6):799-808
8. None

Graduate School of Pharmaceutical Sciences

1. International Atomic Energy Agency's Coordinated Research Project (CRP): Development of a new ^{99m}Tc radiopharmaceutical for sentinel lymph node detection and cancer diagnosis.
2. Graduate School of Pharmaceutical Sciences, Professor, Yasushi Arano
3. International Atomic Energy Agency (IAEA)
4. 2007
5. The development of a new ^{99m}Tc-radiopharmaceutical useful for identification of sentinel lymph node or for cancer diagnosis.

6．IAEA (only for traveling and accommodation fee for the CRP meeting from developed countries)

7．to be published in the IAEA Monograph

8．

1．Plants Metabolomics

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

3．Sweden /Department of Chemistry, Umea Universuty / Par Jonsson

4．2007～

5．

6．

7．Miyako Kusano, Atsushi Fukushima, Masanori Arita, Par Jonsson, Thomas Moritz, Makoto Kobayashi, Naomi Hayashi,Takayuki Tohge and Kazuki Saito: Unbiased characterization of genotype-dependent metabolic regulations by metabolomic approach in *Arabidopsis thaliana*. *BMC Sys. Biol.*, **1**, 53 doi:10.1186/1752-0509-1-53 (2007)

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.

6．Grants-in-Aids for Scientific Research.

7．Jie Luo, Yasutaka Nishiyama, Christine Fuell, Goro Taguchi, Katherine Elliott, Lionel Hill, Yashikazu Tanaka, Masahiko Kitayama, Mami Yamazaki, Paul Bailey, Adrian Parr, Anthony J. Michael, Kazuki Saito and Cathie Martinn: Convergent evolution in the BAHD family of acyl transferases: identification and characterization of anthocyanin acyl transferases from *Arabidopsis thaliana*. Plant Journal, 50, 678-695 (2007).

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.

6．Grants-in-Aids for Scientific Research. CREST of Japan Science and Technology Corporation.

7．Cintia Goulart Kawashima, Oliver Berkowitz, Ruediger Hell, Masaaki Noji, and Kazuki Saito: Characterization and Expression Analysis of a Serine Acetyltransferase Gene Family Involved in a Key Step of the Sulfur Assimilation Pathway in Arabidopsis. Plant Physiology, 137, 220-230 (2005)

8．None

1．Molecular regulation of plant secondary metabolism

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

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.

6．Grants-in-Aids for Scientific Research. CREST of Japan Science and Technology Corporation.

7．Masami Yokota Hirai, Marion Klein, Yuuta Fujikawa, Mitsuru Yano, Dayan B. Goodenowe, Yasuyo Yamazaki, Shigehiko Kanaya, Yukiko Nakamura, Masahiko Kiyayama, Hideyuki Suzuki, Nozomu Sakurai, Daisuke Shibata, Jim Tokuhisa, Michael Reichelt, Jonathan Gershenzon, Jutta Papenbrock, and Kazuki Saito：Elucidation of Gene-to-Gene and Metabolite-to-Gene Networksw in Arabidopsis by Integration of Metabolomics and Transcriptomics. J. Biological Chemistry, 280(27), 25590-25595 (2005)

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 - producion 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

4．2009～

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

6．Grants-in-Aids for Scientific Research.

7．Mutsumi Watanabe, Hans-Michael Hubberten, Kazuki Saito and Rainer Hoefgen: General regulatory patterns of plant mineral nutrient depletion as revealed by serat quadruple mutants disturbed in cysteine synthesis. Mol. Plant, in press (2010)

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.

6．Grants-in-Aids for Scientific Research. CREST of Japan Science and Technology Corporation.

7．Patrik Jones, Burkhard Messner, Jun-Ichiro Nakajima, and Anton R. Schaeffner: UGT73C6 and UGT78D1, Glycosyltransferases Involved in Flavonol Glycoside Biosynthesis in Arabidopsis thaliana. Journal of Biological Chemistry, 278, 43910-43918(2003)

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.

6．Grants-in-Aids from the Ministry of Education, Science, Sport, Culture and Technology, Japan. CREST of Japan Science and Technology Corportation.

7．Naoko Yoshimoto, Hideki Takahashi, Frank W. Smith, Tomoyuki Yamaya and Kazuki Saito： Two distinct high-affinity sulfate transporters with different inducibilities mediate uptake of sulfate in Arabidopsis roots. Plant J., 29, 465-473(2002)

8．None

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

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

7．(1) M. Kanlayavattanakul, N. Ruangrungsi, T. Watanabe, M. Kawahata, B. Therrien, K. Yamaguchi, T. Ishikawa, J. Nat. Prod., 2005, 68, 7-10;
(2) F. Ito, M. Iwasaki, T. Watanabe, T. Ishikawa, Y. Higuchi, Org. Biomol. Chem., 2005, 3, 674-681;
(3) K. Ma, T. Ishikawa, H. Seki, K. Furihata, H. Ueki, S. Narimatsu, C. Chaichantipyuth, Heterocycles, 2005, 65, 893-900.

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

1. Chemical studies on flavonoids from Artocarpus plants (Moraceae) native to Indonesia.
2. Graduate School of Pharmaceutical Sciences/Professor/Hiromitsu Takayama
3. Indonesia/Bandung Institute of Technology/Professor/Sjamsul A. Achmad
   Indonesia/Bandung Institute of Technology/Professor/Euis H. Hakim
4. 2006-
5. Isolation and structure elucidation of the prenylated flavonoids from Artocarpus plants (Moraceae) native to Indonesia.
6. None
7. (1) Prenylated Flavonoids and Related Compounds of the Indonesian Artocarpus (Moraceae). E. H. Hakim, S. A. Achmad, L. D. Juliawaty, L. Makmur, Y. M. Syah, N. Aimi, M. Kitajima, H. Takayama, and E. L. Ghisalberti. J. Nat. Med., 60, 161-184 (2006).
(2) Two prenylated flavones from the tree bark of Artocarpus lanceifolius. Y. M. Syah, S. A. Achmad, N. Aimi, E. H. Hakim, L. D. Juliawaty, and H. Takayama. Z. Naturforsch., C, 61, 1134-1137 (2006).
(3) Prenylated Flavones from Artocarpus lanceifolius and Their Cytotoxic Properties against P-388 Cells. I. Musthapa, J. Latip, H. Takayama, L. D. Juliawaty, E. H. Hakim, Y. M. Syah. Nat. Prod. Commun., 4, 927-930 (2009).
8. None

1. Chemical studies on indole alkaloids from Rubiaceous plants growing in Yunnan Province, China.
2. Graduate School of Pharmaceutical Sciences/Professor/Hiromitsu Takayama
3. China/Kumming Medical College/Professor/Rongping Zhang
4. 2006-
5. Isolation, structure elucidation and biological evaluation of indole alkaloids from Kopsia plant (Rubiaceae) growing in Yunnan Province, China.
6. Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science, The Uehara Memorial Foundation.
7. (1) Y. Wu, M. Kitajima, N. Kogure, R. Zhang, H. Takayama：Two Novel Indole Alkaloids, Kopsiyunnanines A and B, from a Yunnan Kopsia. Tetrahedron Lett., 49, 5935-5938 and 6596 (2008).
(2) Rhazinilam and Quebrachamine Derivatives from Yunnan Kopsia arborea. Y. Wu, M. Suehiro, M. Kitajima, T. Matsuzaki, S. Hashimoto, M. Nagaoka, Masato, R. Zhang, and H. Takayama. J. Nat. Prod., 72, 204-209 (2009).
(3) Kopsiyunnanines F and Isocondylocarpines: New Tubotaiwine-type Alkaloids from Yunnan Kopsia arborea. Y. Wu, M. Kitajima, N. Kogure, Y. Wang, R. Zhang, and H. Takayama. J. Nat. Med., 63, 283-289 (2009).
8. None

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 Fundation
7. (1) Indole Alkaloids of a Thai Medicinal Herb, Mitragyna speciosa, that has Opioid Agonistic Effect in Guinea-Pig Ileum. S. Horie, F. Koyama, H. Takayama, H. Ishikawa, N. Aimi, D. Ponglux, K. Matsumoto, and T. Murayama, Planta Medica, 71, 231-236 (2005).
   (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).

(3) Inhibitory effect of mitragynine, an analgesic alkaloid from Thai herbal medicine, on neurogenic contraction of the vas deferens. K. Matsumoto, L. T. Yamamoto, K. Watanabe, S. Yano, J. Shan, P. K.T. Pang, D. Ponglux, H. Takayama, and S. Horie, Life Sci., 78, 187-194 (2005).

(4) Antinociception, tolerance and withdrawal symptoms induced by 7-hydroxymitragynine, an alkaloid from the Thai medicinal herb Mitragyna speciosa. K. Matsumoto, S. Horie, H. Takayama, H. Ishikawa, N. Aimi, D. Ponglux, T. Murayama, K. Watanabe, Life Sci., 78 , 2-7 (2005).

(5) New Procedure to Mask the 2,3-□ Bond of the Indole Nucleus and Its Application to the Preparation of Potent Opioid Receptor Agonists with a Corynanthe Skeleton. H. Takayama, K. Misawa, N. Okada, H. Ishikawa, M. Kitajima, Y. Hatori, T. Murayama, S. Wongseripipatana, K. Tashima, K. Matsumoto, and S. Horie. *Org. Lett.*, **8**, 5705-5708 (2006).

(6) Partial Agonistic Effect of 9-Hydroxycorynantheidine on □-Opioid Receptor in the Guinea-pig Ileum. K. Matsumoto, H. Takayama, H. Ishikawa, N. Aimi, D. Ponglux, K. Watanabe, S. Horie. *Life Sci.*, **78**, 2265-2271 (2006).

(7) Involvement of □-Opioid Receptors in Antinociception and Inhibition of Gastrointestinal Transit Induced by 7-Hydroxymitragynine, Isolated from Thai Herbal Medicine *Mitragyna speciosa*. K. Matsumoto, Y. Hatori, T. Murayama, K. Tashima, S. Wongseripipatana, K. Misawa, M. Kitajima, H. Takayama, and S. Horie. *Eur. J. Pharmacol.*, **549**, 63-70 (2006).

(8) MGM-9 [(*E*)-Methyl 2-(3-ethyl-7a,12a-(epoxyethanoxy)-9-fluoro-1,2,3,4,6,7,12,12b-octahydro-8-methoxyindolo[2,3-a]quinolizin-2-yl)-3-methoxyacrylate], a Derivative of the Indole Alkaloid Mitragynine: A Novel Dual-acting □- and □-Opioid Agonist with Potent Antinociceptive and Weak Rewarding Effects in Mice. K. Matsumoto, H. Takayama, M. Narita, A. Nakamura, M. Suzuki, T. Suzuki, T. Murayama, S. Wongseripipatana, K. Misawa, M. Kitajima, K. Tashima, and S. Horie : *Neuropharmacology*, **55**, 154-165 (2008).

8. None

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1. Chemical studies on the alkaloidal constituents in the *Pandanus* plants (Pandanaceae) native to the tropical area.
2. Graduate School of Pharmaceutical Sciences/ Professor/ Hiromitsu Takayama
3. Philippines / Santo Tomas University/ 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
7. (1)Isolation and Structure Elucidation of Two New Alkaloids, Pandamarilactonine-C and -D, from *Pandanus amaryllifolius* and Revision of Relative Stereochemsitry of Pandamarilactonine-A and -B by Total Synthesis. H. Takayama, T. Ichikawa, M. Kitajima, M. G. Nonato, and N. Aimi. *Chem. Pharm. Bull.*, 50, 1303-1304 (2002)

   (2) Isolation and Total Syntheses of Two New Alkaloids, Dubiusamines-A and-B, from *Pandanus dubius*. M. A. Tan, M. Kitajima, N. Kogure, M. G. Nonato, and H. Takayama. *Tetrahedron*, **66**, 3353-3359 (2010).
8. None

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1. Chemical studies on the indole alkaloids in Gelsemium plant (Loganiaceae).
2. Graduate School of Pharmaceutical Sciences/Associate Professor/Mariko Kitajima
3. Thailand/Chulalongkorn University/Assistant Professor/Sumphan Wongseripipatana
4. 2006-
5. Isolation and structure elucidation of new oxindole alkaloids in Gelsemium elegans growing in Thailand.
6. Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science, The Uehara Memorial Foundation.
7. (1) Four Novel Gelsenicine-Related Oxindole Alkaloids from the Leaves of Gelsemium elegans Benth. N. Kogure, N. Ishii, M.

Kitajima, S. Wongseripipatana, and H. Takayama. Org. Lett., 8, 3085-3088 (2006).

(2) New Humantenine-type Indole Alkaloids with Iridoid Unit from Gelsemium Species. N. Kogure, H. Kobayashi, N. Ishii, M. Kitajima, S. Wongseripipatana, and H. Takayama. Tetrahedron Lett., 49, 3638-3642 (2008).

(3) New Iridoids from Gelsemium Species. N. Kogure, N. Ishii, H. Kobayashi, M. Kitajima, S. Wongseripipatana, and H. Takayama. Chem. Pharm. Bull., 56, 870-872 (2008).

(4) Four Novel Gelsedine-type Oxindole Alkaloids from Gelsemium elegans. Y. Yamada, M. Kitajima, N. Kogure, and H. Takayama. Tetrahedron, 64, 7690-7694 (2008).

(5) Spectroscopic Analyses and Chemical Transformation for Structure Elucidation of Two Novel Indole Alkaloids from Gelsemium elegans. Y. Yamada, M. Kitajima, N. Kogure, S. Wongseripipatana, and H. Takayama. Tetrahedron Lett., 50, 3341-3344 (2009).

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

7．(1) Tomoyasu T, Takaya, A, Isogai, E, and Yamamoto T. Turnover pf FlhD and FlhC, master regulator proteins fro Salmonella flagellum biogenesis, by the ATP-dependent ClpXP protease. Mol. Microbiol. in press 2003

(2) Tomoyasu T, Ohkishi T, Ukyo Y, Tokumitsu A, Takaya A, Suzuki M, Sekiya K, Matsui H, Kutsukake K, Yamamoto T. The ClpXP ATP-dependent protease regulates flagellum synthesis in Salmonella enterica serovar Typhimurium. J Bacteriol. 184: 645-53．2002

(3) Yamamoto T, Sashinami H, Takaya A, Tomoyasu T, Matsui H, Kikuchi Y, Hanawa T, Kamiya S, Nakane A. Disruption of the genes for ClpXP protease in Salmonella enterica serovar Typhimurium results in persistent infection in mice, and development of persistence requires endogenous gamma interferon and tumor necrosis factor alpha. Infect Immun. 69:3164-74．2001

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

6．Grants-in-Aids for Scientific Research.

