Hybrid Twinning Program

-Appendix-

Shibaura Institute of Technology

2016/2017

Fields and Supervisors to receive students for the Hybrid Twinning Program

Shibaura Institute of Technology

2016/2017

Contents －

Electric and Electronic Engineering

Information Science and Engineering

Applied Chemistry

Bio-Science and Engineering

Mechanical Engineering

Materials Science and Engineering

Architecture

Electric and Electronic Engineering

-Electric and Electronic Engineering-

AKATSU, Kan

Field of Interest:	Power Electronics, Energy conversion, Electric Machines, Advanced Control
Title of Courses:	Advanced Research Program on Systems Control Engineering Electric Machinery and Applications
Lecture Subject:	Advanced PM machine, structure and control
Topics for Thesis:	✓ PM machine design for Electric Vehicle ✓ High efficiency motor drive ✓ High frequency Converter / Inverter ✓ Wireless Power Transfer 13.5MHz 10kW ✓ In-Wheel motor for EVs ✓ SiC power module ✓ Next generation rare earth free motors - e.t.c

Publications and International Conference Papers:

Transactions (Shown only English papers in FY2015, 2014):

[1] KIEN TRUNG NGUYEN and Kan Akatsu, "Analysis and PCB design of a class D inverter for wireless power transfer systems operating at 13.56 MHz", IEEJ Journal of Industry Applications, Vol. 4, No. 6, 2015

[2] Takashi Kato, Hiroki Hijikata, Masanao Minowa, Kan Akatsu and Robert D. Lorenz, "Design Methodology for Variable Leakage Flux IPM for Automobile Traction Drives", *IEEE Trans. on Industry Applications*

[3] Noriya Nakao and Kan Akatsu, "Torque Ripple Control for Synchronous Motors Using Instantaneous Torque Estimation", IEEE Industry Applications Magazine, Vol. 20, No.6, pp.33-44, 2014

[4] Takashi Kato, Takashi Fukushige, Kan Akatsu, and Robert D. Lorenz, "Variable Characteristic Permanent Magnet Motor for Automobile Application," SAE Technical Paper 2014-01-1869, 2014, doi:10.4271/2014-01-1869.

[5] Natee Limsuwan, Takashi Kato, Kan Akatsu, and Robert D. Lorenz, "Design and Evaluation of a Variable-Flux Flux-Intensifying Interior Permanent M agnet Machine," *Industry Applications, IEEE Trans. on*, vol. 50, No.2, March/April 2014, pp. 1015-1024, 2014.

[6] Takashi Kato, Natee Limsuwan, Chen Yen Yu, Kan Akatsu and Robert D. Lorenz, "Rare Earth Reduction Using A Novel Variable Magnetomotive Force, Flux Intensified IPM Machine," *Industry Applications, IEEE Trans. on*, vol.50, No.3, MAY/JUNE2014, pp. 1748-1756, 2014.

Part of International Conference papers in 2014

1. Noriya Nakao and Kan Akatsu, "Vector Control for Switched Reluctance Motor Drives Using an Improved Current Controller", ECCE (IEEE Energy Conversion Congress & Expo) 2014, September 14-18, 2014, Pittsburgh, PA, USA
2. Chen-Yen Yu, Takashi Fukushige, Apoorva Athavale, Brent Gagas, Kan Akatsu, David Reigosa, Robert D Lorenz, "Zero/Low Speed Magnet Magnetization State Estimation using High Frequency Injection for a Fractional Slot Variable

Flux-intensifying Interior Permanent Magnet Synchronous Machine", ECCE (IEEE Energy Conversion Congress & Expo) 2014, September 14-18, 2014, Pittsburgh, PA, USA

3. Shunsuke Amano and Kan Akatsu, "Study on High Frequency Inverter With 100kHz Current Feedback Control by Using FPGA", The 17th International Conference on Electrical Machines and Systems (ICEMS 2014), LS5C4, Oct. 24th 2014, Hangzhou, China
4. Takahiro Sakaue and Kan Akatsu, "Stator Iron loss Measurement Method in Permanent Magnet Synchronous Motor to Remove the Mechanical Loss Effect", The 17th International Conference on Electrical Machines and Systems (ICEMS 2014), LSA4, Oct. 24th 2014, Hangzhou, China
5. Takashi Kato, Hiroki Hijikata, Masanao Minowa, Kan Akatsu and Robert D. Lorenz, "Design Methodology for Variable Leakage Flux IPM for Automobile Traction Drives", IEEE Energy Conversion Congress and Exposition 2014 (ECCE), Sept. 15-19, 2014, Pittsburg, USA
6. Noriya Nakao and Kan Akatsu, "Vector Control Techniques Specialized for Switched Reluctance Motor Drives", 2014 International Conference on Electric Machines (ICEM), Sept. 2-5, 2014, Berlin, Germany
7. Hiroyuki Kaimori, Noriya Nakao, Takahiro Sakaue and Kan Akatsu, "Behavior Modeling of Permanent Magnet Synchronous Motors Using Flux Linkages for Coupling with Circuit Simulation", 2014 International Conference on Electric Machines (ICEM), Sept. 2-5, 2014, Berlin, Germany
8. Hiroki Hijikata, Kan Akatsu, Yoshihiro Miyama, Hideaki Arita and Akihiro Daikoku, "MATRIX Motor with Individual Winding Current Control Capability for Variable Parameters and Iron Loss Suppression", 2014 International Conference on Electric Machines (ICEM), Sept. 2-5, 2014, Berlin, Germany
9. Takashi Kato, Takashi Fukushige, Kan Akatsu, Robert D. Lorenz, "Variable Characteristics Permanent Magnet Motor for Automobile Application", 2014 SAE World Congress, April 8-10, 2014, Detroit, MI USA
10. Ryota Matsui, Noriya Nakao and Kan Akatsu, "Torque/Current Ratio Improvement and Vibration Reduction of Switched Reluctance Motors Using Multi-Stage Structure", IPEC 2014 (International Power Electronics Conference) , May 18-21, 2014, Hiroshima, Japan
11. Kohei Aiso, Noriya Nakao and Kan Akatsu, "A Single Phase SRM Driven by Commercial AC Power Supply", IPEC 2014 (International Power Electronics Conference) , May 18-21, 2014, Hiroshima, Japan
12. Ryo Tanabe and Kan Akatsu, "Advanced Torque and Current Control Techniques for PMSMs with a Real-Time Simulator Installed Behavior motor Model", IPEC 2014 (International Power Electronics Conference) , May 18-21, 2014, Hiroshima, Japan
13. Hiroki Hijikata, Kan Akatsu, Yoshihiro Miyama, Hideaki Arita and Akihiro Daikoku, "Suppression Control Method for Iron Loss of MATRIX Motor under Flux Weakening Utilizing Individual Winding Current Control", IPEC 2014 (International Power Electronics Conference) , May 18-21, 2014, Hiroshima, Japan
14. Masanao Minowa, Hiroki Hijikata, Kan Akatsu, Yoshihiro Miyama, Hideaki Arita and Akihiro Daikoku, "Suppression Control Method for Iron Loss of MATRIX Motor under Flux Weakening Utilizing Individual Winding Current Control", IPEC 2014 (International Power Electronics Conference) , May 18-21, 2014, Hiroshima, Japan
15. Hiroki Hijikata and Kan Akatsu, "Compound Magnetomotive Force Motor with Wide Range Operation Achieved through Winding Reconfiguration Method", EVTeC 2014 (International Electric Vehicle Technology Conference) , May 22-24, 2014,

Yokohama, Japan

16. Noriya Nakao and Kan Akatsu, “High Performance Vector Control of Switched reluctance Motors”, EVTeC 2014 (International Electric Vehicle Technology Conference) , May 22-24, 2014, Yokohama, Japan

Other Features:

Recent global warming is a critical issue in the world. It is required to reduce CO_2 by developing higher efficiency power electronics equipments.

My laboratory especially focuses on the motor and the inverter called power electronics in the various fields such as home appliance, railway system, industry equipments and electric / hybrid electric vehicles. The technique of the power electronics must help you in your carrier because almost every energy conversion must use the power electronics technique; machine design, converter / inverter design and control design.

We currently have many original motors including rare-earth less motors which are driven by original made inverters and controllers. Especially high frequency is a key issue in this field since the wide band gap power devices have been developed. You can design a motor and an inverter as you like by using Finite Element Analysis, circuit simulator, and some software.

Now I have 26 students, 6 Ph.D candidates, 15 master course students and 5 bachelors. 2 Ph.D candidates come from Vetnum, 1 Ph.D candidate from Korea, and 1 bachelor student from Brazil. We usually submit our papers to the international conferences sponsored by IEEE, IEEJ and so on. All master course students submit at least one paper to the international conference. Our field is in the IEEE IAS, IEEE PE and IEEJ Japan and sometimes we go to the EPE conference.

Owing to a lot of student efforts, I have 10 joint researches with companies, 3 national research projects and some individual projects. I hope you will get a lot of experiences and techniques in my laboratory.

-Electric and Electronic Engineering-

ANDO, Yoshinobu

Field of Interest:	Robotics and Mechatronics
Title of Courses:	Advanced Research Program on Systems Control Engineering Robotics and Mechatronics
Lecture Subject:	Autonomous Mobile Robot System
Topics for Thesis:	Robot Navigation, Sensor system, Robotic simulation system, Educational material of robot, Position estimation of robot

Publications and International Conference Papers:

1. Shin'ya Morijiri; Yoshinobu Ando; Takashi Yoshimi; Makoto Mizukawa, "Improvement of Introductory Engineering Education of Mechatronics Based on Outcomes Evaluation by Defining Rubric - Continuous PDCA Cycle Achievement with Reducing Teaching Assistants' WorkLoad -", Journal of Robotics and Mechatronics, 20111101.
2. Hajime Fujii; Yohinobu Ando; Takashi Yoshimi; Makoto Mizukawa, "Shape Recognition of Metallic Landmark and its Application to Self-Position Estimation for Mobile Robot", Journal of Robotics and Mechatronics, Vol.22, No. 6, pp.718-725, Fuji Technology Press, 20101101.
3. Ken Ukai; Yoshinobu Ando; Makoto Mizukawa, "Robot Technology Ontology Targeting Robot Technology Service in Kukanchi -Interactive Human-Space Design and Intelligence-", Journal of Robotics and Mechatronics, 20090601.
4. Anna Ohira; Yoshinobu Ando; Makoto Mizukawa; Trung Ngo; Takashi Yoshimi, "User-Oriented RT Service Proposal System in Kukanchi", Proc. of the 17th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES2013), 20130901.
5. Naofumi Yoshida; Takashi Yoshimi; Makoto Mizukawa; Yoshinobu Ando, "A Study of Egg Breaking Motion by Single Robot Arm", Proc. of the 32nd Chinese Control Conference (CCC2013), 20130726.
6. Yoshio Maeda; Takashi Yoshimi; Yoshinobu Ando; Makoto Mizukawa, "Task Management of Object Delivery Service in Kukanchi", Proc. of the 2012 IEEE/SICE International Symposium on System Integration (SII2012), 20121216.
7. Syohei Shibata; Takashi Yoshimi; Makoto Mizukawa; Yoshinobu Ando, "A Trajectory generation of cloth object folding motion toward realization of

housekeeping robot", Proc. of the 9th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI2012), 20121126.

8. Motoki Hirayama; Takaaki Kanazawa; Masao Kawanami; Syohei Shimoyama; Takashi Yoshimi; Makoto Mizukawa; Yoshinobu Ando; Masakazu Fujii; Hiroki Murakami, "Workpiece Position and Posture Measurement System by Using RFID Tag for Finishing Robot System", Proc. of the 9th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI2012), 20121126.
9. Motoki Hirayama; Takashi Yoshimi; Makoto Mizukawa; Yoshibobu Ando, "A Study of Japanese Tea Caddy Lid Opening by Robot Arm", Proc. of the SICE Annual Conference, 20120820.
10. Takahiro Fujita; Yusuke Numata; Takashi Yoshimi; Makoto Mizukawa; Yoshinobu Ando, "A Study of Intelligent Drawer with RFID Tag Information Reading System for Intelligent Space", Proc. of the 2012 IEEE International Conference on Mechatronics and Automation (ICMA2012), 20120805.
11. Takashi Yoshimi; Naoyuki Iwata; Makoto Mizukawa; Yoshinobu Ando, "Picking up Operation of Thin Objects by Robot Arm with Two-Fingered Parallel Soft Gripper", Proc. of the 2012 IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO2012), 20120521.
12. Yuhki Ishiguro; Yoshio Maeda; Ngo Trung; Takeshi Sakamoto; Makoto Mizukawa; Takashi Yoshimi; Yoshinobu Ando, "Architecture of Kukanchi Middleware: The Second Report", Proc. of the 2011 IEEE/SICE International Symposium on System Integration (SII2011), 20111220.
13. Takashi Nakajima; Takashi Yoshimi; Makoto Mizukawa; Yoshinobu Ando, "A Study of Book Arrangement Task by Robot Arm - Book Insert Operation to Bookshelf -", Proc. of the 2011 IEEE/SICE International Symposium on System Integration (SII2011), 20111220.
14. Hajime Fujii; Syouhei Shimoyama; Takashi Yoshimi; Makoto Mizukawa; Yoshinobu Ando; Masakazu Fujii; Hiroki Murakami, "Development of Environment and Task Motion Framework for Finishing Robot System - Arrangement and Usage of Information in the Environment", Proc. of the 2011 IEEE/SICE International Symposium on System Integration (SII2011), 20111220.

Other Features:

1. Self-Position Estimation for Mobile Robot
2. Engineering Education of Mechatronics

3. Object Searching system with Robotic Technology

-Electric and Electronic Engineering-

CHEN, Xinkai

Field of Interest:	Control Systems Engineering, Robotics, Mechatronics
Title of Courses:	Advanced Research Program on Systems Control Engineering
	Research on Control Systems
Lecture Subject:	Control Systems Engineering
Topics for Thesis:	Adaptive Control for Piezo-Actuated Nano-Stage Advanced Control for Robot Arm Driven by Artificial Muscles Robust Control for Magnetostrictive Actuator High Precision Control for XY-Table Intelligent Visual Feedback Control for Helicopter Robust Control Theory for Systems with Hysteresis Path Planning for Mobile Robots

Publications and International Conference Papers (Recent Years):

1. X. Chen, Y. Feng and C.-Y. Su, “Adaptive control for continuous-time systems with actuator and sensor hysteresis," *Automatica*, 2016 (to appear).
2. T. V. Minh, X. Chen, “Precision tracking control for piezoelectric actuator using pseudo discrete-time Bouc-Wen model,” *International Journal of Advanced Mechatronic Systems*, 2016 (to appear).
3. X. Zhang, C.-Y. Su and X. Chen, “Robust adaptive neural control for a class of time-varying delay systems with hysteresis input,” *Asian Journal of Control*, 2015 (to appear).
4. X. Chen, “A nonlinear exact disturbance observer inspired by sliding mode techniques,” *Mathematical Problems in Engineering*, vol. 2015, Article ID 651601, 2015.
5. Y. Zhang, T. Chai, J. Sun, X. Chen, and H. Wang, “A novel estimation algorithm based on data and low-order models for virtual unmodeled dynamics,” *IEEE Transactions on Neural networks and Learning Systems*, vol. 25, no. 12, pp. 2156-2166, 2014.
6. Z. Li, C.-Y. Su and X. Chen, “Modeling and inverse adaptive control of asymmetric hysteresis systems with applications to magnetostrictive actuator,” *Control Engineering Practice*, vol. 33, pp. 148-160, 2014.
7. Z. Li, C.-Y. Su, X. Chen, and S. Liu, “Prescribed adaptive control of unknown hysteresis in smart material actuated systems,” *Production & Manufacturing Research*, vol. 2, no. 1, pp. 712–724, 2014.
8. Y.-H. Liu, Y. Feng and X. Chen, "Robust adaptive dynamic surface control for a class of nonlinear dynamical systems with unknown hysteresis," *Abstract and Applied Analysis*, Article ID 640249, 2014.
9. Y. Zhang, T. Chai, H. Wang, X. Chen, and C.-Y. Su, "An improved estimation method for unmodeled dynamics based on ANFIS and its application to controller design," *IEEE Transactions on Fuzzy Systems*, vol. 21, no. 6, 989-1005, 2013.
10. X. Chen, “High precision adaptive control for piezo-actuated stage,” *International Journal of Advanced Mechatronic Systems*, Vol. 4, No. 3/4, pp.197 – 204, 2012.
11. J. Ding, T. Chai, H. Wang, and X. Chen, “Knowledge-based plant-wide dynamic operation of mineral processing under uncertainty,” *IEEE Transactions on Industrial Informatics*, vol. 8, no. 4, pp. 849 – 859, 2012.
12. X. Chen and H. Kano, “Motion recovery by using stereo perspective observation,” *IEEE Transactions on Automatic Control*, vol. 56, no. 11, pp. 2660-2665, 2011.

13. X. Chen and T. Ozaki, “Adaptive control for plants in the presence of actuator and sensor uncertain hysteresis,” *IEEE Transactions on Automatic Control*, vo. 56, no. 1, pp. 171-177, 2011.
14. Y. Zhang, T. Chai and X. Chen, "A new control scheme for a class of nonaffine nonlinear input output discrete-time systems," *The 54th IEEE Conference on Decision and Control* (CDC 2015) (Kobe, Japan), December 15-18, 2015.
15. A. Yonenaga and X. Chen, "Robust control for magnetostrictive actuators," *The 47th ISCIE International Symposium on Stochastic Systems Theory and Its Applications* (ISCIE SSS 2015) (Honolulu, Hawaii), December 5-8, 2015.
16. N. M. Linh, T. V. Minh and X. Chen, “Precise Tracking Control for Piezo-actuated Stage Using Inverse Compensation and Model Predictive Control,” *2015 International Conference on Advanced Mechatronic Systems* (ICAMECHS 2015) (Beijing, China), August 21-25, 2015.
17. X. Zhang, S. Wen, D. and X. Chen, "SVM based adaptive output following control for a networked cooling process,” *IEEE Int. Conf. on Mechatronics and Automation* (Beijing, China), August 2-5, 2015.
18. T. V. Minh, N. M. Linh and X. Chen, “Tracking control of piezoelectric actuator using adaptive model,” *International Conference on Real-time Computing and Robotics* (RCAR 2015 (Changsha, China), June 25-27, 2015.
19. X. Chen, S. Wen, D. Wang and C.-Y. Su, “Adaptive control for micro/nano positioning system driven by piezo electric actuator,” *The 24th IEEE International Symposium on Industrial Electronics (ISIE 2015)* (Búzios, Rio De Janeiro, Brazil), June 3-5, 2015.
20. T. V. Minh, X. Chen, “Adaptive control using discrete-time Bouc-Wen model for piezoelectric actuator,” *IEEE International Conference on Robotics and Biomimetics* (ROBIO 2014) (Bali, Indonesia), December 5-10, 2014.
21. X. Chen, “Adaptive control for ionic polymer-metal composite actuator based on continuous-time approach,” *19th IFAC World Congress (IFAC 2014)* (Cape Town, South Africa), August 24-29, 2014.
22. X. Chen, "A nonlinear exact disturbance observer inspired by sliding mode techniques," *The 2014 International Conference on Advanced Mechatronic Systems* (ICAMechS 2014) (Kumamoto, Japan), August 10-12, 2014.
23. X. Chen, "Robust control for ionic polymer-metal composite," *IEEE Int. Conf. on Mechatronics and Automation* (Tianjin, China), August 2-5, 2014.
24. X. Chen, and C.-Y. Su, “Control design for ionic polymer-metal composite based actuators,” *2014 IEEE International Conference on Information and Automation (ICIA 2014)* in conjunction with *2014 IEEE International Conference on Automation and Logistics (ICAL 2014)* (Hailaer, China), July 26-28, 2014.
25. X. Chen and H. Kano, "Modelling and control for ionic polymer-metal composite actuators," *2014 World Congress on Intelligent Control and Automation* (WCICA 2014) (Shenyang, China), June 29-July 4, 2014.

Other Features: The research in this laboratory covers a wide-range of topics related to systems and controls, intelligent systems, robotics and mechatronics. The overall goal of our research is to provide a systematic methodology to design the controllers that will cause the systems to behave in the desired manner, or to give a systematic solution/analysis for the considered systems.

Dr. Chen has published many papers at the prestigious journals in Systems and Control (such as IEEE Transactions on Automatic Control, Automatica, IEEE Transactions on Industrial Electronics, etc). He has been served as Program Chair, Program Co-Chair, and Program Committee Members for many well-known international conferences, and editors for several leading journals in Systems and Control (such as IEEE Transactions on Automatic Control, IEEE Transactions on Control Systems Technology, IEEE/ASME Transactions on Mechatronics, European Journal of Control, etc.).

-Electric and Electronic Engineering-

FUJITA, Goro

Field of Interest:	Power System Planning, Control, Analysis, Modeling
Title of Courses:	Advanced Research Program on Environmental Energy Engineering
	Electric Power System Engineering
Lecture Subject:	Advanced Power System
Topics for Thesis:	Power Quality Control and Evaluation, building circuit

Publications and International Conference Papers:

[1] Danvu Nguyen, Goro Fujita, 'Stability Enhancement of DFIG Wind Turbines with New Space-Vector based Nonlinear Control', IEEJ Transactions on Power and Energy, Vol. 134, No. 9. pp.826-833,Sep 2014

[2] Mohd Nabil Bin Muhtazaruddin; Jasrul Jamani Bin Jamian; Goro Fujita, 'Determination of Optimal Output Power and Location for multiple Distributed Generation Sources Simultaneously by Using Artificial Bee Colony', IEEJ Transactions on Electrical and Electronic Engineering , Vol. 9, No. 4, pp.351-359,(2014-7)

[3] M.N. Muhtazaruddin; J.J. Jamian, G. Fujita; M.A. Baharudin; M.W. Wazir;H. Mokhlis, 'Distribution Network Loss Minimization via Simultaneous Distributed Generation Coordination with Network Reconfiguration', Arabian Journal for Science and Engineering, Vol. 39, No.6, pp. 4923-4933,(2014-6)

[4] Nguyen Tuyen Duc, Goro Fujita, T.Funabashi, M.Nomura, 'Estimated-Impedance Islanding Detection Method for Grids with High Motor Penetration', IEEJ Transactions on Electrical and Electronic Engineering, Vol.8, No.5, pp.446-pp.455,(2013-9)

Other Features:

(1) The laboratory consists of 20 students including 1 visiting researcher, 1 post doctor, 3 D.C. students, 5 M.C. students, forming Power Storage group, Power Quality group, Dispersed Power Source group, etc. 6 students have graduated from D.C., and about 20 graduated from M.C. 9 are foreign students, these are from Vietnam, Malaysia, Indonesia, and Burundi.

(2) Website : http://www.sic.shibaura-it.ac.jp/%7Egfujita/

(3) e-mail : gfujita@sic.shibaura-it.ac.jp

-Electric and Electronic Engineering-

HASEGAWA, Tadahiro

Field of Interest:	Micro Total Analysis Systems, Micro Mechatronics
Title of Courses:	Advanced Research Program on Systems Control Engineering Micro Mechatronics
Lecture Subject:	Micro Mechatronics
Topics for Thesis:	Micro fluidic chip, Micro chemical chip, Portable healthcare device Micro fabrication

Publications and International Conference Papers:

[1] Tatsuya YAMAZAKI, Shinichi YUTA, Tadahiro HASEGAWA,"Verification of View-based Self-localization of Autonomous Outdoor Mobile Robots", The 34th Chinese Control Conference and SICE Annual Conference 2015, WeC04-3, pp.1140-1143, 2015

[2] Wan Azizul, Shinnosuke Imai and Tadahiro Hasegawa, "Fall detection using smart phone and ubiquitous pulse wave sensor", 2014 10th International Conference on Control, Automation and Systems (ICCAS2014), 140191, pp.22-25 Oct. 2014

[3] Tadahiro HASEGAWA, Fumiyuki Omatsu, and Koji Ikuta, "Pneumatic micro dispenser system for ubiquitous micro chemical devices", Journal of Robotics and Mechatronics, Vol.25, No.4, pp.619-622 (2013)

[4] Truong Phi Nguyen, Nobukazu Kawakami, Tadahiro Hasegawa, Hiroyuki Nishikawa, "Development of Proton Beam Direct Writing Technique For Wide Range and Complicated Microstructures", 39th International Conference on Micro and Nano Engineering (MNE2013), (2013)

Other Features:

The lab researches and develops micro machines for medical use (μ-TAS : Micro Total Analysis Systems) using robotics and micro fabrication technologies. The lab focuses especially on healthcare devices such as a portable blood test kit enabling the checking of personal health anywhere, anytime. Research such as this will certainly contribute to the development of medical and bio areas from the engineering side.

-Electric and Electronic Engineering-

ISHIKAWA, Hiroyasu

Field of Interest:	Crystal growth of semiconductors and their new optical and electronic devices
Title of Courses:	Advanced Research Program on Functional Devices Technology Seminar in Semiconductor Physics and Devices
Lecture Subject:	Epitaxial Semiconductor Materials
Topics for Thesis:	Preparation of oxide semiconductors and photovoltaic solar cells, All-carbon photovoltaic solar cells, GaN-based power electronic devices

Publications and International Conference Papers:

1. H. Ishikawa, K. Shimanaka, “Reduction of threading dislocations in GaN on in-situ meltback-etched Si substrates”, J. Crystal Growth, Vol. 315 (2011), pp.196-199.
2. H. Ishikawa, K. Shimanaka, M. Azfar bin M. Amir, Y. Hara, M. Nakanishi, “Improved MOCVD growth of GaN on Si-on-porous-silicon substrates”, Phys. Stat. Sol. (c), Vol. 7 (2010), pp. 2049-2051.
3. H. Ishikawa, K. Shimanaka, F. Tokura, Y. Hayashi, Y. Hara, M. Nakanishi, “MOCVD growth of GaN on porous silicon substrates”, J. Crystal Growth, Vol. 310 (2008), pp. 4900-4903.
4. H. Ishikawa, T. Egawa, T. Jimbo, “GaInN light emitting diodes with AlInN/GaN distributed Bragg reflector on Si”, Phys. Stat. Sol. (c), Vol. 5, No. 6 (2008), pp. 2086-2088.
5. S. Nakazawa, T. Ueda, K. Inoue, T. Tanaka, H. Ishikawa, T. Egawa, “Recessed-Gate AlGaN/GaN HFETs With Lattice-Matched InAlGaN Quaternary Alloy Capping Layers”, IEEE. Trans. Electron. Dev. Vol. 52, No. 10 (2005), pp. 2124-2128.
6. M. Miyoshi, A. Imanishi, T. Egawa, H. Ishikawa, K. Asai, T. Shibata, O. Oda, “DC Characteristics in High-Quality AlGaN/AlN/ High-Electron-Mobility Transistors Grown on AlN/Sapphire Templates”, Jpn. J. Appl. Phys. Vol. 44, No. 9A (2005), pp. 6490-6493.
7. M. Miyoshi, T. Egawa, H. Ishikawa, “Structural characterization of strained AlGaN layers in different Al content AlGaN/GaN heterostructures and its effect on two-dimensional electron transport properties”, J. Vac. Sci. Technol. B, Vol. 23, No. 4 (2005), pp. 1527-1531.
8. T. Egawa, B. Zhang, H. Ishikawa, “High Performance of InGaN LEDs on (111) Silicon Substrates Grown by MOCVD”, IEEE. Electron. Dev. Lett., Vol. 26, No. 3 (2005), pp. 169-171.
11. H. Ishikawa, B. Zhang, K. Asano, T. Egawa, T. Jimbo, “Characterization of GaInN light-emitting diodes with distributed Bragg reflector grown on Si”, J. Crystal Growth, Vol. 272 (2004), pp. 322-326.
12. M. Miyoshi, H. Ishikawa, T. Egawa, K. Asai, M. Mouri, T. Shibata, O. Oda , “High-electron-mobility AlGaN/AlN/GaN heterostructures grown on 100-mm-diam epitaxial AlN/sapphire templates by metalorganic vapor phase epitaxy”, Appl. Phys. Lett., Vol. 85, No.10 (2004) pp. 1710-1712.
13. H. Ishikawa, K. Asano, B. Zhang, T. Egawa, T. Jimbo, “Improved characteristics of GaN-

based light-emitting diodes by distributed Bragg reflector grown on Si", Phys. Stat. Sol. (a), Vol. 201, No.12 (2004) pp. 2653-2657.
14. H. Ishikawa, M. Kato, M. S. Hao, T. Egawa, T. Jimbo, "Growth of GaN on 4-inch Si substrate with a thin AlGaN/AlN intermediate layer", Phys. Stat. Sol. (c), Vol. 0, No.7 (2003), pp. 2177-2180.
15. Y. Liu, T. Egawa, H. Ishikawa, B. Zhang,M. Hao, "Influence of Growth Temperature on Quaternary AlInGaN Epilayers for Ultraviolet Emission Grown by Metalorganic Chemical Vapor Deposition", Jpn. J. Appl. Phys., Vol. 43, No. 5A, (2004), pp. 2414-2418.
16. M. Hao, H. Ishikawa, T. Egawa, "Formation chemistry of high-density nanocraters on the surface of sapphire substrates with an in situ etching and growth mechanism of device-quality GaN films on the etched substrates", Appl. Phys. Lett., Vol. 84, No. 20 (2004), pp. 4041-4043.
17. H. Ishikawa, B. Zhang, T. Egawa, T. Jimbo, "Valence Band Discontinuity at the AlN/Si Interface", Jpn. J. Appl. Phys. Vol. 42, No. 10 (2003), pp. 6413-6414.
18. M. Umeno, T. Egawa, H. Ishikawa, "GaN-based optoelectronic devices on sapphire and Si substrates Materials Science in Semiconductor Processing", Vol. 4 (2001), pp. 459-466.
19. H. Ishikawa, N. Nakada, M. Mori, G. Y. Zhao, T. Egawa, T. Jimbo and M. Umeno, "Suppression of GaInN/GaN Multi-Quantum-Well Decomposition during Growth of Light-Emitting-Diode Structure", Jpn. J. Appl. Phys., Vol. 40, No. 11A (2001), pp. L1170-L1172.
20. T. Egawa, N. Nakada, H. Ishikawa and M. Umeno, "GaN MESFETs on (111) Si Substrate grown by MOCVD", Electron. Lett. Vol. 36, No. 21 (2000), pp. 1816-1818.
21. T. Egawa, H. Ishikawa, M. Umeno, T. Jimbo, "Recessed gate AlGaN/GaN modulation-doped field-effect transistors on sapphire", Appl. Phys. Lett., Vol. 76, No. 1 (2000), pp. 121-123.
22. H. Ishikawa, G. Y. Zhao, N. Nakada, T. Egawa, T. Soga, T. Jimbo and M. Umeno, "High-Quality GaN on Si Substrates Using AlGaN/AlN Intermediate Layer", Phys. Stat. Sol. (a) Vol. 176, pp. 599-603 (1999).
23. H. Ishikawa, G. Y. Zhao, N. Nakada, T. Egawa, T. Jimbo and M. Umeno, "GaN on Si substrate with AlGaN/AlN Intermediate Layer", Jpn. J. Appl. Phys, Vol. 38, No. 5A (1999), pp. L492-L494.
24. H. Ishikawa, K. Yamamoto, T. Egawa, T. Soga, T. Jimbo and M. Umeno, "Thermal stability GaN on (111) Si substrate", J. Cryst. Growth Vol. 189/190 (1998), pp. 178-182.
25. K. Ymamoto, H. Ishikawa, T. Egawa, T. Jimbo and M. Umeno, "EBIC observation of n-GaN on sapphire substrates by MOCVD", J. Cryst. Growth Vol. 189/190 (1998), pp. 575-579.
26. H. Ishikawa, K. Nakamura, T. Egawa, T. Jimbo and M. Umeno, "Pd/GaN Schottky Diode with a Barrier Height of 1.5 eV and a Reasonably Effective Richardson Coefficient", Jpn. J. Appl. Phys. Vol. 37, No. 1A/B (1998), pp. L7-L9.

Other Features:

Hiroyasu ISHIKAWA is a member of the Japan Society of Applied Physics, the Laser Society of Japan, the Institute of Electronics, Information and Communication Engineers, and the Institute of Electrical Engineers of Japan.

-Electric and Electronic Engineering -

KOIKE , Yoshikazu

Field of Interest:	Underwater observation system, Application of multi global navigation satellite system(GNSS), Piezoelectric Actuator, Ultrasonic application,
Title of Courses:	Advanced Research Program on Functional Devices Technology Circuit and Ultrasonic
Lecture Subject:	Advanced Electronic Circuit
Topics for Thesis:	Positioning of Underwater observation system Sound localization using timing pulse of multi-GNSS Multi-degree of freedom ultrasonic motor Sound measurement in the cavitation Detection system of contact portion overheating

Publications and International Conference Papers:

1. Y. Koike, H.Hashimoto, C.Takasugi, H.Takei, H.Hojo and T.Matsui, "Sound source localization using RTK-GPS and time synchronization signal", Proc. of IS-GNSS 2015, (2015.11)
2. T.Ishii, T.Kagiya, T.Shimizu, Y.Koike, " Ultrasonic Welding of the Polyethylene Bag Containing Silicone Grease", International Journal of Control, Automation and Systems, Vol.3, No.4, pp.8-12 (2014)
3. Y.Koike, K.Kikuchi, R.Maeda, K.Suzuki, " Sound pressure measurement of the waveguide type ultrasonic cleaning machine using fiber optic probe hydrophone.", Proc. of The 34th Symp. Ultrasonic Electronics, pp.465-466 (2013.11)
4. T.Umezawa, T.Yamashina, R.Oozeki, Y.Obara, K.Shimizu, H.anyu, Y.oike: "Miniaturization of case-type multi-degree of freedom ultrasonic motor.", Symp. The 34th Ultrasonic Electronics, pp.445-446 (2012.11)
5. Y.Koike, H.Takeuchi, H.Hagiwara, T.Ogura, T.Aoki, D.Kumagai, T.Ishikawa, H.Nishikawa, " Micro fabrication of Poly L Lacid using PBW and Piezoelectric application." MNE 2013 (2013.9)
6. T.Umezawa, K.Shimizu, H.Hanyu, T.Yamashina, S.Shimura and Y.Koike: " A study on the efficiency of multiple degrees of freedom ultrasonic motor using combination of travelling wave type stators ", Proc. of Symp. The 33th Ultrasonic Electronics, pp.465-466 (2012.11)
7. Y.Koike, H.Takeuchi, H.Hagiwara, T.Ogura, T.Aoki, D.Kumagai, T.Ishikawa, H.Nishikawa, "Micro fabrication of poly L lacid and its application." 2012 IEEE GCCE

(2012.10)
8. K.Shimizu, H.Hanyu, T.Umezawa, T.Yamashina and Y.Koike: "A study on half-ring-shaped ultrasonic motor for simple mounting", Proc. of The 32th Symp. Ultrasonic Electronics, pp.379-380 (2011.11)
9. K.Suzuki, K.Han, J.Soejima, Y.Koike, "Application of Novel Ultrasonic Cleaning Equipment That Uses the Waveguide Mode for the Single-Wafer Cleaning Process", Jpn.J.Apl.Phys.,05EC10(2011)
10. H.Takeuchi, H.Hagiwara, T.Ogura, Y.Koike and H.Nishikawa : "Micro processing of poly L lactic acid (PLLA) by proton beam writing", ICMAT2011, ICMAT11-A-4232 (2011.6)

-Electric and Electronic Engineering-

MATSUMOTO, Satoshi

Field of Interest:	Electric power engineering, Electrical insulation, Electromagnetic field analysis, High-voltage engineering, Nano-carbon materials, Insulation diagnosis, Signal processing, Terahertz spectroscopy
Title of Courses:	Advanced Research Program on Environmental Energy Engineering Power Apparatus Technology
Lecture Subject:	Advances in High Voltage and Power Apparatus Engineering
Topics for Thesis:	Non-linear electric field analysis, Electric double layer capacitor (EDLC), Terahertz Spectroscopy, Partial discharge measurement system, UHF/VHF PD sensor, Transient electromagnetic surge analysis, Lightning protection Signal processing using wavelet analysis for partial discharge detection

Publications and International Conference Papers:

1. Zulkarnain A. Noorden, Sougoro Sugawara, Satoshi Matsumoto," Non-Corrosive Separator Materials for Electric Double Layer Capacitor", IEEJ Transactions on Electrical and Electronics Engineering, Vol.9, No.3, pp.235-240 (2014)

2. Satoshi Matsumoto, Tomoyuki Sato, Yoshiyasu Koga, Shigeru Yokoyama, "Voltage-time Characteristics and related Approximation Formula for 6.6-kV Solid-core-type Insulator having Higher Lightning Impulse Withstand Voltage", IEEJ Transactions on Power and Energy, Vol.134, No.3, pp.224-229 (2014)

3. Nguyen Nhat Nam, Satoshi Matsumoto," Electrical and Thermal Computation of Stress Grading System in Inverter-Driven Medium Voltage Motors", Journal of IEEJ Transactions on Electrical and Electronics Engineering, Vol.133, No.11, pp.591-597 (2013)

4. Zulkarnain A. Noorden, Sougoro Sugawara, and Satoshi Matsumoto, "Glass Wool Material as Alternative Separator for Higher Rating Electric Double Layer Capacitor", ECS Transactions, Volume 53, Issue 31, Page 43-51 (2013)

5. Nobuaki Nishimura; Ryuichi Ogura, Satoshi Matsumoto, Maya Mizuno, Kaori Fukunaga, "Study of molecular behavior in oxidation of insulating oil using terahertz spectroscopy", Electrical Engineering in Japan, Vol.183, No.1, pp.9-15 (2013)

6.Zulkarnain A. Noorden, Sougoro Sugawara, Satoshi Matsumoto, "Electrical properties of Hydrocarbon-derived Electrolytes for Supercapacitor", IEEJ Transaction on Electrical and Electronic Engineering, Vol.7, Issue 6, pp.S25-S31 (2012-12)

7. Satoshi Matsumoto, Tomoyuki Sato, Yoshiyasu Koga, Shigeru Yokoyama, "Surface V-t

characteristics of 6.6-kV Solid-core Distribution Insulator and its Approximate Formula", IEEJ International Workshop on High Voltage Engineering, Paper No.HV-12-062 (2012-11)

8. Satoshi Matsumoto, Tomoyuki Sato, Hideki Honda, Shigeru Yokoyama, "Approximate Formula for Surface V-t Characteristics of 6.6-kV Distribution Insulator", International Conference on Lightning Protection, Vienna, Austria, No.31-125, pp.1-5 (2012-9)

9. Satoshi Matsumoto, Yoshikazu Shibuya, Ryuichi Ogura, "Signal Processing for Partial Discharge Pulse Detection using Wavelet Analysis", International Symposium on High Voltage Engineering, Hannover, Germany, D-62, pp.1-5 (2011)

10. Yoshikazu Shibuya, Satoshi Matsumoto, Tatsuya Konno, Kiyoshi Umezu, "Electromagnetic Waves from Partial Discharges in Windings and their Detection by Patch Antenna", IEEE Transactions on Dielectrics and Electrical Insulation, Vol.18, No.6, pp.2013-2023 (2011.12)

11. Ryuichi Ogura, Nobuaki Nishimura, Satoshi Matsumoto, Maya Mizuno, Kaori Fukunaga, " Transmittance Characteristics of Various Insulating Oils Evaluated by Terahertz Spectroscopy", International Symposium on High Voltage Engineering, Hannover, Germany, E-45, pp.1-5 (2011)

12. Nobuaki Nishimura, Ryuich Ogura, Satoshi Matsumoto, Maya Mizuno, Kaori Fukunaga, "Transmittance Spectra of Oxidized Insulation Oil using Terahertz Spectroscopy", 17th IEEE International Conference on Dielectric Liquids (ICDL2011), No.57, pp.1-4 (2011)

13. Y.Shibuya, S.Matsumoto, M.Tanaka, H.Muto, Y.Kaneda, "Electromagnetic Waves from Partial Discharges and their Detection using Patch Antenna", IEEE Transactions on Dielectrics and Electrical Insulation, Vol.17, No.3, pp.862-871 (2010)

14. S.Matsumoto, N.Nishimura, "Analysis of oscillating and non-oscillating impulse waveform for high voltage impulse test using roots of biquadratic equation", IEEJ Transaction on Electrical and Electronic Engineering, Vol.4, No.4, pp.553-560 (2009)

15. U.Khayam, S.Ohtsuka, S.Matsumoto, M.Hikita, "Partial Discharge and Cross Interference Phenomena in a Three-phase Construction", International Journal on Electrical Engineering and Informatics, Vol.1, No.1, pp.78-91 (2009)

16. S.Matsumoto, T.Kawamura, "High voltage testing on UHV equipment: Overshoot and base curve for oscillating lightning impulse", IEEJ Transaction on Electrical and Electronic Engineering, Vol.4, No.1, pp.97-101, (2008)

17. S.Matsumoto, "Analysis and evaluation of waveform parameters for oscillating impulse voltage", IEEJ Transaction on Electrical and Electronic Engineering, Vol.2, pp.651-656 (2007)

Other Features:

Senior member of IEEE and IEEJ, Vice President of the Institute of Engineers on Electrical Discharges in Japan, IEC TC8, TC20, TC28, TC42 and TC 112 member, CIGRE SC C4 member

-Electric and Electronic Engineering-

MUGURUMA, Hitoshi

Field of Interest:	Nanobiotechnology, Bioelectronics,
Title of Courses:	Advanced Research Program on Functional Devices Technology
	Bioelectronics
Lecture Subject:	Advanced Bioelectronics
Topics for Thesis:	Biochip, Bio Fuel Cells,

Publications and International Conference Papers:

1. H. Muguruma, T. Hoshi, R. Fujita, T. Sumii, S. Kudo, "Adhesion and alignment of nonparenchymal cells onto a patterned surface with a two-step plasma polymerization process," *Plasma Processes and Polymers*, **2015**, *12*, 746-754.
2. H. Muguruma, T. Hoshino, K. Nowaki, "Electronically type-sorted carbon nanotube-based electrochemical biosensors with glucose oxidase and dehydrogenase," *ACS Applied Materials and Interfaces*, **2015**, *7*, 584-592.
3. T. Hoshino, S. Sekiguchi, H. Muguruma, "Amperometric biosensor based on multilayer containing carbon nanotube, plasma-polymerized film, electron transfer mediator phenothiazine, and glucose dehydrogenase," *Bioelectrochemistry*, **2012**, *84*, 1-5.
4. H. Muguruma, T. Hoshino, Y. Matsui, "Enzyme biosensor based on plasma-polymerized film covered carbon nanotube layer grown directly on a flat substrate," *ACS Applied Materials and Interfaces*, **2011**, *3*, 2445-2450.
5. H. Muguruma, H. Takahashi, "Protein patterning on functionalized surface prepared by selective plasma polymerization," *Surface Coatings and Technology*, **2010**, *205*, 2490-2494.
6. H. Muguruma, "Plasma-polymerized films for biochip design," *Plasma Processes and Polymers*, **2010**, *7*, 151-162.
7. H. Muguruma, "Biofuel cell based on a complex between glucose oxidase and a plasma-polymerized film containing a redox site," *IEICE Transaction on Electronics*, **2008**, *E91-C*, 1811-1815.

Other Features:

- Committee member of Biomedical and Organic Electronics in IEICE
  URL: http://www.sic.shibaura-it.ac.jp/~muguruma/

- Electric and Electronic Engineering -

NISHIKAWA, Hiroyuki

Field of Interest:	Electrical, Electronic, and Optical Materials and Devices, Quantum Beam Applications, Micromachining, MEMS, Micro-fluidic Devices
Title of Courses:	Advanced Research Program on Environmental Energy Engineering, Advanced Materials for Energy and Related Areas
Lecture Subject:	Advanced Quantum-Beam Applications
Topics for Thesis:	Optical Devices and Micro-fluidic Devices Fabricated by Proton Beam Writing, Fabrication of 3D-Microstructures Using Proton Beam Writing, Dielectrophoretic Devices for Filtering of Microparticles and Microbes, Optical Waveguides, Micro-Lens Arrays

Publications and International Conference Papers:

1. R Kataoka, H Tokita, S Uchida, R Sano and H Nishikawa, "Frequency dependence and assembly characteristics of silver nanomaterials trapped by dielectrophoresis", Journal of Physics: Conference Series 646 (2015) 012005.
2. W. Kada, K. Miura, H. Kato, R. Saruya, A. Kubota, T. Satoh, M. Koka, Y. Ishii, T. Kamiya, H. Nishikawa, O. Hanaizumi, "Development of embedded Mach–Zehnder optical waveguide structures in polydimethylsiloxane thin films by proton beam writing", Nucl. Instr. Meth. Phys. Res. B 348, Pages 218-222 (April 2015).
3. H. Kato, J. Takahashi, H. Nishikawa, "Fabrication of polydimethylsiloxane microlens arrays on a plastic film by proton beam writing", J. Vac. Sci. Technol. B 32, 06F506 (2014); http://dx.doi.org/10.1116/1.4900419.
4. H. Nishikawa and T. Hozumi, "Application of proton beam writing for the direct etching of polytetrafluoroethylene for polydimethylsiloxane replica molding", J. Vac. Sci. Technol. B 31, 06F403 (2013); http://dx.doi.org/10.1116/1.4821650.
5. K. Saito et al.., "Fabrication of curved PDMS microstructures on silica glass by proton beam writing aimed for micro-lens arrays on transparent substrates", Nucl. Instr. Meth. Phys. Res. B 306, pp.284-287 (July, 2013).
6. Y. Arai et al., "Control of Refractive Index of Fluorinated Polyimide by Proton Beam Irradiation", Jpn. J. Appl. Phys. 52, 012601 (5 pages) (2013).
7. S. Uchida et al.., "Optical counting of trapped bacteria in dielectrophoretic microdevice with pillar array", Intelligent Automation and Soft Computing, Vol.18, No.2, pp.165-176 (2012).

