Aug. 20 (Wed.) Session 1A

1A01	**Acoustical Measurement**	9:00	10:40	Room01
	Chair: Wataru Mitsuhashi (UEC)			

1A01-1	Application of Ceramic Piezoelectric Device to Audio Speaker	9:00	9:20	

*Teruo Horikawa (Hosei Univ.), Kazuyuki Kobayashi (Hosei Univ.)

1A01-2	Measurement of Infrasound Generated by Wind Turbine Generator	9:20	9:40	

*Takanao Sugimoto (Hosei Univ.), Kenji Koyama (Hosei Univ.), Yosuke Kurihara (Hosei Univ.), Kajiro Watanabe (Hosei Univ.)

1A01-3	Speech Signal Captured by PVDF Sensor	9:40	10:00	

*Rajkishore Prasad (BRABU), Takuji Koike (UEC), Fumitoshi Matsuno (UEC)

1A01-4	A Study on the Property of Blind Source Separation for Preprocessing of an Acoustic Echo Cancellar	10:00	10:20	

*Yoshihiro Sakai (Tsuyama N.C.T.), Wataru Mitsuhashi (UEC)

1A01-5	Steering of Camera by Stepper Motor Towards Active Speaker Using Microphone Array	10:20	10:40	

*Manoj Kumar Mukul(UEC)

1A02	**Image Processing (1)**	9:00	10:40	Room02
	Chair: Xin Lu (Iwate Univ.)			

1A02-1	Genetic Watermarking Based on Texture Analysis	9:00	9:20	

*Somying Promcharoen (KMITL), Yuttapong Rangsanseri (KMITL)

1A02-2	Clustered Microcalcification Classification Using CC-MLO-View Corresponding Shape and Distribution Features	9:20	9:40	

*Werapon Chiracharit (KMUTT), Rachada Kongkachandra (TU)

1A02-3	A Match of X-ray Teeth Films Using Image Processing Based on Special Features of Teeth	9:40	10:00	

*Supaporn Kiattisin (UTCC), Adisorn Leelasantith(UTCC), Kosin Chamnongthai (Faculty of Engineering,), Kohji Higuchi (UEC)

1A02-4	Duplicate a Key Using Image Processing.	10:00	10:20	

*Montri - Cheewanantakul (KMITL)

1A02-5	Firearm Identification Based on Rotation Invariant Feature of Cartridge Case	10:20	10:40	

Chawarit Prasit (KMITL), *Takenobu Matsuura (Tokai Univ.)

1A03	**Signal Processing (1)**	9:00	11:00	Room03
	Chair: Masaaki Nagahara (Kyoto Univ.)			

1A03-1	A Simplified Method for Online Acoustic Feedback Path Modeling in Multichannel Active Noise Control Systems	9:00	9:20	

*Muhammad Tahir Akhtar (UEC), Masahide Abe (Tohoku Univ.), Masayuki Kawamata (Tohoku Univ.), Mitsuhashi Wataru (UEC)

1A03-2	Low-Component-Count Universal Filter Using Only Two CFOAs	9:20	9:40	

*Tattaya Pukkalanun (KMITL), Danucha Prasertsom (KMITL), Worapong Tangsrirat (KMITL)

1A03-3	A Microstrip Diplexer Filter Using Stepped-Impedance Resonators	9:40	10:00	

*Duangrat Eungdamrong (Sirindhorn International Institute of Technology), Duangporn Puttadilok (Sirindhorn International Institute of Technology), Smith Amornsaensak (Sirindhorn International Institute of Technology)

1A03-4	Fuzzy-Tuned Weights for Kernel-Based Linear Interpolation	10:00	10:20	

Hsiang-Chieh Chen (National Central Univ.), *Wen-June Wang (National Taipei Univ. of Tech.), Chung-Hsun Sun (National Central Univ.)

1A03-5	A Design Method of Fluency FIR Filters with Steep Cut-Off	10:20	10:40	

*Shuji Kawasaki (Univ. of Tsukuba), Kazuki Katagishi (Univ. of Tsukuba), Kazuo Toraichi (Univ. of Tsukuba), Hitomi Murakami (Seikei Univ.)

1A03-6	On-Line Writier Dependent Character Recognition for Khmer Based on FIR System Characterizing Handwriting Motion	10:40	11:00	

Pitak Thumwarin (KMITL), *Sochenda Khem (KMITL), Kanok Janchitraponvej (KMITL), Takenobu Matsuura (Tokai Univ.)

1A04	**Network Systems**	9:00	10:40	Room04
	Chair: Mitsunori Fujita (UEC)			

1A04-1	Trans-Window Free Space Optics Transmission System	9:00	9:20	

*Takeshi Tsujimura (NTT), Koichi Yoshida (NTT), Toshio Kurashima (NTT), Masahiko Mikawa (Tsukuba Univ.)

1A04-2	Development of Real-Time Ethernet Based I/O Network	9:20	9:40	

Toshifumi Akima (TOSHIBA Co.), *Koji Shibata (TOSHIBA Co.)

1A04-3	Computing Resource Management of Field Overlay Architecture for Controllers	9:40	10:00	

*Eiji Nagai (Yokogawa Electric Co.), Kazuyuki Ito (Yokogawa Electric Co.), Takeshi Ohno (Yokogawa Electric Co.)

1A04-4	Application of Particle Filter to Autonomous Navigation System for Outdoor Environment	10:00	10:20	

*Wataru Sawabe (Hosei Univ.), Yoshitaka Goto (Hosei Univ.), Kazuyuki Kobayashi (Hosei Univ.), Kajiro Watanabe (Hosei Univ.)

1A04-5	Keyword Search over Hybrid XML-Relational Databases	10:20	10:40	

*Liru Zhang (UEC), Tadashi Ohmori (UEC), Mamoru Hoshi (UEC)

1A05	**Intelligent Systems (1)**	9:00	10:40	Room05
	Chair: Fu-Shiung Hsieh (Chaoyang Univ. of Technology), Kosuke Sekiyama (Nagoya Univ.)			

1A05-1	Model based Collaborative Problem Solving for Multi-Agent Manufacturing Systems	9:00	9:20	

*Fu-Shiung Hsieh (Chaoyang Univ. of Technology), Shan-Yu Chen (Chaoyang Univ. of Technology)

1A05-2	An Alpha-Wave-Based Binaural Beat Sound Control System Using Fuzzy Logic and Autoregressive Forecasting Model	9:20	9:40	

*Sittapong Settapat (Shibaura Institute of Technology), Michiko Ohkura (Shibaura Institute of Technology)

1A05-3	Dynamic Description of Event on Desktop Environment Based on Cognitive Ontology	9:40	10:00	

*Yuki Wakuda (Univ. of Tokyo), Masahiro Kojima (Nagoya Univ.), Kosuke Sekiyama (Nagoya Univ.), Toshio Fukuda (Nagoya Univ.)

1A05-4 A Nonlinear Semantic Model for Selecting Association Rules for Users	10:00	10:20	
*Guangfei Yang (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)			

1A05-5 Multi-Car Elevator System Using Genetic Network Programming	10:20	10:40	
*Lu Yu (Waseda Univ.), Jin Zhou (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.), Sandor Markon (Fujitec Co. Ltd.)			

1A06 **Autonomous Decentralized Systems**	9:00	10:40	Room06
Chair: Hiroyuki Kobayashi (Osaka Institute of Technology), Satoshi Ito (Gifu Univ.)			

1A06-1 Learning Scheme of Multiple-Patterns in Quadruped Locomotion Using CPG Model	9:00	9:20	
*Satoshi Ito (Gifu Univ.), Yuuichi Sahashi (Gifu Univ.), Minoru Sasaki (Gifu Univ.)			

1A06-2 ``Universal Unipods'' --- A New Autonomous Decentralized Multi-Pedal Robot System	9:20	9:40	
*Hiroyuki Kobayashi (Osaka Inst. of Technology), Hiroshi Hashimoto (Advanced Inst. of Industrial Technology)			

1A06-3 A Termite Internal State Model for Elucidating Caste Differentiation	9:40	10:00	
*Masaki Ikeda (Univ. of Tokyo), Yusuke Ikemoto (Univ. of Tokyo), Toru Miura (Hokkaido Univ.), Hajime Asama (Univ. of Tokyo)			

1A06-4 Idle Cage Assignment Algorithm-Embedded Controller of Dould-Deck Elevator Systems Using Genetic Network Programming	10:00	10:20	
*Jin Zhou (Waseda Univ.), Lu Yu (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.), Sandor Markon (FUJITEC Co.Ltd.)			

1A06-5 Evaluation of Multi-Objective Genetic Algorithm for RoboCupSoccer Team Evolution	10:20	10:40	
*Hidehiko Okada (Kyoto Sangyo Univ.), Takuya Takagi (Kyoto Sangyo Univ.)			

1A07 **Field Robots**	9:00	10:40	Room07
Chair: Min Cheol LEE (Pusan National Univ.)			

1A07-1 Recognition of Corrosion State Based on Omnidirectional Mobile Robot for Inspection of CAS for Oil Tanker	9:00	9:20	
*Seung Heui Lee (Pusan National Univ.), Yong Jae Eum (Pusan National Univ.), Min Cheol Lee (Pusan National Univ.)			

1A07-2 Novel Climbing Method of Pruning Robot	9:20	9:40	
Haruhisa Kawasaki (Gifu Univ.), *Suguru Murakami (Gifu Univ.), Hideki Kachi (Gifu Univ.), Satoshi Ueki (Gifu Univ.)			

1A07-3 Development of a Multilpe Parallel Link Rotor for Flying Robots	9:40	10:00	
*Shin Hasegawa (UEC), Kazuo Tanaka (UEC), Hiroshi Ohtake (UEC)			

1A07-4 Development of a Variable-Wing Mechanism Based on Flapping Motion of Birds	10:00	10:20	
*Taku Yokoyama (UEC), Kazuo Tanaka (UEC), Hiroshi Ohtake (UEC)			

1A07-5 Autonomous Flight Control of Flapping-of-Wings Robot Using GPS	10:20	10:40	
*Hiromasa Ueno (UEC), Hiroshi Ohtake (UEC), Kazuo Tanaka (UEC)			

1A08 **VR - Auditory and Visual Information**	9:00	10:40	Room08
Chair: Masanori Idesawa (UEC)			

1A08-1 Simultaneous Generation of Multiple Three-Dimensional Sound Spot by Using 512 ch Panel Loudspeaker Array	9:00	9:20	
*Kazuhiko Shinagawa (TUS), Yuki Ohtomo (TUS), Hiroshi Takemura (TUS), Hiroshi Mizoguchi (TUS)			

1A08-2 Tracking Control of Sound Spot around Head Using Separability Filter	9:20	9:40	
*Kunihiro Mitsuhashi (Tokyo Univ. of Science), Hiroshi Takemura (Tokyo Univ. of Science), Hiroshi Mizoguchi (Tokyo Univ. of Science)			

1A08-3 Perception of Steady Velocity Field Produced by Cyclic Display of Multi-Phase Images	9:40	10:00	
*Bohui Wang (UEC), Masanori Idesawa(UEC), Qin wang (UEC)			

1A08-4 Volume Perception in Motion Parallax	10:00	10:20	
*Xiaohong Cheng (UEC), Masanori Idesawa (UEC), Qin Wang (UEC)			

1A08-5 A Study on Approaching Motion Perception in Periphery with Binocular Viewing	10:20	10:40	
*Lei Wang (UEC), Masanori Idesawa (UEC), Qin Wang (UEC)			

1A09 **Adaptive Control**	9:00	10:40	Room09
Chair: Taworn Benjanarasuth (KMITL)			

1A09-1 Adaptive Control of a Class of Linear Hybrid System	9:00	9:20	
*Kazuo Mutoh (Keio Univ.), Akira Sano (Keio Univ.)			

1A09-2 Adaptive Control Design Approximating Solution of Hamilton-Jacobi-Bellman Equation for Nonlinear Strict-Feedback System with Uncertainties	9:20	9:40	
*Keizo Okano (UEC), Kojiro Hagino (UEC)			

1A09-3 Experimental Study on Servo Adaptive Pitch Control of a Model Helicopter	9:40	10:00	
*Taworn Benjanarasuth (KMITL)			

1A09-4 A Two-Degree-of-Freedom Design of Simple Adaptive Servosystems	10:00	10:20	
*Yasumasa Fujisaki (Kobe Univ.)			

1A09-5 Adaptive Two Degree-of-Freedom Vibration Control for Flexible Plate with Piezoelectric Patches	10:20	10:40	
*Hiroshi Okumura (Keio Univ.), Ryohsuke Emi (Keio Univ.), Akira Sano (Keio Univ.)			

1A10 **Power Systems Control**	9:00	10:40	Room10
Chair: Haider Abbas Mohamed (Univ. of Malaya), Satean Tunyasrirut (Pathumwan Institute of Technology)			

1A10-1 Power System Stabilizer using Local and Remote Signals	9:00	9:20	
*Pei-Hwa Huang (National Taiwan Ocean Univ.), Shao-Chiang Ding(National Taiwan Ocean Univ.), Ta-Hsiu Tseng(National Taiwan Ocean Univ.)			

1A10-2 Load Frequency Controller Design for Iraqi National Super Grid System Using Fuzzy Logic Controller	9:20	9:40	

*Haider Abbas F. Mohamed (Univ. of Malaya), Lokman H. Hassan (Univ. of Malaya), Mahmoud Moghavvemi (Univ. of Malaya), Soo Siang Yang (Univ. of Malaya)

1A10-3	Current and White-Balance Controls of an RGB LED Backlight Power Supply System	9:40	10:00	

*Shih-Jen Cheng (National Taiwan Tech), Huang-Jen Chiu (National Taiwan Tech), Chun-Jen Yao (National Taiwan Tech), Tai-Hung Wang (National Taiwan Tech), Yu-Kang Lo (National Taiwan Tech)

1A10-4	Inverse Additive Perturbation-Based Optimization of Robust PSS in an Interconnected Power System with Wind Farms	10:00	10:20	

*Cuk Supriyadi Ali Nandar (KMITL), Issarachai Ngamroo (KMITL), Anantawat Kunakorn (KMITL), Sanchai Dechanupaprittha (Kyusu Inst. of Tech), Masayuki Watanabe (Kyusu Inst. of Tech.), Yasunori Mitani (Kyusu Inst. of Tech.), Takuhei Hashiguchi (Kyusu Univ.), Tadahiro Goda (Kyusu Univ.)

1A10-5	Comparison Power Quality of the Voltage Source Inverter Type SVPWM and SPWM Technique for Induction Motor Drive	10:20	10:40	

*Satean Tunyasrirut (Pathumwan Institute of Technology), Sompong Srilad (Pathumwan Institute of Technology), Tianchai Suksri (Pathumwan Institute of Technology)

1A11	Unmanned Aerial Vehicles	9:00	10:40	Room11

Chair: Kazunori Sakurama (UEC)

1A11-1	Time-To-Go Estimation Filter for Anti-Ship Missile Application	9:00	9:20	

*Ick-Ho Whang (Agency for Defense Development), Won-Sang Ra (Agency for Defense Development)

1A11-2	Robust Weighted Least Squares Range Estimator for UAV Applications	9:20	9:40	

Won-Sang Ra (ADD), *Ick-Ho Whang (ADD), Jin Bae Park (Yonsei Univ.)

1A11-3	QB Complex System for Control Design for UAV	9:40	10:00	

*Aleksander Nawrat (Silesian Univ. of Technology)

1A11-4	Autonomous Cooperative UAV Control Platform	10:00	10:20	

Ernest Earon (Quanser Inc), Norman Li (Univ. of Toronto), Cameron Fulford (Quanser Inc.), Rajibul Huq (Quanser Inc), Jacob Apkarian (Quanser Inc), Camille Alain Rabbath (Quanser Inc), *Mahyar Fotoohi (Quanser Inc)

1A11-5	SR-UKF-Based Fault Adaptive Control Algorithm for Rotorcraft UAV	10:20	10:40	

*Juntong Qi (SIA), Jianda Han (SIA)

1A12	PID and Model Predictive Control	9:00	9:40	Room12

Chair: Yoshifumi Okuyama (Humanitech Laboratory)

1A12-1	Synthesis of Multivariable PID Control Systems Based on the Estimation of Output Derivative	9:00	9:20	

Yoshitaka Matsuda (Kyoto Institute of Technology), Nagato Ohse (Kyoto Institute of Technology), *Akihiko Maejima(Kyoto Institute of Technology), Masayuki Maeda(Kyoto Institute of Technology)

1A12-2	Discretized PID Control on an Integer Grid	9:20	9:40	

*Yoshifumi Okuyama (Humanitech Lab.)

1A13	OS: Advanced Systems for Safety of Industry	9:00	11:00	Room13

Organizer: Akira Inoue (Okayama Univ.)
Chair: Akira Inoue (Okayama Univ.), Masami Konishi (Okayama Univ.)

1A13-1	Neuro Based Acoustic Diagnosis of Gas Leakage in Pipeline	9:00	9:20	

*Akihiro Shibata (Okayama Univ.), Masami Konishi (Okayama Univ.), Yoshihiro Abe (Okayama Univ.), Ryuusaku Hasegawa (Nippon Petroleum efinery Company), Masanori Watanabe (Nippon Petroleum efinery Company), Hiroaki Kamijo (Nippon Petroleum efinery Company)

1A13-2	Coordination of product planning and transportation scheduling for multi level structured factory	9:20	9:40	

*Yosuke Ozoe (Okayama Univ.), Masami Konishi (Okayama Univ.), Jun Imai (Okayama Univ.)

1A13-3	Operation Support in Anomalous Plant Conditions Using PKY Knowledge	9:40	10:00	

*Hiroyuki Fujii (Okayama Univ.), Akio Gofuku (Okayama Univ.), Tadashi Ago (Okayama Univ.)

1A13-4	Operator based decentralized nonlinear control system design of a thermal system	10:00	10:20	

*Mingcong Deng (Okayama Univ.), Akira Inoue (Okayama Univ.), Kazunori Edahiro (Okayama Univ.)

1A13-5	Development of a microreactor for rapid analysis of chemical reaction kinetics	10:20	10:40	

*Akinori Muto (Okayama Univ.), Masa-aki Ebata (Okayama Univ.), Akira Inoue (Okayama Univ.)

1A13-6	Support System for Disaster Relief Operations	10:40	11:00	

Yasuhiro Kajihara (Tokyo Metropolitan Unv.), *Seiko Taki (Tokyo Metropolitan Unv.), Shuhei Nishimoto (Tokyo Metropolitan Institute of Tech.)

1A14	OS: Application of Optical Technique to Advanced Electronic Measurement	8:40	11:00	Room14

Organizer: Masanari Taniguichi (Tohoku Bunka Gakuen Univ.)
Chair: Masanari Taniguchi (Tohoku Bunka Gakuen Univ.), Tatuya Zama (AIST)

1A14-1	A New Method for Determining Absolute Spectral Radiant Power of Ultraviolet and Vacuum Ultraviolet Radiation	8:40	9:00	

*Tatsuya Zama (AIST, NMIJ), Ichiro Saito (AIST, NMIJ)

1A14-2	A UV Sensor IC based on SOI Tech. for UV care applications	9:00	9:20	

*Hiroyuki Yamada (Oki Electric Industry), Noriyuki Miura (Oki Electric Industry), Masao Okihara (Miyagi Oki Electric), Kunio Hinohara (Oki Electric Industry)

1A14-3	Non-invasive Blood Glucose Measurement Based on ATR Infrared Spectroscopy	9:20	9:40	

*Hiroaki Ishizawa (Shinshu Univ.), Akinobu Muro (Shinshu Univ.), Tomohiro Takano (Shinshu Univ.), Kazuya Honda (Shinshu Univ.), Hiroyuki Kanai (Shinshu Univ.)

1A14-4	1 kHz Measurement by Using Intelligent Vision System - Stereovision experiment on Column Parallel Vision system: CPV4 -	9:40	10:00	

*Haruyoshi Toyoda (Hamamatsu Photonics k.K.), Munemori Takumi (Hamamatsu Photonics k.K.), Naohisa Mukozaka (Hamamatsu Photonics k.K.), Masatoshi Ishikawa (Univ. of Tokyo)

1A14-5	Distributed Optical Fiber Sensors and ir Applications	10:00	10:20	

*Shoji Adachi (Yokogawa Electric Co.)

1A14-6	A Novel Optical Fiber Temperature and Pressure Sensing System	10:20	10:40	

*Yasutoshi Komatsu (Watanabe Co., Ltd.), Seiichi Onoda (Watanabe Co., Ltd.)

1A14-7	Application of Holography to Evaluation of Printed Circuit Board Connector Due to rmal Stress	10:40	11:00	

Hiromichi Kubota (Tohoku Bunka Gakuen Univ.), *Masanari Taniguchi (Tohoku Bunka Gakuen Univ.), Shosuke Suzuki (Tohoku Bunka Gakuen Univ.), Tasuku Takagi (Tohoku Bunka Gakuen Univ.)

1A15 OS: Intelligent Computation and Control 9:00 11:00 Room15

Organizer: Jyh-Horng Chou (National Kaohsiung First Univ. of Sci. & Tech.), Tung-Kuan Liu (National Kaohsiung First Univ. of Sci. & Tech.)

Chair: Jyh-Horng Chou (National Kaohsiung First Univ. of Science and Tech.), Tung-Kuan Liu (National Kaohsiung First Univ. of Science and Tech.)

1A15-1 Optimal Process Design Using Soft Computing Approaches 9:00 9:20

*Jinn-Tsong Tsai (National Pingtung Univ. of Education), Wen-Hsien Ho (Kaohsiung Medical Univ.), Gong-Ming Hsu (Metal Industries Research and Development Centre), Tung-Kuan Liu (National Kaohsiung First Univ. of Science and Technolog), Jyh-Horng Chou (National Kaohsiung First Univ. of Science and Technolog)

1A15-2 Fuzzy Logic ory with Applications to Hybrid GPS and TDOA/AOA Positioning System 9:20 9:40

*Hsin-Yuan Chen (Feng Chia Univ.), Chih-Ming Chien (Feng Chia Univ.)

1A15-3 Fuzzy Control Design for Switched Nonlinear Systems 9:40 10:00

*Song Shyong Chen (Hsiu-Ping College), Yuan Chang Chang (Lee-Ming College), Jenq Lang Wu (Taiwan Ocean Univ.), Wen Chang Cheng (Hsiu-Ping College), Shun Feng Su (Taiwan Univ.)

1A15-4 Fuzzy C-Means Clustering Algorithm with Unknown Number of Clusters for Symbolic Interval Data 10:00 10:20

*Chen-Chia Chuang (National Ilan Univ., I-Lan, Taiwan), Jin-Tsong Jeng (National Formosa Univ.), Chih-Wen Li (National Ilan Univ., I-Lan, Taiwan)

1A15-5 A Rough-Set-Based for fuzzy modeling with outlier 10:20 10:40

*Chih-Ching Hsiao (Kao Yuan Univ.)

1A15-6 Annealing Robust Neural Fuzzy Networks for Modeling of Mitogen-Activated Protein Kinases Systems with Outliers 10:40 11:00

*Jin-Tsong Jeng (Formosa Univ.)

1A16 OS: Design Theory for Dynamical Systems with Semiosis 9:00 10:40 Room16

Organizer: Tetsuo Sawaragi (Kyoto Univ.)
Chair: Tetsuo Sawaragi (Kyoto Univ.), Lefteri H. Tsoukalas (Purdue Univ.)

1A16-1 Design Theory for Dynamical Systems with Semiosis 9:00 9:20

*Tetsuo Sawaragi (Kyoto Univ.)

1A16-2 Semiotic Analysis of the Relation Design of Townscape 9:20 9:40

*Teruyuki Monnai (Kyoto Univ.), Motoki Moriyama (Kyoto Univ.)

1A16-3 Role differentiation process by division of reward function in multi-agent reinforcement learning 9:40 10:00

*Tadahiro Taniguchi (Ritsumeikan Univ.), Kazuma Tabuchi (Kyoto Univ.), Tetsuo Sawaragi (Kyoto Univ.)

1A16-4 Information Scent Analysis of Hierarchical Menu Design for Quantitative Assessment of Communicative Breakdowns 10:00 10:20

*Yukio Horiguchi (Kyoto Univ.), Yuji Kuroda (Kyoto Univ.), Hiroaki Nakanishi (Kyoto Univ.), Tetsuo Sawaragi (Kyoto Univ.)

1A16-5 Inventing An Energy Internet: The Role of Anticipation in Human-Centered Energy Distribution and Utilization 10:20 10:40

*Lefteri H. Tsoukalas (Purdue Univ.), Rong Gao (Purdue Univ.)

1A17 OS: New Trends in Agent-Based Simulation 9:00 10:40 Room17

Organizer: Keiki Takadama (UEC)
Chair: Keiki Takadama (UEC), Akira Namatame (National Defense Academy)

1A17-1 Modeling Knowledge Generalization Capability in Agent to Replicate Subject Experiment Result 9:00 9:20

*Yasuyo Hatcho (UEC.), Keiki Takadama (UEC.)

1A17-2 Simulation Analysis of the Participant Nations Behavior in the Emissions Trading 9:20 9:40

*Tomohiro Nakada (UEC), Keiki Takadama (UEC), Shigeyoshi Watanabe (UEC)

1A17-3 Agent-based Simulation of CO2 Emissions Trading and Large-scale Traffic Flow 9:40 10:00

*Hideyuki Mizuta (IBM Japan), Sei Kato (IBM Japan), Hideki Tai (IBM Japan)

1A17-4 Measuring Inconsistency between Preference and Action under cascade behavior 10:00 10:20

*Kazufumi Matsuyama (National Defense Academy), Akira Namatame (National Defense Academy)

1A17-5 Relation Between Waiting Time and Flight Length for Efficient Search 10:20 10:40

*Hideaki Koyama (National Defense Academy of Japan), Hiroshi Sato (National Defense Academy of Japan), Akira Namatame (Nationl Defense Academy of Japan)

1A18 OS: Safety, Security, and Rescue Robot Systems (1) 9:00 10:40 Room18

Organizer: Fumitoshi Matsuno (UEC)
Chair: Itsuki Noda (AIST), Richard M Voyles (Univ. of Denver)

1A18-1 Evaluation of Situated-Optimal Planning Strategy with Integrated Disaster Simulation System 9:00 9:20

*Yu Fukuda (Nagoya Institute of Tech.), Keisuke Natsume (Nagoya Institute of Tech.), Nobuhiro Ito (Aichi Institute of Tech.), Eiji Yamada (NTT DATA CORP.), Yoshitaka Kuwata (NTT DATA CORP.), Kazunori Iwata (Aichi Univ.), Koichi Wada (Nagoya Institute of Tech.)

1A18-2 A Framework of Simulation System for Rescue Control/Training Center 9:20 9:40

*Shigeru Yotsukura (Meijo Univ.), Kei Sato (Meijo Univ.), Tomoichi Takahashi (Meijo Univ.)

1A18-3 Real-time Hazard Map Generation Using Small Unmanned Aerial Vehicle 9:40 10:00

*Taro Suzuki (Waseda Univ.), Daichi Miyoshi (Waseda Univ.), Jun-ichi Meguro (Waseda Univ.), Yoshiharu Amano (Waseda Univ.), Takumi Hashizume (Waseda Univ.), Koich Sato (Mitsubishi Ele. Co.), Jun-ich Takiguchi (Mitsubishi Ele. Co.)