7．(1) Li, X.; Ohtsuki, T.; Shindo, S.; Sato, M.; Koyano, T.; Preeprame, S.; Kowithayakorn, T.; Ishibashi, M. "Mangiferin identified in a screening study guided by neuraminidase inhibitory activity" *Planta Medica* **2007**, *73*, 1195-1196

(2) Kikuchi, H.; Ohtsuki, T.; Koyano, T.; Kowithayakorn, T.; Sakai, T.; Ishibashi, M. "Brandisianins A-F, isoflavonoids isolated from *Millettia brandisiana* in a screening program for death-receptor expression enhancement activity" *J. Nat. Prod.* **2007**, *70*, 1910-1914.

(3) Ohtsuki, T.; Kaneko, N.; Koyano, T.; Kowithayakorn, T.; Kawahara, N.; Goda, Y.; Ishibashi, M. "Cell growth and cell cycle inhibitory activeties of 20-epidiosgenyl saponin from *Calamus insignis*" *Heterocycles* **2007**, *74*, 931-936.

(4) Tamaki, M.; Sadhu, S. K.; Ohtsuki, T.; Toume, K.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Parviflorene J, a cytotoxic sesquiterpene dimer with a new rearranged skeleton from *Curcuma parviflora*" *Heterocycles* **2007**, *72*, 649-654

(5) Aoki, W.; Ohtsuki, T.; Sadhu, S. K.; Sato, M.; Koyano, T.; Preeprame, S.; Kowithayakorn, T.; Ishibashi, M. "First isolation of three diterpenes as naturally-occurring compounds from *Sindora siamensis*" *J. Nat. Med.* **2007**, *61*, 77-79

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

6．Grants-in-Aids for Scientific Research, Grants-in-Aids from Tokyo Biochemical Research Foundation

7．(1) Sadhu, S. K.; Khatun, A.; Phattanawasin, P.; Ohtsuki, T.; Ishibashi, M. "Lignan glycosides and flavonoids from *Saraca asoca* with antioxidant activity" *J. Nat. Med.* **2007**, *61*, 480-482.

(2) Sadhu, S. K.; Khan, M. S.; Ohtsuki, T.; Ishibashi, M. "Secoiridoid components from *Jasminum grandiflorum*" *Phytochemistry* **2007**, *68*, 1718-1721.

(3) Sadhu, S. K.; Khatun, A.; Ohtsuki, T.; Ishibashi, M. "First isolation of sesquiterpenes and flavonoids from *Zingiber spectabile* and identification of zerumbone as the major cell growth inhibitory component" *Nat. Prod. Res.* **2007**, *21*, 1242-1247.

8．None

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.

Graduate School of Engineering

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
7. (1)Keisuke Hachisuka , Yusuke Terauchi, Yoshinori Kishi, Ken Sasaki, Terunao Hirota, Hiroshi Hosaka, Katsuyuki Fujii, Masaharu Takahashi , and Koichi Ito, "Simplified circuit modeling and fabrication of intrabody communication devices, " Sensors & Actuators: A. Physical 130-131, pp.322-330, Apr. 2006.

   (2)iroki Usui, Masaharu Takahashi, and Koichi Ito, "Radiation characteristics of an implanted cavity slot antenna into the human body," *2006 IEEE Antennas and Propagation Society International Symposium*, pp.1095-1098, Albuquerque, USA, July 2006.

   (3)Ktsuyuki Fujii, Masaharu Takahashi, Koichi Ito, "Study on the Electromagnetic Field Distributions of Realistic Japanese Adult Male and Female Models with a Wearable Device Using the Human Body as a Transmission Channel," *2006 IEEE Antennas and Propagation Society International Symposium*, pp.2121-2124, Albuquerque, USA, July 2006.

   (4)Tomoaki Nagaoka, Toshihiro Togashi, Kazuyuki Saito, Masaharu Takahashi, Koichi Ito, Takuya Ueda, Hisao Osada, Hisao Ito, and Soichi Watanabe, "An anatomically realistic voxel model of the pregnant woman and numerical dosimetry for a whole-body exposure to RF electromagnetic fields," *28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pp.5463-5467, New York, USA, Sep. 2006.

   (5)Hiroki Kawai, Koichi Ito, Masaharu Takahashi, Kazuyuki Saito, Takuya Ueda, Masayoshi Saito, Hisao Ito, Hisao Osada, Yoshio Koyanagi, and Koichi Ogawa "Simple modeling of an abdomen of pregnant women and its application to SAR estimation, " *IEICE Transactions on Communications*, vol. E89-B, no. 12, pp.3401-3410, Dec. 2006.

   (6)Toshihiro Togashi, Tomoaki Nagaoka, Kazuyuki Saito, Masaharu Takahashi, Koichi Ito, Soichi Watanabe, Takuya Ueda, Masayoshi Saito, Hisao Ito, and Hisao Osada, "Development of a Japanese 7-month pregnant woman model and evaluation of SAR generaged by mobile radio terminals," *European Conference on Antennas and Propagation (EuCAP 2006)*, CD-ROM, Nice, France, Nov. 2006.

   (7)Katsuyuki Fujii, Masaharu Takahashi, Koichi Ito, and Naoki Inagaki, "Study on the electric field distributions around whole body model with a wearable device using the human body as a transmission channel," *European Conference on Antennas and Propagation (EuCAP 2006)*, CD-ROM, Nice, France, Nov. 2006.

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

1．Study on antennas for body-centric wireless communications

2．Graduate School of Engineering / Professor / Koichi Ito

3．England / Queen Mary, University of London / Yang Hao

4．From 2006 to date

5．Body-centric wireless communications system is one of the techniques for the next generation communication. In this technique, human body is used as signal transmission line. Therefore, novel high efficiency and small size antennas are required. Accordingly, under the equal collaboration, both universities are studying and developing these kinds of high-performance antennas. Prof. Hao's group at Queen Mary is developping the antennas by various numerical analyses and Prof. Ito's group is improving the antennas and is evaluating their performances by experimental techniques.

6．None

7．(1). Nozomi Haga, Kazuyuki Saito, Masaharu Takahashi, and Koichi Ito, "Characteristics of cavity slot antenna for body-area networks," *IEEE Transactions on Antennas and Propagation*, vol.57, no.4, pp.837-843, Apr. 2009.

(2). Xia Wei, Kazuyuki Saito, Masaharu Takahashi, and Koichi Ito, "Performances of an implanted cavity slot antenna embedded in the human arm," *IEEE Transactions on Antennas and Propagation*, vol.57, no.4, pp.894-899, Apr. 2009.

(3).Koichi Ito, "Antennas for body-centric wireless communications," *2009 International Symposium on Antennas and Propagation (ISAP 2009)*, Bangkok, Thailand, Oct. 2009.

(4).Nozomi Haga, Koichi Ito, Masaharu Takahashi, and Kazuyuki Saito, "Numerical simulations of on-body channel in the frequency range of 2.5 MHz to 2.5 GHz," *2009 International Symposium on Antennas and Propagation (ISAP 2009)*, pp.508-511, Bangkok, Thailand, Oct. 2009.

(5).Nozomi Haga, and Koichi Ito, "Frequency dependence of on-body channels with top-loaded monopole antennas in the range of HF to UHF," *Asia-Pacific Microwave Conference 2009 (APMC2009)*, TH2E-7(#2029), Singapore, Dec. 2009.

(6). 宇野由美子, 齊藤一幸, 高橋応明, 伊藤公一, "2～10 GHz における人体の組織構造がアンテナ特性に与える影響評価," 電子情報通信学会論文誌 B, vol.J93-B, no.2, pp.278-285, Feb. 2010.

(7). 中島崇志, 齊藤一幸, 高橋応明, 伊藤公一, "リストバンド型 RFID 用アンテナの特性解析," 電子情報通信学会論文誌 B, vol.J93-B, no.2, pp.286-293, Feb. 2010.

(8).Koichi Ito, "Electric field distributions around the human body generated by a small wearable antenna," *International Workshop on Antenna Technology 2010 (iWAT2010)*, Lisbon, Portugal, Mar. 2010.

(9). Hayato Mizuno, Kazuyuki Saito, Masaharu Takahashi, and Koichi Ito, "Development of an implanted helical folded dipole antenna for 2.45 GHz applications," *International Workshop on Antenna Technology 2010 (iWAT2010)*, Lisbon, Portugal, Mar. 2010.

8．Prof. Koichi Ito discussed with Prof. Yang Hao on the IET seminar at London (Apr. 2009), and at University of Liverpool (Mar. 2010).

1．Symbiosis Building of PLUS50

2．Graduate School of Engineering / Professor / Hideki Kobayashi, Assistant Professor / Jung Ji-Young

3．Korea / Korea Institute of Construction Technology / Ph.D. Kim, Soo-Am

4．2007-

5．The legal system and policies of open building

6．R&D program (Korea Institute of Construction Technology)

7．We are preparing the first joint paper.

８．None

１．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

７．T. Takahashi, B.R. Ellingwood: Reliability-based assessment of roofs in Japan subjected to extreme snows, Structural Engineering, Vol.27, No.1, pp.89-95, 2005.1.

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)

(2)「Development of Flat Monochrome CRT by Screen Printing and Thermal Transfer of Phosphor Layers」Su Yong NAM, Hyun Chul LEE, and Yasufumi OTSUBO, J. Printing Sci. Technol. Jpn, 39, 388-393(2002)

(3)「Rheology and Firing Properties of Phosphor Pastes for CRT Displays」Su Yong NAM, Mi Young LEE, Young Bea KIM , Yasufumi OTSUBO, J. Soc. Rheol. Jpn, 32, 123-128(2004)

８．None

１．Molecular Design of New Electron Donating Polymer

２．Graduate School of Engineering／Associate Professor／Yuji Sasanuma

３．United Kingdom／Imperial College (Department of Chemistry)／Dr. Joachim H. G. Steinke and Dr. Robert V. Law

４．From 2002

５．Intramolecular and intermolecular　interactions of polyethers, polysulfides, and polyamines, which have been recently attracted attention to because of their applications to polymer electrolytes and gene delivery polymers, have been revealed and investigated.　On the basis of the information thus obtained, molecular design of electron donating polymers has been attempted.

６．The Grand-in-Aid for Scientific Research(c) (No. 14655003)

The Asahi Glass Foundation

７．①　Yuji Sasanuma, Satoshi Hattori, Shinichi Imazu, Tomoyoshi Kaizuka, Takayuki Iijima, Misa Sawanobori, Muhammand A. Azam, Robert V. Law, and Joachim H. G. Steinke: Intramolecular and Intermolecular Hydrogen Bonds Found in Poly(ethylene imine) and Its Model Compounds, IUPAC Polymer Conference on the Mission and Challenges of Polymer Science and Technology (Kyoto), 44PA-018, 2002 年 12 月 4 日.

②　Yuji Sasanuma: Intramolecular Interactions of Polyethers and Polysulfides, Investigated by NMR, Ab Initio Molecular Orbital Calculations, and Rotational Isomeric State Scheme: An Advanced Analysis of NMR Data, *Annual Reports on NMR*

Spectroscopy, Vol. 49, (G. A. Webb Ed.), Academic Press (Elsevier Science), New York; Chapter 5 , 2003 年 5 月.

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

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

8 . None.

Graduate School of Advanced Integration Science

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

Shota Suzuki, Xavier Allonas, Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, and Tsuguo Yamaoka, Interaction mechanism in pyrromethene dye/photoacid generator photosensitivesystem for high-speed photopolymer, J. Photochem. Photobiol. A: Chem, in press.

BOOK

Shota Suzuki, Xavier Allonas, Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, and Tsuguo Yamaoka, "High speed photopolymers: Interaction mechanism in a novel dye/photoacid generator system and applications", in Photochemistry and UV curing: New Trends, Jean-Pierre Fouassier ed, Trivandrum, Kerala, India (Book published in 2006).

CONTRIBUTIONS TO CONFERENCE

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

Shota Suzuki, Xavier Allonas, Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, and Tsuguo Yamaoka, Photoacid Generation Mechanism in Pyrromethene Sensitizing Dye/Oxime Type Photoacid Generator System, XXIst IUPAC SYMPOSIUM ON PHOTOCHEMISTRY, 2006 (Kyoto).

Shota Suzuki, Xavier Allonas, Jean-Pierre Fouassier, Toshiyuki Urano, Shigeru Takahara, and Tsuguo Yamaoka, Interaction Mechanism In Pyrromethene Dye/Photoacid Generator Photosensitive System for High Speed Photopolymer, SICC-4 (Singapore International Chemical Conference 4), 2005 (Singapore).

Shota Suzuki, Toshiyuki Urano, Shigeru Takahara, Tsuguo Yamaoka, Xavier Allonas, Jean-Pierre Fouassier, Pyrromethene Dye Sensitized Photopolymer for Microlithography, SFC Grand Est, 2005 (Mulhouse).

8 . None

1．Electronic structure of organic semiconductor interfaces

2．G-COE, 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 / Functional Nano & Soft Materials Laboratory (FUNSOM), Soochow University/ Prof. 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．Under preparation of the first joint paper.

8．6-7 Nov.2009, Chiba Univ. "Global-COE Workshop on Organic Electronics: Electronic States, Charge Transport and Devices" (Fastening Asian researcher's network), Invited speaker: Prof. A. Wee /National Univ. Singapore, Prof. W.-Y. Chou /National Cheng Kung Univ., Dr. T.Hasegawa/ AIST.
25-28 Jan.2010, Chiba Univ., "The 5th Edition of The International Workshop on Electronic Structure and Processes at Molecular-Based Interfaces (ESPMI-V)", invited speaker: Prof. J-L. Brédas/ Georgia Ins. of Tech., Prof. C. Woell/ Karlsruhe Ins. of Tech., Prof. A. Kahn/ Princeton Univ.

1．Spectroscopic study of organized organic films

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

3．India/ Indian Institute of Technology (IIT) , Madras /Prof. A. Patnaik

4． From 2002

5． Electronic states of self-assembled monolayers are studied with high-resolution electron spectroscopy。

6．JSPS program、21 Century COE program and Global COE Program etc.