8. K. Takano et al., “Microprocessing of Arched Bridge Structures with Epoxy Resin by Proton Beam Writing”, J. Photopolymer Sci. Technol., 25, 1, pp.43 - 46 (2012).
9. K. Takano et al., “Fabrication of Concave and Convex Structure Array Consisted of Epoxy Long-Nanowires by Light and Heavy Ion Beams Lithography”, Trans. Mat. Res. Soc. Japan, 37, 2, pp. 237 - 240 (2012).
10. Y. Maeyoshi et al., “Fabrication of Poly(9,90-dioctylfluorene)-Based Nano- and Microstructures by Proton Beam Writing”, Jpn. J. Appl. Phys., 51, pp.045201/1-4 (2012).
11. Y. Tanabe et al., “Electroforming of Ni mold for imprint lithography using high-aspect-ratio PMMA microstructures fabricated by proton beam writing”, Microelectron. Eng., 88, pp.2145-2148 (2011).
12. R. Tsuchiya and H. Nishikawa, “Fabrication of silica-based three-dimensional structures by changing fluence using proton beam writing”, Trans. Mat. Res. Soc. Japan, 36 , pp.325-328 (2011) .
13. T. Kamiya et al., “Microbeam complex at TIARA: Technologies to meet a wide range of applications”, Nucl. Instr. Meth. Phys. Res. B 269, pp.2184–2188 (2011)
14. Y. Shiine et al., “Soft-lithographic methods for the fabrication of dielectrophoretic devices using molds by proton beam writing”, Microelectron. Eng., 87, pp. 835-838 (2010).
15. Y. Seki et al., “Electroplating using high-aspect-ratio microstructures fabricated by proton beam writing”, Microelectron. Eng., Vol.86, pp. 945-948 (2009).
16. Y. Furuta et al., “Fabrication and evaluation of 3D-electric micro filters using proton beam writing”, Microelectron. Eng., Vol. 86, Issues 4-6, pp.1396-1400 (2009)
17. H. Nishikawa et al., “Micro-patterning of Siloxane Films by Proton Beam Writing”, J. Photopolymer Sci. Technol., Vol.22, pp.239-243 (2009).
18. Y. Furuta et al., “Applications of microstructures fabricated by proton beam writing to electric-micro filters”, Nucl. Instr. Meth. Phys. Res. B 267, pp.2285–2288 (2009).
19. T. Kamiya et al., “Fabrication of nanowires by varying energy microbeam lithography using heavy ions at the TIARA”, Nucl. Instr. Meth. Phys. Res.B 267, pp.2317–2320 (2009).
20. T. Kamiya et al., “Development of micromachining technology in ion microbeam system at TIARA, JAEA”, Applied Radiation and Isotopes, 67, No.3, pp.481-491 (March, 2009).
21. N. Uchiya et al., “Ni electroplating on a resist micro-machined by proton beam writing,” Microsystem Technologies, 14, Numbers 9-11, pp.1537-1540 (Oct., 2008).
22. Y. Furuta et al., “Fabrication of three-dimensional structures of resist by proton beam writing”, J. Vac. Sci. Technol. B 25, pp. 2171-2174 (November, 2007).

23. N. Uchiya. et al., “Micro-machining of resists on silicon by proton beam writing”, Nucl. Instr. Meth. Phys. Res. B 260, pp.405-408 (July, 2007).

Other Features:

Member of Institute of Electrical Engineers of Japan (IEEJ),
Secretary of the Technical Committee on Electronic Materials, IEEJ,
Vice president, the board of Fundamentals and Materials Society, IEEJ.
Chair person, Editorial Committee of Fundamentals and Materials Society, IEEJ.
Member of Japan Society of Applied Physics,
Member of Japan Institute of Electronics Packaging,

-Electric and Electronic Engineering-

SAITOH, Atsushi

Field of Interest:	Development of Chemical Sensor and its application
Title of Courses:	Advanced Research on Telecommunication Function Control
	Telecommunication System
Lecture Subject:	Sensor Engineering
Topics for Thesis:	Odor recognition system and odor generator
	Development of SAW wireless and passive multi-sensor device
	Sensing system for recognition of daily activities of elder person in a room
	Development of intelligent table for watching over elderly person
	Strain measurement module for health monitoring of aircraft

Publications and International Conference Papers:

[1] A.Kanda, T.Utsunomiya and A.Saitoh, "Development of a Strain Sensor using an Oscillator Circuit", Trans. Japan Soc. Aero. Space Sci., Vol.57 No.5, pp.272 – 278, (2014).
[2] A.Saitoh, "Fundamental Study on Odor generator based on SAW Streaming", Proc. of The 32nd Symposium on Ultrasonic Electronics (USE2011), Vol.32, pp.493 – 494, (2011).
[3] K.Hirasawa, S.Sawada, and A.Satioh, "Recognition of daily activities based on processing information about air environmental changes in living space.", Proc. of The 7th International Conference on (URAI 2010), pp.325-329, (2010).
[4] A.Saitoh and T.Nomura, "Study of Gas Adsorption Property Evaluation of Sensing Film for QCM Gas Sensor by Sensor Response Analysis", Asia-Pacific Conference of Transducer and Micro-Nano Technology 2004 Conference Proceedings, pp.1305-1308, (2004).
[5] A.Saitoh, T.Miyamoto, M.Kobayashi, K.Ido, and T.Nomura, "Development of Sensing System for Monitoring of Indoor Environment and Classification of Daily Action", IEEE SECON 2004 (2004).
[6] T.Nomura, A.Saitoh,.and Y.Horikoshi, "Liquid sensor probe using reflecting SH-SAW delay line", Sensors and Actuators B (chemical), Vol.B91, pp.298-302, (2003).
[7] T.Nomura, A.Saitoh,.and T.Miyazaki, "Gas sensor using complete reflection at free edge of SH-SAW", Ferroelectrics, Vol.273, pp.113-118, (2002).
[8] T.Nomura, A.Saitoh,.and Y.Horikoshi, "Measurement of acoustic properties of liquid flow SH-SAW sensor system", Sensors and Actuators B (chemical), B76 pp.69-73, (2001).
[9] Atsushi Saitoh, Tooru Nomura, Severino Munoz and Toyosaka Moriizumi, "Quartz Crystal Microbalance Odor Sensor Coated with Mixed-Thiol-Compound Sensing Film", Jpn. J. Appl. Phys. Vol.37, pp.2849 - 2852, (1998).

-Electric and Electronic Engineering-

SHIMADA, Akira

Field of Interest:	Motion control, robotics, and mechatronics
Title of Courses:	Advanced Research Program on Systems Control Engineering
	Robotics and Mechatronics
Lecture Subject:	Advanced Robotic Manipulation
Topics for Thesis:	1. Humanoid Climbing robot
	2. High speed motion control on autonomous mobile robots
	3. Sensor-less grasping control on multi-fingered robot hands
	4. Motion control theory and application

Publications and International Conference Papers:

1. Dung Anh Nguyen, Akira Shimada : Equilibrium Control on Four-Limbed Climbing Robot, Applied Mechanics and Materials, Vols.799-800, pp.1021-1027, Trans Tech Publications, Switzerland , 2015
2. Danai Phaoharuhansa, Akira Shimada: Trajectory Tracking for Wheeled Inverted Pendulum Robot using Tilt Angle Control, IECON2013, pp.4287-4291, 2013-11
3. Dung Anh Nguyen, Akira Shimada: Humanoid Climbing Robot Modeling in Matlab-Simechanics, IECON2013, 4160-4165, 2013-11
4. Dung Nguyen,Akira Shimada: A Path Motion Planning For Humanoid Climbing Robot, 8th EUROSIM Congress on Modelling and Simulation, 2013-9
5. Akira Shimada, Danai Phaoharuhansa:An Adaptive Disturbance Observer Design on Motion Control Systems, Proc. of the 2012 Int conf. on Advanced Mechatronic Systems(ICAMechs2012), WedP04-02, p.320-322, Int,J.of Advanced Mechatronic Systems, IEEE Systems,Man, and Cybernetics Society, etc.,2012-9
6. Akira Shimada, Hayato Furukawa: An Approach to Wind Harness Control on Blimp Robots, SICE Annual Conference 2011,p.368-369,2011-9
7. AkiraShimada,KenichiSonoda,and ShinsakuUnuma: An Approach to Sensor-less Grasping and Movement Control on Two-Fingered Robot Hands, SICE Annual Conference 2011,p.917-918,2011-9
8. Danai Phaoharuhansa, Akira Shimada: An Approach to SysML and Simulink Based Motion Controller Design for Inverted Pendulum Robots, SICE Annual Conference 2011,p.2190-2191,2011-9
9. AkiraShimada, AtsushiMaruta: A Controller Design on Tendon-Driven Mechanisms, SICE Annual Conference 2011,p.2684-2685,2011-9
10. Akira Shimada, Atsushi Maruta, Yurtaka Uchimura: An Analysis on Two-Joint Tendon Driven Hybrid Control Systems, SICE Annual Conference 2010,p.529-530,2010-8
11. Tadayuki Nakano, Akira Shimada、Syunnji Usui: An Approach to Robotization of

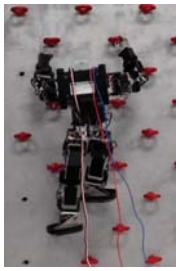
Rokogi-Wasen, ICCAS-SICE Joint Conference 2009, 1A-08-1, p.112-117,2009-8
12. Chaisamorn Yongyai, Akira Shaimada, and Kenichi Sonoda : Tilting Control Based Motion Control on Inverted Pendulum Robots with Disturbance Observer, The 2009 IEEE/ASME International Conference on Advanced Intelligent Mechatronics（AIM2009）,FA5, p.1545-1550, 2009-7

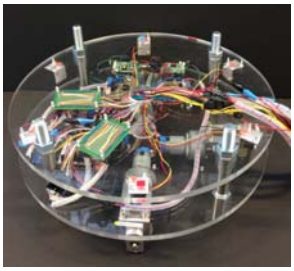
Other Features:

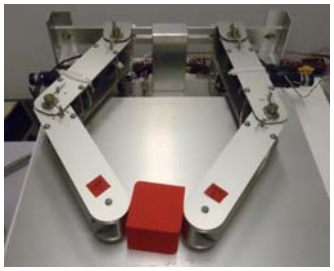
Motion control technology is a fundamental component on today's robotics and mechatronics. It is based on dynamical modeling and feedback control engineering, which covers wide range of applied electronical and mechanical technologies. The motion control was begun by general motor drive systems and it has been expanded to robot control, vehicle control, and some other non-linear system control. Non-linear mechanical systems which we study have some physical constraints, such as position, velocity, and acceleration constraints. They are called non-holonomic systems and it is not easy to design the suitable motion controllers. The control technique we present is based on observer techniques which are useful components in modern control engineering. Furthermore, we recently try to connect motion control technology with software engineering using some system modeling tool such as UML and SysML.

Recently, our research field has also been expanded to some kinds of rescue robots such as humanoid climbing robots, blimp robots, and helicopter robots. It seems that they are fascinating research subjects.

Prof.Shimada was born in Japan, in 1958. He received the Ph.D from Keio University, in 1996. He worked at Seiko Instruments as a robotics engineer. He had developed several kinds of industrial robot controllers, and presented disturbance observer based control techniques (1983-2001). Concurrently, he was a part time lecturer (1995-1999) and a guest professor at Chiba Univ. (2000-2001). He was an associate prof. at Polytechnic Univ. (2001-2009). Now, he is a full professor at SIT. Concurrently, he is the chair person of the mechatronics control technical committee in IEEJ. Concurrently, he is the first steering chair of the international workshop on Sensing, Actuation, Motion Control, and Optimization (SAMCON2016). Furthermore, he is also a mountain and free climber. The considerable experiences of enterprise engineer and university professor are his forte


(a)Climbing Robot


(b)Mobile robot


(c)Robot hand


(d)Prof. Shimada

-Electric and Electronic Engineering-

TAKAMI, Hiroshi

Field of Interest:	Energy Conversion System, AC Motor Drives, Robust Control
Title of Courses:	Advanced Research Program on Systems Control Engineering
	Electric Machinery and Applications
Lecture Subject:	Electric Power Control
Topics for Thesis:	Optimal Control for Industrial Drives by Inverse LQ Design Method
	Development of Inverse LQ Controller for Electrical Vehicle
	Design of Robust Maglev System Based on Transfer Matrix Theory

Publications and International Conference Papers:

S. Stapornchaisit, S. Aumted, H. Takami, “Disturbance Rejection for Boost Converter via Adaptive Inverse LQ Servo-Control”, in Proc. ICFCC 2013, Phucket, May 2013

S. Aumted, S. Shiina, H. Takami, “Advanced ILQ Control for Buck-Converter via Two-Degrees of Freedom Servo-System”, in Proc. ICEMPE 2013, World Academy of Science, Engineering and Technology 73, 2013

Y. Nagano, S. Stapornchaisit, H. Takami, S. Aumted, “Stable Photovoltaic Generation by Boost Converter via Adaptive ILQ Servo-Control”, in Proc. TNIAC 2013, Bangkok, May, 2013

S. Stapornchaisit, S. Aumted, H. Takami, “A Novel Adaptive Voltage Control strategy for Boost Converter via Inverse LQ Servo-Control”, in Proc. ICECECE 2012, World Academy of Science, Engineering and Technology 72, 2012

S. Aumted, S. Kanda, H. Takami, S. Tatsuno, " Optimal Voltage Control for Single-Phase Inverter with Resonant LC Filter via Type-2 ILQ Servo-Control by 2nd-Order Polynomial”, Advanced Materials Research, Vols. 622-623 pp.1514-1518 (2012)

A. Tokunaga, H.Takami, M. Nakamura, T. Okamoto, "A Method of ILQ Optimal Speed Sensorless Control for Three-Phase Induction Motor”, Proc. of IEEE IAS Annual Meeting Conference Record (2012)

Y. Amano, H. Takami, T. Fujii, "Design Method of ILQ Robust Current Control System for Synchronous Reluctance Electrical Motors”, IEEJ Trans. On Electronics, Information and Systems, Vol.132, No.3, pp.401-408(2012)

Y. Nakamura, H. Takami, M. Nakamura, T. Okamoto, "A Method of ILQ Optimal Speed Sensorless Control for Three-Phase Induction Motor”, Proc. of the 2011 Japan Industry Applications Society Conference, Vol.1 pp.429-432 (2011)

A. Tokunaga, H. Takami, M. Nakamura, T. Okamoto, "Evaluation of Robust Stability and Performance of 2-Inertia System based on Resonance Ratio Control via μ-Analysis”, Proc. of the 2011 Japan Industry Applications Society Conference,Vol.2, pp.513-516 (2011)

T. Shiratori, H. Takami, " Verification of analysis of instantaneous forces by transfer-matrix theory for PM LSM”, Proc. of the 2011 Japan Industry Applications Society Conference, Vo.3, pp.375-376 (2011)

S. Chiba, R, Tsunekawa, H. Takami, Y.Nakamura, "Manufacture and experiment of embedded General-Purpose Inverter with Piccolo F28069 control STICK”, Proc. of 13th DSPS Educators Conference, pp.37-38 (2011)

K. Sato, K. Sugano, H. Takami, T. Fukada, R. Nishimurai, ”The development of inverter for EV used Delfino” , Proc. of 13th DSPS Educators Conference, pp.45-46(2011)

H. Takami, K. Logutarawong, S. Chiba ,”Electric Energy Conversion Technique for

Eco-Equipments via Embedded Technology," Proc. of TSME International Conference on Mechanical Engineering, ETM010, (2010)

H. Takami, "Integrated Hybrid Energy Conversion Technology", TSME International Conference on Mechanical Engineering, Key-note speech (Invited), 21 Oct.2010

H. Terauchi, H. Takami, Y. Nakamura, "Power LED Illumination Control via Intelligent Power Unit", Proc. of 12th DSPS Educators Conference, pp.89-90 (2010)

H. Takami, "Development of Near Future Linear System by High-Performance Embeded DSP Controller" , Proc. of 12th DSPS Educators Conference, pp.31-34 (2010)

H. Takami, kanokpanthorn L, S. Chiba, Y. Muramatsu,. Nakamura, "Multi-Purpose Converter for Eco-Equipments by Piccolo A", Proc. of the 22nd Symposium on Electromagnetic and Dynamics (SEAD22), pp.130-133 (2010)

K. Shoji, H. Takami, M. Nakamura, "Two-Degrees-of-Freedom Optimal Speed-Control for Induction Motors via ILQ Design Method", Proc. of the 2010 Japan Industry Applications Society Conference pp.477-480 (2010)

N. Kasa, H. Takami, Toru T., S. Hattori, S. Morimoto, Y. Yamamoto, "New Technology and Application Trend to New Field for Expansion of PM Motor Application － Drive and Control Technology －", Proc. of the 2009 Japan Industry Applications Society Conference pp.85-90. (2009)

K. Ohno, K. Kawakami, H. Takami, "Adjustable-Speed AC Drive Technologies for Ships", Proc. of the 2008 Japan Industry Applications Society Conference, Vol.1, pp. 21-26 (2008)

K. Ito, H. Takami, M. Nakamura, T. Okamoto, "A Robust Optimal Control of 3-phases Induction Motor by ILQ Design Method", Proc. of the 2008 Japan Industry Applications Society Conference, Vol.1, pp. 175-178 (2008)

N. Makuta, H. Takami, T. Yamamoto, T Fukuda, "Generation Robust Control for Interior Permanent Magnet Synchronous Generator Using An ILQ Optimal Current-Control", Proc. of the 2008 Japan Industry Applications Society Conference, Vol.1, pp.471-474 (2008)

D. Furusawa, H. Takami, M. Nakamura, "An Investigation of Robustness of ILQ Optimal Current Control on Permanent Magnetic Synchronous Motor Control including Control Delay Time", Proc. of the 2008 Japan Industry Applications Society Conference, Vol.1, pp.475-476 (2008)

M. Okayasu, H. Takami, T. Fukada, "ILQ Optimal Bilateral Boost and Buck Chopper for Vehicles", Proc. of the 2008 Japan Industry Applications Society Conference, Vol.1, pp.541-542 (2008)

Y. Watanabe, H. Takami, T. Okamoto, " Anti-windup Control for Voltage Saturation in ILQ Current Control of IPMSM", Proc. of the 2008 Japan Industry Applications Society Conference, Vol.1,Y-37 (2008)

H. Takami and T. Tsujino, "Robust Stability and Performance Evaluation of an ILQ Optimal Current-Control System for Permanent Magnet Synchronous Motor via-Analysis, Robust Analysis Including State Feedback Control for Decoupling d- and q-axis Subsystems" Trans. Soc. Instr. Contr. Eng., vol. 42, no. 5, pp. 510-519 (2006)

H. Takami, M. Nakagawa: "Optimal Robust Current Control of Three Phase Induction Motor by ILQ Design Method", The 2006 International Conference on Electrical Machines and Systems (ICEMS 2006), DS2E1-07 (2006)

K. Yoshida, M. Suganuma, K. Oshima, H. Takami, T. Yoshida and T. Kawai: "Steering Control Traveling Experiment of Air-Suspended Hybrid Linear Motor Vehicle Passing Through Continuous LIM and LSM Sections", Proc. of the 2005 International Power Electronics Conference, pp.1520-1527(2005)

K. Yoshida, K. Oshima, M. Suganuma, T. Yoshida, H. Takami, T. Kawai: "Steering Guidance Control in SLIM Drives of Air-Supended Hybrid LM Vehicle", Proc. Of the 5th International Symposium on Linear Drives for Industry Application LDIA2005, A26P1-1(2005)

H. Takami: Robust Current Control for Permanent Magnet Synchronous Motors by the Inverse LQ Method –An Evaluation of Control Performance Using Servo-Locks at Low Speed–, Journal of Power Electronics, Vol.4, No.4, pp.228-236 (2004)

K. Yoshida, H. Takami, and A. Fujii: "Smooth Section-Crossing of Controlled- Repulsive PM

LSM Vehicle by DTC method based on New Concept of Fictitious Section", IEEE Trans. on Industrial Electronics, Vol.51, No.4, pp.821-826 (2004)

-Electrical and Electronic Engineering-

UENO, Kazuyoshi

Field of Interest:	Low-resistance graphene interconnects for low-carbon society. Advanced metallization for GaN power devices for low-carbon society. High reliability interconnects for over 100 year memories.
Title of Courses:	Advanced Research Program on Functional Devices Technology Nanoelectronics Research
Lecture Subject:	Nano Devices and Materials
Topics for Thesis:	Fabrication of ultra-low resistance graphene interconnects, High reliability, low resistance interconnect technologies for power devices, etc.

Publications and International Conference Papers:
Journal papers in recent 5 years:

1) K. Ueno, R. Kosugi, K. Imazeki, A. Aozasa, Y. Matsumoto, H. Miyazaki, N. Sakuma, A. Kajita, and T. Sakai, “Bromine doping of multilayer graphene for low-resistance interconnects”, Jpn. J. Appl. Phys. **53** (2014) 05GC02.
2) L. A. Razak, D. Tobino, and K. Ueno, “Improvement of multilayer graphene quality by current stress during thermal CVD”, Microelectronic Eng. **120** (2013) 200.
3) K. Ueno, M. Takagi, H. Yano, T. Wakui, Y. Yamazaki, N. Sakuma, A. Kajita, and T. Sakai, "Low-resistance metal contacts for Nanocarbon/Cabalt interconnects”, Jpn. J. Appl. Phys. **52** (2013) 05FD01.
4) K. Ueno, Y. Karasawa, S. Kuwahara, S. Baba, H. Hanai, Y. Yamazaki, N. Sakuma, A. Kajita, and T. Sakai, “Heat-resistant Co-W catalytic metals for multilayer graphene chemical vapor deposition”, Jpn. J. Appl. Phys. **52** (2013) 04CB04.
5) A. Mitsumori, S. Fujishima, and K. Ueno, “Barrier integrity of electroless diffusion barriers and organosilane monolayer against copper diffusion under bias temperature stress”, Jpn. J. Appl. Phys. **51** (2012) 05EB03.
6) L. Razak, T. Yamaguchi, S. Akahori, H. Hashimoto, and K. Ueno, “Current induced grain growth of electroplated copper film”, Jpn. J. Appl. Phys. **51** (2012) 05EA04.
7) T. Tanaka, T. Sato, Y. Karasawa, and K. Ueno, “Chemical vapor deposition of nanocarbon on electroless NiB catalyst using ethanol precursor”, Jpn. J. Appl. Phys. **50** (2011) 05EF02.
8) K. Ueno, Y. Shimada, S. Yomogida, S. Akahori, T. Yamamoto, T. Yamaguchi, Y. Aoki, A. Matsuyama, T. Yata, and H. Hashimoto, “Grain growth enhancement of electroplated copper film by supercritical annealing”, Jpn J. Appl. Phys. **49** (2010) 05FA08.
9) Y. Kakuhara, S. Yokogawa, and K. Ueno, “Comparison of lifetime improvements in electromigration between Ti barrier metal and chemical vapor deposition Co capping”, Jpn. J. Appl. Phys. **49** (2010) 04DB08.
10) T. Osaka, H. Aramaki, M. Yoshino, K. Ueno, I. Matsuda, and Y. Shacham-Diamand, “Fabrication of electroless CoWP/NiB diffusion barrier layer on SiO2 for ULSI devices”, J. Electrochem. Soc., **156,** (2009) pp. H707-H710.
11) Y. Kakuhara, S. Yokogawa, M. Hiroi, T. Takewaki, and K. Ueno, "Suppression of electromigration early failure of Cu/porous low-k interconnects using dummy metal”, Jpn. J. Appl. Phys.**48** (2009) 096504.
12) Y. Kakuhara, K. Ueno, "Degradation of electromigration lifetime of Cu/low-k interconnects by

post annealing“, Jpn. J. Appl. Phys. **48** (2009) 046597.

International conference papers in recent 5 years:

1) H. Ichikawa, T. Uchida, and K. Ueno, "Effect of Current Stress during Thermal CVD of Multilayer Graphene on Cobalt Catalytic Layer”, Ext. Abst. 2015 SSDM (International Conf. on Solid State Devices and Materials), E-1-4, pp. 764-765.
2) H. Miyazaki, R. Matsumoto, m. Katagiri, D. Nishide, R. Ifuku, M. Takahashi, Y. Yamazaki, T. Matsumoto, N. Sakuma, K. Ueno, T. Sakai, and A. Kajita, “Intercalation Doping with Metal Chlorides in Low-Temperature-Grown Multilayr CVD Graphene for Interconnect Applications”, Ext. Abst. 2015 SSDM (International Conf. on Solid State Devices and Materials), E-1-5, pp. 766-767.
3) M. S. Uddin, H. Ichikawa, S. Sano, and K. Ueno, “Improvement of Multilayer Crystallinity by Solid Phase Precipitation Applying Current Stress during Annealing”, Ext. Abst. ADMETA 2015 (Advanced Metallization Conference 2015: Asian Session), 7-4, pp. 194-195.
4) S. Sano, K. Kitamura, Y. Matsumoto, T. Sakai, and K. Ueno, “Uniform Growth of Multilayer Graphene on SiO2 by Solid Phase Precipitation Involving Carbon Doped Cobalt with Copper Capping Layer”, IEEE 2015 IITC (International Interconnect Technology Conf.)/MAM (Materials for Advanced Metallization) Conf. 2015 (Grenoble).
5) H. Miyazaki, M. Katagiri, M. Takahashi, Y. Yamazaki, D. Nishide, T. Matsumoto, M. Wada, N. Sakuma, K. Ueno, R. Matsumoto, A. Kajita, and T. Sakai, “Resistivity of Graphene Nanowires: Requirements of Quality and Doping for Interconnect Applications”, Ext. Abst. 2014 SSDM (International Conf. on Solid State Devices and Materials), P-4-3, pp. 1050-1051.
6) Y. Matsumoto, A. Aozasa, R. Kosugi, H. Miyazaki, M. Wada, N. Sakuma, A. Kajita, and T. Sakai, and K. Ueno, “Passivation of Bromine-Doped Multilayer Graphene for Interconnect Applications”, Ext. Abst. ADMETA 2014 (Advanced Metallization Conference 2014: Asian Session) IWAPS Joint Conf., P-17, pp. 72-73.
7) H. Miyazaki, M. Katagiri, M. Takahashi, Y. Yamazaki, D. Nishide, T. Matsumoto, M. Wada, N. Sakuma, K. Ueno, R. Matsumoto, A. Kajita, and T. Sakai, “Estimation of Requirements for Sub-10-nm-wide Graphene Interconnect”, Ext. Abst. ADMETA 2014 (Advanced Metallization Conference 2014: Asian Session) IWAPS Joint Conf., 4-2, pp. 30-31.
8）R. Kosugi, K. Imazeki, A. Aozasa, Y. Matsumoto, H. Miyazaki, N. Sakuma, A. Kajita, T. Sakai, and K. Ueno, “Bromine Doping of Multilayer Graphene for Low Resistance Interconnects”, Ext. Abst. ADMETA 2013 (Advanced Metallization Conference 2013: Asian Session), 4-5.
9) L. Razak, D. Tobino, and K. Ueno, “Improvement of multilayer graphene quality by current stress during thermal CVD”, Abstract Book of Materials for Advanced Metallization 2013 (2013) pp. 147-148.
10) M. Yamashita, S. Fujishige, A. Mistumori, and K. Ueno, “ Reliability test of electroless barriers against copper diffusion under bias temperature stress with n- and p-type substrates”, Ext. Abstracts of Advanced Metallization Conference 2012, 22nd Asian Session (2012) pp. 58-59.
11) M. Takagi, H. Yano, T. Wakui, Y. Yamazaki, N. Sakuma, A. Kajita, T. Sakai, and K. Ueno,”Low-resistance metal contacts to nanocarbon/cobalt interconnects”, Ext. Abstracts of Advanced Metallization Conference 2012, 22nd Asian Session (2012)pp. 124-125.
12) S. Baba, S. Kuwahara, Y. Karasawa, H. Hanai, Y. Yamazaki, N. Sakuma, A. Kajita, T. Sakai, and K. Ueno, Ext. Abstracts of 2012 Solid State Dev. And Mat. (2012).
13) M. Takagi, W. Wakui, Y. Karasawa, S. Kuwahara, N. Sakuma, A. Kajita, and T. Sakai, and K. Ueno, “ Fabrication and electrical properties of nanocarbon/metal hybrid interconnects”, Ext. Abstracts of Advanced Metallization Conference 2012, 21st Asian Session (2011)pp. 134-135.
14) L. Razak, T. Yamashita, S. Akahori, H. Hashimoto, and K. Ueno, “Current induced grain growth of electroplated copper film”, Ext. Abstracts of Advanced Metallization Conference 2012, 21st Asian Session (2011) pp. 94-95.
15) A. Mitsumori, S. Fujishima, and K. Ueno, “Barrier reliability evaluation of electroless diffusion barriers and organosilane monolayer by bias temperature stress (BTS) tests”, Ext. Abstracts of Advanced Metallization Conference 2012, 21st Asian Session (2011) pp. 88-89.
16) T. Tanaka, T. Sato, Y. Karasawa, and K. Ueno, “Chemical vapor deposition of nanocarbon on

electroless Ni-B alloy catalyst", Ext. Abstracts of Advanced Metallization Conference 2010, 20th Asian Session (2010)pp. 118-119.
17) K. Ueno, "Material and process challenges for interconnects in nanoelectronics era (invited)", Proc. 2010 International Symp. VLSI Tech., Systems, and Applications (IEEE, 2010) pp. 64-65.

Other Features:

- National Projects: Low-resistance graphene interconnects for low-carbon society (NEDO), High reliability interconnect technology for storage memories (JST)
- Research Center for Green Innovation for low-carbon society
- Research facilities: MBE, CVD, sputter, evaporation, electroplating, electroless-plating, photo-lithography, RIE, XPS, UPS, AFM, SEM, TEM, Raman spectroscopy, etc.
- Welcome students who wants to challenge advanced technology research in nanoelectronics.

-Electric and Electronic Engineering-

YOKOI, Hideki

Field of Interest:	Optoelectronics, Integrated Photonic Devices
Title of Courses:	Advanced Research Program on Functional Devices Technology Opto-Electronics Engineering
Lecture Subject:	Optical Fiber Engineering
Topics for Thesis:	Integration of laser diode and optical nonreciprocal devices by use of photosensitive adhesives, Optical isolator employing nonreciprocal radiation mode conversion with strip-loaded magneto-optic waveguide Polarization independent optical triplexer for waveguide division multiplexing system, Waveguide optical sensor employing mode coupling

Publications and International Conference Papers:

[1] H. Yokoi, Y. Okada and K. Kobayashi, "Optical isolator with a-Si:H guiding layer": EMN Bangkok Meeting 2015, A19, November 2015.

[2] Y. Okada, K. Kobayashi, Y. Shoji, T. Mizumoto and H. Yokoi, "Design of optical isolator with strip-loaded waveguide employing nonreciprocal guided-radiation mode conversion": 20th Microoptics Conference, H50, pp. 196-197, October 2015.

[3] Y. Okada, D. Tamura, K. Kobayashi and H. Yokoi, "Design of polarization rotators in TE-TM mode conversion optical isolator with Ce:YIG guiding layer": Jpn. J. Appl. Phys., Vol. 54, no. 9, pp. 092202-1-092202-4, September 2015.

[4] Y. Shoji, K. Miura, Y. Okada, H. Yokoi and T. Mizumoto, "Design of Polarization-Independent Optical Isolator with Amorphous Silicon Waveguide": 11th International Conf. Group IV Photonics, August 2014.

[5] D. Tamura, Y. Okada, Y. Shoji, T. Mizumoto and H. Yokoi, "Coupling efficiency between laser diode and optical isolator integrated by photosensitive adhesive bonding": 4th International IEEE Workshop on Low Temperature Bonding for 3D Integration, July 2014.

[6] H. Yokoi, D. Tamura and Y. Okada, "TE-TM mode conversion optical isolator with spot size converter and halfwave plate": 19th Microoptics Conf., P026, June 2014.

[7] H. Yokoi, I. Myouenzono and D. Tamura, "Hybrid integration of laser diode and magneto-optic waveguides based on adhesive bonding": IEEE Summer Topicals 2013, TuB4.4, July 2013.

[8] R. Yokote, Y. Kojima and H. Yokoi, "Waveguide Optical Triplexer with Cascaded

Multi-Mode Interference Coupler": 18th OptoElectronics and Communications Conference, TuPL-12, July 2013.

[9] H. Yokoi, N. Ichishima and I. Myouenzono, "Integrating laser diode and optical isolator by photosensitive adhesive bonding": 14th International Symposium on Semiconductor Wafer Bonding, 2977, Electrochem. Soc. Proc., October 2012.

[10] H. Yokoi and K. Takaki, "Strip-loaded waveguide optical isolator employing nonreciprocal guided-radiation mode conversion": 6th International Symposium on Integrated Optoelectronics, 818, Electrochem. Soc. Proc., May 2012.

[11] S. Ikeya, H. Yokoi, T. Kawasaki and T. Hoshi, "Design of optical triplexer with cascaded mulit-mode interference couplers": 11th International Conf. on Numerical Simulation of Optoelectronic Devices, MP25, September 2011.

[12] H. Yokoi, K. Yamaguchi and Y. Uchiumi, "Design of optical isolator with sputter-deposited Si layer employing nonreciprocal radiation-mode conversion": Jpn. J. Appl. Phys., Vol. 50, no. 7, pp. 078001-1-078001-2, July 2011.

[13] H. Yokoi, S. Igarashi, Y. Uchiumi and K. Tani, "Garnet photonics toward developing laser diode integrated with optical isolator with Si guiding layer": Phys. Status Solidi, Vol. 8, no. 3, pp. 1071-1074, March 2011.

[14] H. Yokoi, S. Ikeya and T. Imada, "Design of optical isolator with TiO_2 / $(CeY)_3Fe_5O_{12}$ guiding layer": Materials Research Society's 2010 Fall Meeting, J4.1, November 2010.

[15] H. Yokoi, S. Igarashi and Y. Uchiumi, "Interferometric optical isolator with air/Si/magnetic-garnet waveguide operated in unidirectional magnetic field": Jpn. J. Appl. Phys., Vol. 49, no. 5, pp. 058002-1-058002-2, May 2010.

[16] H. Yokoi, K. Sasaki and T. Aiba, "Sputter-deposited Si layer for optical isolator with Si guiding layer": Jpn. J. Appl. Phys., Vol. 48, no. 6, pp. 062202-1-062202-4, June 2009.

Other Features: Hybrid integration of laser diode and optical isolator
Optical isolator with Si guiding layer
Amorphous Si layer deposition for magneto-optic waveguides
Design of optical triplexer for WDM
Polarization independent device with polarization diversity circuits
Waveguide optical sensor by use of slot waveguides
Evaluation of various optical devices

-Electric and Electronic Engineering-

YOSHIMI, Takashi

Field of Interest:	Robotics, Mechatronics System, System Integration
Title of Courses:	Advanced Research Program on Systems Control Engineering Robotics and Mechatronics
Lecture Subject:	Robot Task & System
Topics for Thesis:	Robotic skill/technique for task execution, Mobile manipulation system, Environment and manipulation frameworks

Publications and International Conference Papers:

1. Tomoya Oshima and Takashi Yoshimi: "The proposal and its evaluation of unified laundry folding method for robot arm", Proc. of the 1st International Conference on Intelligent Informatics and BioMedical Sciences (ICIIBMS 2015), T2fp-20959, 2015.
2. Naoya Kurihara, Shota Yamazaki, Takashi yoshimi, Takeyoshi Eguchi and Hiroki Murakami: "The Proposal of Automatic Task Parameter Setting System for Polishing Robot", Proc. of the 12th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI2015), FA1-2, 2015.
3. Pham Ngoc Hung and Takashi Yoshimi: "Extraction of actions and objects from instruction manual for executable robot planning", Proc. of the 2015 15th International Conference on Control, Automation and Systems (ICCAS 2015), TB02-5, 2015.
4. Eiji Kobayashi, Takashi Yoshimi, Nobuto Matsuhira, Makoto Mizukawa and Yoshinobu Ando: "A Study of Driving Trajectory for Standing-Up Motion Support System", Proc. of the 10th Asian Control Conference (ASCC2015), 1.1 D1-3, 2015.
5. Tomoya Oshima, Takashi Yoshimi, Makoto Mizukawa and Yoshinobu Ando: "A Study of Towel Folding by a Robot Arm -Spreading and Vertex Detection using Image Processing-", Proc. of the 2014 14th International Conference on Control, Automation and Systems (ICCAS 2014), TA04.5, 2014.
6. Mitsuhiro Iwata, Takashi Yoshimi, Makoto Mizukawa and Yoshinobu Ando: "A Study of Appropriate Task Sharing Based on International Classification of Functioning (ICF) for Human Cooperative Support Robot", Proc. of the SICE Annual Conference 2014, FrBT10.6, 2014.
7. Takashi Yoshimi, Yuu Ohnuki, Kazutaka Yaguchi, Yoshinobu Ando and Makoto Mizukawa: "Trajectory Generation for Beverage Can Opening Operation by Single and Dual Robot Arm", Proc. of the 39th Annual Conference of the IEEE Industrial

Electronics Society (IECON2013), TT09 7-6, 2013.
8. Ken Hashimoto, Takashi Yoshimi, Makoto Mizukawa, Yoshinobu Ando and Kiyoaki Takeuchi: "A study of collision avoidance between service robot and human at corner- Analysis of human behavior at corner -", Proc. of the 10th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI2013), FA1-4, 2013.
9. Naofumi Yoshida, Takashi Yoshimi, Makoto Mizukawa and Yoshinobu Ando: "A Study of Egg Breaking Motion by Single Robot Arm", Proc. of the 32nd Chinese Control Conference (CCC2013), SuA20-2, 2013.
10. Motoki Hirayama, Takaaki Kanazawa, Masao Kawanami, Syohei Shimoyama, Takashi Yoshimi, Makoto Mizukawa, Yoshinobu Ando, Masakazu Fujii and Hiroki Murakami: "Workpiece Position and Posture Measurement System by Using RFID Tag for Finishing Robot System", Proc. of the 9th International Conference on Ubiquitous Robots and Ambient Intelligence (URAI2012), WD3-4, 2012.
11. Takahiro Fujita, Yusuke Numata, Takashi Yoshimi, Makoto Mizukawa and Yoshinobu Ando: "A Study of Intelligent Drawer with RFID Tag Information Reading System for Intelligent Space", Proc. of the 2012 IEEE International Conference on Mechatronics and Automation (ICMA2012), MA1-6-02, 2012.
12. Takashi Yoshimi, Naoyuki Iwata, Makoto Mizukawa and Yoshinobu Ando: "Picking up Operation of Thin Objects by Robot Arm with Two-Fingered Parallel Soft Gripper", Proc. of the 2012 IEEE International Workshop on Advanced Robotics and its Social Impacts (ARSO2012), MoA1-02, 2012.
13. Hajime Fujii, Yoshinobu Ando, Takashi Yoshimi and Makoto Mizukawa: "Shape Recognition of Metallic Landmark and its Application to Self-Position Estimation for Mobile Robot", Journal of Robotics and Mechatronics, Vol.22, No.6, pp. 718-725, 2010.

↓

Other Features:

In a rapidly ageing society with fewer children, skillful and intelligent robots are expected to support humans supplementing labor in various tasks. The lab aims to create highly capable robots that can execute aimed operations flexibly in an environment and situation from factories and plants to everyday home life. The main focus of the lab is research into how to give skills for desired tasks to robots as well as constructing methods of practical robot systems.

(Contact: yoshimit@sic.shibaura-it.ac.jp)

Information Science and Engineering

-Information Science and Engineering-

AIBA, Akira

Field of Interest:	Application of Information Technology to Japanese Classical Literature, Social Application of Information Technology, Multi-Agent System, Logic Programming, Constraint Logic Programming, Functional Programming
Title of Courses:	Advanced Research on Telecommunication Function Control Studies on Problem Solving Systems
Lecture Subject:	Computational Models
Topics for Thesis:	Pedestrian Navigation System using Extended Reality, Cooperative Scheduling By n-ary negotiation in Distributed Constraint Solving, Robustness of Multi-agent System in Dynamic Environment

Publications and International Conference Papers:

1. Akira Aiba, Sachio Hirokawa, “Discrimination of "MASURAWO" and "TAOYAME" in Web Documents”, IEE Workshop on Information Systems, Nov. 2015.
2. Akira Aiba, Shinichi Sato, and Shigeto Aramaki,, “Construction of Robot Structure Design Support System by Constraint Logic Programming”, Journal of Robotics and Mechatronics, Vol.8, No.5, pp.481-490, Jan, 1996.
3. Akira Aiba, Kazumasa Yokota, and Hiroshi Tsuda, “Heterogeneous Distributed Cooperative Problem Solving System HELIOS and Its Cooperation Mechanism”, International Journal of Cooperative Information Systems, Vol.4, No.4, Jan. 1995.
4. Hiroyuki Sawada; Satoshi Terasaki; and Akira Aiba, “Parallel Computation of Grobner Bases on Distributed Memory Machines”, Journal of Symbolic Computation, Vol.18, No.3, Sep. 1994.
5. Akira Aiba; and Ryuzo Hasegawa, “Constraint Logic Programming System : CAL, GDCC and Their Constraint Solvers”, Proc.for International Conference on Fifth Generation Computer Systems 1992, Jun. 1992.

Other Features:

Recent Research Topics

1. Research on information infrastructure system for wheel-chair users
2. Recognition of historical hand written Japanese character HIRAGANA

-Information Science and Engineering-

GYODA, Koichi

Field of Interest:	Wireless Communications network, Disaster communications
Title of Courses:	Advanced Research on Telecommunication Function Control
	Wireless Communication Systems Engineering
Lecture Subject:	Wireless Communications Network
Topics for Thesis:	Research on Ad Hoc Network Performance for Disaster Communication Models Research on Communication Performance for Search Robot Rescue System by use of Hybrid ad hoc Network Research on Space Optical Communication System

Publications and International Conference Papers:

1. K. Yano, Y. Takayama, H. Kunimori, and K. Gyoda, "A Proposal of Beaconless Ground to Satellite Laser Communication System by Using GPS Information", Proc. of JC-SAT2015, pp.81-85, Oct. 2015.
2. K. Yano, Y. Takayama, H. Kunimori, and K. Gyoda, "A Study on the Potable Optical Communication System for Disaster Communications", Proc. of the 30th International Technical Conference on Circuits/Systems, Computers and Communications (ITC- CSCC2015), pp. 4-7, Jul. 2015.
3. T. Nishimaki and K. Gyoda, "A proposal for finding node addresses in the inter-vehicle communication protocol iFORP", Proc. of the 30th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC2015), pp. 4-7, Jul. 2015.
4. T. Nishimaki and K. Gyoda, "Improvement and Evaluation of the Wireless Ad Hoc Network Protocol FORP for Inter-Vehicle Communications", Proc. of 2014 IEEE Asia Pacific Conference on Circuits and Systems (APCCAS2014), pp.387-390, Nov. 2014.
5. K. Yano, Y. Takayama and K. Gyoda, "Measurements of the Refractive Index Structure Constant and Studies on Beam Wander", Proc. of International Conference on Space Optical Systems and Applications (ICSOS2014), No.P-15, May 2014.
6. K. Gyoda, "Analysis and Evaluation of Wireless Ad Hoc Network Performance for Disaster Communication Model and Scenarios", Lecture Notes in Computer Science (LNCS), Springer, Vol.8014, pp. 65-74, Jul. 2013.

