SICE Annual Conference 2010 in Taiwan

Technical Program

Program at a Glance

SICE 2010 Technical Program Wednesday August 18, 2010

13:00–17:00 Auditorium (10F) Workshop A The Future Aspect of Industrial Process Measurement, Control and Automation Industry	13:00–17:00 Song Bo Room (10F) Workshop B ITRI-Academia Collaboration Project on Intelligent Robot Technology	13:00–17:00 Chang Chin Room (10F) Workshop C Mobiligence

17:30–19:30 Sky Lounge (12F) Welcome Reception

SICE 2010 Technical Program Thursday August 19, 2010

8:40–9:00 Grand Ballroom (12F) Opening Ceremony
9:00–9:50 Grand Ballroom (12F) Plenary Talk I: Graham Goodwin

Track 01	Track 02	Track 03	Track 04	Track 05	Track 06	Track 07	Track 08	Track 09	Track 10
12F			10F			VF			
Sky Lounge	North Foyer	South Foyer	Auditorium	Chang Chin Room	Song Bo Room	101	102	103	104
10:20–11:50 TA01 Nanoscale Servo Control	10:20–11:50 TA02 Service Robots and Their Execution Environments	10:20–11:50 TA03 Biological and Physiological Engineering	10:20–11:50 TA04 Advanced Pattern Measurement I	10:20–11:50 TA05 Control for Industrial Applications	10:20–11:50 TA06 Adaptive & Learning Control I	10:20–11:50 TA07 Recent Development on Robustness Analysis, Estimation, Robust and Sampled-Data Control	10:20–11:50 TA08 Model Predictive Control	10:20–11:50 TA09 Neural Networks and Computational Intelligence	10:20–11:50 TA10 International Standardization on Automation System

13:20–14:10 Grand Ballroom (12F) Invited Lecture I: Jae-Hoon Kim	13:20–14:10 Auditorium (10F) Invited Lecture II: Chin-Teng Lin

14:30–16:00 TB01 Control Applications I	14:30–16:00 TB02 Service Engineering and Interface to Support High-Quality Life I	14:30–16:00 TB03 Autonomous Decentralized Systems	14:30–16:00 TB04 Advanced Pattern Measurement II	14:30–16:00 TB05 Sponsored Workshop	14:30–16:00 TB06 Adaptive & Learning Control II	14:30–16:00 TB07 Tracking Control with Some Control Issues	14:30–16:00 TB08 Networked Sensing and Control Systems I	14:30–16:00 TB09 Evolutionary Technology and its Applications I	14:30–16:00 TB10 Challenges for Information Sharing on Industrial Network I
16:30–18:00 TC01 Control Applications II	16:30–18:00 TC02 Service Engineering and Interface to Support High-Quality Life II	16:30–18:00 TC03 Autonomous Decentralized Approaches for Systems Management	16:30–18:00 TC04 Advanced Pattern Measurement III	16:30–18:00 TC05 *Sponsored Workshop in SICE Week* (in Mandarin)	16:30–18:00 TC06 Adaptive & Learning Control III	16:30–18:00 TC07 Control Theoretic Approaches to Future Control Technology	16:30–18:00 TC08 Networked Sensing and Control Systems II	16:30–18:00 TC09 Evolutionary Technology and its Applications II	16:30–18:00 TC10 Challenges for Information Sharing on Industrial Network II

SICE 2010 Technical Program Wednesday August 18, 2010

13:00–17:00 Auditorium (10F) Workshop A The Future Aspect of Industrial Process Measurement, Control and Automation Industry	13:00–17:00 Song Bo Room (10F) Workshop B ITRI-Academia Collaboration Project on Intelligent Robot Technology	13:00–17:00 Chang Chin Room (10F) Workshop C Mobiligence

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SICE 2010 Technical Program Thursday August 19, 2010

8:40–9:00 Grand Ballroom (12F) Opening Ceremony
9:00–9:50 Grand Ballroom (12F) Plenary Talk I: Graham Goodwin

Track 11	Track 12	Track 13	Track 14	Track 15	Track 16		Track 17	Track 18	Track 19
VF							BF		
105	107	108	109	110	West Gallery	International Reception Hall	Fu-Chuon Room	Der-Hou Room East	Der-Hou Room West
10:20–11:50 TA11 Advances in Measurement	10:20–11:50 TA12 Electrical Systems	10:20–11:50 TA13 Applications of Satellite Navigations	10:20–11:50 TA14 Human Interfaces	10:20–11:50 TA15 Kukanchi	10:20–11:50 TA16 Interactive Session I		10:20–11:50 TA17 Robotic System Control	10:20–11:50 TA18 Man-Machine Systems and Human-Robot Interactions	10:20–11:50 TA19 Vehicle Control

13:20–14:10 Grand Ballroom (12F) Invited Lecture I: Jae-Hoon Kim	13:20–14:10 Auditorium (10F) Invited Lecture II: Chin-Teng Lin

14:30–16:00 TB11 Image Processing	14:30–16:00 TB12 Mechatronic Systems and Control I	14:30–16:00 TB13 Navigation, Guidance, and Control in Aerospace Systems I	14:30–16:00 TB14 System Theory and Engineering	14:30–16:00 TB15 Disaster Response Robotics I		14:30–16:00 TB17 Mobile Robots I	14:30–16:00 TB18 Intelligent Human-Machine Systems I	14:30–16:00 TB19 Advances in Control I

16:30–18:00 TC11 Signal Processing	16:30–18:00 TC12 Mechatronic Systems and Control II	16:30–18:00 TC13 Navigation, Guidance, and Control in Aerospace Systems II	16:30–18:00 TC14 Advances in System and Information	16:30–18:00 TC15 Disaster Response Robotics II		16:30–18:00 TC17 Mobile Robots II	16:30–18:00 TC18 Intelligent Human-Machine Systems II	16:30–18:00 TC19 Advances in Control II

SICE 2010 Technical Program Friday August 20, 2010

9:00–9:50 Grand Ballroom (12F) Plenary Talk II: Roberto Tempo	

Track 01	Track 02	Track 03	Track 04	Track 05	Track 06	Track 07	Track 08	Track 09	Track 10
12F			10F			VF			
Sky Lounge	North Foyer	South Foyer	Auditorium	Chang Chin Room	Song Bo Room	101	102	103	104

Track 01	Track 02	Track 03	Track 04	Track 05	Track 06	Track 07	Track 08	Track 09	Track 10
10:20–11:50 FA01	10:20–11:50 FA02	10:20–11:50 FA03	10:20–11:50 FA04	10:20–11:50 FA05	10:20–11:50 FA06	10:20–11:50 FA07	10:20–11:50 FA08	10:20–11:50 FA09	10:20–11:50 FA10
Robot Therapy System	Designing the Service Engineering in Post Ubiquitous Society I	Computational Intelligence and its Applications I	Process Control and Process Automation	Vision Systems I	Healthcare and Welfare I	Nonlinear System Control	Fuzzy System Analysis and Control Applications I	Evolutionary Algorithm	FLUCOME-J
14:30–16:00 FB01	14:30–16:00 FB02	14:30–16:00 FB03	14:30–16:00 FB04	14:30–16:00 FB05	14:30–16:00 FB06	14:30–16:00 FB07	14:30–16:00 FB08	14:30–16:00 FB09	14:30–16:00 FB10
New Design and Methods in Domestic and Assistive Robotics	Designing the Service Engineering in Post Ubiquitous Society II	Computational Intelligence and its Applications II	Panel Discussion: Glocal Control	Vision Systems II	Healthcare and Welfare II	Advances in Nonlinear Systems Analysis and Controller Design	Fuzzy System Analysis and Control Applications II	Applications of Evolutionary Optimization	Monitoring and Diagnosis

16:10–17:20 Auditorium (10F) *SICE Awards Ceremony* (in Japanese)	
17:30–18:45 Auditorium (10F) SICE History Session: Episodes in a Half Century of SICE	

19:15–21:15 Grand Ballroom (12F) Banquet	

SICE 2010 Technical Program Friday August 20, 2010

9:00–9:50 Grand Ballroom (12F)
Plenary Talk II: Roberto Tempo

Track 11	Track 12	Track 13	Track 14	Track 15	Track 16		Track 17	Track 18	Track 19
VF					West Gallery	International Reception Hall	BF		
105	107	108	109	110	West Gallery	International Reception Hall	Fu-Chuon Room	Der-Hou Room East	Der-Hou Room West
10:20–11:50 FA11	10:20–11:50 FA12	10:20–11:50 FA13	10:20–11:50 FA14	10:20–11:50 FA15	10:20–11:50 FA16	11:00–17:00 *SICE Week*	10:20–11:50 FA17	10:20–11:50 FA18	10:20–11:50 FA19
Analytical Measurement	System Design based on "Further Benefit of a Kind of Inconvenience" I	Identification and Estimation	Application of Actuator and Sensor in Intelligent Technology	Robot Walking	Interactive Session II		Motion/ Function Control in Biological and Mechanical Systems I	Robotic Control and Robots	Measurement and Control
14:30–16:00 FB11	14:30–16:00 FB12	14:30–16:00 FB13	14:30–16:00 FB14	14:30–16:00 FB15		*Robot Demo and Operation Experiences*	14:30–16:00 FB17	14:30–16:00 FB18	14:30–16:00 FB19
Pattern Analysis	System Design based on "Further Benefit of a Kind of Inconvenience" II	Estimation	Petri Nets and Discrete Event Systems	Humanoid Robot System Design			Motion/ Function Control in Biological and Mechanical Systems II	Robot Control and Sensing	Sensing, Control and Safety System for Intelligent Vehicle

16:10–17:20 Auditorium (10F)
SICE Awards Ceremony (in Japanese)

17:30–18:45 Auditorium (10F)
SICE History Session: Episodes in a Half Century of SICE

19:15–21:15 Grand Ballroom (12F)
Banquet

SICE 2010 Technical Program Saturday August 21, 2010

9:00–9:50 Grand Ballroom (12F) Plenary Talk III: Masayoshi Tomizuka

Track 01	Track 02	Track 03	Track 04	Track 05	Track 06	Track 07	Track 08	Track 09	Track 10
12F			10F			VF			
Sky Lounge	North Foyer	South Foyer	Auditorium	Chang Chin Room	Song Bo Room	101	102	103	104

10:20–11:50 SA01	10:20–11:50 SA02	10:20–11:50 SA03	10:20–11:50 SA04	10:20–11:50 SA05	10:20–11:50 SA06	10:20–11:50 SA07	10:20–11:50 SA08	10:20–11:50 SA09	10:20–11:50 SA10
Advanced Industrial Control I	Information Systems for Transportation I	Image-based Applications in Food and Agriculture	Plant Modeling	Vision System III	Healthcare and Welfare III	Control Synthesis for Robustness, Synchronization, and Intelligent Adaptation	Fuzzy Systems Analysis and Control	Genetic Network Programming I	Recent Development of Core Technology for Energy-saving Wheel Motors in Taiwan

13:20–14:10 Grand Ballroom (12F) Invited Lecture III: Masami Hagiya	13:20–14:10 Auditorium (10F) Invited Lecture IV: Kenichi Fujii

14:30–16:00 SB01	14:30–16:00 SB02	14:30–16:00 SB03	14:30–16:00 SB04	14:30–16:00 SB05	14:30–16:00 SB06	14:30–16:00 SB07	14:30–16:00 SB08	14:30–16:00 SB09	14:30–16:00 SB10
Advanced Industrial Control II	Information Systems for Transportation II	ICT Applications in Food and Agriculture	Advances in Industrial Applications	Vision System IV	Healthcare and Welfare IV	Robust Control	Applications of Sliding Mode and T-S Fuzzy Control	Genetic Network Programming II	Manufacturing Systems and Development Support

16:20–17:20 Auditorium (10F) Closing Ceremony

18:00–20:00 Sky Lounge (12F) Farewell Reception

SICE 2010 Technical Program Saturday August 21, 2010

9:00–9:50 Grand Ballroom (12F) Plenary Talk III: Masayoshi Tomizuka

Track 11	Track 12	Track 13	Track 14	Track 15	Track 16		Track 17	Track 18	Track 19
VF							BF		
105	107	108	109	110	West Gallery	International Reception Hall	Fu-Chuon Room	Der-Hou Room East	Der-Hou Room West
10:20–11:50 SA11 Recent Advances in Temperature Measurement	10:20–11:50 SA12 Recent Progress in Mechanical Metrology I	10:20–11:50 SA13 Modeling and System Identification I	10:20–11:50 SA14 Inverse Problems I	10:20–11:50 SA15 Nexus System Design: New Interaction among Humans, Agents, and Robots I	10:20–11:50 SA16 Interactive Session III	11:00-11:30 SICE Week Robot Demo	10:20–11:50 SA17 Passive Dynamic Walk	10:20–11:50 SA18 Networked and/or Embedded Systems	10:20–11:50 SA19 Intelligent System and Control

12:30–13:30 SICE Week Lecture

13:20–14:10 Grand Ballroom (12F) Invited Lecture III: Masami Hagiya	13:20–14:10 Auditorium (10F) Invited Lecture IV: Kenichi Fujii

14:30–16:00 SB11 Sensors and Transducers	14:30–16:00 SB12 Recent Progress in Mechanical Metrology II	14:30–16:00 SB13 Modeling and System Identification II	14:30–16:00 SB14 Inverse Problems II	14:30–16:00 SB15 Nexus System Design: New Interaction among Humans, Agents, and Robots II	14:00–16:00 SICE Week Robot Demo and Operation Experiences	14:30–16:00 SB17 Biomimetic Approach in Robotics and Machines	14:30–16:00 SB18 Advances in System Integration	14:30–16:00 SB19 Nonlinear Control and Information Systems

16:20–17:20 Auditorium (10F) Closing Ceremony

18:00–20:00 Sky Lounge (12F) Farewell Reception

SICE Annual Conference 2010 in Taiwan

Technical Program

Detailed Program Listings

Technical Program for Thursday August 19, 2010

	Grand Ballroom (12F)
Plenary Talk I	

Chair: Tzuu-Hseng S. Li — National United University
9:00–9:50

Sampling and Data Compression in Signal Processing and Control
Graham Goodwin — University of Newcastle

TA01	Sky Lounge (12F)
Nanoscale Servo Control (Organized Session)	

Organizer: Jun Ishikawa — Tokyo Denki University
Chair: Jun Ishikawa — Tokyo Denki University
Chair: Motohiro Kawafuku — Nagoya Institute of Technology
10:20–10:35, TA01.01

Short Span Seeking Control System of Hard Disk Drives Based on Pivot Friction Compensation
Motohiro Kawafuku — Nagoya Institute of Technology
Masaki Shibata — Nagoya Institute of Technology
Makoto Iwasaki — Nagoya Institute of Technology
Hiromu Hirai — Nagoya Institute of Technology
10:35–10:50, TA01.02

Torque Disturbance Rejection Improvement by Voltage Mode Control Using Current Driver
Hiroyuki Ono — Atom-giken
10:50–11:05, TA01.03