7．(1) Surface / Interface Electronic Structure in C60 Anchored Aminothiolate Self-Assembled Monolayer: An Approach to Molecular Electronics, Archita Patnaik, Hiroyuki Setoyama and Nobuo Ueno, J. Chem. Phys. 120(13), 6214-6221 (2004).
(2) Polarized near-edge x-ray-absorption fine structure spectroscopy of C60-functionalized 11-amino-1-undecane thiol self-assembled monolayer:Molecular orientation and Evidence for C60 aggregation, Archita Patnaik, Koji K. Okudaira, Satoshi Kera, Hiroyuki Setoyama, Kazuhiko Mase and Nobuo Ueno
(3) J. Chem. Phys. 122, 154703-9(2005).

8．Selected to: Virtual Journal of Nanoscale Science & Technology 11(17), (2005) and March 29, 2004 issue of Virtual Journal of Nanoscale Science & Technology.

1．High-resolution UPS studies on electronic states of oriented molecular films

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

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

4．Continued from 2003

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

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

7．Electronic Delocalization in Discotic Liquid Crystals: A Joint Experimental and Theoretical Study, Xavier Crispin, Jérôme Cornil, Rainer Friedlein, Koji Kamiya Okudaira, Vincent Lemaur, Annica Crispin, Gaël Kestemont, Matthias Lehmann, Mats Fahlman, Roberto Lazzaroni, Yves Geerts, Göran Wendin, Nobuo Ueno, Jean-Luc Brédas, and William R. Salaneck, J. Am. Chem. Soc., (2004).

8．21-25,Oct.2003,Sonan Village Center, Kanagawa, "The 2nd Edition of The International Workshop on Electronic Structure and Processes at Molecular-Based Interfaces (ESPMI-α)

30 Jun.-4 Jul.2005,Sweden,"The 3rd Japan-Sweden Workshop on Advanced Spectroscopy of Organic Materials for Electronic Applications"(ASOMEA-III)

8-12 Oct.2008,Chiba,"The 4th Japan-Sweden Workshop on Advanced Spectroscopy of Organic Materials for Electronic Applications"（ASOMESA-χ）

30 Sep.-2 Oct.2009, Krusenberg Herrgard , Sweden,"The 5th Japan-Sweden Workshop on Advanced Spectroscopy of Organic Materials for Electronic Applications"(ASOMEA-δ), Invited speaker： Prof. C. S. Fadley/Univ. California – Davis,□Prof. P. Rudolf/Univ. Groningen,(Prof. O. Inganäs/ Linkoeping Univ.

1．Electronic states and charge mobility in organic devices

2．G-COE, 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 ultrahigh-resolution UPS.

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

7．(1) Hole-vibration coupling of the highest occupied state in pentacene thin films, H. Yamane, S. Nagamatsu, H. Fukagawa, S. Kera, R. Friedlein, K.K. Okudaira, and N. Ueno Phys. Rev. B 72, 153412 (2005).

(2) Hole-vibration coupling in the uppermost valence band photoemission of pentacene monolayer on graphite, H. Yamane, S. Nagamatsu, H. Fukagawa, S. Kera, K.K. Okudaira, N. Ueno and R. Friedlein,
Mol. Cryst. Liq. Crys. 455, 235-240 (2006).

8．Selected to Virt. J. Nano. Sci. & Tech., 12(20) 2005 and Virt. J. Ultrafast Sci., 4(11) 2005.（http://www.vjnano.org.）（http://www.vjultrafast.org）

1．Electronic states of single-molecular devices

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

3．Israel / Weizmann Inst. Science / Prof. 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．Radiation damage to alkyl chain monolayers on semiconductor substrates investigated by electron spectroscopy, F. Amy, C. K. Chan, W. Zhao, J. Hyung, M. Ono, T. Sueyoshi, S. Kera, G. Nesher, A. Salomon, L. Segev, O. Seitz, H. Shpaisman, A. Schoell, M. Haeming, T. Bo1cking, D. Cahen, L. Kronik, N. Ueno, E. Umbach, and A. Kahn, J. Phys. Chem. B. 110, 21826-21832 (2006). Other papers are under preparation

8．25-28 Jan.2010,Chiba Univ.,"The 5th Edition of The International Workshop on Electronic Structure and Processes at Molecular-Based Interfaces (ESPMI-V)", Invited speaker：Prof. J-L. Brédas/ Georgia Ins. of Tech., Prof. C. Woell/ Karlsruhe Ins. of Tech., Prof. A. Kahn/ Princeton Univ.

1．Electronic states of organic-related interfases

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

3．USA / Princeton University / Antoine Kahn

4．Continued from April 2001

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

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

7．(1) Impact of an interface dipole layer on molecular level alignment at an organic-conductor interface studied by UPS, S. Kera, Y. Yabuuchi, H. Yamane, H. Setoyama, K.K. Okudaira, A. Kahn, and N. Ueno, Phys. Rev. B. 70(8), 085304-1-6 (2004)

(2) Study of excited states of fluorinated copper phthalocyanine by inner shell excitation, K.K.Okudaira, H. Setoyama, H. Yagi, M. Mase, S. Kera, A. Kahn and N. Ueno, J. Electron Spec. & Relat. Phenom.137-140, 137-140 (2004).

8．25-28 Jan.2010,Chiba Univ., "The 5th Edition of The International Workshop on Electronic Structure and Processes at Molecular-Based Interfaces (ESPMI-V)", Invited speaker：Prof. J-L. Brédas/ Georgia Ins. of Tech., Prof. C. Woell/ Karlsruhe Ins. of Tech., Prof. A. Kahn/ Princeton Univ.

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

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

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

Germany/Tuebingen University / Prof. F. Schreiber

4．Continued from September 2004

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

6．21st Century COE program and Global COE Program

7．(1) Vacuum sublimed α, ω-dihexylsexithiophene thin films: Correlating electronic structure and molecular orientation, S. Duhm, I. Salzmann, N. Koch, H. Fukagawa, T. Kataoka, S. Hosoumi, K. Nebashi, S. Kera, and N. Ueno, J. Appl. Phys. 104,033717-1-7 (2008).

(2) Influence of intramolecular polar bonds on interface energetics in perfluoro-pentacene on Ag(111) , S. Duhm, S. Hosoumi, I. Salzmann, A. Gerlach, M. Oehzelt, B. Wedl, T.-L. Lee, F. Schreiber, N. Koch, N. Ueno, and S. Kera, Phys. Rev. B 81, 045418-1-6 (2010).

8．10-12 Aug.2009, Univ. Tokyo,Kashiwa, "ISSP Workshop on Physics and New Phenomena of p-Electronic Interfaces", Invited speaker: Prof. V. Podzorov/Rutgers Univ., Prof. S. Tautz/ Jülich, Prof. F. Schreiber/ Tuebingen Univ.

25-28 Jan.2010, Chiba Univ., "The 5th Edition of The International Workshop on Electronic Structure and Processes at Molecular-Based Interfaces (ESPMI-V)", Invited speaker：Prof. J-L. Brédas/ Georgia Ins. of Tech., Prof. C. Woell/ Karlsruhe Ins. of Tech., Prof. A. Kahn/ Princeton Univ.

1．Interfaces electronic states of organic-based devices

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

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

4．Continued from April 2009

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

6．JSPS program and G-COE

7．in preparation

8．6-7 Nov.2009, Chiba Univ.,"Global-COE Workshop on Organic Electronics: Electronic States, Charge Transport and Devices" (Fastening Asian researcher's network), Invited speaker: Prof. A. Wee /National Univ. Singapore, Prof. W.-Y. Chou /National Cheng Kung Univ., Dr. T.Hasegawa/ AIST.

25-28 Jan.2010, Chiba Univ., "The 5th Edition of The International Workshop on Electronic Structure and Processes at Molecular-Based Interfaces (ESPMI-V)", Invited speaker: Prof. J-L. Brédas/ Georgia Ins. of Tech., Prof. C. Woell/ Karlsruhe Ins. of Tech., Prof. A. Kahn/ Princeton Univ.

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

7．10 journal papers have been published.

102conference papers have been published.

1 book has been published.

8．International Workshop -- Novel high power solid-state lasers and laser processing -- (Chiba, Feb.22, 2005)

International workshop Nonlinear optics for high power laser technology (Chiba, July,2008)

1．Physical properties of low-dimensional nano structure formed on semiconductor surfaces

2．Graduate School of Advanced Integration Science / Associate Professor / Kazuyuki Sakamoto

3．Sweden / Linköping University / Professor R.I.G. Uhrberg

4．From 2002 (continuing)

5．One- and two-dimensional nano structures, which are formed on semiconductor surfaces by the adsorption of metal atoms, have attracted much attention due to the possibility of observing various exotic low-dimensional physical phenomena. The final goal of this project is to observe and to determine low-dimensional physics that have not been reported so far.

6．Grants-in-Aid from the Ministry of Education, Culture, Sports, Science and Technology of the Japanese Government, and the Swedish Research Council

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

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

(3) "High-temperature annealing and surface photovoltage shifts on Si(111)7×7", H. M. Zhang, K. Sakamoto, G.V. Hansson,

and R.I.G. Uhrberg, Phys. Rev. B 78, 035318-1-7 (2008).

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

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

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

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

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

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

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

8．None

1．Time-resolved photoemission study on the adsorption and reaction process of oxygen molecules

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

3．Sweden / Linköping University / Professor R.I.G. Uhrberg

4．From 2002 (continuing)

5．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.

6．Grants-in-Aid from the Ministry of Education, Culture, Sports, Science and Technology of the Japanese Government, and the Swedish Research Council

7．(1) “Adsorption and reaction processes of physisorbed molecular oxygen on a Si (111)-(7x7) surface”, K. Sakamoto, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 72, 075346-1-6 (2005).

(2) “Photoemission study of metastable oxygen adsorbed on a Si (111)-(7x7) surface”, K. Sakamoto, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 70, 035301-1-5 (2004).

(3) “Initial oxidation process of a Si (111)-(7x7) surface studied by photoelectron spectroscopy”, K. Sakamoto, H.M. Zhang, and R.I.G. Uhrberg, Thin Solid Films, 464-465, 10-13 (2004).

(4) “Observation of two metastable oxygen species adsorbed on a Si (111)-(7x7) surface; reinterpretation of the initial oxidation process”, K. Sakamoto, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 68, 075302-1-5 (2003).

(5) “Determination of the bonding configuration of the metastable molecular oxygen adsorbed on a Si (111)-(7x7) surface”, K. Sakamoto, F. Matsui, M. Hirano, H.W. Yeom, H.M. Zhang, and R.I.G. Uhrberg, Phys. Rev. B 65, 201309(R)-1-4, (2002)

8．None

1．Structure and thermodynamic properties of aqueous solutions.

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.

6．mini COE, Grand-in-Aid for Scientific Research from the Ministry of Education, Science and Culture, Japan.

7．1) A Thermodynamic Study of Aqueous Acetonitrile: Excess Chemical Potentials, Partial Molar Enthalpies, Entropies and Volumes, and Fluctuations.
P. V. Nikolova, S. J. B. Duff, P. Westh, C. A. Haynes, Y. Kasahara, K. Nishikawa and Y. Koga
Can. J. Chem., **78**, 1553-1560 (2000).

2) Mixing Schemes of Aqueous Dimethyl Sulfoxide: A Support by X-ray Diffraction Data.
Y. Koga, Y. Kasahara, K. Yoshino and K. Nishikawa
J. Sol. Chem. **30**, 885-893 (2001).

3) Chemical Potential and Concentration Fluctuation in Some Aqueous Alkane-mono-ols at 298 K..
J. Hu, C. A. Haynes, A. H. Y. Wu, C. M. W. Chang, M. G. M. Chen, E. G. M. Yee, T. Ichioka, K. Nishikawa and Y. Koga
Can. J. Chem. **81**, 141-149 (2003).

4) Excess Partial Molar Entropy of Alkane-mono-ols in Aqueous Solutions at 298 K..
Y. Koga, P. Westh and K. Nishikawa
Can. J. Chem. **81**, 150-155 (2003)

5) The Effects of Na_2SO_4 and $NaClO_4$ on the Molecular Organization of H_2O.
Y. Koga, P. Westh and K. Nishikawa
J. Phys. Chem. **A 108**, 1635-1637 (2004).

6) "Icebergs" or No "Icebergs" in Aqueous Alcohols?: Composition-dependent Mixing Schemes.
Y. Koga, K. Nishikawa and P. Westh
J. Phys. Chem. **A 108**, 3873-3877 (2004).

7) Towards Understanding the Hofmeister Series (1): The Effect of Sodium Salts of Some Anions on the Molecular Organization of H_2O.
Y. Koga, P. Westh, J. V. Davies, K. Miki, K. Nishikawa H. Katayanagi
J. Phys. Chem. **A 108** (in press).

8．None

1．Expression analysis of Duox gene in the ascidian endostyle

2．Graduate School of Advanced Integration Science / Assistant Professor / Michio Ogasawara

3．England / University of Reading / Dr. Francoise Mazet

4．2004-

5．Expression analysis of ascidian Duox gene in the endostyle of Ciona intestinalis: insight into the evolution of thyroid-related gene of in the endostyle of invertebrate chordate.

6．Grants-in-Aid Ministry of Education, Culture, Sports, Science and Technology Japan

7．Hiruta J, Mazet F, Ogasawara M. Restricted expression of NADPH oxidase / peroxidase gene (Duox) in zone VII of the ascidian endostyle. Cell Tissue Res (in press)

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. Graduate School 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)
7. Brookes, P. C., Inubushi, K., Wu J. and Patra, D. D. (1991) Properties of the soil microbial biomass, Japanese Journal of Soil Science and Plant Nutrition, 62, 79-84

   Inubushi, K., Brookes, P. C. and Jenkinson, D. S. (1991) Measurements of soil microbial biomass C, N and ninhydrin-N in aerobic and anaerobic soils by the fumigation-extraction method, Soil Biology and Biochemistry, 23, 737-741

   Shibahara, F. and Inubushi, K. (1995) Measurements of microbial biomass C and N in paddy soils by the fumigation-extraction method, Soil Science and Plant Nutrition,41,681-689.

   Inubushi, K (ed.) (2001) Microbial Diversity and Environmental Remediation in Biosphere, Chiba University International Symposium, Chiba University, pp. 145.

   Inubushi, K. and Ando, A. (2001) Report of International Symposium, Biodivesity and bioremediation in biosphere, Bioscience and Industry, 59, 61.

   Kanazawa S., et al (ed.) (2002) Nutrient Metabolisms and Bioremediation by Soil Microorganisms, Grant-in-aid Report, Kyushu University, pp.321.