7. K. Miyata and K. Gyoda, “Performance Evaluation of the Wireless Ad Hoc Network Protocol Considering the Link Expiration Time for Inter-Vehicle Communication”, Proc. of the 28th International Technical Conference on Circuits/Systems, Computers and Communications (ITC- CSCC2013), pp. 12-15, Jul. 2013.
8. T. Kikuchi and K. Gyoda, “Design and Trial Production of the Directivity Controllable Antenna for Three-Dimensional Mobile Robots”, Proc. of the 28th International Technical Conference on Circuits/Systems, Computers and Communications (ITC- CSCC2013), pp. 16-19, Jul. 2013.
9. K. Gyoda, H. Nguyen, Y. Hada, K. Okada and O. Takizawa, “Performance Evaluation of Wireless Ad Hoc Network for Disaster Communication”, JOURNAL OF THE NATIONAL INSTITUTE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, Vol.58, Nos.1/2, pp.107-129, Mar./Jun. 2011.
10. K. Shimoda and K. Gyoda, “Analysis of Ad Hoc Network Performance for Disaster Communication Models”, Proc. of the 10th International Symposium on Autonomous Decentralized Systems (ISADS2011), pp. 483-488, Jun. 2011.
11. K. Fueki and K. Gyoda, “Evaluation of the Communication Performance for Search Robot Rescue System by use of Hybrid ad hoc Network”, Proc. of the 26th International Technical Conference on Circuits/Systems, Computers and Communications (ITC- CSCC2011), Jun. 2011.
12. W. Al-Mandhari, K. Gyoda and N. Nakajima, “Ad-hoc on Demand Distance Vector (AODV) Performance Enhancement with Active Route Time-Out parameter”, WSEAS TRANSACTIONS on COMMUNICATIONS, Vol.7, No.9, pp.912-921, Sep. 2008.
13. K. Gyoda, N. H. Nguyen, K. Okada and O. Takizawa, “Analysis of Ad Hoc Network Performance in Emergency Communication Models”, Proc. of the 22nd International Conference on Advanced Information Networking and Applications- Workshops (WAINA-IWDENS2008), pp.1083-1088, Mar. 2008.
14. W. Al-Mandhari, K. Gyoda and N.Nakajima, “Performance Evaluation of Active Route Time-Out parameter in Ad-hoc On Demand Distance Vector (AODV)”, Proc. of the 6th WSEAS Int. Conf. on APPLIED ELECTROMAGNETIC, WIRELESS and OPTICAL COMMUNICATIONS (ELECTROSCIENCE’ 08), pp. 47-51, Jul. 2008.

Other Features:

Website: http://www.glab.ce.shibaura-it.ac.jp/WCNLAB_EN/

- Information Science and Engineering

INOUE, Masahiro

Field of Interest:	M2M(Machine to Machine) Communication, IoT(Internet of Things), Ubiquitous Network, Personal Area Network, Embedded Systems, Systems Engineering, Project Management Education, Engineering Education
Title of Courses:	Advanced Research on Telecommunication Function Control Information Networking Systems
Lecture Subject:	Embedded Systems Engineering Global Project Based Learning Systems Engineering Exercises in Systems Engineering
Topics for Thesis:	M2M (Machine to Machine) Communication, IoT(Internet of Things), Embedded Systems, Consumer and Home Network Disaster Information System Systems Engineering Project Management Education Engineering Education

Publications and International Conference Papers:

1. Masahiro Inoue, Hiroshi Hasegawa, Kazunori Mano, Yoshimi Furukawa, Atsuko Yamazaki, and Anak Khantachawana , Development of an Engineering Education Program for Innovation in Global Environment, The World Engineering Conference and Convention (WECC2015), December 2, 2015.
2. Masahiro Inoue, Ichiro Sofue, Hiroshi Hasegawa, Atsuko Yamazaki, and Anak Khantachawana, E-portfolio for Global Human Resource Development Program, Proceedings of International Conference on Engineering Education, ICEE 2015, July 22, 2015
3. Yuki Abe, Maher Aljehani and Masahiro Inoue, Early Detection System of Senile Dementia by Analyzing Behavioral Data of Actual Patients, The 34th Chinese Control Conference & SICE Annual Conference 2015 (CCC&SICE2015), July 30, 2015.
4. Ryosuke Saeki and Masahiro Inoue, Vital Data Measurement System During Exercise Using Thermoelectric Element as a Power Supply, IEEE International Conference on Consumer Electronics, ICCE2015, Digest of Technical Papers, pp., Las Vegas, January 9, 2015.

5. Masahiro Inoue, Tomoko Maruyama, and Hiroko Nagaya, Project Management Education Embedded in Engineering Education and Research for Fostering Generic Skills, INNOVATIONS 2014: World Innovations in Engineering Education and Research, iNEER, Potomac, MD, USA, pp.27-36, June 2014.
6. Shuhei Kusano and Masahiro Inoue, Safety Route Guidance System Using Participatory Sensing, IEEE Global Conference on Consumer Electronics, GCCE2012, Proceedings, Oct. 1, 2013.
7. Yuki Abe, Machiko Toya, and Masahiro Inoue, Early Detection System Considering Types of dementia by Behavior Sensing, IEEE Global Conference on Consumer Electronics, GCCE2012, Proceedings, Oct. 1, 2013.
8. Ryosuke Saeki, Junichi Yoshino and Masahiro Inoue, Active RFID Tag Drive Using Thermoelectric Conversion Element, IEEE Global Conference on Consumer Electronics, GCCE2012, Proceedings, Oct. 1, 2013.
9. Masahiro Inoue, Tomoko Maruyama, and Hiroko Nagaya, Project Management Education Embedded in Engineering Education and Research for Fostering Generic Skills, Proceedings of International Conference on Engineering Education and Research, iCEER-2013, pp.184-191, Marrakesh, July 2, 2013.
10. Yuki Abe, Machiko Toya, and Masahiro Inoue, Early Detection System of Senile Dementia by Behavior Sensing, IEEE International Symposium on Consumer Electronics, ISCE2013, Proceedings, June 3, 2013.
11. Eri Usami and Masahiro Inoue, Consumers' Confused Behavior Analysis in Manufacturing and Distribution Shop, IEEE International Symposium on Consumer Electronics, ISCE2013, Proceedings, June 3, 2013.
12. Masashi Kanai and Masahiro Inoue, Home Information Management System with Automatic Acquisition of Consumer Electronics Information, IEEE International Symposium on Consumer Electronics, ISCE2013, Proceedings, June 3, 2013.
13. Tomohiro Suzuki and Masahiro Inoue, Lifestyle Improvement Support System Using Context, IEEE International Conference on Consumer Electronics, ICCE2013, Digest of Technical Papers, pp., Las Vegas, January 11, 2013
14. Tatsuya Nozawa, Katsuya Suzuki, Masahiro Inoue, Development of the Home Network Device Incorporating Distributed Autonomous Control, IEEE Global Conference on Consumer Electronics, GCCE2012, Proceedings, pp.342-343, Oct. 2, 2012.
15. Akihiro Arai, Yuji Takeda, Masashi Nakamura, Takashi Yamaguchi, Masahiro Inoue, Network Power Saving by Group Control Method with Sensing Data Characteristic, IEEE Global Conference on Consumer Electronics, GCCE2012,

Proceedings, pp.617-618, Oct. 2, 2012.
16. Shuhei Kusano, Masahiro Inoue, Consumer Network System for Evacuation Guidance after Natural Disasters, IEEE International Symposium on Consumer Electronics, ISCE2012, Proceedings, June 5, 2012.
17. Katsuya Suzuki, Masahiro Inoue, Home Network System with Cloud Computing and Distributed Autonomous Control, IEEE International Symposium on Consumer Electronics, ISCE2012, Proceedings, June 4, 2012.

Other Features:

Dr. Masahiro Inoue is a professor of College of Systems Engineering and Science, Shibaura Institute of Technology. His field of research includes embedded system, ubiquitous network, M2M (Machine to Machine) communication, IoT(Internet of Things), systems engineering, and project management. He received his B.S. and M.S degree in Applied Physics from Waseda University and Ph. D. degree in Computer Science from Shizuoka University. He was engaged in research and development at Mitsubishi Electric Corporation. During 1990-1991, He was a visiting research scientist at the University of Michigan. In 2005, He became a professor of Shibaura Institute of Technology. He is a Professional Engineer in Japan (PEJp) and a Project Management Professional (PMP).

- Information Science and Engineering -

KAMEKO, Masaki

Field of Interest:	Algebraic Topology
Title of Courses:	Advanced Research Program on Systems Control Engineering Applied Mathematical Science
Lecture Subject:	Topics in Mathematics
Topics for Thesis:	Hit problem, cohomology of classifying spaces

Publications and International Conference Papers:

1. MathMasaki Kameko, Cohomology of classifying spaces of loop groups and finite Chevalley groups associated with spin groups. To appear in Topology and its Applications.
2. Masaki Kameko, On the integral Tate conjecture over finite fields. Math. Proc. Cambridge Philos. Soc. 158(3) 531-546.
3. Masaki Kameko, Michisige Tezuka and Nobuaki Yagita , Coniveau spectral sequences of classifying spaces for exceptional and Spin groups. Math. Proc. Cambridge Philos. Soc. 152(02) 251-278.
4. Masaki Kameko, Chern classes and generators. Proc. Japan Acad. Ser. A Math. Sci. 88(1) 21-23.
5. Masaki Kameko and Nobuaki Yagita, Chern subrings. Proc. Amer. Math. Soc 138(1) 367-373.
6. Masaki Kameko and Nobuaki Yagita, The Brown-Peterson cohomology of the classifying spaces of the projective unitary groups PU(p) and exceptional Lie groups. Trans. Amer. Math. Soc. 360 2265-2284.
7. Masaki Kameko and Mamoru Mimura, On the Rothenberg-Steenrod spectral sequence for the mod 2 cohomology of classifying spaces of spinor groups. Geometry & Topology Monographs 13 261-279.
8. Masaki Kameko and Mamoru Mimura, Mui invariants and Milnor operations. Geometry & Topology Monographs 11 107-140.

↓

Other Features:

I am a mathematician. You may find my name in the Mathematics Genealogy Project http://genealogy.math.ndsu.nodak.edu/

-Information Science and Engineering-

KAMIOKA, Eiji

Field of Interest:	Mobile Network and Communication, Ubiquitous Computing, Context-aware Computing, Mobile Multimedia Applications
Title of Courses:	Advanced Research on Telecommunication Function Control Research in Information and Communication Systems
Lecture Subject:	Ubiquitous Computing System
Topics for Thesis:	Personal Communication Systems in Ubiquitous Environments Context-aware Applications for Ubiquitous Computing Quality of Mobile Multimedia Communications

Publications and International Conference Papers:

1. Toan Nguyen-Duc and Eiji Kamioka, "Feasibility of SDN-based Vertical Handover between Bluetooth and Wi-Fi", Proceedings of the International Conference on Computing, Management & Telecommunications (ComManTel2015), DUY TAN University, DaNang, Vietnam, December 28-30, 2015 (accepted).
2. Toan Nguyen-Duc and Eiji Kamioka, "An Extended SDN Controller for Handover in Heterogeneous Wireless Network", Proceedings of the 21th Asia-Pacific Conference on Communications (APCC2015), Kyoto University, Kyoto, Japan, October 14-16, 2015, pp.332-337.
3. Nur Ellina Binti Ishak and Eiji Kamioka, "Energy Efficient Beamformaing Transmission Scheme considering Hourly Users' Distribution", Proceedings of the 21th Asia-Pacific Conference on Communications (APCC2015), Kyoto University, Kyoto, Japan, October 14-16, 2015, pp.109-113.
4. Mohamad Sabri bin Sinal and Eiji Kamioka, "DIAGNOSIS OF ECG DATA FOR DETECTING CARDIAC DISORDER USING DP-MATCHING AND ARTIFICIAL NEURAL NETWORK", Proceedings of the 3rd International Conference on Innovation in Medicine and Healthcare 2015 (KES-InMed-15), Ritsumeikan University, Kyoto, Japan, September 12, 2015, pp.161-171.
5. Muhammad Ariff Bin Baharudin, Tran Minh Quang, Eiji Kamioka, "Improvement of Handover Performance Based on Bio-Inspired Approach with Received Signal Strength and Mean Opinion Score," Arabian Journal for Science and Engineering, Vol.40, Issue 6, 2015, pp.1623-1636.
6. Daichi Hasumi, Eiji Kamioka, "A Considerate Application Prediction System with Artificial Neural Network", Proceedings of the 18th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES2014), Gdynia, Poland, September 15-17, 2014, pp.1547-1556.
7. Quang Tran Minh, Muhammad Ariff Baharudin, and Eiji Kamioka, "Synergistic Approaches to Mobile Intelligent Transportation Systems Considering Low Penetration Rate," Pervasive and Mobile Computing, Elsevier, Vol.10, Part B, February 2014, pp.187-202.
8. Quang TRAN-MINH, Kien NGUYEN, Eiji KAMIOKA, Shigeki YAMADA, "MDRAN: MULTIHOP DISASTER RECOVERY ACCESS NETWORK," Journal of Mobile Multimedia, Vol.10, No.1&2, May 15, 2014, pp.30-42.
9. Quang Tran Minh, Kien Nguyen, Eiji Kamioka and Shigeki Yamada,

"Tree-based Disaster Recovery Multihop Access Network," Proceedings of the 19th Asia-Pacific Conference on Communications (APCC2013), 29-31 August, Bali Island, Indonesia, 2013, pp.415-420.
10. Quang Minh Tran, Muhammad Ariff Baharudin, Eiji Kamioka and Shigeki Yamada, "Dynamic Effect of Vehicle Types on Traffic State Estimation, " Proceedings of the International Conference on Computing, Management & Telecommunications (ComManTel2013), 21-24 January, 2013, Ho Chi Minh City, Vietnam, pp.32-37.
11. Quang Tran Minh, Muhammad Ariff Baharudin and Eiji Kamioka, "MC-TES: An Efficient Mobile Phone Based Context-Aware Traffic State Estimation Framework," Journal of Information Processing, Vol.21, No.1, 2013, pp.76-89.
12. Yuki Yamashita, Takuya Imawaka, and Eiji Kamioka, "Detection of Unpleasant Auditory Perception with Biological Information," Proceedings of the 18th Asia-Pacific Conference on Communications (APCC2012), 15-17 October, Jeju Island, Korea, 2012, pp.122-126.
13. Quang Tran Minh, Muhammad Ariff Baharudin, and Eiji Kamioka, "Context-Aware Mobile Intelligent Transportation Systems ", Proceedings of IEEE 76th Vehicluar Technology Conference (VTC2012-Fall), September 3-6, Quebec, Canada, 2012, CD-ROM.
14. Quang Tran Minh, Muhammad Ariff Baharudin, and Eiji Kamioka, "Mobile Phone Based Walker Recognition and Vehicle Classification", Proceedings of the 9th IEEE Vehicular Technology Society Asia Pacific Wireless Communications Symposium (VTS APWCS2012), Kyoto, Japan, August 23-24, 2012, CD-ROM.
15. Muhammad Ariff Baharudin, Quang Tran Minh and Eiji Kamioka, " Velocity Classification Model Based on Artificial Neural Network for the Velocity-Centric Ant Colony Optimization-Inspired SCTP Handover System", Proceedings of the 6th International Conference on Mobile Computing and Ubiquitous Networking (ICMU2012), Okinawa, Japan, May 23-25, 2012, pp.62-68.
16. Quang Tran Minh, Muhammad Ariff Baharudin and Eiji Kamioka, "Uncertain Penetration Rate Issues in Mobile Intelligent Transportation Systems ", Proceedings of the 6th International Conference on Mobile Computing and Ubiquitous Networking (ICMU2012), Okinawa, Japan, May 23-25, 2012, pp.48-55.
17. Muhammad Ariff Baharudin, Quang Tran Minh and Eiji Kamioka, “Evaluation of the SCTP Optimal Path Selection with Ant Colony Optimization Probabilistic Equation Implementation”, Proceedings of IEEE 75th Vehicluar Technology Conference (VTC2012-Spring), May 6-9, Yokohama, Japan, 2012, CD-ROM.
18. Quang Tran Minh, Muhammad Ariff Baharudin and Eiji Kamioka, "Uncertain Low Penetration Rate – A Practical Issue in Mobile Intelligent Transportation Systems", Proceedings of the 26th IEEE International Conference on Advanced Information Networking and Applications (AINA2012), Fukuoka, Japan, March 26-29, 2012, pp.237-244.
19. Muhammad Ariff Baharudin, Quang Tran Minh and Eiji Kamioka, "Evaluations of Ant Colony Optimization Inspired SCTP Optimal Path Selection using E-Model", Proceedings of the 26th IEEE International Conference on Advanced Information Networking and Applications (AINA2012), Fukuoka, Japan, March 26-29, 2012, pp.487-494.
20. Quang Tran Minh and Eiji Kamioka, "Adaptive Approaches in Mobile Phone Based Traffic State Estimation with Low Penetration Rate", Journal of Information Processing, Vol.20, No.1, 2012, pp.297-307.
21. Quang Tran Minh and Eiji Kamioka, "Traffic State Estimation with Mobile Phones Based on The “3R” Philosophy", IEICE Transactions on

Communications, Vol. E94-B, No.12, 2011, pp.3447-3458.
22. Quang Tran Minh and Eiji Kamioka, “Assuring Accuracy on Low Penetration Rate Mobile Phone-Based Traffic State Estimation System”, Proceedings of IEEE 74th Vehicluar Technology Conference (VTC2011-Fall), Sep. 5-8, San Francisco, USA, 2011, CD-ROM.
23. Eiji Kamioka, Tatsuya Kasahara, and Takahiro Sawatari, "Possibility of Brainwave-based Context Aware Systems", Proceedings of the 5th South East Asia Technical University Consortium Symposium (SEATUC2011), Hanoi, Vietnam, February 24-25, 2011, pp.44-45.
24. Quang Tran Minh, and Eiji Kamioka, “Pinpoint: An Efficient Approach to Traffic State Estimation System Using Mobile Probes”, Proceedings of the 6th International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM2010), Sep. 23-25, Chengdu, China, 2010, CD-ROM.
25. Quang Tran Minh and Eiji Kamioka, “Granular Quantifying Traffic State Using Mobile Probes”, Proceedings of IEEE 72nd Vehicle Technology Conference (VTC2010-Fall), Sep. 6-9, Ottawa, Canada, 2010, CD-ROM.
26. Eiji Kamioka, “User-Centric Network Application with User’s Intuitive Operations”, Proceedings of the 4th South East Asia Technical University Consortium Symposium (SEATUC2010), Tokyo, Japan, February 25-26, 2010, pp.297-300.
27. Kentaro Tsuji and Eiji Kamioka, “Estimation of User’s Position and Behavior Based on Measurements of Sensor Information”, Proceedings of the 9th International Symposium on Autonomous Decentralized Systems (ISADS2009), Athens, Greece, March 23-25, 2009, pp.345-350.
28. Md. Nurul Huda, Faizana Yasmeen, Eiji Kamioka, and Shigeki Yamada, "Optimal Path Selection in MANET considering Network Stability and Power Cost", ANSI Information Technology Journal, Vol.6, Issue 7, 2007, pp.1021-1028.
29. Eiji Kamioka and Shigeki Yamada, "A Media Handover System with an IrDA Pointer", Proceedings of the 11th International Conference on Internet and Multimedia Systems and Applications (IMSA2007), Honolulu, Hawaii, USA, August 20-22, 2007, pp.62-67.
30. Mingmei Li, Eiji kamioka, and Shigeki Yamada, "Pricing to Stimulate Node Cooperation in Wireless Ad Hoc Networks", IEICE Transactions on Communications, Vol. E90-B, No.7, 2007, pp.1640-1650.
31. Md. Nurul Huda, Eiji Kamioka, and Shigeki Yamada, "Design, Analysis, and Evaluation of Mobile Agent based Privacy Protection Scheme for Multi-party Computation Problem", IPSJ Transactions, Vol.48, No.6, 2007, pp.2085-2096.
32. Ved P. Kafle, Sangheon Pack, Yanghee Choi, Eiji Kamioka, and Shigeki Yamada, "IIPP: Integrated IP Paging with Power Save Mechanism", Wiley Wireless Communications and Mobile Computing (WCMC), Vol.7, Issue 5, June, 2007, pp.553-568.
33. Md. Nurul Huda, Eiji Kamioka, and Shigeki Yamada, "An Efficient and Privacy-aware Meeting Scheduling Scheme using Common Computational Space", IEICE Transactions on Information and Systems, Vol. E90-D, No.3, 2007, pp.656-667.
34. Ved P. Kafle, Eiji Kamioka and Shigeki Yamada, "CoMoRoHo: Cooperative mobile router-based handover scheme for long vehicular networks", IEICE Transactions on Communications, Vol. E89-B, No.10, 2006, pp.2774-2785.
35. Ved P. Kafle, Eiji Kamioka, and Shigeki Yamada, "MoRaRo: Mobile router-assisted route optimization for network mobility (NEMO) support", IEICE Transactions on Information and Systems, Vol. E89-D, No.1, 2006, pp.158-170.
36. Ved P. Kafle, Eiji Kamioka and Shigeki Yamada, "A Scheme for Graceful

Vertical Handover in Heterogeneous Overlay Networks", Proceedings of the 2nd IEEE International Conference on Wireless and Mobile Computing, Networking and Communications (WiMob2006), Montreal, Canada, June 19-21, 2006, pp.343-348.
37. Eiji Kamioka, Shigeki Yamada, Shigeru Morifuku, Makoto Gozu, Shigeo Takifuji, and Makoto Okita, "A User-driven Device Handover System in PAN Environments", Proceedings of the 7th IEEE International Conference on Mobile Data Management 2006 (MDM2006), Nara, Japan, May 10-12, 2006, pp.56-61.
38. Ved P. Kafle, Eiji Kamioka, and Shigeki Yamada, "Maximizing user satisfaction based on mobility on heterogeneous mobile multimedia communication networks", IEICE Transactions on Communications, Vol. E88-B, No.7, 2005, pp.2709-2717.
39. Shigeki Yamada and Eiji Kamioka, "Access Control for Security and Privacy in Ubiquitous Computing Environments", IEICE Transactions on Communications, Vol.E88-B, No.3, 2005, pp.846-856.
40. Ved P. Kafle, Eiji Kamioka, and Shigeki Yamada, "User-centric performance and cost analysis for selecting access networks in heterogeneous overlay systems", Proceedings of the 8th IFIP/IEEE International Conference on Management of Multimedia Networks and Services 2005 (MMNS 2005), LNCS 3754, Barcelona, Spain, October 24-26, 2005, pp.277-288.
41. Ved P. Kafle, Eiji Kamioka, and Shigeki Yamada, "Mobile IPv6-type route optimization scheme for network mobility (NEMO) support", Proceedings of the 10th IFIP International Conference on Personal Wireless Communications 2005 (PWC 2005), Colmar, France, August 25-27, 2005, pp.381-388.
42. Mingmei Li, Eiji Kamioka, Shigeki Yamada and Yang Cui, "Efficient Node Forwarding Strategies via Non-cooperative Game for Wireless Ad Hoc Networks", Proceedings of the 3rd International Conference on Computer Networks and Mobile Computing 2005 (ICCNMC2005), LNCS 3619, Zhangjiajie, China, August 2-4, 2005, pp.334-343.
43. Huda Md. Nurul, Shigeki Yamada and Eiji Kamioka," Routing Cost vs. Network Stability in MANET", Proceedings of the 4th International Conference on Networking 2005 (ICN2005), LNCS 3421, Reunion Island, France, April 17-21, 2005, pp.218-225.
44. Huda Md. Nurul, M. Julius Hossain, Shigeki Yamada, Eiji Kamioka, and Ok-Sam Chae, "Cost-effective Lifetime prediction based Routing Protocol for MANET", Proceedings of the International Conference on Information Networking 2005 (ICOIN2005), LNCS 3391, Jeju, Korea, January 31-February 2, 2005, pp.170-177.
45. Eiji Kamioka, Shigeki Yamada and Takako Sanda, "Proposal for Context-Aware Information Delivery and Personal Communication Network Architectures with Preliminary Evaluations of Their Performance", IEICE Transactions on Communications, Vol.E87-B, No.9, 2004, pp.2672-2681.
46. Eiji Kamioka and Shigeki Yamada, "Environment-Adaptive Personal Communications Realizing Ubiquitous Computing Networks", WILEY, Electronics and Communications in Japan, Part I: Communications, Vol.87, No.1, 2004, pp.34-47.
47. Eiji Kamioka and Shigeki Yamada, "Context-Aware Service System Architectures and Their Performance Evaluations in terms of Response Time", Proceedings of the International Conference on Communications, Internet and Information Technology (CIIT2004), 22-24 November, St. Thomas, Virgin Islands, USA, 2004, pp.387-394.
48. Eiji Kamioka, Shigeki Yamada and Takako Sanda, "Network-Centric Architecture for Context-Aware Information Delivery Services in 3G Mobile Networks", Proceedings of the 7th Asia-Pacific Network Operations and

Management Symposium (APNOMS2003), 1-3 October, Fukuoka, Japan, 2003, pp.464-475.

49. Eiji Kamioka, Shigeki Yamada and Takako Sanda, "A Context-Aware Information Delivery System Architecture using UMTS Network", Proceedings of the International Conference on Communication Systems and Networks (CSN2003), 8-10 September, Benalmadena, Spain, 2003, pp.131-137.

Other Features:

- Served as the chair of Technical Committee on Mobile Multimedia Communications, IEICE, May 2009 - May 2011. Currently, one of the advisory board members of Technical Committee on Mobile Multimedia Communications.
- Served as the publication chair of 7th IEEE International Conference on Mobile Data Management (MDM2006).
- Served as a technical program co-chair of 3rd IPSJ International Conference on Mobile Computing and Ubiquitous Networking (ICMU2006).

English Website:

http://www.kamioka.ce.shibaura-it.ac.jp/index-e.html

(Contact form is available on the Website)

- Information Science and Engineering -

HORIE, Ryota

Field of Interest:	Brain Computer Interface, Natural Interface - Element technology / Fundamental research : Biomedical Signal Processing, Cognitive Neuroscience, Neural Networks, Nonlinear Dynamics - System Integration: Compact EEG Recorder, Smart Devices, Communication Protocols - Applications: Life Support System, Smart House Controller, Entertainment (Neuro Game) Other fields: Optimization, Mathematical Biology
Title of Courses:	Advanced Research on Telecommunication Function Control Bionic Communication Engineering
Lecture Subject:	Bionic and Biomimetic System Engineering (tentative, FY 2017-)
Topics for Thesis:	A Study for Understanding Kawaii Feelings A Fundamental Study on Steady State Visual Evoked Potentials and its Application to a Brain Computer Interface A Proposal for a Life Support System by Using a Brain Computer Interface Composed of a Compact EEG Recording Device and a Smart Phone Prediction of Opening and Closing of the Hand by Using a Gesture Sensor and Recurrent Neural Networks A Verification of EEG-based Biometrics by Using an EEG database and a Compact EEG Recording Device Analysis of Motor Imaginary by Using EEG Hilbert Huang Transform

Publications and International Conference Papers:

1. Jiachen Yang, Ryota Horie, “An Improved Computer Interface Comprising a Recurrent Neural Network and a Natural User Interface”, Procedia Computer Science, Vol. 60, pp.1386-1395 (2015)

2. Ryota Horie, Ito Noriki, “Binarized Event-Related Potentials”, EMBC 2015 Proceedings, SaBPoT6.34 (2015)

3. Yuya Otsuka, Genki Ishii, Shunichi Saeki, Shohei Imanara, Ryota Horie, “Look, Blink, Concentrate, and Control: A Simple Smart House Controller Composed of a Simple BCI, ECHONET Lite and a Smart Glass with a Function of Object Recognition”, EMBC 2015 Proceedings, FrFPoT9.24 (2015)

4. Miyuki Yanagi, Yoshiyuki Yamariku, Tomomi Takashina, Yoshikazu Hirayama, Ryota Horie, Michiko Ohkura, “Differences in Heart Beat Modulation between

Excitedly Kawaii Feeling and Relaxingly Kawaii Feeling in Watching Photos", Proc. ISASE, F3-2 (2015)
5. Ryota Horie, Nobuki Kawai, Shunichi Saeki, JiaChen Yang, "Implementation of a Simple Smart House System Composed of a Smartphone, a Simple Brain-Computer Interface, Near Field Communication, and a Gesture Sensor Using ECHONET Lite", EMBC'14 Proceedings, TB17.17 (2014)
6. Ryota Horie, Miyuki Yanagi, Ryo Ikeda, Yousuke Yamasaki, Yoshiyuki Yamariku, Tomomi Takashina, Yoshikazu Hirayama, Michiko Ohkura, "Event-Related Potentials Caused by Kawaii Feeling in Watching Photos Selected by Heart Beat Modulation", EMBC'14 Proceedings, TD18.19 (2014)
7. Michiko Ohkura, Yosuke Yamasaki, Ryota Horie, "Evaluation of Kawaii Objects in Augmented Reality by ECG", EMBC'14 Proceedings, TB17.32 (2014)
8. Ryo Ikeda, Ryota Horie, "Toward Neural Oscillator Based Brain-Computer Interface", EMBC'14 Proceedings, FB14.12 (2014)
9. Ryo Ikeda, Ryota Horie, "State-Space Trajectories Organized in a Recurrent Neural Learning of Opening and Closing of the Hand", EMBC'14 Proceedings, TD18.41 (2015)
10. Miyuki Yanagi, Yousuke Yamasaki, Yoshiyuki Yamarik, Tomomi Takashina, Yoshikazu Hirayama, Ryota Horie, Michiko Ohkura, "Physiological Responses Caused by Kawaii Feeling in Watching Photos", 20 Volume Set: Proceedings of the 5th AHFE Conference 19-23 July2014, Advances in Affective and Pleasurable Design, Yong Gu Ji and Sooshin Choi Eds., pp. 56-65 (2014)/ Proc. AHFE2014, pp. 839-847 (2014)
11. Ryota Horie, Kenta Kaneko, "Imitated Mind Uploading by Using Electroencephalography", 20 Volume Set: Proceedings of the 5th AHFE Conference 19-23 July2014, Advances in Affective and Pleasurable Design, Yong Gu Ji and Sooshin Choi Eds., pp. 11-19 (2014)/ Proc. AHFE2014, pp. 9-17 (2014)
12. Tomomi Takashina, Miyuki Yanagi, Yoshiyuki Yamariku, Yoshikazu Hirayama, Ryota Hoire, Michiko Ohkura, "Toward Practical Implementation of Emotion Driven Digital Camera Using EEG", Proc. AH2014 Article No. 3 (2014)
13. Shunichi Saeki, Hiroshi Komaki, Ryota Horie, "Implementation of a Simple Brain-Computer Interface Composed of a Compact EEG Recording Device, a Smartphone and Microcomputers with ZigBee Modules", 2013 IEEE EMBC Short Papers, p. 3194 (2013)
14. Miyuki Yanagi, MegumiSone, Ryota Horie, "Toward a Brain-Computer Interface Based on Perception of Audio-Visual Temporal Asynchrony: A Near-infrared Spectroscopy Study", 2013 IEEE EMBC Short Papers, p. 3178 (2013)

15. Kanako Takizawa, Ryota Horie, “Evaluation of Detecting Event-Related Desynchronization Using Hilbert-Huang Transform”, 7th SEATUC SYMPOSIUM, OS-4.13 (2013)

16. Yuki Kawashima, Ryota Horie, “A Basic Study of Steady-State Visual Evoked Potentials-Optimization in Measuring EEG and Visual Stimuli-”, 7th SEATUC SYMPOSIUM, OS-4.12 (2013)

17. Kazuto Fujishima, Ryota Horie, Atsushi Mochizuki, Mineko Kengaku, “Principle branch dynamics governing shape characteristics of cerebellar Purkinje cell dendrites”, Development, Vol. 139, No. 18, pp. 3442- 3455 (2012)

18. Mineko Kengaku, Kazuto Fujishima, Kansai Fukumitsu, Ryota Horie, Atsushi Mochizuki, “Principles branch dynamics governing spatial patterns in Purkinje cell dendrites”, JNS meeting planner, S3-C-1-1 (2012)

19. Kanako Takizawa, Ryota Horie, “Online Detection of Event Related Desynchronization by the Hilbert-Huang Transformation”, JNS meeting planner, P1-k01 (2012)

20. Kanako Takizawa, Ryota Horie, “Online Detection of Event Related Desynchronization by the Short Time Hilbert-Huang Transformation”, EMBC’12 Conference Abstracts Book, p. 183/635 (2012)

21. Takuya Iwase, Ryota Horie, Toichi Sawada, “Measuring readiness potential in driving simulator toward investigation of driver's cognitive process”, Neuroscience Research, Vol. 71S, p. e202 (2011)

22. Mineko Kengaku, Kazuto Fujishima, Ryota Horie, Atsushi Mochizuki, “Dynamics and mechanisms of branch pattern formation of Purkinje cell dendrites”, Neuroscience Research, Vol. 68S, p. e47 (2010)

23. Ryota Horie, Reiko Mazuka, “Learning variation of deterministic chaos in auditory signals”, Neuroscience Research, Vol. 68S, p. e407 (2010)

Other Features:

- Seved as the technical committee (assistant secretary) on ME and Bio Cybernetics (MBE), The Institute of Electronics, Information and Communication Engineers, May 2015 - April 2017
- Seved as the joint research committee on Medical Applications of Quantum, Information, and Electronics, The Institute of Electrical Engineers of Japan, May 2015 - April 2016

- Information Science and Engineering -

TANAKA, Shinichi

Field of Interest:	Microwave Integrated Circuits and their Applications
Title of Courses:	Advanced Research on Telecommunication Function Control Wireless Communication Systems Engineering
Lecture Subject:	High Frequency Circuit Technology
Topics for Thesis:	Dispersion-Engineered CRLH Stub Resonator for Low Phase-Noise Oscillators

Publications and International Conference Papers:

1. S. Tanaka, K. Mukaida, K. Takata, "Compact Stub Resonators with Enhanced Q-Factor Using Negative Order Resonance Modes of Non-Uniform CRLH Transmission Lines", IEICE Trans. on Electoronics, vol.E98-C, no.3, pp.252-259, 2015.
2. K. Saito and S. Tanaka, "Composite Right-/left-handed Transmission Line Stub Resonator with Improved Out-of-band Rejection Characteristics," Progress in Electromagnetics Research Symposium (PIERS), Prague, 2015.
3. S. Tanaka, H. Nishizawa, K. Takata and K. Saito, "Dispersion-Engineered CRLH Stub Resonator for Low Phase-Noise Oscillators," IEEE International Microwave Symposium (IMS), Proceedings, THPH-2, Phoenix, 2015.
4. T. Oka, T. Ogata, K. Saito, and S. Tanaka, "Triple-Band Single-Diode Microwave Rectifier Using CRLH Transmission Line," Asia Pacific Microwave Conference (APMC), Digest, pp.1013-1015, Sendai, 2014.
5. S. Tanaka, K. Mukaida and R. Sugita, "High-Q CRLH Transmission Line Stub Resonator Utilizing Negative Order Resonance Modes", European Microwave Conference (EuMC), Digest, pp.585-588, Nuremberg, 2013.
6. T. Katayose, M. Okunogi, K. Hosoya and S. Tanaka, "High-Q Transmission Line Stub Resonators using Interdigital Capacitor Loading for MMIC Applications", Progress in Electromagnetics Research Symposium (PIERS), Kuala Lumpur, 2012.

Other Features:

-Information Science and Engineering -

KIMURA, Masaomi

Field of Interest:	Data engineering, fundamental studies and applications of databases, data mining and text mining techniques, Topic Maps and their databases, Complex networks, analyses of data related to medical safety
Title of Courses:	Advanced Research Program on Systems Control Engineering Data Engineering
Lecture Subject:	Topics in Data Engineering
Topics for Thesis:	Development of novel data/text mining techniques Development of novel databases (e.g. Topic Maps database) Application of data/text mining techniques to data in medical area Fundamental studies and applications of complex networks

Publications and International Conference Papers:

1. Tomoyuki Nagata, Masaomi Kimura, Fumito Tsuchiya, Similarity Index for Sound-alikeness of Drug Names with Pitch Accents.Proceedings of KES2014, pp.1519-1528, Gdansk (2014)
2. Takuto Enomoto, Masaomi Kimura:Improving Population Diversity in Parallelization of a Real-Coded Genetic Algorithm Using MapReduce, Proceedings of RARM2014, pp.234-239, Istanbul (2014)
3. Marina Naito, Masaomi Kimura: Method for Selecting Words in Japanese-English Translation Based on Ontology, Proceedings of RARM2014, pp. 240-245, Istanbul (2014)
4. Yuuki Hosozawa, Masaomi Kimura:Press-Through-Package Designs Based on Fourier Transformation, Advances in Human Aspects of Healthcare, pp.280-289, Krakow (2014).
5. Kazuya Yokokawa, Masaomi Kimura, Michiko Ohkura, Fumito Tsuchiya, A proposal of the method to identify adverse effects based on topicmaps, Advances in Human Aspects of Healthcare, pp.427-435, Krakow (2014).
6. Ryosuke Ota, Masaomi Kimura: Proposal of Open-ended Dialog System Based on Topic Maps, Proceedings of CETC2013, pp.122-129, Lisbon (2013)
7. Kouta Katano, Masaomi Kimura, Michiko Ohkura, Fumito Tsuchiya:Improvement of the Clustering Technique to Classify Medicines Based on Indications or Efficacies,Proceedings of CETC2013, pp.756-763, Lisbon (2013)
8. Masaomi Kimura, Fumito Tsuchiya: Analysis on Drug Dosage Form Name Based on N-gram Technique and Network Analysis.HCI (29),pp.178-182 , Las Vegas (2013)
9. Tomoyuki Nagata, Masaomi Kimura, Michiko Ohkura, Fumito Tsuchiya:Drug

Name Similarity Index for Sound-Alikeness., HCI (29), pp.197-201, Las Vegas (2013)

10. Ryosuke Ota , Masaomi Kimura: Proposal of a Topic Map Database indexing method, Proceedings of IEEE International Conference on Systems, Man, and Cybernetics 2012, Seoul, 2012.
11. Atsushi Ogata , Masaomi Kimura: Optimization Technique of Queries with Plural Predicates for a Topic Map Database, Proceedings of IEEE International Conference on Systems, Man, and Cybernetics 2012, Seoul, 2012.
12. Yota Kogure, Isao Sasano, Masaomi Kimura: "Topic Maps Query Language supporting Composite and Recursive Queries", proceedings of 12th Interlational Symposium on Adcanced Intelligent Systems (ISIS2011), CDROM, (2011).
13. Keita Nabeta, Hirotsugu Ishida, Masaomi Kimura, Michiko Ohkura, Fumito Tsuchiya: "Automatic Generation of Learning Resources from Drug Information Database" proceedings of 12th Interlational Symposium on Adcanced Intelligent Systems (ISIS2011), CDROM, (2011).
14. Masaomi Kimura, Yutaroh Furukawa, Akira Kojo, Hirotsugu Ishida, Keita Nabeta, Michiko Ohkura, Fumito Tsuchiya: "Appearance Similarity Index for Medicinal Ampoule Labels", proceedings of HCII2011, pp.588-597 (2011)
15. Keita Nabeta, Akira Hatano, Hirotsugu Ishida, Masaomi Kimura, Michiko Ohkura, Fumito Tsuchiya: "The Similarity Index of Character Shape of Medicine Names Based on Character Shape Similarity (II)", proceedings of HCII2011, pp.628-636 (2011)
16. Hirotsugu Ishida, Keita Nabeta, Masaomi Kimura, Michiko Ohkura, Fumito Tsuchiya, "Therapeutic Category Improvement Method Based on the Words Appearing in Effect-Efficacy Description", proceedings of HCII2011, pp.174-181 (2011)
17. Masaomi Kimura, Hiroyuki Furukawa, Hitoshi Tsukamoto, Michiko Ohkura, Fumito Tsuchiya: "Analysis of Questionnaire Data Concerning Bar Codes Printed on Ampoule Labels", Drug Information Journal, Vol.44 pp.693-701 (2010)
18. Masaomi Kimura: "The Method to Analyze Freely Described Data from Questionnaires", JACIII 13(3), pp.268-274 (2009)

Other Features:

In 2014, we have 1 doctor course student, 5 master course students, 10 undergraduate students in our laboratory. We believe that enhancement of communication between members is a key to promote the studies that make data useful for human life. We look forward to inviting you as a new member of our laboratory.

- Information Science and Engineering -

FUKUDA, Hiroaki

Field of Interest:	Software Engineering, System Software, Programming Language, Ubiquitous Computing, Cloud Computing
Title of Courses:	Advanced Research Program on Systems Control Engineering Study of Distributed Systems
Lecture Subject:	
Topics for Thesis:	Study on asynchronous control on the Web using Aspect-Oriented Programming. A proposal detecting aspect interference using unit tests An Efficient Agent Location Management for Wireless Sensor Network

Publications and International Conference Papers:

1. Hiroaki Fukuda and Paul Leger "An Efficient Agent Location Management for Wireless Sensor Network", In the Proceedings of 2015 IEEE 17th International Conference on High Performance Computing and Communications (HPCC-ICESS-CSS 2015), pp. 1014-1019, IEEE Digital Library, 2015.
2. Hiroaki Fukuda "Toward efficient source code sharing on the Web", to appear in Proceedings of the 11th International Symposium on Open Collaboration (OpenSym 2015), ACM Digital Library, 2015.
3. Hiroaki Fukuda and Paul Leger, "SyncAS: A Virtual Block Approach to Tame Asynchronous Programming", International Journal of Software Engineering and Knowledge Engineering, Vol. 25, No. 5, pp. 887-907, World Scientific Publishing, 2015.
4. Wiliam Mateus Boeira da Rocha, Hiroaki Fukuda, Paul Leger, Modular Asynchronous Web Programming: Advantages & Challenges, to appear in Proceedings of the 9th International Conference on Bio-inspired Information and Communications Technologies, 2015.
5. Paul Leger, Manuela Lopez, Carmen Hidalgo-Alcazar; Hiroaki Fukuda, An Open Agent-Based Model to Simulate the Effect of WOM Marketing Campaigns, to appear in Proceedings of the 9th International Conference on Bio-inspired Information and Communications Technologies, 2015.
6. Hiroaki Fukuda and Paul Leger. "Proposals for Modular Asynchronous Web Programming: Issues & Challenges", In Proceedings of First workshop on PERvasive WEb Technologies trends and challenges (PRNET) in conjunction with

ICWE2015, Lecture Note in Computer Science, 9396, pp. 91-102, Springer, 2015.
7. Hiroaki Fukuda and Paul Leger, "An Efficient Agent Location Management for Wireless Sensor Networks" In Proceedings of the IEEE International Conference on Distributed Computing in Sensor Systems, pp. 203-205, IEEE Digital Library, 2015
8. Hiroaki Fukuda and Paull Leger, "A Library to modularly control asynchronous executions", In Proceeding of the 30th ACM/SIGAPP Symposium On Applied Computing, pp. 1648-1650, ACM Digital Library, 2015.
9. Paul Leger, Eric Tanter and Hiroaki Fukuda, An expressive stateful aspect language, Science of Computer Programming (SCP), Vol. 102, pp. 108-141, Elsevier, 2015
10. Takeshi Azegami, Hiroaki Fukuda and Paul Leger "Towards a Virtual Block Approach to Tame Asynchronous Programming", BICT 2014 Special Track on Modularization for Practical Software Engineering, ACM Digital Library, pp. 239-242, 2014.
11. Paul Leger and Hiroaki Fukuda "Why do Developers not Take Advantage of the Progress in Modularity?", 8th International Conference on Bio-inspired Information and Communications Technologies (BICT 2014) Special Track on Modularization for Practical Software Engineering, Poster presentation, ACM Digital Library, pp. 388-389, 2014.
12. Keita Namiki and Hiroaki Fukuda "Effective Agent Location Management on Wireless Sensor Networks", ESS 2014, pp. 63-68, 2014 (in Japanese)
13. Yuki Tanaike, Hiroaki Fukuda and Yoshikazu Yamamoto, Realization of customizable gesture interfaces in mobile device, Journal of Human Interface, Vol. 15, No.2, pp. 163-176, 2013(in Japanese)
14. Kohei Nagashima, Hiroaki Fukuda and Shingo Takada "Aspect-jQuery: An Aspect-Oriented Framework for jQuery", In proceedings of the 8th International Workshop on Advanced modularization techniques pp. 5-8, ACM Digital Library, 2013.
15. Hiroaki Fukuda, "AOP based language extension for web development", In proceedings of the 12th IASTED International Conference on Software Engineering, pp. 744-751, 2013.
16. Junji Tomita, Yoshihiro Matsuo, Hiroaki Fukuda and Yoshikazu Yamamoto, A Document Database for Aggregating Information Elements in a Large Document Set and Its Evaluation on a Sentiment Analysis Service IEICE, D, Vol. J95-D, No.2, pp. 250-263, 2012(in Japanese)
17. Junji Tomita, Hiroaki Fukuda and Yoshikazu Yamamoto, A Class Estimation Method for Extended Named Entities with Multiple Meanings IPSJ Transactions on Database (TOD), Vol. 4, No.4, pp. 34-47, Dec., 2011(in Japanese)

18. Junji Tomita, Yoshihiro Matsuo, Hiroaki Fukuda and Yoshikazu Yamamoto, A Document Database for Aggregating Information Elements in a Large Document Set and Its Evaluation on a Sentiment Analysis Service IEICE, D, Vol. J95-D, No.2, pp. 250-263, 2012(in Japanese)
19. Kohei Nagashima, Hiroaki Fukuda and Yoshikazu Yamamoto, Proposal of Aspect-oriented language for dynamic contents, In Proceedings of 28th annual conference in JSSST, Sep. 2011
20. Hiroaki Fukuda, Yoshikazu Yamamoto, "A framework for supporting collaborative works in RIA by aspect oriented approach", In Proceedings of 12th International Conference on Enterprise Information Systems, pp. 398-403, 2010
21. Yuki Tanaike, Hiroaki Fukuda and Yoshikazu Yamamoto, "Gesture Browser: Realization of customizable gesture interfaces in mobile device", to appear in proceedings of the 2010 International Conference on Software Engineering Research and Practice, 2010.
22. Hiroaki Fukuda, Yoshikazu Yamamoto, "AspectFX: A framework for supporting collaborative works in RIA by aspect oriented approach", Proceedings of 9th International Conference on Aspect-Oriented Software Development, 2010 (as Demonstration session).
23. Hiroaki Fukuda, Yoshikazu Yamamoto, "A system for supporting collaboration with designers by aspect oriented approach in RIA development", Proceedings of 8th International Conference on Aspect-Oriented Software Development, 2009 (as Demonstration session).
24. Hiroaki Fukuda, Yoshikazu Yamamoto, "IBrowser: Realization of Direct Communication Between Mobile Devices and Computers", The 2009 International Conference on Software Engineering Research and Practice, pp. 103-108, , 2009
25. Hiroaki Fukuda, Yoshikazu Yamamoto, "Toward seamless collaboration between mobile devices and computers", In Proceedings of 13th IASTED International Conference on Internet and Multimedia Systems and Applications(IMSA2009), pp. 137-142, 2009.
26. Hiroaki Fukuda, Yoshikazu Yamamoto, "Yet another aspect in Rich Internet Applications", In Proceedings of Asian Workshop on Aspect-Oriented Software Development(AOAsia 2009), pp. 17-24, 2009.
27. Hiroaki Fukuda, Yoshikazu Yamamoto, A Framework for realizing complete separation of developer's and designer's work in Rich Internet Application, In Proceedings of 10th International Conference on Enterprise Information Systems, Vol. 2, pp. 137-142, 2008

28. Hiroaki Fukuda, Yoshikazu Yamamoto, "A system for supporting development of large scaled Rich Internet Applications, In Proceedings of 23th IEEE/ACM International Conference on Automated Software Engineering(ASE2008), IEEE Computer Society Press, 2008
29. Hiroaki Fukuda, Yoshikazu Yamamoto, "AirSpace: A system for delivering multimedia contents of advertisement by push approach", In Proceedings of 20th IASTED International Conference on Parallel and Distributed Computing and Systems(PDCS 2008) as DIMS2008, pp. 436-442, 2008

Other Features:

The interest of this laboratory covers a variety range of software system including Web Engineering, Programming Language, Wireless Sensor Network, Software Defined Network, Operating System and Virtual Machine. We have published conference/journal papers related to the interests. We are currently interested in Aspect-Oriented Programming and it's related fields, Wireless Sensor Networks and system software such as virtual machine. From 2012, we have international collaborations related to Aspect-Oriented Programming and Wireless Sensor Networks with universities in USA and Chile. In 2015, this laboratory consists of one Ph.D student from Saudi Alabia and eleven undergraduate students and three students from Brazil. We strongly expected high-motivated students who have interest in these topics.