1A18-4 Flexible Framework to Maintain Multiple and Floating Coordinate Systems 10:00 10:20

*Itsuki Noda (ITRI, AIST), Hiroki Shimora (ITRI, AIST), Hidehisa Akiyama (ITRI, AIST)

1A18-5 Dynamic schema exchange mechanism for disaster prevention on embedded system 10:20 10:40

*Masauki Hata (Future Univ. Hakodate), Hitoshi Matsubara (Future Univ. Hakodate)

1A19 OS: Women in Engineering on Virtual Reality 9:00 11:00 Room19

Organizer: Michiko Ohkura (Shibaura Institute of Tech.)
Chair: Michiko Ohkura (Shibaura Institute of Tech.), Yasuyuki Yanagida (Meijo Univ.)

1A19-1	Novel Interaction Methods with Mixed Reality Space	9:00	9:20

*Mai Otsuki (Ritsumeikan Univ.), Asako Kimura (Japan Science and Tech. Agency), Fumihisa Shibata (Ritsumeikan Univ.), Hideyuki Tamura (Ritsumeikan Univ.)

1A19-2	Ants in the Pants -Ticklish Tactile Display Using Rotating Brushes-	9:20	9:40

*Yoshimi Sato (UEC), Keiji Sato (UEC), Michi Sato (UEC), Shogo Fukushima (UEC), Yu Okano (UEC), Kanako Matsuo (UEC), Sayaka Ooshima (UEC), Yuichiro Kojima (UEC), Rika Matsue (UEC), Satsuki Nakata (UEC), Yuki Hashimoto (UEC), Hiroyuki Kajimoto (UEC)

1A19-3	Simultaneous Presentation of Tactile and Auditory Motion to the Abdomen to Present the Feeling of Being Slashed	9:40	10:00

*Sayaka Ooshima (UEC), Yuki Hashimoto (UEC), Hideyuki Ando (Osaka Univ.), Junji Watanabe (Japan Science and Tech. Agency), Hiroyuki Kajimoto (UEC)

1A19-4	Consideration of mechanical filtering system of the Meissner corpuscle	10:00	10:20

*Shinobu Kuroki (Tokyo univ), Hiroyuki Kajimoto (UEC), Takaaki Nara (UEC), Naoki Kawakami (Tokyo univ), Susumu Tachi (Tokyo univ)

1A19-5	An Interface System "Marching Bear" Evoking User's Emotional Attachment	10:20	10:40

*Nagisa Munekata (Future Univ.-Hakodate), Takanori Komatsu (Shinshu Univ.), Hitoshi Matsubara (Future Univ.-Hakodate)

1A19-6	Systematic Study for "Kawaii" Products (Second Report)	10:40	11:00

*Michiko Ohkura (Shibaura Inst. Tech.), Akari Konuma (Shibaura Inst. Tech.), Shuto Murai (Shibaura Inst. Tech.), Tetsuro Aoto (Shibaura Inst. Tech.)

1A20	**OS: Research Activities with Regard to Measurements, Control and Systems in Shikoku Area No.1**	**9:00**	**10:40**	**Room20**

Organizer: Satoru Shibata (Ehime Univ.)
Chair: Satoru Shibata (Ehime Univ.), Tomonori Yamamoto (Ehime Univ.)

1A20-1	3D Information Acquisition Using Pattern Projection and Omni-directional Cameras	9:00	9:20

*Hiroyuki Ukida (Tokushima Univ.)

1A20-2	A Distinction Method for Fruit of Sweet Pepper Using Reflection of LED Light	9:20	9:40

*Shinsuke Kitamura (Kochi Univ. of Tech.), Koichi Oka (Kochi Univ. of Tech.), Kenta Ikutomo (Kochi Univ. of Tech.), Yoshihiko Kimura (Kochi Univ. of Tech.), Yuji Taniguchi (Kochi Univ. of Tech.)

1A20-3	Modeling of handing motion reflecting emotional state and its application to robots	9:40	10:00

*Masayoshi Kokabe (Ehime Univ.), Satoru Shibata (Ehime Univ.), Tomonori Yamamoto (Ehime Univ.)

1A20-4	Development of a shake-motion leading model for human-robot handshaking	10:00	10:20

*Yoshihide Yamato (Okayama Prefectural Univ.), Mitsuru Jindai (Okayama Prefectural Univ.), Tomio Watanabe (Okayama Prefectural Univ.)

1A20-5	Development of a Signal Control System along the Route 2 in Hiroshima City	10:20	10:40

*Haruko Fujii (Yuge National College of Maritime Tech.)

1A21	**OS: Inverse Problems in Measurements (1)**	**9:00**	**10:40**	**Room21**

Organizer: Takaaki Nara (UEC)
Chair: Takaaki Nara (UEC), Satoshi Honda (Keio Univ.)

1A21-1	Time-reversal Imaging for Sub-surface Defect Detection over the Lamb-wave	9:00	9:20

*Kenbu Teramoto (Saga Univ.), Akito Uekihara (Saga Univ.)

1A21-2	Thinning Pipe Wall Evaluation by using Electric Potential Difference Method	9:20	9:40

*Satoshi Honda (Keio Univ.)

1A21-3	Crack Sizing Methodologies using Trust Region Method Arising in Eddy Current Testing	9:40	10:00

Fumio Kojima (Kobe Univ.), *Yuka Soen (Kobe Univ.)

1A21-4	Camera-Shake Detection and Evaluation of Image Stabilizers	10:00	10:20

*Ryuichi Ogino (UEC), Tomonori Suzuki (UEC), Kazuki Nishi (UEC)

1A21-5	A direct algebraic method of instantaneous wave source localization	10:20	10:40

*Shoichi Koyama (Univ. Tokyo), Toru Kurihara (Univ. Tokyo), Shigeru Ando (Univ. Tokyo)

Aug. 20 (Wed.) Session 1B

1B01	**Analytical Measurement**	**13:15**	**15:15**	**Room01**

Chair: Takuji Koike (UEC)

1B01-1	The Analysis of Excavator Operation by Skillful Operator	13:15	13:35

*Yuki Sakaida (PWRI), Daisuke Chugo (UEC), Hiroshi Yamamoto (PWRI), Hajime Asama (Univ. of Tokyo)

1B01-2	Improvement of Uncertainty by Application of MCMC for Blood Chemical Analysis	13:35	13:55

*Yasuo Iwaki(Chaos Applied Research office)

1B01-3	Simulations and Analitycal Calculations of Elevator System Factored in the Clustering of Vehicles	13:55	14:15

*Akiyasu Tomoeda (Univ. of Tokyo) Katsuhiro Nishinari (Univ. of Tokyo)

1B01-4	Neural Networks Terrain Classification Using Inertial Measurement Unit for an Autonomous Vehicle	14:15	14:35

*Rubkwan Jitpakdee (KMUTT)

1B01-5	Traffic Prediction Based on the Sampled Data	14:35	14:55

*Hirotada Honda (Keio Univ.)

1B01-6	A Method of One-Way Delay and Clock Skew Estimation	14:55	15:15

*Hirotada Honda (Keio Univ.)

1B02	**Image Processing (2)**	**13:15**	**14:55**	**Room02**

Chair: Teruo Yamaguchi (Kumamoto Univ.)

1B02-1	Simultaneous Estimation of Optical Flow and 3D-Motion Parameters	13:15	13:35

*Tomoya Kawakami (Kumamoto Univ.), Teruo Yamaguchi (Kumamoto Univ.), Hiroshi Harada (Kumamoto Univ.)

			Start	End	Room

1B02-2 Homography-Based Image Mosaicing by Using EM Algorithm for Removing Inconsistent Overlaid Regions — 13:35 – 13:55
*Takeaki Iiyoshi (UEC), Wataru Mitsuhashi (UEC)

1B02-3 Moment-Based Human Motion Recognition from the Representation of DMHI Templates — 13:55 – 14:15
*Md.AtiqurRahman Ahad (Kyushu Inst. Tech.), T. Ogata (Kyushu Inst. Tech.), J.K. Tan (Kyushu Inst. Tech.), H.S. Kim (Kyushu Inst. Tech.), S. Ishikawa (Kyushu Inst. Tech.)

1B02-4 Image Sequence Restoration Based on State Space Model Identification — 14:15 – 14:35
*Xin Lu (Iwate Univ.), Kiyoshi Nishiyama (Iwate Univ.)

1B02-5 Visual Inspection with SVM — 14:35 – 14:55
*Takashi Murosaki (DENSO Co.), Kuniyasu Yoshida (DENSO Co.), Hiroki Naganuma (System One Co.)

1B03 Signal Processing (2) — 13:15 – 15:15 — Room03
Chair: Wataru Mitsuhashi (UEC), Worapong Tangsrirat (KMITL)

1B03-1 An Novel Optimal Zero-Correlation Zone Sequence Set and Its Application to Ultrasonic Imaging — 13:15 – 13:35
*Takafumi Hayashi (Univ. of Aizu), Yuichi Takahashi (Univ. of Aizu), Shigeru Kanemoto (Univ. of Aizu)

1B03-2 OTA-Based Electronically Adjustable Floating Positive/Negative Resistor — 13:35 – 13:55
*Wandee Petchmaneelumka (KMITL), Thawatchai Kamsri (NECTEC), Chaleampan Wangwiwatthana (KMITL), Vanchai Riewruja (KMITL)

1B03-3 A Voltage/Current Controlled Oscillator Using OTAs and RS Flip Flop — 13:55 – 14:15
Sawai Pongswatd (KMITL), *Amphawan Julsereewong (KMITL), Kitti Tirasesth (KMITL), Hirofumi Sasaki (Tokai Univ.), Yan Shi (Tokai Univ.)

1B03-4 A Voltage-Mode Gray-Code Algorithmic ADC — 14:15 – 14:35
Somjai Arayawat (Rajamangala Univ. of Techn. Isan), Uthan Thubtong (KMITL), Prasit Julsereewong (KMITL), Vanchai Riewruja (KMITL), *Amphawan Julsereewong (KMITL)

1B03-5 A Novel Resolver-to-DC Converter Based on OTA-Based Inverse-Sine Function Circuit — 14:35 – 14:55
*Anucha Kaewpoonsuk (Naresuan Univ.), Wandee Petchmaneelumka (KMITL), Apinai Rerkratn (KMITL), Sirichai Tammaruckwattana (KMITL), Vanchai Riewruja (KMITL)

1B03-6 Ultrasonic Measuring Circuit Using Sample and Hold Method — 14:55 – 15:15
*Apinai Rerkratn (KMITL), Sakolkrit Akejakrawan (Naresuan Univ.), Anucha Kaewpoonsuk (Naresuan Univ.)

1B04 Transportation Systems (1) — 13:15 – 15:15 — Room04
Chair: Hikaru Shimizu (Fukuyama Univ.), Takeshi Nagae (UEC)

1B04-1 A Q Value-Based Dynamic Programming Algorithm with Boltzmann Distribution — 13:15 – 13:35
*Shanqing Yu (Waseda Univ.), Hongqiang Wang (waseda Univ.), Fengming Ye (waseda Univ.), Shingo Mabu (waseda Univ.), Kaoru Shimada (waseda Univ.), Kotaro Hirasawa (waseda Univ.)

1B04-2 A Global Routing Strategy in Dynamic Traffic Environments with a Combination of Q Value-Based Dynamic Programming and Boltzmann Distribution — 13:35 – 13:55
*Shanqing Yu (Waseda Univ.), Fengming Ye (Waseda Univ.), Hongqiang Wang (Waseda Univ.), shigo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Songnian Yu (Shanghai Univ.), Kotaro Hirasawa (Waseda Univ.)

1B04-3 Multi-objective Optimal Route Search for Road Networks by Dynamic Programming — 13:55 – 14:15
*Manoj Kanta Mainali (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1B04-4 A New Approach for LMTT Navigation by Fuzzy Inference and Ant Colony Algorithm — 14:15 – 14:35
*Xianhui Song (Dong-A Univ.), Hyun Tae Han (Dong-A Univ.), Dong Gi Shin (Dong-A Univ.), Jin Woo Lee (Dong-A Univ.), Kwon Soon Lee (Dong-A Univ.)

1B04-5 A Development of Deterministic Signal Control System in Urban Road Networks — 14:35 – 14:55
*Hikaru Shimizu (Fukuyama Univ.), Masa-aki Kobayashi (Fukuyama Univ.), Haruko Fujii (Yuge National College), Shigekazu Katagiri (Fukuyama Univ.)

1B04-6 Research into a Continuous Type Train Location Detection Method with Three-inductive Wires for Warning Time Optimum Control of Level Crossing — 14:55 – 15:15
*Taiyo Matsumura (Nihon Univ.), Takashi Ono (Nihon Univ.)

1B05 Intelligent Systems (2) — 13:15 – 14:55 — Room05
Chair: Keiji Tatsumi (Osaka Univ.)

1B05-1 Learning from Errors: A Bio-Inspired Approach for Hypothesis-Based Machine Learning — 13:15 – 13:35
*Dennis Gamrad (Univ. of Duisburg-Essen), Dirk Soeffker (Univ. of Duisburg-Essen)

1B05-2 Integrating Dynamic Track Sectioning into a Hybrid Planning Infrastructure — 13:35 – 13:55
*Alexander Schmidt (Univ. of Paderborn), Philipp Adelt (Univ. of Paderborn), Natascha Esau (Univ. of Paderborn)

1B05-3 Naphtha's Price Forecasting Using Neuro-Fuzzy System — 13:55 – 14:15
*Porntip Visetsripong (The National Institute of Development Administration)

1B05-4 A Stock Trading Model for Multi-Brands Optimization Based on Genetic Network Programming with Control Nodes — 14:15 – 14:35
*Yan Chen (Waseda Univ.), Etsushi Ohkawa (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1B05-5 Traffic Flow Prediction with Genetic Network Programming — 14:35 – 14:55
*Wei Wei (Waseda Univ.), Huiyu Zhou (Waseda Univ.), Manoj Kanta Mainali (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1B06 Computational Intelligence (1) — 13:15 – 13:55 — Room06
Chair: Takehiko Ogawa (Takushoku Univ.)

1B06-1 Fuzzy C-Means Clustering for DNA Computing Readout Method Implemented on LightCycler System — 13:15 – 13:35
Muhammad Faiz Mohamed Saaid (Universiti Teknologi Malaysia), *Zuwairie Ibrahim (Universiti Teknologi Malaysia), Nor Haniza Sarmin (Universiti Teknologi Malaysia), John A. Rose (Ritsumeikan Asia Pacific Univ.)

1B06-2 Prototype Selection Based on Minimal Consistent Subset and Genetic Algorithms — 13:35 – 13:55
*Boontee Kruatrachue (KMITL), Marut Hongsamart (KMITL)

1B07	**Mobile Systems - Design**	**13:15**	**14:55**	**Room07**

Chair: Daisuke Chugo (UEC)

1B07-1	Smooth Switching Phases of a Mobile Robot from Leg-Type to Wheel-Type and Vice Versa	13:15	13:35

*Wagner Tanaka Botelho (Niigata Univ.), Tokuji Okada (Niigata Univ.), Toshimi Shimizu (Niigata Univ.)

1B07-2	A Circular Trajectory Simulation Analysis of a Rotating Four-Legged Robot	13:35	13:55

*Abeer Mahmoud (Niigata Univ.), Tokuji Okada(Niigata Univ.), Toshimi Shimizu (Niigata Univ.)

1B07-3	3D Odometry Based on Body Configuration	13:55	14:15

*Daisuke Chugo (UEC), Kuniaki Kawabata (RIKEN), Hayato Kaetsu (RIKEN), Songmin Jia (UEC), Hajime Asama (Univ. of Tokyo), Taketoshi Mishima (Saitama Univ.), Kunikatsu Takase (UEC)

1B07-4	A Research of Reusable Components for Rescue Robots	14:15	14:35

*Mitsunori Fujita (UEC), Fumitoshi Matsuno (UEC)

1B08	**VR- Haptics and Teleoperation**	**13:15**	**14:35**	**Room08**

Chair: Qin Wang (UEC)

1B08-1	Passive Force Display Glove and Passive Type Supporting Arm	13:15	13:35

*Wataru Nozaki (Toyama Prefectural Univ.), Ken'ich Koyanagi (Toyama Prefectural Univ.), Toru Oshima (Toyama Prefectural Univ.)

1B08-2	Bilateral Tele-Control Using Multi-Fingered Humanoid Robot Hand with Communication Delay	13:35	13:55

*Shinichi Arai (Toyohashi Univ. of Tech.), Kazunari Miyake (Toyohashi Univ. of Tech.), Takanori Miyoshi (Toyohashi Univ. of Tech.), Kazuhiko Terashima (Toyohashi Univ. of Tech.)

1B08-3	Teleoperation of Inverted Pendulum Using Wave Variables in the Framework of Reflection Coefficient	13:55	14:15

*Ho Ching (The Chinese Univ. of H.K.), Longhan Xie (The Chinese Univ. of H.K.), Jian Mao (The Chinese Univ. of H.K.), Ruxu Du (The Chinese Univ. of H.K.), Ching Kong (The Chinese Univ. of H.K.)

1B08-4	A Study on Temporal Properties of Illusory-Surface Perception by Using the Poggendorff Configuration	14:15	14:35

*Qin Wang (UEC), Masanori Idesawa (UEC)

1B09	**Robust Control**	**13:15**	**14:35**	**Room09**

Chair: Vladimir Turetsky (Technion- Israel Institute of Technology), Osamu Kaneko (Osaka Univ.)

1B09-1	Continuous Robust Control Strategies in an Interception Problem with Variable Dynamics	13:15	13:35

Valery Y. Glizer (Ort Braude College), *Vladimir Turetsky (Technion - IIT), Josef Shinar (Technion - IIT)

1B09-2	NN Robustness Design of Nonlinear Structure Systems	13:35	13:55

K. Yeh (De Lin Univ.), C. W. Chen (Shu Te Univ.), *C.Y. Chen (Yung Ta Univ.)

1B09-3	A Design Method of Adaptive Compensation Inputs for a Class of Uncertain Linear Systems via Piecewise Lyapunov Functions	13:55	14:15

*Hidetoshi Oya (Shonan Institute of Technology), Kojiro Hagino (UEC), Soseki Kayo (UEC)

1B09-4	New Robust Stability Condition for Uncertain Discrete-Time Systems with Time-Varying Delay	14:15	14:35

*Masatoshi Hara (Aoyama Gakuin Univ.), Jun Yoneyama (Aoyama Gakuin Univ.)

1B10	**Control for Electrical Systems**	**13:15**	**14:55**	**Room10**

Chair: Pavel Vaclavek (Brno Univ. of Technology)

1B10-1	Speed Sensorless Control of Induction Motor Using Sliding Mode Observer with Variable Boundary Layer	13:15	13:35

Min Yeong Jang (Pusan National Univ.), Bong Su Jang (Pusan National Univ.), Jun Ik Jeong (Pusan National Univ.), *Yong Hun Park (Pusan National Univ.), Young Ahn Kwon (Pusan National Univ.)

1B10-2	Interior Permanent Magnet Synchronous Machine Field Weakening Control Strategy - the Analytical Solution	13:35	13:55

*Pavel Vaclavek (Brno Univ. of Technology), Petr Blaha (Brno Univ. of Technology)

1B10-3	Analysis of Double Line Frequency for PWM Rectifier Using Instantaneous Power Method	13:55	14:15

*Yi-Hung Liao (Chinmin Technology), Ching-Ming Lai (Tsing Hua Univ.), Jenn-Horng Liaw (Minghsin Univ.)

1B10-4	Reactive Power and Voltage of a Synchronous Generator Control by Using T-DOF Controller	14:15	14:35

*Tianchai Suksri (Pathumwan Institute of Technology), Sompong Srilad (Pathumwan Institute of Technology), Satean Tunyasrirut (Pathumwan Institute of Technology)

1B10-5	Single-Stage Electronic Ballast with Class D and Class E Rectifiers as Line-Current Shaper	14:35	14:55

*Kamon Jirasereeamornkul (KMUTT)

1B11	**Wheeled Robots and Vehicles**	**13:15**	**14:35**	**Room11**

Chair: Joe Imae (Osaka Prefecture Univ.)

1B11-1	Motion Controller Design for Two-wheeled Robot Based on a Batch Learning Structure	13:15	13:35

*Ching-Chang Wong (Tamkang Univ.), Hou-Yi Wang (Tamkang Univ), Kuan-Hua Chen (Tamkang Univ), Chia-Jun Yu (Tamkang Univ), Hisayuki Aoyama (Univ of Electro-Communications)

1B11-2	Real-Time Optimization for Parallel-Parking Control of Four-Wheeled Vehicles	13:35	13:55

Joe Imae (Osaka Prefecture Univ.), *Koichiro Yoshimura (Osaka Prefecture Univ.), Guisheng Zhai (Osaka Prefecture Univ.), Tomoaki Kobayashi (Osaka Prefecture Univ.)

1B11-3	Tire-Road Friction Estimation for a Wheel-Driven Field Robot	13:55	14:15

*Chang-Sei Kim (Pusan National Univ.), Keum-Shik Hong (Pusan National Univ.), Wan-Suk Yoo (Agency for Defense Development), Yong-Woon Park (Agency for Defense Development)

1B11-4	Proposal of Lateral Force Observer with Active Steering for Electric Vehicle	14:15	14:35

*Yuya Yamauchi (Yokohama National Univ.), Hiroshi Fujimoto (Yokohama National Univ.)

1B12	**Vibration and Process Control**	**13:15**	**14:55**	**Room12**

Chair: Bernard How (National Univ. of Singapore), Lovely Son (Toyota Technological Institute)

1B12-1	Top Angle Control and Vibration Reduction of Flexible Marine Risers	13:15	13:35

*Bernard Voon Ee How (National Univ. of Singapore), Shuzhi Sam Ge (National Univ. of Singapore), Yoo Sang Choo (National Univ. of Singapore)

1B12-2	Fractional Controller Design for a Binary Distillation Column Using the Method of Inequalities	13:35	13:55

*Van Quang Nguyen (Chulalongkorn Univ.), Suchin Arunsawatwong (Chulalongkorn Univ.)

1B12-3 Proposal of Active Momentum Exchange Impact Damper and Its Application to Floor Shock Vibration Control	13:55	14:15	

*Lovely Son (Toyota Tech. Institute), Susumu Hara (Toyota Tech. Institute), Hiroshi Matsuhisa (Kyoto Univ.), Hideo Utsuno (Kyoto Univ.), Keisuke Yamada (Kyoto Univ.)

1B12-4 On-Line Deterioration Prediction and Residual Life Evaluation of Rotating Equipment Based on Vibration Measurement	14:15	14:35	

*Satoru Goto(Saga Univ.), Yuhki Adachi (Saga Univ.), Sinji Katafuchi (Saga Univ.), Toshihiko Furue (Kyushu Electric Power Co.), Yoshitaka Uchida (Kyushu Electric Power Co.), Mitsuhoro Sueyoshi (Kyushu Electric Power Co.), Hironori Hatazaki (Kyushu Electric Power Co.), Masatoshi Nakamura (Saga Univ.)

1B12-5 Modeling of the Modified Quadruple-Tank Process	14:35	14:55	

*Arjin Numsomran (KMITL)

1B13 OS: New Approaches to Adaptive and Learning Control - Theory and Applications- 1	13:15	15:15	Room13

Organizer: Ikuro Mizumoto (Kumamoto Univ.), Toru Yamamoto (Hiroshima Univ.)
Chair: Ikuro Mizumoto (Kumamoto Univ.), Masahiro Oya (Kyushu Institute of Tech.)

1B13-1 A Simple Redesign of Adaptive Control for Distributed Parameter Systems of Hyperbolic Type by Finite Dimensional Controllers	13:15	13:35	

*Yoshihiko Miyasato (Inst. Statistical Mathematics)

1B13-2 An Adaptive Controller to Realize Smooth Input for Systems with Relative Degree Less Than 3	13:35	13:55	

*Natsuki Takagi (Kyushu Institute of Tech.), Masahiro Oya (Kyushu Institute of Tech.), Qiang Wang (Kyushu Institute of Tech.), Toshihiro Kobayashi (Kyushu Institute of Tech.)

1B13-3 Falling-down Avoidance Control for Acrobat Robot by Q-Learning with Function Approximation	13:55	14:15	

*Hiroshi Suzuki (Tokyo Institute of Tech.), Masaki Yamakita (Tokyo Institute of Tech./RIKEN), Shinya Hirano (RIKEN), Zhi-Wei Luo (Kobe Univ. / RIKEN)

1B13-4 Model Based Starting Control of SI Engines via Adaptive Feedback Linearization	14:15	14:35	

*Shigehiro Sugihira (Keio Univ.), Hiromitsu Ohmori (Keio Univ.)

1B13-5 A robust adaptive control for parallel linear sliders using decoupling model	14:35	14:55	

*Kazuya Sato (Saga Univ.), Kazuhiro Tsuruta (Kyushu Sangyo Univ.), Takahiro Kikuchi (Saga Univ.), Hideki Honda (Kyushu Institute of Tech.)

1B13-6 High Gain Adaptive Output Feedback Control of Nonlinear Systems with Some Uncertainties in Control Input Term	14:55	15:15	

*Ryuji Michino (Kumamoto Industrial Research Institute), Ikuro Mizumoto (Kumamoto Univ.)

1B14 OS: Novel Techniques for Advanced Driver Support Systems	13:15	15:15	Room14

Organizer: Makoto Itoh (Univ. of Tsukuba)
Chair: Genya Abe (JARI), Toshihiro Hiraoka (Kyoto Univ.)

1B14-1 High-Speed Lane Detection for Road Geometry Estimation and Vehicle Localization	13:15	13:35	

*Tomoki Maeda (Kumamoto Univ.), Zhencheng Hu (Kumamoto Univ.), Chenhao Wang (Kumamoto Univ.), Keiichi Uchimura (Kumamoto Univ.)

1B14-2 Influence of cognitively distracting activity on driver's eye movement during preparation of changing lanes	13:35	13:55	

*Huiping Zhou (Tsukuba Univ.), Makoto Itoh (Tsukuba Univ.), Toshiyuki Inagaki (Tsukuba Univ.)

1B14-3 Preliminary Study on Driver Acceptance of Multiple Warnings while Driving on Highway	13:55	14:15	

*Toshihisa Sato (AIST), Motoyuki Akamatsu (AIST)

1B14-4 Effective Instruction Method on Self-awareness of Risks for Drivers	14:15	14:35	

*Midori Inaba (UEC), Yuusuke Yasuki (UEC), Kenji Tanaka (UEC)

1B14-5 Fundamental research on driver's haptic characteristics concerning steering reactive torque	14:35	14:55	

*Toshihiro Hiraoka (Kyoto Univ.), Souhei Hioki (Kyoto Univ.), Hiromitsu Kumamoto (Kyoto Univ.)

1B14-6 Haptic interface for the distracted drivers	14:55	15:15	

*Cristy Ho (Oxford Univ.)

1B15 OS: Haptics (1)	13:15	14:55	Room15

Organizer: Makoto Shimojo (UEC), Hiroyuki Shinoda (Univ. of Tokyo)
Chair: Hiroyuki Kajimoto (UEC), Makoto Shimojyo (UEC)

1B15-1 Grasping Force Control of Multi-fingered Robot Hand based on Slip	13:15	13:35	

*Yoshitomo Mizoghuchi (UEC), Daisuke Gunji (NSK Ltd.), Seiichi Teshigawara (UEC), Aiguo Ming (UEC), Akio Namiki (Chiba Univ.), Masatoshi Ishikawa (Tokyo Univ.), Makoto Shimojo (Tokyo Univ.)