Friction Compensation Based on the LuGre Friction Model
Jun Ishikawa — Tokyo Denki University
Sei Tei — Tokyo Denki University
Daiki Hoshino — Tokyo Denki University
Masaki Izutsu — Tokyo Denki University
Norihiro KAMAMICHI — Tokyo Denki University
11:05–11:20, TA01.04

FIR Optimization Control for External Vibration in Self Servo Track Writer
Parnupong Thongsuk
— King Mongkut's University of Technology Thonburi
Benjamas Panomrattanarug
— King Mongkut's University of Technology Thonburi
11:20–11:35, TA01.05

Final-State Control Satisfying Jerk Continuity
Mitsuo Hirata — Utsunomiya University
11:35–11:50, TA01.06

Precision Motion Control of A Nano Stage Using Repetitive Control and Double-Feedforward Compensation
Chi-Ying Lin
— National Taiwan University of Science and Technology
Po-Ying Chen
— National Taiwan University of Science and Technology

TA02	North Foyer (12F)
Service Robots and Their Execution Environments (Organized Session)	

Organizer: Kao-Shing Hwang — National Chung Cheng University
Chair: Alan Liu — National Chung Cheng University
Chair: Michael N. Mayer — National Chung Cheng University
10:20–10:35, TA02.01

Device Collaboration in Smarthomes as Service Delivery
Huan-Ming Liang — National Chung Cheng University
Alan Liu — National Chung Cheng University
Yi-Chih Chen — National Chung Cheng University
Chiung-Hon Leon Lee — Nanhua University
Yi-Chih Chen — National Chung Cheng University
10:35–10:50, TA02.02

Using U-Bot for RoboCup@home
Michael N. Mayer — National Chung Cheng University
Li-Wei Lu — National Chung Cheng University
Yu-Min Hung — National Chung Cheng University
Hong Wu — National Chung Cheng University
Yu-Cheng Chang — National Chung Cheng University
10:50–11:05, TA02.03

A Visual Surveillance System for Mobile Robot using Omnidirectional and PTZ cameras
Meng-Shiun Yu — National Chung Cheng University
Hong Wu — National Chung Cheng University
Huei-Yung Lin — National Chung Cheng University
11:05–11:20, TA02.04

A Humanoid Robot Designed for HuroCup Competition
Kuo-Yang Tu
 National Kaohsiung First University of Science and Technology
Po Hsu Lin
 National Kaohsiung First University of Science and Technology
Chia Yun Wu
 National Kaohsiung First University of Science and Technology
Yun Hsiang Sun
 National Kaohsiung First University of Science and Technology
Hsiang Pin Yang
 National Kaohsiung First University of Science and Technology
Chia Ming Wang
 National Kaohsiung First University of Science and Technology
Shou Chieh Chen
 National Kaohsiung First University of Science and Technology
Wei Cheng Lee
 National Kaohsiung First University of Science and Technology
11:20–11:35, TA02.05

T-S Fuzzy Control for Magnetic Levitation Systems Using Quantum Particle Swarm Optimization
Gwo-Ruey Yu — National Chung Cheng University
Yu-Jie Huang — National Ilan University
Lun-Wei Huang — National Ilan University

TA03	South Foyer (12F)
Biological and Physiological Engineering	

Chair: Chun-Liang Lin	National Chung Hsing University
Chair: Tomonari Yamaguchi	Kyushu Institute of Technology

10:20–10:35, TA03.01

Feature Extraction of Visual Evoked Potentials Using State-Space Model

Jun Irie	Kyushu Institute of Technology
Tomonari Yamaguchi	Kyushu Institute of Technology
Kana Omori	Kyushu Institute of Technology
Katsuhiro Inoue	Kyushu Institute of Technology

10:35–10:50, TA03.02

Feature Extraction from EEG Signals in SSVEP Spelling System

Tomonari Yamaguchi	Kyushu Institute of Technology
Kana Omori	Kyushu Institute of Technology
Jun Irie	Kyushu Institute of Technology
Katsuhiro Inoue	Kyushu Institute of Technology

10:50–11:05, TA03.03

Asymptotic Stability of Neutral Functional Differential Equation Model of Genetic Regulatory Networks with Time-Varying Delays

Daesung Jung	POSTECH
Jahoo Koo	POSTECH
Sang-Chul Won	POSTECH

11:05–11:20, TA03.04

Estimation of Noisy Gene Regulatory Networks

Chun-Liang Lin	National Chung Hsing University
Chia-Hua Chuang	National Chung Hsing University

11:20–11:35, TA03.05

An OP-Based Potantiostat used in Electrochemical Bio-detection System

Jui-Lin Lai	National United University
Han-ning Wu	National United University
Hung-Hsi Chang	National United University
Kuo-Hung Liao	National United University
Rong-Jian Chen	National United University
Shi-Jinn Horng	
	National Taiwan University of Science and Technology

11:35–11:50, TA03.06

Optimal Mapping of Torus Self-Organizing Map for Forearm Motion Discrimination based on EMG

Atsushi Kiso	Chiba Institute of Technology
Hirokazu Seki	Chiba Institute of Technology

TA04	Auditorium (10F)
Advanced Pattern Measurement I (Organized Session)	

Organizer: Shinpei Okawa	
	The University of Electro-Communications
Chair: Toshiyuki Tanaka	Keio University
Chair: Yoshimitsu Aoki	Keio University

10:20–10:35, TA04.01

Cell Segmentation from Phase-Contrast Images using Hybrid Watershed and Region Growing Algorithm for Genomic Drug Discovery

Jo Orikawa	Keio University
Toshiyuki Tanaka	Keio University

10:35–10:50, TA04.02

3-Dimensional Analysis of Nystagmus using Video and Image Processing

Shunsuke Tominaga	Keio University
Toshiyuki Tanaka	Keio University

10:50–11:05, TA04.03

Automatic Change Detection of Buildings from Aerial Images

Satoshi Nakamura	Keio University
Yoshimitu Aoki	Keio University

11:05–11:20, TA04.04

Detecting and Tracking multiple fluorescence spot in Noisy DXT Image Sequence

Reo Sakakura	Keio University
Yoshimitsu Aoki	Keio University
Keishi Shimizu	University of Fukui
Shigetoshi Oiki	University of Fukui

11:20–11:35, TA04.05

Object Tracking System by Pan-Tilt Moving Cameras and Robot Using Condensation Method

Hiroyuki Ukida	The University of Tokushima

11:35–11:50, TA04.06

Imaging Velocimetry of Range Motion Based on "Moire Doppler Effect" and Frequency Estimation"

Yasuhiro Mochida	The University of Tokyo
Toru Kurihara	The University of Tokyo
Shigeru Ando	The University of Tokyo

TA05	Chang Chin Room (10F)
Control for Industrial Applications	

Chair: Li-Chen Fu	National Taiwan University
Chair: Shigemasa Nakagawa	Sumitomo Metal Industries, Ltd.

10:20–10:35, TA05.01

Design and Implementation of Nonlinear Speed Controller with Adaptive Backstepping Sliding Mode Control Technique for an IPMSM Drive System

Cheng-Kai Lin	National Taiwan University
Li-Chen Fu	National Taiwan University
Tian-Hua Liu	
	National Taiwan University of Science and Technology

10:35–10:50, TA05.02

Data-Driven Optimal Control for Building Energy Conservation

Junya Nishiguchi	Yamatake Corporation
Tomohiro Konda	Yamatake Corporation
Ryota Dazai	Yamatake Corporation

10:50–11:05, TA05.03

Adaptive Backstepping Servo Control for IPMSM Drive Systems with MTPA — An Implicit and Symbolic Computation Approach

Jen-te Yu	National Taiwan University
Cheng-Kai Lin	National Taiwan University

Li-Chen Fu   National Taiwan University
Tian-Hua Liu
                National Taiwan University of Science and Technology
11:05–11:20, TA05.04
SOS Analysis of Cooling Control of Hot Strips in Transition Boiling Region
Shigemasa Nakagawa   Sumitomo Metal Industries, Ltd.
Kentaro Hirata   Nara Institute of Science and Technology
Kenji Sugimoto   Nara Institute of Science and Technology
11:20–11:35, TA05.05
Dynamic Simulation and Experimental Study of Impedance Control for Robotic Orthosis to Assist Overhead Operations in Shipbuilding Process
Namkug Ku   Seoul National Univercity
Jung-Han Kwon   Daewoo Shipbuilding & Marine Engineering
Ju-hwan Cha   Seoul National University
Kyu-Yeul Lee   Seoul National Univercity
Sol Ha   Seoul National University
Kwnag-Phil Park   Seoul National University
Yoon-ok Cho   Seoul National University
Joon-chae Lee   Seoul National University
A-ra Jo   Seoul National University
11:35–11:50, TA05.06
Robust Rebound Suppression Control for Push-pull Solenoid Considering the Characteristic Change During Operation
Hokuto Mizutani   Toyohashi University of Technology
Yoshiyuki Noda   Toyohashi University of Technology
Takanori Miyoshi   Toyohashi University of Technology
Kazuhiko Terashima   Toyohashi University of Technology

TA06	Song Bo Room (10F)
Adaptive & Learning Control I (Organized Session)	

Organizer: Kenji Ikeda   The University of Tokushima
Chair: Kenji Ikeda   The University of Tokushima
Chair: Kazuya Sato   Saga University
10:20–10:35, TA06.01
Model-Based PFC Design based on Time-Varying ASPR Model for Anti-Windup Adaptive PID Control
Ikuro Mizumoto   Kumamoto University
Akihiro Minami   Kumamoto University
Zenta Iwai   Kumamoto Prefectural College of Technology
10:35–10:50, TA06.02
Improvement in Performance-adaptive Control System for a Weigh Feeder
Shohei Kitano   University of Hyogo
Takao Sato   University of Hyogo
Nozomu Araki   University of Hyogo
Toru Yamamoto   Hiroshima University
10:50–11:05, TA06.03
A Design Mehtod of Ideal Vehicle Models in Adaptive Driver-Combined-Vehicles System
Qiang Wang   Kyushu Institute of Technology
Singo Tamaru   Kyushu Institute of Technology

Hideki Wada   Shin-Nippon Nondestructive Inspection Co. Ltd.
Masahiro Oya   Kyushu Institute of Technology
11:05–11:20, TA06.04
Parameters Tuning Using RasID Algorithm in Q Value-Based Dynamic Programming with Boltzmann Distribution
Shanqing Yu   Waseda University
Shingo Mabu   Waseda University
Manoj Kanta Mainali   Waseda University
Kotaro Hirasawa   Waseda University
11:20–11:35, TA06.05
Model Matching Adaptive Control of Non-Square Multiple-Output-Delay Systems
Haixia Su   Beihang University
Yingmin Jia   Beihang University
Junping Du Beijing University of Posts and Telecommunications
Fashan Yu   Henan Polytechnic University

TA07	101 (VF)
Recent Development on Robustness Analysis, Estimation, Robust and Sampled-Data Control (Organized Session)	

Organizer: Chung-Yao Kao   National Sun Yat-Sen University
Chair: Chung-Yao Kao   National Sun Yat-Sen University
Chair: Hisaya Fujioka   Kyoto University
10:20–10:35, TA07.01
Controller Synthesis for Multiple Finite Frequency Specifications: Dissipation Inequalities Approach
Chiaki Kojima   The University of Tokyo
Shinji Hara   The University of Tokyo
10:35–10:50, TA07.02
Robust Control for Input Time-Delay Systems: A Disturbance Observer Approach
In Hyuk Kim   Myongji University
Young Ik Son   Myongji University
10:50–11:05, TA07.03
Robust Stabilization and Robust H_∞ Design for Descriptor Systems with Uncertainties in all System Matrices: An LMI Approach
Li Lee   National Sun Yat-Sen University
Cheng-Ta Ho   National Sun Yat-Sen University
11:05–11:20, TA07.04
Robot Localization and Mapping by Matching the Environmental Features from Proprioceptive and Exteroceptive Sensors
Ming-Tzuoo Yin   National Taiwan University
Feng-Li Lian   National Taiwan University
11:20–11:35, TA07.05
Shift-Invariant Representation of Two Periodic System Classes Defined over Doubly-Infinite Continuous Time
Sei Zhen Khong   University of Melbourne
Michael Cantoni   University of Melbourne
11:35–11:50, TA07.06
Stability Analysis for a Class of Hamiltonian Systems with Digital Control
Shinji Kawakami   Kyoto University
Hisaya Fujioka   Kyoto University

TA08 — 102 (VF)
Model Predictive Control

Chair: Eiko Furutani — Kyoto University
Chair: Toshiyuki Ohtsuka — Osaka University

10:20–10:35, TA08.01

Constrained Nonlinear Receding Horizon Control Using Artificial Potential

Yusuke Kondo — Nara Institute of Science and Technology
Shunsuke Matoba — Nara Institute of Science and Technology
Hisakazu Nakamura — Nara Institute of Science and Technology
Hirokazu Nishitani — Nara Institute of Science and Technology

10:35–10:50, TA08.02

High-order numerical integration for Receding horizon control with a continuation method

Shunsuke Matoba — Nara Institute of Science and Technology
Hisakazu Nakamura — Nara Institute of Science and Technology
Hirokazu Nishitani — Nara Institute of Science and Technology

10:50–11:05, TA08.03

Model Predictive Control of Current and Voltage for Li-Ion Battery Charger using 3-Phase AC/DC Converter

Jae Sik Lim — Seoul National University of Technology
Young Il Lee — Seoul National University of Technology

11:05–11:20, TA08.04

A Real-time Algorithm for Nonlinear Receding Horizon Control of Descriptor Systems

Jun Marutani — Osaka University
Toshiyuki Ohtsuka — Osaka University

11:20–11:35, TA08.05

A Hypnosis and Analgesia Control System Using a Model Predictive Controller in Total Intravenous Anesthesia During Day-Case Surgery

Eiko Furutani — Kyoto University
Keigo Tsuruoka — Kyoto University
Shogo Kusudo — Kyoto University
Gotaro Shirakami — Kagawa University
Kazuhiro Fukuda — Kyoto University

11:35–11:50, TA08.06

Model Based High-Performance PMSM Drive Control

Pavel Vaclavek — Brno University of Technology
Petr Blaha — Brno University of Technology

TA09 — 103 (VF)
Neural Networks and Computational Intelligence

Chair: Takehiko Ogawa — Takushoku University
Chair: Katsunari Shibata — Oita University

10:20–10:35, TA09.01

Performance Analysis of Complex-valued Neural Networks with Stochastic Resonance

Naoto Kaihatsu — University of Hyogo
Teijiro Isokawa — University of Hyogo
Haruhiko Nishimura — University of Hyogo
Nobuyuki Matsui — University of Hyogo

10:35–10:50, TA09.02

A Two Phase Method for Determining the Number of Neurons for the Hidden Layer of a 3-Layer Neural Network

Kazuhiro Shinike — Maizuru National College of Technology

10:50–11:05, TA09.03

Switching Reinforcement Learning to Mimic an Infant's Motor Development — Application to Two-dimensional Continuous Action Space —

Masato Nagayoshi — Niigata College of Nursing
Hajime Murao — Kobe University
Hisashi Tamaki — Kobe University