   Inubushi, K. and Acquaye, S. (2004) Role of microbial biomass in biogeochemical processes in paddy soil environments, Soil Science and Plant Nutrition, 50 (6), 793-805

   Inubushi, K., Sakamoto, K., and Sawamoto T. (2005) Properties of microbial biomass in acid soils and their turnover, Soil Science and Plant Nutrition, 51 (5), 605-608

   Tirol-Padre, A., Tsuchiya, K., Inubushi, K., and Ladha, J.K. (2005) Enhancing soil quality through residue management in a rice-wheat system in Fukuoka, Japan. Soil Sci. Plant Nutr., 51 (6) 849-860

   Xu, X, Han, L., Wang, Y., and Inubushi, K. (2007) Influence of vegetation types and soil properties on microbial biomass carbon and metabolic quotients in temperate volcanic and tropical forest soils, Soil Sci. Plant Nutr., 53(4), 430-440

   Ushiwata, S., Sasa, H., and Inubushi, K. (2007) Influence of steam-treated grass clipping on grass growth, drainage water quality and soil microbial properties in a simulation of green course, Soil Sci. Plant Nutr., 53(4), 489-498
8. Chiba University International Symposium, July 6, 2001

   Japanese Society of Soil Science and Plant Nutrition, Award, April, 2005

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, Prof. K.K.Kapoor, Prof. R.S. Antil

   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 Fundation, JASSO

7．Rajbanshi, S. S., Endo, H., Sakamoto, K. and Inubushi, K. (1998) Stabilization of chemical and biochemical characteristics of grass straw and leafmix during in-vessel composting with and without seeding material, Soil Science and Plant Nutrition, 44, 485-495.

Goyal, S., Inubushi,K., Kato, S., Xu, H.L., and Umemura, H.(1999) Effect of anaerobically fermented manure on the soil organic matter, microbial properties and growth of spinach under greenhouse conditions, Indian Journal of Microbiology, 39, 211-216.

Inubushi, K., Goyal, S., Sakamoto, K., Wada, Y., Yamakawa, K. and Arai, T., (2000) Influence of application of sewage sludge compost on N_2O production in soils, Chemosphere, 2, 329-334.

Miyittah, M. and Inubushi, K. (2003) Decomposition and CO_2-C evolution of okara, sewage sludge, cow and poultry manure composts in soils, Soil Science and Plant Nutrition, 49(1), 61-68.

Simandi, P., Takayanagi, M., and Inubushi, K. (2005) Changes in the pH of two different composts are dependent on the production of organic acids, Soil Science and Plant Nutrition, 51 (5), 771-774

Goyal,S., Sakamoto, K., Inubushi, K. and Kamewada, K. (2006) Long-term effects of inorganic fertilization and organic amendments on soil organic matter and soil microbial properties in Andisols, Archives of Agronomy and Soil Science, 52(6), 617-625

Goyal,S., Sakamoto, K. and Inubushi, K. (2006) Decomposition of sewage sludge compost and its effect on soil microbial biomass and growth of spinach, Research on Crops, 7(2), 517-521

Imre, V., Sakamoto, K. and Inubushi, K.（2008）: Selection of root-associated fungal endophytes from Ericaceae plants to enhance blueberry seedling growth, Jpn Soc Soil Sci Plnat Nutr, Abstract, 54, p.57

Inubushi, K, A. Kawakami, F. Okubo, O. Jumadi, L. Melling, H. Kasai, K. Niida (2009): Greenhouse gases production in oil-palm plantation soil in Indonesia and Malaysia、Jpn Soc Trop Agr, Res for Tropical Agr.、2 (Extra issue 1) p.73-74

F. Okubo, Inubushi, K, A. Kawakami, O. Jumadi, L. Melling, H. Kasai (2009): Organic matter decomposition and greenhouse gases production in oil-palm plantation soil in Indonesia and Malaysia、Jpn Soc Microbial Ecol、p.1

Vano, I., Sakamoto, K. and Inubushi, K.（2009）: Selection of dark septate endophytes from Ericaceae plants to enhance blueberry (Vaccinium corymbosum L.) seedling growth. Abstracts of 7th International Symposium on Integrated Field Science, p.15 (Organized by Field Science Center, Tohoku University and Ecosystem adaptability Global COE, Tohoku University) (October 10-12, 2009, Sendai, JAPAN)

Silvio Ushiwata, Yoshimiki Amemiya, Kazuyuki Inubushi (Aug. 2009): Inhibition of in vitro growth of Rhizoctonia solani by liquid residue derived from steam-treated grass clippings, Journal of General Plant Pathology 75: 312-315

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

1．Emission and uptake of methane and nitrous oxide in peat wetland and agricultural field in tropical and temperate Asia

2．Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI

3．Indonesia / Lambung Mangkurat University, President / Ir. Muhammad Rasmadi

Indonesia / Lambung Mangkurat University, Faculty of Agriculture, Lecturer / Abdul Hadi

Indonesia / Bogor Agricultural University / Daniel Murdiyarso, Iswandi Anas

Indonesia / Makkasar University / Yusminah Hala

China / Institute of Atmospheric Physics / Xu Xingkai

4．Since 1998 (Continued)

5 . Methane emission from wetland is estimated as 20% of global but accuracy is very low and such estimate for nitrous oxide is not available. This study is to investigate these emissions and their controlling factors in tropical wetland and agricultural field.

6 . The Ministry of Environment (via NIAES)

7 . Hadi, A., Inubushi, K., Purnomo, E., Razie, F., Yamakawa, K. and Tsuruta, H. (2000) Effect of land-use changes on nitrous oxide (N2O) emission from tropical peatlands, Chemosphere, 2, 347-358.

Hadi, A., Haridi, M., Inubushi, K., Purnomo, E., Razie, F. and Tsuruta, H. (2001) Effects of land-use change in tropical peat soil on the microbial population and emission of greenhouse gases, Microbes and Environments, 16 (2), 79-86

Hadi, A. and Inubushi, K. (2001) Applicability of method to measure organic matter decomposition in peat soils, Indonesian Journal of Agricultural Sciences, 1, 25-28

Hadi, A., K. Inubushi, E. Purnomo, and H. Tsuruta (2002): Effect of hydrological zone and land-use management on the emissions of N_2O, CH_4, and CO_2 from tropical peatlands, Agroscientiae, 9, 53-60.

Xingkai, Xu and K. Inubushi (2004) Effects of N sources and methane concentration on methane uptake potential of a typical coniferous forest and its adjacent orchard soil, Biology and Fertility of Soils,40, 215-221.

Hadi, A., Inubushi, K., Furukawa, Y., Purunomo, E., Rasmadi, M., and Tsuruta, H. (2004): Greenhouse gas emissions from tropical peatlands of Kalimantan, Indonesia, Nutrient Cycling in Agroecosystems, 71, 73-80.

Furukawa, Y., Inubushi, K., Ali, M., Itang, AM. and Tsuruta, H. (2005) Effect of changing groundwater levels caused by land-use changes on greenhouse gas emissions from tropical peatlands, Nutrient Cycling in Agroecosystems, 71, 81-91.

Inubushi, K., Otake, S., Furukawa, Y., Shibasaki, N., Ali, M., Itang, AM. and Tsuruta, H. (2005) Factors influencing methane emission from peat soils: Comparison of tropical and temperate wetlands, Nutrient Cycling in Agroecosystems, 71, 93-99.

Xu, Xingkai, and Inubushi, K. (2005) Mineralization of nitrogen and N_2O production potentials in acid forest soils under controlled aerobic conditions, Soil Science and Plant Nutrition, 51 (5), 683-688.

Oslan Jumadi, Yusminah Hala, and Inubushi, K. (2005) Production and emission of nitrous oxide and responsible microorganisms in upland acid soil in Indonesia, Soil Science and Plant Nutrition, 51 (5), 693-696

Murakami, M., Furukawa, Y., and Inubushi, K. (2005) Methane production after liming to tropical acid peat soil, Soil Science and Plant Nutrition, 51 (5), 697-699.

Ali, M., Taylor, D., and Inubushi, K. (2006) Effect of environmental variations on CO_2 efflux from tropical peatland in eastern Sumatra, WETLANDS, 26(2), 612–618

Zheng X, Zhou Z, Wang Y, Zhu J, Wang Y, Yue J, Shi Y, Kobayashi K, Inubushi K, Huang Y, Han S, Xu Z, Xie B, Butterbach-Bahl K, Yang L (2006) Nitrogen-regulated effects of free-air CO_2 enrichment on methane emissions from paddy rice fields. Global Change Biology 12, 1717-1732

Xu, X., Inubushi, K., and Sakamoto, K. (2006) Effect of vegetations and temperature on microbial biomass carbon and metabolic quotients of temperate volcanic forest soils, Geoderma, 136, 310-319

Yasuhiko MURAMATSU and Kazuyuki INUBUSHI (2009) Financial Viability and its Analysis of CDM Projects for Mitigation of Methane Emissions from Paddy Fields in Indonesia: A cost-benefit simulation study, HortResearch, 63, 35-43

Cheng, W., Inubushi, K., Hoque, M.M., Sasaki, H., Kobayashi, K., Yagi, K., Okada, M. and Hasegawa, T. (2008) Effect of elevated [CO_2] on soil bubble and CH_4 emission from a rice paddy: A test by ^{13}C pulse-labeling under free-aid CO_2 enrichment. Geomicrobiology Journal, 25(7-8):396–403, 2008

Yunsheng LOU*, Kazuyuki INUBUSHI , Takayuki MIZUNO, Toshihiro HASEGAWA, Yanhung LIN, Hidemitsu SAKAI, Weiguo CHENG and Kazuhiko KOBAYASHI (2008) CH_4 emission with differences in atmospheric CO_2 enrichment and rice cultivars in a Japanese paddy soil, Global Change Biology 14: 2678–2687.

Xu X and Inubushi K (2009): Responses of ethylene and methane consumption to temperature and soil pH in temperate volcanic

forest soils, European Journal of Soil Science 60： 489–498

Xu X K,and Inubushi K. (2009) Ethylene oxidation, atmospheric methane consumption, and ammonium oxidation in temperate volcanic forest soils. Biology and Fertility of Soils, 45：265-271

8．Oze Award, June 2004

1．Paleoecosystem in “Arkaim” Ecopreserve and Protection of Boreal Ecosystem in Central South Ural, Russia

2．Graduate School of Horticulture / Professor / Kazuyuki INUBUSHI, Susumu OKITSU / Assist Prof / Miwa MATSUSHIMA

3．Russia／Institute of Physicochemical and Biological Problems in Soil Science (IPBPSS), Russian Academy of Sciences ／Professor／PRIKHODKO, Valentina et al.

Russia／Moscow State University／Scientific officer ／Manakhov Dmitry Valentinovich et al.

Russia／Chelyabisk State University／Professor／Zdanovich Gennady Borisovich et al.

4．Since 2009 (Continued)

5．Reconstruction of ecological conditions of unique civilization of Bronze Age and conservation of nature and soils and other natural components on the boundary of Europe and Asia. The project is devoted to solution of the fundamental problem – reconstruction of ecological conditions of Bronze Age, conservation of unique paleoworld, saving and recovery of soils and other natural components in reserve regime.

6．JSPS and RFBR (Russian Foundation of Basic Research) Joint Research Program 2009-2010

7．Susumu Okitsu, Valentina E. Prikhodko, Miwa Matsushima and Kazuyuki Inubushi (2009); Vegetation landscape in Arkaim and surround area, south Urals, The Soc Vegetation, Tottori.

Hirohiko Nagano, Ikumi Utsugi, Mai Adachi, Fumina Okubo, Satoshi Horaguchi, Miwa Matsushima, Susumu Okitsu, Valentina E. Prikhodko, Elena Manakhova, Gennady B.Zdanovich, Dmitry G. Zdanovich, So Sugihara, Shinya Funakawa, Masayuki Kawahigashi and Kazuyuki Inubushi (2010): Biological aspects of soils in Arkaim and surround area, south Urals, Russia, World Congress of Soil Science, Brisbane, (accepted)

8．Joint Seminar ; November 9, 2009 in Chiba University and November 11, 2009, in Nihon University

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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

Thailand / BIOTEC / C. Kirdmanee

4．From 2000 to date

5．An aquatic vegetable (Ipomoea aquatica Forsk.) is used in a tropical region for long time. There are a lot of uncertain points of the characteristic. There are inherited varieties among the strains; color of the stem or shape of the leaf. It is assumed that the color of the stem is green in the cultivation strains and red in the wild strains. There are a lot of unknown parts of the inherited difference and the characteristic.

From our current investigation, it has become clear that there are many cultivation methods of Ipomoea aquatica Forsk in Southeast Asia. In floating cultivation on the river or the canal, it has grown by minerals in water of river or canal. It can make a special mention of the high nutrient absorption ability of Ipomoea aquatica Forsk compared with other leafy vegetables. We collect many strains of Ipomoea aquatica Forsk in Thailand.

Differences of the physiological and ecological characteristic among strains are investigated. At the same time, selection of the strains which have high nutrient absorption ability or stress tolerance and analysis of genetic variability among strains are done.

6．Heiwa Nakajima Foundation (Aids for the Academic Research in Asia Region), 2002.

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

7．1) Cultivation methods of water convolvulus in Thailand. Jap. J. Tropic. Agric., 45 (ext.1) 11-12. 2001

2) The lowest limiting concentration of the nutrient solution that could be absorbed by the water convolvulus. Proceedings of annual meeting of the societies for Agricultural Environmental Engineering: 220. 2001.

3) Genetic variability of water convolvulus (Ipomoea aquatica Forsk.) in Thailand, Jap. J. Tropic. Agric., 45 (ext.2) 105-106. 2001.

4) Growth of Ipomoea aquatica Forsk. strains under different concentrate on of nutrient solution, Jap. J. Tropic. Agric., 45 (ext.2) 107-108. 2001

5) Relations between leaf color or N contents of Ipomoea aquatica Forsk. strains and mineral contents of water, Jap. J. Tropic. Agric., 45 (ext.2) 3-4 2002

6) Morphological variability of Ipomoea aquatica Forsk strains, J. Tropic. Agric., 46(ext.1) 1-2 2002

7) Flowering variability of Ipomoea aquatica Forsk strains, J. Tropic. Agric., 47(ext.1) 33-34 2003

8) In vitro selection of Ipomoea aquatica Forsk. strains, Proceedings of annual meeting of the societies for Agricultural Environmental Engineering : 315. 2003.