1B15-2 Study of High Speed and High Sensitivity Slip Sensor-Characteristic of conductive material-	13:35	13:55	

*Seiichi Teshigawara (UEC), Masatoshi Ishikawa (Tokyo Univ.), Makoto Shimojo (UEC)

1B15-3 A Net-Structure Tactile Sensor Covering Freeform Surfaces with Reduced Wiring	13:55	14:15	

Makoto Shimojo (UEC), Takuma Araki (UEC), *Masahiro Teranishi (UEC), Aigou Ming (UEC), Masatoshi Ishikawa (Univ. of Tokyo)

1B15-4 Cubic Stress Tensor Sensor for Robot Skins	14:15	14:35	

*Shohei Kiyota (Univ. of Tokyo), Hiroyuki Shinoda (Univ. of Tokyo)

1B15-5 3D Shape Measuring Sheet Utilizing Gravitational and Geomagnetic Fields	14:35	14:55	

*Takayuki Hoshi (Univ. of Tokyo), Hiroyuki Shinoda (Univ. of Tokyo)

1B16 OS: The Technologies and Challenges on Field-data Management in Plants (1)	13:15	14:55	Room16

Organizer: Yoichi Takayanagi (Toshiba Co.), Masatoshi Takano (Toyota Motor Co.), Tsutomu Yamada (Hitachi, Ltd.), Yohsuke Inagaki (Yamatake Co.)
Chair: Kouji Demachi (Yokogawa Electric Co.), Yoichi Takayanagi (Toshiba Co.)

1B16-1 Human-Centered Industrial Control Systems through Seamless Communication and Flexible Reconfiguration	13:15	13:35	

*Masatoshi Takano (Toyota Motor Co.)

1B16-2 FDT/DTM Framework for Field Device Integration	13:35	13:55	

*Mitsuhiro Yamamoto (Yokogawa), Hideyuki Sakamoto (Yokogawa)

1B16-3 Device configuration software development on EDDL and FDT/DTM environment	13:55	14:15	

*Akio Ito (Yokogawa Electric Co.)

| 1B16-4 | OPC UA based Field Device Integration | 14:15 | 14:35 | |

*Daniel Grossmann (Technische Universitaet Muenchen), Klaus Bender (Technische Universitaet Muenchen), Benjamin Danzer (Technische Universitaet Muenchen)

| 1B16-5 | Emerging FDI technologies / requirements and study report on tackling it as the solution for multi Tech. issues of FA open system integration | 14:35 | 14:55 | |

Masaru Nagashima (Mitsubishi Electric Co.), Kenji Suzuki (Mitsubishi Electric Co.), Hirofumi Kai (Mitsubishi Electric Co.), *Nobumasa Nakano (Aichi Prefectural Univ.)

| 1B17 | OS: Logistics and Complex Networks | 13:15 | 15:15 | Room17 |

Organizer: Keiki Takadama (UEC)
Chair: Keiki Takadama (UEC), Takahiro Majima (National Maritime Research Institute)

| 1B17-1 | Hub airport location in air cargo system | 13:15 | 13:35 | |

*Daisuke Watanabe (Tokyo Univ. of Marine Science and Tech.), Takahiro Majima (National Maritime Research Institute), Keiki Takadama (UEC), Mitujiro Katuhara (SocioTechData)

| 1B17-2 | An analytical model to evaluate the hierarchical system of road networks | 13:35 | 13:55 | |

*Masashi Miyagawa (Univ. of Yamanashi)

| 1B17-3 | Development of a Method correcting O-D matrix with Biased Error using Screen Line Traffic | 13:55 | 14:15 | |

*Yoichi Shimakawa (Salesian Polytechnic), Shigeru Kashima (Chuo Univ.)

| 1B17-4 | Computational Results on Some Shortest Path Problems with Side Constraints | 14:15 | 14:35 | |

*Kazuhiro Kobayashi (NMRI)

| 1B17-5 | Generation of Public Transit Network by Network Evolution Model | 14:35 | 14:55 | |

*Takahiro Majima (National Maritime Research Inst.), Keiki Takadama (UEC), Daisuke Watanabe (Tokyo Univ. of Marine Science and Tech.), Mitujiro Katuhara (SocioTechData)

| 1B17-6 | Exemplar-Based Learning Classifier System: Towards Cargo Layout Optimization | 14:55 | 15:15 | |

*Hiroyasu Matsushima (UEC), Keiki Takadama (UEC)

| 1B18 | OS: Safety, Security, and Rescue Robot Systems (2) | 12:55 | 15:15 | Room18 |

Organizer: Fumitoshi Matsuno (UEC)
Chair: Fumitoshi Matsuno (UEC), Richard M Voyles (Univ. of Denver)

| 1B18-1 | Ongoing Research on Disaster Monitoring UAV at JAXA's Aviation Program Group | 12:55 | 13:15 | |

*Shuichi Sasa (JAXA), Yukio Matsuda (JAXA), Masaaki Nakadate (JAXA), Kazutoshi Ishikawa (JAXA)

| 1B18-2 | Outdoor Blimp Robots for Rescue Surveillance Systems | 13:15 | 13:35 | |

*Takanori Fukao (Kobe Univ.), Takashi Oshibuchi (Kobe Univ.), Koichi Osuka (Kobe Univ.), Takashi Kohno (JAXA), Yasuto Tomoi (JAXA)

| 1B18-3 | Information acquisition using intelligent sensor nodes and an autonomous blimp | 13:35 | 13:55 | |

*Yasushi Hada (NICT), Osamu Takizawa (NICT), Kuniaki Kawabata (RIKEN), Hayato Kaetsu (RIKEN), Takashi Kohno (JAXA), Masaaki Nakadate (JAXA), Hajime Asama (Univ. of Tokyo)

| 1B18-4 | Gestural Joystick and the Efficacy of Path Tortuosity in Rubbled Environments | 13:55 | 14:15 | |

*Richard Voyles (Univ. of Denver), Jaewook Bae (Samsung)

| 1B18-5 | Visualization System of Channel Availability in Wireless LAN using a Mobile Robot | 14:15 | 14:35 | |

*Katsunori Miyazawa (UEC), Yojiro Uo (IIJ), Mitsunori Fujita (UEC), Fumitoshi Matsuno (UEC)

| 1B18-6 | Decision Making Framework for Autonomous Vehicle Navigation | 14:35 | 14:55 | |

*Augie Widyotriatmo (Pusan National Univ.), Keum-Shik Hong (Pusan National Univ.)

| 1B18-7 | Non-Isomorphic Tread Design for a Side-Slipping Tread/Limb Hybrid Robot | 14:55 | 15:15 | |

Roy Godzdanker (Univ. of Denver), *Richard Voyles (Univ. of Denver)

| 1B19 | OS: Recent Progress in Mechanical Metrology (1) | 13:15 | 14:55 | Room19 |

Organizer: Toshiyuki Hayashi (AIST)
Chair: Toshiyuki Hayashi (NMIJ/AIST), Masaaki Ueki (NMIJ/AIST)

| 1B19-1 | Innovative weighing solutions to support safety and proper weighing | 13:15 | 13:35 | |

*Yoshikazu Watabe (Mettler-Toledo K.K.)

| 1B19-2 | Mass stability of 1-kg stainless steel weights in the past 13 years | 13:35 | 13:55 | |

*Masaaki Ueki (NMIJ/AIST), Shigeki Mizishima (NMIJ/AIST), Jian-Xin Sun (NMIJ/AIST), Kazunaga Ueda (NMIJ/AIST)

| 1B19-3 | Simplification of Structure and Improvement of Weighing Accuracy for Multi-hopper | 13:55 | 14:15 | |

*Isao Nakagiri (Yamato-scale co.jp), Toru Kohasi (Yamato-scale co.jp)

| 1B19-4 | Improvement of Accuracy for Continuous Mass Measurement in Checkweighers with an Adaptive Notch Filter | 14:15 | 14:35 | |

*Toshitaka Umemoto (Osaka Prefectural College of Tech.), Yuuki Sasamoto (Osaka Univ.), Motoyuki Adachi (Yamato Scale Co.), Yoichiro Kagawa (Yamato Scale Co.)

| 1B19-5 | Length Measurement of Moving Products on Conveyor Belt (2nd report) | 14:35 | 14:55 | |

*Akihiro Watanabe (Gunma Univ.), Takanori Yamazaki (O.N.C.T), Hideo Ohnishi (Shinko Co.), Masaaki Kobayashi (Shinko Co.), Shigeru Kurosu (Reserach Inst., Crotech)

| 1B20 | OS: Research Activities with Regard to Measurements, Control and Systems in Shikoku Area No.2 | 13:15 | 15:15 | Room20 |

Organizer: Satoru Shibata (Ehime Univ.)
Chair: Satoru Shibata (Ehime Univ.), Tomonori Yamamoto (Ehime Univ.)

| 1B20-1 | A Method on Parameter Estimation of Nonlinear Systems | 13:15 | 13:35 | |

*Makoto Horio (Tokushima Bunri Univ.), Jiro Morimoto (Tokushima Bunri Univ.), Toshiaki Tabuchi (Tokushima Bunri Univ.)

| 1B20-2 | Feedback GMDH-type neural network algorithm using prediction error criterion for self-organization | 13:35 | 13:55 | |

*Tadashi Kondo (Tokushima Univ.)

| 1B20-3 | Feedback GMDH-type neural network using prediction error criterion and its application to 3-dimensional medical image recognition | 13:55 | 14:15 | |

*Tadashi Kondo (Tokushima Univ.)

| 1B20-4 | Forward-Propagation Rule Based on Ridge Regression for Inverse Kinematics Problem | 14:15 | 14:35 | |

*Koji Kinoshita (Ehime Univ.), Hiroshi Okimoto (Ehime Univ.), Kenji Murakami (Ehime Univ.)

| 1B20-5 | Research on Instruction of Robots by Head Movement Using KANSEI Transfer Function | 14:35 | 14:55 | |

*Tomonori Yamamoto (Ehime Univ.), Satoru Shibata (Ehime Univ.), Yasuhiro Mise (Ehime Univ.), Mitsuru Jindai (Okayama Pref. Univ.)

| 1B20-6 | Development of Non-Contact Measurement System of Human Stepping | 14:55 | 15:15 | |

*Koichi Kurita (Kochi National College of Tech.)

| 1B21 | OS: Inverse Problems in Measurements (2) | 13:15 | 14:15 | Room21 |

Organizer: Takaaki Nara (UEC)
Chair: Takaaki Nara (UEC), Satoshi Honda (Keio Univ.)

| 1B21-1 | Diffuse optical tomography maximizing localized variation in optical properties | 13:15 | 13:35 | |

*Shinpei Okawa (UEC), Yukio Yamada (UEC)

| 1B21-2 | Direct source reconstruction of MEG inverse problem using cerebral cortex shapes | 13:35 | 13:55 | |

*Masaru Hashimoto (Tokyo Univ), Takaaki Nara (UEC)

| 1B21-3 | Title A coil for measuring the Fourier coefficients of the magnetic field and its application to dipole localization | 13:55 | 14:15 | |

*Takaaki Nara (UEC), Shigeru Ando (Univ. of Tokyo)

Aug. 20 (Wed.) Session 1C

| 1C01 | Sensors and Transducers | 15:30 | 17:30 | Room01 |

Chair: Shogo Tanaka (Yamaguci Univ.), Shigeki Tsuchitani (Wakayama Univ.)

| 1C01-1 | Optimal Electromagnetic Coupling for High Speed Running Radar | 15:30 | 15:50 | |

*Shogo Tanaka (Yamaguchi Univ.)

| 1C01-2 | Experimental Research on a Newly Developed Detonation Flame Arrester | 15:50 | 16:10 | |

*Yoichi Okawa (Tokyo Tech.), Seiichiro Asano (Tokyo Tech.), Chongho Youn (Tokyo Tech.), Syunsuke Ikeda (Tokyo Tech.), Toshiharu Kagawa (Tokyo Tech.)

| 1C01-3 | Evaluation of Basic Operating Characteristics of Ion Conductive Polymer Actuator Using Ionic Liquid | 16:10 | 16:30 | |

*Kunitomo Kikuchi (Wakayama Univ.), Masafumi Miwa (Univ. of Tokushima), Shigeki Tsuchitani (Wakayama Univ.)

| 1C01-4 | Effects of Environmental Humidity on Displacement Characteristics of Ionic Polymer Actuator Using Ionic Liquid | 16:30 | 16:50 | |

*Takeshi Yokota (Wakayama Univ.), Kunitomo Kikuchi (Wakayama Univ.), Shigeki Tsuchitani (Wakayama Univ.)

| 1C01-5 | Electrical Capacitance Tomography with Physical Bound Constraints | 16:50 | 17:10 | |

*Gerald Steiner (Graz Univ. Technol.), Daniel Watzenig (Graz Univ. Technol.)

| 1C01-6 | Prototype Double-Pulse BOTDR for Measuring Distributed Strain with 20-cm Spatial Resolution | 17:10 | 17:30 | |

*Yoshiyuki Sakairi (Ibaraki Univ.), Satoshi Matsuura (Yokogawa Elec. Co.), Shoji Adachi (Yokogawa Elec. Co.), Yahei Koyamada (Ibaraki Univ.)

| 1C02 | Image Processing (3) | 15:30 | 17:10 | Room02 |

Chair: Shuichi Sasa (JAXA)

| 1C02-1 | A Development of Inspection Techniques for Printed Circuit Board: From 2-D to 3-D | 15:30 | 15:50 | |

*Shih-Chieh Lin (Nat. Tsing Hua Univ.), Chia-Hsin Su (Nat. Tsing Hua Univ.), Chih-Hsien Chou (Nat. Tsing Hua Univ.), Hung-Chi Chen (Nat. Tsing Hua Univ.)

| 1C02-2 | Velocity Field Integration using Oculomotor System | 15:50 | 16:10 | |

*Hideaki Takahashi (Kumamoto Univ.), Teruo Yamaguchi (Kumamoto Univ.), Hiroshi Harada (Kumamoto Univ.)

| 1C02-3 | Improved Gradient-Based Methods for Motion Estimation in Image Sequences | 16:10 | 16:30 | |

*Toshiaki Kondo (SIIT), Pramuk Boonsieng (SIIT), Waree Kongprawechnon (SIIT)

| 1C02-4 | Effect of Color Pre-Processing on Color-Based Object Detection | 16:30 | 16:50 | |

*Mohamed Abdellatif (Ain Shams Univ.)

| 1C02-5 | A Novel Scheme for Feature Extraction and Classification of Magnetic Resonance Brain Images Based on Slantlet Transform and Support Vector Machine | 16:50 | 17:10 | |

Madhubanti Maitra (Jadavpur Univ.), *Amitava Chatterjee (Jadavpur Univ.), Fumitoshi Matsuno (UEC)

| 1C03 | Signal Processing (3) | 15:30 | 17:30 | Room03 |

Chair: Kazuki Katagishi (Univ. of Tsukuba)

| 1C03-1 | An Amplitude-to-Digital Converter | 15:30 | 15:50 | |

Chaleampan Wangwiwatthana (KMITL), *Anucha Kaewpoonsuk (Naresuan Univ.), Vanchai Riewruja (KMITL)

| 1C03-2 | Temperature-Insensitive Current-Mode Square-Rooting Circuit Using OTAs | 15:50 | 16:10 | |

*Danucha Prasertsom (KMITL), Sumalee Unhavanich(KMITNB), Worapong Tangsrirat (KMITL)

| 1C03-3 | Current-Mode Second-Order Notch Filter Using CDTA-Based Allpass Sections | 16:10 | 16:30 | |

*Wason Tanjaroen (Kasetsart Univ. Si Racha Campus), Worapong Tangsrirat (KMITL)

| 1C03-4 | CFOA-Based Single Resistance Controlled Quadrature Oscillator | 16:30 | 16:50 | |

*Pratya Mongkolwai (KMITL), Tattaya Pukkalanun (KMITL), Teerasilapa Dumawipa (King Mongkut Institute of Technology North Bnagkok), Worapong Tangsrirat (King Mongkut In

| 1C03-5 | Interpolation of Nonuniformly Decimated Signals via Sampled-Data H-Infinity Optimization | 16:50 | 17:10 | |

Masaaki Nagahara (Kyoto Univ.), *Masaki Ogura (Kyoto Univ.), Yutaka Yamamoto (Kyoto Univ.)

| 1C03-6 | An ${\rm H}_\infty$ Echo Cancellation With Noise Suppressor | 17:10 | 17:30 | |

*Tomonori Katsumata (Iwate Univ.), Naohito Hakoishi (Iwate Univ.), Kiyoshi Nishiyama (Iwate Univ.), Katsuaki Satou (Amenity Research Institute), Takuma Suzuki (Amenity Research Institute)

| 1C04 | Transportation Systems (2) | 15:30 | 16:50 | Room04 |

Chair: Xin Li (Tokyo Institute of Technology)

1C04-1	Efficient Dispatching Algorithm for Transfer Crane in Harbor Physical Distribution Considering Inland Carriage	15:30	15:50	

*Hisato Hino (Univ. of Tokyo), Satoshi Hoshino (Tokyo Institute of Technology), Tomoharu Fujisawa (Ministry of Land, Infrastructure, Transport and Tourism), Shigehisa Maruyama (Japan Association of Cargo-handling Machinery Systems), Jun Ota (Univ. of Tokyo)

1C04-2	A Risk-Cost Minimization Model for Catastrophe Averse Shipment of Hazardous Materials	15:50	16:10	

*Takeshi Nagae (UEC)

1C04-3	Planning through Information Sharing Across a Supply Chain	16:10	16:30	

*Athitaporn Buakaew (KMITL), Ruedee Masuchun (KMITL)

1C04-4	Dynamic Characteristics of Vortex Levitation	16:30	16:50	

*Xin Li (Tokyo Tech.), Kenji Kawashima (Tokyo Tech), Toshiharu Kagawa (Tokyo Tech.)

1C05	Intelligent Systems (3)	15:30	17:30	Room05

Chair: Satoru Takahashi (Kagawa Univ.)

1C05-1	GA-Based Optimization of DI diesel Engine Emission and Performance Using a Neural Network Model	15:30	15:50	

Ehsan Samadani (KNT Univ. of Tech.), Mohammadhassan Behroozi (Iran Univ. of Sci. and Tech.), *Amirhossein Shamekhi (KNT Univ. of Tech.), Reza Chini (KNT Univ. of Tech.)

1C05-2	Class Association Rules Mining with Time Series and Its Application to Traffic Load Prediction	15:50	16:10	

*Huiyu Zhou (Waseda Univ.), Wei Wei (Waseda Univ.), Manoj Kanta Mainali (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1C05-3	Solving Multi-Objective Optimization Problems by RasID-GA	16:10	16:30	

*Marina G Ogata (Waseda Univ.), Dongkyu Sohn (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1C05-4	A Perturbation Based Chaotic Particle Swarm Optimization Using Multi-Type Swarms	16:30	16:50	

*Keiji Tatsumi (Osaka Univ.), Hiroyuki Yamamoto (Osaka Univ.), Tetsuzo Tanino (Osaka Univ.)

1C05-5	Path Planning of Mobile Robot by Vision and Range	16:50	17:10	

*Shigetaka Yagi (Kagawa Univ.), Daisuke Nagahara (Kagawa Univ.), Satoru Takahashi (Kagawa Univ.)

1C05-6	Intake Manifold Fault Diagnosis of a Spark Ignition Engine Using Residuals and Neural Network Classifier	17:10	17:30	

Reza Chini (KNT Univ. of Tech.), Mohammadhassan Behroozi (Iran Univ. of Sci. and Tech.), *Amirhossein Shamekhi (KNT Univ. of Tech.), Ehsan Samadani (KNT Univ. of Tech.)

1C06	Computational Intelligence (2)	15:30	17:30	Room06

Chair: Takehiko Ogawa (Takushoku Univ.)

1C06-1	Quick Response Data Mining Model Using Genetic Algorithm	15:30	15:50	

*Wenxiang Dou (Waseda Univ.), Jinglu Hu (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.), Gengfeng Wu (Shanghai Univ.)

1C06-2	Genetic Network Programming with Rule Chains	15:50	16:10	

*Fengming Ye (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1C06-3	Satellite Mission Scheduling Using Genetic Algorithm	16:10	16:30	

*Soon-mi Han (Pusan National Univ.), Seung-woo Beak (Pusan National Univ.), Kyuem-rae Cho (Pusan National Univ.), Dae-woo Lee (Pusan National Univ.), Hae-dong Kim (Korea Aerospace Research Institute, Daejeon)

1C06-4	Evaluation of Varying Portfolio Construction of Stocks Using Genetic Network Programming with Control Nodes	16:30	16:50	

*Etsushi Ohkawa (Waseda Univ.), Yan Chen (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

1C06-5	Regularization for Complex-Valued Network Inversion	16:50	17:10	

*Seisho Fukami (Takushoku Univ.), Takehiko Ogawa (Takushoku Univ.), Hajime Kanada (Takushoku Univ.)

1C06-6	Remaining Cycle Time Estimation in a Semiconductor Manufacturing Factory with a Fuzzy-Neural Approach	17:10	17:30	

Horng-Ren Tsai (Lingtung Univ.), *Toly Chen (Feng Chia Univ.)

1C07	Distributed & Network Systems	15:30	16:50	Room07

Chair: Takakuni Douseki (Ritsumeikan Univ.)

1C07-1	Complex Cooperative Robot Actions Based on Recursive Optimal Motion Composition	15:30	15:50	

*Masakazu Suzuki (Tokai Univ.), Yusuke Takada (Tokai Univ.)

1C07-2	Stability of Swarm Robot Based on Local Forces of Local Swarms	15:50	16:10	

*Hiroshi Hashimoto (AIIT), Shinichi Aso (Tokyo Univ. of Tech.), Sho Yokota (Tokyo Univ. of Tech.), Akinori Sasaki (Tokyo Univ. of Tech.), Yasuhiro Ohyama (Tokyo Univ. of Tech.), Hiroyuki Kobayashi (Osaka Inst. of Tech.)

1C07-3	Probabilistic Model of the Effective Per-Client Goodput Based on an IEEE 802.11g Access Point	16:10	16:30	

Roungsan Chaisricharoen (Mae Fah Luang Univ.), Boonruk Chipipop (KMUTT), *Kosin Chamnongthai (KMUTT)

1C07-4	Batteryless Optical Wireless Audio Receiver Uses 1-Bit Sigma-Delta-Modulated Visible Light and Spherical Si Solar Cells	16:30	16:50	

*Syun Sasaki (Ritsumeikan Univ.), Takakuni Douseki (Ritsumeikan Univ.), Yasuyuki Matauya (Aoyama Gakuin Univ.)

1C08	Medical and Welfare Systems	15:30	17:30	Room08

Chair: Kazuyuki Kobayashi (Hosei Univ.)

1C08-1	Computer-Aided Pre-Operative Planning System for Total Hip Replacement by Using 2D X-Ray Images	15:30	15:50	

Fuangrod Todsaporn (KMITL), * Khawne Amnach (KMITL), Wataru Mitsuhashi(UEC)

1C08-2	Study on the Wheelchair User's Body Vibration and Wheelchair Driving Torque when Wheelchair is Ascending / Descending the Boundary Curb between Pavement and Roadway	15:50	16:10	

*Tsutomu Hashizume (Assistive Technology Research and Design), Hiroshi Kitagawa(Assistive Technology Research and Design), Ikuo Yoneda (Univ. of Tokyo), Masatoshi Takami(Kobe Gakuin Univ.), Shoichiro Fujisawa(Univ. of Tokushima), Osamu Sueda (Univ. of Tokushima), Minoru Kamata(Univ. of Tokyo)

1C08-3	Wearable Leg Support System Based on Manual Control	16:10	16:30	

*Masato Tanaka (Ibaraki Univ.), Yusuke Yabuki (Hitachi Appliance, Inc.), Yousuke Akiyama (Ibaraki Univ.), Ryou Kondo (Ibaraki Univ.)

1C08-4	Research on Flashlights Intended to Aid the Visually Impaired when Walking at Night	16:30	16:50	

*Ichiro Kitayama (Kinki Univ.), Kiyohiro Omori (Hyogo Assistech), Yoshimi Sugimoto (Hyogo Assistech)

1C08-5	A Color Compensation Vision System for Color-Blind People	16:50	17:10	

*Tomoyuki Ohkubo (Hosei Univ.), Kazuyuki Kobayashi (Hosei Univ.)

1C08-6	Dealing with Missing Values for Effective Prediction of NPC Recurrence	17:10	17:30	

*Orrawan Kumdee (Mahidol Univ.), Panrasee Ritthipravat (Mahidol Univ.), Thongchai Bhongmakapat (Mahidol Univ.), Wichit Cheewaruangroj (Mahidol Univ.)

1C09	Control Synthesis	15:30	16:50	Room09

Chair: Takao Fujii (Fukui Univ. of Technology)

1C09-1	Generalized Minimum Variance Control of MIMO System	15:30	15:50	

*Satoshi Bessho (Tokyo Metropolitan Univ.), Yasuchika Mori (Tokyo Metropolitan Univ.)

1C09-2	Synthesis of ILQ Control System for Disturbance Attenuation	15:50	16:10	

*Takao Fujii (Fukui Univ. of Technology), Sadaaki Kunimatsu (Kumamoto Univ.), Osamu Kaneko (Osaka Univ.)

1C09-3	Generalized Minimum Variance Control in Continuous Time Domain with Double Controller	16:10	16:30	

*Jyun-ichi Tajima (Tokyo Metropolitan Univ.), Yasuchika Mori (Tokyo Metropolitan Univ.)

1C09-4	Two-Stage Compensator Design --- A Factorization Approach ---	16:30	16:50	

*Kazuyoshi Mori (Univ. of Aizu)

1C10	Inverters and Converters	15:30	17:10	Room10

Chair: Ching-Tsai Pan (National Tsing Hua Univ.)

1C10-1	A High-Performance Strategy for SVPWM Voltage Source Inverter Using Variable Link Voltage	15:30	15:50	

Sang Kyoon Kim (Pusan National Univ.), Guen Bo Lee (Pusan National Univ.), *Jun Seong Park (Pusan National Univ.), Young Ahn Kwon (Pusan National Univ.)

1C10-2	Modeling of Circulating Currents for Grid-Connected Parallel Three-Phase Inverters	15:50	16:10	

Ching-Tsai Pan (National Tsing Hua Univ.), Jui-Yang Chang (National Tsing Hua Univ.), *Ching-Ming Lai (National Tsing Hua Univ.), Yu-Ling Juan (National Tsing Hua Univ.), Yi-Hung Liao (Chin Min Inst. of Tech.)

1C10-3	A New Model Predictive Control Approach to DC-DC Converters Based on Combinatory Optimization	16:10	16:30	

*Abu Zaharin Ahmad (Chiba Univ.), Kang-Zhi Liu (Chiba Univ.)

1C10-4	Implementation of a PLL-Based High Frequency Resonant AC Power Supply	16:30	16:50	

Pao-Chuan Lin (Institute Industrial Technology Research), Ying-Ying Ku (National Tsing Hua Univ), *Ching-Ming Lai (National Tsing Hua Univ), Yi-Hung Liao (Chin Min Institute of Technology), Yi-Shuo Huang (Institute Industrial Technology Research)

1C10-5	The Technique to Generate Firing Signal of Converter for Linear DC Output	16:50	17:10	

*Teerawat Thepmanee (KMITL), Sawai Pongswatd (KMITL), Prapart Ukakimapurn (KMITL), Kitti Tirasesth (KMITL)

1C11	Underwater Systems and Surface Vessels	15:30	17:10	Room11

Chair: Mazda Moattari (Islamic Azad Univ.), Hitoshi Katayama (Shizuoka Univ.)