11:05–11:20, TA09.04

Inverse Estimation of Distributed Generation by Complex-Valued Network Inversion

Takehiko Ogawa — Takushoku University
Seisho Fukami — Takushoku University
Hajime Kanada — Takushoku University

11:20–11:35, TA09.05

Adaptive State Partition for Reinforcement Learning

Yu-Jen Chen — National Chung Cheng University
Kao-Shing Hwang — National Chung Cheng University
Wei-Cheng Jiang — National Chung Cheng University

11:35–11:50, TA09.06

Interval Type-2 Recurrent Fuzzy Neural System with Asymmetric Membership Functions for Chaotic System Identification

Feng-Yu Chang — Yuan Ze University
Ching-Hung Lee — Yuan Ze University

TA10 — 104 (VF)
International Standardization on Automation System (Organized Session)

Organizer: Seiichi Shin — University of Electro-Communications
Chair: Seiichi Shin — University of Electro-Communications
Chair: Kazuo Seo — Mitsubishi Electric Corporation

10:20–10:35, TA10.01

First Year Contribution to International Standardization Activities by SICE

Kazuo Seo — Mitsubishi Electric Corporation
Masaharu Ogawa — Mitsubishi Electric Corporation
Kazuo Kyuma — Mitsubishi Electric Corporation
Seiichi Shin — University of Electro-Communications

10:35–10:50, TA10.02

Standardization of Key Performance Indecator for Manufacturing Execution System

Yoshiro Fukuda — Hosei University
Robert Patzke — Messtechnik und Fertigungstechnologie GmbH
Robert Patzke — Messtechnik und Fertigungstechnologie

10:50–11:05, TA10.03

Recent Progress of Robotic Vocabulary Standardization Efforts in ISO

Seungbin Moon — Sejong University
Soon-Geul Lee — Kyung Hee University

Kwang-Ho Park   Korea Agency for Technology and Standards

11:05–11:20, TA10.04

Education of Automation Infrastructure Based on International Standards

   Sawai Pongswatd

      King Mongkut's Institute of Technology Ladkrabang

   Amphawan Julsereewong

      King Mongkut's Institute of Technology Ladkrabang

   Srinakorn Nontanakorn   Fieldbus Foundation Thai Association

   Hisashi Sasajima   Yamatake Corporation

   Tsuyoshi Kitai   Yamatake Corporation

TA11	105 (VF)
Advances in Measurement	

   Chair: Hideki Hashimoto   University of Tokyo

   Chair: Kajiro Watanabe   Hosei University

10:20–10:35, TA11.01

Measurement and Analysis of Tennis Swing Motion Using 3D Gyro Sensor

   Yuri Iijima   Hosei University

   Kajiro Watanabe   Hosei University

   Kazuyuki Kobayashi   Hosei University

   Yousuke Kurihara   Seikei University

10:35–10:50, TA11.02

Measurement of Static Electricity Generated by Human Walking

   Yuki Bunda   Hosei University

   Kajiro Watanabe   Hosei University

   Kazuyuki Kobayashi   Hosei University

   Yosuke Kurihara   Hosei University

10:50–11:05, TA11.03

Improvements in Accurate GPS Positioning Using Time Series Analysis

   Yuichiro Koyama   Keio University

   Toshiyuki Tanaka   Keio University

11:05–11:20, TA11.04

Coherent Change Detection with Complex Logarithm Transformation on SAR Imagery

   Takehiro Hoshino   University of Electro-Communications

   Shouhei Kidera   University of Electro-Communications

   Tetsuo Kirimoto   University of Electro-Communications

11:20–11:35, TA11.05

Position Measurement System for Cylindrical Objects Using Laser Range Finder

   Hajime Tamura   University of Tokyo

   Takeshi Sasaki   University of Tokyo

   Xiangqi Huang   University of Tokyo

   Hideki Hashimoto   University of Tokyo

   Fumihiro Inoue   Obayashi Corporation

11:35–11:50, TA11.06

Neutron Detection with NE213 Liquid Scintillator and Helium-3 Proportional Tube Detector

   Bei-Zhen Hu   National Chiao Tung University

   Chung-Hsiang Wang   National United University

   Liq-Ji Yuan   National Tsing Hua University

   Guey-Lin Lin   National Chiao Tung University

   Huan Niu   National Tsing Hua University

TA12	107 (VF)
Electrical Systems	

   Chair: Chih-Chiang Cheng   National Sun Yat-Sen University

   Chair: Cheng-Fang Tai   National United University

10:20–10:35, TA12.01

Design of the Robust Backstepping Tracking Controllers for Synchronous Generators

   Ming-Shan Kung   National Sun Yat-Sen University

   Yu-Feng Kuo   National Sun Yat-Sen University

   Chih-Chiang Cheng   National Sun Yat-Sen University

10:35–10:50, TA12.02

Static Var Compensator Using Remote Signal

   Pei-Hwa Huang   National Taiwan Ocean University

   Ta-Hsiu Tseng   National Taiwan Ocean University

   Yi-Kuan Ke   National Taiwan Ocean University

10:50–11:05, TA12.03

Performance Measurement of Static Var Compensators in Distribution System

   Yi-Kuan Ke   National Taiwan Ocean University

   Pei-Hwa Huang   National Taiwan Ocean University

   Ta-Hsiu Tseng   National Taiwan Ocean University

11:05–11:20, TA12.04

Loop Filter Design for Fourth-order Charge-Pump PLL Using Linearized Discrete-Time Model

   Yu-Cheng Chen   National Taiwan University

   Fan-Ren Chang   National Taiwan University

11:20–11:35, TA12.05

Design a Low-Noise Operational Amplifier with Constant-gm

   Jui-Lin Lai   National United University

   Ting-You Lin   National United University

   Cheng-Fang Tai   National United University

   Yi-Te Lai   National United University

   Rong-Jian Chen   National United University

11:35–11:50, TA12.06

Analysis and Design of SC DC-DC Converter for Maximum Efficiency

   Wandee Petchmaneelumka

      King Mongkut's Institute of Technology Ladkrabang

   Sawai Pongswatd

      King Mongkut's Institute of Technology Ladkrabang

   Yongyuth Prapamonton

      King Mongkut's Institute of Technology Ladkrabang

   Kei Eguchi   Shizuoka University

   Hirofumi Sasaki   Tokai University

   Yongyuth Prapamonton

      King Mongkut's Institute of Technology Ladkrabang

TA13	108 (VF)
Applications of Satellite Navigations (Organized Session)	

Organizer: Fan-Ren Chang   National Taiwan University
Chair: Jyh-Ching Juang   National Cheng Kung University
Chair: He-Sheng Wang   National Taiwan Ocean University
10:20–10:35, TA13.01

SLERP-Based Optimal TRIAD Algorithm

Fan-Ren Chang   National Taiwan University
Shu-Wei Chang   National Taiwan University
Yi-Te Chiang   Lee-Ming Institute of Technology
10:35–10:50, TA13.02

Applying Fuzzy Gain Scheduling Technique for GPS-Based Unmanned Vehicle Navigation and Control

Shun-Hung Chen   National Cheng Kung University
Yu-Chun Li   National Cheng Kung University
Jyh-Ching Juang   National Cheng Kung University
10:50–11:05, TA13.03

Evaluation of Local Aera GPS Quality Monitoring Algorithms in Taipei Flight Information Region

Shuo-Ju Yeh   National Cheng Kung University
Hui-Chieh Hsu   National Cheng Kung University
Yao-Cheng Lin   National Cheng Kung University
Shau-Shiun Jan   National Cheng Kung University
11:05–11:20, TA13.04

A Convex Optimization Approach to GPS Receiver Tracking Loop Design

He-Sheng Wang   National Taiwan Ocean University
11:20–11:35, TA13.05

Toward Real-Time Precise Point Positioning: Differential GPS Based on IGS Ultra Rapid Product

Hung-Wei Chen   National Taiwan University
Yi-Te Chiang   Lee-Ming Institute of Technology
Fan-Ren Chang   National Taiwan University
He-Sheng Wang   National Taiwan Ocean University

TA14   109 (VF)
Human Interfaces

Chair: Takayuki Hoshi   Kumamoto University
Chair: Hiroyuki Shinoda   University of Tokyo
10:20–10:35, TA14.01

Large Aperture Airborne Ultrasound Tactile Display Using Distributed Array Units

Masafumi Takahashi   The University of Tokyo
Hiroyuki Shinoda   The University of Tokyo
10:35–10:50, TA14.02

Articulated Multilateral Control for Adaptation to Variation of System Connection

Takumi Ishii   Keio University
Seiichiro Katsura   Keio University
10:50–11:05, TA14.03

Analysis of Environmental Surface Data Using Haptic Scanning System Constructed from the Biaxial Linear Motors

Hiroyuki Nagai   Keio University
Seiichiro Katsura   Keio University
11:05–11:20, TA14.04

Relationship Between Brightness Illusion and Recognition Performance in Human-Computer Interaction

Yuzo Takahashi   Hiroshima City University
11:20–11:35, TA14.05

Design of New Braille Display using Inverse Principle of Tuned Mass Damper

Kiyoshi Ioi   Kinki University
Yoshihisa Kawaguchi   Kinki University
Yoshikazu Ohtsubo   Kinki University
11:35–11:50, TA14.06

Observations of Airflow Arising from Airborne Ultrasound Tactile Display

Takayuki Hoshi   Kumamoto University
Yuta Nishiyama   Kumamoto University
Ippei Torigoe   Kumamoto University

TA15   110 (VF)
Kukanchi (Organized Session)

Organizer: Kazuyoshi Wada   Tokyo Metropolitan University
Chair: Kazuyoshi Wada   Tokyo Metropolitan University
Chair: Yasunari Fujimoto   Tokyo Metropolitan University
10:20–10:35, TA15.01

Development of Infrared Communication Device using RT Middleware

Kazuyoshi Wada   Tokyo Metropolitan University
Keisuke Tanaka   Tokyo Metropolitan University
Hayato Takayama   Tokyo Metropolitan University
10:35–10:50, TA15.02

Information Recommendation System for the Care Prevention Using a Communication Robot

Kazumasa Murakami   Tokyo Metropolitan University
Tomomi Shibano   Tokyo Metropolitan University
Yasunari Fujimoto   Tokyo Metropolitan University
Toru Yamaguchi   Tokyo Metropolitan University
10:50–11:05, TA15.03

Domestic Robot System Considering Generalization

Takahiro Iijima   Tokyo Metropolitan University
Eri Sato Shimokawara   Tokyo Metropolitan University
Toru Yamaguchi   Tokyo Metropolitan University
11:05–11:20, TA15.04

Information Reduction for Environment Perception of an Intelligent Robot Arm Equipped with a 3D Range Camera

Hiroyuki Masuta   Tokyo Metropolitan University
Naoyuki Kubota   Tokyo Metropolitan University
11:20–11:35, TA15.05

Indoor Positioning with Pseudolites

Yoshihiro Sakamoto   Waseda University
Haruhiko Niwa   Waseda University
Takuji Ebinuma
     Tokyo University of Marine Science and Technology
Kenjiro Fujii   Hitachi Industrial Equipment Systems Co., Ltd.
Shigeki Sugano   Waseda University
11:35–11:50, TA15.06

Dosing Timing Recognition by Ubiquitous Sensors

Takuo Suzuki	University of Tsukuba
Yasushi Nakauchi	University of Tsukuba

10:20–11:50, TA16.01

Measurement of Human Heartbeat using a Novel Sensing Technique Based on Measurement of Current Generated by Electrostatic Induction

Koichi Kurita	Kochi National College of Technology
Taiki Nonaka	Kochi National College of Technology
Hitoshi Kumon	Toyota Motor Corporation

10:20–11:50, TA16.02

Maximum Likelihood Estimation of Target RCS in Tracking

Sun-Mog Hong	Kyungpook National University
Young-Hun Jung	Agency for Defense Development
Sang-Hong Seo	Kyungpook National University

10:20–11:50, TA16.03

Estimation of Corrosion Rates at External Corrosion of Pipes Under Insulation — Evaluation Indexes of Case Databases —

Shigeyuki Tateno	Waseda University
Sung-Hye Moon	Waseda University
Hisayoshi Matsuyama	Waseda University

10:20–11:50, TA16.04

Uncertainty Estimation of Blood Chemical Analysis by QA Engineering

Yasuo Iwaki	Chaos applied research office

10:20–11:50, TA16.05

Design of Motor Controller Based on System Identification

Aolin Tang	Shanghai Jiaotong University
Qixin Cao	Shanghai Jiaotong University

10:20–11:50, TA16.06

Fault Diagnosis Based on Discrete Wavelet Transform and ART2 Neural Network

In Soo Lee	Kyungpook National University
Sang-Jin Lee	Kyungpook National University
Young-Wung Kim	Kyungpook National University

10:20–11:50, TA16.07

Motion Switching Control of Robotic Manipulators and Reducing a Throughput Time in Handling Semiconductor Wafers

Koichi Abiko	Nagaoka University of Technology
Hirata Kenji	Nagaoka University of Technology
Yoshito Ohta	Kyoto University

10:20–11:50, TA16.08

Realization of Non-Fourier Phenomena in Heat Transfer with 2D Transfer Function

Boe-Shong Hong	National Chung Cheng University
Po-Jen Su	National Cheng Kung University
Chia-Yu Chou	National Chung Cheng University
Chen-I Hung	National Cheng Kung University

10:20–11:50, TA16.09

Implementation and Experimental Validation of Circular Periodic

Motion Generation for Mobile Robots Using Limit Cycle Systems

Kenichi Yamada	Osaka Prefecture University
Naoyuki Hara	Osaka Prefecture University
Hideki Kokame	Osaka Prefecture University
Keiji Konishi	Osaka Prefecture University

10:20–11:50, TA16.10

Sensorless T-S Fuzzy Controller for Wind Power Generating Systems

Kuang-Yow Lian	National Taipei University of Technology
Ya-Lun Ouyang	Chung-Yuan Christian University

10:20–11:50, TA16.11

A Class of Fast Unscented Kalman Filtering Algorithms

Xiaoyan Fu	Beihang University
Yingmin Jia	Beihang University
Junping Du	Beijing University of Posts and Telecommunications
Fashan Yu	Henan Polytechnic University

10:20–11:50, TA16.12

Prediction of vocalization using time-frequency information of mu rhythm

Akira Toyomura	Tokyo Denki University
Koichi Yokosawa	Hokkaido University
Kaname Suzuki	Hokkaido University
Shinya Kuriki	Tokyo Denki University

10:20–11:50, TA16.13

Generalized Clustering Coefficients and Milgram Condition for q-th Degrees of Separation

Norihito Toyota	Hokkaido Information University

10:20–11:50, TA16.14

Parallel Mechanism Using Passive Pin Joints with Wide Movable Area

Kazuya Okawa	Chiba University
Yoshihiro Okamura	Chiba University

10:20–11:50, TA16.15

Development of PXA320 Based Embedded System for Ships

Jin-Woo Park	Pusan National University
Hyung-Chul Won	Pusan National University
Ki-joong Kim	Pusan National University
Joon-Young Choi	Pusan National University