9) Variability of shoot growth rate under low temperature of Ipomoea aquatica Forsk. strains, J. Tropic. Agric., 48(ext. 2):49-50, 2004

10) Comparison of photoperiodic responsibility of water convolvulus (Ipomoea aquatica Forsk.) and sweet potato (Ipomoea batatas Poir.), The First Int. Symposium on Water Convolvulus, KU, Bangkok, Thailand, 27.2005

11) Geographical distribution of water convolvulus in west Africa, The First Int. Symposium on Water Convolvulus, KU, Bangkok, Thailand, 28. 2005

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.

2) Growth of Ipomoea aquatica Forsk. strains under different concentration of nutrient solution, Jap. J. Tropic. Agric., 45 (ext.2) 107-108. 2001

3) Relations between leaf color or N contents of Ipomoea aquatica Forsk. strains and mineral contents of water, Jap. J. Tropic. Agric., 45 (ext.2) 3-4、2002

4) Effects of mineral contents of water on those of Ipomoea aquatica Forsk Strains leaves, J. Tropic. Agric., 47(ext.1) 31-32、2003

5) Effect of Nitrogen Fertilizer Amount on Early Growth of Leafy Vegetable in Thailand, Jap. J. Tropic. Agric., in press, 2006.

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 curial point for sustainable agri-tourism, we need to collaborate on this field to find effective measures for the sustainable rural development.

Details: Through bilateral exchange of researchers, optimum marketing strategy will be clarified and give future directions for Japanese agri-tourism.

Forms: Exchange of researchers, joint survey analysis, and joint presentation at international meetings, finally joint publication of the research output.

6．Grant aids to joint presentation in the 99 International Farm Management Congress, Durban, 1999.

Research fellowship from Japan Society for the Promotion of Science in 2000.

Grant-in-Aid for Scientific Research since 2001. .

7．Ohe, Y. and A. Ciani (1999): Activities of Farm Tourism and Attitudes of the Operators: Japan-Italy Comparison, P. Simms Eds. Proceedings of the 12th International Farm Management Congress, 801-811, Durban.

Yasuo Ohe and Adriano Ciani, Characteristics and Activities of Agri-tourism farms in Umbria, Italy, Ixth European of Agricultural Economists, poster paper, 1999.

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

Ohe,Y and A. Ciani (2000): On-farm Tourism Activity and Attitudes of the Operations: A Hiroshima-Umbria Comparative Case Study, The Technical Bulletin of Faculty of Horticulture, Chiba University, No.54, 73-80.

Ohe, Y. (2003): Multifunctionality and Farm Diversification: A Case of Rural Tourism, 14th International Farm Management Congress, Proceedings CD-ROM, 761-768.

Ohe, Y. and A. Ciani (2003): Evolutionary Process of Agri-toursim in Cetral Italy, Umbria, Japanese Journal of Tourism Studies, 2, 11-18.

Ohe, Y. and A. Ciani (2005): Evaluating diversification of agri-tourism in Umbria, Italy, Japanese Journal of Farm Management, 43(1), 124-127.

8．Keynote and invited speakers at the International Seminar on Italian Agritourism in Tokyo in 2001.

Invited speakers at Seminar on Agritourism in Italy organized by Italian Embassy in Japan in 2002.

Invited speakers at Seminar on Sustainable Rural Development held at Tirana Agricultural University in Tirana, Albania.

Invited speakers at Seminar on Multifunctionality and agri-tourism held at

Perugia University, Italy in September, 2006.

Invited speaker at the international conference 'Quale Strategia per Lo Sviluppo Sostenibile? , Perugia, Italy in5 September, 2009.

1．Study on the physiological active substances and aroma volatile biosynthesis in fruit

2．Graduate School of Horticulture,/ Professor/ Satoru Kondo

3．The United State of America/United State of Department of Agriculture/Senior Researcher/Dr. James Mattheis

4．Since 2004 (Continued)

5．Aroma volatile is a kind of important factor to decide the fruit quality. Physiological active substances can promote or inhibit fruit ripening and aroma volatile production. However, the effects of physiological active substances on volatile compounds are unclear.

6．Grant-in-Aid for Scientific Research; Hiroshima Prefectural University

7．1) Kondo, S., J. P. Mattheis et al. 2005. Aroma volatile biosynthesis in apples affected by 1-MCP and methyl jasmonates. Postharvest Biol. Technol. 36:61-68.

2) Kondo, S., J. P. Mattheis et al. 2006. Aroma volatile emission and expression of 1-aminocyclopropane-1-carboxylate (ACC) synthase and ACC oxidase genes in pears treated with 2,4-DP. Postharvest Biol. Technol. 41:22-31.

8．Invited speaker at the international symposium on plant growth regulators in fruit production (Mexico, June, 2005)

1．Roles of jasmonates in fruit trees

2．Graduate School of Horticulture,/ Professor/ Satoru Kondo

3．Italy/ Bologna University/ Professor/ Dr. Guglielmo Costa; Dr. Patrizia Torrigiani

4．Since 2006 (Continued)

5．Physiological active substance, jasmonates influence tree or fruit physiology including coloring of the skin, fruit ripening, flower bud formation, and dormancy. This study investigates the metabolism and physiology of jasmonates in the fruit and tree.

6．Bologna University

7．1) Ziosi, V..Torrigiani, P., G. Costa, S. Kondo et al. 2008. Jasmonates-induced transcriptional changes suggest a negative interference with the ripening syndrome in peach fruit. Journal of Experimental Botany 59:563-573.

2) Kondo, S. Roles of jasmonates in fruit ripening and environmental stress. 2010. Acta Hort. (In press).

8．1)Invited speaker at a seminar held in Bologna university (Bologna, Italy, May, 2006)

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

1．Study on the postharvest physiology in tropical fruit

2．Graduate School of Horticulture,/ Professor/ Satoru Kondo

3．Thailand/ King Mongkut's University of Technology Thonburi/ Associate Professor/ Dr. Sirichai Kanlayanarat

4．Since 2000 (Continued)

5．Effects of physiological active substances on fruit physiology such as pigmentation, chilling injury and so on are investigated in subtropical and tropical fruit.

6．JASSO, JSPS postdoctoral fellowship for foreign researchers

7．1) Kondo, S., S. Kanlayanarat et al. (2001). Abscisic acid metabolism during development and maturation of rambutan fruit. J. Hort. Sci Biotech. 76: 235-241.

2) Kondo, S., S. Kanlayanarat et al. (2001). Changes in physical characteristics and polyamines during maturation and storage of rambutan. Scientia Hort. 91: 101-109.

3) Kondo, S., S. Kanlayanarat et al. (2002). Effects of chilling injury on cell wall metabolism during storage of rambutan fruit. J. trop. Agri. 46:259-264.

4) Kondo, S., Kanlayanarat et al. (2002). Abscisic acid metabolism during fruit development and maturation of mangosteens. J. Amer. Soc. Hort. Sci. 127:737-741.

5) Kondo, S. Kanlayanarat et al. (2002). Cell wall metabolism during development of rambutan fruit. J. Hort. Sci. Biotech. 77:300-304.

6) Kondo, S., S. Kanlayanarat et al. (2003). Relationship between ABA and chilling injury in mangosteen fruit treated with spermine. Plant Growth regulat. 39:119-124.

7) Kondo, S., Kanlayanarat et al. (2004). ABA catabolism during development and storage in mangoes: Influence of jasmonates. J. Hort. Sci. Biotech. 79:891-896.

8) Kondo, S. et al. (2004). Relationship between jasmonates and chilling injury in mangosteens are affected by spermine. HortScience 39:1346-1348.

9) Kondo, S., Kanlayanarat et al. (2004). Changes in jasmonates of mangoes during development and storage after varying harvest times. J. Amer. Soc. Hort. Sci. 129:152-157.

10)Kondo, S., Kanlayanarat et al. (2005). Preharvest antioxidant activities of tropical fruit and the effect of low temperature storage on antioxidants and jasmonates. Post harvest Biol.Technol. 36:309-318.

11) Kondo, S. et al. (2007). Effects of jasmonates differed at fruit ripening stages on ACC synthase and ACC oxidase gene

expression in pears. J Amer. Soc. Hort. Sci. 132: 120-125.

12) kondo, S. (2007). Chilling-related browning of rambutan. Stewart Postharvest review. 3 (6). On line ISSN: 1945-9656.

13) kondo, S., Meemak, S., Ban, Y., Moriguchi, t., Harada, T. (2009). Effects of auxin and jasmonates on 1-aminocyclopropane-1-carboxylate (ACC) synthase and ACC oxidase gene expression during ripening of apple fruit. Postharvest Biol. Technol. 51: 281-284.

14) Setha, S. and kondo, S. (2009). Abscisic acid levels and anti-oxidant activity are affected by an inhibitor of cytochrome P450 in apple seedlings. J. Hort. Sci. Biotech. 84: 340-344.

15) kondo, S., Sae-Lee, K. and Kanlayanarat, S. (2010). Xyloglucan and polyuronide in the cell wall of papaya fruit during development and storage. Acta Hort. (In press).

8．1) Special seminar in King Mongkut's University Thonburi (Since 2000)

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

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

2．Faculty of Horticulture／Professor／Hiroyuki Matsui

Associate／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, □relationship between fruit set and growth, and plant hormones, and □the factor that relates to the penetration of plant hormones from the fruit surface.

6．Michigan State University

7．①N-Substituted phthalimide-induced of parthenocarpy in sour cherry (Prunus cerasus L.'Montm-orency ') enhanced by auxin. 1994. 24th Inter. Hort. Congress,Abstracts 269.

②Gibberellins in immature seed of Prunus cerasus: Structure detarmination and synthesis of gibberellins, GA_{95} (1,2-didehydro-GA_{20}. 1996. Phytochemistry,42(4):913-920.

③GA_{95} is a genuine precoursor of GA_3 in immature seed of Prunus cerasus L.. 1998. 16th Inter. Conference on Plant Growth Substances,Abstracts 146.

④Induction of fruit set and growth of parthenocarpic 'Hayward' kiwifruit with plant growth regulators. 1997. J. Japan. Soc. Hort. Sci. 66(3.4):467-473.

⑤Endogenous gibberellin-induced parthenocarpy in grape berries. 2000. Acta Hort. 514:69-74.

⑥Endogenous gibberellins in immature seeds of Prunus persica L.: identification of GA_{118}, GA_{119}, GA_{120}, GA_{121}, GA_{122} and GA_{126}. 2001. Phytochemistry 57:749-758.

⑦Effects of the combination of gibberellic acid and ammonium nitrate on the growth and quality of seedless berries in 'Delaware' grape. 2001. J. Japan. Soc. Hort. Sci. 72(5):366-371.

⑧Effect of gibberellins on induction of parthenocarpic berry growth of three grape cultivars and their endoginous gibberellins. 2001. 52nd ASEV Annual Meeting, Technical Abstracts, 81.

⑨Effects of gibberellin A_3 and ammonium sulfate of growth and quality of seedless Delaware grapes. 2003. J. ASEV Jpn. 14(2):58-63.

⑩Induction of parthenocarpic fruit growth with endogenous gibberellins of Loquat. 2004. Acta Hort. 653:67-70.

⑪Production of seedless loquat fruits. 2004. Regulation of Plant Growth and Development. 39(1):106-113.

⑫Effects of grape berry development stages on ammonium nitrate-enhanced penetration of gibberellin A3. 101st Abstracts

ASHS Annual Conference, HortScience, 39(4):793.

8．None

1．Improvement of 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

7．Shishido, M., Miwa, C., Usami, T., Amemiya, Y., and Johnson, K. B. (2005) Biological control efficiency of Fusarium wilt of tomato by nonpathogenic Fusarium Fo-B2 in different environments. Phytopathology (in press)

Shishido, M., Naoi, M., Momma, N., Usami, T., Amemiya, Y., and Johnson, K. B. (2005) Nutrient availability in the rhizosphere influences the efficacy of biological control of Fusarium wilt of tomato. J. Gen. Plant Pathol.

8．None

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.

7．(1) Isoda et al. 2001. Dry matter production and physiological characteristics of cotton and soybean under different water conditions. Kanto Branch Jpn. J. Crop Sci., 16, 40-41.

(2) Isoda et al. 2001. Varietal differences in dry matter production of processing tomato in the arid area of China. Kanto Branch Jpn. J. Crop Sci., 16, 60-61.

(3) Isoda, A. and P. Wang, 2001. Effects of leaf movement on leaf temperature, transpiration and radiation interception in soybean under water stress conditions. Tech. Bull. Faculty Hort. Chiba Univ., 55, 1-9.

(4) Isoda, A. and P. Wang, 2002. Leaf temperature and transpiration of field grown cotton and soybean under arid and humid conditions. Plant Prod. Sci., 5: 224-228.

(5) Isoda et al. 2002. Yield and dry matter production of soybean in the arid area of China, Kanto Branch Jpn. J. Crop Sci., 17, 68-69.

(6) Wang, C., A. Isoda, P. Wang, and Z. Li, 2002. Varietal differences in leaf temperature and sap flow rate of field grown cotton, Kanto Branch Jpn. J. Crop Sci., 17, 76-77.

(7)Wang, C., A. Isoda, Z. Li and P. Wang, 2004. Transpiration and leaf movement in field grown cottons under arid conditions.

Plant Prod. Sci., 7:266-270

(8) Wang, C., A. Isoda and P. Wang, 2004. Growth and yield performance of some cotton cultivars in Xinjiang, China, an arid area with short growing period. J. Agron. Crop Sci., 190: 177-183

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.

6．Grants-in-Aid for Scientific Research administered by the Ministry of Education, Culture, Sports, Science and Technology.

7．*Nobuhiko Fuwa and James N. Anderson (2004). “Filipina Encounters with Japan: Diverse Stories from a Pangasinan Barangay.” Paper presented at the 7th International Conference on Philippine Studies, Leiden, The Netherland. June 2004.

*Nobuhiko Fuwa (2003). “Exit Paths from Poverty and the Role of Education: A Philippine Case.” Keijiro Otsuka and Takashi Kurosaki (eds.), Education and Economic Development: toward poverty reduction in developing countries. Tokyo: Toyo Keizai Shimpo Sha.

*Nobuhiko Fuwa (2003) “Pathways from Poverty toward Middle Class: Determinants of Socio-Economic Class Mobility in the Rural Philippines.” A paper presented at the conference “Staying Poor: Chronic Poverty and Development Policy,” organized by Chronic Poverty Research Centre, University of Manchester. April 7-9, 2003.