1C11-1	A Neural Network Controller for Diving of a Variable Mass Autonomous Underwater Vehicle	15:30	15:50	

*Mazda Moattari (Islamic Azad Univ.), Alireza Khayatian (Univ. of Shiraz)

1C11-2	Sliding Mode Control for Autonomous Underwater Vehicle under Open Control Platform Environment	15:50	16:10	

*Tae Kyu Ha (Pusan National Univ.), Eko Henfri Binugroho (Pusan National Univ.), Young Bong Seo (Pusan National Univ.), Jae Weon Choi (Pusan National Univ.)

1C11-3	Distributed Single Target Tracking in Underwater Wireless Sensor Networks	16:10	16:30	

*Chang Ho Yu (Pusan Nat'l Univ.), Knag Hoon Lee (Pusan Nat'l Univ.), Jae Weon Choi (Pusan Nat'l Univ.), Young Bong Seo (Pusan Nat'l Univ.)

1C11-4	To A Based Sensor Localization in Underwater Wireless Sensor Networks	16:30	16:50	

*KangHoon Lee (Pusan Nat'l Univ.), ChangHo Yu (Pusan Nat'l Univ.), JaeWeon Choi (Pusan Nat'l Univ.), YoungBong Seo (Pusan Nat'l Univ.)

1C11-5	Sampled-Data Output Regulation for Ships	16:50	17:10	

*Hirotaka Kaji (Yamaha Motor Co., Ltd.), Hitoshi Katayama (Shizuoka Univ.)

1C12	Control Applications	15:30	17:10	Room12

Chair: Hiroaki Fukushima (UEC)

1C12-1	AFR Control for Motorcycle Engine Using Smith Predictor and H-inf Control	15:30	15:50	

*Tomoyasu Konno (UEC), Hiroaki Fukushima (UEC), Fumitoshi Matsuno (UEC), Hiroki Tanabe (Yamaha Motor Co.), Shigeho Sakoda (Yamaha Motor Co.), Hidetoshi Ishigami (Yamaha Motor Co.)

1C12-2	Compensation of Manual Reset to Offset Thermal Loads Change for Air-Conditioning System	15:50	16:10	

*Yuji Yamakawa (Univ. of Tokyo), Takanori Yamazaki (Oyama National College of Technology), Kazuyuki Kamimura (Yamatake Co. Ltd.), Shigeru Kurosu (Research Inst. Crotech)

1C12-3	Online Fault Detection and Diagnosis Algorithm Based on Probabilistic Model for Induction Machines	16:10	16:30	

*Hyun C Cho (Dong-A Univ.), Kwang S Kim (Dong-A Univ.), Chang H Song (Dong-A Univ.), Young J Lee (Dong-A Univ.), Kwon S Lee (Dong-A Univ.)

1C12-4	Nonlinear Discrete-Time Feedback Error Learning with PI Controller for AC Servo Motor	16:30	16:50	

*Noppanan Suwanjatuporn (Sirindhorn International Institute of Technology), Mes Napaamporn (Sirindhorn International Institute of Technology), Waree Kongprawechnon (Sirindhorn International Institute of Technology), Sirisak Wongsura (Univ. of Tokyo)

1C12-5	High Performance Algorithm Realization on FPGA for Stepper Motor Controller	16:50	17:10	

Tzungcheng Chen (CJCU), *Yungchun Su (CJCU)

1C13	OS: New Approaches to Adaptive and Learning Control - Theory and Applications- 2	15:30	17:30	Room13

Organizer: Ikuro Mizumoto (Kumamoto Univ.), Toru Yamamoto (Hiroshima Univ.)
Chair: Toru Yamamoto (Hiroshima Univ.), Shiro Masuda (Tokyo Metropolitan Univ.)

1C13-1	A PID Gain Tuning Using Fictitious Reference Iterative Tuning Approach with Simultaneous Tuning for the Delay Parameter of the Reference Model	15:30	15:50	
	*Shiro Masuda (Tokyo Metropolitan Univ.), Yusuke Yasuda (Tokyo Metropolitan Univ.)			
1C13-2	Synchronization Control for Circadian Rhythm of Drosophila with Flatness-based Adaptive Control	15:50	16:10	
	*Tetsuya Kusumi (Keio Univ.), Hiromitsu Ohmori (Keio Univ.)			
1C13-3	Experimental Study on Operator Based Nonlinear Temperature Control of an Aluminum Plate Actuated by a Peltier Device	16:10	16:30	
	*Mingcong Deng (Okayama Univ.), Akira Inoue (Okayama Univ.), Yuichiro Tahara (Okayama Univ.)			
1C13-4	A Unified Approach of Control Performance Evaluation and PID Controller Design in Industrial Process Systems	16:30	16:50	
	*Toru Yamamoto (Hiroshima Univ.), Kazuo Kawada (Hiroshima Univ.), Hidekazu Kugemoto (Sumitomo Chemical), Yoshinori Kutsuwa (Sumitomo Chemical)			
1C13-5	Realtime Estimation of the Degree of Market Efficiency using Variable Weighted Sample Entropy	16:50	17:10	
	*Koichi Sugisaki (Keio Univ.), Hiromitsu Ohmori (Keio Univ.)			
1C13-6	Output Feedback Control of Multirate Sampled Systems with an Adaptive Output Estimator	17:10	17:30	
	*Ikuro Mizumoto (Kumamoto Unive.), Satoshi Ohdaira (Kumamoto Unive.), Nao Watanabe (Kumamoto Unive.), Taisuke Tomonaga (Kumamoto Unive.), Zenta Iwai (Kumamoto Prefectual College of Tech.)			
1C14	**OS: Emergent Control Technologies for Human Living Environment**	**15:30**	**17:10**	**Room14**
	Organizer: Feng-Li Lian (National Taiwan Univ.), Hou-Tsan Lee (Takming Univ. of Sci. & Tech.) Chair: Jong-Hann Jean (John's Univ.), Feng-Li Lian (National Taiwan Univ.)			
1C14-1	Multisensor-based Outdoor Tour Guide Robot NTU-I	15:30	15:50	
	*Kuo-Hung Chiang (NTU), Shih-Huan Tseng (NTU), Yen-Hsun Wu (NTU), Guan-Hao Li (NTU), Chi-Pang Lam (NTU), Li-Chen Fu (NTU)			
1C14-2	Indoor environment navigation algorithms for sonar-based mobile robots	15:50	16:10	
	*Feng-Li Lian (National Taiwan Univ.), Chih-Chung Chou (National Taiwan Univ.)			
1C14-3	Design of an Entertainment Robot with Multimodal Human-Robot Interactions	16:10	16:30	
	*Jong-Hann Jean (St. Johns Univ.)			
1C14-4	Voice-Controlled CD Feed Forward Robot	16:30	16:50	
	*Hou-Tsan Lee (Takming Univ. of Sci. & Tech.), Ming-Chiuan Shiu (Hsiuping Institute of Tech.)			
1C14-5	Realization of Fuzzy Congestion Control on Linux Platform	16:50	17:10	
	*Kuang-Yow Lian (NTUT), Shu-Wei Yang (CYCU), Yi-Chin Hung (CYCU)			
1C15	**OS: Haptics (2)**	**15:30**	**17:10**	**Room15**
	Organizer: Makoto Shimojo (UEC), Hiroyuki Shinoda (Univ. of Tokyo) Chair: Hiroyuki Shinoda (Univ. of Tokyo), Hiroyuki Kajimoto (UEC)			
1C15-1	A Handle Interface to Present Pressure Sensation by Using Locally Cancelled Strains	15:30	15:50	
	*Yuichiro KOJIMA (UEC)			
1C15-2	An Emotional Tactile Interface Completing with Extremely High Temporal Bandwidth	15:50	16:10	
	*Yuki Hashimoto (UEC), Hiroyuki Kajimoto (UEC)			
1C15-3	Hanger reflex: a reflex motion of a head by temporal pressure for wearable interface	16:10	16:30	
	Rika Matsue (UEC), Michi Sato (UEC), Yuki Hashimoto (UEC), *Hiroyuki Kajimoto (UEC)			
1C15-4	Flexible EMG Sensor Array for Haptic Interface	16:30	16:50	
	*Yasutoshi Makino (Univ. of Tokyo), Shuhei Ogawa (Univ. of Tokyo), Hiroyuki Shinoda (Univ. of Tokyo)			
1C15-5	New Design for a Dynamic Tactile Graphic System for Blind Computer Users	16:50	17:10	
	*Shigenobu Shimada (TIRI), Suguru Yamamoto (UEC), Yusuke Uchida (UEC), Masami Shinohara (AIST), Yutaka Shimizu (UEC), Makoto Shimojo (UEC)			
1C16	**OS: The Technologies and Challenges on Field-data Management in Plants (2)**	**15:30**	**16:30**	**Room16**
	Organizer: Yoichi Takayanagi (Toshiba Co.), Masatoshi Takano (Toyota Motor Co.), Tsutomu Yamada (Hitachi, Ltd.), Yohsuke Inagaki (Yamatake Co.) Chair: Tsutomu Yamada (Hitachi, Ltd), Yohsuke Inagaki (Yamatake Co.)			
1C16-1	Analyzing Aspects of Cyber Security Standard for M&CS	15:30	15:50	
	*Hiromichi Endoh (Hitachi, Ltd.)			
1C16-2	Trend in Security Evaluation and Accreditation	15:50	16:10	
	*Tatsuaki Takebe (Yokogawa Elec Corp)			
1C16-3	Safety field network Tech. and its implementation	16:10	16:30	
	*Hiroo Kanamaru (Mitsubishi Electric Co.), Taro Harima (Mitsubishi Electric Co.)			
1C17	**OS: Evolutionary and Distributed Systems Towards Real-world Applications**	**15:30**	**17:10**	**Room17**
	Organizer: Keiki Takadama (UEC) Chair: Keiki Takadama (UEC), Katsunori Shimohara (Doshisha Univ.)			
1C17-1	Deadlock avoidance method based on Leader-Follower relations among multiple robots in large-scale structure assembly	15:30	15:50	
	*Masayuki Otani (UEC), Keiki Takadama (UEC)			
1C17-2	Link prediction of complex networks from temporal quantity variation assigned to elements	15:50	16:10	
	*Tetsuya Maeshiro (Univ. Tsukuba), Hitoshi Hemmi (NTT CS Labs), Shin-ichi Nakayama (Univ. Tsukuba), Katsunori Shimohara (Doshisha Univ.)			
1C17-3	Co-evolution of Sensing Morphology and Locomotion Control of Simulated Snakebot	16:10	16:30	
	*Ivan Tanev (Doshisha Univ.), Katsunori Shimohara (Doshisha Univ.)			
1C17-4	Evolutionary Adaptive Behavior in Noisy Multi-Agent System	16:30	16:50	
	*Takamasa Iio (Doshisha Univ.), Ivan Tanev (Doshisha Univ.), Katsunori Shimohara (Doshisha Univ.)			
1C17-5	On the Possibility of Priority-Based Road Traffic Control	16:50	17:10	
	*Yoshiaki M Senda (Doshisha Univ.), Ivan Tanev (Doshisha Univ.), Katsunori Shimohara (Doshisha Univ.)			
1C18	**OS: Advanced Pattern Measurement**	**15:30**	**17:30**	**Room18**

Organizer: Mitsuru Baba (Ibaraki Univ.), Hiroyuki Ukida (Univ. of Tokushima)
Chair: Mitsuru Baba (Ibaraki Univ.), Hiroyuki Ukida (Univ. of Tokushima)

1C18-1	Camera position and posture estimation from a still image using feature landmark database	15:30	15:50	
	*Tomokazu Sato (Nara Institute of Science and Tech.), Yoshiyuki Nishiumi (Nara Institute of Science and Tech.), Mitsutaka Susuki (Nara Institute of Science and Tech.), Tomoka Nakagawa (Nara Institute of Science and Tech.), Naokazu Yokoya (Nara Institute of Science and Tech.)			

1C18-2	Touch Sensing by Image Analysis of Fingernail	15:50	16:10	
	*Naoki Sugita (Osaka Univ.), Daisuke Iwai (Osaka Univ.), Kosuke Sato (Osaka Univ.)			

1C18-3	3D Shape and Specular Reflection Measurement Using Image Scanner	16:10	16:30	
	*Hiroyuki Ukida (Tokushima Univ.)			

1C18-4	3-D shape measurement by inverse raytracing approach	16:30	16:50	
	*Kozo Ohtani (Hiroshima Institute of Tech.), Daisuke Narita (Sigma Co.), Mitsuru Baba (Ibaraki Univ.)			

1C18-5	3D Shape Measurement Using Fixed Camera and Handheld Laser Scanner	16:50	17:10	
	*Hirofumi Nakai (Osaka Univ.), Daisuke Iwai (Osaka Univ.), Kosuke Sato (Osaka Univ.)			

1C18-6	Automatic Music Scoring based on Wavelet Transform	17:10	17:30	
	*Yoshiki Kondo (Keio Univ), Toshiyuki Tanaka (Keio Univ)			

1C19	**OS: Recent Progress in Mechanical Metrology (2)**	**15:30**	**16:50**	**Room19**
	Organizer: Toshiyuki Hayashi (AIST)			
	Chair: Toshiyuki Hayashi (NMIJ/AIST), Masaaki Ueki (NMIJ/AIST)			

1C19-1	Estimation of the Effective Area of the Controlled-Clearance Pressure Balance for Pressures up to 500 MPa	15:30	15:50	
	*Hiroaki Kajikawa (NMIJ, AIST), Kazunori Ide (NMIJ, AIST), Tokihiko Kobata (NMIJ, AIST)			

1C19-2	State Estimation of Automatic Pouring System with Load Cell in Casting Process	15:50	16:10	
	*Yoshiyuki Noda (Toyohashi Univ. of Tech.), Kazuhiko Terashima (Toyohashi Univ. of Tech.)			

1C19-3	Enabling One Step Loading Operation using Linkage-Weight System of 20 kN Force Standard Machine	16:10	16:30	
	*Toshiyuki Hayashi (AIST), Yoshihisa Katase (AIST), Hiroshi Maejima (AIST), Yukio Yamaguchi (AIST), Kazunaga Ueda (AIST)			

1C19-4	Evaluation of positioning performance of a fine-coarse mechanism by AC servomotors	16:30	16:50	
	*Yoshitaka Morimoto (Kanazawa Institute of Tech.)			

1C20	**OS: Discrete Event Systems and Hybrid Systems**	**15:30**	**17:50**	**Room20**
	Organizer: Tadanao Zanma (Mie Univ.)			
	Chair: Tadanao Zanma (Mie Univ.), Eiji Konaka (Meijo Univ.)			

1C20-1	An Implementability of Hybrid Specification with Discrete Event Controllers -2D System oretic Approach in a Behavioral Framework -	15:30	15:50	
	*Osamu Kaneko (Osaka Univ.), Satpshi Yamamoto (Osaka Univ.)			

1C20-2	Explicit Modeling of Mode Transition Constraints for Model Predictive Control	15:50	16:10	
	*Koichi Kobayashi (Japan Advanced Inst. of Sci. and Tech.), Kunihiko Hiraishi (Japan Advanced Inst. of Sci. and Tech.)			

1C20-3	Nonlinear System Identification by Fuzzy Piecewise Affine Models	16:10	16:30	
	*Haider Abbas F. Mohamed (Univ. of Malaya), Masood Askari (Univ. of Malaya), Mahmoud Moghavvemi (Univ. of Malaya), Soo Siang Yang (Univ. of Malaya)			

1C20-4	Optimization-based systematic data drop in rate-limited networked control system	16:30	16:50	
	*Eiji Konaka (Meijo Univ.)			

1C20-5	Lagrangian Relaxation Approach for Solving Optimal Firing Sequence Problems by Decomposition of Timed Petri Nets	16:50	17:10	
	Tatsushi Nishi (Osaka Univ.), *Kenichi Shimatani (Osaka Univ.), Masahiro Inuiguchi (Osaka Univ.)			

1C20-6	Learning Control of Underactuated Robots by Using Discrete Event Model	17:10	17:30	
	*Toshiaki Sakurai (Yokohama National Univ.), Yasutaka Fujimoto (Yokohama National Univ.)			

1C20-7	Modeling and Analysis of Peg-in-hole Task Based on Mode Segmentation	17:20	17:50	
	*Hiroyuki Okuda (Nagoya Univ.), Hidenori Takeuchi (Nagoya Univ.), Shinkichi Inagaki (Nagoya Univ.), Tatsuya Suzuki (Nagoya Univ.)			

1C21	**OS: Recent Progress in Temperature Measurement**	**15:30**	**17:50**	**Room21**
	Organizer: Tadashi Ito (Gunma Univ.)			
	Chair: Tadashi Ito (Gunma Univ.), Januarius Widiatmo (National Metrology Institute of Japan)			

1C21-1	Study on the Realization of Tin Point	15:30	15:50	
	*Januarius Widiatmo (NMIJ, AIST), Kazuaki Yamazawa (NMIJ, AIST), Kouichi Sato (NMIJ, AIST), Jun Tamba (NMIJ, AIST), Masaru Arai (NMIJ, AIST)			

1C21-2	Construction of a Cr_3C_2-C peritectic point cell for thermocouple calibration	15:50	16:10	
	*Hideki Ogura (AIST), Thierry Deuze (LNE), Ronan Morice (LNE), Pascal Ridoux (LNE), Jean-Remy Filtz (LNE)			

1C21-3	Multiple phase transitions in Al-In monotectic alloy	16:10	16:30	
	*David Lowe (NPL)			

1C21-4	Development of InGaAs Radiation rmometers	16:30	16:50	
	*Fumihiro Sakuma (AIST), Laina Ma (ex AIST)			

1C21-5	Temperature measurement using fluorescence image	16:50	17:10	
	*Toru Katsumata (Toyo Univ.), Hiroaki Aizawa (Toyo Univ.), Shuji Komuro (Toyo Univ.)			

1C21-6	Two-dimensional evaluation of soil property based on thermal imaging	17:10	17:30	
	*Chieko Nakayama (Toyo Univ.), Toru Katsumata (Toyo Univ.), Hiroaki Aizawa (Toyo Univ.), Syuji Komuro (Toyo Univ.), Hideki Arima (Toyo Univ.)			

1C21-7	Comparison of Surface temperature Readings between an Embedded rmocouple in a Silicon Wafer and a Hybrid-type Temperature Sensor	17:20	17:50	
	*Atsushi Gogami (Toyo Unv.), Tohru Iuchi (Toyo Unv.)			

1CIS	OS: NEDO Rescue Robot System Project	15:30	16:30	Building B

Organizer: Fumitoshi Matsuno (UEC)
Chair: Fumitoshi Matsuno (UEC)

IS-1	Touch-pen interface with local environment map for mobile robot navigation	15:30	16:30	

*Noritaka Sato (UEC), HIsashi Mizumoto (UEC), Naoji Shiroma (Ibaraki Univ.), Masahiko Inami (Keio Univ.), Fumitoshi Matsuno (UEC)

IS-2	Formation Control of Multiple Rescue Robots with Collision Avoidance	15:30	16:30	

*Shinsuke OH-HARA (UEC), Fumitoshi MATSUNO (UEC)

IS-3	Development of grouped rescue robot platforms for information collection in damaged buildings	15:30	16:30	

*Tetsushi Kamegawa (Okayama Univ.), Kenta Saikai (Okayama Univ.), Shinjirou Suzuki (Okayama Univ.), Akio Gofuku (Okayama Univ.), Seiji Oomura (TOPY INDUSTRIES), Tsuyoshi Horikiri (TOPY INDUSTRIES), Fumitoshi Matsuno (UEC)

IS-4	Auto configuration and management mechanism for the robotics self extensible WiFi network	15:30	16:30	

*Keiichi Shima (Nara Institute of Science and Tech.), Yojiro Uo (Internet Initiative Japan), Sho Fujita (Univ. of Tokyo)

IS-5	Temporal GIS for Information Collection System using Robot Tech. in a Damaged Building	15:30	16:30	

*Michinori Hatayama (Kyoto Univ.), Fumitoshi Matsuno (UEC)

Aug. 21 (Thu.) Session 2A

2A01	Remote Sensing (1)	9:00	10:40	Room01

Chair: Mitsuhiro Tomosada (The Institute of Statistical Mathematics)

2A01-1	Enhancement of the Sensing Distance of an Embedded Surveillance System with Video Streaming Recording Triggered by an Infrared Sensor Circuit	9:00	9:20	

*Ying-Wen Bai (Fu Jen Catholic Univ.)

2A01-2	Optical and Radio Probing of Lightning-Associated Phenomena in the Atmosphere and Ionosphere	9:20	9:40	

*Tomokazu Asano (UEC), Yu Matsudo (UEC), Tomoyuki Suzuki (Air Force Defense), Yasuhide Hobara (Sheffield Univ.), Masashi Hayakawa (UEC)

2A01-3	Subionospheric VLF/LF Probing of Ionospheric Perturbations Associated with Earthquakes (Earthquake Prediction)	9:40	10:00	

*Masashi Hayakawa (UEC)

2A01-4	Generation and Adaptation of Transferable Roadway Model in Naturally Complex Scene	10:00	10:20	

*Kohji Kamejima (Osaka Institute of Technology)

2A01-5	Ionospheric Monitoring by ELF Signals Received at Moshiri Station in Japan	10:20	10:40	

*Masaki Yano (UEC), Kozo Yamashita (UEC), Yuichi Ida (UEC), Masashi Hayakawa (UEC), Alexander Pavlovich Nickolaenko (Usikov Institute for Radio-Physics and Electronics Kharkov,)

2A02	Networked Sensor System	9:00	11:00	Room02

Chair: Shigeru Takayama (Ritsumeikan Univ.)

2A02-1	Bridge Diagnosis System by Using Wireless Sensor Network and Independent Component Analysis	9:00	9:20	

*Jia Cheng (Waseda Univ.), Miduki Nakayama (Waseda Univ.), Ping-an Ruan (Waseda Univ.), Jong-In Cheon (Waseda Univ.), Ming-Yuan Hsieh (Waseda Univ.), Harutoshi Ogai (Waseda Univ.), Hiroshi Inujima (Waseda Univ.), Noriyoshi Yamauchi (Waseda Univ.)

2A02-2	Integration of Sensor Networks with Information Systems Using the Messaging Network Architecture	9:20	9:40	

*Hideyuki Fukuhara (Net One Systems Co.Ltd.), Kensaku Kawauchi (Univ. of Aizu), Isamu Koseda (Net One Systems Co.Ltd.), Ryutaro Fujita (Net One Systems Co.Ltd.), Yuichi Takahashi (Univ. of Aizu), Masahiro Kinugawa (Eyes Japan Co., Ltd.), Toshiaki Miyazaki (Univ. of Aizu), Senro Saito (Univ. of Aizu), Atushi Kara (Nara National College of Tech.), Takafumi Hayashi (Univ. of Aizu)

2A02-3	Evaporative Estimation Using Data Fusion	9:40	10:00	

*Vittaya Tipsuwanporn (KMITL)

2A02-4	IEEE 802.11 Timing Synchronization Based Wireless Sensor System for Vibration Measurement	10:00	10:20	

*Yutaka Uchimura (Shibaura Inst. of Tech.), Tadashi Nasu (Kajima Co.), Motoichi Takahashi (Kajima Co.)

2A02-5	Monitoring System for Landslide Disaster by Wireless Sensing Node Network	10:20	10:40	

*Riki Ohbayashi (Ritsumeikan Univ.BKC), Yasutaka Nakajima (Ritsumeikan Univ.BKC), Hideto Nishikado (Ritsumeikan Univ.BKC), Shigeru Takayama (Ritsumeikan Univ.BKC)

2A03	Sensing Systems in Robotics	9:00	10:40	Room03

Chair: Aiguo Ming (UEC), Hiroaki Nakanishi (Kyoto Univ.)

2A03-1	Sensitivity Analysis and Influence Discussion of Estimation Errors in Rotation Parameters in Localization of Rovers on Small Planetary Bodies with Single Source of Radio Waves	9:00	9:20	

Sayaka Kanata (Kyoto Univ.), *Hiroaki Nakanishi (Kyoto Univ.), Tetsuo Sawaragi (Kyoto Univ.), Tetsuo Yoshimitsu (JAXA), Ichiro Nakatani (Aichi Univ. of Tech.)

2A03-2	Improvement of Performance of Localization ID Tag Using Multi-Antenna RFID System	9:20	9:40	

*Songmin Jia (UEC), Jinbuo Sheng (UEC), Kunikatsu Takase (UEC)

2A03-3	Application of Stereoscopic Video Based on Mobile Robot	9:40	10:00	

*Chompoonuch Jinjakam (KMITL), Nuttapong Jinjakam (KMITL), Ruttikorn Varakulsiripunth (KMITL)

2A03-4	Analisis of Human Walking by 3-D Acceleration Sensor and Its Application	10:00	10:20	

*Koji Umemura (Hosei Univ.), Koki Tachikawa (Hosei Univ.), Yosuke Kurihara (Hosei Univ.), Kajiro Watanabe (Hosei Univ.)

2A03-5	Relative Localization of a Hopping Rover on an Asteroid Surface Using Optical Flow	10:20	10:40	

*Edmond Wai Yan So (Graduate Univ. for Advanced Studies), Tetsuo Yoshimitsu (JAXA ISAS), Takashi Kubota (JAXA ISAS)

2A04	Mechanical Systems	9:00	10:40	Room04

Chair: Shigeru Aoki (Tokyo Metrop Coll of Industrial Tech)

2A04-1	Passive Control for Seismic Response of House with Oil Damper	9:00	9:20	

Shigeru Aoki (Tokyo Metropolitan College of Industrial Technology), Kouichi Iwanami (Tokyo Metropolitan College of Technology), *Kento Sakakibara (Tokyo Metropolitan College of Industrial Technology)

2A04-2	Liquid Handling Control for Service Robot by Hybrid Shape Approach	9:20	9:40	

*Yuta Komoguchi (Gifu Univ.), Motofumi Kunieda (Gifu Univ.), Ken'ichi Yano (Gifu Univ.)

2A04-3	Dynamic Modeling and Optimization of a Decoupled XY Flexure Parallel Micro-Manipulator	9:40	10:00	

Qingsong Xu (Univ. of Macau), *Yangmin Li (Univ. of Macau)

2A04-4	Micromanipulation System Based on Local Vibration	10:00	10:20	

*Akira Masuda (Kyushu Inst. of Technol.), Takeshi Yamakawa (Kyushu Inst. of Technol.), Lev Zimin (Kyushu Inst. of Technol.)

2A04-5	Electronically Controlled Throttle Synchronized with Intake Valves	10:20	10:40	

*Yuta Ikeda (UEC), Seiichi Shin (UEC)

2A05	Man-Machine Systems (1)	9:00	10:00	Room05

Chair: Masayoshi Wada (Saitama Institute of Technology), Yoshihiro Miyake (Tokyo Institute of Technology)

2A05-1	Development of Human-Robot Interfacing Method for Assistive Wearable Robot of the Human Upper Extremities	9:00	9:20	

*HeeDon Lee (Hanyang Univ.), SeungNam Yu (Hanyang Univ.), SeungHoon Lee (Hanyang Univ.), JungSoo Han (Hansung Univ.), ChangSoo Han (Hanyang Univ.)