10:20–11:50, TA16.16

A Precise Automatic Riveting System Using Internet-based Monitoring and Control

Hsiung-Cheng Lin	National Chin-Yi University of Technology
C. K. Tung	National Chin-Yi University of Technology
L. Y. Liu	Chienkuo Technology University
C. H. Chen	Chienkuo Technology University

Chair: Wen-Chung Chang	
	National Taipei University of Technology
Chair: Zhi-Wei Luo	Kobe University

10:20–10:35, TA17.01

Establishment of Common Coordinate System by using Migration

of Autonomous Robot Herd

Koji Makino — Tokyo University of Technology
Jin-Hua She — Tokyo University of Technology
Yasuhiro Ohyama — Tokyo University of Technology

10:35–10:50, TA17.02

Hybrid Fuzzy Control of an Eye-to-Hand Robotic Manipulator for Autonomous Assembly Tasks

Wen-Chung Chang — National Taipei University of Technology
Chia-Kai Shao — National Taipei University of Technology

10:50–11:05, TA17.03

Hybrid Eye-to-Hand and Eye-in-Hand Visual Servoing for Autonomous Robotic Manipulation

Wen-Chung Chang — National Taipei University of Technology
Chia-Kai Shao — National Taipei University of Technology

11:05–11:20, TA17.04

Passive Control of A Dual-Arm Cooperative Robot

Kosuke Kido — Kobe University
Zhi-Wei Luo — Kobe University
Akinori Nagano — Kobe University

11:20–11:35, TA17.05

Toward the Compact Design of a Robotic Waveguide for Active Line Duplication

Koichi Yoshida — NTT
Kuniaki Tanaka — NTT
Takeshi Tsujimura — NTT
Kazutaka Noto — NTT
Tetsuya Manabe — NTT
Yuji Azuma — NTT

11:35–11:50, TA17.06

Adaptive Backstepping Controller for Triple Rotary Joint Manipulator

Jadesada Maneeratanaporn — Thammasat University
Pakpoom Patompak — Thammasat University
Siripong Varongkriengkrai — Thammasat University
Itthisek Nilkhamhang — Thammasat University
Kanokvate Tungpimolrut — NSTDA

TA18	Der-Hou Room East (BF)
Man-Machine Systems and Human-Robot Interaction	

Chair: Shigeki Sugano — Waseda University
Chair: Kuu-young Young — National Chiao-Tung University

10:20–10:35, TA18.01

Pressure Control on Whole Surface of Humanmimetic Multi-fingered Hand with Tactile Sensing

Taisuke Sugaiwa — Waseda University
Kunihiro Iwamoto — Waseda University
Hiroyasu Iwata — Waseda University
Shigeki Sugano — Waseda University

10:35–10:50, TA18.02

Relative Spectral Power (RSP) and Temporal RSP as Features for Movement Imagery EEG Classification with Linear Discriminant Analysis

Manoj Kumar Mukul — The University of Electro-Communications
Fumitoshi Matsuno — Kyoto University

10:50–11:05, TA18.03

Three-Channel Electroencephalogram (EEG) Signal Analysis by Independent Component Analysis and Classification by Linear Discriminant Analysis.

Manoj Kumar Mukul — The University of Electro-Communications
Fumitoshi Matsuno — Kyoto University

11:05–11:20, TA18.04

Learning by Demonstration for Tool-Handling Task

Kuu-young Young — National Chiao-Tung University
Hoa-yu Chan — National Chiao Tung University
Hsin-Chia Fu — National Chiao Tung University

11:20–11:35, TA18.05

The Workability of Sliding Perturbation Observer as Haptic Signal at the Surgical Robot Instrument

Chi Yen Kim — Pusan National University
MinCheol Lee — Pusan National University
Seok Jo Go — Dong-Eui Institute of Technology

11:35–11:50, TA18.06

Pain Perception Model of Human Skin Using Multiple Pain Sensors

Aydin Tarik Zengin — Kumamoto University
Nobutomo Matsunaga — Kumamoto University
Hiroshi Okajima — Kumamoto University
Shigeyasu Kawaji — Kumamoto University

TA19	Der-Hou Room East (BF)
Vehicle Control	

Chair: Yasuchika Mori — Tokyo Metropolitan University
Chair: Akira Shimada — Shibaura Institute of Technology

10:20–10:35, TA19.01

Applying Generalized Minimum Variance Control for Ship's steering control system

Masayoshi Doi — Hiroshima Institute of Technology
Kazuhisa Nagamoto — Yuge National College of Maritime Technology
Yutaka Osaka — IHI corpolation
Tetsuya Takehira — Ministry of Defense
Yasuchika Mori — Tokyo Metropolitan University

10:35–10:50, TA19.02

Feedback Control of a Suspension System with Non-Model-Based Velocity and Acceleration Estimators

Yuta Kitsuka — Oita University
Tsuyoshi Nimiya — Oita University
Haruo Suemitsu — Oita University
Takami Matsuo — Oita University

10:50–11:05, TA19.03

A Movement Control on Indoor Blimp Robots

Akira Shimada — Shibaura Institute of Technology
Hayato Furukawa — Shibaura Institute of Technology
Yutaka Uchimura — Shibaura Institute of Technology

11:05–11:20, TA19.04

Spin-Axis Stabilization of Gyroless and Underactuated Rigid Spacecraft Using Modified Rodrigues Parameters

Yee-Jin Cheon Korea Aerospace Research Institute

11:20–11:35, TA19.05

A Study of SDRE and ISMC Combined Scheme with Application to Vehicle Brake Control

Yew-Wen Liang National Chiao Tung University
Yuan-Tin Wei National Chiao Tung University
Der-Cherng Liaw National Chiao Tung University
Chiz-Chung Cheng Lee-Ming Institute of Technology
Li-Gang Lin National Chiao Tung University

11:35–11:50, TA19.06

Transient Control of Air Intake system in Diesel Engines

Arata Ejiri FUJITSU LABORATORIES LTD
Jun Sasaki TRANSTRON Inc
Yusuke Kinoshita TRANSTRON Inc
Keiji Shimotani TRANSTRON Inc
Ryuji Iizawa TRANSTRON Inc

	Grand Ballroom (12F)
Invited Lecture I	

Chair: Hisaya Fujioka Kyoto University

13:20–14:10

Robotics and Automation in Shipbuilding Industry

Jae-Hoon Kim Samsung Heavy Industries Co., Ltd.

	Auditorium (10F)
Invited Lecture II	

Chair: Ching-Chih Tsai National Chung Hsing University

13:20–14:10

Computational Intelligent Brain Computer Interaction and Its Applications on Driving Cognition

Chin-Teng Lin National Chiao Tung University

TB01	Sky Lounge (12F)
Control Applications I	

Chair: Masaaki Nagahara Kyoto University
Chair: Koji Tsumura University of Tokyo

14:30–14:45, TB01.01

Design of Observation for Multi-qubit Preparation based on Equilibrium Point Analysis

Daisuke Matsuna The University of Tokyo
Koji Tsumura The University of Tokyo

14:45–15:00, TB01.02

Synchronization Detection of Biological CAM Plants Using Instantaneous Lyapunov Exponent

Yusuke Totoki Oita University
Akira Goto Oita University
Haruo Suemitsu Oita University
Takami Matsuo Oita University

15:00–15:15, TB01.03

Design of State Predictive Congestion Controllers considering Effective Equilibrium Points

Takehito Azuma Utsunomiya University
Kazuki Fukuyama Utsunomiya University

15:15–15:30, TB01.04

2DOF Control System Design for Maneuverability Matching and Gust Disturbance Rejection in In-Flight Simulator MuPAL-alpha

Yoshio Ebihara Kyoto University
Yoshinori Fujiwara Kyoto University
Tomomichi Hagiwara Kyoto University
Masayuki Sato JAXA

15:30–15:45, TB01.05

An Analysis on Two-Joint Tendon Driven Hybrid Control Systems

Akira Shimada Shibaura Institute of Technology
Atsushi Maruta Shibaura Institute of Technology
Yutaka Uchimura Shibaura Institute of Technology

15:45–16:00, TB01.06

Quadratic Programming for Monotone Control Theoretic Splines

Masaaki Nagahara Kyoto University
Clyde Martin Texas Tech University
Yutaka Yamamoto Kyoto University

TB02	North Foyer (12F)
Service Engineering and Interface to Support High-Quality Life I (Organized Session)	

Organizer: Sho Yokota Setsunan University
Chair: Hiroshi Hashimoto
  Advanced Institute of Industrial Technology
Chair: Sho Yokota Setsunan University

14:30–14:45, TB02.01

A Measuring Method of Satisfaction Rating in Service Engineering

Mitsunari Uozumi Mitsubishi Electric Corp.
Hajime Asama University of Tokyo

14:45–15:00, TB02.02

Development of an EMG Acquisition System of Universal Bio-Signal Interface for High-Quality Life

Hiroyuki Kobayashi Osaka Institute of Technology
Tetsuya Sasakura Osaka Institute of Technology
Minoru Ishidzuka Osaka Institute of Technology

15:00–15:15, TB02.03

Adaptive Rate Datagram Protocol Suitable for Real-Time Communication in Ad-Hoc Networks

Toshinori Tsuboi Tokyo University of Technology
Chang Yi-Luo Tokyo University of Technology
Komuro Nobuyoshi Chiba University
Ueda Hiromi Tokyo University of Technology

15:15–15:30, TB02.04

Dynamical Analysis of Grasping with Hand Model for High Quality Product Design

Hiroshi Hashimoto Advanced Institute of Industrial Technology
Hideki Murakoshi Advanced Institute of Industrial Technology
Akinori Sasaki Tokyo University of Technology
Yasuhiro Ohyama Tokyo University of Technology
Koji Makino Tokyo University of Technology
Sho Yokota Setsunan University

15:30–15:45, TB02.05

A Service Design Methodology Based on the Discrete Event

Simulation — Proposal of the PLAN —

Seiichi Kawata Advanced Institute of the Industrial Technology
Yosuke Tenma Advanced Institute of the Industrial Technology
Harunobu Satakuni
                    Advanced Institute of the Industrial Technology
Chinatsu Sugita
                    Advanced Institute of the Industrial Technology
Tsuyoshi Aziro Advanced Institute of the Industrial Technology
Hiroshi Hashimoto Advanced Institute of Industrial Technology

TB03	South Foyer (12F)
Autonomous Decentralized Systems	

Chair: Toshihiko Sasama   Tottori University
Chair: Takao Terano   Tokyo Institute of Technology

14:30–14:45, TB03.01

Swarm Robot Simulation Using Object-Oriented Programming

Somar Muhammad Boubou   Kyushu Institute of Technology
Yoshihiko Tagawa   Kyushu Institute of Technology

14:45–15:00, TB03.02

Theoretical and Experimental Study on Excluded Volume Effect in Pedestrian Queue

Daichi Yanagisawa   The University of Tokyo
Yuki Tanaka   The University of Tokyo
Rui Jiang   University of Science and Technology of China
Akiyasu Tomoeda   Meiji University
Kazumichi Ohtsuka   The University of Tokyo
Yushi Suma   The University of Tokyo
Katsuhiro Nishinari   The University of Tokyo

15:00–15:15, TB03.03

Determining the Length of Static Message for Efficient Use of FlexRay Network

Byungseok Seo   Kyungpook National University
Dongik Lee   Kyungpook National University

15:15–15:30, TB03.04

Agent-Based Modeling for Analyzing Labor Migration in Economic Activities

Bin Jiang   Tokyo Institute of Technology
Rio Nishida   Tokyo Institute of Technology
Takashi Yamada   Tokyo Institute of Technology
Takao Terano   Tokyo Institute of Technology

15:30–15:45, TB03.05

Detection Method to Continue Tracking of Automatic Human Tracking System

Shinya Iwasaki   Tottori University
Takao Kawamura   Tottori University
Toshihiko Sasama   Tottori University
Kazunori Sugahara   Tottori University
Hiroto Kakiuchi   Melco Power System Co., Ltd.

15:45–16:00, TB03.06

A Method of Transparent Swapping Control for Mobile Agents

Masayuki Higashino   Tottori University
Toshihiko Sasama   Tottori University
Takao Kawamura   Tottori University

Kazunori Sugahara   Tottori University

TB04	Auditorium (10F)
Advanced Pattern Measurement II (Organized Session)	

Organizer: Shinpei Okawa
           The University of Electro-Communications
Chair: Toshiyuki Tanaka   Keio University
Chair: Yoshimitsu Aoki   Keio University

14:30–14:45, TB04.01

High Accuracy Analysis Method for 3D Nanoscale Deformation / Fracture Characteristics inside a Material

Mitsuru Nakazawa   Keio University
Masakazu Kobayashi   Toyohashi University of Technology
Hiroyuki Toda   Toyohashi University of Technology
Yoshimitsu Aoki   Keio University

14:45–15:00, TB04.02

Severity Analysis of Pulmonary Emphysema based on the Comparison of Expiratory and Inspiratory States

Kazuaki Neda   Keio University
Toshiyuki Tanaka   Keio University
Toru Shirahata   Keio University
Hiroaki Sugiura   Keio University

15:00–15:15, TB04.03

Accurate Estimation of Tone Duration in Automatic Music Transcription

Noboru Funakoshi   Keio University
Toshiyuki Tanaka   Keio University

15:15–15:30, TB04.04

Reduction of Poisson Noise for Time-Resolved Diffuse Optical Measurement

Shinpei Okawa   The University of Electro-Communications
Yukio Yamada   The University of Electro-Communications

15:30–15:45, TB04.05

Fast Positioning using N4SID Model Referenced Predictive Antiphase Pitch Driving Vibration Suppression Control

Kazuaki Akagi   Ibaraki University
Sumiya Hideyasu   Ibaraki University

TB05	Chang Chin Room (10F)
Sponsored Workshop: Symbolic Mathematical Approach to Virtual Plant Prototyping	

14:30–14:50

A Historical Review of Symbolic Computation Techniques for Control Engineering

Maplesoft

14:50–15:10

Component-Based Physical Modeling for Multidomain and Other Modern Applications

Maplesoft

15:10–15:40

Computer Algebra — What Does It Bring to Control System Design ?