- Information Science and Engineering -

MANO, Kazunori

Field of Interest:	(1) Speech, audio and language information processing. (2) Multimedia data compression, retrieval, and mining. (3) Statistical signal processing and machine learning.
Title of Courses:	Advanced Research on Telecommunication Function Control Advanced Communication Design
Lecture Subject:	Statistical Signal Processing
Topics for Thesis:	(1) Higher resolution speech representation and synthesis system by using example-based large databases and statistical signal processing approaches. (2) Media conversion system from linguistic and emotional information of speech to animated texts and images for effective foreign language learning. (3) Human-Robot interaction systems.

Publications and International Conference Papers:

1. Y. Tasaki, S. Kawai, and K. Mano," Design of a Communication Promotion System with an Interactive Robot (Pepper) for Autistic Children," Proc. ASD-HR2015, associated with JSAI International Symposia on AI 2015 (IsAI-2015).
2. Nur Syafikah Binti Samsudin, and K. Mano, "Comparison of Native and Nonnative Speakers' Perspective in Animated Text Visualization Tool," Proc. IEEE TENCON 2015.
3. A. Yoshida, H. Mizuno, and K. Mano, "Segment selection method based on tonal validity evaluation using machine learning for concatenative speech synthesis," Proc. IEEE ICASSP2008, pp.4617-4620, 2008.
4. M. Isogai, H. Mizuno, and K. Mano, "Recording script design for corpus-based TTS system based on coverage of various phonetic elements," Proc. IEEE ICASSP2005, pp.I-301 - I-304, 2005.
5. Y. Hiwasaki, K. Mano, K. Yasunaga, T. Morii, H. Ehara, and T. Kaneko, "Design of a robust LSP quantizer for a high-quality 4-kbit/s CELP speech coder," IEICE Trans. Inf. & Syst. Vol. ED87-D, No.6, pp.1496 - 1506, June, 2004.
6. H. Ehara, K. Yasunaga, K. Yoshida,Y. Hiwasaki, K. Mano, and T. Kaneko, "Noise Post-processing for Low Bit-rate CELP Coders," IEICE Trans. Inf. & Syst. Vol. ED87-D, No.6, pp.1507- 1516, June, 2004.
7. Y. Hiwasaki, K. Mano, and T. Kaneko, "An LPC vocoder based on phase-equalized pitch waveform," Speech Communication, Vol. 40, No.3, pp. 277–290, May 2003.
8. K. Mano, T. Moriya, S. Miki, H. Ohmuro, K. Ikeda, J. Ikedo, "Design of a pitch synchronous innovation CELP coder for mobile communications," IEEE Journal on Selected Areas on Communication, Vol. 13, No.1, pp.31-41, Jan. 1995.

Other Features:

- Member of IEEE, Senior Member of IEICE, Member of ASJ, and Member of IPSJ.
- 64 patents, some of which are incorporated in current mobile speech codec standards.
- URL: http://www.sic.shibaura-it.ac.jp/~mano/index_e.html

-Information Science and Engineering-

MIYOSHI, Takumi

Field of Interest:	Internet Technology, Communication Engineering,
	Peer-to-Peer Communication, Grid Computing,
	Mobile Ad Hoc / Sensor Network,
	Quality of Services, Quality of Experiences
Title of Courses:	Advanced Research on Telecommunication Function Control,
	Information Networking Systems
Lecture Subject:	Data Communication Network
Topics for Thesis:	Traffic Analysis on Video/Audio Streaming Services
	Traffic Localization on P2P Video Streaming
	Image Processing and Routing on Ad Hoc / Sensor Network
	Mobile Resource Allocation with Users' Quality of Experiences

Publications in recent 3 years (English reviewed papers only):

1. C. Wechtaisong, K. Ikeda, H. Morino, and T. Miyoshi, "Delay-Insertion-based P2PTV Traffic Localization Using AS-level Topological Information," to appear in *IEICE Transactions on Communications*, Vol. E98-B, No. 11, November 2015.
2. H. Pham-Thi and T. Miyoshi, "A Bandwidth Allocation Method Based on Psychological Factors Considering QoE of Users," *12th International Conference on Mobile Web and Intelligent Information Systems (MobiWis 2015)*, Rome, Italy, pp. 93-101, August 2015. **DOI: 10.1007/978-3-319-23144-0_9**
3. N. Takeuchi, K. Mizutani, T. Miyoshi, and O. Fourmaux, "Analysis of Users' Viewing Behavior on P2PTV," *17th Asia-Pacific Network Operations and Management Symposium (APNOMS 2015)*, Busan, Korea, Paper No. I1-2, August 2015.
4. C. Wechtaisong, H. Morino, and T. Miyoshi, "Delay-Insertion-based P2PTV Traffic Localization Using AS-level Topological Information," *10th Asia-Pacific Symposium on Information and Telecommunication Technologies (APSITT 2015)*, Colombo, Sri Lanka, August 2015.
5. H. Pham-Thi, H. Hoang-Van, and T. Miyoshi, "Correlating Objective Factors with Video Quality Experienced by End Users on P2PTV," *International Journal of Computer Networks & Communications (IJCNC)*, Vol. 7, No. 3, pp. 59-73, May 2015. **DOI: 10.5121/ijcnc.2015.7305**
6. K. Mizutani, T. Miyoshi, and O. Fourmaux, "Traffic Analysis in Concurrent Multi-Channel Viewing on P2PTV," *6th International Conference on Information Science and Applications (ICISA2015)*, Pattaya, Thailand, LNEE, Vol. 339, pp. 85-92, February 2015. **DOI: 10.1007/978-3-662-46578-3_11**
7. T. Shirai, T. Yamazaki, R. Yamamoto, T. Miyoshi, and Y. Tanaka, "Performance Analysis of Fixed Node Assisted Opportunistic Routing for Ad Hoc Networks," *2nd International Symposium on Computing and Networking – Across Practical Development and Theoretical Research – (CANDAR2014)*, Shizuoka, Japan, pp. 260-265, December 2014. **DOI: 10.1109/CANDAR.2014.63 (The Best Paper Award of**

ASON Workshop)

8. T. Yamazaki, R. Yamamoto, T. Miyoshi, and Y. Tanaka, "Autonomous Retransmission Control with Neighbour Terminals for Ad Hoc Networks," *16th Asia-Pacific Network Operations and Management Symposium (APNOMS2014)*, Hsinchu, Taiwan, Paper No. TS2-3, September 2014.
9. H. Pham-Thi, H. Hoang-Van, T. Miyoshi, and T. Yamazaki, "QoE-driven Bandwidth Allocation Method Based on User Characteristics," *16th Asia-Pacific Network Operations and Management Symposium (APNOMS2014)*, Hsinchu, Taiwan, Paper No. TS5-1, September 2014.
10. H. Hoang-Van, T. Miyoshi, and O. Fourmaux, "A Router-aided P2P Traffic Localization Method with Bandwidth Limitation," *VNU Journal of Science: Computer Science and Communication Engineering (VNU JCSCE)*, Vol. 30, No. 3, pp. 50-63, August 2014.
11. H. Hoang-Van, T. Miyoshi, and O. Fourmaux, "Peer List Sharing by Router Collaboration for P2PTV Traffic Localization," *5th International Conference on Communications and Electronics (ICCE2014)*, Da Nang, Vietnam, pp. 623-628, July-August 2014.
12. H. Hoang-Van, T. Miyoshi, and O. Fourmaux, "A Hierarchical P2P Traffic Localization Method with Bandwidth Limitation," *IEEE International Conference on Communications (ICC2014)*, Sydney, Australia, pp. 3142-3147, June 2014. **DOI: 10.1109/ICC.2014.6883803**
13. T. Yamazaki, M. Eguchi, T. Miyoshi, and K. Yamori, "Quality of Experience Modeling with Psychological Effect for Interactive Web Services," *2nd IEEE/IFIP International Workshop on Quality of Experience Centric Management (QCMan2014)*, Krakow, Poland, May 2014. **DOI: 10.1109/NOMS.2014.6838398**
14. T. Yamazaki and T. Miyoshi, "Resource Allocation Method Based on QoE for Multiple User Types," *7th International Conference on Communication Theory, Reliability, and Quality of Service (CTRQ2014)*, Nice, France, pp. 13-18, February 2014. **(The Best Paper Award)**
15. H. Hoang-Van, Y. Shinozaki, T. Miyoshi, and O. Fourmaux, "A Router-aided Hierarchical P2P Traffic Localization Based on Variable Additional Delay Insertion," *IEICE Transactions on Communications*, Vol. E97-B, No. 1, pp. 29-39, January 2014. **DOI: 10.1587/transcom.E97.B.29**
16. H. Hoang-Van, K. Mizutani, T. Miyoshi, and O. Fourmaux, "P2P Traffic Localization by Forcing Packet Loss," *ACIS International Journal of Networked and Distributed Computing (IJNDC)*, Vol. 1, No. 4, 2013. **DOI: 10.2991/ijndc.2013.1.4.6**
17. H. Hoang-Van, T. Miyoshi, and O. Fourmaux, "A Hierarchical P2P Traffic Localization Method with Bandwidth Limitation," *10th IEEE RIVF International Conference on Computing and Communication Technologies (RIVF2013)*, Hanoi, Vietnam, November 2013. **DOI: 10.1109/RIVF.2013.6719880**
18. K. Mizutani, Y. Shinozaki, H. Hoang-Van, and T. Miyoshi, "An Adaptive Packet Discard Method for P2P Traffic Localization," *15th Asia-Pacific Network Operations and Management Symposium (APNOMS2013)*, Hiroshima, Japan, Paper No. I2-2, September 2013.
19. H. Pham-Thi and T. Miyoshi, "Effect of Group-of-Picture Size to Quality of Experience on P2PTV," *15th Asia-Pacific Network Operations and Management Symposium (APNOMS2013)*, Hiroshima, Japan, Paper No. I2-3, September 2013.
20. H. Kawashima and T. Miyoshi, "An Application for QoE measurement of Mobile Communication Speed," *15th Asia-Pacific Network Operations and Management Symposium (APNOMS2013)*, Hiroshima, Japan, Paper No. I2-4, September 2013.
21. H. Hoang-Van, T. Miyoshi, and O. Fourmaux, "P2PTV Traffic Localization by Deep Packet Inspection," *14th IEEE/ACIS International Conference on Software*

Engineering, Artificial Intelligence, Networking, and Parallel/Distributed Computing (SNPD2013), Honolulu, Hawaii, USA, pp.375-380, July 2013. **DOI: 10.1109/SNPD.2013.77**

22. H. Hoang-Van, K. Mizutani, T. Miyoshi, and O. Fourmaux, "P2P Traffic Localization by Forcing Packet Loss," *12th IEEE/ACIS International Conference on Computer and Information Science (ICIS 2013)*, Niigata, Japan, pp. 323-328, June 2013. **DOI: 10.1109/ICIS.2013.6607861**
23. H. Hoang-Van, T. Miyoshi, and O. Fourmaux, "P2P Traffic Localization by Peer List Modification at Network Layer," *7th South East Asian Technical University Consortium (SEATUC) Symposium*, Bandung, Indonesia, March 2013.
24. V. Tran-Quang, P. Nguyen Huu, and T. Miyoshi, "Extended Kalman Filter for Target Tracking in Wireless Sensor Networks," *AUN/SEED-Net Regional Conference in Electrical and Electronics Engineering (RC-EEE2013)*, Bangkok, Thailand, pp. 129-132, February 2013.

Other Features:

Three doctoral students of Hybrid Twinning Program have successfully got their Ph.D. degrees in September 2009, 2012, and 2014 after their two- or three-year study. Currently, one student from Hanoi Institute of Science and Technology, Vietnam, is now pursuing her Ph.D. degree. Research topic includes peer-to-peer traffic control mechanism, wireless ad hoc and sensor networks, and quality of experience on mobile communications.

In 2015, I have five Japanese master-course students. For undergraduate research, seven Japanese students are studying in my laboratory. Their researches include: traffic analysis and modeling on P2P video streaming, traffic control on P2P video streaming, QoE evaluation on mobile network and applications, and a development of alerting system of texting-while-walking on mobile phones.

I was a visiting scholar in Laboratoire d'Informatique de Paris 6 (LIP6), UPMC Sorbonne Universités, Paris, France. I have started some collaborative study with professors in LIP6 and in HUST in some research fields: P2P, overlay, and wireless sensor networks. I also have many national research collaborations with Waseda University, Tokyo Metropolitan University, Niigata University, Sophia University, and Asahi University. I strongly expect that highly motivated students would have interest in these topics.

-Information Science and Engineering-

MORINO, Hiroaki

Field of Interest:	Beyond 4G Mobile Information Networking, Vehicular Networks Timely Information Providing System using Wireless Networks, Peer-to-peer Communication, Participatory Sensing using Wireless Networks and Sensors
Title of Courses:	Advanced Research on Telecommunication Function Control Telecommunication Networks
Lecture Subject:	Mobile Communication Networks
Topics for Thesis:	Decentralized MAC Protocol and Routing in Beyond 4G Networks for Improving User Satisfaction Vehicular Ad Hoc Networks (VANET) for Safe Driving Assistance Topology-Aware Efficient routing for P2P multicast(P2PTV) and its implementation Energy efficient Disruption Tolerant Networks using Smartphone to be used for Disaster Relief

Publications and International Conference Papers:

[1] Hiroaki Morino, Takashi Inafune and Takuya Watanabe,
"Assisting Solution of Traffic Congestion At Sags Using Inter-Vehicle Communication with Heterogeneous Wireless Systems,"
Proc. of IEEE Vehicular Networking Conference (VNC 2015), Dec 2015.

[2] Chitapong Wechtaisong, Hiroaki Morino and Takumi Miyoshi,
"Delay-Insertion-Based P2PTV Traffic Localization Using AS-Level Topology Information,"
IEICE Transactions on Communications Vol.E98-B,No.11,pp.2259-2268, Nov.2015.

[3] Chitapong Wechtaisong, Kazato Ikeda, Takahiro Iijima and Hiroaki Morino,
"Delay Insertion Based P2PTV Traffic Localization Considering Available Bandwidth of Logical Link,"
Proc. of APNOMS2015, Pusan, Korea, Aug 2015 (Poster).

[4] Chitapong Wechtaisong, Hiroaki Morino and Takumi Miyoshi,
"Delay-Insertion-Based P2PTV Traffic Localization Using AS-Level Topological Information,"
Proc. of APSITT2015, Columbo, Sri Lanka, Aug 2015.

[5] Kien Duc Nguyen, Hoang Nam Nguyen, Hiroaki Morino and Iwao Sasase
"Uplink Channel Allocation Scheme and QoS Management Mechanism for Cognitive Cellular-Femtocell Networks,"
International Journal of Communication Networks and Information Security, Apr.

2014.

[6] Hiroaki Morino and Ryoma Iio,
"Group based two layer multicast for wireless mesh networks supporting mobile sources," Proc. of the Sixth International Workshop on Autonomous Self-Organizing Networks (ASON 2013) in conjunction with CANDAR 2013. Dec 2013.**(Best Paper Award)**

[7] Kien Duc Nguyen, Hoang Nam Nguyen and Hiroaki Morino,
"Performance Study of Channel Allocation Schemes for Beyond 4G Cognitive Femtocell-Cellular Mobile Networks,"
Proc. of the Fifth Workshop on Ad-Hoc Sensor and P2P (AHSP 2013) in conjunction with the 11th International Symposium on Autonomous Decentralized Systems (ISADS 2013) pp.209-214, Mar 2013.

[8] Hiroaki Morino and Tatsuya Onishi,
"Performance Evaluation of Topology Aware Super Peer Selection Methods in ALM networks," Proc. of the Fifth Workshop on Ad-Hoc Sensor and P2P (AHSP 2013) in conjunction with the 11th International Symposium on Autonomous Decentralized Systems (ISADS 2013) pp.239-244, Mar 2013.

[9] Hiroaki Morino, Masugi Inoue and Tohru Sanefuji, "Distance-and-Rate Dependent RTS/CTS Reservation in Wireless LAN for Enhancing Spatial Reuse," Proc. of the Fourth Workshop on Ad-Hoc Sensor and P2P(AHSP2011) in conjunction with the 10th International Symposium on Autonomous Decentralized Systems (ISADS 2011) pp.489-494, Jun 2011.

[10] Masugi Inoue, Masaaki Ohnishi, Hiroaki Morino, Tohru Sanefuji,
"Fast Recovery from Link Failures and Blackout of A Managed Wireless Mesh for NerveNet," Proc. of IEEE Global Telecommunication Conference (GLOBECOM 2011) (Poster) Dec 2010.

[11] Masugi Inoue, Masaaki Ohnishi, Hiroaki Morino, Tohru Sanefuji,
"Fast Route Switching of A Managed Wireless Mesh for Regional Network Infrastructure,"
Proc. of Annual IEEE International Conference on Personal, Indoor and Mobile Radio Communications (PIMRC 2010) pp. 2073-2078, Sept. 2010..

[12] Masugi Inoue , Masaaki Ohnishi , Hiroaki Morino, Tohru Sanefuji, "Sensor-Terminal-Network Cooperative Architecture for Context-Aware Services" Proc. of IEEE Wireless Communication and Networking Conference (WCNC 2010) , Apr 2010.

[13] Satoshi Aoki, Hiroaki Morino,
"Estimation of human activity area in the indoor environment using receive signal

strength variation of IEEE 802.15.4 nodes," Proc . of the 4th Symposium of South East Asia Technical University Consortium (SEATUC), pp.253-256, Feb 2010.

[14] Hiroyuki Kawamura, Hiroaki Morino, Masugi Inoue and Tohru Sanefuji, "Analysis of channel use efficiency in Wireless mesh networks by adaptively controlling radio range and transmission rate," Proc . of the 4th Symposium of South East Asia Technical University Consortium (SEATUC), pp.257-260, Feb 2010.

[15] Shin Hasegawa, Hiroaki Morino, Ayako Iwata and Kenichi Miyoshi, "Performance evaluation of adaptive relaying scheme of FEC error packets in cooperative relaying," Proc . of the 4th Symposium of South East Asia Technical University Consortium(SEATUC), pp.261-264,Feb 2010.

[16] Hung Yu Shih, Hiroaki Morino, "Call admission control for wireless access network exploiting adaptive multiple routing and load balancing," Proc . of the 4th Symposium of South East Asia Technical University Consortium. (SEATUC), pp.265-268, Feb 2010.

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Conference on Communications and Electronics (HUT-ICCE 2008) Jun 2008. (Poster)

[23] Shinsuke Terada, Takumi Miyoshi Hiroaki Morino Masakatsu Ogawa and Kaoru Sezaki, "Ad hoc routing protocol with flooding control using unidirectional links," Proc. of the 18th Annual IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (IEEE PIMRC 2007) pp.1-5, Sep 2007.

[24] Hiroaki Morino, Takumi Miyoshi and Masakatsu Ogawa, "Unidirectional ad hoc routing with area-controlled flooding using neighbor node information," Proc. of the Second Workshop on Ad-Hoc Sensor and P2P(AHSP2007) in conjunction with the 8th International Symposium on Autonomous Decentralized Systems (ISADS 2007) pp. 519-525 , Mar 2007.

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[29] Hiroaki Morino, Tadao Saito and Mitsuo Nohara, "An Efficient Proactive Routing Method for Mobile Ad Hoc Networks Using Peer-to-Peer and Cellular Communication System," Lecture Notes on Computer Science 1715 pp.29-36, (Proc. of IFIP TC6 7th International Conference on Personal Wireless Communications (PWC 2002)), Springer-Verlag, Oct 2002.

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- Information Science and Engineering -

USAMI, Kimiyoshi

Field of Interest:	Computer Architecture, LSI design
Title of Courses:	Advanced Research Program on Systems Control Engineering Computer Architecture and LSI Design
Lecture Subject:	Advanced Computer Architecture
Topics for Thesis:	Energy efficient computer architecture and LSI chip design

Publications and International Conference Papers:

1. S. Abe, Y. Shi , K. Usami, M. Yanagisawa, N. Togawa, "An Energy-Efficient Floorplan Driven High-Level Synthesis Algorithm for Multiple Clock Domains Design," IEICE Trans. Fundamentals E98.A(7), 1376-1391, 2015.
2. A. Koshiba, M. Wada, R. Sakamoto, M. Sato, T. Kosaka, K. Usami, H. Amano, M. Kondo, H. Nakamura, M. Namiki, "A Fine-Grained Power Gating Control on Linux Monitoring Power Consumption of Processor Functional Units," IEICE Trans. Electron. E98.C(7), 559-568, 2015.
3. M. Kudo, K. Usami, "MTJ Based Non-Volatile Flip Flop to Prevent Useless Store Operation," The 30th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 2015) , July 1, 2015.
4. S. Nakamura, J. Kawasaki, Y. Kumagai, K. Usami, "Measurement of the Minimum Energy Point in Silicon on Thin-BOX (SOTB) and Bulk MOSFET," 2015 Joint International EUROSOI Workshop and International Conference on Ultimate Integration on Silicon (EUROSOI-ULIS), Bologna, Italy, Jan. 26-28, 2015.
5. Y. Kumagai, M. Kudo, K. Usami, "Power Gating for FDSOI using Dynamically Body-Biased Power Switch," 2015 Joint International EUROSOI Workshop and International Conference on Ultimate Integration on Silicon (EUROSOI-ULIS), Bologna, Italy, Jan. 26-28, 2015.
6. K. Usami, M. Miyauchi, M. Kudo, K. Takagi, H. Amano, M. Namiki, M. Kondo, H. Nakamura, "Unbalanced Buffer Tree Synthesis to Suppress Ground Bounce for Fine-grain Power Gating," International Symposium on System-on-Chip (SOC) 2014, Tampere, Finland, Oct. 28-29, 2014.
7. S. Nakamura, K. Usami, "Level Converter Design for Ultra-low Voltage Operation in FDSOI Devices," The 29th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC'14), Phuket, Thailand, July 1-4, 2014.

8. K. Usami,, M. Kudo, K. Matsunaga, T. Kosaka, Y. Tsurui, W. Wang, H. Amano, H. Kobayashi, R. Sakamoto, M. Namiki, M. Kondo, H. Nakamura, "Design and Control Methodology for Fine Grain Power Gating based on Energy Characterization and Code Profiling of Microprocessors," IEEE/ACM Asia and South Pacific Design Automation Conference (ASP-DAC'14), Singapore, Jan. 20-23, 2014.
9. K. Ishibashi, N. Sugii, K. Usami, H. Amano, K. Kobayashi, C-K Pham, T. Iwamatsu, "A Perpetuum Mobile 32bit CPU with 13.4pJ/cycle, 0.14μA sleep current using Reverse Body Bias Assisted 65nm SOTB CMOS technology," IEEE Symposium on Low-Power and High-Speed Chips, 2014 IEEE COOL Chips XVII. 2014.
10. S. Kamohara, N. Sugii, H. Makiyama, T. Yamashita, S. Okanishi, H. Yanagita, M. Kadoshima, K. Ishibashi, H. Amano, K. Usami, K. Kobayashi, "Ultralow-voltage design and technology of silicon-on-thin-buried-oxide (SOTB) CMOS for highly energy efficient electronics in IoT era," Symposium on VLSI Technology. 2014.

Other Features:

- Department head of Electrical Engineering and Computer Science in Graduate School of Science and Engineering 2012-2013.
- Chair of IEICE Technical Group on VLSI Design Technologies (VLD) 2011-2012.
- Collaborative research with Keio Univ., Univ. Tokyo and Tokyo Univ. of Agriculture and Technology under Japanese government (MEXT) Grant-in-Aid for Scientific Research (S) since 2013 on “A Study on Building-Block Computing Systems using Inductive Coupling Interconnect”.
- Collaborative research with Keio Univ., Kyoto Univ., Univ. of Electro-Communications and Japanese companies under the Japanese national project (LEAP) from 2011 to 2014 on ultra low-power microprocessor design technology.
- Technical Program Committee member for IEEE International Conference on Computer Design (ICCD) from 2000 to 2004, 2008, 2009 and 2011. Technical Program Committee member for IEEE and ACM Asia and South Pacific Design Automation Conference (ASP-DAC) 2010, 2011 and 2012.
- Guest editor of IEICE TRANSACTIONS on Fundamentals of Electronics, Communications and Computer Sciences Vol.E96-A No.12 (Special Section on VLSI Design and CAD Algorithms) published on Dec. 1, 2013.
- Visiting researcher at Stanford University 1993-1995.
- Member of IEEE, ACM and IEICE.

URL: http://www.usamilab.ise.shibaura-it.ac.jp/

- Information Science and Engineering -

Yamazaki, Atsuko

Field of Interest:	Knowledge Engineering, Information Science, Educational studies, Communication studies
Title of Courses:	Advanced Research Program on Systems Control Engineering Communication and Diversity Studies
Lecture Subject:	Language Communication Studies
Topics for Thesis:	Knowledge Engineering in relation to human communication & neurological studies

Publications and International Conference Papers:

1. Yamazaki, A. K., Eto, K.: A preliminary experiment to investigate the effects of blue backgrounds on a tablet screen for elderly people, Procedia Computer Science Vol. 60, pp. 1490 -1496 (2015)

2. Anuardi, M. N. A. M., Yamazaki, A. K., Nur Amanina Rasid, N. A.: An analysis of emotions in reversed Japanese sentences and Malay sentences with NIRS, Procedia Computer Science, Vol. 60, pp. 1215-1222 (2015)

3. Yamazaki, A. K., Koizumi, H., Shimada, H., Eto, K.: The effects of light blue and white backgrounds on the brain activity of Web-based English tests' takers, Procedia Computer Science, Vol. 35, pp. 262 -269 (2014)

4. Eto, K., Yamazaki, A. K., Mukuda, M., Kabasawa, Y., Yoshida, H., Ito, I., Ogiwara, M.: Analysis of the effect of aroma foot care using functional near-infrared spectroscopy, Procedia Computer Science, Vol. 35, pp. 1536 -1546 (2014)

5. Yamazaki, A. K., Eto, K., Nakabayashi, A., Shimada, H.: Brain activity measurement for the scores of on-line English grammar tests with white and blue backgrounds, Communications in Computer and Information Science, Vol. 246 pp.3-15, Springer (2013)

6. Yamazaki, A. K., Taki, H.: A comprehensibility study of pictogram elements for manufacturing steps, Int. J. of Knowledge Engineering and Soft Data Paradigms , Vol.2, No.1, pp.70 - 81 (2010)

Other Features:

-Information Science and Engineering

ZHAI, Guisheng

Field of Interest:	Modern Control Theory and Application, Optimization, Intelligent Robots, Multi-Agent Systems
Title of Courses:	Advanced Research Program on Systems Control Engineering Research on Mathematic Control
Lecture Subject:	Digital Control Systems
Topics for Thesis:	Switched and Hybrid Systems Robust Intelligent Control of Mechanical Systems Cooperative Control of Multi-Agent Systems Modelling and Optimization of Traffic Systems Decentralized Control of Large-Scale Systems

Publications and International Conference Papers:

1. Weiming Xiang, Jian Xiao, Guisheng Zhai: Dissipativity and dwell time specifications of switched discrete-time systems and its applications in H-infinity and robust passive control; ***Information Sciences***, Vol.320, pp.206-222, November 2015.

2. Guisheng Zhai: A Generalization of Graph Laplacian with Application to Distributed Consensus Algorithm; ***International Journal of Applied Mathematics and Computer Science,*** Vol.25, No.2, pp.353-360, June 2015.

3. Ning Chen, Guisheng Zhai, Yuqian Guo, Weihua Gui, Yiaoyu Shen: Parametric Stabilization of Quantized Interconnected Systems with Application to Coupled Inverted Pendulums; ***Asian Journal of Control***, Vol.17, No.3, pp.1061-1069, May 2015.

4. Weiming Xiang, Guisheng Zhai, Jian Xiao: Stability Analysis and Failure Tolerant Control for Discrete-Time Linear Systems with Controller Failure; ***International Journal of Control***, Vol.88, No.3, pp.559-570, March 2015.

5. Zhaoxia Duan, Guisheng Zhai, Zhengrong Xiang: State Consensus for Hierarchical Multi-Agent Dynamical Systems with Inter-Layer Communication Time Delay; ***Journal of the Franklin Institute,*** Vol.352, Issue 3, pp.1235-1249, March 2015.

6. Guisheng Zhai, Chi Huang: A Note on Basic Consensus Problems in Multi-Agent Systems with Switching Interconnection Graphs; ***International Journal of Control***, Vol.88, No.3, pp.631-639, March 2015.

7. Guisheng Zhai, Chi Huang: Basic Consensus Problems in Multi-Agent Systems with Switching Interconnection Graphs; ***Proceedings of 2013 CACS International Automatic Control Conference (CACS2013)*** (Nantou, Taiwan, December 2-4, 2013), Paper: T1-4 1014.

8. Guisheng Zhai, Ning Chen, Weihua Gui: Design of Quantised Dynamic Output Feedback for Decentralized H-infinity Control Systems; ***IET Control Theory & Applications***, Vol.7, No.10, pp.1408-1414, July 2013.

9. Guisheng Zhai, Ning Chen, Weihua Gui: Decentralized Design of Interconnected H-infinity Feedback Control Systems with Quantized Signals; ***International Journal of Applied Mathematics and Computer Science,*** Vol.23, No.2, pp.317-325, June 2013.

10. Lei Zhou, Daniel W. C. Ho, Guisheng Zhai: Stability Analysis of Switched Linear Singular Systems, ***Automatica***, Vol.49, No.5, pp.1481-1487, May 2013.

11. Guisheng Zhai: Quadratic Stabilizability and H_∞ Disturbance Attenuation of Switched Linear Systems via State and Output Feedback; ***Proceedings of the 51st IEEE Conference on Decision and Control (CDC2012)*** (Hawaii, USA, December 10-13, 2012), pp.1935-1940.

12. Guisheng Zhai, Xuping Xu, Daniel W.C. Ho: Stability of Switched Linear Discrete-Time Descriptor Systems: A New Commutation Condition; ***International Journal of Control***, Vol.85, No.11, pp.1779-1788, November 2012.

13. Guisheng Zhai, Takaaki Norisada, Joe Imae, Tomoaki Kobayashi: An extension of generalized bilinear transformation for digital redesign; ***International Journal of Innovative Computing, Information and Control,*** Vol.8, No.6, pp.4071-4081, June 2012.

14. Guisheng Zhai, Masayuki Naka, Tomoaki Kobayashi, Joe Imae: Towards neutral steer and sideslip reduction for four-wheeled electric vehicles; ***Frontiers of Mechanical Engineering,*** Vol.7, No.1, pp.16-22, March 2012.

15. Guisheng Zhai, Shohei Okuno, Joe Imae, Tomoaki Kobayashi: A New Consensus Algorithm for Multi-Agent Systems via Decentralized Dynamic Output Feedback; ***Journal of Intelligent & Robotic Systems,*** Vol.63, No.2, pp.309-322, August 2011.

16. Guisheng Zhai, Xuping Xu: A Commutation Condition for Stability Analysis of Switched Linear Descriptor Systems; ***Nonlinear Analysis: Hybrid Systems,*** Vol.5, No.3, pp.383-393, August 2011.

17. Guisheng Zhai, Shohei Okuno, Joe Imae, Tomoaki Kobayashi: Extended Consensus Algorithm for Multi-Agent Systems; ***IET Control Theory & Applications,*** Vol.4, No.10, pp.2232-2238, October 2010.

18. Guisheng Zhai, Junya Takeda, Joe Imae, Tomoaki Kobayashi: Towards Consensus in Networked Nonholonomic Systems; ***IET Control Theory & Applications,*** Vol.4, No.10, pp.2212-2218, October 2010.

19. Xuping Xu, Guisheng Zhai, Shouling He: Some Results on Practical Stabilizability of Discrete-Time Switched Affine Systems; ***Nonlinear Analysis: Hybrid Systems,*** Vol.4, No.1, pp.113-121, February 2010.

20. Guisheng Zhai, Xuping Xu: A Unified Approach to Stability Analysis of Switched Linear Descriptor Systems under Arbitrary Switching; ***International Journal of Applied Mathematics and Computer Science,*** Vol.20, No.2, pp.249-259, February 2010.

21. Guisheng Zhai, Ning Chen, Weihua Gui: Quantizer Design for Interconnected Feedback Control Systems; ***Journal of Control Theory and Applications,*** Vol.8, No.1, pp.93-98, January 2010.

22. Guisheng Zhai, Shohei Okuno, Joe Imae, Kobayashi: A Matrix Inequality Based Design Method for Consensus Problems in Multi-Agent Systems; ***International Journal of Applied Mathematics and Computer Science,*** Vol.19, No.4, pp.639-646, December 2009.

23. Guisheng Zhai, Xuping Xu, Joe Imae, Tomoaki Kobayashi: Qualitative Analysis of Switched Discrete-Time Descriptor Systems; ***International Journal of Control, Automation, and Systems***, Vol.7, No.4, pp.512-519, 2009.

24. Guisheng Zhai, Ryuuen Kou, Joe Imae, Tomoaki Kobayashi: Stability Analysis and Design for Switched Descriptor Systems; ***International Journal of Control, Automation, and Systems***, Vol.7, No.3, pp.349-355, 2009.

25. Guisheng Zhai, Xinkai Chen: Stability Analysis of Switched Linear Stochastic

Systems; *Proceedings of IMechE, Part I: J. Systems and Control Engineering,* Vol.222, pp.661-669, 2008.

26. Xuping Xu, Guisheng Zhai, Shouling He: On Practical Asymptotic Stabilizability of Switched Affine Systems; *Nonlinear Analysis: Hybrid Systems,* Vol.2, No.1, pp.196-208, March 2008.

27. Guisheng Zhai, Hai Lin, Xuping Xu, Joe Imae, Tomoaki Kobayashi: Analysis of Switched Normal Discrete-Time Systems; *Nonlinear Analysis*, Vol.66, No.8, pp.1788-1799, April 2007.

28. Guisheng Zhai, Xuping Xu, Hai Lin, Derong Liu: Extended Lie Algebraic Stability Analysis for Switched Systems with Continuous-Time and Discrete-Time Subsystems; *International Journal of Applied Mathematics and Computer Science,* Vol.17, No.4, pp.447-454, 2007.

29. Guisheng Zhai, Isatada Matsune, Tomoaki Kobayashi, Joe Imae: A Study on Stabilization of Nonholonomic Systems via a Hybrid Control Method; *Nonlinear Dynamics and Systems Theory,* Vol.7, No.3, pp.327-338, 2007.

30. Guisheng Zhai, Xuping Xu, Hai Lin, Anthony N. Michel: Analysis and Design of Switched Normal Systems; *Nonlinear Analysis*, Vol.65, No.12, pp.2248-2259, December 2006.

31. Guisheng Zhai, Hideaki Kondo, Joe Imae, Tomoaki Kobayashi: Hybrid Static Output Feedback Stabilization of Two-Dimensional LTI Systems: A Geometric Method; *International Journal of Control,* Vol.79, No.8, pp.982-990, August 2006.

32. Guisheng Zhai, Derong Liu, Joe Imae, Tomoaki Kobayashi: Lie Algebraic Stability Analysis for Switched Systems with Continuous-Time and Discrete-Time Subsystems; *IEEE Transactions on Circuits and Systems II*, Vol.53, No.2, pp. 152-156, 2006.

33. Guisheng Zhai, Masaharu Yoshida, Joe Imae, Tomoaki Kobayashi: Decentralized H_2 Controller Design for Descriptor Systems: An LMI Approach; *Nonlinear Dynamics and Systems Theory,* Vol.6, No.1, pp.98-108, 2006.

34. Guisheng Zhai, Hai Lin, Youngbok Kim, Joe Imae, Tomoaki Kobayashi: L_2 Gain Analysis for Switched Systems with Continuous-Time and Discrete-Time

Subsystems; *International Journal of Control,* Vol.78, No.15, pp.1198-1205, 2005.

35. Xuping Xu, Guisheng Zhai: Practical Stability and Stabilization of Hybrid and Switched Systems; *IEEE Transactions on Automatic Control,* Vol.50, No.11, pp.1897-1903, 2005.

36. Ye Sun, Anthony N. Michel, Guisheng Zhai: Stability of Discontinuous Retarded Functional Differential Equations; *IEEE Transactions on Automatic Control,* Vol.50, No.8, pp.1090-1105, 2005.

37. Guisheng Zhai, Hai Lin: Controller Failure Time Analysis for Symmetric H-Infinity Control Systems; *International Journal of Control,* Vol.77, No.6, pp.598-605, 2004.

38. Guisheng Zhai, Anthony N. Michel: Generalized Practical Stability Analysis of Discontinuous Dynamical Systems; *International Journal of Applied Mathematics and Computer Science*, Vol.14, No.1, pp.5-12, 2004.

39. Guisheng Zhai, Hai Lin, Panos J. Antsaklis: Quadratic Stabilizability of Switched Linear Systems with Polytopic Uncertainties; *International Journal of Control*, Vol.76, No.7, pp.747-753, 2003.

40. Guisheng Zhai, Bo Hu, Kazunori Yasuda, Anthony N. Michel: Stability Analysis of Switched Systems with Stable and Unstable Subsystems: An Average Dwell Time Approach; *International Journal of Systems Science*, Vol.32, No.8, pp.1055-1061, 2001.

41. Guisheng Zhai, Bo Hu, Kazunori Yasuda, Anthony N. Michel: Disturbance Attenuation Properties of Time-Controlled Switched Systems; *Journal of The Franklin Institute*, Vol.338, No.7, pp.765-779, 2001.

42. Guisheng Zhai, Masao Ikeda, Yasumasa Fujisaki: Decentralized H-Infinity Controller Design: A Matrix Inequality Approach Using a Homotopy Method; *Automatica*, Vol.37, No.4, pp.565-572, 2001.

Other Features:

Dr. Guisheng Zhai received the B.S. degree from Fudan University, China, in 1988,

and received the M.E. and the Ph.D. degrees, both in system science, from Kobe University, Japan, in 1993 and 1996, respectively. In April 2010, he joined the faculty of Shibaura Institute of Technology, Japan, where he currently is a Professor of Mathematical Sciences. He has held a visiting professor position in University of Notre Dame, USA, from August 2001 to July 2002. His research interests include large scale and decentralized control systems, robust control, switched systems and switching control, networked control systems, neural networks and signal processing, multi-agent intelligent systems, etc.

Dr. Zhai has published more than 90 academic journal papers and 140 peer-reviewed international conference papers. He is on the editorial board of several academic journals including *International Journal of Control*, *International Journal of Applied Mathematics and Computer Science*, *IET Control Theory & Applications*, and *Frontiers of Mechanical Engineering*. He is a Senior Member of IEEE, a member of SICE, ISCIE, JSST and JSME.

- Information Science and Engineering -

NICODIMUS, Retdian

Field of Interest:	Filters, Analog front-ends, Switched-capacitor Circuits, DC-DC converters, Analog building blocks, Energy harvesting, Low-power low-noise designs
Title of Courses:	Advanced Research on Telecommunication Function Control Electronic Circuits and Systems Design
Lecture Subject:	Electronic Circuits and Systems
Topics for Thesis:	N-path filters design Programmable switched-capacitor DC-DC converters Analog front-end design for Near Field Communication Low-noise techniques for switched-capacitor circuits Low-voltage techniques for analog building blocks

Publications and International Conference Papers:

1. Nicodimus Retdian, Takeshi Shima, "Noise Reduction Technique of Switched-Capacitor Low-pass Filter using Adaptive Configuration", IEICE Trans. Fundamentals, vol.E99-A, no.2, Feb.2016 (to be published).

2. Hiroki Yotsuda, Nicodimus Retdian, Masahiro Kubo, Taro Kosaka, Nobuhiko Nakano, "Compensation Technique for Current-to-Voltage Converters for LSI Patch Clamp System using High Resistive Feedback", IEICE Trans. Fundamentals, vol.E99-A, no.2, Feb. 2016 (to be published).

3. Nicodimus Retdian, Shigetaka Takagi, "Implementation of Low-Noise Switched-Capacitor Low-Pass Filter with Small Capacitance Spread", IEICE Trans. Fundamentals, vol.E96-A, no.2,
pp.477-485, Feb. 2013.

4. Nicodimus Retdian, Daisuke Horii, Shigetaka Takagi, "Linear voltage-to-current converters with current reuse technique", Journal of Analog Integrated Circuits and Signal Processing, vol.72, no.3, pp.549-556, Sep. 2012.

5. Nicodimus Retdian, Shigetaka Takagi, "Implementation of Low-Noise Switched-Capacitor Integrators with Small Capacitors", IEICE Trans. Fundamentals, vol.E95-A, no.2, pp.447-455, Feb. 2012.