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 data base 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

7．*Shahidur R. Khandker, Mark M. Pitt, and Nobuhiko Fuwa (2003). “Subsidy to Promote Girls’ Secondary Education: The Female Stipend Program in Bangladesh.” A paper presented at Annual Meeting of the Population Association of America. May 2003.

*Nobuhiko Fuwa. (2001) “The Net Impact of the Female Secondary School Stipend Program in Bangladesh.” Technical Bulletin of Faculty of Horticulture Chiba University, 55.

*Nobuhiko Fuwa (2000). “Measuring the Net Impact of the Female Secondary Stipend Program on Girls' Enrolment Using School-level Data in Bangladesh.” Mimeographed, Poverty Reduction and Economic Management, The 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

7．*P.B. Banik, C.M. Edmonds, N. Fuwa, S.P. Kam, L. Villano and D.K. Bagchi. 2004. “Sustainability Criteria in Rice-Based Cropping Systems in the Bihar Plateau of Eastern India: Initial report of the ISI-IRRI research project.” International Rice Research Institute Discussion Paper No. 47. Los Baños: International Rice Research Institute. May 2004.

*Nobuhiko Fuwa, Christopher Edmonds and Pabitra Banik. 2005. “How inefficient are small-scale rice farmers in eastern India really?: Examining the effects of microtopography on technical efficiency estimates.” East-West Center Working Paper No. 79. Honolulu: East-West Center. May 2005.

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.

6．World Bank, Grants-in-Aid for Scientific Research administered by the Ministry of Education, Culture, Sports, Science and Technology.

7．*Arsenio Balisacan and Nobuhiko Fuwa (2005). Changes in Spatial Income Inequality in the Philippines: An Exploratory Analysis (with Arsenio Balisacan) in *Spatial Disparities in Human Development: Perspectives from Asia*. (eds.) Ravi Kanbur, Tony Venables and Guanghua Wan. United Nations University Press. 2005.

*Arsenio Balisacan and Nobuhiko Fuwa (2004). "Going beyond Cross-country Averages: Growth, Inequality, and Poverty in the Philippines." *World Development,* 32, pp.1891-1907

*Arsenio Balisacan, Nobuhiko Fuwa and Margarita Debuque (2004). "The Political Economy of the Philippine Rural Development since the 1960s." In T. Akiyama and D. Larson (eds.) *Rural Development and Agricultural Growth in Indonesia, the Philippines and Thailand*. Asia Pacific Press at the Australian National University.

*Arsenio Balisacan and Nobuhiko Fuwa (2003). "Growth, Inequality and Politics Revisited: A Developing-Country Case." *Economics Letters*, 79. pp. 53-58.

*Arsenio Balisacan and Nobuhiko Fuwa (2002). "Going beyond Cross-country Averages: Revisiting Growth, Inequality, and Poverty in the Philippines." Foundation for Advanced Studies on International Development (FASID) Discussion Paper Series on International Development Strategies No. 2001-005. Mar. 2002.

*Arsenio Balisacan and Nobuhiko Fuwa (2001). "Growth, Inequality, Politics and Poverty Reduction in the Philippines." University of the Philippines School of Economics Working Paper 0109.

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

1．Nutrient dynamics of some cropping system around Bangkok.

2．Faculty of Horticulture / Associate Professor / Toru Maruo

3．Thailand / Faculty of Agriculture, Kasetsart University / Sutevee Sukprakan, Pariyanuj Chulaka, Spachai Aumka

4．2000-

5．After Green Revolution, amount of chemical or organic fertilizers applied to the fields in Tropical region is increased. Application amounts is too big and percentage of go 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．(Aids for the Academic Research in Asia Region), 2002-2004.

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.

2) Growth of *Ipomoea aquatica* Forsk. strains under different concentration of nutrient solution, Jap. J. Tropic. Agric., 45 (ext.2), 107-108, 2001

3) Relations between leaf color or N contents of *Ipomoea aquatica* Forsk. strains and mineral contents of water, Jap. J. Tropic. Agric., 45 (ext.2) 3-4, 2002

4) Effects of mineral contents of water on those of *Ipomoea aquatica* Forsk Strains leaves, J. Tropic. Agric., 47(ext.1) 31-32, 2003

5) Development of Vegetable Production System by Purification of Euthrophic Tega-Lake Water, Acta Hort. No.644, 85-90, 2004

6)Critical Nutrient Concentrations for Absorption of Some Vegetables, Acta Hort. No.644, 493-499, 2004

8．None

1．International Comparative Studies on the Roles of Green Environment for Urban Regeneration

2．Faculty of Horticulture / Associate Professor / Takeshi KINOSHITA, PhD

3．Republic of Korea / Keisen College of Horticulture / Kyungrock YE

China / Institute of Natural and Environmental Sciences, Himeji Institute of Technology / Yue SHEN

China / Shan-tong Agricultural University / Eikichi Boku

United States of America / Harvard University Graduate School of Design / Ryosuke Shimoda

United Kingdom / AA School Landscape Urbanism / Taku Suzuki

4．2002 - continued

5．This project is the advanced reseach works based on the international comparative studies titled " The Roles of Traditional Gardens for Consrvation of Historic Cities and Towns", which had been conducted 1999 to 2001.This research project aims to discuss on the ideal way of environmental regeneration and lanscape planning.

6．No (own expence)

7．Yue SHEN, Yohei SAITOH, Takeshi KINOSHITA, Kyungrock YE and Akira MOCHIZUKI, Formation of Greenery Space in the Vacant Lot of the Former Athletes' Village of the Tokyo Olympic Games − From Athletes' Village to Forest Park -, The 5th International Landscape Architectural Symposium of China, Japan and Korea, p.86-91, 2002 Beijing, China.

Takeshi KINOSHITA, Ryosuke SHIMODA, Taku SUZUKI and others, How should we face to "Urbanism", The National Meeting of the Japanese Institute of Landscape Architecture 2003, Chiba, Japan.

8．Cooporative Studies by the three countries' reseachers

1．Comparison of Natural Landscape Evaluation Between Japan and Russia

2．Graduate School of Horticulture／Associate Professor／Katsunori Furuya

3．Russian Federation／Lomonosov Moscow State Univ.／Elena PETROVA

Russian Federation／V.B. Sochava Institute of Geography SB RAS／Yuri SEMENOV

Russian Federation／Vernadsky State Geological Museum of RAS／Yury MIRONOV

Russian Federation／Institute of Orientalistic RAS／Anastasia PETROVA

4．Since 2008

5．The purpose of this study is to compare the landscapes appreciation in Russia and Japan, in two countries with deep-rooted traditions of landscape appreciation. The photo database of landscapes both similar and unique for Russia and Japan was made using the same methods. The respondents in both countries are suggested to classify and group photo images of different landscapes according to their personal perception as well as to estimate the attractiveness of given landscapes images.

6．2008-2009 Joint Research Program in Bilateral Programs, JSPS and RFBR

7．Elena Petrova, Yoji Aoki, Yury Mironov, Anastasia Petrova, Katsunori Furuya, Hajime Matsushima, Norimasa Takayama, Comparison of natural landscapes appreciation between Russia and Japan: methods of investigation, Monitoring and Management of Visitor Flows in Recreational and Protected Areas, Pisa (Italy), 198-202.

Katsunori Furuya, Hajime Matsushima, Introduction of the natural landscape evaluation between Japan and Russia, International Seminar of Chiba University Expert Program, 2009.8.12

Yoji AOKI, Elena PETROVA, Yury MIRONOV, Anastasia PETROVA, Katsunori FURUYA, Hajime MATSUSHIMA, Norimasa TAKAYAMA Toshihiro NAKAJIMA, Comparison of natural landscapes appreciation between Russia and Japan: photo selection, Special seminar at Moscow University, 2009.2.19

Hirofumi Ueda, Toshihiro Nakajima, Norimasa Takayama, Elena Petrova, Hajime Matsushima, Katsunori Furuya, Yoji Aoki, Ways of Seeing the Forest -Landscape Image Sketches in Japan and Russia-, Monitoring and Management of Visitor Flows in Recreational and Protected Areas, Wageningen, 2010. 6.

Katsunori Furuya ed., Summaries of technical reports of JAPAN-RUSSIA Joint Research Project and Scientific Seminar, Chiba University, 2009.8.12

8．Chiba University International Seminar of Chiba University, August 12,2009

Center for Environmental Remote Sensing

1．Remote sensing study of the atmosphere

2．Center for Environmental Remote Sensing ／Professor／Hiroaki Kuze

3．China／Anhui Institute of Optics and Fine Mechanics (AIOFM), Chinese Academy of Sciences／Dr. Liu Wenqin, Director

4．From 1997

5．A wide range of collaboration activity has been made in the field of atmospheric remote sensing, including the differential optical absorption spectroscopy (DOAS), lidar and satellite observations, through visiting/staying at both institutes (CEReS and AIOFM) for various occasions such as participation to the workshop/international conferences and relatively long stay as visiting scientists.

6．COE fund, donated funds, support from CAS, etc.

7．・Si Fuqi, Hiroaki Kuze, Yotsumi Yoshii, Masaya Nemoto, Nobuo Takeuchi, Toru Kimura, Toyofumi Umekawa, Taisaku Yoshida, Tadashi Hioki, Tsuyoshi Tsutsui, Masahiro Kawasaki, Measurement of regional distribution of atmospheric NO_2 and aerosol particles with flashlight long-path optical monitoring, Atmospheric Environment, 39 (27) (September 2005) 4959-4968.

・Si Fuqi, Liu Jianguo, Xie Pinghua, Zhang Yujun, Liu Wenqing, Hiroaki Kuze, Liu Cheng, Nofel Lagrosas and Nobuo Takeuchi, Determination of aerosol extinction coefficient and mass extinction efficiency by DOAS with a flashlight source, Chinese Phys. 14(11), (November 2005) 2360-2364.

・Si Fuqi, Liu Jianguo, Xie Pinghua , Zhang Yujun, Liu Wenqing , Hiroaki Kuze, Nofel Lagrosas and Nobuo Takeuchi, Correlation study between suspended particulate matter and DOAS data, Advances in Atmospheric Sciences (Science Press, co-published with Springer-Verlag GmbH, ISSN 0256-1530), Vol. 23, No.3: DOI 10.1007/s00376- 006-0461-z, (May 2006) 461-467.

・Hiroaki Kuze, Masashi Miyazaki, Daisuke Kataoka, Ippei Harada, Measurement of NO_2 and SPM in the lower troposphere by means of DOAS method based on white flashlight sources, The 4th DOAS International Workshop for Environmental Research and Monitoring, March 30-April 3, 2008 (Anhui).

・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

7．・Bannu, Josaphat Tetuko Sri Sumantyo, Musali Knishnaiah, Hiroaki Kuze, Study on interannual variation of sea surface temperature anomalies in the Indo-Pacific region and Indonesian rainfall variability, 3rd Indonesia Japan Joint Scientific Symposium (Chiba University) 9-11 September, 2008.

・Bannu, Josaphat Tetuko Sri Sumantyo, Musali Knishnaiah, Hiroaki Kuze, The impact of El Nino and the positive Indian Ocean Dipole on rainfall variability in the Indo-Pacific region, The 14th CEReS International Symposium, pp.107-110 (Chiba University) 13-14 November 2008.

・Merna Baharuddin, Prilando Rizki Akbar, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, Development of circularly polarized synthetic aperture radar sensor mounted on unmanned aerial vehicle, ISRS2008, Korea Institute of Geoscience and Mineral Resources (KIGAM), Daejeon, Korea, Oct. 29-31, 2008.

・Merna Baharuddin, Victor Wissan, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, Equilateral triangular microstrip antenna for circularly-polarized synthetic aperture radar, Progress in Electromagnetics Research C (PIERC) 8, page 107-120, 2009

・Merna Baharuddin, Josaphat Tetuko Sri Sumantyo, and Hiroaki Kuze, Microstrip Antenna Subarray for Circularly-polarized Synthetic Aperture Radar, March 22-26, The 27th Progress in Electromagnetics Research Symposium (PIERS) (Xi'an, China)

8．None

1．Characterization of atmospheric aerosols and clouds using lidar remote sensing

2．Center for Environmental Remote Sensing ／Professor／Hiroaki Kuze

3．India／Sri 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)

7．・Musali Krishnaiah, Atmospheric features over a tropical station Gadanki, India - Lidar observations from troposphere to mesopause region, The 14th CEReS International Symposium and SKYNET workshop on “Remote Sensing of the Atmosphere for Better Understanding of Climate Change”, Invited Talk, November 13-14, 2008, Keyaki-Hall, Chiba University.

・Y. Padmavathi kulkarni, Bhavani Kumar, Bannu, M. Krishnaiah, H. Kuze, C. Sujathamma, A. Kondoh, Remote sensing of tropical high altitude clouds and aerosols using ground based lidar and MODIS, The 14th CEReS International Symposium, November 13-14, 2008 (Chiba University).

・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． Indonesia／Institute of Bundong Technology／Ketut Wikantika（with Agreement of Academic Cooperation）

Hashemite Kingdom of Jordan／The University of Jordan／Hussam Al-Bilbisi（with Agreement of Academic Cooperation）

China／Inner-Mongolia Normal University／Bayaer

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

6．Grant-in-aid- for Scientific Research by the Ministry of Education, Science, Sports and Culture (Fundamental Research (B)) (2001-2004)

7．Hoan, N.T., Tateishi, R., 2009, Cloud removal of optical image using SAR data for ALOS applications - Experimenting on simulated ALOS data, *Journal of The Remote Sensing Society of Japan*, vol. 29, No. 2, pp. 410-417.

Alimujiang Kasimu and Ryutaro Tateishi, GLCNMO global urban mapping, validation and comparison with existed global urban maps, Journal of The Remote Sensing Society of Japan, 28(5) 427-440, 2008

Ryutaro Tateishi, Javzandulam Tsend-Ayush, Mohamed Aboel Ghar, Hussam Al-Bilbisi, and Takaki Okatani, Sampling methods for validation of large area land cover mapping, Journal of the Remote Sensing Society of Japan, Vol.27, No.3, pp.195-204, 2007

Toshiyuki Kobayashi and Ryutaro Tateishi, Global possible land cover change map using 1981-2000 time-series AVHRR/NDVI data, Journal of the Remote Sensing Society of Japan, Vol.27, No.3, pp.216-227, 2007

Rakhmatuloh, Daisuke Nitto, Hussam Al Bilbisi, Kota Arihara, and Ryutaro Tateishi, Estimating percent tree cover using regression tree method with very-high-resolution QuickBird images as training data, Journal of the Remote Sensing Society of Japan, Vol.27, No.1, pp.1-12, January 2007

M.A.Ghar, T.Renchin, R.Tateishi and T.Javzandulam, Agricultural land monitoring using a linear mixture model, International Journal of Environmental Studies, Vol.62, No.2, pp.227-234, 2005

T.Javzandulam, R.Tateishi and T.Sanjaa, Analysis of vegetation indices for monitoring vegetation degradation in semi-arid and arid areas of Mongolia, International Journal of Environmental Studies, Vol.62, No.2, pp.215-225, 2005

Adel Shalaby, Mohamed Aboel Ghar, Ryutaro Tateishi, Desertification Impact Assessment in Egypt Using Low Resolution Satellite Data and GIS, International Journal of Environmental Studies, Vol.61 (4), pp. 375-383, 2004.