Hirokazu Anai   Fujitsu Laboratories Ltd/Kyushu University

15:40–16:00
Discussions
    Moderator: Maplesoft

TB06	Song Bo Room (10F)
Adaptive & Learning Control II (Organized Session)	

Organizer: Kenji Ikeda	The University of Tokushima
Chair: Masanori Takahashi	Tokai University
Chair: Takao Sato	University of Hyogo

14:30–14:45, TB06.01

A Simple Redesign of Model Reference Adaptive Control for State-Delayed Systems with General Relative Degrees

Yoshihiko Miyasato	The Institute of Statistical Mathematics

14:45–15:00, TB06.02

Generalized Structure for Stable Model Reference Adaptive Control System

Seitaro Tanahashi	National Defense Academy
Keietsu Itamiya	National Defense Academy

15:00–15:15, TB06.03

Control Performance Amelioration with Gain Retuning

Yoshihiro Ohnishi	Ehime University

15:15–15:30, TB06.04

Design of a Data-Driven Internal Model Controller

Kento Tsutsumi	Hiroshima University
Toru Yamamoto	Hiroshima University

15:30–15:45, TB06.05

Estimation of a Transition Time in Piecewise Linear Systems

Kenji Ikeda	The University of Tokushima
Tomoaki Kashiwao	Niihama National Collage of Technology
Shimomura Takao	The University of Tokushima

15:45–16:00, TB06.06

Conditions for Mixed Small Gain and Positive Real Property for LTI Systems

Sirisak Wongsura	The University of Tokyo
Lu Liu	The University of Tokyo
Shinji Hara	The University of Tokyo

TB07	101 (VF)
Tracking Control with Some Control Issues (Organized Session)	

Organizer: Toru Asai	Osaka University
Chair: Kenji Sawada	University of Electro-Communications
Chair: Toru Asai	Osaka University

14:30–14:45, TB07.01

State-Space Controller Design for Stabilization of Descriptor Systems

Masaki Inoue	Osaka University
Teruyo Wada	Osaka University
Masao Ikeda	Osaka University

14:45–15:00, TB07.02

Trajectory Tracking and Collision Avoidance Against a Non-cooperative Omnidirectional Vehicle Based on Minimal Collision Time

Isoda Naritaka	Osaka University
Ayumu Kitagaki	Osaka University
Toru Asai	Osaka University

15:00–15:15, TB07.03

A Design Procedure of Discrete-Time Tracking Control Systems with Actuator Saturation

Kenji Sawada	The University of Electro-Communications
Tsuyoshi Kiyama	Osaka University

15:15–15:30, TB07.04

Direct Yaw-Moment Control Method for Electric Vehicles to Follow the Desired Path by Driver

Hiroshi Okajima	Kumamoto University
Shouhei Yonaha	Kumamoto University
Nobutomo Matsunaga	Kumamoto University
Shigeyasu Kawaji	Kumamoto University

15:30–15:45, TB07.05

Extension of Reference Signal in Iterative Learning Control for Non-minimum Phase Systems

Chee Leong Ooi	Deutsche Securities
Toru Asai	Osaka University
Hiroshi Okajima	Kumamoto University

TB08	102 (VF)
Networked Sensing and Control Systems I	

Chair: Jyh-Ching Juang	National Cheng Kung University
Chair: Shinji Ohyama	Tokyo Institute of Technology

14:30–14:45, TB08.01

Switching Control Algorithm for Sensor Scheduling

Yuta Kochiyama	Keio University
Hirotmitsu Ohmori	Keio University

14:45–15:00, TB08.02

Outlier Detection Technique for RSS-Based Localization Problems in Wireless Sensor Networks

Yu Chi Chen	National Cheng Kung University
Wei Chih Sun	National Cheng Kung University
Jyh Ching Juang	National Cheng Kung University
Wei-Chih Sun	National Cheng Kung University

15:00–15:15, TB08.03

Output Feedback Controller Design of Networked Control Systems with Nonlinearity: An LMI Approach

Young Jun Yoo	POSTECH
Jahoo Koo	POSTECH
Sang-Chul Won	POSTECH

15:15–15:30, TB08.04

Synch-Free RF Time-of-Flight Measurement System for Wireless Sensor Networks Based on Vernier Effect

Sang-Il Ko	Tokyo Institute of Technology
Go Aikawa	Tokyo Institute of Technology
Jun-ya Takayama	Tokyo Institute of Technology
Shinji Ohyama	Tokyo Institute of Technology

15:30–15:45, TB08.05

Compensating Network Delays for Smart Actuator Using Lagrange Polynomial Curve Fitting

| Sunyoung Kang | Kyungpook National University |
| Dongik Lee | Kyungpook National University |

15:45–16:00, TB08.06

A Robust Adaptive Algorithm for Bilateral Control System without Force Sensor with Time Delay

| Suangsamorn Nurung | Thammasat University |
| Itthisek Nilkhamhang | Thammasat University |

TB09   103 (VF)

Evolutionary Technology and its Applications I (Organized Session)

Organizer: Kazuhiro Ohkura	Hiroshima University
Chair: Kazuhiro Ohkura	Hiroshima University
Chair: Yukiko Orito	Hiroshima University

14:30–14:45, TB09.01

Effective Diversification of Ant-Based Search by Considering Agent Traffic in Edges

Akira Hara	Hiroshima City University
Souichi Tanabe	Hiroshima City University
Takumi Ichimura	Prefectural University of Hiroshima
Tetsuyuki Takahama	Hiroshima City University

14:45–15:00, TB09.02

Construction of Players' Action for Robocup Soccer Using Graph Structured Program Evolution

Yasuaki Horima	Yokohama National University
Shinichi Shirakawa	Yokohama National University
Noriko Yata	Yokohama National University
Tomoharu Nagao	Yokohama National University

15:00–15:15, TB09.03

Estimation of ZigBee's RSSI Fluctuated by Crowd Behavior in Indoor Space

Masaya Arai	Hokkaido University
Hidenori Kawamura	Hokkaido University
Keiji Suzuki	Hokkaido University

15:15–15:30, TB09.04

Particle Filter Based Indoor Localization with ZigBee Sensor Networks

Junpei Tsuji	Hokkaido University
Hidenori Kawamura	Hokkaido University
Keiji Suzuki	Hokkaido University
Takeshi Ikeda	

National Institute of Advanced Industrial Science and Technology
| Akio Sashima | |

National Institute of Advanced Industrial Science and Technology
| Koichi Kurumatani | |

National Institute of Advanced Industrial Science and Technology

15:30–15:45, TB09.05

A Swarm Robotics Approach to Cooperative Package-Pushing Problems with Evolving Recurrent Neural Networks

Kazuhiro Ohkura	Hiroshima University
Toshiyuki Yasuda	Hiroshima University
Yukihiko Kotani	Hiroshima University
Yoshiyuki Matsumura	Shinshu University

TB10   104 (VF)

Challenges for Information Sharing on Industrial Network I (Organized Session)

Organizer: Tsutomu Yamada	Hitachi, Ltd.
Chair: Tsutomu Yamada	Hitachi, Ltd.
Chair: Akio Ito	Yokogawa Electric Corporation

14:30–14:45, TB10.01

Energy Efficiency Requires Information Sharing on Industrial Networks

Tsutomu Yamada	Hitachi, Ltd.
Masatoshi Takano	TOYOTA MOTOR CORPORATION
Takayanagi Yoichi	TOSHIBA CORPORATION
Itou Akio	Yokogawa Electric Corporation

14:45–15:00, TB10.02

Extending Field Device Functionality using FDT/DTM Technology

| Itou Akio | Yokogawa Electric Corporation |

15:00–15:15, TB10.03

Combination of FDT and EDDL Technologies

Stefan Lugert	Endress+Hauser Process Solutions AG
Sandra Gisy	Endress+Hauser Process Solutions
Kato Mamoru	Endress+Hauser Japan

15:15–15:30, TB10.04

OPC Server for Real-Time Ethernet

Genki Tateno	TOSHIBA CORPORATION
Yoshitomo Mizoguchi	TOSHIBA CORPORATION
Masako Koyama	TOSHIBA CORPORATION
Yoichi Takayanagi	TOSHIBA CORPORATION
Akira Nojima	

TOSHIBA MITSUBISHI-ELECTRIC INDUSTRIAL SYSTEMS CORPORATION

15:30–15:45, TB10.05

Multiprexing by MIMO that FA expects

| Hisato Yoneda | Murata Machinery, LTD. |
| Kenji Kumagai | Murata Machinery, LTD. |

TB11   105 (VF)

Image Processing

| Chair: Kohji Kamejima | Osaka Institute of Technology |
| Chair: Shigeru Takayama | Ritsumeikan University |

14:30–14:45, TB11.01

Motion Segmentation Scheme using Multichannel Optical Flow Estimator

| Teruo Yamaguchi | Kumamoto University |
| Jun Hirai | Kumamoto University |

14:45–15:00, TB11.02

Perceptual Equivalence of Environmental Saliency in Naturally Complex Scene

| Kohji Kamejima | Osaka Institure of Technology |

15:00–15:15, TB11.03

Extraction of Dense Urban Area from High Resolution Satellite Images

| Yuta Mizumoto | Nagasaki University |
| Senya Kiyasu | Nagasaki University |

| Kotaro Sonoda | Nagasaki University |
| Sueharu Miyahara | Nagasaki University |

15:15–15:30, TB11.04

Active Ranging System Based on Structured Laser Light Image

Sooyeong Yi	Seoul National University of Technology
Jinho Suh	Pohang Institute of Intelligent Robotics
Youngjin Hong	Pohang Institute of Intelligent Robotics
David Hwang	ThinkLife Robotics, Inc.

15:30–15:45, TB11.05

Velocity Measurement of River Flow for River Disaster Prevention

| Hideto Nishikado | Ritsumeikan University |
| Shigeru Takayama | Ritsumeikan University |

15:45–16:00, TB11.06

A Progressive Approach for Building Extraction by Fusing LIDAR Data and Co-Registered Bands

| Hong Wei | University of Reading |
| Wei Xu | Surrey University |

TB12	107 (VF)
Mechatronic Systems and Control I	

| Chair: Masahide Ito | Seikei University |
| Chair: Yoichi Shiraishi | Gunma University |

14:30–14:45, TB12.01

Backward Swing Noise Reduction of Windshield Wiper Using an Embedded System

Youg Zhe Chu	Gunma University
Wataru Kawauchi	Gunma University
Mona Abo El Dahb	Gunma University
Yoichi Shiraishi	Gunma University
Takanori Saito	Realize Computer Engineering, co., ltd.

14:45–15:00, TB12.02

Development and Application of Flexible Pneumatic Cylinder with Linear Encoder

Akimasa Fukuhara	Okayama University of Science
Tetsuya Akagi	Okayama University of Science
Shujiro Dohta	Okayama University of Science

15:00–15:15, TB12.03

Dynamic Analysis of a Three-Axis Robot Wrist and Optimization of its Structure

Hong Dae Sun	Changwon National University
Jang U-il	Changwon National University
Kwon Jung-Hee	Changwon National University

15:15–15:30, TB12.04

Maximal Admission of Joint Range of Motion Based on Redundancy Resolution for Kinematically Redundant Manipulators

Masahide Ito	Seikei University
Kazuyoshi Kawatsu	Seikei University
Masaaki Shibata	Seikei University

15:30–15:45, TB12.05

Development and Analysis of Small-sized Quasi-servo Valve Using On/Off Valves

| Tetsuya Akagi | Okayama University of Science |
| Shujiro Dohta | Okayama University of Science |

| FeiFei Zhao | Okayama University of Science |
| Keiji Fujita | Okayama University of Science |

15:45–16:00, TB12.06

Sliding Mode Control for a Ball and Arc System

Ming-Tzu Ho	National Cheng Kung University
Sho-Tsung Kao	National Cheng Kung University
Yu-Sheng Lu	National Cheng Kung University

TB13	108 (VF)
Navigation, Guidance, and Control in Aerospace Systems I	
(Organized Session)	

Organizer: Tsutomu Ichikawa	
	Japan Aerospace Exploration Agency
Chair: Shin-Ichiro Nishida	Japan Aerospace Exploration Agency
Chair: Tsutomu Ichikawa	Japan Aerospace Exploration Agency

14:30–14:45, TB13.01

Analyses for Mobility and Control System of Lunar Rover

| Shin-Ichiro Nishida | Japan Aerospace Exploration Agency |
| Sachiko Wakabayashi | Japan Aerospace Exploration Agency |

14:45–15:00, TB13.02

Low-Thrust Trajectory Optimization Using Second-Order Generating Functions

| Mai Bando | Kyoto University |
| Hiroshi Yamakawa | Kyoto University |

15:00–15:15, TB13.03

Control System Design for Visual Based Indoor Inspection Helicopter

Takehiro Higuchi	Yokohama National University
Fuyuto Takeyama	Yokohama National University
Seiya Ueno	Yokohama National University

15:15–15:30, TB13.04

Application of High-Precision two-way Ranging to the spacecraft navigation

| Tsutomu Ichikawa | Japan Aerospace Exploration Agency |

15:30–15:45, TB13.05

Operation Scenario of PLANET-C: Venus Climate Orbiter (AKAT-SUKI)

Shinichiro Narita	Japan Aerospace Exploration Agency
Yasuhiro Kawakatsu	Japan Aerospace Exploration Agency
Toshihiro Kurii	NEC TOSHIBA Space Systems, Ltd
Takeshi Yoshizawa	NEC TOSHIBA Space Systems, Ltd
Nobuaki Ishii	Japan Aerospace Exploration Agency
Masato Nakamura	Japan Aerospace Exploration Agency

TB14	109 (VF)
System Theory and Engineering	

Chair: Koichi Kobayashi	
	Japan Advanced Institute of Science and Technology
Chair: Shunji Tanaka	Kyoto University

14:30–14:45, TB14.01

Reachability Analysis of Probabilistic Boolean Networks using Model Checking

| Koichi Kobayashi | |

Japan Advanced Institute of Science and Technology
Kunihiko Hiraishi
 Japan Advanced Institute of Science and Technology

14:45–15:00, TB14.02

Global Optimization using the Draining Method and the Simultaneous Perturbation Gradient Approximation

| Takashi Okamoto | Chiba University |
| Hironori Hirata | Chiba University |

15:00–15:15, TB14.03

Integrated Optimization Based on Successive Adaptive Modeling

Tomoyuki Tanaka	Tokyo Metropolitan University
Kenichi Tamura	Tokyo Metropolitan University
Keiichiro Yasuda	Tokyo Metropolitan University

15:15–15:30, TB14.04

Improvement of the Optimization-Based Collision Avoidance Method for Reversal- and Livelock-Free Operation in Multi-Car Elevator Systems

| Shunji Tanaka | Kyoto University |
| Watanabe Masashi | Kyoto Uinversity |

15:30–15:45, TB14.05

A Multi-Agent Arrival and Flow Rotary Intersection Model using Safe Petri-net for Congestion Avoidance

| Makoto Katoh | Osaka Institute of Technology |
| Xue Li | Kobe University |

15:45–16:00, TB14.06

Control Frame of Cognition in Cognitive System Engineering

Rui Wang	Northeastern University
Tianyou Chai	Northeastern University
Heng Yue	Northeastern University
Keiji Watanabe	

TB15 110 (VF)

Disaster Response Robotics I (Organized Session)

Organizer: Hisanori Amano
 National Research Institute of Fire and Disaster
Chair: Kenichi Tokuda Wakayama University
Chair: Hisanori Amano National Research Institute of Fire and Disater

14:30–14:45, TB15.01

Forereaching Motion Generation of Mobile Robots for Pedestrian Face Identification

Kazushi Tanaka	Tohoku University
Eijiro Takeuchi	Tohoku University
Kazunori Ohno	Tohoku University
Satoshi Tadokoro	Tohoku University
Toru Yonezawa	GLORY LTD.