6. Nicodimus Retdian, Kento Takeuchi, Takeshi Shima, "Design of Programmable Switched-Capacitor DC-DC Converters with Arbitrary Conversion Ratio", Proc. of 2015 IEEE Int. Symp. on Intelligent Signal Processing and Communication Systems, Nov. 2015

7. Takeshi Shima, Nicodimus Retdian, "A High Resolution Time-to-Digital Converter Utilizing
Coupled Oscillator, ORIGAMI", Proc. of 2015 European Conf. on Circuit Theory and Design, Aug. 2015
8. Nicodimus Retdian, Takeshi Shima, "Design of Low-Noise Switched-Capacitor Low-Pass Filters with Adaptive Configuration", Proc. of 2015 European Conf. on Circuit Theory and Design, Aug. 2015
9. Takeshi Shima. Nicodimus Retdian, Kento Takeuchi, "New Design Methodologies for TDC and Programmable SC DC-DC Converter", Proc. of Int. Conf. on Integrated Circuits, Design and Verification, Aug. 2015
10. Nicodimus Retdian, Yasuhiro Enomoto, Shigetaka Takagi, "Analysis and Measures on the Effect of Non-idealities in Switched-Capacitor Integrators with Correlated Double Sampling", Proc. of 2012 Int. Conf. on Analog VLSI Circuits, Oct. 2012

Other Features:

Electronic circuits played an important role in improving our quality of life. With the increasing demands for a better performance and longer operating time, “high-performance” and “low-power” have been two important aspects in circuit design.

Our laboratory focuses its researches on design of analog circuits and systems such as amplifiers, filters, analog front-ends for sensor or communication systems and power management/converters. The laboratory is equipped with industry standard design tools accessible through VDEC of Tokyo University as well as instruments for basic and advanced measurement. Graduate course students will be given an opportunity to use these facilities to manufacture a prototype chips using either 0.8um, 0.6um or 0.18um CMOS process.

All students will be encouraged to take a part in join projects with other laboratories, institutions and industries of both domestic and international. All students will submit their works to international journals of conferences, domestic technical meetings or workshops and occasions related to the research field. We also organize a summer school annually with some universities in Japan.

We sincerely welcome students from Japan and overseas who are interested in our research fields to join our laboratory. We hope you can gain a lot of useful knowledge and experiences for your carrier development.

Applied Chemistry

-Applied Chemistry-

HAMASAKI, Keita

Field of Interest:	Chemical biology
Title of Courses:	Advanced Research Program on Bio-function Control Study on Chemical Biology
Lecture Subject:	Chemical Biology
Topics for Thesis:	Study on the protein and the peptide folding as an understanding of diseases derived from protein deficiency HIV-1 Tat fused fluorescent proteins, their synthesis and characterization as protein-probes for drug discovery. Cyclodextrin-petide hybrids, their synthesis and evaluation as a dynamic nano-materials

Publications and International Conference Papers:

1. Nucleobase modified neamines with a lysine as a linker, their inhibition specificity for TAR-Tat derived from HIV-1., R.Inoue. K.Watanabe, T. Katou, Y.Ikezawa, Keita Hamasaki. *Bioorg. Med. Chem,* 23, 2139-2147, 2015
2. Hairpin RNA modulates FRET emission from the fluorescent proteins linked with the RNA binding peptide
   Yutarou Shirasaka, Yusuke Itou, Kazuki Inazawa, Keita Hamasaki
   The 41st International Symposium on Nucleic Acid Chemistry, 2014, 294-295
3. Design, synthesis and binding study of the amino saccharide derivatives as a potential inhibitor for the RNA-protein interactions
   Ryo Inoue, Hiroharu Matsumoto, Kentarou Watanabe, Toyofusa Katou, Yasunori Ikezawa, Keita Hamasaki
   The 41st International Symposium on Nucleic Acid Chemistry, 2014, 326-327
4. TAR RNA induces FRET by folding Tat peptide of which placed as a linker between two fluorescent proteins
   Kazuki Inazawa, Tomoya Tanaka, Atsuko Kikuchi, Keita Hamasaki
   The 40th International Symposium on Nucleic Acid Chemistry, 2013, 298-297
5. Hairpin RNA as a scaffold capable of assembling two fluorescent proteins via TAR-Tat or RRE-Rev interactions
   Yutaro Shirasaka, Takashi Harada, Daisuke Watanabe, Keita Hamasaki,
   The 40th International Symposium on Nucleic Acid Chemistry, 2013, 278-279
6. Nucleobase modified neamines with L-lysine as a linker, their binding toward hairpin RNAs
   Ryo Inoue, Kentarou Watanabe, Toyofusa Katou, Yasunori Ikezawa, Keita Hamasaki
   The 40th International Symposium on Nucleic Acid Chemistry, 2013, 166-167
7. HIV Tat fused GFP capable of detecting TAR RNA with its enhanced emission

Yutarou Shirasaka, Takashi Harada, Hiroaki Kozuka, Kazuya Takahashi, keita Hamasaki,
The 39th International Symposium on Nucleic Acid Chemistry, 2012, 278-279

8. Host-guest-bridge induces irreversible helix folding in a short peptide
Yuki Nakamura; Kazuya Nakazawa; Keita Hamasaki
Chemistry Letters, (2012), 41, 9, 908-909
9. A synthetic approach to aromatic aminoglycoside as a neamine mimic
Ryo Inoue; Sho Matsudqa; Yosiki Oda; irofumi Ooyama; Akihiro Yoshida; Keita Hamasaki; Takashi Yamanoi
Heterocycles (2010), 52, 2, 1335-1343
10. 6,7,8,10-Tetra-O-benzyl-1,2,3,4-tetradeoxy-α-D-gluco-dec-5-ulopyranosyl 2,3,4,6-Tetra-O-benzyl-α-D-glucopyranoside
Takashi Yamanoi, Ryo Inoue, Yoshiki Oda, Keita Hamasaki
Molbank, (2010), 33-34

Other Features:

HAVE A TICKET? Come on board to our ship, CHEMICAL BIOLOGY. Here we go to the voyage on the ocean of GENOME! Let's explore the RNA continent to find treasure of the HISTORY of LIFE!
Nowadays, all we know that human genome is constructed with 3 X 10^9 base pairs of DNA. Even though, only 2% of it is used as the information of protein of which construct our body. What is other 98% of genomic information? Is that junk? On the other hand, 70% of genome is transcribed toward RNA. Definitely, there is SOMETHING ABOUT RNA! We have been voyage the ocean of genome, focus on RNA and RNA binding protein, small molecules and looking for the rules for the recognition and correct folding of those biological molecules. CHEMICAL BIOLOGIST manages tool sets of organic, inorganic, analytical and physical chemistry, molecular biology as well. At the end of this voyage, you might have a broad knowledge and experimental skills for CHEMISTRY and BIOLOGY. All you need now is a ticket for CHEMICAL BIOLOGY. Just ride on our ship, start voyage to find amazing treasures on the RNA continent.

-Applied Chemistry-

IMABAYASHI, Shin-ichiro

Field of Interest:	Electrochemistry, Interfacial phenomena in electrode systems
Title of Courses:	Advanced Research Program on Eco-materials Engineering Applied Electrochemistry
Lecture Subject:	Basic Electrochemistry
Topics for Thesis:	• Development of methods for recovering elemental selenium based on the electrochemical reduction of seleno-oxyanions accelerated by methyl viologen. • Development of electrode systems for the oxidation of sulfur dioxide in concentrated sulfuric acid • Development of electrodeposition reaction of iridium oxide and the application of the resulting iridium thin films • Specific reactions and phenomena at the electrode | ionic liquid interface • Fabrication methods for porous electrodes and the reaction kinetics in porous electrodes

Publications and International Conference Papers (2007~present):

1. T. Morita, H. Kuroe, A. Eguchi, and S. Imabayashi, “Electrochemical Quartz Crystal Microbalance Analysis of Nitrogen Oxide-Promoted Platinum Dissolution in $HClO_4$”, *J. Phys. Chem. C*, **118** (28), 15114-15121 (2014).
2. A. Kawano and S. Imabayashi, “Influence of oxygen atmosphere in Platinum dissolution under potential cycling conditions”, *J. Electrochem. Soc*., **161**(1), F67-F71 (2014).
3. F. Koshikumo, W. Murata, A. Ooya, and S. Imabayashi, “Acceleration of Electroreduction Reaction of Water-Soluble Selenium Compounds in the Presence of Methyl Viologen”, *Electrochemistry*, 81(5), 350-52 (2013).
4. H. Kuroe, T. Morita, Y. Uchiyama, T. Abe, and S. Imabayashi, “Platinum Dissolution in Nitrogen Oxides-Containing $HClO_4$ Solution Studied by Electrochemical Quartz Crystal Microbalance”, *ECS Trans.*, 50(2), 1607-12 (2012).
5. T. Ohsaka, K. Hirano, and S. Imabayashi, “Bath-life extension of iridium electroplating by separating anode and cathode compartments with ion-exchange membrane”, *Electrochem. Solid State Lett.*, **13**(8), D65-D68 (2010).
6. T. Ohsaka, Y. Goto, K. Sakamoto, M. Isaka, S. Imabayashi, and K. Hirano, “Effect of intensities of ultrasound sonication on reduction of crack formation and surface roughness in iridium electrodeposites”, *Trans IMF.*, **88**(4), 204-8 (2010).
7. N. Nakadan, S. Imabayashi, and M. Watanabe, “Role of the thermoresponsive segment in determining the redox properties of phenothiazine-labeled poly(ethoxyethyl glycidyl ether)-

block-poly(ethylene oxide)", *J. Electroanal. Chem.* **632**(1-2), 59-63 (2009).

8. S. Inoue, H. Kakikawa, N. Nakadan, S. Imabayashi, and M. Watanabe, "Thermal response of poly (ethoxyethyl glycidyl ether) grafted on gold surfaces probed on the basis of temperature-dependent water wettability", *Lamgmuir*, **25**(5), 2837-41 (2009).
9. S. Imabayashi, Y. Kondo, R. Komori, A. Kawano, and T. Ohsaka, "Effects of atmospheric trace species on the oxygen reduction reaction and the production of hydrogen peroxide", *ECS Transactions*, **16**(2), 925-930 (2008).
10. R. Tsuda, K. Kodama, T. Ueki, H. Kokubo, S. Imabayashi, and M. Watanabe, "LCST-type liquid-liquid phase separation behaviour of poly(ethylene oxide) derivatives in an ionic liquid", *Chem Commun.*, **2008**, 4939-4941.
11. M. Ogura, H. Tokuda, S. Imabayashi, and M. Watanabe, "Preparation and Solution Behavior of Thermoresponsitive Diblock Copolymer of Poly(ethyl glycidyl ether) and Poly(ethylene oxide)," *Lamgmuir*, **23**(18), 9429-9434 (2007).
12. R. Tsuda, S. Kaino, H. Kokubo, S. Imabayashi, and M. Watanabe, "Effect of core-shell micelle formation on the redox properties of phenothiazine-labeled poly(ethyl glycidyl ether)-*block*-poly(ethylene oxide)", *Colloids and Interfaces B: Biointerface*, **56**, 255-259(2007).

Other Features:

- S. I. is a member of the Electrochemical Society of Japan, the Electrochemical Society (USA), the Polarographic Society of Japan, the Chemical Society of Japan, and American Chemical Society.
- **What is electrochemistry?** Electrochemistry is the discipline of chemistry which deals with the interconversion of electrical energy into chemical energy and vice-versa. It is the study of phenomena at electrode solution interfaces. Electrochemistry deals with the relationship between electrical, chemical phenomena and the laws of interaction of these phenomena.
- **Practical significance of electrochemistry** Electrochemical methods have been widely used in various area of industry. Electrolysis, which is the most important method for the production of chlorine, fluorine, many oxidizing agents and organofluorine compounds, is used in the chemical industry. The importance of the electrosynthesis of valuable chemical compounds is increasing. The production of aluminum, magnesium, sodium, lithium, beryllium, tantalum, titanium, and zinc and the refining of copper are based on electrochemical methods. Hydrogen, the main fuel for the next generation, is produced by electrolysis of water in a relatively limited scale at present, but the electrochemical methods for producing hydrogen, will be of great significance in future. Various types of electro- and electroless-plating methods have been used in various industries for protective and decorative purposes as well as for providing optical, mechanical, and magnetic properties. Of major importance is the development of power supply for electric or fuel cell vehicles.

• **Correspondence**

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-Applied Chemistry-

KITAGAWA, Osamu

Field of Interest:	Organic Chemistry
Title of Courses:	Advanced Research Program on Eco-materials Engineering Synthetic Organic Reaction
Lecture Subject:	Organic Stereochemistry
Topics for Thesis:	Highly stereoselective synthesis of separable amide rotamers at ambient temperature and their structural property (Ph.D. thesis in 2014) Highly enantioselective synthesis of N-C axially chiral compounds through catalytic asymmetric aromatic amination and their application to asymmetric reaction (Ph.D. thesis in 2012)

Publications and International Conference Papers:

1. The synthesis of optically active N-C-axially chiral tetrahydroquinolinone and its response to an acid-accelerated molecular rotor. Suzuki, Y.; Kageyama, Y.; Morisawa, R.; Dobashi, Y.; Hasegawa, H.; Yokojima, S.; Kitagawa, O. *Chem. Commun*. 51, 11229-11232 (2015).

2. Relationship between rotational barriers and structures in N-C axially chiral 3,4-dihydroquinolin-2-one and 3,4-dihydrobenzoquinolin-2-one. Suzuki, Y.; Takahashi, I.; Dobashi, Y.; Hasegawa, H.; Roussel, C.; Kitagawa, O*. *Tetarahedron Lett*. 56 (1), 132-135 (2015).

3. Unique Structural Property of 2,4,6-tri-tert-butylanilide: Isomerization and Switching between Separable Amide Rotamers through the Reaction of Anilide Enolates. Tsukagoshi, S.; Ototake, N.; Ohnishi, Y.; Shimizu, M. Kitagawa, O. *Chem. Eur. J.* 19 (21), 6845-6850 (2013).

Other Features: Research subjects at my laboratory: 1) Catalytic enantioselctive synthesis of N-C axially chiral compounds and their structural property, 2) Highly stereoselective synthesis of separable amide rotamers and their structural property, 3) Self-disproportionation of enantiomers in non-racemic chiral compounds and its application to optical resolution

-Applied Chemistry-

MASADOME, Takashi

Field of Interest:	Analytical Chemistry, Environmental Analytical Chemistry
Title of Courses:	Advanced Research Program on Eco-materials Engineering Environmental Analytical Chemistry
Lecture Subject:	Environmental Analytical Chemistry
Topics for Thesis:	Sequential Injection Immunoassay for Environmental Pollutants, Determination of Environmental Pollutants Using Microfluidic Polymer Chip Integrated with an ISE Detector, Immunoassay for Environmental Pollutants based on a Surface Plasmon Resonance Sensor

Publications and International Conference Papers:

1) B. Tossanaitada, T. Masadome, T. Imato, "Sequential injection analysis of thiocyanate ions using a microfluidic polymer chip with an embedded ion-selective electrode", *Analytical Sciences*, **30**, 507-511 (2014).
2) T. Masadome and T. Hattori, "Determination of polyhexamethylene biguanide hydrochloride", *Reviews in Analytical Chemistry,* **33**, 49-57 (2014).
3) B. Tossanaitada, T. Masadome, T. Imato, "Simultaneous Determination of Inorganic Anions by Sequential Injection Chromatography System Constructed from a Monolithic Column and a Microfluidic Polymer Chip with an Embedded Ion-Selective Electrode", *Journal of Flow Injection Analysis*, **29**, 89-94 (2012).
4) B. Tossanaitada, T. Masadome, T. Imato, "Sequential injection analysis of nitrate ions using a microfluidic polymer chip with an embedded ion-selective electrode", *Analytical Methods*, **4**, 4384-4388 (2012).
5) T. Masadome, T. Miyanishi, K. Watanabe, H. Ueda, T. Hattori, "Determination of polyhexamethylene biguanide hydrochloride using photometric colloidal titration with crystal violet as a color indicator", *Analytical Sciences*, **27**, 817-821 (2011).
6) T. Masadome, K. Nakamura, D. Iijima, O. Horiuchi, B. Tossanaitada, S. Wakida, T. Imato, Microfluidic polymer chip with an embedded ion-selective electrode detector for nitrate-ion assay in environmental samples, *Analytical Sciences*, **26**, 417-423 (2010).
7) M. Tanaka, K. Sakamoto, H. Nakajima, N. Soh, K. Nakano, T. Masadome, T. Imato, "Flow immunoassay for nonioinic surfactants based on surface plasmon resonance sensors", *Analytical Sciences*, **25**, 999-1005 (2009).
8) T. Masadome, M. Akatsu, "Optical sensor of anionic surfactants using solid-phase extraction with a lactone-form Rhodamine B membrane", *Analytical Sciences*, **24**, 809-812 (2008).
9) T. Masadome, Y. Yano, T. Imato, "Surface plasmon resonance immunosensor for anionic surfactants based on an indirect competitive immunoreaction", *Analytical Letters*, **41**,640-648 (2008).
10) T. Masadome, Y. Yamagishi, M. Takano, T. Hattori, "Potentiometric titration of polyhexamethylene biguanide hydrochloride with potassium poly (vinyl sulfate) solution using a cationic surfactant-selective electrode", *Analytical Sciences*, **24**, 415-418 (2008).

11) R. Zhang, H. Nakajima, N. Soh, K. Nakano, T. Masadome, K. Nagata, K. Sakamoto, T. Imato, "Sequential injection chemiluminescence immunoassay for nonionic surfactants by using magnetic microbeads", *Analytica Chimica Acta*, **600**, 105-113 (2007).
12)T. Masadome, T. Takahashi, "Optical sensing membrane based on tetrabromophenolphthalein ethyl ester for the determination of cationic surfactants", *Analytical Letters,* **40**, 441-448 (2007).
13) T. Masadome, K. Yada, S. Wakida, "Microfluidic polymer chip integrated with an ISFET detector for cationic surfactant assay in dental rinses", *Analytical Sciences,* **22**, 1065-1069 (2006).
14) T. Masadome, Y. Yano, "Response of surface-plasmon resonance sensor based on gold surfaces modified by self-assembled monolayer to nonionic surfactants", *Analytical Letters,* **39**, 2169 - 2177(2006).
15) R. Zhang, K. Hirakawa, D. Seto, N. Soh, K. Nakano, T. Masadome, K. Nagata, K. Sakamoto, T. Imato, "Sequential injection chemiluminescence immunoassay for anionic surfactants using magnetic microbeads immobilized with an antibody", *Talanta*, **68**, 231-238 (2005).
16) T. Masadome, S. Kugoh, M. Ishikawa, E. Kawano, S. Wakida, "Polymer chip incorporated with anionic surfactant-ISFET for micro flow analysis of anionic surfactants", *Sensors and Actuators B*, **108**, 888-892 (2005).
17) N. Soh, H. Nishiyama, Y. Asano, T. Imato, T. Masadome, Y. Kurokawa, "Chemiluminescence sequential injection immunoassay for vitellogenin using magnetic microbeads", *Talanta*, **64**, 1160-1168 (2004).
18) T. Masadome, J.G. Yang, T. Imato, "Effect of plasticizer on the performance of the surfactant-selective electrode based on a poly (vinyl chloride) membrane with no added ion-exchanger", *Microchimica Acta*, **144**, 217 - 220 (2004).
19) T. Masadome, "Determination of cationic surfactants by a photometric titration method with crystal violet as a color Indicator", *Analytical Letters,* **37**, 495-502(2004).
20) T. Masadome, M. Ishikawa, S. Wakida, "Fabrication and characterization of polymer-based microchip integrated with NH_4^+-ISFET using a small diameter wire as a template of channel", *Analytical Letters,* **37**, 373-380 (2004).
21) T. Masadome, A. Ueda, M. Kawakami, "Gold electrode modified with a self-assembled monolayer of 11-amino-1-undecanethiol hydrochloride for the determination of anionic surfactants, *Analytical Letters,* **37**, 225-233 (2004).
22) T. Masadome, T. Imato, "Flow injection analysis of cationic and anionic polyelectrolytes using surfactant-selective electrode detector", *Journal of Flow Injection Analysis*, **20**, 211-214 (2003).
23) T. Masadome, T. Imato, "Flow injection analysis of surfactants using surfactant-selective electrode detector", *Journal of Flow Injection Analysis,* **20**, 207-210 (2003).
24) T. Masadome, Y. Hoshi, "Determination of anionic polyelectrolytes using a photometric titration with crystal violet as a color indicator", *Microchimica Acta*, **142**, 37-41 (2003).
25) N. Soh, T. Tokuda, T. Watanabe, K. Mishima, T. Imato, T. Masadome, Y. Asano, S. Okutani, O. Niwa, S. Brown, "A surface plasmon resonance immunosensor for detecting a dioxin precursor using a gold binding polypeptide", *Talanta*, **60**, 733–745 (2003).
26) T. Masadome, T. Imato, "Use of marker ion and cationic surfactant plastic membrane electrode for potentiometric titration of cationic polyelectrolytes", *Talanta,* **60**, 663–668 (2003).
27) T. Masadome, M. Kawaguchi, L. Kurniasari, "Photometric titration of anionic polyelectrolytes using the cationic dye as an Indicator", *Analytical Letters,* **36**, 619-625(2003).

28) T. Masadome, "Determination of cationic polyelectrolytes using a photometric titration with crystal violet as a color indicator", *Talanta*, **59**, 659-666 (2003).
29) N. Soh, H. Nishiyama, K. Mishima, T. Imato, T. Masadome, Y. Asano, Y. Kurokawa, H. Tabei, S. Okunishi, "Spectrophotometric determination of carp vitellogenin using a sequential injection analysis technique equipped with a jet ring cell", *Talanta*, **58**, 1123-1130 (2002).
30) T. Masadome, "Cationic surfactant-selective electrode based on a hydrophobic cation exchanger, *Microchimica Acta*, **140**, 227-231(2002).
31) T. Masadome, Y. Asano, T. Imato, S. Ohkubo, T. Tobita, H. Tabei, Y. Iwasaki, O. Niwa, Y. Fushinuki, "Preparation of refractive index matching polymer film alternative to oil for use in a portable surface-plasmon resonance phenomenon-based chemical sensor method ", *Analytical and Bioanalytical Chemistry*, **373**, 222-226 (2002).
32) N. Kaneki, H. Tanaka, K. Shimada, Y. Asano, T. Masadome, H. Hachiya, H. Hara, "Measurement of aroma of soup using potentiometric gas sensor", *Sensors and Materials,* **14**, 109-118 (2002).

Other Features:

1) FIA Award for Science by Japanese Association for Flow Injection Analysis (FIA), “Development of Flow Analysis Method Using a Chemical sensor as a Detector” in 2013.
2) FIA Award for Young Researchers by Japanese Association for Flow Injection Analysis (FIA), “Development of FIA Method for the Determination of Surfactants and Polyelectrolyte Using High Performance Surfactant-Selective Electrode Detector” in 1998.
3) The Takeda Techno-Entrepreneurship Award 2001, “Development of Portable Immunosensor for Endocrine Disruptors Based on Surface Plasmon Resonance with Assistance of Sequential Injection Technique”.

-Applied Chemistry-

NAKAMURA, Asao

Field of Interest:	Organic Photochemistry, Photomedicine, Biomaterials Chemistry
Title of Courses:	Advanced Research Program on Eco-materials Engineering Supramolecular Chemistry
Lecture Subject:	Bioorganic Photochemistry
Topics for Thesis:	• Use of microreactor in organic photochemical reactions • Control of regio- and stereoselectivity using inclusion by host molecules • Development of fluorescent probes of oxygen and reactive oxygen species for medical uses • Development of new photosensitizers for photodynamic therapy

Publications and International Conference Papers:

1. K. Imai, I. Nakanishi, A. Ohno, M. Kurihara, N. Miyata, K. Matsumoto, A. Nakamura, K. Fukuhara, "Synthesis and Radical-Scavenging Activity of a Dimethyl Catechin Analogue", *Bioorg. Med. Chem. Lett.*, **2014**, *24*, 2582–2584.

2. K. Imai, I. Nakanishi, K. Anzai, T. Ozawa, N. Miyata, S. Urano, H. Okuda, A. Nakamura, K. Fukuhara, "Synthesis and Enhanced Radical Scavenging Activity of Conformationally Constrained Epigallocatechin Analogue", *Chem. Lett.*, **2011**, *40*, 1417–1419.

3. A. Nakamura, H. Irie, S. Hara, M. Sugawara, S. Yamada, "Regiospecific [2 + 2] photocyclodimerization of *trans*-4-styrylpyridines templated by cucurbit[8]uril", *Photochem. Photobiol. Sci.*, **2011**, *10*, 1496–1500.

4. K. Fukuhara, A. Ohno, K. Imai, A. Nakamura et al., "Novel ninhydrin adduct of catechin with potent antioxidative activity", *Tetrahedron Lett.*, **2009**, *50*, 6989-6992.

5. K. Fukuhara, K. Imai, A. Nakamura et al., "Intramolecular base-accelerated radical-scavenging reaction of a planar catechin derivative bearing a lysine moiety", *Chem. Commun.*, **2009**, 6180–6182.

6. M. Nishijima, T. C. S. Pace, A. Nakamura, T. Mori, T. Wada, C. Bohne, Y. Inoue, "Supramolecular Photochirogenesis with Biomolecules. Mechanistic Studies on the Enantiodifferentiation for the Photocyclodimerization of 2-Anthracenecarboxylate Mediated by Bovine Serum Albumin", *J. Org. Chem.* **2007**, *72*, 2707−2715.

7. A. Nakamura and Y. Inoue, “Electrostatic Manipulation of Enantiodifferentiating Photocyclodimerization of 2-Anthracenecarboxylate within γ -Cyclodextrin Cavity through Chemical Modification. Inverted Product Distribution and Enhanced Enantioselectivity”, *J. Am. Chem. Soc.* **2005**, *127*, 5338–5339.

Other Features:

Research collaboration is going on with National Institute of Health Sciences, National Institute of Radiological Sciences, and Showa University.

-Applied Chemistry-

NOMURA, Mikihiro

Field of Interest:	Energy and Water treatment based on Chemical Engineering
Title of Courses:	Advanced Research Program on Eco-materials Engineering Research of Energy Engineering
Lecture Subject:	Energy and Water Treatment Based on Chemical Engineering
Topics for Thesis:	Development silica RO membranes for water purification H_2 production by using a water splitting IS process Membrane separation processes

Publications and International Conference Papers:

1. “Permeation evaluation of a mordenite zeolite membrane by using an alkaline post-treatment”, R. Ono, A. Ikeda, E. Matsuyama, M Nomura, *J. Chem. Eng. Jpn.*, **48**(6), 444-449 (2015)

2. "High hydrogen permeance silica membranes prepared by a chemical vapor deposition method", A. Ikeda, R. Ono, M. Nomura, *J. Membr. Sep. Tech.*, **4**, 66-73 (2015)

3. “Development of inorganic silica reverse osmosis membranes by using a counter-diffusion chemical vapor deposition method”, A. Ikeda, E. Matsuyama, M. Komatsuzaki, M. Sasaki and M. Nomura, *J. Chem. Eng. Jpn.*, **47**(7), 574-578 (2014)

4. “Preparation of silica hybrid membranes for high temperature CO_2 separation”, M. Nomura, E. Matsuyama, A. Ikeda, M. Komatsuzaki and M. Sasaki, *J. Chem. Eng. Jpn.*, **47**(7), 569-573 (2014)

5. "High temperature propylene/propane separation thorugh silica hybrid membranes ", E. Matsuyama, A. Ikeda, M. Komatsuzaki, M. Sasaki, M. Nomura, *Sep. Purif. Tech.*, **128**, 25-30 (2014)

6. “Preparation of thin Li_4SiO_4 membranes by using a CVD method”, M. Nomura, Y. Nishi, T. Sakanishi, K. Utsumi and R. Nakamura, *Energy Procedia*, **37**, 1012-1019 (2013)

7. “Preparation of CO_2 permselective Li_4SiO_4 membranes by using mesoporous silica as a silica source”, M. Nomura, T. Sakanishi, Y. Nishi, K. Utsumi and R. Nakamura, *Energy Procedia*, **37**, 1004-1011 (2013)

8. “Flowsheet study of the thermochemical water-splitting IS process for effective hydrogen production”, S. Kasahara, S. Kubo, R. Hino, K. Onuki, M. Nomura, and S. Nakao, *Int. J. Hydrogen Energy,* **32**, 489-496 (2007)

9. “Preparation of a catalyst composite silica membrane reactor for steam reforming

reactions using a counter diffusion CVD method", M. Nomura, H.Aida, K. Nakatani, S. Gopalakrishnan, T. Sugawara, S. Nakao, M. Seshimo, T. Ishikawa and M. Kawamura, *Ind. Eng. Chem. Res.*, **45**(11), 3950-3954 (2006)

10. "Steam stability of a silica membrane prepared by a counter diffusion chemical vapor deposition", M. Nomura, H. Aida, S. Gopalakrishnan, T. Sugawara, S. Nakao, S. Yamazaki, T. Inada, Y. Iwamoto, *Desalination,* **193**(1-3), 1-7 (2006)

11. "Evaluation of the IS process featuring membrane techniques by total thermal efficiency", M. Nomura, S. Kasahara, H. Okuda and S. Nakao, *Int. J. Hydrogen Energy,* **30**(13-14), 1465-1473 (2005)

12. "Preparation of a stable silica membrane using a counter diffusion chemical vapor deposition method", M. Nomura, K. Ono, S. Gopalakrishnan, T. Sugawara and S. Nakao, *J. Membr. Sci.,* **251**(1-2), 151-158 (2005)

13. "Silica membrane reactor for the thermochemical Iodine-Sulfur process to produce hydrogen", M. Nomura, S. Kasahara and S. Nakao, *Ind. Eng. Chem. Res.*, **43**(18), 5874-5879 (2004)

14. "Development of an Electrochemical Cell for Efficient Hydrogen Production through the IS Process," M. Nomura, S. Fujiwara, H. Okuda, S. Kasahara, K. Ikenoya, S.Kubo, K. Onuki and S. Nakao, *AIChE J.* **50**(8), 1991-1998 (2004)

15. "Application of an electrochemical membrane reactor to the thermochemical water splitting IS process for hydrogen production", M. Nomura, S. Fujiwara, K. Ikenoya, S. Kasahara, H. Nakajima, S. Kubo, G.-J. Hwang, H.-S. Choi and K. Onuki, *J. Membr. Sci.*, **240**(1-2), 221-226 (2004)

16. "Improvement of thermal stability of porous titania films prepared by the electrostatic sol-spray deposition (ESSD) method," M. Nomura, B. Meester, J. Schoonman, F. Kapteijn, J. A. Moulijn, *Chem. Mater.* **15**(6), 1283-1288 (2003)

17. "Selective ethanol extraction from fermentation broth using a silicalite membrane", M. Nomura, T. Bin and S. Nakao, *Sep. Purif. Tech.* **27**, 59-66 (2002)

18. "Transport phenomena through intercrystalline and intracrystalline pathways of silicalite zeolite membranes", M. Nomura, T. Yamaguchi and S. Nakao, *J. Membr. Sci.* **187**, 203-212 (2001)

19. "Ethanol/water transport through silicalite membranes", M. Nomura, T. Yamaguchi and S. Nakao, *J. Membr. Sci.*, **144**, 161-171 (1998)

20."Silicalite Membranes Modified by Counterdiffusion CVD Technique", M. Nomura, T. Yamaguchi and S. Nakao, *Ind. Eng. Chem. Res.*, **36** (10), 4217-4223 (1997)

Other Features:

-Applied Chemistry

OHISHI, Tomoji

Field of Interest:	Materials Chemistry
Title of Courses:	Advanced Research Program on Eco-materials Engineering
	Inorganic Material Chemistry
Lecture Subject:	Inorganic Materials Chemistry
Topics for Thesis:	Preparation properties of functional thin film by sol-gel method

Publications and International Conference Papers:

1. T. Ohishi et al., Preparation and gas barrier characteristics of polysirazane-derived silica thin films using ultraviolet irradiation, Materials Sciences and Application, Vol.5, p105 (2014)
2. T. Ohishi et al., Electrical properties of anatase TiO2 films by atomic layer deposition and low annealing temperature, J. Vac. Sci. Technol., B Vol.23, 03D121 (2014)

Other Features:

-Applied Chemistry-

YAMASHITA, Mitsuo

Field of Interest:	Applied Biological Chemistry, Microbiology, Gene Technology
Title of Courses:	Advanced Research Program on Eco-materials Engineering Life Science
Lecture Subject:	Life Science
Topics for Thesis:	Lipoteichoic acids from Lactobacillus plantarum L137 elicit strong interleukin 12-inducing activities, Allergen synthesis in microorganisms for prototype of the allergens detection chip, Optimization of seleno-oxyanions reduction and recovery of elemental and gaseous selenium using selenate reducing bacterium, Pseudomonas stutzeri NT-I

Publications and International Conference Papers:

1. Satishi. Soda, Ai. Hasegawa, Masashi. Kuroda, Aiko. Hanada, Mitsuo Yamashita, and Michihiko Ike.: Seleniumu recovery form kiln powder of cement manufacturing by chemical leaching and bioreduction. Water Science and Technology, 72(8), 1294-1300, (2015).

2. Takumi Horiike, and Mitsuo Yamashita.: A new isolate, *Penidiella* sp. T9, accumulates the rare earth element dysprosium. Appl. Environ. Microbiol., 81(9), 3062-3068, (2015).

3. Masashi Kuroda, Hiroyuki Ayano, Kazunari Sei, Mitsuo Yamashita, and Michihiko Ike.: Draft genome sequence of *Bacillus selenatarsenatis* SF-1^{T}, a promising agent for bioremediation of environmrnts contaminated with selenium and arsenic. Genome Announc., 3(1), 1-2, (2015). pii: e01466-14.

4. Tsubasa Kagami, Takanobu Narita, Masashi Kuroda, Emi Notaguchi, Mitsuo Yamashita, Kazunari Sei, Satoshi Soda, and Michihiko Ike.: Selenium volatilization under aerobic conditions and recovery from aqueous phase by *Pseudomonas stutzeri* NT-I. Water Research, 47, 1361-1368, (2012).

5. Tsubasa Kagami, Akira Fudemoto, Noriyuki Fujimoto, Emi Notaguchi, Masaya Kanzaki, Masashi Kuroda, Satoshi Soda, Mitsuo Yamashita, and Michihiko Ike.: Isolation and characterization of bacteria capable of reducing tellurium oxyanions to insoluble elemental tellurium for tellurium recovery from wastewater. Waste and Biomass Valorization. 3(4), 409-418 (2012).

6. Kayo Ohkouchi, Seiji Kawamoto, Kenji Tatsugawa, Noboru Yoshikawa, Yuki Takaoka, Sayumi Miyauchi, Tsunehiro Aki, Mitsuo Yamashita, Yoshikatsu Murooka, and Kazuhisa Ono.: Prophylactic effect of lactobacillus oral vaccine expressing a Japanese ceder pollen allergen. J. Biosci. Bioeng., 113(4), 536-541, (2012).

7. Satoshi Soda, Masami Kashiwa, Tsubasa Kagami, Masashi Kuroda, Mitsuo

Yamashita, and Michihiko Ike.: Laboratory-Scale bioreactors for soluble selenium removal from selenium refinery wastewater using anaerobic sludge. Desalination 279, 433-438 (2011).

8. Masashi Kuroda, Emi Notaguchi, Akiko Sato, Masaya Yoshioka, Ai Hasegawa, Tsubasa Kagami, Takanobu Narita, Mitsuo Yamashita, Kazunari Sei, Satoshi Soda,and Michihiko Ike.: Characterizationof *Pseudomonas stutzeri* NT-I capable of removing soluble selenium from the aqueous phase under aerobic conditions. J. Biosci. Bioeng., 112(3), 259-264 (2011).

9. Masashi Kuroda, Mitsuo Yamashita, Kanako Imao, Noriyuki Fujimoto, Hisayo Ono, Kouta Nagano, Emiko Miwa, Kazunari Sei, and Michihiko Ike.: Molecular cloning and characterization of the *srdBCA* operon encoding the respiratory selenate reductase complex from the selenate-reducing bacterium, *Bacillus selenatarsenatis* SF-1. J. Bacteriol., 193(9), 2141-2148 (2011).

10. Pornpimon Kiatpapan, Manthana Phonghatsabun, Mitsuo Yamashita, Yoshikatsu Murooka, and Watanalai Panbangred.: Production of 5-aminolevulinic acid by *Propionibacterium acidipropionici* TISTR442. J. Biosci. Bioeng., 111(4), 425-428, (2011).

11. Yoshitaka Hirose, Shinji Murosaki, Takashi Fujiki, Yoshihiro Yamamoto, Yasunobu Yoshikai, Mitsuo Yamashita.: Location of teichoic acids on the cell-surface affects to induce the interleukin-12 production in *Lactobacillus plantarum*. Microbiol. Immunol., 54, 143-151, (2010).

12. Jong-Hyun Kim, Michihiro Sunako, Hisayo Ono, Yoshikatsu Murooka, Eiichiro Fukusaki, and Mitsuo Yamashita.: Characterization of C-terminal truncated form of amylopullulanase from *Lactobacillus plantarum* L137. J. Biosci. Bioeng., 107(2), 124-129 (2009).

13. Yoshikatsu Murooka, Kumiko Nanda and Mitsuo Yamashita.: Rice vinegar. pp. 221-232. In Paolo Giudici and Lisa Solieri (eds.), Vinegars of the world. Springer (2009).

14. Jong-Hyun Kim, Michihiro Sunako, Hisayo Ono, Yoshikatsu Murooka, Eiichiro Fukusaki, and Mitsuo Yamashita.: Characterization of gene encoding amylopullulanase from plant-originated lactic acid bacterium, *Lactobacillus plantarum* L137. J. Biosci. Bioeng., 106(5), 449-459 (2008).

15. Yoshikatsu Murooka, and Mitsuo Yamashita.: Traditional healthful fermented products of Japan. J. Ind. Microbiol. Biotechnol., 35(8), 791-798 (2008).

Other Features:

Member of the Society for Biotechnology, Japan

Member of Japan Society for Bioscience, Biotechnology, and Agrochemistry

Member of the Japanese Biochemical Society

Member of Japanese Association for Food Immunology Society

Bio-Science and Engineering

-Bio-Science and Engineering-

HANAFUSA, Akihiko

Field of Interest:	Welfare and Human Engineering, Rehabilitation Engineering
Title of Courses:	Advanced Research Program on Bio-function Control Research on welfare and rehabilitation support system
Lecture Subject:	Welfare Engineering
Topics for Thesis:	Development of welfare and rehabilitation systems. Development of computer assisted design system for welfare and medical equipments including human body model. Brain computer interfaces for welfare equipments.

Publications and International Conference Papers:

1. Hanafusa Akihiko, Komeda Takashi, Ito Kazuhisa, Zobel Pierluigi Beomonte, "Italy-Japan International Project-Based Learning for Developing Human Resources using Design of Welfare Equipment as a Subject", 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC2015), pp.3675-3678, 2015.
2. Fumiya Shiki, Haruki Ishii, Akihiko Hanafusa, Kengo Ohnishi, Jiro Mizusawa, "Development of Active Upper Limb Orthosis To Support Activities of Daily Living", 9th SEATUC Symposium,, pp.190-193, 2015.
3. Akihiko Hanafusa, Noriyasu Maruyama, Tomozumi Ikeda, Tsuyoshi Nakayama, "Dynamic Finite Element Analysis of Different Width Ankle Foot Orthoses that is Incorporated with Human Lower Leg Model", International Society for Prosthetics and Orthotics(ISPO) World Congress 2015 Abstract Book, pp.523-524, 2015.6.
4. Le Van Tuan, Akihiko Hanafusa, Shinichiro Yamamoto, "Functional 3D modeling of transfemoral prosthesis for dynamics analysis", International Society for Prosthetics and Orthotics(ISPO) World Congress 2015 Abstract Book, pp.459-460, 2015.
5. Akihiko Hanafusa, Daisuke Yoshino, "Effect of Changing Mother Wavelet Parameters for Detecting the Event-Related Potentials", 1st Global Conference on Biomedical Engineering (GCBME2014) and 9th Asian Pacific Conference on Medical and Biological Engineering (APCBME2014), CDROM, pp.1-4, 2014.
6. Sinichiro Saeki, Akihiko Hanafusa, Naoki Suzuki, Asaki Hattori, "Development of a Fluid Drive System for the Endoscopic Surgery Robot" , 8th SEATUC Symposium, pp.OS-04-36-39, 2014.

7. Kousei Ouki, Ken Nishida, Akihiko Hanafusa, Naoki Suzuki, Asaki Hattori, “Development of a 3D Spinal Model Superimpose Display System According to The Seating Posture of a Wheelchair” , 8th SEATUC Symposium, pp.OS-04-17-20, 2014.
8. Akihiko. Hanafusa, Kousei Ouki, Kenichi Miyazaki, Takashi Komeda, Tomozumi Ikeda, Naoki Suzuki, Aasaki Hattori, “Wheelchair Seating Evaluation System ~ Introduction of System Functions ~”, 13th International Workshop on Research and Education in Mechatronics, CDROM pp.1-6, 2012.
9. Akihiko Hanafusa, Tomozumi Ikeda, Naoki Suzuki, and Asaki Hattori, “Wheelchair Driving Analysis System Incorporating Assessment of Sitting Posture of Spine”, 6th SEATUC Symposium, pp.OS-04-09-1-4, 2012.
10. Taisuke Ishii, Akihiko Hanafusa, Takashi Komeda, “Availability Assessment of Wavelet Analysis of EEG Signal”, 5th SEATUC Symposium, pp.304-307, 2011.
11. Akihiko Hanafusa, Shuri Terada, Yuuri Miki, Chiharu Sasagawa, Tomozumi Ikeda, Teruhiko Fuwa, “Makeup Support System for Visually Impaired Persons: Overview of System Functions”, 12th International Conference Computers Helping People with Special Needs (ICCHP2010), pp.338-345, 2010.
12. Akihiko Hanafusa, Johta Sasaki, Teruhiko Fuwa, Tomozumi Ikeda, “Self-Aided Manipulator System for Bed-Ridden Patients - Evaluation of Psychological Influence for the Generated Approach Motion -”, IEEE 11th International Conference on Rehabilitation Robotics (ICORR2009), pp.626-631, 2009.
13. Akihiko Hanafusa, Motoki Sugawara, Teruhiko Fuwa, Tomozumi Ikeda, Naoki Suzuki, Asaki Hattori, “Wheelchair Propulsion Analysis System that Incorporates Human Skeletal Muscular Model ~Analyses on the Flat Floor and Slope~”, Medical Imaging and Augmented Reality (MIAR 2008), LNCS 5128, pp.70-80, 2008.
14. Akihiko Hanafusa, Hiroko Washida, Jota Sasaki, Teruhiko Fuwa, Yasuhito Shiota, “Approach Motion Generation of the Self-Aided Manipulator for Bed Ridden Patients”, Complex Medical Engineering, Springer, pp.227-238, 2007.