Aboel Ghar, Adel Shalaby, Mohamed, Ryutaro Tateishi, Agricultural land monitoring in the Egyptian Nile Delta using Landsat data, International Journal of Environmental Studies, Vol.61 (6), pp. 651-657, 2004.

Tateishi, R. and M.Ebata, Analysis of phenologycal change patterns using 1982-2000 Advanced Very High Resolution

Radiometer (AVHRR) data, Int. J. of Remote Sensing, vol.25, no 12, 2287-2300, 2004

Sato, H.P. and R. Tateishi, Land cover classification in SE Asia using near and short wave infrared bands, Int. J. of Remote Sensing, vol.25, no 14, 2821-2832, 2004

H. Al-Bilbisi, R. Tateishi, J. Tetuko S S., A technique to estimate topsoil thickness in arid and semi-arid areas of north-eastern Jordan using synthetic aperture radar data, Int. J. of Remote Sensing, vol.25, No. 19, pp.3873-3882, 2004

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

Thomas G. Ngigi and Ryutaro Tateishi, Monitoring deforestation in Kenya, Int. J. of Environmental Studies, vol.61, no.3, pp.281-291, June 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

Y. O. Ouma and R. Tateishi, A fast environmental change detection approach based on unsupervised multiscale texture clustering, Int. J. Environmental Studies, Vol.62, No.1, pp.79-93, February 2005

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

http://www.cr.chiba-u.jp/databaseGGI.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

6．Grand-in-Aid for Scientific Research(2002 -)、Japan-China Scientific Cooperation Program(1999 _ 2001)、National Space Development Agency, MEXT GEOSS observation plan(Observational research project for atmospheric change in the troposphere)

7．G. -Y.Shi, T.Nakajima, T.Takamura, T.Hayasaka, L.Xu, B. Wang, X. Jin, X. -B. Fan, R. -m. Hu, P. Zhang, L.-S. Zhang X. -H. Wang, and H. Zhang, Observational Study on the Radiative Properties of Atmosphere Aerosols over China. CEReS International Symposium on Atmospheric Correction of Satellite Date and its Application to Global Environment, p.280-283, Chiba, Jan.21-23, 1998.

T. Takamura, I. Okada, N. Takeuchi, G-Y. Shi, T. Nakajima, 2001：Estimation of surface solar radiation from satellite data and its validation using SKYNET data, P2-37, p536-541, Proceedings of the Fifth International Study Conference on GEWEX in Asia and GAME, Oct. 3-5,2001, Aichi Trade Center, Nagoya, Japan.

T. Takamura, I. Okada, T. Nakajima, G-Y Shi, J. Zhou, 2001: SKYNET aerosol / radiation observation network in the East Asia, 55-61,, Proceedings of Nagasaki Workshop on Aerosol-Cloud Radiation Interaction and Asian Lidar Network, 27-29 Nov. 2001, Nagasaki.

T.Takamura,A.Arao, H. Fukushima, G.Shi, N.Sugimoto(Editors), 2001: Proceedings of Nagasaki Workshop on Aerosol-Cloud Radiation Interaction and Asian Lidar Network, pp.119.

Zhen-zhu Wang, J. Zhou, Chao Li, T. Takamura, and N. Sugimoto, Studies on net long-wave radiation on clear days in Hefei region, Proceedings of the 14th CEReS Int'l Symposium and SKYNET Workshop on "Remote Sensing of the Atmosphere for Better Understanding of Climate Change", 65-68, Nov. 13-14 2008, Keyaki-Hall, Chiba University.

8．Nagasaki Workshop on Aerosol-Cloud Radiation Interaction and Asian Lidar Network, 27-29 Nov. 2001, Nagasaki University, Nagasaki.

CEReS International Symposium and SKNET workshop on "Remote Sensing of the Atmosphere for Better Understanding of Climate Change", 13-14, Nov. 2008, Chiba University

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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.

6．Grant-in-aid- for Scientific Research by the Ministry of Education, Science, Sports and Culture (Fundamental Research (B))

(1998-1999, 2000-2002, 2003-2005, 2006-2008,2009-2011)

7．①Fadong Li, Xinfabg Song, Changyuan Tang, Akihiko Kondoh, Wanjun Zhang(2008): Stable isotopic charavterisation of precipitation, soil water and groundwater in Tanhang Mountain, north China. IAHS Publ., 319, 83-90.

②Dilinur Aji, Akihiko Kondoh, Changyuan Tang(2008):Analysis of hydrological changes of lakes and rivers in XinJiang using GIS techniques and remote sensing data. IAHS Publ., 319, 175-183.

③Tang, C., Chen, J., Kondoh, A., and Lu, Y.(2006): Characteristics of soil water movements and water table at the Leizhou Peninsula, Guangdong Province, China. Advances in Geosciences, 4, 219-227.

④Aji, K., Tang, C., Kondoh, A., and Song, X.(2006): Environmental Isotopes of Precipitation, groundwater and surface water in Yanshan Mountain, China. Advances in Geosciences, 4, 11-16.

⑤Jianyao Chen, Changyuan Tang, Yasuo Sakura, Akihiko Kondoh, Jingjie Yu, Jun Shimada and Tadashi Tanaka(2004):Spatial geochemical and isotopic characteristics associated with groundwater flow in the North China Plain. Hydrological Processes, 18, 3133-3146.

⑥Yanjun Shen, Yongqiang Zhang, Akihiko Kondoh, Changyuan Tang, Jianyao Chen, Jieying Xiao, Yasuo Sakura, Changming Liu and Hongyong Sun(2004): Seasonal variation of energy partitioning in irrigated lands, Hydrological Processes, 18, 2223-2234.

8． Acceptance of Chinese students

Medical Mycology Research Center (MMRC)

1． Research on highly a pathogenic fungi: Paracoccidioides brasiliensis and its related species.

2． Research Center for Pathogenic Fungi and Microbial Toxicoses / Associate Professor / Ayako Sano

3． Brazil / Department of Pathology Sciences, CCB, State University of Londrina, Londrina, Brazil / Eiko Nakagawa Itano

4． From 2003 to date.

5． Paracoccidioidomycosis is an endemic disease in Latin American countries and caused by biosafety level 3 pathogen; *Paracoccidioides brasiliensis*. We applied loop-mediated isothermal amplification (LAMP) method for detection of species specific gp43 from sputa of patient, found an antigenic similarity between *Arthrographis kalrae* and *P. brasiliensis* and isolated one strain from a patient lived in Londrina, Parana, Brazil identified as a new *Paracoccidioides* sp.: *P. lutzii* based on multiple gene analysis. We are under investigation the isolating ratio of P. lutti in Londrina's areas and are seeking for the antigenic similarities of *P. brasiliensis* and *P. lutzii* to other related fungal species, such as *Histoplasma capsulatum* and dermatophytes related fungi.

6． The Association of Nikkei & Japanese Abroad. (JICA)

1) May 2009-June: Dr. Itano Eiko Nakagawa visited our center by the special program supported by JICA, and presented the our cooperative research at ISHAM 2009 (Tokyo) supported by JICA.

2) June 2010 –July: Dr. Belenise Tomoko Tatibana will visit our center for the discussion and technical stabilization for detection of atypical *P. brasiliensis* in Londorina areas supported by JICA.

7． 1) Ramos SP, Sano A, Ono MA, Camargo ZP, Estavao D, Miyaji M, Nishimura K, Itano EN: Antigenuria and antigenemia in experimental murine paracoccidioidomycosis. Med Mycol, 43:631-6, 2005.

Pavanelli WR, Kaminami MS, Geres JR, Sano A, Ono MA, Camargo IC, Itano EN. Protection induced in BALB/c mice by the high-molecular-mass (hMM) fraction of *Paracoccidioides brasiliensis*. Mycopathologia.163: 117-28, 2007.

2) Tatibana BT, Sano A, Uno J, Mikami Y, Miyji M, Nishimura K, Itano EN. Humoral immune response in experimental ddY mice paracoccidioidomycosis. Semina: Ciencias Agricias, Londrina, v. 28, n. 2, p. 287-294, abr./jun. 2007.

3) Tatibana BT, Sano A, Uno J, Kamei K, Igarashi T, Mikami Y, Miyaji M, Nishimura K, Itano EN: Detection of *Paracoccidioides brasiliensis gp43* gene in sputa by loop-mediated isothermal amplification method (LAMP) Journal of Clinical Laboratory Analysis, 2009;23(2):139-43.

4) Takayama A, Itano EN, Sano A, Ono MA, Kamei K. An atypical *Paracoccidioides brasiliensis* clinical isolate based on multiple gene analysis. Medical Mycology,48:64-72, 2010.

5) Sano A, Itano EN (Other 57 writers), Voigt K ed. Part II. "Current Advances in Molecular Identification of Fungi". Human pathological and clinical contributions. 18- Applications of loop-mediated isothermal amplificaton methods (LAMP) for identification and diagnosis of mycotic diseases: Paracoccidioidomycosis and *Ochroconis gallopava* infection.

6) Vivan RH, Leonello PC, Nagashima LA, Kaminami MS, Tristão FS, Sano A, Ono MA, Béjar CV, Itano EN. Soluble components of *Histoplasma capsulatum* var. *capsulatum* have hemagglutinin activity and induce syngeneic hemophagocytosis in vitro. Mycopathologia. 2010 Mar;169(3):151-7. Epub 2009 Nov 8.

8 .

1 . Molecular characterization of pathogenic fungi in Brazil

2 . Medical Mycology Research Center, Chiba University / Professor Emeritus / 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)

7 . (1) Delgado CAN, Taguchi H, Mikami Y, Miyaji M, Villares MCB, Branchini ML: Human cryptococcosis: relationship of environmental and clinical strains of Cryptococcus neoformans var. neoformans from urban and rural areas. Mycopathol 159: 7-11, 2005.

(2) Morelira-Oliveira MS, Mikami Y, Miyaji M, Imai T, Schreiber AZ, Branchini ML: Diagnosis of candidemia by polymeras e chain reaction and blood culture: Prospective study in a high-risk population and identification of variables associated with development of candidemia. Eur J Clin Micorbiol Infect Dis 24: 721-726, 2005.

(3) Iida S, Imai T, Oguri T, Okuzumi K, Yamanaka A, Branchini MLM, Nishimura K, Mikami Y: Genetic diversity of the internal transcribed spacers (ITS) and 5.8S rRNA genes among the clinical isolates of Candida parapsilosis in Brazil and Japan. Jpn J Med Mycol 46: 133-137, 2005.

(4) Binelli CA, Moretti ML, Assis RS, Sauaia N, Menezes PR, Ribeiro E, Geiger DC, Mikami Y, Miyaji M, Oliveira MS, Barone AA, Levin AS : Investigation of the possible association between nosocomial candiduria and candidaemia. Clin Microbiol Infect 12: 538-543, 2006.

(5) Melo NR, Taguchi H, Culhari VVP, Kamei K, Mikami Y, Smith SN, Vilela MMS: Oral candidiasis of HIV infected children undergoing sequential HIV therapies. Med Mycol 47: 149-156, 2009.

(6) Delgado ACD, de Jesus Pedro R, Aoki FH, MD*, Resende MR, Trabasso P, Colombo AL, MD#,? Moreira de Oliveira MS,? Mikami Y, Moretti ML: Clinical and microbiological assessment of long-term diagnosed HIV1-infected patients and *Candida* oral colonization. Clin Microbiol Infect 15: 364-371, 2009.

(7) Kang Y, Tanaka H, Moretti MR, Mikami Y: New ITS genotype of *Cryptococcus gattii* isolated from an AIDS patient in Brazil. Microbiol Immunol 53: 112-116, 2009.

(8) Zhu J, Kang Y, Uno J, Taguchi H, Liu Y, Ohata M, Tanabe R, Mretti ML, Mikami Y: Comparison of genotypes between environmental and clinical isolates of *Cryptococcus neoformans* var. *grubii* based on microsatellite pattern. Mycopathol

169: 47-55, 2010.

8．Agreement for Academic Exchange Cooperation between Campinas University and Chiba University. New agreement was started from 2006.

1．Genetic analyses of Cryptococcus neoformans

2．Medical Mycology Research Center, Chiba University / Professor Emeritus / 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

6．Special coordination funds for Promoting Science and Technology from the Ministry of Education, Culture, Sports, Science and Technology, the Japanese Government, and National BioResource Project 8NBRP).

7．Hanafy A, Kaocharoen S, Jover-Botella A, Katsu M, Iiida S, Kogure T, Gonoi T, Meyer W, Mikami Y:Multilocus microsatellite typing for *Cryptococcus neoformans* var. *grubii.* Med Mycol 46: 685-696, 2009.

8．None

1．Studies on drug susceptibility profile and genotyping of pathogenic fungi from AIDS patients

2．Medical Mycology Research Center, Chiba University / Professor Emeritus / 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

6．Special coordination funds for Promoting Science and Technology from the Ministry of Education, Culture, Sports, Science and Technology, the Japanese Government.

7．(1) Kumar G, Hanafy AM, Katsu M, Mikami Y, Thangam M: Molecular analysis and susceptibility profiling of *Candida albicans* isolates from immunocompromised patients in South India. Mycopathol 161: 153-159, 2006.

(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. Mycoses, 2009, in press.

8．Foreigner examiner of PhD thesis

1．Molecular epidemiological studies on pathogenic fungi in China

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

3．China / Guiyang Medical College / Professor Wang He

4．From 2005-

5．Identification and classification of pathogenic fungi in University Hospital

6．National BioResource Project

7．(1) Kang Y, Takeda K, Yazawa K, Mikami Y: Phylogenetic studies of *Gordonia* species based on *gyrB* and *secA1* gene analyses. Mycopathol 167: 95-105, 2009.