14:45–15:00, TB15.02

Proposal of a Simulation Platform to Evaluate Rescue Robots in Active Disaster Environment

Masaru Shimizu	Chukyo University
Yotsukura Shigeru	Meijo University
Takahashi Tomoichi	Meijo University

15:00–15:15, TB15.03

Measurement of Flexed Posture for Flexible Mono-Tread Mobile Track

Tetsuya Kinugasa	Okayama University of Science
Tetsuya Akagi	Okayama University of Science
Kuniaki Ishii	Okayama University of Science
Yuta Otani	Pacific software development
Takafumi Haji	Okayama University of Science
Koji Yoshida	Okayama University of Sicence
Hisanori Amano	
	National Research Institute of Fire and Disaster
Ryota Hayashi	Kagoshima University
Kenichi Tokuda	Wakayama University
Koichi Osuka	Osaka University

15:15–15:30, TB15.04

Motion Control of Multi-Linked Stretcher Robot DUCKS

| Koichi Osuka | Osaka University |
| Shingo Isayama | Kobe University |

15:30–15:45, TB15.05

Design and Implementation of User Friendly Remote Controllers for Rescue Robots in Fire Sites

YoungDuk Kim	DGIST
JeongHo Kang	Hoya Robot Co. LTD
DukHan Sun	Hoya Robot Co. LTD
Jeonil Moon	Hoseo University
YoungSun Ryuh	KITECH
Jinung An	
	Daegu Gyeongbuk Institute of Science and Technology

15:45–16:00, TB15.06

Wheel & Track Hybrid Robot Platform for Optimal Navigation in an Urban Environment

Jinwook Kim
 Daegu Gyeongbuk Institute of Science and Technology
Yoon-Gu Kim
 Daegu Gyeongbuk Institute of Science and Technology
Jeong-Hwan Kwak
 Daegu Gyeongbuk Institute of Science and Technology
Jinung An
 Daegu Gyeongbuk Institute of Science and Technology

TB17 Fu-Chuon Room (BF)

Mobile Robots I

| Chair: Kazuyuki Kobayashi | Hosei University |
| Chair: Hiroshi Mizoguchi | Tokyo University of Science |

14:30–14:45, TB17.01

Performance Evaluation of Contra-Rotating Drill for DIGBOT

Ryouhei Abe	University of Tsukuba
Youhei Kawamura	University of Tsukuba
Kazushi Kamijima	HDK CORPORATION
Kazutosi Murakami	UNIVANCE CORPORATION

14:45–15:00, TB17.02

A Study of Functions for Robot Returned from Parking to Store Autonomously

| Ryoma Arai | Tokyo University of Science |

Hiroshi Takemura — Tokyo University of Science
Hiroshi Mizoguchi — Tokyo University of Science

15:00–15:15, TB17.03

Development of Path Planning Algorithm Using Potential Field Based on Two Fixed Angle Laser Scanners

Takuya Yamakawa — Hosei University
Kazuyuki Kobayashi — Hosei University
Kajiro Watanabe — Hosei University
Yosuke Kurihara — Seikei University

15:15–15:30, TB17.04

Experimantal Verification of Fastest Guidance Control Preventing Carrying Objects from Slipping

Kosuke Okumura — University of Fukui
Masanori Mukono — University of Fukui
Mamoru Minami — Okayama University

15:30–15:45, TB17.05

Development of a Simulation Model for Inner-Gas-Pipe Inspection Robot: SPRING

Takashi Nishihara — Osaka University
Koichi Osuka — Osaka University
Itaru Tamura — Osaka Gas Co., Ltd.

15:45–16:00, TB17.06

Path Planning Through Local Tree Exploration with RRTs Method

Jorge Sofrony — Universidad Nacional de Colombia
Edwin Francis Cardenas — Universidad Nacional de Colombia
Luis Miguel Mendez — Universidad Nacional de Colombia

TB18	Der-Hou Room East (BF)
Intelligent Human-Machine Systems I (Organized Session)	

Organizer: Toshihiro Hiraoka — Kyoto University
Chair: Toshihiro Hiraoka — Kyoto University
Chair: Hironori Suzuki — Nippon Institute of Technology

14:30–14:45, TB18.01

Analysis of Time Delay in User's Awareness of ACC System Mode Transitions

Yukio Horiguchi — Kyoto University
Takanori Suzuki — Kyoto University
Hiroaki Nakanishi — Kyoto University
Tetsuo Sawaragi — Kyoto University

14:45–15:00, TB18.02

Toward Inference of Driver's Lane-Change Intent under Cognitive Distraction

Huiping Zhou — University of Tsukuba
Makoto Itoh — University of Tsukuba
Toshiyuki Inagaki — University of Tsukuba

15:00–15:15, TB18.03

Comparison Between Emotional and Objective Views to Promote Understanding of Risks for Elderly Drivers

Midori Inaba — University of Electro-Communications

15:15–15:30, TB18.04

New Approach to Evaluating Macroscopic Safety of Platooned Vehicles Based on Shockwave Theory

Hironori Suzuki — Nippon Institute of Technology

Kouichi Matsunaga — Bestpartner Inc.

15:30–15:45, TB18.05

Behavioral Adaptation to Advanced Driver-Assistance Systems

Toshihiro Hiraoka — Kyoto University
Junya Masui — Kyoto University
Seimei Nishikawa — Kyoto University

TB19	Der-Hou Room East (BF)
Advances in Control I	

Chair: Mitsuaki Ishitobi — Kumamoto University
Chair: Masanobu Koga — Kyusyu Institute of Technology

14:30–14:45, TB19.01

Sampled-Data Models for Decouplable Nonlinear Multivariable Systems

Masatoshi Nishi — Kumamoto University
Mitsuaki Ishitobi — Kumamoto University
Liang Shan — Chongqing University
Sadaaki Kunimatsu — Kumamoto University

14:45–15:00, TB19.02

Complete Intervals for D-stability of Single-Parameter Polynomially-Dependent Matrices — Generalization of the Stability Feeler

Tadasuke Matsuda — Toyota Technological Institute
Michihiro Kawanishi — Toyota Technological Institute
Tatsuo Narikiyo — Toyota Technological Institute

15:00–15:15, TB19.03

Decentralized Impulsive Control of Uncertain Large Scale Systems

Cheng Fa Cheng — National Taiwan Ocean University

15:15–15:30, TB19.04

Validated Pole Assignment Method based on Verified Numerical Computation

Kentaro Yano — Fukuoka Institute of Technology
Masanobu koga — Kyushu Institute of Technology
Hiromasa Nakashima — Kyushu Institute of Technology

15:30–15:45, TB19.05

An improved Approach to Stability Analysis of Fixed-Point Digital Control Systems under Finite Word Length Effects

Hsien-Ju Ko — Asia University

15:45–16:00, TB19.06

Design of Speed Control Systems Using Digital Controllers

Huaider Pai — MEC

TC01	Sky Lounge (12F)
Control Applications II	

Chair: Makoto Katoh — Osaka Institute of Technology
Chair: Kazuhiko Terashima — Toyohashi University of Technology

16:30–16:45, TC01.01

Sloshing Suppression Control of Liquid Container Transfer with Tilting Motion Using Principal Component Analysis

Ryota Shibuya — Toyohashi University of Technology
Yoshiyuki Noda — Toyohashi University of Technology
Kazuhiko Terashima — Toyohashi University of Technology

16:45–17:00, TC01.02

Air-Conditioning Control System using PD Control with Adjustable

Manual Reset

Yuji Yamakawa	University of Tokyo
Takanori Yamazaki	Oyama National College of Technology
Kamimura Kazuyuki	
	National Institute for Environmental Studies
Kurosu Shigeru	Research Instit. "Crotech"

17:00–17:15, TC01.03

Static and Dynamic Robust Parameters and PI Control Tuning of TV-MITE Model for Liquid Level in a Single Tank

Makoto Katoh	Osaka Institute of Technology

17:15–17:30, TC01.04

Multistep Optimal Scheduling of Automated Guided Vehicles in a Semiconductor Fabrication

Fumihiko Kato	University of Electro-Communications
Seiichi Shin	University of Electro-Communications

17:30–17:45, TC01.05

Design and Control of MR Mount for Vibration Isolation

Jinsiang Shaw	National Taipei University of Technology
Ray Pan	National Taipei University of Technology
W. Kuo	Tungnan University
G. Lin	Tungnan University

17:45–18:00, TC01.06

Heat Inflow Control of Peltier Device Based on Heat Inflow Observer

Hidetaka Morimitsu	Keio University
Seiichiro Katsura	Keio University

TC02	North Foyer (12F)
Service Engineering and Interface to Support High-Quality Life II (Organized Session)	

Organizer: Sho Yokota	Setsunan University
Chair: Hiroshi Hashimoto	
	Advanced Institute of Industrial Technology
Chair: Hiroyuki Kobayashi	Osaka Institute of Technology

16:30–16:45, TC02.01

Evaluation of Activity Level of Daily Life Based on Heart rate and Acceleration

Syunji Yazaki	University of Electro-Communications
Toshio Matsunaga	Tokyo University of Technology

16:45–17:00, TC02.02

Construction of Virtual Human Model by Using ODE — Study on Sitting Motion —

Sho Yokota	Setsunan University
Hiroshi Hashimoto	Advanced Institute of Industrial Technology
Yasuhiro Ohyama	Tokyo University of Technology
Jin-Hua She	Tokyo University of Technology
Daisuke Chugo	Kwansei Gakuin University

17:00–17:15, TC02.03

Camera-based Indoor Navigation for Service Robots

Daisuke Chugo	Kwansei Gakuin University
Shinya Matsushima	The University of Electro-Communications
Sho Yokota	Setsunan University
Kunikatsu Takase	The University of Electro-Communications

17:15–17:30, TC02.04

Study of Evaluation Method for Mental Activities and Apprication to Intelligent Power Wheelchair

Yasunari Fujimoto	Tokyo Metropolitan University
Gen Obayashi	Tokyo Metropolitan University
Nobuyuki Sekine	Tokyo Metropolitan University
Toru Yamaguchi	Tokyo Metropolitan University

TC03	South Foyer (12F)
Autonomous Decentralized Approaches for Systems Management (Organized Session)	

Organizer: Haruhiko Suwa	Setsunan University
Chair: Tatsushi Yamasaki	Setsunan University
Chair: Kazutoshi Sakakibara	Ritsumeikan University

16:30–16:45, TC03.01

Simulated Annealing Method Based on Recursive Problem Decomposition for Vehicle Routing Problems

Kazutoshi Sakakibara	Ritsumeikan University
Takahiro Tsuda	Ritsumeikan University
Ikuko Nishikawa	Ritsumeikan University

16:45–17:00, TC03.02

Autonomous Decentralized Simulation Model of City and Urban Traffic

Takuya Matsumoto	Kobe University
Hisashi Tamaki	Kobe University
Tsutomu Inamoto	Kobe University

17:00–17:15, TC03.03

Adaptive Supervisory Control Based on a Preference of Agents for Decentralized Discrete Event Systems

Kouji Kajiwara	Setsunan University
Tatsushi Yamasaki	Setsunan University

17:15–17:30, TC03.04

Management of Multimedia Data on a Distributed e-Learning System

Daisuke Yamamoto	Tottori University
Kazunari Meguro	Tottori University
Takao Kawamura	Tottori University
Shinichi Motomura	Tottori University
Toshihiko Sasama	Tottori University
Kazunori Sugahara	Tottori University

17:30–17:45, TC03.05

Development of User Interface Supporting Multi Web Browsers for Distributed e-Learning System

Takashi Hirata	Tottor University
Kazunari Meguro	Tottori University
Takao Kawamura	Tottori University
Toshihiko Sasama	Tottori University
Kazunori Sugahara	Tottori University

17:45–18:00, TC03.06

Realization of Persistency for Meeting Scheduling System Based on Mobile Agent Technology

Takayuki Onishi	Tottori University
Takao Kawamura	Tottori University

Toshihiko Sasama   Tottori University
Kazunori Sugahara   Tottori University

TC04   Auditorium (10F)
Advanced Pattern Measurement III (Organized Session)

Organizer: Shinpei Okawa
                The University of Electro-Communications
Chair: Toshiyuki Tanaka   Keio University
Chair: Yoshimitsu Aoki   Keio University
16:30–16:45, TC04.01

Study of Feature Extraction for Diagnosing Prostate Cancer

Yoshiteru Toki   Keio University
Toshiyuki Tanaka   Keio University
16:45–17:00, TC04.02

Case Classification of Pulmonary Emphysema using Shape and Distribution of Lesions

Shotaro Yoshie   Keio University
Toshiyuki Tanaka   Keio University
Toru Shirahata   Keio University
Hiroaki Sugiura   Keio University
17:00–17:15, TC04.03

Authentication System based on Computer Generated Hologram

Naoki Murakami   Keio University
Toshiyuki Tanaka   Keio University
17:15–17:30, TC04.04

Knowledge Simplification of Hierarchical Neural Network for Multidimensional Pattern Recognition Problems

Satoru Suzuki   Tokyo University of Agriculture and Technology
Yasue Mitsukura
                Tokyo University of Agriculture and Technology
17:30–17:45, TC04.05

Eye Movement-Related EEG Potential Pattern Recognition for Real-Time BMI

Takuma Ito   Ibaraki University
Tomoyuki Shinji   Ibaraki University
Hideyasu Sumiya   Ibaraki University
Mituru Baba   Ibaraki University
17:45–18:00, TC04.06

Pipe Wall Thickness Inspection with Current Driven Thermal Method

Satoshi Honda   Keio University

TC06   Song Bo Room (10F)
Adaptive & Learning Control III (Organized Session)

Organizer: Kenji Ikeda   The University of Tokushima
Chair: Yohihiko Miyasato   Institute of Statistical Mathematics
Chair: Yoshihiro Ohnishi   Ehime University
16:30–16:45, TC06.01

Evolutionary Identification Using Closed-Loop Data for a Mechanical System

Kazuo Kawada   Hiroshima University
Toru Yamamoto   Hiroshima University

16:45–17:00, TC06.02

Logic-based Switching Control of Trains with Actuator Failures

Taro Takagi   Tokai University
Masanori Takahashi   Tokai University
17:00–17:15, TC06.03

Adaptive Compensation Method of Friction Forces Using Differential Estimator

Kazuya Sato   Saga University
Obata Shin-ichiro   Saga University
Nomura Jyun   Saga University
Kazuhiro Tsuruta   Kyushu Sangyo University
17:15–17:30, TC06.04

Adaptive Output Recurrent Neural Network for Overhead Crane System

Chih-Hui Chiu   Yuan Ze University
Chun Hsien Lin   Yuan Ze University
17:30–17:45, TC06.05

Adaptive State Feedback Control for Descriptor Systems
Kenichi Tamura   Tokyo Metropolitan University
Keiichiro Yasuda   Tokyo Metropolitan University

TC07   101 (VF)
Control Theoretic Approaches to Future Control Technology (Organized Session)

Organizer: Toru Asai   Osaka University
Chair: Toru Asai   Osaka University
Chair: Tomoaki Hashimoto   Osaka University
16:30–16:45, TC07.01

A Numerical Solution Method to Receding Horizon Control for Nonlinear Diffusion Systems

Yusuke Yoshioka   Osaka University
Tomoaki Hashimoto   Shinshu University
Toshiyuki Ohtsuka   Osaka University
16:45–17:00, TC07.02