-Bio Science and Engineering-

KOMEDA, Takashi

Field of Interest:	Biomedical Robotics, Rehabilitation engineering
Title of Courses:	Advanced Research Program on Systems Control Engineering
	Research on Bio Functional and Bio System
Lecture Subject:	Robotics for Medical and Rehabilitation Field
Topics for Thesis:	Master-slave system for operation
	Haptic device for rehabilitation use
	Human robot interface

Publications and International Conference Papers:

1. Noor Ayuni Che Zakaria, Takashi Komeda, Cheng Yee Low, Kaoru Inoue, Stephan Raczak "Emulation of Spasticity Symptoms in Upper Limb Part-Task Trainer for Physiotherapist Education", Applied Mechanics and Materials, Vol. 393, pp.999-1004 (2013)
2. Takashi Komeda, Yoshiyuki Takahashi, et. al. "Development of an Upper Limb Patient Simulator for Physical Therapy Exercise" Proceedings of International Conference on Rehabilitation Robotics, pp.1117-1120 (2011)
3. Motoki Takagi, Kie Iwata, Yoshiyuki Takahashi, Shin-ichiroh Yamamoto, Hiroyuki Koyama, Takashi Komeda, Development of A Grip Aid System using Air Cylinders, Proceedings of 2009 IEEE International Conference on Robotics and Automation, pp 2312-2317, ISBN: 978-1-4244-2789-5. ISSN: 1050-4729 (2009)
4. Masaru Ide, Takashi Komeda, Hiroyuki Koyama, Shin-ichirh Yamamoto, Makoto Mohri: Development of a master slave system for interventional radiology; CARS2008 Computer Assisted Radiology and Surgery (2008)
5. Tomohiro Fujisawa, Motoki Takagi, Yoshiyuki Takahashi, Kaoru Inoue, Takafumi Terada, Yukio Kawakami and Takashi Komeda: Basic Research on the Upper Limb Patient Simulator; Proceedings of the 2007 IEEE 10th ICORR, PP48~51(2007)
6. H.Lee, T.Komeda et. al. "Basic experiments of upper limb rehabilitation using haptic device system", Proceedings of the 2005 IEEE 9th International Conference on Rehabilitation Robotics, pp.444-447,(2005)
7. Y.Takahashi, T.Komeda et.al. "Development of the assistive mobile robot system:AMOS-to aid in the daily life of the physically handicapped", Advanced Robotics Vol.18, No.5, pp 473-496(2004)

Other features:

Research title for doctor course students

- Development of a gait training system for the acute patient
- Master slave system for assistive technology

- **Bio-Science and Engineering** -

WATANABE, Nobuo

Field of Interest:	Mechanical Engineering based Biomedical Science, Biorheology
Title of Courses:	Advanced Research Program on Bio-function Control System Research in Biomedical Control
Lecture Subject:	Advanced Biofluid Engineering
Topics for Thesis:	Mechanical Engineering based bio-medical science, Artificial Organs and biorheology (Blood trauma, hemolysis, and thrombus, platelet adhesion), Diagnostics of the Red blood cell's deformability Cardiac ablation therapy Basic studies for Medical growth

Publications and International Conference Papers:

1. S. Ueda, K. Nagashima, T. Oguri, T. Mita, and **N. Watanabe**. Development of shear flow generator, and its application for understanding the shear stress related hemolysis –Flow scale as the possible additional trigger to hemolysis-p.75, ***9th SEATUC Symposium 27-30 July 2015 Suranaree Univerisity of Technology*** (ISSN1882-5796)
2. T. Shimada, R. Hara, **N. Watanabe**. Equipment development for Visualization of Red blood cell's deformation and rheological behavior process in high-shear flow. P.76, ***9th SEATUC Symposium 27-30 July 2015 Suranaree Univerisity of Technology*** (ISSN1882-5796)
3. Sunao Ueda, Kentaro Nagashima, Nobuo Watanabe. Flow scale affected the shear-induced blood trauma, ESAO 2015 (Leuven Belgium, 5th Sept 2015)Abstracts from the XLII Annual ESAO Congress, 2-5September, Leuven, Belgium, **Int J Artif Organs** 2015;38(7):392(ISSN 0391-3988)
4. N. Watanabe, T. Tsuzuki, and Y. Suzuki. Variation in red blood cell deformability within whole blood using a sinusoidally changing shear flow. ISB-ISCH2015, Seoul,Korea, 24-28 May 2015 . **Biorheology** 2015. 52.(1,2) p.110
5. **Nobuo Watanabe**, Tatsuya Tsuzuki, Yusuke Suzuki, Feasibility study of a sinusoidal shear flow generator for using counter-oscillating flow fields in monitoring of individual red blood cells under shear flow conditions. Journal of Biorheology2015 (In print)
6. **N. Watanabe**, M. Shibata, S. Sawada, and K. Mizukami. Prototyping the experimental setup to quantify the tissue oxygen consumption rate and its preliminary test. Proceeding of ISOTT2014. (In print)
7. Affeld K., Goubergrits L., **Watanabe N.**, Kertzscher U., Numerical and experimental evaluation of platelet deposition to collagen coated surface at low shear rates. ***Journal of Biomechanics*** 46 (2013)430–436

8. **Watanabe N**., Affeld K., Schaller J., Schmitmeier S., Reininger A.J., Goubergrits L., Kertzscher U. , Investigation of the human platelets' adhesion under low shear condition in a rotational flow chamber.. ***Journal of Biorheology*** 2011. 25:64-70.
9. Tsuzuki T. and **Watanabe N.**, Prototyping the experimental setup for the deformability evaluation of a single red cell and its preliminary study. 17th Conference of the European Society for Clinical Hemorheology and Microcirculation, Pecs, Hungary 6-9 July 2013
10. Inoue M, Takahashi K., **Watanabe N.,** Basic study toward the elucidation of pop phenomenon induced by the catheter cardiac ablation treatment. ***The 7th Southeast Asian Technical University Consortium (SEATUC) Symposium, 2013***, Institut Teknologi Bandung Indonesia
11. Tsuzuki T. and **Watanabe N.**, Prototyping the experimental setup, which enables us to observe a single red cell's shape change response to the sinusoidal shear fluctuation, and its feasibility test. ***The 7th SEATUC Symposium, 2013***, Institut Teknologi Bandung Indonesia
12. **Watanabe N.,** Affeld K., Poethke J., Schmitmeier S., Reininger A.J., Goubergrits L., and Kertzscher U., Development of a device which allows the Generation of controllable shear stress and simultaneous microscopic observation of platelets in whole blood, ***The 4th SEATUC Symposium, 25th-26th Feb. 2010,*** Shibaura Campus, Shibaura Institute of Technology, Tokyo, Japan

-Bio-Science and Engineering-

YAMAMOTO, Shin-ichiroh

Field of Interest:	Neuro-Rehabilitation Engineering, Physiological Engineering
Title of Courses:	Advanced Research Program on Systems Control Engineering Research on welfare and rehabilitation support system
Lecture Subject:	Neurophysiology and Rehabilitation Engineering Neuro-Rehabilitation Engineering
Topics for Thesis:	1) Novel Development of Gait Training System for Spinal Cord Injury and Stroke 2) Biomechanical Analysis of Posture Control for Standing and Walking in Human 3) Quantitative Analysis and Simulation of Prothetic Socket by Force Sensor and Finite Element Methods

International Journal Papers:

1. T.Kato, S. Yamamoto, T. Miyoshi, K. Nakazawa, K. Masani, D. Nozaki: Anti-phase action between the angular accelerations of trunk and leg is reduced in the elderly. Gait & Posture, 40, 1, 2014, 107-112

2. M. Azuwan, S. Yamamoto, “Recent Trend in Lower-Limb Robotic Rehabilitation Orthosis: Control Scheme and Strategy for Pneumatic Muscle Actuated Gait Trainers,” Robotics, vol. 3 (2014), pp 120-148, MDPI Publishing Corporation, Basel, Switzerland. doi:10.3390/robotics3020120

3. A.Azaman and S.Yamamoto: Ankle Joint Stiffness and Damping Pattern under Different Frequency of Translation Perturbation. Applied Mechanics and Materials 393: 703-708. doi:10.4028/www.scientific.net/AMM.393.703

4. M. Azuwan, S. Yamamoto, “Design and Evaluation of the AIRGAIT Exoskeleton: Leg Orthosis Control for Assistive Gait Rehabilitation,” Journal of Robotics, vol. 2013, Article ID 535106, 20 pages, Hindawi Publishing Corporation, 2013. doi:10.1155/2013/535106.

5. M. Azuwan, T. Nobutomo, S. Yamamoto, “Development of Gait Training System Powered by Antagonistic Mono-and Bi-Articular Actuators Using Contraction Model Control Scheme,”

Applied Mechanics and Materials, vol. 393 (2013), pp 525-531, Trans Tech Publications, Switzerland. doi:10.4028/www.scientific.net/AMM.393.525

6. H. Ogata, D.G. Sayenko, E. Yamamoto, T. Kitamura, S. Yamamoto, T. Miyoshi, K. Kamibayashi, K. Nakazawa: Effect of spinal cord injury and its lesion level on stretch reflex modulation by cold stimulation in humans. Clinical Neurophysiology 122, 163-170, 2011.
7. Shimba, N. Kawashima, Y. Ohta, S. Yamamoto, K. Nakazawa: Enhanced stretch reflex excitability in the soleus muscle during passive standing posture in humans. J. Electromyo. Kinesiol. 20, 3, 2010, 406-412
8. T. Miyoshi, T. Kihara, H. Koyama, S. Yamamoto, T. Komeda: Automatic detection method of muscle fiber movement as revealed by ultrasound images. Med Eng Phys. 31(5)., 558-564, 2009
9. H. Ogata, D. Sayenko, E. Yamamoto, T. Kitamura, S. Yamamoto, T. Miyoshi, K. Kamibayashi, K. Nakazawa, K: Sympathetic Effect on Stretch Reflex of the Relaxed Muscle is Inhibitory, not Facilitatory, in Humans. J. Physiological Sci. 59, 1, 473-473, 2009
10. T. Miyoshi, K. Hotta, S. Yamamoto, K. Nakazawa, M. Akai: Somatosensory gravitation inhibits soleus H-reflex gain in humans during walking. Exp. Brain Res., 169, 135-138, 2006
11. T. Miyoshi, T. Shirota, S. Yamamoto, K. Nakazawa, M. Akai: Functional roles of lower-limb moments while walking in water., Clin. Biomech. 20, 194-201, 2005
12. N. Kawashima, K. Nakazawa, S. Yamamoto, D. Nozaki, M. Akai, H. Yano: Stretch reflex excitability of the anti-gravity ankle extensor muscle in elderly humans. Acta. Physiol. Scand.,180, 99-105, 2004

International Conference Papers:

1. F. Tayama, Y. Agarie, H. Ohtsuka, K. Ohnishi, A. Hanafusa and S. Yamamoto: The Quantitative Analysis and Evaluation of Prothetic Sockets for Trans-Femoral Amputees Using Finite Element Methods. The proceedings of APOSM & ISRN 2014, Taipei, Taiwan
2. Azaman, A,and S.I Yamamoto: Balance Process during Repeated Surface Perturbation:

Adaptation Response of Joint Stiffness and Muscle Activation. The Proceedings of IEEE EMBS International Conference on Biomedical Engineering and Sciences (IECBES 2014).8-10 December 2014. Sarawak, Malaysia.

3. Azaman, A., Ishibashi, M., Ishizawa, M., Yamamoto, S.. 'Effect of Sensory Manipulations on Human Joint Stiffness Strategy and Its Adaptation for Human Dynamic Stability'. World Academy of Science, Engineering and Technology, International Science Index 93, International Journal of Medical, Health, Pharmaceutical and Biomedical Engineering, 2014, 8(9), 535 – 538. – ICCB 2014 conference.
4. M. Azuwan, S. Yamamoto, "Recent Trend in Lower-Limb Robotic Rehabilitation Orthosis: Pneumatic Muscle Activated Gait Trainer Systems. The Proceedings of Canadian Medical and Biological Engineering Conference (CMBEC) 2014
5. M.A. Mat Dzahir, T. Nobutomo, and S.I. Yamamoto: Development of Body Weight Support Gait Training System using Pneumatic McKibben Actuators ~Control of Lower Extremity Orthosis~. The Proceedings of 35th Annual International Conference of the IEEE EMBS Osaka, Japan, 3 - 7 July, 2013, 6417-6420
6. M.A. Mat Dzahira, T. Nobutomo, S.I. Yamamoto: Antagonistic Mono- and Bi-Articular Pneumatic Muscle Actuator Control for Gait Training System using Contraction Model. The Proceedings of BRC 2013, Rio de Janeiro, Brazil, 2013, 1-6
7. Azaman, A. and S. I. Yamamoto. Estimation of stiffening strategy of ankle and hip based on joint sway. Neural Engineering (NER), The Proceedings of 6th International IEEE/EMBS Conference on Medical and Biology Society.2013
8. S. Yamamoto, H. Tabei, M. Ishizawa: Influence of translation frequency on postural control strategy during passive postural movement. The Proceedings of 19th Congress of the International Society of Electrophysiology and Kinesiology (ISEK), pp471, 2012
9. H. Ihara, S. Yamamoto, N. Kawashima: NOVEL APPROACH FOR UNDERSTANDING POSTURAL CONTROL STRATEGY USING REALTIME FEEDBACK MOVABLE FORCE

PLATE. The Proceedings of 19th Congress of the International Society of Electrophysiology and Kinesiology (ISEK), pp496, 2012

10. T. Kitamura, T. Nakajima, S. Yamamoto, K. Nakazawa: Effect of sensory inputs on the motor evoked potentials in the wrist flexor muscle during the robotic passive stepping in humans. The proceedings of 34th Annual International Conference of the IEEE EMBS, pp3862-3865, 2012
11. M. Ishizawa, S.Yamamoto: Effect of inclined support surface on postural strategy during anterior-posterior platform translations. The proceedings of 34th Annual International Conference of the IEEE EMBS, pp4772-4775, 2012
12. Y. Shibata, S. Imai, T. Nobutomo, T. Miyoshi, S. Yamamoto: Development of Body Weight Support Gait Training System using Antagonistic Bi-articular Muscle Model, The proceedings of 32nd Annual International Conference of the IEEE EMBS, pp4468-4471, 2010
13. Y Shibata, R Aoyama, S Imai, T Miyoshi, S Yamamoto: Development of body weight support tread-mill training system powered by pneumatic Mckibben actuator, The 4th South East Asian Technical University Consortium (SEATUC) Symposium, ISSN 1882-5796, pp400-403, Malaysia, 2010.
14. Y. Shibata, T. Miyoshi, S. Yamamoto, Development of Gait Training System Using Bi-articular Muscle Model, The 3rd South East Asian Technical University Consortium (SEATUC) Symposium, Johor Bahru, Malaysia, ISSN 1882-5796, pp106-107, 2009.2.
15. S. Yamamoto, T. Miyoshi, T. Komeda, K. Hiramatsu, K. Nakazawa and M. Akai: Development of Pneumatic Gait Assist System, 2007 IEEE/ICME International conference on Complex Medical Engineering (CME2007), pp.1362-1365, 2007
16. T. Miyoshi, H. Yamamoto, S.I. Yamamoto, H. Koyama, T Komeda: Muscle Movements Depend On Position Of The Center-Of-Mass Relative To The Ankle Center Of Rotation In Humans, 2007 IEEE/ICME International conference on Complex Medical Engineering (CME2007), pp.1274-1277, 2007
17. S. Shimba, N. Kawashima , S. Yamamoto, K. Nakazawa: Facilitation of Stretch Reflex in

Human Soleus Muscle during Passive Standing. The Proceedings of 16th Congress of the International Society of Electrophysiology and Kinesiology (ISEK),2006

18. S. Yamamoto, H. Hiramatsu, T. Miyoshi, K. Hiramatsu, T. Komeda, K. Nakazawa, M. Akai: Development of Gait Assist System for Underwater Training. Proceedings of 3rd European Medical and Biological Engineering Conference (EMBEC), 2005
19. S. Yamamoto, H. Hiramatsu, T. Miyoshi, K. Hiramatsu, T. Komeda, K. Nakazawa, M. Akai: Development of Underwater Pneumatic Gait Orthosis. The Proceedings of 1st International Conference on Complex Medical Engineering (CME), pp500-503, 2005
20. T. Kihara, H. Koyama, Y. Yanno, S. Yamamoto, T. Komeda: Modeling of Fascia and Muscle Fiber Structure on Ultrasound Images. The Proceedings of 1st International Conference on Complex Medical Engineering (CME), pp963-968, 2005
21. T. Miyoshi, K. Hotta, S.I. Yamamoto, K. Nakazawa, M. Akai: Somatosensory graviception inhibits soleus H-reflex gain during walking in humans revealed by reduced gravity condition, International Society for Posture and Gait Research XVIIth Conference (ISPGR2005), Gait Posture 21(Supplement 1), S68-69, 2005
22. T Miyoshi, K Hotta, SI Yamamoto, K Nakazawa, M Akai: Effect of the head-out water immersion onto the Soleus H reflex excitabilities while standing and walking in humans, 6th International Head-out Water Immersion Symposium 2005, pp.14, 2005
23. B. Najafi, T. Kato, Ph. Vuadens, S. Yamamoto, K. Aminian: A New Index for Assessing the Postural Control in Humans. Proceedings of 17th International Society for Postural and Gait Research (ISPG), 2005
24. T. Miyoshi, K. Hotta, S.I. Yamamoto, K. Nakazawa, M. Akai: Somatosensory graviception inhibits soleus H-reflex gain during walking in humans revealed by reduced gravity condition. Proceedings of 17th International Society for Postural and Gait Research (ISPG), pp.665-668, 2005
25. T. Hirano, D. Nozaki, K. Nakazawa, S. Yamamoto, M. Akai: Prediction of Different Activity

Patterns between Soleus and Gastrocnemius during Standing in Humans: Preferred Direction Approach. The proceedings of 15th Congress of the International Society of Electrophysiology and Kinesiology (ISEK), 239, 2004

-Bio-Science and Engineering-

YOSHIMI, Yasuo

Field of Interest:	・Biomimetic Chemical Engineering for Clinical Use
	・Development of Biosensors for Artificial Organs
	・Design of Molecular Recognition Polymers for Biosensors
Title of Courses:	Advanced Research Program on Bio-function Control
	Chemical Engineering
Lecture Subject:	Bioelectronics based on Chemical Engineering
Topics for Thesis:	・Monitoring Drugs in Blood using Molecularly Imprinted Polymers
	・Development of Artificial Synapse using an Electrochemical Micropump
	・A Novel Separation Process using a Molecularly Imprinted Nanoparticles
	・A Voltage Imaging of Central Nervous System

Publications and International Conference Papers:
[Publications]

1. Y. Yoshimi, N. Ishii, Improved gate effect enantioselectivity of phenylalanine- imprinted polymers in water by blending crosslinkers", *Anal. Chim. Act*a, **862,** 77-85, 2015
2. Y. Yoshimi, K. Sato, M. Ohshima, E. Piletska: Application of the 'gate effect' of a molecularly imprinted polymer grafted on an electrode for the real-time sensing of heparin in blood, *Analyst*, **138**, 5121-5128, 2013
3. Y. Yoshimi, S. Namayama, S.A. Piletsky: Changes in the porosity and permeability of a molecularly imprinted membrane induced by the adsorption of a trace quantity of template, *Open Anal. Chem. J.*, **7**, 22-29, 2013
4. Y. Yoshimi, R. Arai, S. Nakayama: Influence of the solvent on nature of gate effect in molecularly imprinted membrane. *Analytica Chimica Acta*, 682, 20110–116, 2010

[**International Conference Papers**]

1. Y. Yoshimi, M. Ohira: A reagentless vancomycin sensor using a molecularly imprinted polymer including a redox group, *14th International Congress of Therapeutic Drug Monitoring and Clinical Toxicology*, Rotterdam, 2015
2. Y. Miyake, Y. Yoshimi, T. Nagahama: Analysis of neural network in *Aplysia* central nervous system concerning with taste recognition by voltage sensitive dye imaging, *Annual Meeting of Society for Neuroscience*, Washington D.C., 2014

3. Y. Miyake, R. Kimura, Y. Yoshimi, T. Nagahama: Analysis of neural network in *Aplysia* central nervous system concerning with taste recognition by voltage sensitive dye imaging, *Annual Meeting of Society for Neuroscience*, San Diego, 2013
4. R. Kimura, Y. Yoshimi, T. Nagahama: Analysis of roles of D-Serine and D-Aspartic acid at central pattern generator in buccal ganglion of *Aplysia*, *Annual Meeting of Society for Neuroscience*, San Diego, 2013
5. Y. Yoshimi: Application of 'gate effect' of molecularly imprinted polymer for therapeutic drug monitoring (plenary lecture), *19th Symposium of Young Asian Biochemical Engineers' Community*, Urumqi, 2013

Other Features:

Human body is an integration of ideal chemical plants. Then philosophy of chemical engineering is available for development for artificial organs. Then we are developing novel devices for artificial organs based on chemical engineering.

We are preparing the following themes for the HBT.

(A) Development of biomimetic sensor for therapeutic drug monitoring

Overdose of antibacterial drugs causes serious side effects, but the underdose generates resistant bacteria. Spread of the resistant bacteria is serious problem in developing countries. Monitoring blood level of antibacterial drugs is very important for optimization of the chemotherapy. We are developing simple and economy sensors by using molecular imprinting technology in order to enable therapeutic drug monitoring in developing countries.

(B) Development of Brain-Machine Interface

Development of prosthesis technology of sense organs (eyes, ears, etc.) or brain progresses behind that of heart or kidney. So we are challenging the development of basic technology or artificial sense organs (artificial synapse and voltage imaging of neuronal networks.)

We need your young power for developing the new frontier in chemical engineering.

Mechanical Engineering

-Mechanical Engineering-

HASEGAWA, Hiroshi

Field of Interest:	Optimal Design, Conceptual Design, Computational Engineering and Science, Emergent and Intelligent Systems
Title of Courses:	Advanced Research Program on Systems Control Engineering Research in Systems Design
Lecture Subject:	Engineering Optimization
Topics for Thesis:	Nature-Inspired Algorithm for Optimal Design, Topology Optimization Based on Brain Machine Interface, Creativity for Conceptual Design, such as Kando Understanding, Engineering Application for Optimal Design, such as Vehicle and Biped robot Design.

Publications and International Conference Papers:

1. Thanh-Tung TRAN, Hiroshi HASEGAWA, Advanced Passive Suspension with Inerter Devices and Optimization Design for Vehicle Oscillation, International Journal of Mechanical Engineering and Robotics Research, Vol.4, No. 4, pp. 354-360, (2015.10)
2. Eisuke Saito, Satoshi Takezawa and Hiroshi Hasegawa, Validation of Kando Requirements in the Kando Understanding Support Process Using V-model, 15th ETRIA World TRIZ Future Conference 2015 , Procedia CIRP, Elsevier, (2016)
3. Hiroshi Hasegawa, Syogo Shibasaki and Yusuke Ito, Shape and Layout Understanding Method Using Brain Machine Interface for Idea Creation Support System, 19th International Conference in Knowledge Based and Intelligent Information and Engineering Systems (KES2015), Procedia Computer Science, Elsevier, (2015.09)
4. Tao Ngoc Linh and Hiroshi Hasegawa, Global Iterative Closet Point Using Nested Annealing for Initialization, 19th International Conference in Knowledge Based and Intelligent Information and Engineering Systems (KES2015), Procedia Computer Science, Elsevier, (2015.09)
5. Thanh-Tung Tran and Hiroshi Hasegawa, Verification and Optimization Advantage of Inerter Devices Apply to Grounded Vehicle Dynamics, ECCOMAS Thematic Conference on Multi-body Dynamics, (2015.06)
6. Ngoc Tam Bui, Hiroshi Hasegawa, Training Artificial Neural Network using Modification of Differential Evolution Algorithm, Journal of Machine Learning and Computing, International Association of Computer Science and Information Technology Press (IACSIT Press), Vol.5, No.1, pp.1-6, (2015.02)
7. Bui Tam Ngoc, Hiroshi Hasegawa, Training Artificial Neural Network using Modification of Differential Evolution Algorithm, 5th International Conference on Computer and Computational Intelligence, (2014.12)
8. Thanh-Tung TRAN and Hiroshi HASEGAWA, Advanced Passive Suspension with Inerter Devices and Optimization Design for Vehicle Oscillation, 2nd International Conference on Control, Mechatronics and Automation, (2014.12)
9. Hiroshi Hasegawa, Yu Kozano, and Kanako Goto, S-Curves Analysis Focusing on WOM for Technological System Evolution, 14th ETRIA World TRIZ Future Conference 2014 , Procedia Engineering, Elsevier, (2015)
10. Thanh-Tung TRAN, Chiaki HORI and Hiroshi HASEGAWA, Integrated Inerter Design and

Application to Optimal Vehicle Suspension System, International Journal of Computer-Aided technologies, AIRCC Publishing, Vol.1, No.2/3, (2014.10)
11. Satoshi Takezawa, Yu Yoshizaki, Akari Utsumi, and Hiroshi Haseagwa, Verification of Kando requirements in the Kando Understanding Support Process Using DOE and Bioinstrumentation, 18th International Conference in Knowledge Based and Intelligent Information and Engineering Systems (KES2014), Procedia Computer Science, Elsevier, (2014.09)
12. Bhanupong Petchlert and Hiroshi Hasegawa, Using a Low-Cost Electroencephalogram (EEG) Directly as Random Number Generator, 2nd International Conference on Smart Computing and Artificial Intelligence (ICSCAI 2014), (2014.08)
13. Thanh-Tung Tran, Chiaki Hori and Hiroshi Hasegawa, Verification and Optimization of Formula SAE Suspension Employing Inerter Mechanism, The 12th International Conference on Motion and Vibration Control, (2014.08)
14. Kirssana Nerakae and Hiroshi Hasegawa, Bigtoe Sizing Design of Small Biped Robot by Using Gait Generation Method, Applied Mechanics and Materials Journal, Scientific, Vols. 541-542 (2014.02)
15. Tam Bui, Hieu Pham, Hiroshi Hasegawa, Hybrid Improved Self-Adaptive Differential Evolution and Nelder-Mead Simplex Method for Solving Constrained Real-Parameters, Journal of Mechanics Engineering and Automation No. 3, (2013.09)
16. Hieu Pham, Tam Bui and Hiroshi Hasegawa, Neural Network with Migration Parallel GA for Adaptive Control of Integrated DE-PSO Parameters, Proceedings of 8th EUROSIM Congress on Modelling and Simulation (EUROSIM 2013), (2013.09)
17. Bhanupong Petchlert, Hiroki Sakata and Hiroshi Hasegawa, A Generic Image-Based Features Classification System for Brain-Computer Interface System, the Japan Society for Simulation Technology, International Conference on Simulation Technology (JSST 2013), (2013.09)
18. Thanh-Tung Tran and Hiroshi Hasegawa, Integrated Optimization Design for Vehicle Dynamics Considering Suspension with Inerter, Proceedings of the 15th Asia Pacific Vibration Conference (APVC 2013), (2013.06)
19. Hieu Pham, Hiroshi Hasegawa, Adaptive Plan System of Swarm Intelligent using Differential Evolution with Genetic Algorithm, the Japan Society of Mechanical Engineers, Journal of Advanced Mechanical Design, Systems, and Manufacturing, Vol. 7, No. 3, (2013.05)
20. Tam Bui, Hieu Pham, Hiroshi Hasegawa, Improve Self-Adaptive Control Parameters in Differential Evolution for Solving Constrained Engineering Optimization Problems, the Japan Society of Mechanical Engineers, Journal of Computational Science and Technology, Vol.7, No.1, (2013.4)
21. Hiroshi Hasegawa, Junya Tabuchi, Akimine Suzuki and Takayuki Kashiwakura, Creative and Inventive Design Support System: Concept Making of Biped Robot for Intrinsically Safety Design, Proceedings of 12th ETRIA World TRIZ Future Conference 2012, (2012.10)
22. Shun Takahashi, Hiroshi Hasegawa, Takeshi Mizokami and Kanako Goto, Idea creation: Function Synthesis Approach with Simplification and Evaluation, Proceedings of 12th ETRIA World TRIZ Future Conference 2012, (2012.10)
23. Hieu Pham and Hiroshi Hasegawa, Adaptive System of Swarm Intelligent with Genetic Algorithm for Global Optimization, Proceedings of the 2012 IEEE International Conference on Systems, Man, and Cybernetics (IEEE SMC 2012), (2012.10)
24. Bui Ngoc Tam, Pham Ngoc Hieu and Hiroshi Hasegawa, Hybrid Integrate Differential Evolution with Artificial Bee Colony for Global Optimization, Proceedings of The International Conference on Evolutionary Computation Theory and Applications 2012 (ECTA2012) (2012.10)
25. Nerakae Krissana and Hiroshi Hasegawa, The Effect of Toe Mechanism for Simulation of Small Biped Walking Robot by Gait Generation, Proceedings of The International Conference on Modelling & Applied Simulation 2012 (MAS2012) , (2012.09)
26. Hieu Pham, Sousuke Tooyama and Hiroshi Hasegawa, Evolutionary Strategies of Adaptive Plan System with Genetic Algorithm, The Japan Society of Mechanical Engineers, Journal of Computational Science and Technology, Vol.6, No.3, (2012.9)

- Mechanical Engineering -

ITO, Kazuhisa

Field of Interest:	- Water hydraulic motor/cylinder control systems (novel, clean, manufacturing system) - Intelligent energy management systems - Agricultural engineering, Greenhouse environment control - Advanced control of mechatronic systems (NOT including Robotics),
Title of Courses:	Advanced Research Program on Systems Control Engineering Research in Dynamical System Control
Lecture Subject:	Feedback Control System Design
Topics for Thesis:	Research in Dynamical System Control - Advanced controller design for water hydraulic servo system and analysis of its energy saving performance - Green house control system - Novel energy management system

Publications and International Conference Papers:

1. Wataru Kobayashi, Kazuhisa Ito, Shin-ichiro Yamamoto: Displacement control of water hydraulic muscles with load compensation, JFPS International Journal of Fluid Power System, Vol.8, No.2, pp.107-112, 2015
2. P.N.Pha, K.Ito, S.Ikeo: Energy Efficiency Improvement of Water Hydraulic Fluid Switching Transmission, International Journal of Automation Technology, Vol.8 No.5, pp.733-744, 2014
3. P.N.Pha, K.Ito, W.Kobayashi, S.Ikeo: Control and Energy Performances of Water Hydraulic FST and PMT Systems, Mechanical Engineering Journal, JSME, Vol.1, No.4, pp.FE0033, 2014
4. R.Inoguchi, K.Ito, S.Ikeo: Pure-Hydraulic Hybrid Cylinder Drive System with Hydraulic Transformer, Japan Fluid Power System International Journal of Fluid Power System, Vol.5, No.1, pp.1-5, 2012
5. P.N.Pha, K.Ito, W.Kobayashi, S.Ikeo: Analysis of Velocity Control Performance and Energy Recovery Efficiency of Water Hydraulic Fluid Switching Transmission, International Journal of Automation Technology. Vol.6 No.4, pp.457-467, 2012
6. K.Ito, T.Yamada, S.Ikeo and K.Takahashi: Application of Simple Adaptive Control to Water Hydraulic Servo Cylinder System, Chinese Journal of Mechanical Engineering, 25-5, pp.882-888, 2012
7. Yukio Kawakami, Kazuhisa Ito, Masashi Ogawa, Akiyoshi Horikawa, Koji Shioda and Kiono Nagai: Development of Articulated Manipulators with Pneumatic

Cylinders, Int. J. of Automation Technology, Vol.5, No.4, pp.478-484, 2011
8. W.Kobayashi, K.Ito, S.Ikeo, T.Yamada and K.Takahashi: Study on Energy Efficiency of Water Hydraulic Fluid Switching Transmission, Proc. of the 8th JFPS International Symposium on Fluid Power 2011, pp.579-585 (October 25-28, 2011, Okinawa, Japan)
9. P.N.Pha, K.Ito, W.Kobayashi and S.Ikeo: Research on Velocity Error and Energy Recovery Efficiency of Water Hydraulic Fluid Switching Transmission, Proc. of the 11th International Conference on Automation Technology 2011, R0005 (November 18-20, 2011, Douliu, Taiwan)
10. S.Ikeo, J.Ogawa and K.Ito: Energy Saving in Injection Molding Machine, Proc. of the 8th International Fluid Power Conference IFK2012, E3 (March 26-28, 2012, Dresden, German)
11. R.Inoguchi, K.Ito and S.Ikeo: Pure-Hydraulic Hybrid Cylinder Drive System with Hydraulic Transformer, Proc. of the 2nd Japan-China Joint Workshop on Fluid Power -Sustainable Future on Fluid Power-, pp.17-21 (May 23, 2012, Tokyo, Japan)
12. K.Ito: Greenhouse Temperature Control with Wooden Pellets Heater Via Model Predictive Control Approach, Proc. of the 20th Mediterranean Conference on Control and Automation 2012, pp.1542-1547 (July 3-6, 2012, Barcelona, Spain)
13. K.Ito, W.Kobayashi, S.Ikeo and Pham Ngoc Pha: Control and Energy Saving Performance of Water Hydraulic Fluid Switching Transmission, Proc. of the 12th Scandinavian International Conference on Fluid Power SICFP2011, Vol.1, pp.103-114, May 18-20, 2011, Tampere, Finland
14. K.Ito: Control Performance Comparison of Simple Adaptive Control to Water Hydraulic Servo Cylinder System, Proc. of the 19th Mediterranean Conference on Control and Automation 2011, pp.195-200, June 20-23, Corfu, Greek

Other Features:

Research topic candidates:

- Robust control & energy regenerating control for water hydraulic system
- Development of Rehabilitation system with water hydraulic McKibben muscle
- Novel energy management system for production plant
- Agricultural/Horticultural engineering (Green house control)

-Mechanical Engineering-

ITO, Toshio

Field of Interest:	Automotive Engineering, Image Processing, Driving Simulation, System Control, Navigation, Machine learning, Cognitive Science
Title of Courses:	Advanced Research Program on Systems Control Engineering Advanced Driver Assistance Systems
Lecture Subject:	Advanced Driver Assistance System
Topics for Thesis:	Object detection using image processing Driving environment recognition Driver model for automated car Evaluation of on-board systems

Publications and International Conference Papers:

1. Toshio Ito, Ryohei Kaneyasu. Prediction of the Meta-stability Phase through Analysis of Driving Behavior, ITS World Congress Detroit 2014.
2. Toshio Ito. Moving Vehicle Detection Method Using Reference Images, The 17th Meeting on Image Recognition and Understanding, SS1-28, 2014.
3. Toshio Ito. Cognitive Vision for Driving Environment Categorization using Network-Type Fusion, ITS World Congress Tokyo 2013, 4036, 2013.
4. Toshio Ito, Kazuyoshi Yamashita. Proposal of Other Vehicle Detection Method Using Reference Image, FastZero2013, 20134659, 2013.
5. Shiho Tanaka, Kenichi Yamada, Toshio Ito, Takenao Ohkawa. Vehicle Detection Based on Perspective Transformation Using Rear-View Camera, International Journal of Vehicular Technology, Volume 2011,Article ID 279739,9 pages, doi:10.1155/2011/279739, 2011.
6. Tsukasa Yamamoto, Yasuyuki Kono, Toshio Ito. Real-time Tracking of the Leading Vehicle Using Smartphone Camera, MOBILITY 2012 (2nd International Conference on Mobile Services, Resources, and Users), Venice, Italy, Oct. 2012
7. Toshio Ito, Akira Saito and Kenichi Yamada. Evaluation Method of V2V Communication Community by Mutual Diagnostic Network, Proceedings of the 18th ITS World Congress, Orland, USA, 2011.
8. Shiho Tanaka, Kenichi Yamada, Toshio Ito, and Takenao Ohkawa, Improvement of Distant Approaching Vehicle Detection Based on Perspective Transformation Using On-board Rear View Camera, 17th ITS World Congress, Busan, Korea, 2010.
9. Toshio Ito, Taizo Sugino and Masaaki Ariyoshi. Energy Saving Route Guidance Using Altitude Information, 17th ITS World Congress, Busan, Korea, 2010.

10. Toshio Ito, Taiki Sekii, Shiho Tanaka, and Takenao Ohkawa. Shape from Motion and Local Plane Assumption, Proceedings of the 16th Korea-Japan Joint Workshop on Frontiers of Computer Vision (FCV2010), O2-1, 2010.
11. Toshio Ito, Yusuke Kanzawa, Takenao Ohkawa. Distant vehicle recognition method using frame-merging based on multi resolution analysis, Proceedings of the 16th ITS World Congress, Stockholm, Sweden, 2009.
12. Yusuke Kanzawa, Takenao Ohkawa, and Toshio Ito, Proposal of low-resolution vehicle image recognition method, Proceedings of 2008 IEEE Intelligent Vehicles Symposium (IV 2008), Eindhoven, Netherlands, pp.43-48, 2008.
13. Toshio Ito, Hiroki Kobayashi, Taiki Sekii and Takenao Ohkawa. Super-Resolution Reconstruction Using Wavelet Transform, Proceedings of the 15th ITS World Congress, New York, USA, 2008.
14. Takayuki Naito, Toshio Ito and Yukio Kaneda. The Obstacle Detection Method Using Optical Flow Estimation at the Edge Image, Proceedings of 2007 IEEE Intelligent Vehicles Symposium (IV 2007), Istanbul, Turkey, pp.817-822, 2007.
15. Hideshige Nakano, Hideo Araki and Toshio Ito. Characteristics of Driver Headway Distance Control in Starting and Accelerating Situation, Proceedings of the 11th ITS World Congress, Nagoya, Japan, 2004.
16. Kosuke Sakagami, Hiroomi Takizawa, Kenichi Yamada and Toshio Ito. Forward-looking Method Using Sensor Fusion with Monaural Camera and Radar, Proceedings of the 11th ITS World Congress, Nagoya, Japan, 2004.
17. Hiroomi Takizawa, Kenichi Yamada and Toshio Ito. Vehicles detection using sensor fusion, Proceedings of 2004 IEEE Intelligent Vehicles Symposium (IV 2004), Parma, Italy, pp.238-243, 2004.
18. Hajimu Masuda, Yasuhiro Hiroshima and Toshio Ito. Development of Daihatsu ASV2, Proceedings of 2000 IEEE Intelligent Vehicles Symposium (IV 2000), Dearborn, USA, pp.708-713 , 2000.
19. Kenichi Yamada, Hajimu Masuda and Toshio Ito. The Omnidirectional Vision Sensor for In-Vehicle Image Processing Applications, ICIP 99. Proceedings. 1999 International Conference on Image Processing, Vol.4, pp.11-15, 1999.
20. Kenichi Yamada, Hajimu Masuda and Toshio Ito. OMNIDIRECTIONAL VISION SENSOR FOR INTELLIGENT VEHICLES, Proceedings of 1998 IEEE Intelligent Vehicles Symposium (IV 1998), Stuttgart, Germany, pp.365-370 , 1998.
21. Toshio Ito and Kenichi Yamada. STUDY OF COLOR IMAGE PROCESSING METHODS TO AID UNDERSTANDING OF THE RUNNING ENVIRONMENT, Proceedings of the 4th ITS World Congress, Berlin, Germany, 1997.

Other Features: Vehicle related systems are available to study.

- Mechanical Engineering -

MATSUHIRA, Nobuto

Field of Interest:	Robotics, Robot design, Tele-operation, Field Robotics, Industrial application
Title of Courses:	Advanced Research Program on Systems Control Engineering Intelligent Mechanical Systems
Lecture Subject:	Human-Centric Robotics
Topics for Thesis:	Support system for stand-up motion for elderly, Human interactive robot system, Robot control using universal design concept, Robot application using RT middleware, Teleoperated robot system, Smart mechanism

Publications and International Conference Papers:

1. Matsuhira, Nobuto, Namatame, Shogo, Yamaguchi, Toru, Development of a Robot with Photography Service As a RT-Middleware Application for the Widespread Use of Robots, 2014 IEEE Workshop on Advanced Robotics and its Social Impacts(ARSO2014)

2. Shogo Namatame, Nobuto Matsuhira, Navigation Method of a Mobile Robot in Daily Life Environment Considering Environmental Design, SP1-J.2, 2013 IEEE/SICE International Symposium on System Integration (SII2013).

3. Nobuto Matsuhira, Toshihiko Orikasa, Daisuke Yamamoto, Masahito Sano, Response Control of a Communication Robot Depends on the Position and Velocity of the Person, Ro-Man2013, TuM1T2.4, Gyeongju, Korea, 2013.

4. Shinichi Ishida, Nobuto Matsuhira, Development of a remote control system of a mobile robot using RSNP, SICE Annual Conference 2013, pp.197-202, 2013.

5. Nobuto Matsuhira, Takehito Fukushima, Hideki Nukada and Takamitsu Sunaoshi, Development of the Supporting Apparatus for Standing up Motion of the Elderly Person: Basic Experiment of Standing up Motion, 2012 IEEE/SICE International Symposium on System Integration（SII2012), SP2-A.6, 2012.

6. Takafumi Sonoura, Seiji Tokura, Tsuyoshi Tasaki, Fumio Ozaki, and Nobuto Matsuhira, Reflective Collision Avoidance for Mobile Service Robot in Person Coexistence Environment, Journal of Robotics and Mechatronics(JRM), pp. 999-1011, Vol.23, No.6, 2011.

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Other Features:

http://www.meo.shibaura-it.ac.jp/matsuhira/index_e.html

-Mechanical Engineering-

ONO, Naoki

Field of Interest:	Fluid and Thermal Engineering in Mini/Micro-Scale Systems, Studies on Surface-Tension related Phenomena
Title of Courses:	Advanced Research Program on Environmental Energy Engineering Studies on Heat and Mass Transfer
Lecture Subject:	Microscale Fluid Mechanics
Topics for Thesis:	Marangoni convection in mini/micro-scale devices, Two-phase flow in boiling bubbles, Flow in micromixers, Solidification processing from molten metal

Publications and International Conference Papers:

1. Shinya Watanabe, Sohei Matsumoto, Tomohiro Higurashi, Yuya Yoshikawa and Naoki Ono, Almost Complete Separation of a Fluid Component from a Mixture Using Burgers Networks of Microseparators, Journal of Physical Society of Japan, letters, 84 (2015),043401-1-043401-4.
2. Takashi Yamada and Naoki Ono, A Study on Micromixing Utilizing Marangoni Effect Induced on Gas-liquid Free Interfaces, Journal of Micro- and Nano-Manufacturing (ASME), June 2015, Vol.3, 021003-1-021003-11.
3. Takahiro Wako, Masae Shimizu, Sohei Matsumoto and Naoki Ono, Development of a MEMS Channel Device for Hydrogen Gas Separation Based on the Soret Effect, Journal of Thermal Science and Technology(JSME), Vol.9(2014), No.1, pp1-12.
4. Li Fen, Hu Ruiqing, Yamada Takashi, He Ying, Ono Naoki, The Observations of the Flow Behavior and Distribution of Red Blood Cells Flowing Through a Micro-network Channel, Chinese Journal of Theoretical and Applied Mechanics, Vol. 46, No. 1, Jan.(2014), pp1-9.
5. S.Nishiguchi, N.Ono and M.Shoji, “Boiling Heat Transfer of Butanol Aqueous Solution –Augmentation of Critical Heat Flux-“, Journal of ASTM International, September 2012, Paper IDJAI 103452-10, on-line journal.
6. Takashi Yamada, Kazuki Takeda, Naoki Kato and Naoki Ono, A Basic Study of a Straight-Flow Micromixing Device Utilizing a Very Thin Liquid Film, Journal of Fluid Science and Technology (JSME), Vol.7(2012), No.1, p64-77.
7. Shunsuke Kuwatani, Shinya Watanabe and Naoki Ono, Study and Development of a mini-tube gas separator utilizing the Soret effect, Journal of Thermal Science and Technology(JSME), Vol.7(2012), No.1, p31-44.

8. Naoki Ono, Atsushi Hamaoka, Yuki Eda and Koichi Obara, Book title “Evaporation, Condensation and Heat transfer (ISBN 978-953-307-583-9)”, Chapter title: “High-Carbon Alcohol Aqueous Solutions and Their Application to Flow Boiling in Various Mini-Tube Systems”, Intech, On-line book, p465-486.
9. Y.Mitsuhashi, K.Yamazaki, E.Kobayashi, A.Yoneya and N.Ono, Fluid-Flow Analysis for a Novel Cylindrical Micromixer, Journal of Fluid Science and Technology (JSME), Vol.6(2011), No.2, p230-241.
10. T.Yamada, N.Osato, Y.Watanabe and N.Ono, Experimental and Numerical Study on Micromixing by Utilizing the Movement of Gas-Liquid Free Interface, Journal of Fluid Science and Technology (JSME), Vol.6(2011), No.2, p128-138.
11. N.Ono, T.Kaneko, S.Nishiguchi and M.Shoji, Measurement of Temperature Dependence of Surface Tension of Alcohol Aqueous Solutions by Maximum Bubble Pressure Method, Journal of Thermal Science and Technology (JSME), Vol.4(2009), No.2, p284-293.
12. N.Ono, T.Yoshida, M.Shoji, F.Takemura and T.-H. Yen, Heat Transfer and Liquid Motion of Forced Convective Boiling in a Mini-Tube for Aqueous Solutions with Nonlinear Surface Energy, Multiphase Science and Technology, Vol.19, No.4 (2007), p225-240.
13. K.Kitamura, J.Furukawa, Y.Nakada, N.Ono, Y.Shimanuki, A.M.Eidenzon, N.I.Puzonov and D.N.Puzanov, Radial Distribution of Temperature Gradients in Growing CZ-Si Crystals and Its Application to the Prediction of Microdefect Distribution, Journal of Crystal Growth 242 (2002), 293-301.
14. N.I.Puzanov, A.E.Eidenzon, D.N.Puzanov, J.Furukawa, K.Harada, N.Ono and Y.Shimanuki, Computer Simulation of Point-Defect Fields and Microdefect Patterns in Czochralski-Grown Si Crystals, Japanese Journal of Applied Physics Vol.41 (2002), pp464-471.
15. N.Ono, K.Kitamura, K.Nakajima and Y.Shimanuki, Measurement of Young’s Modulus of Silicon Single Crystal at High Temperature and Its Dependency on Boron Concentration Using the Flexural Vibration Method, Japanese Journal of Applied Physics Vol.39 (2000), pp368-371.
16. N.Machida, Y.Suzuki, K.Abe, N.Ono, M.Kida and Y.Shimizu, Effects of Argon Gas Flow Rate and Furnace Pressure on Oxygen Concentration in Czochralski-Grown Silicon Crystals, Journal of Crystal Growth 186 (1998), 362-368.
17. N.Ono and G.Trapaga, A Numerical Study of the Effects of Electromagnetic Stirring on the Distributions of Temperature and Oxygen Concentration in Silicon Double-Crucible Czochralski Processing, Journal of the Electrochemical Society Vol.144,

No.2, February 1997, pp764-772.
18. N.Ono, M.Kida, Y.Arai and K.Sahira, A Numerical Study on Oxygen Transport in the Silicon Melt in a Double Crucible Method, Journal of Crystal Growth 137 (1994), 427-434.
19. N.Ono, M.Kida, Y.Arai, K.Abe and K.Sahira, A New Method of Controlling the Dopant Concentration in the Double-Crucible Method, Journal of Crystal Growth 135 (1993), 359-364.
20. N.Ono, K.Kida, Y.Arai and K.Sahira, A Numerical Study of the Influence of Feeding Polycrystalline Silicon Granules on Melt Temperature in the Continuous Czochralski Process, Journal of Crystal Growth 132 (1993), 297-304.
21. N.Ono, M.Kida, Y.Arai and K.Sahira, Thermal Analysis on Double-Crucible Method in Continuous Silicon CZ Technology I, II", Journal of the Electrochemical Society Vol.140, No.7, July 1993, pp2101-2111.