2A05-2	Formalization and Automated Detection of Human Errors	9:20	9:40	

*Dennis Gamrad (Univ. of Duisburg-Essen), Hendrik Oberheid (German Aerospace Center), Dirk Soeffker (Univ. of Duisburg-Essen)

2A05-3	Development of a 4WD Omnidirectional Wheelchair	9:40	10:00	

*Masayoshi Wada (Saitama Inst. of Tech)

2A06	Systems Theory and Engineering (1)	9:00	10:40	Room06

Chair: Wathanyoo Khaisongkram (Tokyo Univ. of Agriculture & Technology)

2A06-1	Control System Design Method Based on Multiple-Precision Arithmetic with Guaranteed Accuracy	9:00	9:20	

*Kentaro Yano (Kyushu Inst. of Tech.), Masanobu Koga (Kyushu Inst. of Tech.), Eisuke Yamamura (Kyushu Inst. of Tech.)

2A06-2	Designing Method for Large Queueing System by Walking-Distance Introduced Queueing Theory	9:20	9:40	

*Daichi Yanagisawa (Univ. of Tokyo and JSPS Research Fellow), Akiyasu Tomoeda (Univ. of Tokyo), Ayako Kimura (Univ. of Tokyo), Katsuhiro Nishinari (Univ. of Tokyo and PRESTO)

2A06-3	Discrete PIDx(n-2) Stage PD Cascade Controller for SISO Systems	9:40	10:00	

Pittaya Pannil (KMITL), *Suksiri Kanchanasomranvong (KMITL), Prapart Ukakimaparn (KMITL), Thanit Trisuwannawat (KMITL), Kitti Trisesth (KMITL)

2A06-4	Discovering Fuzzy Classification Rules Using Genetic Network Programming	10:00	10:20	

*Karla Taboada (Waseda Univ.), Eloy Gonzales (Waseda Univ.), Kaoru Shimada (Waseda Univ.), Shingo Mabu (Waseda Univ.), Kotaro Hirasawa (Waseda Univ.)

2A06-5	Passive Dynamic Walking with Flat Feet and Ankle Push-off	10:20	10:40	

Yan Huang (Peking Univ.), *Qining Wang (Peking Univ.), Long Wang (Peking Univ.), Guangming Xie (Peking Univ.), Wei Chen (Peking Univ.)

2A07	Mobile Systems - Control	9:00	10:00	Room07

Chair: Yoshinori Kuno (Hosei Univ.)

2A07-1	Trajectory Generation of an Unmanned Forklift for Autonomous Operation in Material Handling System	9:00	9:20	

*Tua Agustinus Tamba (Pusan National Univ.), Quyen T. T. Bui (Pusan National Univ.), Keum-Shik Hong (Pusan National Univ.)

2A07-2	Traversability Analysis for Navigation of Unmanned Robots	9:20	9:40	

Gang-Gyoo Jin (Korea Maritime Univ.), *Yun-Hyung Lee (Korea Port Training Inst.), Hyung-Sik Lee (Defense Agency for Tech and Quality), Myung-Ok So (Korea Maritime Univ.)

2A07-3	Hierarchical and Distributed Autonomous Navigation for Lunar Rover	9:40	10:00	

Jiajun Gu (Research Institute of Robotics, SJTU), *Qixin Cao (Research Institute of Robotics, SJTU), Yi Huang (Research Institute of Robotics, SJTU)

2A08	Human Interfaces - Human Detection	9:00	9:40	Room08

Chair: Kosuke Sekiyama (Nagoya Univ.), Hideki Hashimoto (The Univ. of Tokyo)

2A08-1	Localization of Human Hand by Using Inertial Sensors	9:00	9:20	

*Kauki Yokoi (Univ. of Tokyo), Mihoko Niitsuma (Univ. of Tokyo), Hideki Hashimoto (Univ. of Tokyo)

2A08-2	Measurement of Vital Signs of a Person on Concrete Flooring	9:20	9:40	

*Kosuke Masuyama (Hosei Univ.), Kajiro Watanabe (Hosei Univ.), Yosuke Kurihara (Hosei Univ.)

2A09	Optimal Control and Particle Swarm Optimization	9:00	10:00	Room09

Chair: Gou Nakura (Osaka Univ.), Amitava Chatterjee (Jadavpur Univ.)

2A09-1	Discrete Optimal H2 Controller for Inverted Pendulum System	9:00	9:20	

Pittaya Pannil (KMITL), *Nattakan Srisiri (KMITL), Prapart Ukakimaparn (KMITL), Thanit Trisuwannawat (KMITL), Kitti Tirasesth (KMITL)

2A09-2	Stochastic Optimal Tracking with Preview for Linear Continuous-Time Markovian Jump Systems	9:20	9:40	

*Gou Nakura (Osaka Univ.)

2A09-3	A Lyapunov Theory and Stochastic Optimization Based Stable Adaptive Fuzzy Control Methodology	9:40	10:00	

Kaushik DasSharma (Future Institute of Engineering and Management), *Amitava Chatterjee (Jadavpur Univ.), Fumitoshi Matsuno (UEC)

2A10	Fuzzy Systems	9:00	10:20	Room10

Chair: Jyh-Ching Juang (National Cheng Kung Univ.)

2A10-1	Improving Nonlinear T-S Fuzzy Controller Design Using Sum of Squares Technique	9:00	9:20	

*Shun Hong Chen (National Cheng Kung Univ.), Jyh-Ching Juang (National Cheng Kung Univ.)

2A10-2	Delay Dependent Passive Fuzzy Control Design for Synchronous Generator with Multiplicative Noise	9:20	9:40	

*Cheung-Chieh Ku (National Taiwan Ocean Univ.), Pei-Hwa Huang (National Taiwan Ocean Univ.), Wen-Jer Chang (National Taiwan Ocean Univ.), Wei Chang (National Taiwan Ocean Univ.)

2A10-3	GA-Based Fuzzy Control for Nonlinear Systems	9:40	10:00	

P.C. Chen (National Central Univ.), C. W. Chen (Shu Te Univ.), *C.Y. Chen (Yung Ta Univ.), W.L. Chiang (National Central Univ.)

2A10-4	Fuzzy Controller Design for Singular Affine T-S Fuzzy Models	10:00	10:20	

Wen-Jer Chang (National Taiwan Ocean Univ.), Jian-Hon Sie (National Taiwan Ocean Univ.), *Cheung-Chieh Ku (National Taiwan Ocean Univ.)

2A11	System Identification	9:00	10:20	Room11

Chair: Henry Leung (Univ. of Calgary), Kenji Sugimoto (Nara Institute of Science and Technology)

2A11-1	Semiblind System Identification with Symbolic Chaotic Sequences	9:00	9:20	

*Ajeesh P Kurian (Univ. of Calgary), Henry Leung (Univ. of Calgary)

2A11-2	Heat Capacity Identification via Mahalanobis Taguchi System	9:20	9:40	

Arata Suzuki (Zojirushi Co.), *Kenji Sugimoto (NAIST)

2A11-3	Nonlinear Dynamics Estimation of CAM Plants Using Slow Manifolds	9:40	10:00	

*Yusuke Totoki (Oita Univ.), Haruo Suemitsu (Oita Univ.), Takami Matsuo (Oita Univ.)

2A11-4	Nonmodel-Based Estimation of Friction Forces with Acceleration Estimator	10:00	10:20	

*Kouichi Mitsunaga (Oita Inst. of Tech.), Takami Matsuo (Oita Univ.)

2A12	Control for Mechanical Systems (1)	9:00	11:00	Room12

Chair: Taworn Benjanarasuth (KMITL)

2A12-1	Hybrid Controller for Rotational Inverted Pendulum Systems	9:00	9:20	

*Taworn Benjanarasuth (KMITL), Songmoung Nundrakwang (KMITL)

2A12-2	Stabilization for the Nonlinear Beam Equation	9:20	9:40	

*Daewook Kim (Pusan National Univ.), Keum-Shik Hong (Pusan National Univ.), Il Hyo Jung (Pusan National Univ.)

2A12-3	Simplified Design of I-P Controller for Speed Control of Two-Inertia System	9:40	10:00	

*Sataporn Suathed (Pathumthani Univ.), Songmoung Nundrakwan (KMITL), Taworn Benjanarasuth (KMITL), Jongkol Ngamwiwit (KMITL), Noriyuki Komine (Tokai Univ.)

2A12-4	A Study on Impedance Control Using Passive Elements for Human-Assist System	10:00	10:20	

*Soichi Nakamura (Mie Univ.), Ryojun Ikeura (Mie Univ.), Takahiro Wasaka (Mie Univ.), Kazuki Mizutani (Mie Univ.), Hideki Sawai (Mie Univ.), Hitoshi Hirata (Nagoya Univ.)

2A12-5	A Study on Stabilization Errors of Vehicle-mounted System Using 2-Axes Gyro Sensor	10:20	10:40	

Joonghyun Kim (KAIST), Dong-Jae Lee (KAIST), *Youngjin Park (KAIST), Youn-sik Park (KAIST)

2A12-6	I-infinity Preview Control for Biped Walking Pattern Generation	10:40	11:00	

Sadaaki Kunimatsu (Kumamoto Univ.), *Takahiro Fukuda (Kumamoto Univ.), Kazuhide Nakasaki (MLIT), Mitsuaki Ishitobi (Kumamoto Univ.)

2A13	OS: Sensing, Control and Safety Systems for Smart Vehicle Automation	9:00	11:00	Room13

Organizer: Masafumi Hashimoto (Doshisha Univ.), Mamoru Minami (Univ. of Fukui)
Chair: Masafumi Hashimoto (Doshisha Univ.), Mamoru Minami (Univ. of Fukui)

2A13-1	Obstacle Map Generation Using Virtual Disparity Image for Non-Flat Road	9:00	9:20	

*Naoki Suganuma (Kanazawa Univ.), Masanori Shimoyama (Kanazawa Univ.), Naofumi Fujiwara (Kanazawa Univ.)

2A13-2	Appearance Based Object Pose Estimation Using Regression Models	9:20	9:40	

*Mamoru Saito (Osaka Muni. Tech. Res.), Katsuhisa Kitaguchi (Osaka Muni. Tech. Res.)

2A13-3	Cognitive Resource Allocation Optimization for Real-time Multiple Object Recognition	9:40	10:00	

*Ryohei Ozawa (Univercity of Fukui), Mamoru Minami (Univercity of Fukui)

2A13-4	A 3D Display with Variable Depth Moire Pattern	10:00	10:20	

*Keita Nagasaki (Musashi Institute of Tec.), Yue Bao (Musashi Institute of Tec.)

2A13-5	Voting Based Fault Isolation of In-Vehicle Multi-Sensors	10:20	10:40	

Masafumi Hashimoto (Doshisha Univ.), *Ryohei Kitade (Doshisha Univ.), Fumihiro Itaba (Doshisha Univ.), Kazuhiko Takahashi (Doshisha Univ.)

2A13-6	Research on Rescue Robots with Force Sensors on the Fingertips for Rubble Withdrawal Works	10:40	11:00	

*Keita Miyasaka (Nihon Univ.), Masatoshi Hatano (Nihon Univ.)

2A14	OS: Non-destructive Evaluation (1)	9:00	10:40	Room14

Organizer: Kenbu Teramoto (Saga Univ.)
Chair: Kenbu Teramoto (Saga Univ.), Shinji Ohyama (Tokyo Institute of Tech.)

2A14-1	Measuring the Diameter of Reinforcing Bars in Concrete Nondestructively Using Electromagnetic Wave Radar	9:00	9:20	

*Halima Begum (Yamaguchi Univ.), Masayuki Okamoto (Yamaguchi Univ.), Shogo Tanaka (Yamaguchi Univ.)

2A14-2	A Fundamental Research on Crack Detection of Base Piles of Bridge Piers Using an Acceleration Pickup	9:20	9:40	

Hiroshi Fujimoto (Tokuyama College of Tech.), *Masayuki Okamoto (Yamaguchi Univ.), Shogo Tanaka (Yamaguchi Univ.)

2A14-3	Structure Analysis of Textile Fabric Based on Automatic Extraction of Yarn Positional Information from Three-dimensional CT Image	9:40	10:00	

*Toshihiro Shinohara (Kinki Univ.)

2A14-4	Advanced Visualization of Inner Concrete Structure using Micro-wave Subsurface Radar	10:00	10:20	

Jun-ya Takayama (Tokyo Tech.), *Tadahisa Miyagawa (Tokyo Tech.), Shinji Ohyama (Tokyo Tech.)

2A14-5	Measurement Methods and 3D Reconstruction Algorithms of X ray CT Inspection	10:20	10:40	

*Mitsukuni Tanemura (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Kazuo Kikuchi (Comscan Tecno)

2A15	**OS: Computational Intelligence in Neural Networks (1)**	**9:00** **10:40**	**Room15**

Organizer: Yasuaki Kuroe (Kyoto Institute of Tech.), Hiroaki Nakanishi (Kyoto Univ.)
Chair: Yasuaki Kuroe (Kyoto Institute of Tech.), Toshiharu Hatanaka (Osaka Univ.)

2A15-1 F-MRI analysis of the human brain activities during manual control of a nonholonomic system — 9:00 9:20

*Shinpei Kato (Tohoku Univ.), Takakuni Goto (Tohoku Univ.), Noriyasu Homma (Tohoku Univ.), Makoto Yoshizawa (Tohoku Univ.), Yukihito Yomogida (Tohoku Univ.), Yuko Sassa (Tohoku Univ.), Motoaki Sugiura (Tohoku Univ.), Jorge Riera (Tohoku Univ.), Ryuta Kawashima (Tohoku Univ.)

2A15-2 Parameter Optimization of Model Predictive Control Using PSO — 9:20 9:40

*Ryohei Suzuki (Keio Univ.), Fukiko Kawai (Fuji Electric Advanced Tech.), Chikashi Nakazawa (Fuji Electric Advanced Tech.), Tetsuro Matsui (Fuji Electric Advanced Tech.), Eitaro Aiyoshi (Keio Univ.)

2A15-3 Estimation System of Human Behaviors Using a Fuzzy Neural Network Based Object Selection — 9:40 10:00

*Kiyotaka Izumi (Saga Univ.), Kohei Kamohara (Saga Univ.), Keigo Watanabe (Saga Univ.)

2A15-4 On-line Configuration-optimizing Control of Redundant Manipulator Based on AMSIP — 10:00 10:20

*Yusaku Nakamura (Fukui Univ.), Tongxiao Zhang (Fukui Univ.), Mamoru Minami (Fukui Univ.)

2A15-5 Perception for partner robot using spiking neural network in dynamic environment — 10:20 10:40

*Hiroyuki Masuta (Tokyo Metropolitan Univ.), Naoyuki Kubota (Tokyo Metropolitan Univ.)

2A16	**OS: Artificial Life Body System**	**9:00** **10:20**	**Room16**

Organizer: Masanori Sugisaka (Waseda Univ.)
Chair: Fengzhi Dai (Mastsue College of Tech.), Ju-Jang Lee (KAIST)

2A16-1 Study on the Effect of Stiffness Modification at Pneumatic Muscle actuated Manipulator — 9:00 9:20

*Tae-Yong Choi (KAIST), Jeong-Jung Kim (KAIST), Ju-Jang Lee (KAIST)

2A16-2 A control method of ankle foot orthosis(AFO) with artificial muscle — 9:20 9:40

*Masanori Sugisaka (Nippon Bunri Univ., ALife Robotics Co., Ltd.), Jiwu Wang (ALife Robotics Co., Ltd.), Hiroshi Tsumura (Oita Univ.), Masashi Kataoka (Oita Univ.)

2A16-3 Image Segmentation by Resonance Algorithm — 9:40 10:00

*Fengzhi Dai (Matsue College of Tech.), Yutaka Fujihara (Matsue College of Tech.), Masanori Sugisaka (Waseda Univ.)

2A16-4 Fundamental Research on Polymer Material as Artificial Muscle — 10:00 10:20

Yutaka Fujihara Fujihara (Matsue College of Tech.), *Takayuki Hanamoto (Matsue College of Tech.), Fengzhi Dai (Matsue College of Tech.)

2A17	**OS: New Trends in Reinforcement Learning**	**9:00** **11:00**	**Room17**

Organizer: Keiki Takadama (UEC)
Chair: Keiki Takadama (UEC), Kazuteru Miyazaki (National Institution for Academic Degrees and Univ. Evaluation)

2A17-1 Natural Gradient Actor-Critic Algorithms using Random Rectangular Coarse Coding — 9:00 9:20

*Hajime Kimura (Kyushu Unv.)

2A17-2 About Q-values of Monte Carlo method — 9:20 9:40

*Wataru Uemura (Ryukoku Univ.)

2A17-3 Extension of Improved Penalty Avoiding Rational Policy Making Algorithm to Tile Coding Environment for Keepaway Tasks — 9:40 10:00

*Takuji Watanabe (Meiji Univ.), Kazuteru Miyazaki (NIAD-UE), Hiroaki Kobayashi (Meiji Univ.)

2A17-4 Swarm Reinforcement Learning Algorithms Based on Sarsa Method — 10:00 10:20

*Hitoshi Iima (Kyoto Institute of Tech.), Yasuaki Kuroe (Kyoto Institute of Tech.)

2A17-5 How to recommend preferable solutions of a user in interactive reinforcement learning ? — 10:20 10:40

*Tomohiro Yamaguchi (Nara National College of Tech.), Takuma Nishimura (Nara National College of Tech.)

2A17-6 Service Flow Simulation Using Reinforcement Learning Models and Scene Transition Nets — 10:40 11:00

*Takeshi Tateyama (Tokyo Metropolitan Univ.), Seiichi Kawata (Advanced Institute of Industrial Tech.), Yoshiki Shimomura (Tokyo Metropolitan Univ.)

2A18	**OS: Safety, Security, and Rescue Robot Systems (3)**	**8:40** **11:00**	**Room18**

Organizer: Fumitoshi Matsuno (UEC)
Chair: Fumitoshi Matsuno (UEC), Toshi Takamori (International Rescue System Institute)

2A18-1 Development of a Door Opening System on Rescue Robot for Search "UMRS-2007" — 8:40 9:00

*Shigeru Kobayashi (Kobe City College of Tech.), Yasuhiro Kobayashi (BI Autotec, Ltd.), Yoshihiro Yamamoto (Shouden Techno, Ltd), Taro Watasue (IRS), Yoshikazu Ohtsubo (Kinki Univ.), Takumi Inoue (Kobe City College of Tech.), Masanobu Yasuda (BI Autotec, Ltd.), Toshi Takamori (IRS)

2A18-2 A semi-autonomous tracked robot system for rescue missions — 9:00 9:20

*Daniele Calisi (Sapienza Univ. of Rome), Daniele Nardi (Sapienza Univ. of Rome), Kazunori Ohno (Tohoku Univ.), Satoshi Tadokoro (Tohoku Univ.)

2A18-3 Evaluating a 3D camera for RoboCup Rescue — 9:20 9:40

Andreas Nuechter (Univ. of Osnabrueck), *Kai Lingemann (Univ. of Osnabrueck), Joachim Hertzberg (Univ. of Osnabrueck)

2A18-4 Rescue Inspectors to Enhance Accessibility and Traverse Ability Using Magnetic Brake Cylinder — 9:40 10:00

*Eyri Watari (Tokyo Institute of Tech.), Hideyuki Tsukagoshi (Tokyo Institute of Tech.), Ato Kitagawa (Tokyo Institute of Tech.)

2A18-5 Measurement of Survivor Location by using GPR with Two Dimensional Array Antenna — 10:00 10:20

*Toshio Takeuchi (Keio Univ.), Hideo Saito (Keio Univ.), Yoshimitsu Aoki (Keio Univ.), Akihisa Ohya (Univ. of Tsukuba), Fumitoshi Matsuno (UEC), Iwaki Akiyama (Shonan Institute of Tech.)

2A18-6 Development of simplified search device based on human power generation, "Kuru-Kuru" and carrier vehicle for rescue materials,"BENKEI-2" — 10:20 10:40

*Tomoharu Doi (Osaka Pref. College of Tech.), Koichi Osuka (KOBE univ.), Yuki Iwano (Akasi National College of Tech.)

2A18-7 Development of an Unmanned Terrestrial Mobile Robot with enhanced situational awareness — 10:40 11:00

*Ovais Zuberi (National Univ. of Scien. and Tech.), Javaid Iqbal (National Univ. of Scien. and Tech.), Akhtar Nawaz (National Univ. of Scien. and Tech.), Khalid Munawar (National Univ. of Scien. and Tech.), Aamna Fayyaz (National Univ. of Scien. and Tech.), Sidrah Liaqat (National Univ. of Scien. and Tech.)

2A19	**OS: Control and Monitoring for Process Plants**	9:00	10:20	**Room19**

Organizer: Yamashita Yoshiyuki (Tokyo Univ. of Agriculture and Tech.), Tetsuya Ohtani (Yokogawa Electric Co.)
Chair: Yoshiyuki Yamashita (Tokyo Univ. of Agriculture and Tech.), Tetsuya Ootani (Yokogawa Electric Co.)

2A19-1	Innovative Plant Operations by Using Tracking Simulator	9:00	9:20

*Tatenobu Seki (Yokogawa Electric Co.), Gentaro Fukano (Yokogawa Electric Co.), Kyojiro Kawaguchi (Yokogawa Electric Co.), Akio Nakabayashi (Yokogawa Electric Co.), Emiko Hatsugai (Yokogawa Electric Co.), Makoto Nakaya (Yokogawa Electric Co.), Tetsuya Ohtani (Yokogawa Electric Co.), Katsumi Yokoyama (Omega Simulation Co., Ltd.), Tsuguo Kawamura (Omega Simulation Co., Ltd.), Goro Oguchi (TinyMouse Co., Ltd.)

2A19-2	Hierarchical MPC Supervisory Control with Sensitivity and Controllability Monitoring	9:20	9:40

*Yutaka Iino (Toshiba Co.)

2A19-3	Diagnosis and Quantification of Control Valves	9:40	10:00

*Yoshiyuki Yamashita (Tokyo Univ. of A & T)

2A19-4	Nonlinear Model Predictive Control of an Oxy-Fuel Combustion Boiler for Regulating the Excess Oxygen Percentage in the Flue Gas	10:00	10:20

*Ade Haryanto (Pusan National Univ.), Keum-Shik Hong (Pusan National Univ.), Chung-Hwan Jeon (Pusan National Univ.)

2A20	**OS: Navigation, Guidance, and Control in Aerospace Systems (1)**	9:00	10:40	**Room20**

Organizer: Tsutomu Ichikawa (JAXA), Yoshimasa Ochi (National Defense Academy)
Chair: Yoshimasa Ochi (National Defense Academy), Tsutomu Ichikawa (JAXA)

2A20-1	Collision Avoidance Control Law of a Helicopter using Information Amount Feedback	9:00	9:20

*Seiya Ueno (Yokohama Nat. Univ.), Takehiro Higuchi (Yokohama Nat. Univ.), Kikuko Iwama (Yokohama Nat. Univ.)

2A20-2	UAV Collision Avoidance Based on Geometric Approach	9:20	9:40

*Jung-Woo Park (KAIST), Hyon-Dong Oh (KAISt), Min-Jea Tahk (KAIST)

2A20-3	Cooperative Control of Multiple Electronic Combat Air Vehicles for Electronic Attack	9:40	10:00

*Il-hyoung Lee (kaist), Hyochoong Bang (kaist)

2A20-4	Development of Alpha Sensor for Unmanned Aerial Systems	10:00	10:20

*Mi-Hyun Park (Inha Univ.), Sung-Su Kim (Inha Univ.), Chang-Kyung Ryoo (Inha Univ.), Keeyoung Choi (Inha Univ.), Choonbae Park (Inha Univ.)

2A20-5	Linear Model of a Powered Paraglider and Observer Design	10:20	10:40

*Masahito Watanabe (National Defense Academy), Yoshimasa Ochi (National Defense Academy)

2A21	**OS: Control Application to Mechatronics and Powertronics (1)**	9:00	10:20	**Room21**

Organizer: Kohji Higuchi (UEC)
Chair: Kohji Higuchi (UEC), Yoshihiro Matsui (Tokyo National College of Tech.)

2A21-1	Compact Audio Power Supply Using Apprpximate 2DOF Robust Digital Control	9:00	9:20

*Tomotaka OGAWA (UEC), Yuta MIYAZAWA (UEC), Kohji HIGUCHI (UEC), Tatsuyoshi KAJIKAWA (UEC), Akira SHIMIZU (Pioneer Co.), Osamu YOSHIZAWA (Pioneer Co.)

2A21-2	Design of Digital Robust Controller for PWM Power Amplifier and Bumpless Mode Switching	9:20	9:40

*Ryosuke Okazaki (UEC), Koji Matsushita (NF Co.), Kohji Higuchi (UEC), Kazushi NakanoA (UEC), Tatsuyoshi Kajikawa (UEC), Fumiho Chino (NF Co.)

2A21-3	Application of Non-linear Observer with Simultaneous Perturbation Stochastic Approximation Method to Single Flexible Link SMC	9:40	10:00

*Jorge Martinez Medina (UEC.), Umerujan Sawut (Nikki Co. Ltd), Kazushi Nakano (UEC.)

2A21-4	Cascade Lattice IIR Adaptive Filter Structure Using Simultaneous Perturbation Method for Self-Adjusting SHARF Algorithm	10:00	10:20

*Jorge Martinez Medina (UEC.), Kazushi Nakano (UEC.), Umerujan Sawut (Nikki Co. Ltd)

Aug. 21 (Thu.) Session 2B

2B01	**Remote Sensing (2)**	13:15	14:35	**Room01**

Chair: Masashi Hayakawa (UEC)

2B01-1	An Evaluation Method of the Retrieved Carbone Dioxide Column Amount Derived from Short Wave Infrared Measurement	13:15	13:35

*Mitsuhiro Tomosada (The Institue of Statistical Mathmatics), Hiroe Tsubaki (The Institute of Statistical Mathmatics)

2B01-2	Small Object Recognition Techniques Based on Structured Template Matching for High-Resolution Satellite Images	13:35	13:55

*Toshio Modegi (Dai Nippon Printing)

2B01-3	Evaluation of Pedestrians Flow by Time Transition of Traffic Line Density Distribution	13:55	14:15

*Takahiro Iwata (Ritsumeikan Univ.BKC), Hideto Nishikado (Ritsumeikan Univ.BKC), Shigeru Takayama (Ritsumeikan Univ.BKC)

2B01-4	Extraction of Road Markings from Aerial Images	14:15	14:35

*Yuichi Ishino (Shizuoka Univ.), Hitoshi Saji (Shizuoka Univ.)

2B02	**Opto-Electronic Measurement**	13:15	14:35	**Room02**

Chair: Shoji Adachi (Yokogawa Electric Co.)

2B02-1	Enhancement of BOCDA System for Aircraft Health Monitoring	13:15	13:35

*Yoshihiro Kumagai (Yokogawa Electric Co.), Satoshi Matsuura (Yokogawa Electric Co.), Shoji Adachi (Yokogawa Electric Co.), Kazuo Hotate (Univ. of Tokyo)

2B02-2	Beam Shaping for Detection of Small Object by Phase Correction Element	13:35	13:55

*Masato Yamada (Sanyo Electric Co.,Ltd), Tatsuo Arai (Osaka Univ.), Yoshiyuki Matsumura (Sanyo Electric Co., Ltd), Yasuyuki Kanou (Sanyo Electric Co., Ltd)

2B02-3	Optical pH Measurement Method Using Organic Dye Film	13:55	14:15

*Hiroaki Aizawa (Toyo Univ.), Kenichi Okubo (Toyo Univ.), Tooru Katsumata (Toyo Univ.), Shuji Komuro (Toyo Univ.)