Approach to Relocate Sampled Zeros for Feedforward Control Application

Takuya Sogo   Chubu University
Masafumi Joe   Chubu University
17:00–17:15, TC07.03

Synthesis of Continuous-time Linear Reset Feedback System with $\mathcal{L}_2$ Stability

Atsushi Satoh   Iwate University
17:15–17:30, TC07.04

Ouput Feedback Stabilization of Systems with Ternary Valued PWM Control Input

Toru Asai   Osaka University
17:30–17:45, TC07.05

An Inverse Halftoning Algorithm Based on Super-Resolution Image Reconstruction

Yuki Minami   Maizuru National College of Technology
Shun-ichi Azuma   Kyoto University
Toshiharu Sugie   Kyoto University
17:45–18:00, TC07.06

Super-Resolution Image Reconstruction using an Observer of a Motorized Camera Head

Satoru Onishi	Nara Institute of Science and Technology
Kiminao Kogiso	Nara Institute of Science and Technology

TC08	102 (VF)
Networked Sensing and Control Systems II	

Chair: Takehito Azuma	Utsunomiya University
Chair: Akira Kojima	Tokyo Metropolitan University

16:30–16:45, TC08.01

Convergence Analysis of Consensus Problem with Communication Delays

Satoshi Maki	Tokyo Metropolitan University
Akira Kojima	Tokyo metropolitan University

16:45–17:00, TC08.02

A Study of RSSI Based Formation Control Algorithm for Multiple Mobile Robots

Takanori Komatsu	Hosei University
Tomoyuki Ohkubo	Hosei University
Kazuyuki Kobayashi	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Seikei University

17:00–17:15, TC08.03

Robust Feedback Stabilizability of Periodic Networked Control Systems

Cheng Fa Cheng	National Taiwan Ocean University
Shuang Yu Chung	National Taiwan Ocean University

17:15–17:30, TC08.04

Formation Control with Fault-Tolerance Based on Rigid Graph Theory

Takehito Azuma	Utsunomiya University
Tatsuya Karube	Utsunomiya University

17:30–17:45, TC08.05

Adaptive Consensus on a Class of Nonlinear Multi-Agent Dynamical Systems

Kouichi Sumizaki	The University of Tokyo
Lu Liu	The University of Tokyo
Shinji Hara	The University of Tokyo

17:45–18:00, TC08.06

Online Leader-Following Formation Navigation with Initial Movements of Followers and Its Experimental Verification

Manabu Suzuki	The University of Electro-Communications
Kazunori Sakurama	The University of Electro-Communications
Kazushi Nakano	The University of Electro-Communications

TC09	103 (VF)
Evolutionary Technology and its Applications II (Organized Session)	

Organizer: Kazuhiro Ohkura	Hiroshima University
Chair: Yukiko Orito	Hiroshima University
Chair: Kazuhiro Ohkura	Hiroshima University

16:30–16:45, TC09.01

Extended TSP Model as Conflicting Resource Utilizations by Individual Optimizers

Ryota Ono	Hokkaido University
Hidenori Kawamura	Hokkaido University
Keiji Suzuki	Hokkaido University

16:45–17:00, TC09.02

A Feasibility Study of the Intelligent Cart System

Yasushi Kambayashi	Nippon Institute of Technology
Hidemi Yamachi	Nippon Institute of Technology
Munehiro Takimoto	Tokyo University of Science

17:00–17:15, TC09.03

Generating Stock Trading Signals Based on Matching Degree with Extracted Rules by Genetic Network Programming

Shingo Mabu	Waseda University
Yuzhu Lian	Waseda University
Yan Chen	Waseda University
Kotaro Hirasawa	Waseda University

17:15–17:30, TC09.04

Evolutionary Trend Prediction Using Plural Technical Indicators for Foreign Exchange Transaction

Daigo Kato	Yokohama National University
Noriko Yata	Yokohama National University
Tomoharu Nagao	Yokohama National University

17:30–17:45, TC09.05

Stock Market Prediction Using Classifier System Based on Incident Pattern of Wave Template

Ryota Kato	Yokohama National University
Noriko Yata	Yokohama National University
Tomoharu Nagao	Yokohama National University

17:45–18:00, TC09.06

Extended Information Ratio Proposal for Portfolio Optimization Based on Market Dynamics

Yukiko Orito	Hiroshima University
Hisashi Yamamoto	Tokyo Metropolitan University
Tomokazu Sasaki	Tokyo Metropolitan University
Toru Kurazumi	Tokyo Metropolitan University
Yasuhiro Tsujimura	Nippon Institute of Technology
Yasushi Kambayashi	Nippon Institute of Technology

TC10	104 (VF)
Challenges for Information Sharing on Industrial Network II (Organized Session)	

Organizer: Tsutomu Yamada	Hitachi, Ltd.
Chair: Tsutomu Yamada	Hitachi, Ltd.
Chair: Yoichi Takayanagi	TOSHIBA CORPORATION

16:30–16:45, TC10.01

Industrial Wireless Sensor Networks and Standardizations

Li Zheng	Yamatake Corporation

16:45–17:00, TC10.02

Development of the Landslide Observation System Using ZigBee

Yuya Nakahata	University of Tsukuba
Youhei Kawamura	University of Tsukuba

17:00–17:15, TC10.03

Implementing Localization Scheme on ZigBee Wireless Sensor

Network

Junya Ohtsuka	University of Hyogo
Teijiro Isokawa	University of Hyogo
Hironobu Kawa	Step One Limited
Satoshi Nakashima	Step One Limited
Ayumu Saitoh	University of Hyogo
Naotake Kamiura	University of Hyogo
Nobuyuki Matsui	University of Hyogo

17:15–17:30, TC10.04

Consideration on Vulnerability Handling for Control Systems

Miyachi Toshio	JPCERT Coordination Center
Hiroki Narita	JPCERT Coordination Center
Oguma Nobutaka	JPCERT Coordination Center
Furuta Hirohisa	JPCERT Coordination Center

17:30–17:45, TC10.05

Security Measures of Manufacture & Control System

Yuuji Umeda	JEMIMA
Satoshi Kuboya	JEMIMA

TC11	105 (VF)
Signal Processing	

Chair: Rong-Jian Chen	National United University
Chair: Seiji Hata	Kagawa University

16:30–16:45, TC11.01

Person Localization using TDOA of Non-speech Sound Signal based on Multiplexed CSP Analysis

Yasuhiro Teshima	Tokyo Institute of Technology
Jun-ya Takayama	Tokyo Institute of Technology
Shinji Ohyama	Tokyo Institute of Technology
Kazuo Oshima	NTT Facilities Research Institute INC.

16:45–17:00, TC11.02

Nano-level 3-D shape Measurement Method from Analysis of Interference Fringes Using RGB LED Lightings

Seiji Hata	Kagawa University
Masanobu Kaneda	Kagawa University
Daichi Kimura	Kagawa University
Jun'ichiro Hayashi	Kagawa University
Ichirou Ishimaru	Kagawa University
Shigeaki Morimoto	REXXAM
Masakatsu Iwamoto	REXXAM
Hiroaki Kobayashi	Kagawa Industrial Technology Center

17:00–17:15, TC11.03

Precise Diameter Measurement of Reinforcing Bar and Steel Pipe based on Bi-static Model using Microwave Radar

Junya Takayama	Tokyo Institute of Technology
Tsubasa Yoshinaga	Tokyo Institute of Technology
Shinji Ohyama	Tokyo Institute of Technology
Yusuke Ohtake	Tokyo Institute of Technology

17:15–17:30, TC11.04

Novel Multi-bit and Bitwise Minimum Error Replacement Technique for Watermarking and Data Hiding

Rong-Jian Chen	National United University
Su-Min Hung	National United University

Yu-Cheng Peng	National United University
Jui-Lin Lai	National United University
Shi-Jinn Horng	
	National Taiwan University of Science and Technology

17:30–17:45, TC11.05

Spacecraft Telemetry Data Monitoring by Dimensionality Reduction Techniques

Takehisa Yairi	University of Tokyo
Akihiro Yoshiki	University of Tokyo
Minoru Inui	University of Tokyo
Yoshinobu Kawahara	Osaka University
Noboru Takata	Japan Aerospace Exploration Agency

17:45–18:00, TC11.06

Frequency and Amplitude Estimation in Microwave Doppler Signal and its Application to Car Driver's Foot Motion Estimation

Norikazu Ikoma	Kyushu Institute of Technology
Ryosuke Nagayama	Kyushu Institute of Technology
Hiroshi Kumamoto	TOTO LTD.
Nobuharu Nishiyama	TOTO LTD.

TC12	107 (VF)
Mechatronic Systems and Control II	

Chair: Kiyoshi Ioi	Kinki University
Chair: Shinya Kajikawa	Tohoku Gakuin University

16:30–16:45, TC12.01

Basic Performance of a Joint Mechanism with Multi-Directional Adjustable Stiffness

Shinya Kajikawa	Tohoku Gakuin University
Masashi Nasuno	Tohoku Gakuin University
Kazuto Hayasaka	Tohoku Gakuin University

16:45–17:00, TC12.02

Development of 2-Position 3-Port Control Valve with Self-Holding Function

Hirofumi Ueda	Okayama Univercity of Science
Tetsuya Akagi	Okayama University of Science
Shujiro Dohta	Okayama University of Science

17:00–17:15, TC12.03

Precise Tracking Control of Piezo Actuator Using Sliding Mode Control with Feedforward Compensation

Joo Yong Lee	POSTECH
Dong Wook Lee	POSTECH
Sang-Chul Won	POSTECH

17:15–17:30, TC12.04

Dynamic Analysis of Wagon Caster with Shock Absorber

Koji Moriya	Kinki University
Takashi Kawabuchi	Kinki University
Kiyoshi Ioi	Kinki University
Atsushi Suda	Yuei Caster Co. Ltd.
Masahiko Yamamoto	Yuei Caster Co. Ltd.

17:30–17:45, TC12.05

A Practical Approach to Detecting External Force Applied to Hydraulic Cylinder for Construction Manipulator

Mitsuhiro Kamezaki	Waseda University

| Hiroyasu Iwata | Waseda University |
| Shigeki Sugano | Waseda University |

17:45–18:00, TC12.06

Modal Separation Control of Circular Cylindrical Wedge Wave Ultrasonic Motors

| Tai Ho Yu | National United University |
| Ching-Chung Yin | National Chiao Tung University |

TC13   108 (VF)

Navigation, Guidance, and Control in Aerospace Systems II (Organized Session)

Organizer: Tsutomu Ichikawa
     Japan Aerospace Exploration Agency
Chair: Tsutomu Ichikawa   Japan Aerospace Exploration Agency
Chair: Takehiro Higuchi   Yokohama National University

16:30–16:45, TC13.01

Wavelet-based Method for Signal Acquisition in GNSS Receivers

Chung-Liang Chang	
National Pingtung University of Science and Technology	
Ho Nien Shou	Air Force Institute of Technology
Jyh-Ching Juang	National Cheng Kung University

16:45–17:00, TC13.02

Path Tracking of UAV Using Self-Tuning PID Controller Based on Fuzzy Logic

Pined Laohapiengsak	Thammasat University
Theerasak Sangyam	Thammasat University
Wonlop Chongcharoen	Thammasat University
Itthisek Nilkhamhang	Thammasat University

17:00–17:15, TC13.03

A Tight Path Following Algorithm of an UAS Based on PID control

Sanghyuk Park	Inha University
Ihnseok Rhee	Korea University of Technology and Education
Chang-Kyung Ryoo	Inha University

17:15–17:30, TC13.04

Path Generation Algorithm for Intelligence, Surveillance, Reconnaissance of UAV

Chan-Wook Lim	Inha University
Chang-Kyung Ryoo	Inha University
Keeyoung Choi	Inha University
Jung-Hee Cho	Agency for Defense Development

17:30–17:45, TC13.05

Micro-Satellite Attitude Angle Rate Estimation: Unscened Kalman Filter Approach

Ho Nien Shou	Air Force Institute of Technology
Chen Tsung Lin	National Space Organization
Chung-Liang Chang	
National Pingtung University of Science and Technology	

TC14   109 (VF)

Advances in System and Information

Chair: Setsuya Kurahashi   University of Tsukuba
Chair: Yohei Saika   Wakayama National College of Technology

16:30–16:45, TC14.01

Optimizing of Support Plan for New Graduate Employment Market: Reinforcement learning

| Keiko Mori | University of Tsukuba |
| Setsuya Kurahashi | University of Tsukuba |

16:45–17:00, TC14.02

A Consideration of Pan-Sharpen Images by HSI Transformation Approach

| Yoshihiro Mitani | Ube National College of Technology |
| Yoshihiko Hamamoto | Yamaguchi University |

17:00–17:15, TC14.03

Visualizing Similar Text Documents Based on 3D Dendrogram

Tomohito Kinoshita	Hosei University
Tomoyuki Ohkubo	Hosei University
Kazuyuki Kobayashi	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Seikei University

17:15–17:30, TC14.04

A Memorization Network Model of Normal Environment for Anomaly Detection

Masato Takeda	Yokohama National University
Noriko Yata	Yokohama National University
Tomoharu Nagao	Yokohama National University

17:30–17:45, TC14.05

Quantum Annealing via Transverse Interaction with XY-type Anisotropy

Yohei Saika	Wakayama National College of Technology
Tetsuya Kakimoto	Wakayama National College of Technology
Jun-ichi Inoue	Hokkaido University

17:45–18:00, TC14.06

Japanese Language Proficiency Index for Koreans by N400

| Hisaya Tanaka | Kogakuin University |
| Song Chol Choi | Kogakuin University |

TC15   110 (VF)

Disaster Response Robotics II (Organized Session)

Organizer: Hisanori Amano
     National Research Institute of Fire and Disaster
Chair: Tetsuya Kimura   Nagaoka University of Technology
Chair: Masaru Shimizu   Chukyo University

16:30–16:45, TC15.01

Concept of a hopping sphere robot for rescue

Kenichi Tokuda	Wakayama University
Hidenori Yagi	Wakayama University
Tetsuya Kinugasa	Okayama University of Science
Masafumi Miwa	The University of Tokushima

16:45–17:00, TC15.02

Torque Transfer Characteristics of the Flexible Shafts for Movement Mechanism of a Crawler-type Rescue Robot

Ryota Hayashi	Kagoshima University
Ichiro Nakamura	Kagoshima University
Yong Yu	Kagoshima University
Hisanori Amano	

National Research Institute of Fire and Disaster
Tetsuya Kinugasa   Okayama University of Science

17:00–17:15, TC15.03

Development of Heavy Duty Mobile Unit for Disaster Response

Hisanori Amano
     National Research Institute of Fire and Disaster
Ryutaro Morisono
     Mitsubishi Electric TOKKI Systems Cooperation
Ryuichi Hodoshima
     National Research Institute of Fire and Disaster

17:15–17:30, TC15.04

Development of a Search Type Rescue Robot Driven by Pneumatic Actuator

Kengo Harihara   Okayama University of Science
Tetsuya Akagi   Okayama University of Science
Shujiro Dohta   Okayama University of Science
Feng Zhang   Sanki Engineering Co., Ltd.