Other Features: Numerical simulations (by original programs, PHOENICS, ANSYS-FLUENT) are sometimes employed in the studies

END

-Mechanical Engineering-

TAKASAKI, Akito

Field of Interest:	Materials Science, Hydrogen Storage Materials, Oxygen storage materials, Functional Materials, Strength of Materials, Hydrogen Embrittlement, Biomass
Title of Courses:	Advanced Research Program on Eco-materials Engineering Structure and Properties of Materials for Mechanical Engineering
Lecture Subject:	Advanced Materials Science
Topics for Thesis:	Synthesis and Evaluation of Novel Hydrogen/Oxygen Storage Materials; Hydrogen Susceptibility of Advanced Materials; Powder Metallurgy; Functional Materials (Shape Memory Alloys, Thin Films); New Applications of Biomass

Recent Publications and International Conference Proceedings:

1. A. Patah, A. Takasaki, J.S. Szmyd, The Effect of Cr2O3/ZnO on Hydrogen Desorption Properties of MgH2, *Solid-State Chemistry of Inorganic Materials VII*, edited by P.M. Woodward, J.F. Mitchell, S.L. Brock, J.S.O. Evans (Materials Research Society Symposium Proceedings Vol. 1148E, Warrendale,PA, (2009) pp.1148-PP03-38.
2. A. Patah, A. Takasaki, J.S. Szmyd, Influence of Multiple Oxide (Cr2O3/Nb2O5) Addition on the Sorption Kinetics of MgH_2, International Journal of Hydrogen Energy, 34 (2009) 3032-3037.
3. A.Takasaki, W. Zając, T. Okuyama, J.S. Szmyd, Electrochemical Hydrogenation of $Ti_{45}Zr_{38}Ni_{17}$ Quasi Crystal and Amorphous Powders Produced by Mechanical Alloying, Journal of Electrochemical Society, 156 (7) (2009) A521-A526
4. A.Takasaki, H. Matsumoto, Synthesis of bulk Ti-based Quasicrystal by Shock Compression, Advanced Powder Technology, 20 (4) (2009) 395-397
5. A. Takasaki, R. Era, Hydrogen storage Properties of Graphite Intercalated with Lithium by Mechanical Alloying, Proc. ExHFT-7 (7th World Conference on Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, Krakow, Poland) eds. J.S. Szmyd, J. Spalek, T.A. Kowalewski, (2009) 269-275
6. A. Żywczak, D. Shinya, Ł. Gondek, A. Takasaki, H. Figiel, Hydriding of $Ti_{45}Zr_{38}Ni_{17-x}Fe_x$ Nanocompounds, Solid State Communications, 150 (2010), 1-4
7. A.Takasaki, W. Zając, T. Okuyama, Electrochemical Properties of $Ti_{45}Zr_{38}Ni_{17}$ Quasicrystal and Amorphous Produced by Mechanical Alloying, Transactions of Materials Research Society of Japan, 35(2), (2010) 405-408
8. A. Takasaki, T. Okuyama, J.S. Szmyd, Synthesis of Ti-Zr-Ni Amorphous and Quasicrystal Powders by Mechanical Alloying, and their Electrochemical Properties, Journal of Materials Research, 25(8), (2010) 1575-1582
9. A. Takasaki, A Review on the Hydrogen Storage Systems for Fuel Cell Vehicles in Japan, Jurnal Mekanikal (ISBN 0127-3396), No.30 (2010), pp.17-23

10. A.Takasaki, C. Kuroda, S.-H. Lee, J.-Y. Kim, Electrochemical Properties of $Ti_{45}Zr_{38-x}Ni_{17+x}$ ($0 \leq x \leq 8$) Quasicrystals Produced by Rapid-Quenching, Journal of Alloys and Compounds, 509S (2011), pp. S782-S785
11. T. Saito, Yokoyama, A. Takasaki, Hydrogenation of TiNi Shape Memory Alloy Produced by Mechanical Alloying, Journal of Alloys and Compounds, 509S(2011), pp.S779-S781
12. A. Żywczak, Ł. Gondek, H. Figiel, J. Żukrowski, J. Czub, A. Takasaki, Structure and hyperfine properties of Ti48Zr7Fe18 and its hydrides, Journal of Alloys and Compounds, 509 (9), (2011) 3952-3957
13. A.Takasaki, K.F.Kelton, Hydrogen storage in Ti-Zr/Hf-Ni quasicrystal powders produced by Mechanical alloying, in "Quasicrystals: Types, Systems, and Techniques", B.E. Puckermann ed., Nova Science Publishers Inc, (2011), pp. 127-146
14. A.Takasaki, S.Iijima, T.Yamane, T.Okabe, Hydrogen Adsorption by Woodceramics Produced from Biomass, Journal of Shanghai Jiaotong University (Science) Springer, 17(3) (2012), 330-333
15. T. Okabe, K. Kakishita, H. Shimizu, Y. Nishimoto, A. Takasaki, T. Suda, M. Fushitani, H. Togawa, M. Sato,R. Yamamoto, Current Status and Application of Woodceramics Made from Biomass, Trans. Materials Research Society of Japan, 38 (2013) pp.191-194
16. A. Takasaki, A. Żywczak, Ł. Gondek, H. Figiel, Hydrogen storage characteristics of $Ti_{45}Zr_{38}Ni_{17-x}Co_x$ (x= 4, 8) alloy and quasicrystal powders produced by mechanical alloying, Journal of Alloys and Compounds, 580 (2013) S216-S218
17. Y. Ariga, A. Takasaki, C. Kuroda, A. Kulka, Electrochemical properties of $Ti_{45-x}Zr_{30+x}Ni_{25}$ (x=−4, 0, 4) quasicrystal and amorphous electrodes produced by mechanical alloying, Journal of alloys and Compounds, 580 (2013) S251-S254
18. D. Baster, A. Takasaki, C. Kuroda, E. Hanc, S.-H. Lee, K. Świerczek, J. S. Szmyd, J.-Y. Kim, J. Molenda, Effect of mechanical milling on electrochemical properties of $Ti_{45}Zr_{38x}Ni_{17+x}$ (x=0, 8) quasicrystals produced by rapid-quenching, Journal of Alloys and Compounds, 580(2013) S238-S242
19. T. Kobayashi, A. Takasaki, Ab initio study of the role of niobium oxides as catalysts in magnesium hydride, Journal of Alloys and Compounds, 580 (2013) S229-S232
20. A. Takasaki, D. Kaewdook, T. Okabe, Electrochemical Metallic Deposition on Woodceramics Originated from Biomass, 11th Intl. Conf. on Ecomaterials Proc, November 11-14, 2013, Hanoi, Vietnam, PP.61-64, (2013)
21. D. Kaewdook, J. Aphirakmethawawong, S. Siwadamrongpong, T. Okabe, A. Takasaki, Fabrication of Composites Consisted of Waste Melamine and Charcoal Originated from Waste Thai Rubber Trees, 11th Intl. Conf. on Ecomaterials Proc, November 11-14, 2013, Hanoi, Vietnam, PP.71-74, (2013)
22. T. Saito. C. Kapusta, A. Takasaki, Synthesis and characterization of Fe-Mn-Si Shape Memory Alloy by Mechanical Alloying and Subsequent Sintering, Materials Science & Engineering A, 529 (2014), 88-94

(Publications (1), (2), (20) and (21) are collaboration works with PhD students from South East Asian countries)

Other Features:

- http://www.qsys.se.shibaura-it.ac.jp/m-mecha/

- Mechanical Engineering -

TANGE, Manabu

Field of Interest:	Heat Transfer
Title of Courses:	Advanced Research Program on Environmental Energy Engineering Microscale Thermofluid Engineering
Lecture Subject:	Experimental Thermo-fluid engineering
Topics for Thesis:	Measurement of Flow Field of Boiling

Publications and International Conference Papers:

1. Koizumi, T.; Kamiya T.; Sekine K; Tange, M; Flow Visualization around Nucleate Boiling Bubbles in a Quasi-two-dimensional Space: 16th International Symposium on Flow Visualization, paper No. 1087, 2014.

2. Tomiyasu, K.; Hara, Y.; Tange, M.; Relation between Temporal Variation of Pressure Loss and Boiling Bubble Behavior in a Microchannel: 16th International Symposium on Flow Visualization, paper No. 1089, 2014.

3. TANGE Manabu, KUSUDA Shu, TOBA Masaki,
ABE Seiichiro, HARAGUCHI Kohei, and YUSA Tomoaki; A Prototype of Thermally Actuated Microscale Scissors with a Sharpened Blade; 2013 International Symposium on Micro-NanoMechatronics and Human Science; Session WA-2-1 No. 3; 2013.

Other Features:

-Mechanical Engineering-

YAMADA, Jun

Field of Interest:	Radiation Transfer in Thermal System, Skin Optics, Computational Electromagnetics
Title of Courses:	Advanced Research Program on Environmental Energy Engineering Studies on Radiation Transfer
Lecture Subject:	Advanced Heat Transfer
Topics for Thesis:	Radiative Characteristics of Surface with Nano-structure

Publications and International Conference Papers:

1. Jun Yamada, Yasuo Kurosaki and Tomoyuki Morikawa, 2001, Radiation emitted from Fluidizing Particles adjacent to a Heated Surface in a Fluidized Bed, International Journal of Thermal Science, Vol. 40, pp. 104-113
2. Jun Yamada, Yasuo Kurosaki, Takanori Nagai, 2001, Radiation Heat Transfer Between Fluidizing Particles and Heat Transfer Surface in a Fluidized Bed", Transaction of the ASME, Journal of Heat Transfer, Vol. 123, No. 3, pp. 458-465
3. Jun Yamada, 2002, Radiative Properties of Fibers with Non-Circular Cross Sectional Shapes, Journal of Quantitative Spectroscopy & Radiative Transfer, Vol. 73, pp. 261-272
4. Jun Yamada, Hiroki Iida, 2002, Numerical Study on Radiative Characteristics for Scale of Morpho Butterfly (in Japanese)", Thermal Science and Engineering, Vol. 10, No. 2, pp. 39-45
5. Jun Yamada, Norihisa Nagahara, Isao Satoh and Yasuo Kurosaki, 2002, Direct-Contact Heat Exchange Between Fluidizing Particles and a Heat Transfer Surface in a Fluidized Bed: Temperature Visualization of Fluidizing Particles, Heat Transfer-Asian Research, Vol. 31, No. 3, pp. 165-181
6. Jun Yamada, Toru Murase and Yasuo Kurosaki, 2003. 6, Thermal Imaging System Applying Two-Color Thermometry, Heat Transfer-Asian Research, Vol. 32, No. 6, pp. 473-488
7. M. Aslan, J. Yamada, M. P. Menguc and J. A. Thomasson, 2003.10, Characterization of Individual Cotton Fibers via Light-Scattering Experiments, Journal of Thermophysics and Heat Transfer, Vol. 17, No. 4, pp. 442-449
8. J. Yamada, A. Kawamura, Y. Miura, S. Takada and K. Ogawa, 2005. 3, Study on Radiation Transfer in Human Skin for Cosmetics, Journal of Quantitative Spectroscopy & Radiative Transfer, Vol. 93, No. 1-3
9. J. Yamada, R. Nagai, M. Watanabe, M. Aoki, 2007. 6, Numerical Analysis for Radiative Characteristics of Surfaces with Periodic Nanostructure, Radiation Transfer - V, Proc. 5th International Symposium on Radiative Transfer at Istanbul, CD RAD-V-053
10. J. Yamada, Y. Arita, Akihiro An, Y. Miura, S. Takata, 2007. 8, Estimation of Radiative Properties for Human Skin by Reflection Profile Measurement, Proc. of the 7th Asian Thermophysical Properties Conference, Paper No. 90

11. Y. Miyamoto, J. Kamoshida and J. Yamada, 2009.6, Drying Behavior of Residual Liquid Droplets during Marangoni Drying, Proceedings of 7th World Conference on Experimental Heat Transfer, Fluid Mechanics and Themodynamics, Krakow, Poland (ExHFT-7) p. 138 (CD-ROM) 1875-1882
12. M. Sangklinhom, J. Yamada, 2009.6, A Study on Radioactive Transfer in A TiO2 Photo electrode for Dye Sensitized Solar Cell Performance Enhancement", Proceedings of 7th World Conference on Experimental heat Transfer, Fluid Mechanics and Thermodynamics, Krakow, Poland (ExHFT-7) p. 45 (CD-ROM) 581-588
13. J. Yamada, K. Nakamura, M. Kaizuka, K. Kikuchi, S. Takata 2009, Effect of Skin Texture on Radiative Characteristics of Human Skin, Proceedings of 7th World Conference on Experimental heat Transfer, Fluid Mechanics and Themodynamics, Krakow, Poland (ExHFT-7) p. 17 (CD-ROM) 227-233
14. Manon SANGKLINHOM and Jun YAMADA, A Study on Radiative Transfer in a TiO2 Photoelectrode for Improvement of Dye-Sensitized Solar Cell Performance, Journal of Thermal Science and Technology, Vol. 4 (2009) No. 2, pp.248-259

Other Features:

- Mechanical Engineering -

YAMAMOTO, Sota

Field of Interest:
Title of Courses: Advanced Research Program on Bio-function Control
Biomechanics and Injury Prevention
Lecture Subject: Biomechanics & Injury Prevention
Topics for Thesis:

Coming soon…

- Mechanical Engineering -

YAMANISHI, Yoko

Field of Interest:	**Micro-nanoscale Engineering, Bio-MEMS**
Title of Courses:	Advanced Research Program on Functional Devices Technology Micro-nano Functional Bio-fluid Engineering
Lecture Subject:	Functional Micro/nano Device
Topics for Thesis:	**・Gene Injection by Electrically-induced Bubble Injector** **・High Dynamic Range Processing by using Combination of Cavitation and Plasma Irradiation** **・Investigation of Molecular Condensation on Air-liquid Interface for Protein Crystallization**

Publications and International Conference Papers:

1.“Local Ablation of a Single Cell Using Micro/Nano Bubbles”, Hiroki Kuriki, Yoko Yamanishi, Shinya Sakuma, Satoshi Akagi, Fumihito Arai, Journal of Robotics and Mechatronics, 25-3, (2013), pp.476-483.

2.“Cancer cell separator using size-dependent filtration in microfluidic chip”, Taisuke Masuda, Miyako Niimi, Hayao Nakanishi, Yoko Yamanishi, Fumihito Arai, Sensors & Actuators: B. Chemical, 185, pp. 245-251, (2013).

3. “Multiple-reagent Layer Laden High-speed Micro-bubbles in Extended Two-dimensional Microchip”, Y. Hamano, T. Kambayashi, Y. Yamanishi, 2015 International Symposium on Micro-NanoMechatronics and Human Science (MHS2015), pp.73-76, (2015).

4. “Extract of Radical Species by Criculating Reactive Interface of Microfludic Chip for Protein Crystallization”, T. Kobayashi, K. Ohtonari, and Y. Yamanishi, Proc. of the 19 th Int. Conf. on Miniaturized Systems for Chemistry and Life Sciences (μ-TAS 2015), pp.251-253, 2015.

5. “Investigation of Molecular Condensation on Air-liquid Interface for Protein Crystallization”, S. Takasawa, S. Hosoda, Y. Yamanishi, Transducers 2015, Anchorage, Alaska, (T3E.001), p.440-443.

6. “Plasma-cavitation Pencil Cutter for Powerful Micro-Processing”, Y. Arakawa, M. Ohmura, D. Tsujimoto and Y. Yamanishi, Transducers 2015, Anchorage, Alaska, (W1C.004), p.521-524.

7. “Radical Induced Protein Crystallization by radical Amplification Microfludic Chip”, T. Kobayashi, Y. Yamanishi, Transducers 2015, Anchorage, Alaska, (Th1A.005), p.700-703.

8. “Minimally Invasive Needle-free Bubble Injector for Gene Therapy”, K. Takahashi, S. Omi, Y. Yamanishi, The 28th International Conference on Micro Electro Mechanical Systems (MEMS2015), pp. 655-657, (2015).

9. “Carving of Protein Crystal by High-speed Micro-bubble Jet Using Micro-fluidic Platform”, S. Takasawa, T. Shu, Y. Yamanishi, The 28th International Conference on

Micro Electro Mechanical Systems (MEMS2015), pp. 242-244, (2015).

10. “Minimally-invasive Local Injection by Electrically-driven Narrow Orifice Channel”, K. Takahashi, S. Omi, Y. Yamanishi, 2014 International Symposium on Micro-NanoMechatronics and Human Science (MHS2014), pp. 94-98, (2014).

11.“Micro-bubble Ring Generation by Electrically-driven High-speed Bubble Strike under Micro-fluidic Environment”, S. Takasawa, Y. Fujiwara, T. Kobayashi, M. Oomura, H. Kamegawa, and Y. Yamanishi, Proc. of the 18th Int. Conf. on Miniaturized Systems for Chemistry and Life Sciences (μ-TAS 2014), pp.1548-1550, 2014.

12. “Electrically Induced Bubble Capillary-poration”, K. Takahashi, W. Kawaguchi, Y. Hamano, S. Hosoda, Y. Arakawa, and Y. Yamanishi, Proc. of the 18th Int. Conf. on Miniaturized Systems for Chemistry and Life Sciences (μ-TAS 2014), pp.1392-1394, 2014.

13. “Electrically-induced bubble knife for protein crystallization and processing”, H. Kuriki, S. Takasawa, G. Kurisu, F. Arai, Y. Yamanishi, 2013 International Symposium on Micro-NanoMechatronics and Human Science (MHS2013), pp.154-157 (2013).

14. “Disintegration and Conveyance of Dielectric Barrier Discharge-Generated Micro-Plasma Ball under Water”, I. Azman, D. Tsujimoto, S. Sameshima, F. Arai, Y. Yamanishi, 2013 International Symposium on Micro-NanoMechatronics and Human Science (MHS2013), pp.250-253 (2013).

15.“Protein Crystallization Induced by Electrically Driven Bubble Knife”, H. Kuriki, S. Takasawa, S. Sakuma, K. Shinmura, G. Kurisu, F. Arai, Y. Yamanishi, Proc. of the 17th Int. Conf. on Miniaturized Systems for Chemistry and Life Sciences (μ-TAS), pp.1317-1319, 2013.

16.“Multiphase-laden Gas-liquid Interface Injection for the Versatile Gene Transfer”, H. Kuriki, S. Takasawa, M. Iwabuchi, K. Ohsumi, T. Suzuki, T. Higashiyama, S. Sakuma, F. Arai, and Y. Yamanishi, Proc. of the 17th Int. Conf. on Miniaturized Systems for Chemistry and Life Sciences (μ-TAS), pp.1173-1175, 2013.

17. “Transportation of monodispersed micro-plasma bubble in microfluidic chip under atmospheric pressure”, Y. Yamanishi, S. Sameshima, H. Kuriki, S. Sakuma and F. Arai, Transducers 2013, Barcelona, Spain, pp.1795-1798.

18.“Dispensing of mono-dispersed micro-bubbles for cell ablation”, H. Kuriki, Y. Yamanishi, S. Sakuma, S. Akagi and F. Arai, Proc. of IEEE International Conference on Robotics and Automation (ICRA2013), Karlsruhe, Germany, (May 2013), pp.2768-2773,(2013).

19.“Simultaneous Ablation and Injection by Electrically-induced Mono-dispersed Bubble Knife for Biomedical Applications”, H. Kuriki, Y. Yamanishi, S. Sakuma, S. Akagi and F. Arai, Proc. of The 26th IEEE International Conference on Micro Electro Mechanical Systems (IEEE MEMS 2013), pp.209-212, 2012.

Other Features:

Yamanishi Laboratory is aim to clarify unknown function of cells by using micro-nano technology based on mechanical engineering, electrical engineering and bio-medical engineering, and also we are targeting to contribute to the cellular scale medical treatment. For example, researches on novel gene injection method, protein crystallization, micro-nano scale actuation in micro-fluidic channels are studied which contribute to clarify unknown phenomenon in biomedical fields.

URL: http://www.sic.shibaura-it.ac.jp/~yoko/en/index.html

Materials Science and Engineering

-Materials Science and Engineering-

KYUNO, Kentaro

Field of Interest:	Solid State Physics, Surface Science, Physics of Thin Films
Title of Courses:	Advanced Research Program on Functional Devices Technology
	Semiconductor Materials
Lecture Subject:	Thin Film Physics
Topics for Thesis:	Crystallization of Amorphous Si Thin Films for Solar Cells
	Crystal Growth of Ge Thin Films for Thin-Film Transistors

Publications and International Conference Papers:

1. H.Miura, M.Kamiko, K.Kyuno, Novel Crystallization Process for Germanium Thin Films: Surfactant-Crystallization Method, Japanese Journal of Applied Physics **52** (2013) 010204
2. K.Suzuki, N.Igarashi and K.Kyuno, Two-Step Forming Process in Planar-Type Cu_2O-Based Resistive Switching Devices, Applied Physics Express **4** (2011) 051801
3. N.Sasaki, K.Kita, A.Toriumi and K.Kyuno, Observation of the creation and annihilation of local current paths in HfO_2 thin films on Pt by ultrahigh-vacuum conductive atomic force microscopy : Evidence of oxygen spill over during the forming process, Japanese Journal of Applied Physics **48** (2009) 060202
4. Y.Zhao, K.Kita, K.Kyuno and A.Toriumi, Dielectric and electrical properties of amorphous $La_{1-x}Ta_xO_Y$ films as higher-k gate insulators, Journal of Applied Physics **105** (2009) 034103
5. Y.Zhao, K.Kita, K.Kyuno and A.Toriumi, Band gap enhancement and electrical properties of La_2O_3 films doped with Y_2O_3 as high-k gate insulators, Applied Physics Letters **94** (2009) 042901
6. Y.Zhao, K.Kita, K.Kyuno and A.Toriumi, Higher-k LaYOx films with strong moisture resistance, Applied Physics Letters, **89** (2006) 252905
7. K.Yamamura, K.Kita, A.Toriumi and K.Kyuno, Reversible creation and annihilation of a local leakage path in HfO_2/GeOx stacked gate dielectrics : A direct observation by ultrahigh vacuum conducting atomic force microscopy, Applied Physics Letters, **89** (2006) 222101
8. Y.Yamamoto, K.Kita, K.Kyuno and A.Toriumi, Structural and electrical properties of HfLaOx films for an amorphous high-k gate insulator, Applied Physics Letters, **89** (2006) 032903

Other Features:
Electronic Properties of Thin Films

-Materials Science and Engineering-

MATSUMURA, Kazunari

Field of Interest:	Biomaterials for Bio-sensing, Bio-inspired Chemistry, Interface and Colloid science
Title of Courses:	Advanced Research Program on Eco-materials Engineering Biomaterials Science and Engineering
Topics for Thesis:	Liposome-based Sensor System using Peptide Chemistry, Micro-fabricated Bio-colloidal Array, Ion Beam Fabrication of Molecular Imprinting Polymer

Publications and International Conference Papers:

1. "Immobilization of a single intact liposome onto a peptide-modified glass microwell", Kasuya, Y.; Tsukamoto, K.; Yamada, D.; Matsumura, K., *Chemistry Letters* (2012), 41(10), 1191-1192
2. "Modification of sensor surface with oligopeptide as liposome anchor for development of analytical devices based on biomembrane systems", Kasuya, Y.; Nosaka, S.; Yamada, D.; Matsumura, K., *Peptide Science* (2010), 46th, 69-72.
3. "Grayscale Photopatterning of an Amorphous Polymer Thin Film Prepared by Photopolymerization of a Bisanthracene-Functionalized Liquid-Crystalline Monomer", Kihara, H.; Motohashi,M.;Matsumura, K.;Yoshida, M., *Advanced Functional Materials* (2010),
4. "Quartz crystal microbalance study of liposome adsorption to surface-bound peptides for applications in liposome-based sensor", Kasuya, Y.; Nosaka, S.; Yamada, D.; Ikeda, Yasuyuki; Matsumura, Kazunari, *Peptide Science* (2009), 45th, 45-48.
5. "Liposome Immobilization on Peptide-modified Quartz Crystal Microbalance Electrodes for Kinetic Analysis of Interactions on Membrane Surfaces", Kasuya Y.; Ohtaka M.; Tsukamoto K.; Ikeda Y.; Matsumura K.. *Chemistry Letters* (2008), 37(6), 588-589.
6. "Preparation, Characterization and Application of Surface-Immobilized Liposomes as Nanosized Mimics of Cells", Kasuya, Y.; Matsumura, K. *1st Russian-Japanese Young Scientists Conference on Nanomaterials and Nanotechnology,* Moscow, (2008), Oct. 6-7

Other Features:

-Materials Science and Engineering-

MURAKAMI, Masato

Field of Interest:	Synthesis and characterization of superconducting materials, Applications of superconductivity, Ferrous shape memory alloys
Title of Courses:	Advanced Research Program on Eco-materials Engineering
	Study of High Functional Materials
Lecture Subject:	High Functional Materials
Topics for Thesis:	Characterization of high temperature superconductors
	Processing of high temperature superconductors
	Applications of bulk high temperature superconductors
	Applications and characterization of Fe-Mn-Si shape memory alloys

Publications and International Conference Papers:

1. M. Tomita and M. Murakami: "High temperature superconductor bulk magnets that can trap magnetic fields of over 17T at 29K " *Nature*, vol. 421, p. 517-520, 2003
2. M. Muralidhar, N. Sakai, N. Chikumoto, M. Jirsa, T. Machi, M. Nishiyama, Y. Wu and M. Murakami: "New type of vortex pinning structure effective at very high magnetic fields", *Phy. Rev. Lett*., vol. 89, p. 237011 1-4, 2002
3. S. Sasaki, I. Yagi, and M. Murakami : "Levitation of an iron ball in midair without active control", *J. Appl. Phys*. vol. 95, no. 4, p. 2090-2093, 2004
4. M. Murakami, Y. Nishimura, T. Hirooka, S. Sasaki and I. Yagi: "Interaction of multiple iron balls in magnetic fields", *J. Appl. Phys*. vol. 97, p. 083911-1-4, 2005
5. M. Koyama, M. Murakami, K. Ogawa, T. Kikuchi, T. Swaguchi: "Influence of Al on Shape memory effect and twinning induced plasticity of Fe-Mn-Si-Al alloy", *Materials Transactions*, vol. 48, No. 10 (2007) pp2729-2734.
6. M. Murakami:"Processing and Applications of bulk RE-Ba-Cu-O superconductors", *International Journal of Applied Ceramic Technology*, vol. 4, No. 3, (2007) pp.225 -241.
7. A. Wongsatanawarid, H. Seki, M. Murakami, " Growth of large bulk Y-Ba-Cu-O with multi-seeding", *Supercond. Sci. Technol.* vol. 23 no. 4, p. 45022, (2010).
8. Y. F. Zhang, M. Izumi, M. Murakami, D. D. Wang, P. L. Li, " Enhanced J_c in air-processed $GdBa_2Cu_3O_{7-d}$ superconductor bulk grown by the additions of two Nd_2BaCuO_5 seeds, *Physica C* vol. 470 no. 20, p. 1164-1166, (2010).
9. A. Wongsatanawarid, H. Seki, S. Kobayashi, M. Murakami," Crack reduction in a large bulk Y-Ba-Cu-O superconductor through liquid binder addition", *Physica C* vol. 470 no. 20, p. 1167-1169, (2010).
10. H. Seki, A. Wongsatanawarid, S. Kobayashi, Y. Ikeda, M. Murakami," Effects of binder addition on the mechanical properties of bulk Y-Ba-Cu-O superconductors", *Physica C* vol. 470 no. 20, p.

1177-1180, (2010).
11. M. Ikeda, K. Takeda, H. Hasegawa, H. Seino, K. Nagashima, M. Murakami," Characterization of non-contact torque transfer and switching system for superconducting flywheel", *Physica C* vol. 470 no. 20, p. 1224-1226, (2010).
12. H. Kurabayashi, S. Horikoshi, A. Suzuki, M. Ikeda, A. Wongsatanawarid, H. Seki, S. Akiyama, M. Hiragushi, M. Murakami, " Interaction between ring permanent magnets and bulk Dy-Ba-Cu-O superconductors", *Physica C* vol. 470 no. 20, p. 1853-1855, (2010).
13. H. Seki, Y. Shimpo, T. Katagiri, M. Murakami," Fabrication of bulk Y-Ba-Cu-O superconductors with artificial holes through oxidation of carbon rods", *J. Phys*., vol. 234 no. 1, p. 12037, (2010).
14. A. Wongsatanawarid, H. Seki, M. Murakami,"Multi-seeding melt growth process of bulk Y-Ba-Cu-O superconductors for engineering applications", *J. Phys.*, vol. 234 no. 1, p. 12047, (2010).
15. Y. Ikeda, S. Umakoshi, A. Wongsatanawarid, H. Seki, M. Murakami: "Enhancement of mechanical strength in Y-Ba-Cu-O bulk superconductor through liquid binder addition ", *Physica C* vol. 471 no. 21-22, p. 846-849, (2011).
16. S. Umakoshi, Y. Ikeda, A. Wongsatanawarid, C.-J. Kim, M. Murakami: "Top-seeded infiltration growth of Y-Ba-Cu-O bulk superconductors" , *Physica C* vol. 471 no. 21-22, p. 843-845, (2011).
17. Y. F. Zhang, M. Izumi, Y. J. Li, M. Murakami, T. Gao, Y. S. Liu, P. L. Li: "Enh anced J_c in air-processed $GdBa_2Cu_3O_{7-\delta}$ superconductor bulk grown by the additions of n ano-particles, Physica C vol. 471 no. 21-22, p. 840-842, (2011).
18 Alev Aydiner, Bakiye Cakir, Hironori Seki, Mehmet Basoglu, Atikorn Wongsatanawa rid, M. Murakami, Ekrem Yanmaz: "The Effect of Y_2O_3 Buffer Layer on the Magnetic Properties of Melt-Processed YBCO Superconductor", *J. Supercond. Nov. Mag.* vol. 24 No.5, p. 1397-1401, (2011).

Other Features:

- URL http://moniko.s26.xrea.com

-Materials Science and Engineering-

NODA, Kazuhiko

Field of Interest:	Electrochemistry, Corrosion Science
Title of Courses:	Advanced Research Program on Eco-materials Engineering
	Material Chemistry
Lecture Subject:	Materials Chemistry
Topics for Thesis:	Atmospheric Corrosion
	Electrodeposition of Metal
	Materials of Fuel Cell

Publications and International Conference Papers:

1. M. Itagaki, H. Araki, K. Watanabe, H. Katayama and K. Noda : Electrochemical impedance of thin rust film fabricated artificially, *Passivation of Metals and Semiconductors, and Properties of Thin Oxide Layers*, 317-323 (2006)
2. M. Itagaki, A. Ono, K. Watanabe, H. Katayama, and K. Noda : Analysis on organic film degradation by dynamic impedance measurements. Corrosion Science, 47, 3802-3811 (2006)
3. E. Kobayashi, M. Ogo, H. Doi, T. Yoneyama, K. Noda and T. Hanawa: Calcium Phosphate Precipitation by Galvanic Current between Titanium and Gold in Pseudo-body Fluid, Materials Science Forum Vols. 539-543, 653-656 (2007)
4. A.P. Yadav, H. Katayama, K. Noda, H. Masuda, A. Nishikata and T. Tsuru : Effect of Fe–Zn alloy layer on the corrosion resistance of galvanized steel in chloride containing environments, *Corrosion Science*, 49, 3716-3731 (2007)
5. A.P. Yadav, H. Katayama, K. Noda, H. Masuda, A. Nishikata and T. Tsuru : Surface potential distribution over a zinc/steel galvanic couple corroding under thin layer of electrolyte, *Electrochimica Acta*, 52, 3121-3129 (2007)
6. A.P. Yadav, H. Katayama, K. Noda, H. Masuda, A. Nishikata and T. Tsuru : Effect of Al on the galvanic ability of Zn–Al coating under thin layer of electrolyte, *Electrochimica Acta*, 52, 2411-2422 (2007)

Other Features:

-Materials Science and Engineering-

SHIMOJO, Masayuki

Field of Interest:	Nanomaterials and electron microscopy
Title of Courses:	Advanced Research Program on Functional Devices Technology Materials Science
Lecture Subject:	Basic Physics in Electron Microscopy
Topics for Thesis:	Fabrication of nanoparticles, nanowires and nanostructures. Evaluation of nanomaterials. Development of novel techniques in electron microscopy.

Publications and International Conference Papers:

1. T. Noriki, S. Abe, K. Kajikawa and M. Shimojo; "Patterning technique for gold nanoparticles on substrates using a focused electron beam"; Beilstein J. Nanotechnol., 6 (2015) 1010.

2. Y. Ebihara, R. Ota, T. Noriki, M. Shimojo and K. Kajikawa; "Biometamaterials: Black ultrathin gold film fabricated on lotus leaf"; Sci. Rep., 5 (2015) 15992.

3. K. Makise, K. Mitsuishi, M. Shimojo and B. Shinozaki; "Microstructural analysis and transport properties of MoO and MoC nanostructures prepared by focused electron beam-induced deposition"; Sci. Rep., 4 (2014) 5740.

4. A. Hashimoto, P. Wang, M. Shimojo, K. Mitsuishi, P. D. Nellist, A. I. Kirkland and M. Takeguchi; "Three-dimensional analysis of nanoparticles on carbon support using aberration-corrected scanning confocal electron microscopy"; Appl. Phys. Lett., 101 (2012) 253108.

5. D. Tanaka, H. Karube, M. Shimojo and K. Kajikawa; "Micropatterning of polydiacetylene nanoparticle monolayer based on ultraviolet or electron beam polymerization"; Appl. Phys. Express, 4 (2011) 121604.

6. K. Makise, K. Mitsuishi, M. Shimojo and K. Furuya; "A nanosized photodetector fabricated by electron-beam-induced deposition"; Nanotechnology, 20 (2009) 425305.

↓

Other Features:

Development of electron beam-induced deposition techniques.

Development of patterning techniques for nanoparticles on substrates.

In-situ observation of the deformation of polymers in electron microscopes.

- Materials Science and Engineering -

MURALIDHAR, Miryala

Field of Interest:	Development of High Performance Materials for Energy and Environment
Title of Courses:	Advanced Research Program on Eco-materials Engineering Materials for Energy and Environment -High T_c Superconductivity
Lecture Subject:	Super-magnets and its future Applications
Topics for Thesis:	➢ Development of low cost high performance LRE-123 Bulk Super-magnets for medical and auto mobile applications; ➢ Development of new class of bulk FeSe and light weight MgB_2 Super-magnets for space and power applications; ➢ Development of technology for RE-123 superconducting films using RE-210 for silver sheet wire technology ➢ Development of single phase X-Fe-Si (X= La, Gd, etc.,) materials.

Selected publications:

1. M. Muralidhar, "Superconductivity: Today and Tomorrows Applications - Book" *Nova Science Publishers*, New York, ISBN 978-63483-816-0 (2015).
2. M. Muralidhar, K. Nozaki, H. Kobayashi, X.L. Zeng, A. Koblischka-Veneva, M.R. Koblischka, K. Inoue, and M. Murakami, "Optimization of Sintering Kinetics of Bulk MgB_2 for Highest Flux Pinning", *Journal of Alloys and Compounds*, Vol. **649**, pp. 833-842 (2015).
3. M. Muralidhar, K. Inoue, M.R Koblischka, A. Murakami, M. Murakami, "Title Effects of Silver Addition on Critical Current Densities and Mechanical Properties in Bulk MgB_2", J*ournal of Advanced Engineering Materials*, Vol. **17**, pp. 831-838 (2015)
4. M. Muralidhar, N. Kenta, M. R Koblischka and M. Murakami "High Critical Current Densities in Bulk MgB_2 Fabricated using Amorphous Boron". *Physica Status Solidi (a)*, Article first published online: 12 MAY 2015, DOI:10.1002/pssa.201532108 (2015)
5. M.Muralidhar, M.R.Koblischka, M.Tomita, "Development of Nano-Structured HTSC for Application in Medicine" *Current Microscopy Contributions to Advances in Science and Technology*, Microscopy Book Series No.**5**, pp.1468-1479 (2012).
6. M. Muralidhar, N.Sakai, M.Jirsa, M.Murakami, I.Hirabayashi; Highly enhanced flux pinning in melt-textured NEG-123 doped Nb and Mo nano particles"*Appl. Phys. Lett.*, **92** 162512 (3 pp) (2008).
7. M. Muralidhar, N. Sakai, M. Jirsa, N. Koshizuka, and M. Murakami; Direct observation and analysis of nanoscale precipitates in (Sm,Eu,Gd)$Ba_2Cu_3O_y$ *Appl. Phys. Lett***., 85**, 3504 (2014).
8. M. Muralidhar, N. Sakai, N. Chikumoto, M. Jirsa, T. Machi, Y. Wu, and M. Murakami, New type of vortex pinning structure effective at very high magnetic fields, *Physical Review Letters***, 89** 237001-1 (2002).

Other Features:

…The laboratory had started from Oct. 2015. Muralidhar Miryala had received Ph.D degree in High T_c Superconductivity from Osmania University, Hyderabad, India, in 1993. Afterwards (1994-1995), he had worked as a lecturer and principal investigator in a young-scientist project. Subsequently, he joined a superconductivity research laboratory (SRL), ISTEC, as well as JR-Railway Technology Research Institute (RTRI), Tokyo as a senior research scientist. He had further developed a new class of mixed LRE-123 system which could be used up to 15 T at 77 K at high temperatures upto 90.2 K. He also developed a novel technology to produce RE-123 type silver sheathed wire on the basis of solid state / liquid phase reaction. His intellectual mindset enabled him to produce a small type superconducting bulk magnet which is useful to magnetize both high-T_c superconducting materials and magnetic materials for a variety of industrial applications. Further, he also contributed to develop technology for the development of DC Superconducting Cable for Railway system applications. Furthermore, he is also working to enhance a new class of superconducting super magnets using the MgB_2 and rear-earth free FeSe materials for NMR and MRI applications. He is an author and co-author for more than 260 publications in international journals. He holds several Japanese national and international patents. Awards: Young Scientist Project Award, DST-Govt. of India (1995), Director's Award, SRL-ISTEC (1998 and 2003), 1999 PASREG Award of Excellence (1999), Best Presentation Award at the IWCC11 (2003), Best Researcher Award, ISTEC-SRL (2007 and 2008), Best Researcher Award, Railway Technical Research Institute (2012). He has established a student exchange and collaborative research within *top global ranked universities* and institutions; this will be very useful for those who are going to join SIT. Hope students can enjoy their stay at SIT.

- Materials Science and Engineering -

YAMAMOTO, Ayako

Field of Interest:	Search for new functional materials with high pressure, Phase transition and chemical reaction under high pressure
Title of Courses:	Advanced Research Program on Eco-materials Engineering High-pressure Material Science Research
Lecture Subject:	High-pressure Science
Topics for Thesis:	1. Search for new superconductor and magnet using high pressure 2. Development of new reaction process under high pressure 3. Structure and properties of high-pressure stabilized materials 4. Solid state chemistry of pressure depending phase transition

Selected publications:

1. A. Yamamoto, N. Takeshita, C. Terakura, Y. Tokura, "High pressure effects revisited for the cuprate superconductor family with highest critical temperature", Nature Communications 6 (2015) #9990, doi:10.1038/ncomms9990
2. A. Yamamoto, D. Hashizume, M.S. Bahramy. Y. Takura "Coexistence of Monochalocogen and Dichalocogen Ions in $BiSe_2$ and BiS_2 Crystals Prepared d at High Pressure". Inorg. Chem., 2015, 54, 4114-4119
3. A. Yamamoto, D. Hashizume, H.A. Katori, T. Sasaki, E. Ohmichi. T. Nishizaki, N. Kobayashi, H. Takagi, "Ten layered hexagonal perovskite $Sr_5Ru_{5-x}O_{15}$ (x = 0.90), a weak ferromagnet with a giant coercive field H_c ~ 12 T", Chem. Mater., 22 (2010) 5712-5717
4. A. Yamamoto, P.A. Sharma. Y. Okamoto, A. Nakao, H.A. Katori, S. Niitaka, D. Hashizume, H. Takagi, "Metal-insulator transition on Pyrochlore-type Ruthenium oxide, $Hg_2Ru_2O_7$", J. Phys. Soc. Jpn., 76 (2007) 043703, 1-4

Other Features:

The laboratory has started from Nov. 2015. Ayako Yamamoto has been worked at Institute of Materials Research Tohoku University, International Superconductivity Technology Center, and Center for Emergent Matter Science RIKEN (Institute of Physics and Chemistry). Her academic background is solid state chemistry and high-pressure science. Examples of recently developed material are $BiSe_2$ (Semiconductor, high-pressure phase (HPP), $Sr_5Ru_{5-x}O_{15}$ (Magnet, HPP), $Hg_2Ru_2O_7$ (Metal-insulator transition phase: HPP), $Hg_{0.4}ReO_3$ (Superconductor, HPP), and $CaPbO_3$ (Semiconductor, HPP). High pressure is attractive tool for new material search. Let's enjoy it.