2B02-4	An Experimental Study of Natural Lighting for Energy Conservation Using Top-Up Control Method	14:15	14:35

Chaichana Wangkadilok (KMITL), Witsarut Sriratana (KMITL), Narin Tammarugwattana (KMITL), *Lerdlekha Tanachaikhan (RU)

2B04	**Industrial Automation**	**13:15**	**15:15**	**Room04**

Chair: Koichi Yoshida (NTT), Yasuo Takagi (Toshiba Co.)

2B04-1	Auto Defect Repair Algorithm for LCD Panel Review & Repair Machine	13:15	13:35

*Woo Chul Lee (LG Electronics), Jun Bong Song (LG Electronics), Byung Yeol Kim (LG Electronics), Sang Hyuk Park (LG Electronics), Sung Muk Lim (LG Electronics), Won Jeong Lee (LG Electronics)

2B04-2	Developing Auto Recipe Management System for LCD Panel Auto Defect Detecting Inspection Machine	13:35	13:55

*Song Jun Bong (LG Electronics), Lee Woo Chul (LG Electronics)

2B04-3	Safety-Related Data Transfer in Secure Virtual Automation Networks	13:55	14:15

*Heiko Adamczyk (ifak e.V. Magdeburg), Andreas Deuter (Phoenix Contact), Steffen Horn (Phoenix Contact), Mario Wolframm (TSA)

2B04-4	Development of Processor Directly Executing IEC 61131-3 Language	14:15	14:35

*Motohiko Okabe (Toshiba Co.)

2B04-5	Seamless Transmission Between Single-Mode Optical Fibers Using Free Space Optics System	14:35	14:55

*Koichi Yoshida (NTT), Takeshi Tsujimura (NTT), Toshio Kurashima (NTT)

2B04-6	Next Generation HVAC System	14:55	15:15

Yasuyuki Ito (Toshiba Co.), Yoshiki Murakami (Toshiba Co.), Kenzo Yonezawa (Toshiba Co.), Nobutaka Nishimura (Toshiba Co.), *Yasuo Takagi (Toshiba Co.), Hiroyuki Morimoto (Toshiba Co.), Susumu Sugawara (Toshiba Co.), Nobuyuki Donen (Toshiba IT&Control)

2B05	**Man-Machine Systems (2)**	**13:15**	**14:35**	**Room05**

Chair: Takayuki Yamada (Ibaraki Univ.), Syunji Yazaki (Tokyo Univ. of Technology)

2B05-1	Development of a Control System for Supporting to Grow Human Skill of a Unicycle	13:15	13:35

*Hiroshi Ohsaki (Tokyo Denki Univ.), Masaya Kinoshita (Tokyo Denki Univ.), Yoshiaki Sugimoto (Tokyo Denki Univ.), Kohei Yoshida (Tokyo Denki Univ.), Hideo Yoshida (Tokyo Denki Univ.), Masami Iwase (Tokyo Denki Univ.), Shoshiro Hatakeyama (Tokyo Denki Univ.)

2B05-2	A Proposal of Abnormal Condition Detection System Using Wireless Wearable Biosensor for Elderly People	13:35	13:55

*Syunji Yazaki (Tokyo Univ. of Technology), Toshio Matsunaga (Tokyo Univ. of Technology)

2B05-3	An Efficient Approach to Human Motion Recognition Employing Large Motion-Database Structure	13:55	14:15

*S. M. Ashik Eftakhar (Kyushu Institute of Technology), Joo Kooi Tan (Kyushu Institute of Technology), Hyong Seop Kim (Kyushu Institute of Technology), Seiji Ishikawa (Kyushu Institute of Technology)

2B05-4	Remarks on Feedback Loop Gain Characteristics of Adaptive Type Neural Network Feedforward Feedback Controller	14:15	14:35

*Takayuki Yamada (Ibaraki Univ.)

2B06	**Systems Theory and Engineering (2)**	**13:15**	**14:55**	**Room06**

Chair: Zhou Jun (Kyoto Univ.), Li Xu (Akita Prefectural Univ.)

2B06-1	Controllability in Linear Continuous-Time Periodic Systems	13:15	13:35

*Jun Zhou (Kyoto Univ.)

2B06-2	Synthesis of Multidimensional Control Systems by Grobner Basis Approach	13:35	13:55

*Li Xu (Akita Prefectural Univ.)

2B06-3	An Evolutionary Approach to Identification Problems with Incomplete Output Data	13:55	14:15

Joe Imae (Osaka Prefecture Univ.), *Yasuhiko Morita (Osaka Prefecture Univ.), Guisheng Zhai (Osaka Prefecture Univ.), Tomoaki Kobayashi (Osaka Prefecture Univ.)

2B06-4	Cost Oriented Assembly Process Planning with Time Constraints	14:15	14:35

*Fu-Shiung Hsieh (Chaoyang Univ. of Technology), Chih-Wen Chiang (Chaoyang Univ. of Technology)

2B06-5	A Hierarchical Branch-and-Bound Algorithm to Compute the Worst-Case Norm of Uncertain Linear Systems under Inputs with Magnitude and Rate Bounds	14:35	14:55

*Wathanyoo Khaisongkram(Tokyo Univ. Agri. & Tech.), David Banjerdpongchai (Chulalongkorn Univ.)

2B07	**Mobile Systems - Service Robots**	**13:15**	**14:55**	**Room07**

Chair: Songmin Jia (UEC)

2B07-1	Development of Small Mobile Robot Platform Suitable for Living Space	13:15	13:35

*Takafumi Abe (UEC), Kunikatsu Takase (UEC)

2B07-2	Development of an Autonomous Inverted Pendulum Mobile Robot for Outdoor Environment	13:35	13:55

*Igarashi Hiroki (UEC and SGI Japan, Ltd.), Toshihisa Saito (SGI Japan, Ltd.), Takaya Kinjyo (SGI Japan, Ltd.), Fumitoshi Matsuno (UEC)

2B07-3	Collision Prediction Using Physical Simulator and Stereo Vision System for Human Support Robot	13:55	14:15

*Akira Ohta (Tokyo Univ. of Technology), Naoki Amano (Tokyo Univ. of Technology)

2B07-4	Human-Assistance Robotic System Using Interactive GUI	14:15	14:35

*Songmin Jia (UEC), Tomoyuki Murakami (UEC), Daisuke Chugo (UEC), Kunikatsu Takase (UEC)

2B07-5	LRF-Based Self-Localization of Mobile Robot Using Extended Kalman Filter	14:35	14:55

*Songmin Jia (UEC), Akira Yasuda (UEC), Daisuke Chugo (UEC), Kunikatsu Takase (UEC)

2B08	**Human Interfaces - Sensors**	**13:15**	**14:55**	**Room08**

Chair: Yutaka Sakaguchi (UEC)

2B08-1	Capacitive Touch Sensor Based User-Interface : Generic Design Considerations and Development of an Wearable Input Device	13:15	13:35

*Ranajit Chatterjee (UEC), Fumitoshi Matsuno (UEC)

2B08-2	Development of an Earphone-Like Pulsimeter and Walking Application	13:35	13:55

*Jun Tokuda (Hosei Univ.), Kajiro Watanabe (Hosei Univ.)

2B08-3 The Three-Lead Wireless ECG in Sensor Networks for Mobile Patients	13:55	14:15
*Visarut Nopparat (KMUTNB), Phongsak Keeratiwintakorn (KMUTNB)		
2B08-4 Audializing Human Movements for Motor Skill Learning	14:15	14:35
*Koji Matsumura (UEC), Yutaka Sakaguchi (UEC)		
2B08-5 Real-Time Measurement, Visualization and Analysis of Movements by Fiber Optical Sensory Applied to Robotics	14:35	14:55
*Markus Koch (Univ. of Paderborn), Robert Beckebans (Univ. of Paderborn), Juergen Schrage (Siemens AG), Willi Richert (Univ. of Paderborn)		

2B09 Trajectory Tracking and Planning	**13:15**	**14:35**	**Room09**
Chair: Fumio Miyazaki (Osaka Univ.)			

2B09-1 Trajectory Generator for Autonomous Object Control	13:15	13:35
*Aleksander Nawrat (Silesian Univ. of Technology)		
2B09-2 Real-Time Motion Planning in Unknown Environment: a Voronoi-Based StRRT (Spatiotemporal RRT)	13:35	13:55
*Hiroto Sakahara (Osaka Univ.), Yasuhiro Masutani (O.E.C.U.), Fumio Miyazaki (Osaka Univ.)		
2B09-3 Object Tracking for a Panning Stereo Vision System	13:55	14:15
*Choong-Ho Lee (Inha Univ.), Seung-Hoon Yeom (Inha Univ.), Min-Jung Kang (Inha Univ.), Jin-Hwan Kim (Inha Technical College), Uk-Youl Huh (Inha Univ.)		
2B09-4 Non-linear Observer-Based Trajectory Tracking Control for A Wheeled Mobile Robot	14:15	14:35
*Jahoo Koo (POSTECH), Seungjoon Choi (POSTECH), Daehyun Ji (POSTECH), Sangchul Won (POSTECH)		

2B10 Sliding Mode Control	**13:15**	**14:55**	**Room10**
Chair: Kang-Bak Park (Korea Univ.), Hamza Chaal (Waseda Univ.)			

2B10-1 The Ultimate Bound of a Sampled-Data System with Sliding Mode Controller	13:15	13:35
Moon-Ho Son (Korea Univ.), Hum Young Park (Korea Univ.), *Kang-Bak Park (Korea Univ.)		
2B10-2 Design of Preview Sliding Mode Control for an Wideband Speaker System	13:35	13:55
*Takayuki Hosokawa (Tokyo Metropolitan Univ.),Yasuchika Mori (Tokyo Metropolitan Univ.)		
2B10-3 Discrete Time Sliding Mode Control With Time Varying Switching Hyper Plane	13:55	14:15
*Yuki Kanai (Tokyo Metropolitan Univ.), Yasuchika Mori (Tokyo Metropolitan Univ.)		
2B10-4 Second Order Sliding Mode Control of a DC Drive with Uncertain Parameters and Load Conditions	14:15	14:35
*Hamza Chaal (KFUPM)		
2B10-5 An Approach to Discrete-Time Sliding Mode Control with Variable Convergence Rate to Sliding Surface	14:35	14:55
*Choong Woo Lee (Hanyang Univ.), Chung Choo Chung (Hanyang Univ.)		

2B11 System Analysis	**13:15**	**14:55**	**Room11**
Chair: Jium-Ming Lin (Chung-Hua Univ.), Masami Saeki (Hiroshima Univ.)			

2B11-1 Time Domain Characterization of Finite Frequency Properties via Behavioral Approach	13:15	13:35
*Yusuke Kaizuka (Univ. of Tokyo), Chiaki Kojima (Univ. of Tokyo), Shinji Hara (Univ. of Tokyo)		
2B11-2 Data-Driven Controller Design for Loop-Shaping Using Plant Transient Responses	13:35	13:55
*Masami Saeki (Hiroshima Univ.), Yosuke Sugitani (Hiroshima Univ.)		
2B11-3 A Fundamental Study of Loop Shaping on H_infinity Control Designs by Fractional Order Calculus	13:55	14:15
*Fujio Ikeda (Nagaoka NCT), Shigehiro Toyama (Nagaoka NCT)		
2B11-4 Scanning Probe Microscope System Design with Linear Velocity Transducer for Feedback Compensation	14:15	14:35
Jium-Ming Lin (Chung-Hua Univ.), *Po-Kuang Chang (Chung-Hua Univ.)		
2B11-5 A Novel Approach to Stability Analysis of Fixed-Point Digital Filters under Finite Word Length Effects	14:35	14:55
*Hsien-Ju Ko (Asia Univ.)		

2B12 Control for Mechanical Systems (2)	**13:15**	**14:35**	**Room12**
Chair: Shinsuke Oh-hara (UEC)			

2B12-1 Proposal on Nonlinear Friction Compensation Based on Variable Natural Length Spring Model	13:15	13:35
*Hiroyoshi Asaumi (Yokohama National Univ.), Hiroshi Fujimoto (Yokohama National Univ.)		
2B12-2 Energy Control of Slider-Crank Mechanism	13:35	13:55
*Yohei Komaita (Tokyo Denki Univ.), Katsuhisa Furuta (Tokyo Denki Univ.)		
2B12-3 Design of 2-Inertia Control System by Minimum-Phase State Control	13:55	14:15
*Takao Tomaru (Tokyo Metropolitan Univ.), Yasuchika Mori (Tokyo Metropolitan Univ.)		
2B12-4 The Driving Control System for Articulated Mobile Robots	14:15	14:35
*Shinsuke Oh-hara(UEC), Tomoya Itoh (UEC), Fumitoshi Matsuno (UEC)		

2B13 OS: Distributed and Cooperative Formation Control	**13:15**	**15:15**	**Room13**
Organizer: Tomohisa Hayakawa (Tokyo Institute of Tech.)			
Chair: Tomohisa Hayakawa (Tokyo Institute of Tech.)			

2B13-1 Consensus Control of Observer-based Multi-Agent System with Communication Delay	13:15	13:35
*Toru Namerikawa (Kanazawa Univ.), Chika Yoshioka (Kanazawa Univ.)		
2B13-2 Formation Control via Receding Horizon Control: A Set oretic Approach	13:35	13:55
*Takeshi Hatanaka (Tokyo Institute of Tech.), Nopthawat Kitudomrat (Tokyo Institute of Tech.), Masayuki Fujita (Tokyo Institute of Tech.)		
2B13-3 Formation Control of Multi-Agent Systems for Urban Earthquake Disasters: Model Predictive Control Approach	13:55	14:15
*Sangil Pak (Tokyo Inst. of Tech.), Tomohisa Hayakawa (Tokyo Inst. of Tech.)		
2B13-4 Multi-Camera Visual Servoing of Multiple Micro Helicopters	14:15	14:35
*Yasushi Iwatani (Tohoku Univ.), Ko Hou (Tohoku Univ.), Koichi Hashimoto (Tohoku Univ.)		
2B13-5 Cyclic Pursuit Strategy for Multi-agent Dynamical Systems with Sampled Communication	14:35	14:55

*Tae-Hyoung Kim (Japan Science and Tech. Agency), Shinji Hara (Univ. of Tokyo)

2B13-6 Fast Sensor Scheduling for Mobile Sensor Networks	14:55	15:15	

*Shogo Arai (Tohoku Univ), Yasushi Iwatani (Tohoku Univ), Koichi Hashimoto (Tohoku Univ)

2B14 **OS: Non-destructive Evaluation (2)**	**13:15**	**14:15**	**Room14**

Organizer: Kenbu Teramoto (Saga Univ.)
Chair: Shinji Ohyama (Tokyo Institute of Tech.), Kenbu Teramoto (Saga Univ.)

2B14-1 Corrosion Shape Recovery by Electromagnetic Acoustic Transducer and its Application to Pipe Wastage Management	13:15	13:35	

*Daigo Kosaka (Kobe Univ.), Fumio Kojima (Kobe Univ.)

2B14-2 Characterization of Deep-lying Fatigue Cracking Arising in Eddy Current Testing	13:35	13:55	

*Kenichi Ohshima (Kobe Univ)

2B14-3 Eigenvalue Imaging Method for Subsurface Inspection over the Lamb-wave Field	13:55	14:15	

*Kenbu Teramoto (Saga Univ.), Akito Uekihara (Saga Univ)

2B15 **OS: Computational Intelligence in Neural Networks (2)**	**13:15**	**15:15**	**Room15**

Organizer: Yasuaki Kuroe (Kyoto Institute of Tech.), Hiroaki Nakanishi (Kyoto Univ.)
Chair: Yasuaki Kuroe (Kyoto Institute of Tech.), Hiroaki Nakanishi (Kyoto Univ.)

2B15-1 Learning Properties of Modular Network SOMs	13:15	13:35	

*Manabu Takeda (Kyoto Univ.), Kazushi Ikeda (NAIST), Tetsuo Furukawa (Kyushu Inst. Tech.)

2B15-2 A Synthesis Method of Gene Regulatory Networks by Network Learning --Extension to Generalized Models	13:35	13:55	

*Yoshihiro Mori (Kyoto institute of Tech.), Yasuaki Kuroe (Kyoto institute of Tech.), Takehiro Mori (Kyoto institute of Tech.)

2B15-3 An incremental principal component analysis based on dynamic accumulation ratio	13:55	14:15	

*Seiichi Ozawa (Kobe Univ.), Kazuya Matsumoto (Kobe Univ.), Shaoning Pang (Auckland Univ. of Tech.), Nikola Kasabov (Auckland Univ. of Tech.)

2B15-4 Gene Classification Using An Improved SVM Classifier with Soft Decision Boundary	14:15	14:35	

*Boyang LI (Waseda Univ.), Liangpeng MA (Waseda Univ.), Jinglu HU (Waseda Univ.), Kotaro HIRASAWA (Waseda Univ.)

2B15-5 Performance improvement of plastic landmine visualization system by employing local correlation method	14:35	14:55	

*Yukimasa Nakano (Univ. of Tokyo), Akira Hirose (Univ. of Tokyo)

2B15-6 A Neural Network Approach for Counting Pedestrians from Video Sequence Images	14:55	15:15	

*Norifumi Ikeda (Univ. of Hyogo), Ayumu Saitoh (Univ. of Hyogo), Teijiro Isokawa (Univ. of Hyogo), Naotake Kamiura (Univ. of Hyogo), Nobuyuki Matsui (Univ. of Hyogo)

2B16 **OS: Biomimetic Approach on Robot Design and Control for Dynamic Locomotion**	**13:15**	**14:55**	**Room16**

Organizer: Takashi Takuma (Osaka Institute of Tech.), Yasuhiro Sugimoto (Kobe Univ.)
Chair: Takashi Takuma (Osaka Institute of Tech.), Katsushi Tsujita (Osaka Institute of Tech.)

2B16-1 A Study on Adaptive Gait Transition of Quadruped Locomotion	13:15	13:35	

*Katsuyoshi Tsujita (Osaka Institute of Tech.), Toshiya Kobayashi (Osaka Institute of Tech.), Takashi Inoura (Osaka Institute of Tech.), Tatsuya Masuda (Osaka Institute of Tech.)

2B16-2 Towards a general neural controller for 3D quadrupedal locomotion	13:35	13:55	

*Christophe Maufroy (UEC), Hiroshi Kimura (Kyoto Inst. of Tech.), Kunikatsu Takase (UEC)

2B16-3 Emergence of a Quadrupedal Bound Gait as Interaction among the Brain, Body and Environment	13:55	14:15	

*Toshiki Maasuda (UEC), Hiroshi Kimura (Kyoto Institute of Tech.), Kunikatsu Takase (UEC)

2B16-4 Adaptive Walking of a 2D Biped Robot during Splitbelt Treadmill	14:15	14:35	

*Yuji Otoda (UEC), Hiroshi Kimura (Kyoto Institute of Tech.), Kunikatsu Takase (UEC), Jia Songmin (UEC)

2B16-5 Gait Transition between Passive Dynamic Walking and Running by Changing the Body Elasticity	14:35	14:55	

*Dai Owaki (Tohoku Univ.), Koichi Osuka (Kobe Univ.), Akio Ishiguro (Tohoku Univ.)

2B17 **OS: Biomimetic Approach in Robotics and Machines**	**13:15**	**15:15**	**Room17**

Organizer: Keigo Watanabe (Saga Univ.), Yutaka Maeda (Kansai Univ.)
Chair: Keigo Watanabe (Saga Univ.), Yutaka Maeda (Kansai Univ.)

2B17-1 Biomimetic Motion Control System Using CPG for a Multi Link Mobile Robot	13:15	13:35	

*Takayuki Matsuo (Kyushu Institute of Tech.), Takeshi Yokoyama (Kyushu Institute of Tech.), Kazuo Ishii (Kyushu Institute of Tech.)

2B17-2 Generation of Obstacle Avoidance Behaviors for Quadruped Robots Using a Finite Automaton	13:35	13:55	

*Kiyotaka Izumi (Saga Univ.), Ryoichi Sato (Saga Univ.), Keigo Watanabe (Saga Univ.)

2B17-3 Environment Recognition System based on Multiple Classification Analyses for Mobile Robot	13:55	14:15	

*Atushi Kanda (KIT), Masanori Sato (KIT), Kazuo Ishii (KIT)

2B17-4 Shape-grinding by Direct Position / Force Control with On-line Constraint Estimation	14:15	14:35	

Weiwei Xu (Univ. of Fukui), *Guanghua Chen (Univ. of Fukui), Mamoru Minami (Univ. of Fukui)

2B17-5 Controlling a Robot Manipulator with Fuzzy Voice Commands Guided by Visual Motor Coordination Learning	14:35	14:55	

*Buddhika Jayasekara (Saga Univ.), Keigo Watanabe (Saga Univ.), Kiyotaka Izumi (Saga Univ.)

2B17-6 Empirical Study of Simultaneous Perturbation Particle Swarm Optimization	14:55	15:15	

Yutak Maeda (Kansai Univ.), *Naoto Matsushita (Kansai Univ.)

2B18 **OS: HDD and Nanoscale Precision Servo Control**	**13:15**	**14:35**	**Room18**

Organizer: Takashi Yamaguchi (Ricoh Co., Ltd.)
Chair: Takashi Yamaguchi (RICOH CO, LTD.), Hiroshi Fujimoto (Yokohama National Univ.)

2B18-1 Identification of Microactuator Resonance at Frequencies Beyond the Nyquist Rate in Dual-Stage Actuator Hard Disk Drives.	13:15	13:35	

*Masaki Nagashima (CRL, Hitachi Ltd.), Shinsuke Nakagawa (CRL, Hitachi Ltd.)

2B18-2 Novel hard disk drive actuator control method to solve micro jog problem	13:35	13:55	

*Hiroyuki Ono (IMES Co. Ltd), Junichi Mochizuki (IMES Co. Ltd), Teiji Hisano (IMES Co. Ltd)

2B18-3 RRO Compensation of Hard Disk Drives with RPTC Considering Correlation of Adjacent Tracks	13:55	14:15	
*Hiroaki Nishina (Yokohama National Univ.), Hiroshi Fujimoto (Yokohama National Univ.)			
2B18-4 Realization of High-Speed Measurement AM-AFM \\Using Surface Topography Learning Observers	14:15	14:35	
*Takayuki Shiraishi (Yokohama National Univ.), Hiroshi Fujimoto (Yokohama National Univ.)			
2B19 OS: Frontline of Bioinformation Exchange (BIX) Research	**13:15**	**14:55**	**Room19**
Organizer: Takaharu Kameoka (Mie Univ.), Atsushi Hashimoto (Mie Univ.) Chair: Takaharu Kameoka (Mie Univ.), Masayuki Hirafuji (National Agricultural Research Center)			
2B19-1 Trial to Develop Extreme Environmental Field Server	13:15	13:35	
*Masayuki Hirafuji (NARC, NARO/ Univ. of Tsukuba), Haoming Hu (NARC, NARO), Hideo Yoichi (NARC, NARO), Tokihiro Fukatsu (NARC, NARO), Takuji Kiura (NARC, NARO), Xuefeng Wang (NARC, NARO/ CAF), Seishi Ninomiya (NARC, NARO/ Univ. of Tsukuba)			
2B19-2 Real time Monitoring for Imja Glacial Lake in Himalaya --- Global Warming Front Monitoring System	13:35	13:55	
*Hiromichi Fukui (Keio Univ.), Ponthip Limlahapun (Keio Univ.), Takaharu Kameoka (Mie Univeristy)			
2B19-3 Spinach Field Monitoring for bridging Thai Producer and Japanese Consumer under Sensor Asia	13:55	14:15	
*Kiyoshi Honda (Asian Institute of Tech.), Aadit Shrestha (Asian Institute of Tech.), Rassarin Chinnachodteeranun (Asian Institute of Tech.), Masaru Mizoguchi (Univ. of Tokyo), Hiroshi Shimamura (Elab Experience Co.,Ltd.), Takaharu Kameoka (Mie Univ.)			
2B19-4 Laser Speckle Measurement for Field Server and BIX	14:15	14:35	
*Hiroaki Ishizawa (Shinshu Univ.), Tsukasa Matsuo (Shinshu Univ.), Takashi Miki (Japan Textile Products Quality and Tech. Center), Hiroyuki Kanai (Shinshu Univ.)			
2B19-5 Optical Monitoring with Field Server toward the BIX Standardization	14:35	14:55	
Atsushi Hashimoto (Mie Univ.), Ryouei Ito (Mie Univ.), Nobukazu Iguchi (Kinki Univ.), Yoshitaka Motonaga (Niigata Univ.), Kenichi Nakanishi (Mie Univ.), Takashi Mishima (Mie Univ.), Toyokazu Hirozumi (Mie Univ.), Masayuki Hirafuji (NARC), Seishi Ninomiya (NARC), *Takaharu Kameoka (Mie Univ.)			
2B20 OS: Navigation, Guidance, and Control in Aerospace Systems (2)	**13:15**	**14:55**	**Room20**
Organizer: Tsutomu Ichikawa (JAXA), Yoshimasa Ochi (National Defense Academy) Chair: Tsutomu Ichikawa (JAXA), Yoshimasa Ochi (National Defense Academy)			
2B20-1 Federated Hybrid Extended Kalman Filter Design for Multiple Satellites Formation Flying in LEO	13:15	13:35	
*Muhammad Ilyas (Seoul National Univ)			
2B20-2 Angular Position Estimation of the moving spacecraft	13:35	13:55	
*Tsutomu Ichikawa (JAXA)			
2B20-3 Periodic Orbits with Constant Control Acceleration in the Restricted Three Body Problem	13:55	14:15	
*Mutsuko Y Morimoto (JSPEC/JAXA), Hiroshi Yamakawa (Kyoto Univ.)			
2B20-4 Light Source Target Design for Vision-based Blended Wing Body UAV Recovery	14:15	14:35	
*Dae-Yeon Won (KAIST), Min-Jea Tahk (KAIST)			
2B20-5 Guidance Algorithms for Tactical Missiles with Strapdown Seeker	14:35	14:55	
*Se-Ah Jang (Inha Univ.), Chang-Kyung Ryoo (Inha Univ.), Keeyoung Choi (Inha Univ.), Min-Jea Tahk (KAIST)			
2B21 OS: Control Application to Mechatronics and Powertronics (2)	**13:15**	**14:35**	**Room21**
Organizer: Kohji Higuchi (UEC) Chair: Yoshihiro Matsui (Tokyo National College of Tech.), Kohji Higuchi UEC)			
2B21-1 Digital Robust Controller for DC-DC Converter at Remote Sensing	13:15	13:35	
*Eiji Takegami (DENSEI-LAMBDA K.K.), Kohji Higuchi (UEC), Kazushi Nakano (UEC), Tatsuyoshi Kajikawa (UEC)			
2B21-2 Design of Fixed-Order Controller for Travelling Crane	13:35	13:55	
*Yoshihiro Matsui (Tokyo National College of Tech.), Takayuki Tanaka (TDK Corp.)			
2B21-3 Sliding Mode Sensor Fault Tolerant Control Structure for Induction Motor	13:55	14:15	
*Haider Abbas F. Mohamed (Univ. of Malaya), Soo Siang Yang (Univ. of Malaya), Mahmoud Moghavvemi (Univ. of Malaya)			
2B21-4 Reduced Chatter Bang-Bang-Like SMC Flux and Speed Control of Induction Motor	14:15	14:35	
*Haider Abbas F. Mohamed (Univ. of Malaya), En Lai Lau (Univ. of Malaya), Mahmoud Moghavvemi (Univ. of Malaya), Soo Siang Yang (Univ. of Malaya)			

Aug. 22 (Fri.) Session 3A

3A01 Mass and Force Sensing	**9:00**	**10:20**	**Room01**
Chair: Takeshi Mizuno (Saitama Univ.)			
3A01-1 A Development of Accurate Axle Box Accelerometer for Railway Vehicle	9:00	9:20	
*Takeo Shirotori (RTRI)			
3A01-2 Manufacture and Proofreading of 6-Axis Force Sensor for Walking Analysis	9:20	9:40	
*Kentaro Sekiguchi (TUS), Masahiro Ueda (TUS), Hiroshi Takemura (TUS), Hiroshi Mizoguchi (TUS)			
3A01-3 Analysis on the Effect of Stiffness on Mass Measurement Using a Relay Feedback of Velocity	9:40	10:00	
*Takeshi Mizuno (Saitama Univ.), Yuji Ishino (Saitama Univ.), Masaya Takasaki (Saitama Univ.)			
3A01-4 Intelligent Fuzzy Weighted Input Estimation Method for the Ground Motion Accelerations Caused by Earthquakes	10:00	10:20	
*Tsung-Chien Chen (Chung Cheng Inst. of Tech.), Ming-Hui Lee (Chung Cheng Inst. of Tech.), Pan-Chio Tuan (Chung Cheng Inst. of Tech.), Chien-Yu Ji (Chung Cheng Inst. of Tech.)			
3A02 Identification and Estimation	**9:00**	**10:20**	**Room02**
Chair: Yoshio Kosuge (Nagasaki Univ.), Hiroshi Harada (Kumamoto Univ.)			
3A02-1 Observer-Based Identification of Unknown Exogenous Input via Pseudomeasurement Approch	9:00	9:20	
*Takuro Kimura (Univ. of Miyazaki), Akira ohsumi (Univ. of Miyazaki), Michio Kono (Univ. of Miyazaki)			

3A02-2	Identification of Wiener-Type Nonlinear Systems by Using M-Sequence Correlation Method	9:20	9:40	

*Hiroshi Harada (Kumamoto Univ.), Yukio Toyozawa (FANUC Co., Kyushu Branch Office), Hiroshi Kashiwagi (The Open Univ. of Japan), Teruo Yamaguchi (Kumamoto Univ.)