（2）Takeda K, Kang Y, Yazawa K, Gonoi T, Mikami Y: Phylogenetic studies of *Nocardia* species based on gyrB gene analysis. J Med Microbiol 59: 165-171, 2009.

8．None

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

2．Medical Mycology Research Center, Chiba University / Professor Emeritus / 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.

6．National BioResource Project

7．(1)Zaki SM, Mikami Y, El-Din AA, Youseff YA: Keratinophilic fungi recovered from muddy soil in Cairo vicinities. Mycopathol 160: 2456-251, 2005.

(2)Hanafy A, Ito J, Iida S, Kang Y, Kogure T, Yazawa K, Takashi Y, Mikami Y: Majorityof Actinomadura clinical isolates from sputa or bronchoalveolor lavage fluid in Japan belongs to the cluster of *Actinomadura cremea* and *Actinomdadura nitritigenes*, and the description of *Actinomadura chibensis* sp. nov. Mycopathol 164: 281-287, 2006.

(3) Zaki SM, Ibrahim N, Aoyama K, Shetia YM, Abdel-Ghabt K, Mikami Y: Dermtophytes infections in Cairo, Egypt. Mycopathol, 167: 3314-3317, 2009.

8. Foreign researcher exchange program supported by Egyptian government

Institute of Media and Information Technology

1．PDE-based numerical image analysis

2．Institute of Media and Information Technology / Professor / Atsushi IMIYA

3．1) Germany / Institute of Mathematics and Computer Science, Universitaet des Saarlands / Professor Dr. Joachim Weickert

2) Kingdome of the Netherlands / Dept. of Biomedical Engineering, Techniches Universtaet Einthoven / Professor Dr. Ing Bart ter Haar Romeny

3) Canada / Computer Science Department, University of Western Ontario / Professor John Barron

4．1) 2000-

2) 2003-

3) 1998-

5．For the construction of temporal atrs of human being, design of the motion of normalized beating is a fundamental problem. In this research we are focusing on the detection nand computation of motion form beating heart form gated MRI image sequence using PDE-based image analysis technique.

6．None

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

8．None

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

2) Kingdom of Sweden / CBA, University of Uppsala / Professor Gunilla Borgefords

3) New Zealand / Dept. Computer Science, The University of Auckland / Professor Dr. Reinhard Klette

4) France / ESIEE / Professor Gilles Bertrand

4．1) 2005-

2) 2003-

3) 1997-

4) 2005-

5．In the project, we are focusing of the geometrical and topological treatment of voxels data in the higher-dimensional discrete space as a tool for topological analysis of MRI high-resolution brain imaging

6．None

7．In 2nd International Symposium on Visual Computing November 2006, Nevada, USA, we will organise Special Track: Discrete and Computational Geometry and their Applications in Visual Computing.

8．None

Center for Frontier Science

1．Carrier blocking nature at organic hetero interfaces

2．Center for Frontier Science / Assistant Professor / Yutaka Noguchi

3．Germany / Experimental Physics IV, Augsburg University/ Wolfgang Bruetting, Taiwan / National Tsing-Hua University / Shu-Jun Tang.

4．2008

5．This project had been done for two years (FY. 2008-2009) as an international collaboration work. The aim of this project was to understand the carrier blocking nature at organic hetero interfaces, which can be described as a combination of (a) energy barrier height, (b) mismatch in carrier mobility, and (c) interface charge density. We used the following techniques: photoelectron yield spectroscopy (PYS) and ultraviolet photoelectron spectroscopy (UPS) to determine (a), displacement current measurement (DCM) and impedance spectroscopy (IS) for (b) and (c). The DCM and PYS experiments were performed in Chiba University, but IS and UPS were done in Augsburg and Taiwan, respectively. To create international networks for mutual visits without any barrier through these activities was also the objective of this project.

6．Global-COE program of Chiba University (“Advanced School for Organic Electronics”)

7．

Paper

1) "Light- and ion-gauge-induced space charges in tris-(8-hydroxyquinolate) aluminum-based organic light-emitting diodes"
Yutaka Noguchi, Naoki Sato, Yukimasa Miyazaki, Hisao Ishii, Applied Physics Letters, *in press*.

2) "Higher resistance to hole injection and electric field distribution in organic light-emitting diodes with copper phthalocyanine interlayer"
Yutaka Noguchi, Naoki Sato, Yukimasa Miyazaki, Yasuo Nakayama, Hisao Ishii, Japanese Journal of Applied Physics, **49** (2010) 01AA01.

3) "Electronic Structures of Model Interfaces of an Organic Bistable Devices: AIDCN(2-amino-4,5-imidazoledicarbonitrile)-metal interfaces"
Yasuo Nakayama, Yen-Hao Huang, Ching-Hsuan Wei, Shinichi Machida, Takuya Kubo, Tun-Wen Pi, Shu-Jung Tang, Yutaka Noguchi, Hisao Ishii *in preparation.*

Conference

1) "Electronic Structures of Model Interfaces of an Organic Bistable Devices: AIDCN(2-amino-4,5-imidazoledicarbonitrile)-metal interfaces"
Yasuo Nakayama, Yen-Hao Huang, Ching-Hsuan Wei, Shinichi Machida, Takuya Kubo, Tun-Wen Pi, Shu-Jung Tang, Yutaka Noguchi, Hisao Ishii

The 5th edition of the international workshop on "Electronic Structure
and Processes at Molecular-Based Interfaces" (ESPMI-V); Chiba, Jan./2010

2) "Substrate metal-dependent electronic structures of 2-amino-4,5-imidazoledicarbonitride (AIDCN) adlayers"
Yasuo Nakayama, Yen-Hao Huang, Ching-Hsuan Wei, Takuya Kubo, Shin-ichi Machida, Tun-Wen Pi, Shu-Jung Tang, Yutaka Noguchi, Hisao Ishii
29th Annual Meeting of The Surface Science Society of Japan, Tokyo,Oct./2009

3) "Photoemission study of model interfaces of an organic bistable device:
2-amino-4,5-imidazoldicarbonitride/metal interfaces"
Yasuo Nakayama, Yen-Hao Huang, Ching-Hsuan Wei, Shinichi Machida, Takuya
Kubo, Tun-Wen Pi, Shu-Jung Tang, Yutaka Nogichi, Hisao Ishii
11th International Conference on Electronic Spectroscopy and Structure
(ICESS11); Nara, Oct./2009

4) "Electronic structures of the model interfaces between an organic bistable device material AIDCN and electrodes" Yasuo Nakayama, Shin-ichi Machida Takuya Kubo, Yen-Hao Huang, Shu-Jung Tang, Yutaka Noguchi, Hisao Ishii
The 70th Autumn Meeting of The Japan Society of Applied Physics, Toyama, Japan.

5)“Carrier Accumulation Processes at Organic Hetero Interfaces: Effects of Interface charge”
Yukimasa Miyazaki, Yutaka Noguchi, Wolfgang Bruetting, Hisao Ishii
The 57th Spring Meeting of The Japan Society of Applied Physics and Related Societies, Tokai Univ.,Mar./2010

８．None

１．Gamma-ray Burst jet

２．Center for Frontier Science /Assistant Prof./Akira MIZUTA

３．Spain/Valencia Univ./M. A. Aloy

４．2005

５．Collapsars are fast-spinning, massive stars, whose core collapse liberates an energy that can be channeled in the form of ultrarelativistic jets. We study the dynamics of ultrarelativistic jets produced in collapsars. Also we extrapolate our results to infer the angular energy distribution of the produced outflows in the afterglow phase.
The angular energy distribution of the jets from light progenitor models is steeper than that of the jets injected in more massive progenitor stars. This trend is also imprinted in the angular distribution of isotropic equivalent energy.

６．KAKENHI（Grant-in-Aid for Scientific Research on Priority Areas,Grant-in-Aid for Scientific Research B, Grant-in-Aid for Scientific Research C）

７．"Angular Energy Distribution of Collapsar-Jets"
Akira MIZUTA, & Miguel A. Aloy, The Astrophysical Journal, Volume 699, Issue 2, pp. 1261-1273 (2009)

８．None

Marine Biosystems Research Center

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

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

３．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

7．Togashi, T., M. Nagisa, T. Miyazaki, J. Yoshimura, K. Tainaka, J.L. Bartelt and P.A. Cox. 2008.
Effects of gamete behavior and density on fertilization success in marine green algae: insights from three-dimensional numerical simulations. Aquatic Ecology **42:** 355-362.
Togashi, T., Y. Sakisaka, T. Miyazaki, M. Nagisa, N. Nakagiri, J. Yoshimura, K. Tainaka, P.A. Cox and J.L. Bartelt. 2009. Evolution of gamete size in primitive taxa without mating types. Population Ecology **51:** 83-88. 8．We have received the Ecological Research Award 2005 and organized an international symposium at the International Botanical Congress 2005 in Vienna, Austria.

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

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 ~

5．Wavelet Transform and ifs Application to Color Medical Image Processing.

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

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 / Institute Plant Biotechnology for Developing Countries (IPBO), 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 neurolathyrism. 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

7．1) Kusama-Eguchi, K., Y. Yamazaki, T. Ueda, A. Suda, Y. Hirayama, F. Ikegami, K. Watanabe, M. May, F. Lambein and T. Kusama: Hind-limb paraparesis in a rat model for neurolathyrism associated with apoptosis and an impaired vascular endothelial growth factor system in the spinal cord. *J. Comp. Neurol.* **518**, 928-942 (2010).

2) Lambein, F., Y.-H.Kuo, K. Kusama-Eguchi, F. Ikegami: 3-*N*-oxalyl-L-2,3-diaminopropanoic acid, a multifunctional plant metabolite of toxic reputation. *ARKIVOC* **9**, 45-52 (2007).

8．None

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

7．1) Tachakittirungrod, S., F. Ikegami and S. Okonogi: Antioxidant active principles isolated from *Psidium guajava* grown in Thailand. *Scientia Pharmaceutica* **75**, 179-193 (2007).

2) Ikegami, F.: Active constituents in Chinese, Ayurvedic and Thai herbal medicines: Applicable separation procedures. *Thai J. Health Res.* **19**, 1-12 (2005).

8．None

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

2．Faculty of Horticulture / Professor emeritus / 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, relationship between fruit set and growth, and plant hormones, and the factor that relates to the penetration of plant hormones from the fruit surface.

6．Michigan State University / Academic Expense

7．①N-Substituted phthalimide-induced of parthenocarpy in sour cherry (*Prunus cerasus* L. 'Montm-orency') enhanced by auxin. 1994. 24th Inter. Hort. Congress, Abstracts 269.

②Gibberellins in immature seed of *Prunus cerasus*: Structure determination and synthesis of gibberellins, GA_{95} (1,2-didehydro-GA_{20}. 1996. Phytochemistry, 42(4):913-920.

③GA_{95} is a genuine precursor of GA_3 in immature seed of *Prunus cerasus* L.. 1998. 16th Inter. Conference on Plant Growth Substances, Abstracts 146.

④Induction of fruit set and growth of parthenocarpic 'Hayward' kiwifruit with plant growth regulators. 1997. J. Japan. Soc. Hort. Sci. 66(3.4):467-473.

⑤Endogenous gibberellin-induced parthenocarpy in grape berries. 2000. Acta Hort. 514:69-74.

⑥Endogenous gibberellins in immature seeds of *Prunus persica* L.: identification of GA_{118}, GA_{119}, GA_{120}, GA_{121}, GA_{122} and GA_{126}. 2001. Phytochemistry 57:749-758.

Effects of the combination of gibberellic acid and ammonium nitrate on the growth and quality of seedless berries in

'Delaware' grape. 2001. J. Japan. Soc. Hort. Sci. 72(5):366-371.

⑧Effect of gibberellins on induction of parthenocarpic berry growth of three grape cultivars and their endogenous gibberellins. 2001. 52nd ASEV Annual Meeting, Technical Abstracts, 81.

⑨Effects of gibberellin A_3 and ammonium sulfate of growth and quality of seedless Delaware grapes. 2003. J. ASEV Jpn. 14(2):58-63.

⑩Induction of parthenocarpic fruit growth with endogenous gibberellins of Loquat. 2004. Acta Hort. 653:67-70.

⑪Production of seedless loquat fruits. 2004. Regulation of Plant Growth and Development. 39(1):106-113.

⑫Effects of grape berry development stages on ammonium nitrate-enhanced penetration of gibberellin A_3. 2004. 101st Abstracts ASHS Annual Conference, HortScience, 39(4):793.

⑬Effects of Applications of exogenous gibberellins, forchlorfenuron, streptomycin and endogenous gibberellin-like Substances on induction of seedless Berries in Koshu grapes. 2005. J. ASEV Jpn. 16(2): 68-79.

⑭Induction of seedlessness in Koshu, Concord and Niagara grapes. 2006. J. ASEV Jpn. 17(1): 14-20.

⑮Effect of ethychlozate in combination with ammonium nitrate on fruit thinning in 'Takabayashi-wase' Satsuma mandarin (*Citrus unshu* Marc.). 2006. 27th International Horticultural Congress, Abstracts: 310.

⑯Effect of application of gibberellins in combination with forchlorfenuron (CPPU) on induction of seedless fruit set and growth in triploid loquat. 2006. Acta Hort. 727: 263-267.

8 . None

1 . Physiological effects of nature therapy

2 . Center for Environment, Health and Field Sciences/ Professor/ Yoshifumi Miyazaki

3 . Korea/ Chungnam National University/ Joon Woo Lee (Professor)

4 . From 2009

5 . The purpose of this study was conducted to clarify the physiological effect of nature therapy. It is widely believed that coming into contact with forest environments is somehow beneficial to human comfort. The subjects are male university students in their twenties. For the clarify the physiological effect of nature therapy, we measure heart rate variability (HRV), heart rate, blood pressure and saliva cortisol concentration in this study.

6 .Contract research（7212000443）

7 .1) Subjective comfort enhancing effects of University campus green spaces—classifying effects by personality. K.T., Park, Lee, M.S., Lee, J., Park, B.J., Ku, J.H., Lee, J.W., Oh, K.O., An, K.W., Miyazaki, Y. Proceeding of the 3th meeting of Physiological Anthropology for young researchers, 1. 2009.

2) Physiological Relaxation Produced by Horticultural Activity. M.S., Lee, Park, K.T., Lee, J., Park, B.J., Ku, J.H., Lee, J.W., Oh, K.O., An, K.W., Miyazaki, Y. Proceeding of the 3th meeting of Physiological Anthropology for young researchers, 2. 2009.

8 .None