Architecture

-Architecture-

AKAHORI, Shinobu

Field of Interest:	Architecture
Title of Courses:	Advanced Research Program on Regional Environmental Design
	Architectural Design
Lecture Subject:	Architectural Environment Planning
Topics for Thesis:	Dwelling of lignification and Urban Design

Publications and International Conference Papers:

S. AKAHORI, YamashitaSekkei, "Lycée Francçais International de Tokyo", Contemporary Japanese architects, pp62−63, 05/14

S. AKAHORI, YamashitaSekkei, "Lycée Francçais International de Tokyo", Nikkei Architecture, pp54−57, 05/13

S. AKAHORI, "IT House", Contemporary Japanese architects, pp66−67, 05/13

S. AKAHORI, M. FUJINUMA, "Lycée Francçais International de Tokyo", BP vol.10, pp21−24, 04/13

S. AKAHORI, M. FUJINUMA, "Lycée Francçais International de Tokyo", Shinnkenchiku, pp174−181, 12/12

S. AKAHORI,"Lycée Francçais International de Tokyo", Nikkan Kogyo Shinbun, 07/12

S. AKAHORI, "Urban Design in France", Kajima research Foundation, p.296-297, 2011

S. AKAHORI, "Urban Design in France", Kajima research Foundation, p.114-120, 2010

S. AKAHORI, M.TORIUMI, “Urban Design in France”, Syokokusya, 07/10

S. AKAHORI, “Contemporary Architecture in Luxembourg”, architects 6, JIA, p20, 04/10

S. AKAHORI, “Role of Architects as a profession”, architect 548, Osaka AABE, p13, 02/10

S. AKAHORI, “Promenade Plaints-Green promenade born by Train way abandoned”, CHIKAI 302, 2009 summer pp18-19

S. AKAHORI, M.TORIUMI, “Projets Urbains Français 6 Lyon”, Shinkenchiku 0904, pp195-198, 03/09

S. AKAHORI, M.TORIUMI, “Projets Urbains Français 5 Bordeaux The public space by light and plantations”, Shinkenchiku 0903, pp215-218, 02/09

S. AKAHORI, M.TORIUMI, “Projets Urbains Français 4 La Defense to offense ”, Shinkenchiku 0902, pp201-204, 01/09

S. AKAHORI, M.TORIUMI, “Projets Urbains Français 3 Nantes”, Shinkenchiku 0901, pp182-185, 12/08

S.AKAHORI, M.TORIUMI, “Projets Urbains Français 2 Paris after Grand Projets”, Shinkenchiku 0812, pp210-213, 11/08

S. AKAHORI, M.TORIUMI, “Projets Urbains Français 1 Euralille 20 years after”,

Shinkenchiku 0811, pp178-183, 12/08
S. AKAHORI, “La Defense”, architects 5, JIA, p19, 06/08
S. AKAHORI, “Construction a school in DJIBOUTI”, SFJTI tome 54 no 1, pp.40-43, 05/08
H. HATTORI, S.AKAHORI, “The insurance of architect”, Nikkankogyo journal, pp.107-112, 10/07
S. AKAHORI, Architectural education and qualification in France, Symposium, Architectural Institute of Japan, 2006
S. AKAHORI, Institut franco-Japonais du Kansai, Selection of JIA 2005, 2005
S.AKAHORI, Institute Franco-Japanese, Architecture ASIA, new heritage, a journal of the architects regional council Asia (ARCASIA) p48-49, may 2005
S. AKAHORI, Renovation and re-structure, Institute Franco-Japanese of Kansai, Symposium franco-japonais sur les cites du futur 2003, 2004
YAHAGI Kijyuro, S.AKAHORI, M. KANO, “Giuseppe TERRAGNI”, A de S PUBLISHING INC., 1998
S. AKAHORI, Spatial interpenetration in Modernism and Material as appearance, JA Modern Houses II, p6-7, 04/98
S.AKAHORI, Architecture française, SHINKENCHIKU (Japon) (l'exercice professionnelle en France, conditons de production d'un projet, relation architecte / maîtrise d'ouvrage public ou privé) 06/91
S. AKAHORI, Fragments de la ville (Paris. mémoire de la ville) Signe de B (Japon) 07/92
S. AKAHORI, L'école d'architecture Paris-Belleville KENCHIKUBUNKA (Japan) 12/93 (série d'interviews des différents enseignants de cette école avec présentation de projets d'étudiants et de réalisations d'anciens étudiants)
S. AKAHORI, Les conditions économiques de la construction en France, JIA NEWS (Japon) 08/94
S. AKAHORI, L'architecture contemporaine en France, Journal of Architecture and Building Sciences 04/94

Other Features:

EXPOSITIONS; 」
“New Direction of Japanese Architecture and Design: Beyond the Disaster”, Tehran, Tabriz, Hamadan, Isfahan, Istanbul, Konya (Sept. 2015-august 2016)
“Parallel NIPPON-japanese architecture 1996-2006-”, Tokyo Metropolitan Museum of Photographie (2006), “Scénographies d’architectes”, Pavillon de l’Arsenal in Paris (2006), “Progrès”, Japan Institute of Architcts in Tokyo (2004), “Huit architectes français et Willem”, in Berlin (1998), “EURALILLE Poser, exposer” à Lille (1995), à Wienne (1996), “ARCHITECTURE PUBLQUES 1989-1995”, Communes de l'Ain (1995), Pavillon de l’Arsenal (1992), Salon d'automne au Grand Palais (1992), Galerie Axis à Tokyo (1991), ‘Médiathèque”Centre G. Pompidou à Paris (1988), GaJede Bernanos à Paris (1986), Bunka Gakun à Tokyo (1983)

PROJECTS ;

Guide d’architecture de la METROPOLE LILLOISE, Le passage, 2004
Patrimoine industriel et urbanisme, Le site de Philidor-Maraîchers, SEDP, 2003
Profil, at (Japon) 04/91
Concours de l'école maternelle et halte-garderie, Le Moniteur Architecture AMC 02/91
Stand du moniteur architecture, Le Moniteur Architecture AMC 12/90
Prix Cogedim 1990 de la premiere oeuvre, Le Moniteur Architecture AMC 11/90
Projet d'une médiathèque, D'A 09/90
Profils Les élus 1989, Le Moniteur Architecture AMC 03/90

Projet d'une école de danse, Cahier de Pavillon de l'Arsenal 12/89

REALISATIONS;

Zero Energy House 2015, T. AKIMOTO, S. AKAHORI, K.SHIDE, K. AOSHIMA, 2015

Zero Energy House, T. AKIMOTO, S. AKAHORI, H. KANISAWA, I. SHIMIZU, K. AOSHIMA, 2014

Lycée Francçais International de Tokyo, S. AKAHORI, YamashitaSekkei, 2012

IT House, 2009

Scénographie de l'exposition "Road of Koreans messengers", AIJ, 2007

Scénographie de l'exposition "Parallel NIPPON-japanese architecture 1996-2006-", Tokyo Metropolitan Museum of Photographie, Tokyo, 2006

Scénographie de l'exposition "Homme et Robots", Maison du Japon à Paris, 2003

Rénovation de l'Institut franco-japonais du Kansai à Kyoto, 2003

Rénovation d'une crèche à Paris 12ème, Le Moniteur, 1998

Groupe Scolaire International à EURALILLE, Le Moniteur Architecture AMC, 10/95, 09/96, Le Moniteur, SHINKENCHIKU (Japan) 01/97, THE JAPAN ARCHITECT (JA) 01/98, The Architectural Review (England) 09/97, Journal of Architecture and Building Science Special Issue, AIJ 1998

Ecole maternelle et halte-garderie à Divonne, Le Moniteur Architecture AMC (France), 03/93, 12/93, SHINKENCHIKU, 02/94, THE JAPAN ARCHITECT (JA), 01/95, Le Moniteur Architecture AMC 1985-1995 CD-ROM

-Architecture-

AKIMOTO, Takashi

Field of Interest:	Thermal Comfort, HVAC, LCA, Environmental Design
Title of Courses:	Advanced Research Program on Regional Environmental Design Building Environmental Engineering
Lecture Subject:	Planning of Regional-Energy System and Building Services
Topics for Thesis:	Thermal Comfort and Productivity, Task/Ambient Conditioning System, Assessment System of Buildings

Publications and International Conference Papers:

1. H. Kubo, S. Tanabe, T. Yokoyama, T. Omori, N. Ohira, R. Tominaga, T. Akimoto, Predictive Model of Thermal Sensation for Heating Systems Considering Contact with the Floor, Healthy Buildings 2012, 10th International conference, (Brisbane, Australia), 2012.7
2. J. Kubota, T. Akimoto, T. Chikamoto, S. Hashimoto, A. Nishino, Investigation of Thermal Comfort Model using Optimum Control of Local Air Velocity, Healthy Buildings 2012, 10th International conference, (Brisbane, Australia), 2012.7
3. T. Kanda, T. Akimoto, K. Kanou, S. Tazawa, Y. Kawaraguchi, Indoor Thermal Environment and Energy Saving by reducing Heating/Cooling Capacity of Air Conditioner at Home, Healthy Buildings 2012, 10th International conference, (Brisbane, Australia), 2012.7
4. Y. Kawano, T. Akimoto, Comfortable Bedroom controlled by Mechanical Air Conditioner and Natural Ventilation, Healthy Buildings 2012, 10th International conference, (Brisbane, Australia), 2012.7
5. T. Akimoto, Y. Watanuki, F. Kimura, and K. Nakajima, Natural Ventilation Effects for Environmentally Symbiotic House with Double Layer Veranda in Summer, Healthy Buildings 2012, 10th International conference, (Brisbane, Australia), 2012.7
6. T. Akimoto, H. Ohta, S. Hashimoto, A. Nishino, T. Chikamoto, and S. Nakamura, Thermal Comfort in Transitional Metabolism based on Subjective Experiments with Ceiling Supply Task Conditioning System, INDOOR AIR 2011, The 12th International Conference on Indoor Air Quality and Climate, (Austin, Texas), 2011.6
7. K. Mori, T. Akimoto, T. Nagai, and K. Emoto, Consideration by Field Survey of Consumption and Computerized Simulation in Apartment House with Gas Hot Water Floor Heating, INDOOR AIR 2011, The 12th International Conference on Indoor Air Quality and Climate, (Austin, Texas), 2011.6
8. Y. Watanuki and T. Akimoto, Verification of Renewal Actions in Long-Life Office Building by CASBEE, INDOOR AIR 2011, The 12th International Conference on Indoor Air Quality and Climate, (Austin, Texas), 2011.6
9. T. Akimoto, M. Yamamoto, M. Sasaki, and S.Tanabe, Field survey of workers' communication and knowledge-creativity in an office for intellectual creative work, CLIMA 2010, The 10th

REHVA WORLD CONGRESS "Sustainable Energy Use in Buildings", (Antalya,Turkey), 2010.5

10. M.Sasaki, T.Yanai1, T.Akimoto, and S.Tanabe, Evaluation of work place environment and energy consumption in office for creative work, CLIMA 2010, The 10th REHVA WORLD CONGRESS "Sustainable Energy Use in Buildings", (Antalya,Turkey), 2010.5
11. R. Ishiguro, T.Chikamoto, S. Fukuda, S. Hashimoto, R. Inada, A. Nishino and T. Akimoto, Airflow control for personal air-conditioning and unoccupied zone by multi-flow ceiling cassette type packaged air-conditioner, CLIMA 2010, The 10th REHVA WORLD CONGRESS "Sustainable Energy Use in Buildings", (Antalya,Turkey), 2010.5
12. H. Ohta, T. Akimoto, S. Hashimoto, A. Nishino, R. Inada, T. Chikamoto and S. Nakamura, Environmental selection option effects of ceiling supply task conditioning system, CLIMA 2010, The 10th REHVA WORLD CONGRESS "Sustainable Energy Use in Buildings", (Antalya,Turkey), 2010.5
13. R. Kuzuki, M. Satoh, T. Akimoto, S. Murakami, H. Ishino, K. Sasajima, F. Nohara, H. Ninomiya, Y. Tabata, Integrated Energy Simulation for Building and MEP Systems Including Thermal Cascading in Consideration of the Characteristics of Thermal Energy Media, CLIMA 2010, The 10th REHVA WORLD CONGRESS "Sustainable Energy Use in Buildings", (Antalya,Turkey), 2010.
14. T. Akimoto, S. Tanabe, T. Yanai, and M. Sasaki, Thermal Comfort and Productivity – Evaluation of Workplace Environment in a Task Conditioned Office, Building and Environment, Volume 45, Issue 1, 2010.1
15. S. Nakamura, T. Akimoto, and N. Miura, Floor-Supply Displacement Air-conditioning System applied for Office Space faced to Void - Laboratory Experiment and CFD Analysis based on the Experimental Results-, ROOMVENT 2009, (Busan, Korea), 2009.5
16. K. Emoto, S. Kagiya, K. Matsumae, T. Akimoto, Y. Kuwasawa, and K.Emura, Effects of Heat Loss Coefficient of Enclosures on Thermal Comfort, ROOMVENT 2009, (Busan, Korea), 2009.5
17. T. Akimoto, Designing an Assessment System of Buildings for All Lifecycle Stages based on the Concept of Eco-efficiency, 2nd International Conference on Build Environment in Developing Countries 2008, Sustainable Build Environment: Bridging Theory and Practice, ICBEDC 2008, (Penang, Malaysia), 2008.12
18. T. Akimoto, S. Kagiya, K. Matsumae, and Y. Kuwasawa, Contact Area and Heat Transfer of Subject with Heated Floor, Advanced Building Ventilation and Environmental Technology for Addressing Climate Change Issues, The 29th AIVC Conference in 2008 (Kyoto, Japan), 2008.10
19. T. Yanai, M. Sasaki, and T. Akimoto, The Evaluation of Thermal Performance in the Sustainable Office Building with Environmental Adjustable System, the 2008 World Sustainable Building Conference, World SB08 (Melbourne, Australia), 2008.9
20. T. Akimoto, S. Murakami, T. Ikaga, T. Seike, K. Iwamura, and T. Hayashi, Case Studies of Comprehensive Assessment System for Building Environment Efficiency (CASBEE) for Home, the 2008 World Sustainable Building Conference, World SB08 (Melbourne, Australia), 2008.9
21. T. Akimoto, S. Kagiya, K. Matsumae, and Y. Kuwasawa, Evaluation of Thermal Comfort for Various Heating Systems, The 11th International Conference on Indoor Air Quality and Climate, Indoor Air 2008 (Copenhagen, Denmark), 2008.8

22. T. Akimoto, Thermal Comfort and Productivity – Evaluation of Workplace Environment, International Symposium on the Interaction between Human and Building Environment (Seoul, Korea), 2008.7

-Architecture-

ITO, Yoko W.

Field of Interest:	Architectural History, Urban History
	Preservation engineering of Cultural Properties
Title of Courses:	Advanced Research Program on Regional Environmental Design
	History of Architecture
Lecture Subject:	History of Architecture and Urban Design
Topics for Thesis:	Reconstruction of Historical Architecture
	Preservation and Renovation for Cultural Properties
	Design Survey for World Heritage Proposals
	Experimental Verification Comparing Virtual and Real Spaces
	Trials for Reconstruction Design Methods using VR spaces

Publications and International Conference Papers:

1. Yoko Watanabe et al. "Modern Japanese Style Architecture in Yamanashi Prefecture" Yamanashi Prefectural Board of Education (2015)
2. Yusuke Isomata, Masahiko Hara, Yoko Watanabe, "A Study on Jingu Choko-Kan and Jingu Nogyo-Kan" Journal of Architecture and Planning, Vol.78 No. 691 pp. 2031-2037 (2013)
3. Hoko Miwa, Yoko Watanabe, "A Study on the Construction of Hikawa Nyotai Shrine" Journal of Architecture and Planning, Vol. 78 No. 694 pp. 2587～2595 (2013)
4. Yoko Watanabe, Masahiko Hara, Yuta Ichinose, Yusuke Isomata, Masakazu Tamano, Hoko Miwa, Satoshi Yoshikawa: A Study on the Tokuma Katayama Archives -Design Characteristics of the Leading Architect in the Japanese Modernization Period- 6th SEATUC Symposium CDR 03-30-104 2012.3
5. M.Ohkura , M.Konuma, Y.Kogure, S.Tanaka, H. Ei, A.Sakai, T.Ishidou, and Y.W.Ito, Restoration Support System for a Historic Textile Market Using Virtual Environment Proceedings of the 14th International Conference on Human-Computer Interaction, pp.413-422, Orlando (2011)
6. H.Miwa, M.Kido, Y.Watanabe, and T.Ishidou: A Study on the Age Determination of Architectural Remains 5th SEATUC Symposium pp.292-295 (2011)
7. H.Ito, H.Sasayama, Y.W.Ito “A Study on Restoration of Site of Barrier and Formative Process of *Kamiashigawa* Settlement", Journal of Architecture, Planning and Environmental Engineering No. 656 (2010)
8. M.Itoh, H.Mieno, T.Fujinuma, M.Ohkura, and Y.W.Ito " Method to Support Restoration and Reconstruction of Historical Buildings using Virtual Environment –Study on Theater Interior through Impression Estimation- ", Journal of Japan

Society of Kansei Engineering Vol.9, No.2 pp.161-170 (2010)
9. E.Matsuo, H.Ito, F.Nishino, Y.W.Ito, H.Sasayama "A Study on Village Forming Process of Kamiashigawa in Fuefuki City,Yamanashi Prefecture- Reconstruction from Historical Pictures and Documents-" Summaries of technical papers of Annual Meeting Architectural Institute of Japan F-2, pp. 399-400 (2009)
10. H.Sasayama, S.Yoshioka, K.Yasuhara, Y.Nishiguchi, Y.Hirade, H.Ito, Y.W.Ito, K.Sugiyama "A Research on Traditional Thatched Roof Minka of Ashigawa in Fuefuki City, Yamanashi Prefecture" part1-part3 Summaries of technical papers of Annual Meeting Architectural Institute of Japan F-2, pp. 95-100 (2008)
11. Y.W.Ito et al. "History of Yamanashi Prefecture ", Volume of Medieval Chronology (2007)
12. S.Yamamoto, Y.W.Ito "A Survey of Iwatsuki Ward for Urban Revitalization on historical town dwelling along Nikko-Onari Highway" Summaries of technical papers of Annual Meeting Architectural Institute of Japan F-2, pp. 473-474 (2007)
13. T.Ishido, M.Ohkura, Y.W.Ito " Experiment on maze space –Comparison between real space and VR space", Summaries of technical papers of Annual Meeting Architectural Institute of Japan E-1, pp. 843-844 (2007)
14. M.Ohkura, Y.Komatsu, Y.Shimada, T.Shibata, S.Nakayama, T.Aoto, Y.W.Ito"Comparison of the Impression of Spaces in Inclined Projection System –The Difference of the Experimental Results Between Virtual Environment and Real Environment - ", Journal of Japan Society of Kansei Engineering Vol.6, No.2 (014) (2006)
15. R.Teramoto, M.Kido, Y.W.Ito “On architectural design-methods from the view-point of Matsuki Archives No.1：Unshirou Matsuki”Summaries of technical papers of Annual Meeting Architectural Institute of Japan F-2, pp.67-68 (2006)
16. M.Kido, R.Teramoto, Y.W.Ito “On architectural design-methods from the view-point of Matsuki Archives No.2：Terushige Matsuki”Summaries of technical papers of Annual Meeting Architectural Institute of Japan F-2, pp.69-70 (2006)
17. M.Ohkura Y.Komatsu, Y.Shimada, T.Shibata, S.Nakayama, and Y.W.Ito "Comparison of the impression of the space between virtual environment and real environment", Proceeding of the 11th International Conference on Human-Computer Interaction, Las Vegas (2005)
18. Y.W.Ito et al. "History of Yamanashi City", Volume of Cultural Properties and Religious Architecture (2005)
19. Y.W.Ito et al. "Fine Art, Architecture, Castles in Kai", Iwata Shoin Publication Inc. (2002)
20. Y.W.Ito, H.Ito "A Study on Transition of Rows of Town Houses and their Types in Daigahara along the Old Route of Koshu-Kaido", Journal of Architecture, Planning and Environmental Engineering No. 549 pp.253～261(2001)
21. Y.W.Ito et al. "History of Yamanashi Prefecture ", Volume of Cultural Properties (1999)
22. Y.W.Ito "On Shichimendo-Halls Built in Villages In Minami-Koma County of Yamanashi Prefecture", Journal of Architecture, Planning and Environmental Engineering No.495 pp.223～230 (1997)
23. Y.W.Ito et al. "Encyclopedia of Timber Architecture", Gakugei Shuppan Publication Inc. (1995)

Other Features:

-Architecture-

MAEDA, Hidetoshi

Field of Interest:	Urban Design
Title of Courses:	Advanced Research Program on Regional Environmental Design Spatial Planning and Design
Lecture Subject:	Urban Planning and Design
Topics for Thesis:	Architecture and public space, History and morphology of cities, Conservation and regeneration of communities

Publications and International Conference Papers:

1. Namiho Tanaka; Hidetoshi Maeda; Urban Block Parks in Tokyo Central, Summaries of Technical Papers. Annual Meeting; 2015; Tokai University. Architectural Institute of Japan. (in Japanese)
2. Hidetoshi Maeda; Urban Design Center -Public-private-academic collaboration in spatial design and management-, Summaries of Technical Papers. Annual Meeting; 2015; Tokai University. Architectural Institute of Japan. (in Japanese)
3. Haruka Nakamura; Hidetoshi Maeda; Modernization of Feudal Post Towns, Summaries of Technical Papers. Annual Meeting; 2014; University of Kobe. Architectural Institute of Japan. (in Japanese)
4. Yuki Kasahara; Hidetoshi Maeda; Revitalization of Riverside Town, Summaries of Technical Papers. Annual Meeting; 2014; University of Kobe. Architectural Institute of Japan. (in Japanese)
5. Hidetoshi Maeda; Urban Design in Architecture, Poster Session, Design of Excellence, 5th International Congress; 2013; Shibaura Institute of Technology. International Association of Societies of Design Research.
6. Masashi Takada; Hidetoshi Maeda; Conservation of Scattered Historical Spaces, Summaries of Technical Papers. Annual Meeting; 2013; University of Hokkaido. Architectural Institute of Japan. (in Japanese)
7. Hidetoshi Maeda; Arata Endo; Taku Nohara; Daisuke Abe; Takefumi Kurose; Urban Design Center: Open Style Urban Design. Riko Tosho; 2012. (in Japanese)
8. Shingo Sekiya; Hidetoshi Maeda; Atushi Deguchi; Municipal Urban Design Development in Professional Training and Advisory Body, AIJ Journal of Technology and Design. 2012;(40):1074-1084. (in Japanese)

9. Shingo Sekiya; Hidetoshi Maeda; Daisuke Abe; Atushi Deguchi; Urban Information Centers in EU Cities, Journal of Architecture and Planning. 2012; (676): 1397-1404. (in Japanese)
10. Shingo Sekiya; Arata Endo; Hidetoshi Maeda; Yukio Nishimura; Regional Center Organized by Society of Architects, Journal of Architecture and Planning. 2011; (667): 1659-1666. (in Japanese)
11. Taizo Taniguchi; Hidetoshi Maeda; Hitoshi Kuwata; Michihiko Shinozaki; Architecture and Urban Design Course at Shibaura Institute of Technology, Exhibition of Architectural Universities, The 24th World Congress of Architecture; 2011; Tokyo, The International Union of Architects.
12. Hidetoshi Maeda; Open style urban design on public-private-academic collaboration, The 11th International Congress; 2011/9/21; Tokyo. Asian Planning Schools Association.
13. Hidetoshi Maeda; Makuhari Newtown, Urban Development in Japan: 60 Best Planning Practices. The City Planning Institute Japan; 2011. (in Japanese)
14. Hidetoshi Maeda; Urban Redevelopment and College Campuses, The New Dimensions of Campus Planning. Architectural Institute of Japan; 2011. (in Japanese)
15. Hidetoshi Maeda; History of Architecture and Urbanism, Introduction to Engineering and Design. Shibaura Institute of Technology College of Engineering and Design. Miki Shobo; 2011. (in Japanese)
16. Hidetoshi Maeda; An Empirical Consideration of Urban Design Center, Journal of Architecture and Planning. 2010; 75(655): 2203-2212. (in Japanese)
17. Hidetoshi Maeda; Takeru Kitazawa; Yukari Niwa; Hiroo Tanaka; Mako Matsuo; Saori Kashihara; Urban design center on public-private-academic partnership in small local city - Urban Design Center Tamura, Tamura city, Fukushima prefecture, AIJ Journal of Technology and Design. 2010;16(32):339-344. (in Japanese)
18. Hidetoshi Maeda; Takeru Kitazawa; Tsuyoshi Seike; Tatsurou Sasaki; Yoko Kitsuda; Yukari Niwa; Small public space with prefabricated units: An experiment at Kashiwa-no-ha District, Kashiwa City, Chiba prefecture, AIJ Journal of Technology and Design. 2009; 15(29):189-194. (in Japanese)
19. Hidetoshi Maeda; Takeru Kitazawa; Yukari Niwa; A start of design center on public-private-academic partnership first year of urban design center Kashiwa-No-Ha,

AIJ Journal of Technology and Design. 2008; 14(27):291-296. (in Japanese)

20. Hidetoshi Maeda; A Practice of Urban Design in Urban Development Project, Journal of Architecture and Planning. 2007;(612):107-114. (in Japanese)

21. Hidetoshi Maeda; Planning and Design of Urban Space Based on Correlation with Building, Streets and Open Space, Reports of the City Planning Institute of Japan. 2006; 41(2):25-32. (in Japanese)
22. Hidetoshi Maeda; Urban Design of Housing Blocks with Street Wall and Courtyard, Journal of Architecture and Planning. 2006; (606):99-106. (in Japanese)
23. Hidetoshi Maeda; A Practice of Design Coordination Towards Urban Architecture, Journal of Architecture and Planning. 2006; (606):123-130. (in Japanese)
24. Hidetoshi Maeda; A Practice of Urban Design Education in Undergraduate Studio of Architecture and Planning, AIJ Journal of Technology and Design. 2006; (24):439-444. (in Japanese)

Other Features:

Doctor of Engineering, The University of Tokyo, 2005
Professional Engineer Japan, Civil Engineering, Urban & Regional Planning, 2001
Registered Architect Japan, 1997
Member, Architectural Institute of Japan
Member, The City Planning Institute of Japan

Website http://murbanism.net
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-Architecture-

MINAMI, Kazunobu Ph.D (University of Tokyo), S.M.Arch (MIT)

Field of Interest:	Architectural Design Theory and Method
Title of Courses:	Advanced Research Program on Regional Environmental Design Architectural Planning
Lecture Subject:	Architectural Design Theory and Method Architectural Design Theory and Method -Advanced
Topics for Thesis:	Study on the transformation of the built environment

Publications and International Conference Papers:

1. THE NEW JAPANESE HOUSING POLICY AND RESEARCH AND DEVELPOMENT TO PROMOTE THE LONGER LIFE OF HOUSING, Kazunobu Minami, CIB W104 16th International Conference: OPEN AND SUSTAINABLE BUILDING, pp.65-72, Open and Sustainable Building, May 17-19, 2010, Bilbao, Spain

2. THE NEW JAPANESE HOUSING LAW TO PROMOTE THE LONGER LIFE OF HOUSING AND EXAMPLE OF CHANGES IN THE LAYOUT OF PUBLIC HOUSING OVER 40 YEARS IN JAPAN, Kazunobu Minami, CHANGING ROLES; New Roles, New Challenges, pp.449-455, October 2009, The Netherlands

3. An education of the urban tissue design studio to reorganize the urban environments in downtown Tokyo –A case study of the Shimbashi areas of Tokyo –, Kazunobu MINAMI, pp.91-95, EDUCATION FOR AN OPEN ARCHITECTURE Proceedings of the Joint Conference of CIB W104 and W110, October 20-22, 2008, College of Architecture and Planning Ball State University Muncie, Indiana

4. A Study of the Urban Tissue Design for Reorganizing Urban Environments -A Case Study of the Shimbashi Areas of Tokyo, Kazunobu MINAMI, Building Stock Activation 2007, November 2007

5. A Post-Occupancy Evaluation of Layout Changes Made to KEP Adaptable Housing, Kazunobu Minami, Journal of Asian Architecture and Building Engineering, vol.6, No.2 November 2007, pp.369－373

6. A Study on the Continuous Customization of an adaptable housing by KEP System, Kazunobu Minami, Adaptables2006, TU/e, International Conference On Adaptable Building Structures, July,2006,Vol.1, PP.2-101～106

7. Regeneration of City Space Based on the Continuity of Orders, Kazunobu Minami, Journal of Asian Architecture and Building Engineering, pp.369－373,November 2005

8. Continuity and Regeneration of the Orders in City Space, Kazunobu Minami, Proceedings of the Tenth International Conference on Open Building and Sustainable

Development, Tenth International Conference of CIB W104, September 2004, Paris
9. Whole life appraisal of repair and improvement work costs of post office buildings in Japan, Kazunobu Minami, Construction Management and Economics, volume 22, number 3, pp313-318, Spon Press, the United Kingdom, March 2004
10. Whole Life Cost of Post Offices Based on a Survey of Actual Conditions and Consideration of Investment Correction, Kazunobu Minami, Journal of Facilities Management, Vol. 2 Number 4 2004, Henry Stewart Publications, London, pp382-407
11. Repair and Improvement Work of Post Office Buildings and Reduction of Overall Investment Costs by Lengthening the Life of the Buildings, Kazunobu Minami, The Journal of Asian Architecture and Building Engineering vol. 2, no.1 May 2003
12. Repair and Improvement Work of Post Office Buildings and Reduction of Overall Investment Costs by Lengthening the Life of the Buildings, Kazunobu Minami, The Journal of Asian Architecture and Building Engineering, Vol. 2, No.1, May 2003
13. Research into Repair and Improvement Work of Post Office Buildings by Surveying and Monitoring, Kazunobu Minami, Journal of Architecture and Planning (Transactions of AIJ), Vol. 565, pp.269-275、 2003.3
14. Estimation of Whole Life Cost of Post Offices Based on a Survey of Actual Conditions and Consideration of Investment Correction, Kazunobu Minami, Journal of Architecture and Planning (Transactions of AIJ), Vol. 565, pp. 277-284、2003.3
15. Building a Sustainable “Relationship between Urban Tissue and Buildings”, Kazunobu Minami, Open House International, vol27、No2、69－75、2002.6
16. Open Building in the Netherlands- an evaluation, Kazunobu Minami, Open House International, vol26、No4、59-66、2001.12

Other Features:

Member: Science Council of Japan, Architectural Institute of Japan, CIB, DOCOMOMO International

URL: http://www.minami.arc.shibaura-it.ac.jp/en/Profile/index.html

Awards

·1986 Tucker-Voss Awards, Department of Architecture, School of Architecture and Planning, Massachusetts Institute of Technology

·2000 Chiba Prefecture Architecture and Culture Award

·2001 International Illumination Design Awards, Edwin F. Guth Award for Interior Lighting Design, Special Citation for Innovative Use of Emerging Lamp Technology

·2004 Best paper Award, Paper Competition on the Development and Control of City Architecture, The Architectural Institute of Japan

·2005 Award for the Distinguished Activity of Arts, The City of Aomori

-Architecture-

MIURA, Masao

Field of Interest:	Urban Environment, Building Environment and Architecture
Title of Courses:	Advanced Research Program on Regional Environmental Design Urban Environment Systems
Lecture Subject:	Urban Environment and Building Environment
Topics for Thesis:	Study on Theories and Methods for Urban Environment Improvement

Publications and International Conference Papers:

1. Abdul Azeez Kadar Hamsa, Masao Miura, Shuhei Inokuma and Yosuke Nishimura, Perception Analysis of Living Environment at Taman Melati Residential Areas, Journal of Design and Built Environment(An International Refereed Journal Published by Faculty of Built Environment, University of Malaya), Vol. 7, pp.1-13, 2010
2. Abdul Azeez Kadar Hamsa, Masao Miura, Osamu Sakurai and Sohei Seki, Analysis of Streetlight Illuminance in Residential Areas in Kuala Lumpur, Journal of Asian Architecture and Building Engineering (JAABE), Vol.8, No.2, 547-554, 2009
3. Tetsu Kubota, Masao Miura, Yoshihide Tominaga, Akashi Mochida, Wind tunnel tests on the relationship between building density and pedestrian-level wind velocity: Development of guidelines for realizing acceptable wind environment in residential neighborhoods, Building and Environment(The International Journal of Building Science and its Applications), Vol.43, pp.1699-1708, 2008
4. Abdul Azeez Kadar Hamsa, Masao Miura, Shuhei Inokuma and Yosuke Nishimura, Evaluating the Living Environment in Residential Areas at Taman Melati, Kuala Lumpur, Journal of Asian Architecture and Building Engineering (JAABE), Vol.5, No.2, 377-384, 2006
5. Abdul Azeez Kadar Hamsa, Daiki Sugaya, Masao Miura, Analysis of living environment settings in residential areas in Kuala Lumpur and Putrajaya, Architecture, City, and Environment, Universitat Politecnica de Catalunya Vol.10, No.28, pp.33-56, 2015

Other Features:

-Architecture-

MURAKAMI, Kimiya

Field of Interest:	Building Environmental Engineering
Title of Courses:	Advanced Research Program on Regional Environmental Design
	Research of Building and Community System
Lecture Subject:	Planning of Regional-Energy System and Building Services
Topics for Thesis:	Evaluation Method of Efficiency of Heat Source System

Publications and International Conference Papers:

1. Kimiya Murakami, Ryosuke Okada," Study on the Proper Evaluation of the Efficiency of DHC Systems", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2010(in Japanese)
2. Shohei Ogata, Ryosuke Okada, Kimiya Murakami," Study on the Energy-Saving Effect of the Heat Source Water Supply Network Using Reclaimed Water Constructed in an Existing Urban Area", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2010(in Japanese)
3. Ryosuke Okada, Kimiya Murakami, Toshihiko SUDO, Akira Okagaki, " Investigation of Cooling and Heating Load in Large-scale Office Buildings Part.1 Investigation Outline and Characteristic of Annual Cooling and Heating Load", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2010(in Japanese)
4. Toshihiko SUDO, Ryosuke Okada, Kimiya Murakami, Akira Okagaki, " Investigation of Cooling and Heating Load in Large-scale Office Buildings Part.2 Basic unit analysis cooling and heating load of real buildings and applicability simulation of heat source system", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2010(in Japanese)
5. Ryosuke Okada, Kimiya Murakami," Study on the Proper Evaluation of the Efficiency of DHC Plants which utilize Cogeneration", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2009(in Japanese)
6. Tomoaki Kobayakawa, Kimiya Murakami," Study on Heat Source Water Supply Network as New City's Infrastructure for Energy Supply Part 1; Proposal of Heat Source Water Supply Network and Case Study Models", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2009(in Japanese)

7. Shinta Tanabe, Kimiya Murakami," Study on Heat Source Water Supply Network as New City's Infrastructure for Energy Supply　Part 2; Verification of the Effect in Sewerage Compound Maintenance Type Models", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2009(in Japanese)
8. Yukihide Kobayashi, Kimiya Murakami," Study on Evaluation Method for Energy Efficiency of Energy Systems Part4 ; Evaluation Method for Energy Systems with Waste Energy", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2008(in Japanese)
9. Hirokazu Enomoto, Naoko Kawashima, Kimiya Murakami,"Study on Evaluation Method of Efficiency of Cogeneration-Part1:Arrangement of Object Range of Evaluation and Quality Index for Each Case", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2007(in Japanese)
10. Naoko Kawashima, Hirokazu Enomoto, Kimiya Murakami,"Study on Evaluation Method of Efficiency of Cogeneration-Part2: Total Power and Heat Efficiency Equivalent to Power Output of CGU or CGS", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2007(in Japanese)
11. Kimiya Murakami, Naoko Kawashima, Hirokazu Enomoto, "Study on Evaluation Method of Efficiency of Cogeneration-Part3: The Primary Energy Conversion Method of Electric Power and Waste Heat from CGU, and Influence which the Application has on the Efficiency of Heat Source Systems", Technical Papers of The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan, 2007(in Japanese)
12. Kimiya Murakami, "Study on Evaluation of Combined Heat and Power System-Part4 : Evaluation index of Unit of Combined Heat and Power System-", Summaries of Technical Papers of Annual Meeting Architectural Institute of Japan,2006.(in Japanese)
13. Kimiya Murakami, "Study on Regional Energy Supply System by Cooperation with Public Micro Grid", Summaries of Technical Papers of Annual Meeting Architectural Institute of Japan, 2005. (in Japanese)
14. Kimiya Murakami, "Study on Best Mix of Intensive Mode Power Source and Distributed Power Source in Urban Energy System", Summaries of Technical Papers of Annual Meeting Architectural Institute of Japan, 2005. (in Japanese)
15. Kimiya Murakami, "Study on Steam Pipeline Networking in District Heating and Cooling System", Summaries of Technical Papers of Annual Meeting Architectural Institute of Japan, 2005. (in Japanese)

Other Features:

-Architecture-

NAKAMURA, Hitoshi

Field of Interest:	Urban Planning and Design, Disaster Risk Management Climate Change Adaptation
Title of Courses:	Advanced Research Program on Regional Environmental Design Planning for Urban and Regional Resilience
Lecture Subject:	Spatial Planning for Disaster Risk Reduction
Topics for Thesis:	Land use planning and environmental design for adapting to climate change Environmental land use planning and management Spatial planning for disaster risk reduction Community-based collaborative activities against mega hazards Spatial planning for the super-aged society Seismic resilience of densely built-up areas Community-based recovery processes from the 3.11 earthquake disaster Pre-disaster image training programs for post-disaster urban recovery Inductive development of new urban planning theory on city diversity and resilience

Publications and International Conference Papers:

1. Nakamura H. and Kato T. (2014). Reevaluation of high standard levees along the Arakawa River as upland evacuation areas in the lowlands of Tokyo, Abstracts of the International Conference on Deltas in Times of Climate Change II: 105

2. Nakamura H. and Kato T. (2013). Land use of super levees along the Arakawa River in the low-lying areas of Tokyo, Proceedings of the 12nd International Symposium on New Technologies for Urban Safety of Mega Cities in Asia (USMCA2013): A-7

3. Nakamura H., Shiozaki Y. and Kato T. (2013). Super levees along the Arakawa River in Tokyo: Evaluation from the viewpoint of spatial planning in a low-lying area, Extended summaries of the International Conference on Flood Resilience: Experiences in Asia and Europe (ICFR2013): 13-14

4. Kato T., Nakamura H. and Shiozaki Y. (2013). Community-based activities for the large-scale flood hazard in a low-lying area: the case of Shinkoiwa in Tokyo, Extended summaries of the International Conference on Flood Resilience: Experiences in Asia and Europe (ICFR2013): 129-130

5. Shiozaki Y., Kato T. and Nakamura H. (2013). Conceptual model of city resilience to large-scale flooding in a low-lying area in Tokyo, Extended summaries of the International Conference on Flood Resilience (ICFR2013): Experiences in Asia and Europe: 141-142
6. Nakamura H. and Kato T. (2013). The need for reevaluation of super levees as the upland evacuation area in the large-scale flood in the low-lying area, proceedings of International Symposium on City Planning 2013: 17-20
7. Nakamura H., Shiozaki Y. and Kato T. (2012). A preliminary survey of flood map types in Europe, Institute of Industrial Science, the University of Tokyo, SEISAN-KENKYU 64(4): 461-463
8. Nakamura, H. (2012). Urban planning system and machizukuri in Tokyo, Center for Sustainable Urban Regeneration, The University of Tokyo, SUR 23: 66-71
9. Nakamura H. and Yamamoto T. (2012). The distance between the outer walls along narrow roads in Kyojima, Tokyo, Proceedings of the 9th International Symposium on Architectural Interchanges in Asia (ISAIA 2012): G5-7
10. Hori, H., Nakamura, H. and Kato, T. (2012). The damages of land liquefaction by the 3.11 Eastern: Japan Great Earthquake Disaster and public financial support in Ibaraki prefecture, Japan, Proceedings of the 15th World Conference on Earthquake Engineering
11. Nakamura, H. and Hino, K. (2011). The Great East Japan Earthquake: Features of the Damage and Reconstruction Efforts, the City Planning Institute of Japan, CPIJ Newsletter 35: 7-16
12. Nakamura, H. (2008). "The incremental improvement of the area densely built-up with old wooden houses in Tokyo", Vulnerable Cities: Realities, Innovations and Strategies, cSUR-UT: Library for Sustainable Urban Regeneration 8, Springer, pp.169-185

Other Features:

The Laboratory of Planning for Urban and Regional Resilience was started by Dr. H. Nakamura in April 2012, in pursuit of more resilient way of spatial planning and design.

Research projects in the laboratory focus on multidisciplinary studies across architectural, environmental, social and urban-engineering fields with an emphasis on how to build a safe, resilient, diverse and vibrant city - rather than disaster-protected but unlivable area.

English Website: http://www.planktonik.com/nakamurajin/english/

-Architecture-

SHINOZAKI, Michihiko

Field of Interest:	Design Science in Architecture and Urban Studies
Title of Courses:	Advanced Research Program on Regional Environmental Design
	Environmental Design
Lecture Subject:	Urban Planning and Design
Topics for Thesis:	Sustainable Urban Design in Asian Cities,
	Visual Landscape Assessment,
	Design Computing in Urban Morphological Study

Publications and International Conference Papers:

1. Saito K., Ismail S., Shinozaki M., "Scenario-based Application of Neighborhood Greening Methods towards Mitigating Urban Heat Environment in a World Heritage Site – Malacca, Malaysia", 13th International Congress of Asian Planning Schools Association, 2015
2. Saito K., Ismail S., Shinozaki M., "An Analytical Approach Toward Future Neighborhood Green Corridor for Enhancing Walkability in the context of World Heritage Site - Malacca, Malaysia", *The First International Conference of International Alliance for Sustainable Urbanization and Regeneration*, Kashiwanoha, 2014.11
3. Saito K., Ismail S., Shinozaki M., "A Study Towards Green Neighborhood Approaches in the Malacca World Heritage Site, Malaysia: Quantitative Analysis of Relationship between Historical Landscape Components and Green Spaces distribution", *12th International Congress of Asian Planning Schools Association,* Taipei, 2013.11
4. Saito K., Ismail S., Mohd Hisyam R., Shinozaki M., "Quantitative Study on Green Coverage Ratio and Its Effectiveness of Ambient Temperature Reduction in Surrounding Terraced House – Environmental-Friendly Housing Area Design Methods in Tropic Southeast Asia Part 2", *Journal of Architecture, Planning and Environmental Engineering*, Architectural Institute of Japan, No.689, pp.1561-1568, 2013.7 (in Japanese)
5. Aswin I., Shinozaki, M., "Computing level of privacy in a virtual environment", *International Journal of Architectural Computing*, Vol.11, No.1, pp.65-86, 2013.3
6. Aswin I., Shinozaki, M., "Computational Models for Measuring Spatial Quality of Interior Design in Virtual Environment", *Building and Environment*, Vol. 49, pp.67-85, 2012.3 Elsevier
7. Aswin I., Shinozaki, M., "Elaboration Model for Mapping Architectural Space", *Journal of Asian Architecture and Building Engineering*, Vol.10, No.2, 2011.11 (accepted)
8. Saito K., Ismail S., Mohd Hisyam R., Shinozaki M., "Quantitative Study of Relationship Between Urban Structure and Ambient Microclimate in new Developed Housing Areas – Enviromental-Friendly Housing Area Design Methods in Tropic Southeast Asia Part 1", *Journal of Architecture, Planning and Environmental Engineering*, Architectural Institute of Japan, No.664, pp.1155-1162, 2011.6 (in Japanese)
9. Akbar A., Shinozaki, M., "The Barrier of Innovation Adoption on Urban Household Sanitation in Indonesia", *International Journals of Engineering & Sciences*, Vol.11, Issue 1, 2011.2
10. Gero J.S. Ed., Aswin I., Shinozaki, M., "Approxicimate Enclosed Space Using Virtual Agent", *Design Computing and Cognition '10*, Springer, pp.285-303, 2011.1
11. Aswin I., Shinozaki, M., "Experimental and Computation Method on Personality Impact in Architectural Design", *ACADIA 2010 Conference*, 2010.10

12. Mohd Hisyam R., Shinozaki, M., “Physical Environment and Needs of Community in High Tech Park development: Case Studies of Cyberjaya, Malaysia and Tsukuba Science City, Japan”, *International Society of Habitat Engineering, Journal of Habitat Engineering*, Vol.1, No.1, pp.249-262, 2010.3
13. Mohd. Hisyam, R., Shinozaki, M., “High Tech Parks: The Built Environment, Sustainability and Their Place Making. A Comparative Case Study between Cyberjaya in Malaysia and Tsukuba Science City in Japan”, *XXVI IASP World Conference on Science and Technology* Parks, Raleigh, 2009.6
14. Aswin I., Shinozaki, M., “The Investigation on Using Unity3D Game Engine in Urban Design Study”, *ITB Journal of Information and Communication Technology*, Vol. 3C No.1, pp.1-18, 2009
15. Aswin, I., Shinozaki, M., “New Framework of Behavioral-based Simulation for Spatial Design Assessment”, *11th International Conference on Computers in Urban Planning and Urban Management*, Hong Kong, 2009.6
16. Saito, K., Shinozaki, M., “Urban Landscape Visualization and Analysis for Buildings Skyline Study using 3DGIS Technology”, *The 12th International Conference of Computer on Civil and Building Engineering*, Proceedings (Ref. No. 396), Beijing, 2008.12
17. Nafisa, H., Shinozaki, M., “The Understanding of Landscape Pattern for Regional Conservation Planning, Case Study: Hiki Gun, Saitama”, *Asia GIS 2008*, Proceedings, Busan, 2008.9
18. Aswin, I., Shinozaki, M., “Constructing Virtual Urban Environment Using Game Technology, A Case Study of Tokyo Yaesu Downtown Development Plan” *26th eCAADe Conference*, Proceedings ISBN 978-0-9541183-7-2, pp.359-366, Antwerpen, 2008 .9
19. Mohd. Hisyam, R., Shinozaki, M., “Sustainable Development: A Lesson From High Tech Parks and Case Study of Cyberjaya, Malaysia”, *Hawaii International Conference for Social Sciences*, Proceedings, Hawaii, 2008.6
20. Shinozaki, M., “Virtual 3D Models in Urban Design”, Virtual Geographic Environment 2008, Hong Kong, 2008.1
21. Mohd. Hisyam, R. and Shinozaki, M., “High Tech Parks: Industial Garden Complexes”, *International Conference on Built Environment in Developing Country*, Proceedings, Penang, 2007.12
22. Shinozaki, M., Saito, K. and Hitaka, K., “Digital Platform for Collaborative Urban Landscape Design using Google Earth”, *REAL CORP 007*, Proceedings, ISBN:978-39502139-2-8 (CD-ROM); ISBN:978-39502139-3-5, Vienna, 2007.5
23. Shinozaki, M., Saito, K. and Hitaka, K., “Virtual Fukuoka”, *The 1st SEATUC Symposium Proceedings*, South East Asia Technical University Consortium, Bangkok, 2007.2
24. Saito, K., Shinozaki, M. and Kuwata, H., “Performance-oriented bulk control system for securing minimum daylight access to the possible adjacent buildings Part2”, *Journal of Architecture, Planning and Environmental Engineering*, Architectural Institute of Japan, No.611, 2007.1 (in Japanese)
25. Shinozaki, M., Kuwata, H. and Saito, K., “Performance-oriented bulk control system for securing minimum daylight access to the possible adjacent buildings Part1”, *Journal of Architecture, Planning and Environmental Engineering*, Architectural Institute of Japan, No.603, 2006.5 (in Japanese)

Other Features:

Deputy Chair, City Planning Council, Koto Ward, Tokyo
Deputy Chair, Urban Design Council, Sumida Ward, Tokyo
Deputy Chair, Landscape Design Committee, Kazusa Academia Park, Chiba Pref.
Director, Urban Simulation Lab., Tokyo
Member, Committee for CASBEE/Urban Development, Institute for Building Environment and Energy Conservation