3A02-3	Non-process-noise Tracking Filter Using a Constant Velocity Model	9:40	10:00	

*Yoshio Kosuge (Nagasaki Univ.)

3A02-4	Quantification of Angular Prediction Accuracy for Phased Array Radar Tracking	10:00	10:20	

*Sun-Mog Hong (Kyungpook National Univ.), Won-Yong Choi (Kyungpook National Univ.)

3A03	**Education and Design Support Sysmtems**	**9:00**	**10:40**	**Room03**

Chair: Hitoshi Iima (Kyoto Institute of Technology)

3A03-1	Approach to Learning Financial Theory through Business Gaming	9:00	9:20	

*Yasuo Yamashita (Tokyo Institute of Technology), Hiroshi Takahashi (Okayama Univ.), Takao Terano (Tokyo Institute of Technology)

3A03-2	A Method for Improving Learning Effect by Using a Prediction Model and an Optimization Algorithm	9:20	9:40	

*Kazuhiro Shin-ike (Maizuru National College of Technology), Hitoshi Iima (Kyoto Institute of Technology)

3A03-3	Modeling of Government-Initiated Collusive Bidding- an Approach with Gaming Simulation	9:40	10:00	

*Hideyuki Morofuji (Univ. of Tsukuba), Setsuya Kurahashi (Univ. of Tsukuba), Hiroshi Deguchi (Tokyo Institute of Technology)

3A03-4	Design Support Classifier of Filter Circuit Structure	10:00	10:20	

*Keita Ohe (Okayama Univ.), Masami Konishi (Okayama Univ.), Jun Imai (Okayama Univ.)

3A03-5	Low Cost DSP Microcontroller-Based Universal Drives for Electrical Machine Laboratory	10:20	10:40	

*Phiphat Laohasongkram (KMITL), Prapart Ukakimapurn (KMITL)

3A04	**Devices & Human Interfaces**	**9:00**	**10:20**	**Room04**

Chair: Huang-Jen Chiu (Taiwan Univ. of Sci. and Tec.), Takashi Imamura (Toyohashi Univ. of Technology)

3A04-1	A Single-Stage Full-Bridge Electronic Ballast for High-Pressure Mercury Lamps	9:00	9:20	

*Chun-Jen Yao (National Taiwan Tech), Huang-Jen Chiu (National Taiwan Tech), Tai-Hung Wang (National Taiwan Tech), Shih-Jen Cheng (National Taiwan Tech), Yu-Kang Lo (National Taiwan Tech), Shann-Chyi Mou (Ching-Yun Univ.)

3A04-2	A Study of an Intuitive Electric Wheelchair Control Interface Based on Weight Shift	9:20	9:40	

*Masaru Onishi (Hosei Univ.), Kazuyuki Kobayashi (Hosei Univ.), Kajiro Watanabe (Hosei Univ.)

3A04-3	Driving Behavior Classification and Driver Sensing Based on Vehicle Steering Wheel Operations	9:40	10:00	

*Takashi Imamura (Toyohashi Univ. of Tech.), Hagito Yamashita(Toyohashi Univ. of Tech.), MD Rizal Othman (Toyohashi Univ. of Tech.), Zhong Zhang (Toyohashi Univ. of Tech.), Tetsuo Miyake (Toyohashi Univ. of Tech.)

3A04-4	Development of Unmanned Ground Vehicle for IGVC JAUS Challenge	10:00	10:20	

*Makoto Sugiura (Hosei Univ), Kazuyuki Kobayashi (Hosei Univ), Kajiro Watanabe (Hosei Univ), Tomoyuki Ohkubo (Hosei Univ)

3A05	**Biological and Physiological Engineering (1)**	**9:00**	**10:20**	**Room05**

Chair: Seiji Nishifuji (Yamaguchi Univ.)

3A05-1	Characteristic Extraction of EMG with the Apparent Movement	9:00	9:20	

*Young-il Park (UEC), Koji Kawahara (UEC), Masafumi Uchida (UEC)

3A05-2	Measurement of Threshold of Hearing Using Tone Trains	9:20	9:40	

*Rajkishore Prasad (BRABU), Takuji Koike (UEC), Fumitoshi Matsuno (UEC)

3A05-3	Destabilization of Alpha Wave During and After Listening to Unpleasant and Pleasant Acoustic Stimuli	9:40	10:00	

*Seiji Nishifuji (Yamaguchi Univ.), Iyo Miyahara (Yamaguchi Univ.)

3A05-4	Developing Diagnostic Expert System in ESTA for Pomological Application	10:00	10:20	

*Rajkishore Prasad (BRABU), Madan Manohar Prasad (BRABU), Haider MD (BRABU)

3A06	**Safety and Eco Systems**	**9:00**	**10:40**	**Room06**

Chair: Kenji Tanaka (UEC), Yuichi Chida (Shinsyu Univ.)

3A06-1	Nonintrusive Appliance Load Monitoring Based on Integer Programming	9:00	9:20	

*Kosuke Suzuki (Nagoya Univ.), Shinkichi Inagaki (Nagoya Univ.), Tatsuya Suzuki (Nagoya Univ.), Hisahide Nakamura (TOENEC Co.), Koichi Ito (TOENEC Co.)

3A06-2	A Simple Control Method for Daylighting in Passive Solar Design: A Case Study of Bangkok, Thailand	9:20	9:40	

*Lerdlekha Tanachaikhan (AIT), S. Kumar (AIT)

3A06-3	Introduction to Partial Stroke Testing	9:40	10:00	

*Yoshinori Sato (JGC Co.)

3A06-4	A Study on Human Error in a Blowout Accident in Well Operation	10:00	10:20	

*Haer Xiali (UEC), Midori Inaba (UEC), Kenji Tanaka (UEC)

3A06-5	Sensor Fault Detection Filter Design Method - Rejection Method of Disturbances -	10:20	10:40	

Akira Nakazawa (Toshiba Co.), *Yuichi Chida (Shinshu Univ.), Keita Ueda (Shinshu Univ.)

3A07	**Manipulator Control**	**9:00**	**11:00**	**Room07**

Chair: Yoshiro Hamada (JAXA)

3A07-1	Novel Technique of Contact Force Vector Determination Aimed at Control of Service Robot Arm and Estimation of Environment Stiffness	9:00	9:20	

*Dzmitry Tsetserukou (Univ. of Tokyo), Naoki Kawakami (Univ. of Tokyo), Susumu Tachi (Univ. of Tokyo)

3A07-2	The Control Algorithm Enabling Natural Physical Interaction with Humanoid Robot Arm Having Joint Flexibility	9:20	9:40	

*Dzmitry Tsetserukou (Univ. of Tokyo), Naoki Kawakami (Univ. of Tokyo), Susumu Tachi (Univ. of Tokyo)

3A07-3	Active Vibration Control on A 3-DOF Parallel Platform Based on Kane's Dynamics Method	9:40	10:00	

Yuan Yun (Univ. of Macau), *Yangmin Li (Univ. of Macau), Qingsong Xu (Univ. of Macau)

3A07-4	Mechanical Compliance Control System for A Pneumatic Robot Arm	10:00	10:20	

*Kouichi Watanabe (Univ. of Tokyo), Hisashi Nagayasu (Univ. of Tokyo), Naoki Kawakami (Univ. of Tokyo), Susumu Tachi (Univ. of Tokyo)

3A07-5 Internal Force Computation Of Grasped Object Using Joint Torques	10:20	10:40	

*Zhixing Xue (FZI, Karlsruhe), Michael Schmidt (FZI, Karlsruhe), Johann Marius Zoellner (FZI, Karlsruhe), Ruediger Dillmann (FZI, Karlsruhe)

3A07-6 A Coupling Constraint Force Problem with Coulomb Friction between an End Effector of a Robot and a Constraint Surface and Its Solution	10:40	11:00	

*Hiroaki Ichii(NNCT), Sadao Kawamura(Ritsumeikan Univ.)

3A08 **Human Interfaces - Man/Machine**	9:00	10:40	Room08

Chair: Songmin Jia (UEC)

3A08-1 Pointing System Using Fingers on Keyboard	9:00	9:20	

*Hayato Oikawa (Shibaura Institute of Technology), Masanobu Takahashi (Shibaura Institute of Technology)

3A08-2 Design and Implementation a Control Interface by Touch Panel for an Embedded Arbitrary Waveform Generator	9:20	9:40	

*Ying-Wen Bai (Fu Jen Catholic Univ.)

3A08-3 Navigation Path Scanning System for Mobile Robot by Laser Beam	9:40	10:00	

*Keigo Hara (Okayama Univ.), Shoichi Maeyama (Okayama Univ.), Akio Gofuku (Okayama Univ.)

3A08-4 Development of Electric Wheelchair Controlled by Human Body Motion	10:00	10:20	

*Sho Yokota (Tokyo Univ. of Tech.), Yasuhiro Ohyama (Tokyo Univ. of Tech.), Hiroshi Hashimoto (Advanced Inst. of Industrial Tech.), Hisato Kobayashi (Hosei Univ.), Pierre Blazevic (Laboratoire d'Ingenierie des Systemes de Versailles)

3A08-5 Robotic Wheelchair for Museum Visit	10:20	10:40	

*Tomoo Shibusawa (Saitama Univ.), Yoshinori Kobayashi (Saitama Univ.), Yoshinori Kuno (Saitama Univ.)

3A09 **Control for Robotic Systems**	9:00	10:40	Room09

Chair: Shigeki Nakaura (Tokyo Institute of Technology), Mitsunori Uemura (Ritsumeikan Univ.)

3A09-1 Development of Yo-Yo Robot with Three Links Manipulator	9:00	9:20	

Shuhei Kanai (Tokyo Denki Univ.), *Shingo Kojima (Tokyo Denki Univ.), Yoshikazu Fukuda (Tokyo Denki Univ.), Masami Iwase (Tokyo Denki Univ.), Shoshiro Hatakeyama (Tokyo Denki Univ.)

3A09-2 Static Balancing Control of Humanoid Robot Based on Accelerometer	9:20	9:40	

Ching-Chang Wong (Tamkang Univ), Chi-Tai Cheng (Tamkang Univ), *Hao-Che Chen (Tamkang Univ), Yue-Yang Hu (Tamkang Univ), Chii-Sheng Yin (MIRDC)

3A09-3 The Running of Humanoid Robot on Uneven Terrain Utilizing Output Zeroing	9:40	10:00	

*Yasuhiro Amagata (Tokyo Tech), Shigeki Nakaura (Tokyo Tech), Mitsuji Sampei (Tokyo Tech)

3A09-4 A Rolling Motion Control for Acrobot Composed of Rounded Links	10:00	10:20	

Shimpei Isobe (Tokyo Tech), *Shigeki Nakaura (Tokyo Tech), Mitsuji Sampei (Tokyo Tech)

3A09-5 Passive Periodic Motions of Multi-Joint Robots by Stiffness Adaptation and DFC for Energy Saving	10:20	10:40	

Mitsunori Uemura (Ritsumeikan Univ.), *Lu Guangqiang (Ritsumeikan Univ.), Sadao Kawamura (Ritsumeikan Univ.), Ma Shugen (Ritsumeikan Univ.)

3A10 **Networks, Communications and Bilateral Teleoperation**	9:00	10:40	Room10

Chair: Yasunori Kawai (Ishikawa National College of Technology), Tomohisa Hayakawa (Tokyo Institute of Technology)

3A10-1 Synchronization of Multiple Plants over Networks via Switching Observer with Time-stamp Information	9:00	9:20	

*Yukinori Nakamura (NAIST), Kentaro Hirata (NAIST), Kenji Sugimoto (NAIST)

3A10-2 Local-Asymptotic Stability of a Network Congestion Control System Using Lyapunov-Krasovskii Methods	9:20	9:40	

*Damian Hobson-Garcia (Tokyo Inst. of Tech.), Tomohisa Hayakawa (Tokyo Inst. of Tech.)

3A10-3 Simple Robust Normalized IP Control Design for Unknown Input Disturbance	9:40	10:00	

*Makoto Katoh (O.I.T.)

3A10-4 Experimental Implementation of Bilateral Teleoperation with Time Delay Using Command Governor	10:00	10:20	

*Yasunori Kawai (Ishikawa National College of Technology), Masayuki Fujita (Tokyo Institute of Technology)

3A10-5 Robust Stability Analysis of Bilateral Teleoperation Systems Using Admittance-Type Devices	10:20	10:40	

*Angelika Peer (Technische Universitaet Muenchen), Martin Buss (Technische Universitaet Muenchen)

3A11 **System Modeling**	9:00	10:40	Room11

Chair: Li Xu (Akita Prefectural Univ.), Marko Bago (Univ. of Zagreb)

3A11-1 A New Elementary Operation Approach to Multidimensional Realization and LFR Uncertainty Modeling	9:00	9:20	

Li Xu (Akita Prefectural Univ.), *Shi Yan (Akita Prefectural Univ.)

3A11-2 Structural Insights and Constructive Procedures for Multidimensional Realization and LFR Uncertainty Modeling	9:20	9:40	

*Li Xu (Akita Prefectural Univ.)

3A11-3 Engine Control Education System	9:40	10:00	

*Dongmei Wu (,Waseda Univ.), Harutoshi Ogai (Waseda Univ.), Masatoshi Ogawa (Waseda Univ.), Mushikkachai Maruto (Waseda Univ.), Jin Kusaka (Waseda Univ.), Pengfei Jiao (Waseda Univ.)

3A11-4 Modeling Wire Train Bus Communication Using Timed Colored Petri Nets	10:00	10:20	

*Marko Bago (Univ. of Zagreb), Nedjeljko Peric (Univ. of Zagreb), Sinisa Marijan (Koncar - EEI)

3A11-5 Practical Sensor Fault Tolerant Control System	10:20	10:40	

Soo Siang Yang (Univ. of Malaya), Ernie Che Mid (Univ. of Malaya), *Haider Abbas F. Mohamed (Univ. of Malaya), Mahmoud Moghavvemi (Univ. of Malaya)

3A13 **OS: Intelligent Control Applications**	9:00	10:40	Room13

Organizer: Hsu Pau-Lo (National Chiao-Tung Univ.), Feng-Li Lian (National Taiwan Univ.)
Chair: B.-C. Wang (China Univ. of Tech.), J. M Lin (National Chiao-Tung Univ.)

3A13-1 nonlinear 3-D crane control with an intelligent operating method	9:00	9:20	

*Cheng-Yuan Chang (Chung Yuan Christian Univ.), Kuo-Hung Chiang (National Taiwan Univ.)

3A13-2 Intelligent Mobile Satellite Antenna Tracking System Design	9:20	9:40

*Jium-Ming Lin (Chung-Hua Univ.), Po-Kuang Chang (Chung-Hua Univ.)

3A13-3 Remote Control Realization of Distributed Rescue Robots via the Wireless Network	9:40	10:00

Syh-Shiuh Yeh (National Taipei Univ. of Tech.), Cheng-Chung Hsu (National Chiao-Tung Univ.), Tzu-Chiang Shih (National Chiao-Tung Univ.), Jen-Pin Hsiao (National Chiao-Tung Univ.), *Pau-Lo Hsu (National Chiao-Tung Univ.)

3A13-4 Design of the Adaptive Smith Predictor for the Time-Varying Network Control System	10:00	10:20

*Chien-Liang Lai (National Chiao-Tung Univ.), Pau-Lo Hsu (National Chiao-Tung Univ.), Bor-Chyun Wang (China Univ. of Tech.)

3A13-5 Applications of the Network Controlled System to the Omni-directional Mobile Robot	10:20	10:40

Yee-Chang Lin (National Chiao-Tung Univ.), Chun-Wei Liu (National Chiao-Tung Univ.), Jian-Lung Li (National Chiao-Tung Univ.), *Pau-Lo Hsu (National Chiao-Tung Univ.)

3A14 OS: Intelligent Methods for Autonomous Mobile Robots	9:00	11:00	Room14

Organizer: Ching-Chih Tsai (National Chung Hsing Univ.)
Chair: Ching-Chih Tsai (National Chung Hsing Univ.)

3A14-1 A CMAC-Q-Learning Based Dyna Agent	9:00	9:20

*Yuan-Pao Hsu (National Formosa Univ.)

3A14-2 Dynamic Modeling and Sliding-Mode Control of a Ball Robot with Inverse Mouse-Ball Drive	9:20	9:40

*Ching-Wen Liao (National Chung Hsing Univ.), Ching-Chih Tsai (National Chung Hsing Univ.), Yi-Yu Li (National Chung Hsing Univ.), Cheng-Kai Chan (National Chung Hsing Univ.)

3A14-3 Global Pose Localization of an Autonomous Wheeled Mobile Robot by Fusing Active RFID	9:40	10:00

*Hung-Hsing Lin (National Chung Hsing Univ.), Ching-Chih Tsai (National Chung Hsing Univ.), Yi-Yu Yi-Yu (National Chung Hsing Univ.)

3A14-4 Development of Intutive Operation Interface for Underfloor Inspection Robot	10:00	10:20

*Hisashi Mizumoto (UEC), Noritaka Sato (UEC), Fumitoshi Matsuno (UEC), Hidekazu Iwaki (Topy Industries Ltd), Seiji Oomura (Topy Industries Ltd), Shingo Tsukui (Topy Industries Ltd)

3A14-5 Design and Implementation of Sensor Fusion Based Behavior Strategies for a Surveillance and Security Robot Team	10:20	10:40

*Tzuu-Hseng Steve Li (National Cheng Kung Univ.), Chih-Yang Chen (National Cheng Kung Univ.), Hong-Kai Huang (National Cheng Kung Univ.), Ying-Chieh Yeh (National Cheng Kung Univ.), Chia-Chang Yang (National Cheng Kung Univ.), Hui-Ling Hung (National Cheng Kung Univ.), Chien-Hsun Chu (National Cheng Kung Univ.), Shiuan-Hung Hsu (National Cheng Kung Univ.), Ding-Yao Huang (National Cheng Kung Univ.), Bing-Rung Tsai (National Cheng Kung Univ.)

3A14-6 Cooperative Reinforcement Learning Based on Zero-Sum Games	10:40	11:00

*Kao-Shing Hwang (National Chung Cheng Univ.)

3A15 OS: FLUCOME-J 2008	8:40	11:00	Room15

Organizer: Satoshi Honda (Keio Univ.)
Chair: Satoshi Honda (Keio Univ.), Osamu Oyama (Meiji Univ.)

3A15-1 Diagnostics of Impulse Line Blockage with Multi-sensing Differential Pressure Transmitter in Oil Line	8:40	9:00

*Akira Uehara (Waseda Univ.), Jyun-ichi Eino (Waseda Univ.), Takumi Hashizume (Waseda Univ.), Tetuya Wakui (Osaka Prefecture Univ.), Nobuo Miyaji (Yokogawa Electric Corp.), Yoshitaka Yuuki (Yokogawa Electric Corp.)

3A15-2 Development of Transient Type Air Flow Meter for Critical Environment	9:00	9:20

*Riki Nishimura (tokyo tech), Mitsuo Igari (hanawa industrial high school), Yasuhito Omagari (yamatake co.), Kotaro Tadano (tokyo tech), Kenji Kawashima (tokyo tech), Toshiharu Kagawa (tokyo tech), Chongho Youn (tokyo tech)

3A15-3 A Study on Leak Detection of a Household Gas Supply System	9:20	9:40

*Laksana Guntur Harus (Institute of Tech. Sepuluh Nopember), Chongho Youn (Tokyo Institute of Tech.), Nozomu Nagai (Tokyo Gas Co.), Hajime Furusawa (Tokyo Gas Co.), Toshiharu Kagawa (Tokyo Institute of Tech.)

3A15-4 Pneumatically Driven Forceps Manipulator for Laparoscopic Surgery	9:40	10:00

*Kotaro Tadano (Tokyo Institute of Tech.), Kenji Kawashima (Tokyo Institute of Tech.), Toshiharu Kagawa (Tokyo Institute of Tech.)

3A15-5 Application of MI-simulation Using Turbulent Model for Unsteady Orifice Flow	10:00	10:20

*Mitsuhiro Nakao (Tokyo Institute of Tech.), Kenji Kawashima (Tokyo Institute of Tech.), Toshiharu Kagawa (Tokyo Institute of Tech.)

3A15-6 A noble fuel injection using DDVC for marine diesel engines	10:20	10:40

Ai Haginiwa (Yokohama National Univ.), *Kazushi Sanada (Yokohama National Univ.)

3A15-7 Study about an influence of impedance element for dynamic characteristics measurement with oscillatory gas flow generator	10:40	11:00

*Tatsuya Funaki (National Metrology Institute of Japan, AIST), Kenji Kawashima (Tokyo Institute of Tech.), Toshiharu Kagawa (Tokyo Institute of Tech.)

3A17 OS: Advanced Robot Sensing and Control	9:00	10:40	Room17

Organizer: Yunhui Liu (The Chinese Univ. of Hong Kong)
Chair: Yunhui Liu (Chinese Univ. of Hong Kong), Hongbin Zha (Beijing Univ.)

3A17-1 Bayesian Fusion of Laser and Vision for Multiple People Detection and Tracking	9:00	9:20

*Xuan Song (Peking Univ.), Jinshi Cui (Peking Univ.), Huijing Zhao (Peking Univ.), Hongbin Zha (Peking Univ.)

3A17-2 Motion Planning for Robot Manipulators among Moving Obstacles Based on Trajectory Analysis and Waiting Strategy	9:20	9:40

*Yan Li (Peking Univ.), Hong Liu (Peking Univ.), Ding Ding (Peking Univ.)

3A17-3 Locomotion Control and Gaits' Modality of a 3D Snake-like Robot	9:40	10:00

*Shumei Yu (SY Inst. of Auto,CAS), Shugen Ma (Ritsumeikan Univ.), Bin Li (SY Inst. of Auto,CAS), Yuechao Wang (SY Inst. of Auto,CAS)

3A17-4 Fabrication of Gold Nano-Particle Based Sensors Using Microspotting and DEP Technologies	10:00	10:20

*Siu Ling Leung (Chinese Univ. of Hong Kong), Minglin Li (Shenyang Institute of Automation), Fong Ting Lau (Chinese Univ. of Hong Kong), Wen J. Li (Chinese Univ. of Hong Kong)

3A17-5 Adaptive Visual Servoing of Autonomous Helicopters	10:20	10:40

*Yunhui Liu (Chinese Univ. of Hong Kong), Yipin Chen (Chinese Univ. of Hong Kong), Hesheng Wang (Chinese Univ. of Hong Kong)

3A18	OS: Industrial Application 1	9:00	11:00	Room18

Organizer: Kazushi Nakano (UEC), Tetsuo Kirimoto (UEC)
Chair: Tetsuo Kirimoto (UEC), Takayuki Inaba (UEC)

3A18-1	GIS Crisis-management Systems Using Ajax Tech.	9:00	9:20	

*Takeo Sakairi (Mitsubishi Electric Co.), Takashi Tamada (Mitsubishi Electric Co.), Hideo Nakata (Mitsubishi Electric Co.)

3A18-2	Development of advanced control system for waterworks	9:20	9:40	

*Hirokazu Kaieda (Mitsubishi Electric Co.), Yohei Ueno (Mitsubishi Electric Co.)

3A18-3	Human Specific Activity Retrieval from a Surveillance Image Sequence	9:40	10:00	

*Tetsuji Haga (Mitsubishi Electric Co), Kiyotaka Watanabe (Mitsubishi Electric Co)

3A18-4	High speed 3-D registration using GPU	10:00	10:20	

*Yasuo Kitaaki (Mitsubishi Electric Co.), Haruhisa Okuda (Mitsubishi Electric Co.), Hiroshi Kage (Mitsubishi Electric Co.), Kazuhiko Sumi (Mitsubishi Electric Co.)

3A18-5	Mitigate the GPS position error by neural network technique	10:20	10:40	

*Sarawut Nontasud (KMITL), Nipha Leelaruji (KMITL)

3A18-6	Smart Tupperware: Active Containers for Kitchen Automation	10:40	11:00	

*Richard Voyles (Univ. of Denver), Jaewook Bae (Samsung), Bret Smith (Auburn Univ.), David Kusuma (Tupperware), Ledu Nguyen (Tupperware)

3A19	OS: Redundant / Underactuated Robot Systems	9:00	10:20	Room19

Organizer: Takahiro Suzuki (Univ. of Tokyo)
Chair: Takahiro Suzuki (Univ. of Tokyo), Akira Shimada (Polytechnic Univ.), Fumitoshi Matsuno (UEC)

3A19-1	Model Based Control of Robot with Free Joints Driven by Wires	9:00	9:20	

*Kazuyuki Gotoh (Polytechnic Univ.), Akira Shimada (Polytechnic Unuv.)

3A19-2	Modeling and Control of a Snake Robot with Switching Constraints	9:20	9:40	

*Motoyasu Tanaka (UEC), Fumitoshi Matsuno (UEC)

3A19-3	Singular Configuration Avoidance of a Snake-like Robot with Screw Drive Units	9:40	10:00	

*Yong Gao (UEC), Motoyasu Tanaka (UEC), Hiroaki Fukushima (UEC), Fumitoshi Matsuno (UEC)

3A19-4	Analysis and Control of 3R Underactuated Manipulator	10:00	10:20	

*Takahiro Suzuki (Univ. of Tokyo), Toru Kinoshita (Univ. of Tokyo), Satoshi Gunji (Univ. of Tokyo)

3A20	OS: Medical Image Processing	9:00	10:40	Room20

Organizer: Toshiyuki Tanaka (Keio Univ.)
Chair: Toshiyuki Tanaka (Keio Univ.), Toshiyuki Tanaka (Keio Univ.)

3A20-1	3D Reconstruction of Facial Shape using Color Stripe Projection	9:00	9:20	

*Ayumi Iso (Keio Univ.), Toshiyuki Tanaka (Keio Univ.)

3A20-2	Restoration of Original Image from Deteriorated Image by Probabilistic Image Model	9:20	9:40	

*Yuji Karita (Keio Univ.), Toshiyuki Tanaka (Keio Univ.)

3A20-3	Discriminant Method for Severity of Glandular Tumor by Support Vector Machine	9:40	10:00	

*Ayako Suzuki (Keio Univ.), Toshiyuki Tanaka (Keio Univ.)

3A20-4	Diagnosis Method of Pulmonary Emphysema using CT Images in Expiratory and Inspiratory State	10:00	10:20	

*Ryosuke Kobayashi (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Hidetoshi Nakamura (Tokyo Electric Power Hospital), Toru Shirahata (Keio Univ.), Hiroaki Sugiura (Keio Univ.)

3A20-5	An Automated 3D Emphysema Extraction Method using Lung CT	10:20	10:40	

*Kok Liang Tan (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Hidetoshi Nakamura (Tokyo Electric Power Hospital), Toru Shirahata (Keio Univ.), Hiroaki Sugiura (Keio Univ.)

3A21	OS: Multi-Resolved Dynamical System (MRDS)	9:00	11:00	Room21

Organizer: Shinji Hara (Univ. of Tokyo), Koji Tsumura (Univ. of Tokyo)
Chair: Shinji Hara (Univ. of Tokyo), Koji Tsumura (Univ. of Tokyo)

3A21-1	Multi-Resolved Dynamical System ory for Large Scale Complex Systems	9:00	9:20	

*Shinji Hara (Univ. of Tokyo), Jun-ichi Imura (Tokyo Tech.), Koji Tsumura (Univ. of Tokyo)

3A21-2	Approximately bisimilar finite-state modeling of interconnected systems	9:20	9:40	

Yuichi Tazaki (Tokyo Inst. of Tech.), *Jun-ichi Imura (Tokyo Inst. of Tech.)

3A21-3	Hierarchical structure and multi time-scale in large scale dynamical systems	9:40	10:00	

Koichi Tojo (Univ. of Tokyo), *Koji Tsumura (Univ. of Tokyo)

3A21-4	Cyclic Pursuit Behavior for Hierarchical Multi-agent Systems with Low-rank Interconnection	10:00	10:20	

*Hikaru Shimizu (Univ. of Tokyo), Shinji Hara (Univ. of Tokyo)

3A21-5	Constrained Control Based on a Decomposition of Finite-horizon Linear Systems	10:20	10:40	

*Naoyuki Hara (Osaka Prefecture Univ.), Akira Kojima (Tokyo Metropolitan Univ.)

3A21-6	Mean square optimal hedging with non-uniform rebalancing intervals	10:40	11:00	

*Kenji Sato (Kyoto Univ.), Yuji Yamada (Univ. of Tsukuba), Hisaya Fujioka (Kyoto Univ.)

Aug. 22 (Fri.) Session 3B

3B01	Ultra-High Precision Measurement	13:15	14:15	Room01

Chair: Zeljko Hocenski (Univ. Josip Juraj Strossmayer)

3B01-1	High-Precision Digital Lock-in Measurements of Critical Current and AC Loss in HTS 2G-Tapes	13:15	13:35	

*Ruilin Pei (Univ. of Cambridge), Anton Velichko (Univ. of Cambridge), Yudong Jiang (Univ. of Cambridge), Zhiyong Hong (Univ. of Cambridge), Mako Katayama (Toyo Eiwa Univ.), Tim Coombs (Univ. of Cambridge)

3B01-2	Comparison of Methods for Nonlinearity Correction of Platinum Rresistance Tthermometer	13:35	13:55	

*Zeljko Hocenski (Univ. of Osijek), Ljubivoj Cvitas (Siemens d.d. Zagreb), Zeljko Lasinger (Univ. of Osijek)

ID	Title / Authors	Start	End	Room
3B01-3	Influence of a Trace Impurity on Tin Fixed Point Plateaus *Patchariya Petchpong (Brunel Univ), David I Head (NPL), Joe Y.H. Au (Brunel Univ)	13:55	14:15	
3B03	**Fuzzy Systems** Chair: Markus Koch (Univ. of Paderborn and Siemens)	**13:15**	**14:35**	**Room03**
3B03-1	An Efficient Dataflow-Oriented Fuzzy Library *Markus Koch (Univ. of Paderborn), Lars Schaefers (Univ. of Paderborn), Bernd Kleinjohann (Univ. of Paderborn)	13:15	13:35	
3B03-2	Dynamical & Non-Dynamical Neurofuzzy Models of a Mixing Chamber *Juan Manuel Escano (Sevilla Univ.), Carlos Bordons (Sevilla Univ.), Antonio Nuevo (DMASTEC)	13:35	13:55	
3B03-3	Retinal Image Enhancement by Indices of Fuzziness Sathit Intajag (KMITL), *Phiphat Laohasongkram (KMITL)	13:55	14:15	
3B03-4	Robust H_Infinity Output Feedback Control Design for Uncertain Fuzzy Markovian Jump Descriptor Systems *Wudhichai Assawinchaichote (KMUTT)	14:15	14:35	
3B05	**Biological and Physiological Engineering (2)** Chair: Koji Kashihara (NCGG), Katsuhiro Inoue (Kyushu Institute of Technology)	**13:15**	**14:35**	**Room05**
3B05-1	Non-parametric System Identification of Dynamic Baroreflex from Step Response *Koji Kashihara (NITECH (NCGG))	13:15	13:35	
3B05-2	EEG Signal Analysis during Miss Operation in BCI System *Junpei Kaminaka (Kyushu Institute of Technology), Tomonari Yamaguchi (Kyushu Institute of Technology), Miyo Taniguchi (Kyushu Institute of Technology), Kana Ohmori (Kyushu Institute of Technology), Sinya Watanabe (Kyushu Institute of Technology), Katsuhiro Inoue (Kyushu Institute of Technology), Gert Pfurtscheller (Graz Univ. of Technology)	13:35	13:55	
3B05-3	Influence of Undetected ECG R Waves on the Heart Rate Variability Analysis *Naka Hiroyuki (Kyusyu Institute of Technology), Tohara Takashi (Kyusyu Institute of Technology), Inoue Katsuhiro (Kyusyu Institute of Technology)	13:55	14:15	
3B05-4	Multi-Valued Decision Making of Sleep Stages Determination Based on Expert Knowledge *Bei Wang (Saga Univ.), Takenao Sugi (Saga Univ.), Fusae Kawana (Toranomon Hospital), Xingyu Wang (East China Univ. of Science and Technology), Masatoshi Nakamura (Saga Univ.)	14:15	14:35	
3B06	**Vision Systems** Chair: Hiroshi Fujimoto (Yokohama National Univ.)	**13:15**	**14:15**	**Room06**
3B06-1	Template Matching Method for SMD Inspection Using Discrete Wavelet Transform *Han-Jin Cho (Chungbuk Univ.), Tae-Hyung Park (Chungbuk Univ.)	13:15	13:35	
3B06-2	Image Processing of Particle Detection for Asbestos Qualitative Analysis Support Method -Particle Counting by Using Color Variance of Background- *Kenichi Ishizu (Tokyo Univ. of Science), Hiroshi Takemura (Tokyo Univ. of Science), Kuniaki Kawabata (RIKEN), Hajime Asama (Univ. of Tokyo), Taketoshi Mishima (Saitama Univ.), Hiroshi Mizoguchi (Tokyo Univ. of Science)	13:35	13:55	
3B06-3	Proposal of 6 DOF Visual Servoing for Moving Object Based on Real-Time Distance Identification. *Akira Goto (Yokohama National Univ.), Hiroshi Fujimoto (Yokohama National Univ.)	13:55	14:15	
3B07	**Dynamic Walking** Chair: Sadao Kawamura (Ritsumei Univ.), Shinkichi Inagaki (Nagoya Univ.)	**13:15**	**14:15**	**Room07**
3B07-1	A Posture Control Method for a Hopping Robot Based on a Linear Dual Mode System *Kazuki Harasawa (Ibaraki Univ.), Ryou Kondo (Ibaraki Univ.)	13:15	13:35	
3B07-2	Passivity-Based Three-Dimensional Bipedal Robot with Compliant Legs *Qining Wang (Peking Univ.), Jinying Zhu (Peking Univ.), Long Wang (Peking Univ.)	13:35	13:55	
3B07-3	Passive Dynamic Walking with Elastic Energy *Masahiro Mizuno (UEC), Hiroshi Ohtake (UEC), Kazuo Tanaka (UEC), Hua O. Wang (Boston Univ.)	13:55	14:15	
3B08	**Entertainment Systems** Chair: Masanobu Takahashi (Shibaura Institute of Technology)	**13:15**	**14:55**	**Room08**
3B08-1	Guiding Tourists Using Nintendo DS Game Console *Mohammad Shirali-Shahreza (Sharif Univ.)	13:15	13:35	
3B08-2	Support System for Pocket Billiards *Masanobu Takahashi (Shibaura Institute of Technology), Takamasa Kasai (Shibaura Institute of Technology), Yousuke Suzuki (Shibaura Institute of Technology)	13:35	13:55	
3B08-3	Application and Evaluation of Augmented Reality User Interface to a Card Game "Mate" *Hidehiko Okada (Kyoto Sangyo Univ.), Hiroki Arakawa (Kyoto Sangyo Univ.)	13:55	14:15	
3B08-4	Identifying Child Users: Is It Possible? *Sajad Shirali-Shahreza (Sharif Univ.), Mohammad Shirali-Shahreza (Sharif Univ.)	14:15	14:35	
3B08-5	Development of Novel Robot Via Computer Aided Engineering *Yukiho Komiyama (Hosei Univ.), Kajiro Watanabe (Hosei Univ.)	14:35	14:55	
3B09	**Control of Robotic Arms and Cranes** Chair: Yuichi Sawada (Kyoto Institute of Technology)	**13:15**	**15:15**	**Room09**
3B09-1	Collision Detection and Suspend Control of Parallel-Structured Single-Link Flexible Arms *Junki Kondo (Kyoto Institute of Technology), Yuichi Sawada (Kyoto Institute of Technology)	13:15	13:35	
3B09-2	Throwing Motion Control Experiment Utilizing 2-Link Arm with Passive Joint *Shigenori Ichinose (Tokyo Tech.), Shigeki Nakaura (Tokyo Tech.), Mitsuji Sampei (Tokyo Tech.)	13:35	13:55	
3B09-3	An Attitude Control of the Space Robot with Two Arms of Single Degree of Freedom Jiun Sohn (Tokyo Tech.), *Tsuyoshi Sagami (Tokyo Tech.), Shigeki Nakaura (Tokyo Tech.), Mitsuji Sampei (Tokyo Tech.)	13:55	14:15	

3B09-4	Positioning Control of One Link Arm with Parametric Uncertainty Using QFT Method	14:15	14:35
	*Takayuki Kuwashima (Okayama Univ.), Jun Imai (Okayama Univ.), Masami Konishi (Okayama Univ.)		
3B09-5	Two-Degree-of-Freedom Control System for Motion Control of a Flexible Stacker Crane	14:35	14:55
	*Minoru Sasaki (Gifu Univ.), Toshimi Shimizu (Niigata Univ.), Koji Ikai (Gifu Univ.), Satoshi Ito (Gifu Univ.)		
3B09-6	Multivariable Control of Overhead Crane System by CRA Method	14:55	15:15
	*Songmoung Nundrakwang (KMITL), Taworn Benjanarasuth (KMITL), Jongkol Ngamwiwit (KMITL), Noriyuki Komine (Tokai Univ.)		

3B10	**Nonlinear Systems**	**13:15**	**14:55**	**Room10**
	Chair: Hiroshi Ito (Kyushu Institute of Technology)			
3B10-1	Lyapunov Functions for Networks of Asymmetrically IISS Systems and Circadian Oscillations	13:15	13:35	
	*Hiroshi Ito (Kyushu Inst. Tech.)			
3B10-2	Stabilization of a Nonholonomic Mobile Robot Using Adaptive Output Feedback	13:35	13:55	
	*Zhanping Yuan (Tongji Univ.), Zhuping Wang (Tongji Univ.), Qijun Chen (Tongji Univ.)			
3B10-3	FDE-Dissipativity and its Similarities with ISS Systems	13:55	14:15	
	*Adha Imam Cahyadi (Tokai Univ.), Yoshio Yamamoto (Tokai Univ.)			
3B10-4	Attitude Consensus of Two Underactuated Spacecraft	14:15	14:35	
	*Maclaurin Hutagalung (Tokyo Inst. of Tech.), Tomohisa Hayakawa (Tokyo Inst. of Tech.)			
3B10-5	Generation of Quantum Entangled State via Continuous Feedback Control	14:35	14:55	
	*Tomonari Abe (Univ. of Tokyo), Koji Tsumura (Univ. of Tokyo)			

3B11	**System Theory**	**13:15**	**15:15**	**Room11**
	Chair: Takuya Kitamoto (Yamaguchi Univ.), Gottfried Koppensteiner (VIENNA Univ. OF TECHNOLOGY)			
3B11-1	On the Hankel Singular Values for a Parametric System	13:15	13:35	
	*Takuya Kitamoto (Yamaguchi Univ.), Tetsu Yamaguchi (Cybernet Systems, Co., LTD)			
3B11-2	A Note on Sequence Generation Power of Two-States Cellular Automata	13:35	13:55	
	*Naoki Kamikawa (Osaka Electro-Communication Univ.), Hiroshi Umeo (Osaka Electro-Communication Univ.)			
3B11-3	Stabliltiy Analysis of 2-Dimensional Fluid Flow Based on Sum of Squares Relaxation	13:55	14:15	
	*Hwayeong Yu (Tokyo Institute of Technology), Kashima Kenji (Tokyo Institute of Technology), Jun-ichi Imura (Tokyo Institute of Technology)			
3B11-4	Efficient Experience Reuse in Non-Markovian Environments	14:15	14:35	
	Tien-Dung Le (S.I.T), Takashi Komeda (S.I.T), *Motoki Takagi (S.I.T)			
3B11-5	Parameterization of Output Function for SISO Systems	14:35	14:55	
	*Kazuma Sekiguchi (Tokyo Tech), Mitsuji Sampei (Tokyo Tech), Shigeki Nakaura (Tokyo Tech)			
3B11-6	Simulation of an Ontology-Based Multi-Agent Transport System	14:55	15:15	
	*Munir Merdan (Vienna Univ. of Technology), Lisa Vittori (Vienna Univ. of Technology), Gottfried Koppensteiner (Vienna Univ. of Technology), Pavel Vrba (Rockwell Automation Research Center), Bernard Favre-Bulle (Vienna Univ. of Technology)			

3B13	**OS: SICE City**	**13:15**	**14:15**	**Room13**
	Organizer: Naoyuki Kubota (Tokyo Metropolitan Univ.)			
	Chair: Yasuchika Mori (Tokyo Metropolitan Univ.), Hisashi Tamaki (Kobe Univ.)			
3B13-1	Tracking Human Motions for Security System	13:15	13:35	
	*Junzo Watada (Waseda Univ.), Zalili Binti Musa (Waseda Univeristy)			
3B13-2	Development of self-propelled robot that recognizes voice instruction	13:35	13:55	
	*Keisuke Ishikawa (TokyoMetropolitan Univ.), Yasuchika Mori (TokyoMetropolitan Univ.)			
3B13-3	Tele-operated Robots for Monitoring Based on Sensor Networks	13:55	14:15	
	Naoyuki Kubota (Tokyo Metropolitan Univ.), *Shinya Ozawa (Tokyo Metropolitan Univ.)			

3B14	**OS: Integration in Robotics**	**13:15**	**14:35**	**Room14**
	Organizer: Takahiro Suzuki (Univ. of Tokyo)			
	Chair: Takahiro Suzuki (Univ. of Tokyo), Akio Namiki (Univ. of Tokyo)			
3B14-1	Movement control of two-wheeled inverted pendulum robots considering robustness	13:15	13:35	
	*Akira Shimada (Polytechnic Univ.), Naoya Hatakeyama (Olympus)			
3B14-2	Control of underactuated biped running robot via synchronous oscillator	13:35	13:55	
	*Susumu Ohtake (Tokyo Institute of Tech.), Masaki Yamakita (Dep. of Mechanical and Control Eng., titech/RIKEN), Sang-Ho Hyon (JST-ICORP/ATR)			
3B14-3	A Teleoperation Interface using Past Images for Outdoor Environment	13:55	14:15	
	*Masataka Ito (UEC), Noritaka Sato (UEC), Maki Sugimoto (Keio Univ.), Naoji Shiroma (Ibaraki Univ.), Masahiko Inami (Keio Univ.), Fumitoshi Matsuno (UEC)			
3B14-4	Sensory-Motor Integration for Dexterous High-speed Handling	14:15	14:35	
	*Akio Namiki (Chiba Univ.), Yuji Yamakawa (Univ. of Tokyo), Masatoshi Ishikawa (Univ. of Tokyo)			

3B15	**OS: Networked Sensing Systems**	**13:15**	**14:55**	**Room15**
	Organizer: Satoshi Honda (Keio Univ.)			
	Chair: Satoshi Honda (Keio Univ.), Hideto Iwaoka (Kanazawa Institute of Tech.)			
3B15-1	Node Localization in the "Two-Dimensional Communication" Networks based on Electric Field Pattern Measurement	13:15	13:35	
	*Kei Nakatsuma (Univ. of Tokyo), Yasutoshi Makino (Univ. of Tokyo), Hiroyuki Shinoda (Univ. of Tokyo)			
3B15-2	Successive Localization of Mobile Sensor Nodes Using Non-Parametric Belief Propagation	13:35	13:55	
	Hidekata Hontani (Nagoya Instituite of Tech.), *Yuko Toshimitsu (Nagoya Institute of Tech.)			
3B15-3	Double Rectangular Slot Loop Antenna for Dual Frequency	13:55	14:15	
	*Pornthep Jearapraditkul (KMITL)			

3B15-4	CPW-Fed Slot Antenna with Inset L-Strip Tuning Stub for Ultra-Wideband	14:15	14:35	
	*Pornthep Jearapraditkul (KMITL)			

3B15-5	Rectangular Patch Antenna with Inset Feed and Modified Ground-Plane for Wideband Antenna	14:35	14:55	
	*Sutham Satthamsakul (KMITL)			

3B17	**OS: Statistical Mechanics**	**13:15**	**14:55**	**Room17**

Organizer: Balram Rai (RDS College Muzaffarpur), Rajkishore Prasad (BRA Bihar Univ. Muzaffarpur)
Chair: Balram Rai (R.D.S. College, Muzaffarpur)

3B17-1	Theory for virial equation of state of two-Dimensional hard body fluid mixtures	13:15	13:35	
	*Tarun Kumar Dey (BRABU), Jyotish Kumar (BRABU)			

3B17-2	Theory for transport properties of Gaussian Overlap molecular fluids	13:35	13:55	
	*Tarun Kumar Dey (BRABU), Rajkishore Prasad (BRABU)			

3B17-3	Thermo physical properties of hard-sphere associating chain molecules	13:55	14:15	
	*Balram Rai (BRABU), Rajkishore Prasad (BRABU)			

3B17-4	Thermo physical properties of Binary Mixtures of Additive Hard Spheres	14:15	14:35	
	*Balram Rai (BRABU), Rajkishore Prasad (BRABU)			

3B17-5	Estimation of Shape parameter of GGD function: An Information oretic Approach	14:35	14:55	
	*Rajkishore Prasad (BRABU MUZ), Balram Rai (BRABU MUZ), Fumitoshi Matsuno (UEC), Tarun Dey (BRABU MUZ)			

3B18	**OS: Industrial Application 2**	**13:15**	**15:15**	**Room18**

Organizer: Kazushi Nakano (UEC), Tetsuo Kirimoto (UEC)
Chair: Takayuki Inaba (UEC), Tetsuo Kirimoto (UEC)

3B18-1	Performance Analysis of Independent Component Analysis to Separate Mixtures of Complex Sinusoidal Signals	13:15	13:35	
	Tetsuo Kirimoto (UEC), *Kiana Danial (UEC), Takeshi Amishima (Mitsubishi Electric Co.), Atsushi Okamura (Mitsubishi Electric Co.)			

3B18-2	Permutation Scheme by Tracking Association for ICA Separated Signal Blocks	13:35	13:55	
	*Takeshi Amishima (Mitsubishi Electric Co.), Atsushi Okamura (Mitsubishi Electric Co.), Shinichi Morita (Mitsubishi Electric Co.), Tetsuo Kirimoto (UEC)			

3B18-3	Tracking Algorithm using N-back Scan MHT under Dense Environments	13:55	14:15	
	*Yasushi Obata (Mitsubishi Electric Co.), Masayoshi Ito (Mitsubishi Electric Co.), Hiroshi Kameda (Mitsubishi Electric Co.)			

3B18-4	Target Tracking Using TDOA/FDOA Measurements in the Distributed Sensor Network	14:15	14:35	
	*Yuki Takabayashi (Mitsubishi Electric Co.), Takashi Matsuzaki (Mitsubishi Electric Co.), Hiroshi Kameda (Mitsubishi Electric Co.), Masayoshi Ito (Mitsubishi Electric Co.)			

3B18-5	A 2D/3D Data Fusion with Range Estimation on 2D sensor	14:35	14:55	
	*Takashi Matsuzaki (Mitsubishi Electric Co.), Hiroshi Kameda (Mitsubishi Electric Co.), Kazuhiko Yamamoto (Mitsubishi Electric Co.), Tatsuo Fuji (Mitsubishi Electric Co.), Ryoji Maekawa (Mitsubishi Electric Co.)			

3B18-6	Using a Kalman Filter to Attenuate Noise in Learning and Repetitive Control can Easily Degrade Performance	14:55	15:15	
	*Benjamas Panomruttanarug (KMUTT)			

3B19	**OS: Optimization and Its Applications**	**13:15**	**15:15**	**Room19**

Organizer: Keiichiro Yasuda (Tokyo Metropolitan Univ.), Shunji Tanaka (Kyoto Univ.)
Chair: Shunji Tanaka (Kyoto Univ.), Kazuaki Masuda (Kanagawa Univ.)

3B19-1	On the Properties of Search Directions in the Particle Swarm Optimization System	13:15	13:35	
	*Kazuaki Masuda (Kanagawa Univ.), Kenzo Kurihara (Kanagawa Univ.)			

3B19-2	Topology-based Personal Selection in Multi-objective Particle Swarm Optimization	13:35	13:55	
	Takeshi Korenaga (Osaka Univ.), Nobuhiko Kondo (Osaka Univ.), *Toshiharu Hatanaka (Osaka Univ.), Katsuji Uosaki (Fukui Univ. of Tech.)			

3B19-3	PID Optimal Tuning Method by Particle Swarm Optimization	13:55	14:15	
	*Akihiro Oi (Fuji Electric Advanced Tech.), Chikashi Nakazawa (Fuji Electric Advanced Tech.), Tetsuro Matsui (Fuji Electric Advanced Tech.)			
	Hiroe Fujiwara (Fuji Electric Systems), Kouji Matsumoto (Fuji Electric Systems), Hideyuki Nishida (Fuji Electric Systems)			

3B19-4	Solving unit commitment problem by combining of continuous relaxation method and genetic algorithm	14:15	14:35	
	*Ken-ichi Tokoro (CRIEPI), Yasushi Masuda (Keio Univ.), Hisakazu Nishino (Keio Univ.)			

3B19-5	Packing Optimization for Air Cargo Containers	14:35	14:55	
	*Natsuko Yano (KKE), Takashi Morinaga (NCA), Tsutomu Saito (KKE)			

3B19-6	Value Delivery in Convergent Supply Network with Mediating Auctioneers	14:55	15:15	
	*Jayeola Femi Opadiji (Kobe Univ.), Toshiya Kaihara (Kobe Univ.)			

3B20	**OS: GPS and Its Application**	**13:15**	**14:55**	**Room20**

Organizer: Toshiyuki Tanaka (Keio Univ.)
Chair: Toshiyuki Tanaka (Keio Univ.), Kouichi Hidaka (TDU)

3B20-1	GPS Positioning Method under the Condition of Only Three Acquired Satellites	13:15	13:35	
	*Masashi Nomura (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Masashi Yonekawa (Keio Univ.)			

3B20-2	Possibility and Practicality of A High Precision Positioning System using Carrier	13:35	13:55	
	*Masashi Yonekawa (Keio Univ), Toshiyuki Tanaka (Keio Univ)			

3B20-3	Recovery Method from Cycle Slip in GPS Positioning	13:55	14:15	
	*Nao Akiyama (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Masashi Yonekawa (Keio Univ.)			

3B20-4	High Accuracy Positioning of Two-Wheeled Vehicle at High Speed traveling using GPS	14:15	14:35	
	*Masaki Hayashi (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Masashi Yonekawa (Keio Univ.)			

3B20-5	Improvement accuracy in measurement of long baseline DGPS	14:35	14:55	
	*Takashi Matsushita (Keio Univ.), Toshiyuki Tanaka (Keio Univ.), Masashi Yonekawa (Keio Univ.)			

3B21	OS: Kukanchi:Interactive Human-Space Design and Intelligence	13:15	14:55	Room21

Organizer: Yamaguchi Toru (Tokyo Metropolitan Univ.), Eri Sato Shimokawara (Tokyo Metropolitan Univ.)
Chair: Eri sato-Shimokawara (Tokyo Metropolitan Univ.), Mihoko Niitsuma (Univ. of Tokyo)

3B21-1	Enhancement of Spatial Memory Using Human-Object Relations	13:15	13:35

*Mihoko Niitsuma (Univ. of Tokyo), Takeshi Sasaki (Univ. of Tokyo), Hideki Hashimoto (Univ. of Tokyo)

3B21-2	Design of Plug and Play System for RT-Component	13:35	13:55

*Motomasa TANAKA (S.I.T.), Makoto Mizukawa (S.I.T.), Yoshinobu Ando (S.I.T.)

3B21-3	User's Intention Understanding System Design for RT Service According Situation	13:55	14:15

*Ken Ukai (S.I.T.), Makoto Mizukawa (S.I.T.), Yoshinobu Ando (S.I.T.)

3B21-4	Growing Topological Map for SLAM of Mobile Robots	14:15	14:35

*Hironobu Sasaki (Tokyo Metropolitan Univ.), Naoyuki Kubota (Tokyo Metropolitan Univ.), Kazuhiko Taniguchi (Kinden Co.)

3B21-5	Service offer system in "Kukanchi: Interactive Human-Space Design and Intelligence" using multi phase environmental information	14:35	14:55

Yusuke Fukusato (Tokyo Metropolitan Univ.), *Eri Sato-Shimokawara (Tokyo Metropolitan Univ.), Jun Nakazato (Tokyo Metropolitan Univ.), Toru Yamaguchi (Tokyo Metropolitan Univ.)