17:30–17:45, TC15.05

Summary of the 9th Rescue Robot Contest

Tomoharu Doi   Osaka Prefectural College of Technology
Masayuki Okugawa   Aichi Institute of Technology
Yoshiomi Munesawa   Okayama University
Hitoshi Yamauchi   Okayama Prefectural University
Seisuke Yamanaka   Osaka Prefectural College of Technology
Executive committee of Rescue Robot Contest

17:45–18:00, TC15.06

RT Development for Local Area Disaster Mitigation via Local Area Human Network: A Case Study in Nagaoka Area in Japan

Tetsuya Kimura   Nagaoka University of Technology

TC17	Fu-Chuon Room (BF)
Mobile Robots II	

Chair: Changsoo Han   Hanyang University
Chair: Tatsuo Narikiyo   Toyota Technical Institute

16:30–16:45, TC17.01

Robust Adaptive Position/Force Control of Mobile Manipulators — Theory and Experiments

Tatsuo Narikiyo   Toyota Technological Institute
Michihiro Kawanishi   Toyota Technological Institute
Tomohiko Mizuno   Toyota Technological Institute
Yasuo Hanada   Toyota Technological Institute

16:45–17:00, TC17.02

Study of Locomotion Strategy of Humanoid Robot Using Whole Body

Hirofumi Niimi   College of Industrial Technology
Minoru Koike   College of Industrial Technology
Seiichi Takeuchi   College of Industrial Technology
Noriyoshi Douhara   College of Industrial Technology

17:00–17:15, TC17.03

Localization Algorithm using Virtual Label for a Mobile Robot in Indoor and Outdoor Environment

Ki-Ho Yu   Pusan National University
Min Cheol Lee   Pusan National University

Seok Jo Go   Dong-Eui Institute of Technology

17:15–17:30, TC17.04

Path Planning of Unmanned Vehicle Using Potential Field and Lane Detection

Jun Young Baek   Pusan National University
Sung Hyun Kim   Busan College of Information Technology
Min Cheol Lee   Pusan National University

17:30–17:45, TC17.05

Performance Comparison between Neural Network and SVM for Terrain Classification of Legged Robot

Kisung Kim   Hanyang University
Kwangjin Ko   Hanyang University
Wansoo Kim   Hanyang University
Seungnam Yu   Hanyang University
Changsoo Han   Hanyang University

17:45–18:00, TC17.06

Development of the Mowing Robot of Trimmer Type

Yuki Iwano   Akashi National College of Technology

TC18	Der-Hou Room East (BF)
Intelligent Human-Machine Systems II (Organized Session)	

Organizer: Toshihiro Hiraoka   Kyoto University
Chair: Yoshitaka Marumo   Nihon University
Chair: Takahiro Wada   Kagawa University

16:30–16:45, TC18.01

Braking Assistance System for Train Drivers by Indicating Predicted Stopping Position

Hiroyasu Sato   Nihon University
Yoshitaka Marumo   Nihon University
Hitoshi Tsunashima   Nihon University
Takashi Kojima   Railway Technical Research Institute

16:45–17:00, TC18.02

A Collision Risk Criterion Based on Imaginary Brakes

Yuta Inoue   Nara Institute of Science and Technology
Kazushi Ikeda   Nara Institute of Science and Technology
Hiroki Mima   Nara Institute of Science and Technology
Tomohiro Shibata   Nara Institute of Science and Technology
Naoki Fukaya   DENSO CORPORATION
Kentaro Hitomi   DENSO CORPORATION
Takashi Bando   DENSO CORPORATION

17:00–17:15, TC18.03

Proposal of Warning Methods for Rear Obstacle Warning System Using Sensor Recognition Reliability

Shigeyoshi Tsutsumi   Kagawa University
Tokihiko Akita   AISIN SEIKI CO., LTD.
Takahiro Wada   Kagawa University
Shun'ichi Doi   Kagawa University

17:15–17:30, TC18.04

Effect of Activation Timing of Automatic Braking System on Driver Behaviors

Takahiro Wada   Kagawa University
Shoji Hiraoka   Kagawa University
Shigeyoshi Tsutsumi   Kagawa University

Shun'ichi Doi   Kagawa University
17:30–17:45, TC18.05

Seat Vibrotactile Warning Interface for Forward Vehicle Collision Avoidance

Pongsathorn Raksincharoensak

Tokyo University of Agriculture and Technology

Masato Higuchi   Tokyo University of Agriculture and Technology
17:45–18:00, TC18.06

Method for Evaluating the Collision Mitigation Ratio When Using Collision Avoidance Alarm at Intersection

Keisuke Suzuki   Kagawa University
Kiichi Yamada   Daido University

TC19	Der-Hou Room East (BF)
Advances in Control II	

Chair: Chieh-Neng Chang   Kao Yuan University
Chair: Tadashi Ishihara   Fukushima University
16:30–16:45, TC19.01

Design of Optimal Output Disturbance Cancellation Controllers for Non-minimum Phase Plants via Loop Transfer Recovery

Tadashi Ishihara   Fukushima University
Hai-Jiao Guo   Tohoku Gakuin University
16:45–17:00, TC19.02

Stability Analysis of Discrete-Time Systems with Two State Delays

Kun Feng Chen   National Taiwan University
I-Kong Fong   National Taiwan University
17:00–17:15, TC19.03

The Key Stability Determinants for Low-order Interval Polynomials

Jerome Chang   Kao Yuan University
17:15–17:30, TC19.04

The Sufficient Condition of System Matrix to Find A Lyapunov Function

Jerome Chang   Kao Yuan University
17:30–17:45, TC19.05

Design of Terminal Sliding Mode Control System for Second-Order Systems

Young-Hun Jo   Korea University
Yong-Hwa Lee   Korea University
Kang-Bak Park   Korea University
17:45–18:00, TC19.06

Model-Reference Type Discretized PID Control for Continuous PLants

Yoshifumi Okuyama   Humanitech Laboratory

	Grand Ballroom (12F)
Plenary Talk II	

Chair: Yasumasa Fujisaki   Kobe University
9:00–9:50

The PageRank Computation in Google, Randomized Algorithms and Consensus of Multi-Agent Systems

Roberto Tempo   IEIIT-CNR, Politecnico di Torino

FA01	Sky Lounge (12F)
Robot Therapy System (Organized Session)	

Organizer: Toshimitsu Hamada   Tsukuba Gakuin University
Chair: Toshimitsu Hamada   Tsukuba Gakuin University
Chair: Yoshihito Kagawa   Takushoku University
10:20–10:35, FA01.01

Production and Evaluation of a Walking Simulator in a VR Town

Tomomi Hashimoto   Saitama Institute of Technology
Yasuyuki Takakura   Saitama Medical University
Toshimitsu Hamada   Tsukuba Gakuin University
Toshiko Akazawa   Kitasato University
10:35–10:50, FA01.02

Proposal and Trial of Robot Assisted Rehabilitation System Using Remote Controlled Robotic Pet

Eiichi Ohkubo   Teikyo Junior College
Kazuhiro Miura   Teikyo University of Science and Technology
Hidekazu Murata   Teikyo University of Science and Technology
Toshihiro Tetsui   Teikyo University of Science and Technology
Ryuhei Kimura   Teikyo University of Science and Technology
Noriko Kato   Tokorozawa Royal Hospital
Mitsuru Naganuma

Teikyo University of Science and Technology
10:50–11:05, FA01.03

Gait Learning Method for Stable Motion Using Quadrupedal Robot

Hidekazu Suzuki   Tokyo Polytechnic University
Hitoshi Nishi   Fukui National College of Technology
Seiya Tsuchiya   Tokyo Polytechnic University
11:05–11:20, FA01.04

Consideration of Physiological Effect of Robot Assisted Activity on Dementia Elderly by Electroencephalogram (EEG) — Estimation of Positive Effect of RAA by Neuroactivity Diagram —

Ryuhei Kimura   Teikyo University of Science and Technology
Kazuhiro Miura   Teikyo University of Science and Technology
Hidekazu Murata   Teikyo University of Science and Technology
Akimitsu Yokoyama

Teikyo University of Science and Technology
Mitsuru Naganuma

Teikyo University of Science and Technology
11:20–11:35, FA01.05

The Effect of the Distance Between Human and Robot in RAA Setting

Akimitsu Yokoyama

Teikyo University of Science and Technology

Megumi Hakata   Teikyo University of Science and Technology

FA02   North Foyer (12F)
Designing the Service Engineering in Post Ubiquitous Society I (Organized Session)

Organizer: Sakae Yamamoto	Tokyo University of Science
Chair: Hirohiko Mori	Tokyo City University
Chair: Sakae Yamamoto	Tokyo University of Science

10:20–10:35, FA02.01
Visualization in Service Sciences

Hiroyuki Miki	Oki Electric Ind. Co., Ltd.
Naotune Hosono	Oki Consulting Solutions Co., Ltd.
Sakae Yamamoto	Tokyo University of Science

10:35–10:50, FA02.02
Effectiveness of Introducing Human-Centered Design Process

Naotake Hirasawa	Otaru University of Commerce
Kiko Yamada-Kawai	Otaru University of Commerce
Hideaki Kasai	Otaru University of Commerce
Shinya Ogata	U'eyes Design Inc.

10:50–11:05, FA02.03
Privacy Protection against Ubiquitous Marketing

Yumi Asahi	Tokyo University of Science

11:05–11:20, FA02.04
Implications of Envisioning Citizen-centered Administrative Services

Kiko Yamada-Kawai	Otaru University of Commerce
Naotake Hirasawa	Otaru University of Commerce
Hidemi Fukada	Otaru University of Commerce
Shou Ohtsu	Otaru University of Commerce

11:20–11:35, FA02.05
A Study on Color Conversion for the Anomalous Trichromat to Identify Color

Makoto Oka	Tokyo City University
Naoki Ozawa	Keio University
Hirohiko Mori	Tokyo City University
Akito Sakurai	Keio University

FA03   South Foyer (12F)
Computational Intelligence and Its Applications I (Organized Session)

Organizer: Eitaro Aiyoshi	Keio University
Chair: Toshiharu Hatanaka	Osaka University
Chair: Yoshihiro Mori	Kyoto Institute of Technology

10:20–10:35, FA03.01
Dynamic Associative Memory by Using Chaos of a Simple Associative Memory Model with Euler's Finite Difference Scheme

Kazuaki Masuda	Kanagawa University
Eitaro Aiyoshi	Keio University

10:35–10:50, FA03.02
Gene Expression Pattern Based Controller Design for Gene Regulatory Networks

Yoshihiro Mori	Kyoto Institute of Technology

Yasuaki Kuroe	Kyoto Institute of Technology

10:50–11:05, FA03.03
Evolution strategies for biped locomotion learning using nonlinear oscillators

Takeshi Uchitane	Osaka University
Toshiharu Hatanaka	Osaka University
Katsuji Uosaki	Fukui University of Technology

11:05–11:20, FA03.04
Simultaneous Perturbation Particle Swarm Optimization and FPGA Realization

Takahiro Yamada	Kansai University
Yutaka Maeda	Kansai University
Seiji Miyoshi	Kansai University
Hiroomi Hikawa	Kansai University

11:20–11:35, FA03.05
Multiple-Attribute Decision Making with Estimation of Preferences of Multiple Evaluators

Junichi Murata	Kyushu University
Masato Saruwatari	Kyushu University
Satoshi Hashikawa	Kyushu University

11:35–11:50, FA03.06
Simultaneous Bayesian Inference of Motion Velocity Fields and Probabilistic Models in Successive Video-Frames Described by Spatio-Temporal MRFs

Yuya Inagaki	Hokkaido University
Jun-ichi Inoue	Hokkaido University

FA04   Auditorium (10F)
Process Control and Process Automation

Chair: Tetsuya Tabaru	Yamatake Corporation
Chair: Masatoshi Ogawa	Waseda University

10:20–10:35, FA04.01
Just-In-Time Statistical Process Control for Flexible Fault Management

Manabu Kano	Kyoto University
Takeaki Sakata	Kyoto University
Shinji Hasebe	Kyoto University

10:35–10:50, FA04.02
An Application of Tracking Simulator to Depropanizer Process

Shin Ishimaru	Yokogawa Electric Corporation
Makoto Nakaya	Yokogawa Electric Corporation
Tetsuya Ohtani	Yokogawa Electric Corporation

10:50–11:05, FA04.03
Long-term Prediction of Industrial Furnace by Extended Sequential Prediction Method of LOM

Masatoshi Ogawa	Waseda University
Yichun Yeh	Waseda University
Syou Kawanari	Waseda University
Harutoshi Ogai	Waseda University

11:05–11:20, FA04.04
An Application of Nonlinear Model Predictive Control Using C/GMRES Method to a pH Neutralization Process

Masahiro Takekawa	Yokogawa Electric Corporation

Jun Aoki	Yokogawa Electric Corporation
Makoto Nakaya	Yokogawa Electric Corporation
Tetsuya Ohtani	Yokogawa Electric Corporation
Toshiyuki Ohtsuka	Osaka University

11:20–11:35, FA04.05

A Process Simulator Based on Hybrid Model of Physical Model and Just-In-Time Model

Akio Nakabayashi	Yokogawa Electric Corporation
Makoto Nakaya	Yokogawa Electric Corporation
Tetsuya Ohtani	Yokogawa Electric Corporation
Dong Chen	Yokogawa Beijing Development Center
Dong Wang	Yokogawa Beijing Development Center
Xinchun Li	Yokogawa Beijing Development Center

11:35–11:50, FA04.06

Diagnosis of Impulse Line Blockage by Frequency Count Approach

| Tetsuya Tabaru | Yamatake Corporation |
| Naoyuki Aota | Yamatake Corporation |

| **FA05** | Chang Chin Room (10F) |
| **Vision Systems I** | |

Chair: Chin-Sheng Chen	
	National Taipei University of Technology
Chair: Joo Kooi Tan	Kyushu Institute of Technology

10:20–10:35, FA05.01

Viewpoint-oriented Human Activity Recognition in a Cluttered Outdoor Environment

S. M. Ashik Eftakhar	Kyushu Institute of Technology
Joo Kooi Tan	Kyushu Institute of Technology
Hyongseop Kim	Kyushu Institute of Technology
Seiji Ishikawa	Kyushu Institute of Technology

10:35–10:50, FA05.02

Human Motion Recognition Using Directional Motion History Images

Makoto Murakami	Kyusyu Insutitute of Technology
Joo Kooi Tan	Kyusyu Insutitute of Technology
Hyoungseop Kim	Kyusyu Insutitute of Technology
Seiji Ishikawa	Kyusyu Insutitute of Technology

10:50–11:05, FA05.03

Three-dimensional Scene Reconstruction Using Stereo Camera and Laser Range Finder

Kota Saito	Yokohama National University
Noriko Yata	Yokohama National University
Tomoharu Nagao	Yokohama National University

11:05–11:20, FA05.04

On Detecting a Human Body Direction Using an Image Information

Yuuki Nakashima	Kyushu Institute of Technology
Joo Kooi Tan	Kyushu Institute of Technology
Seiji Ishikawa	Kyushu Institute of Technology
Takashi Morie	Kyushu Institute of Technology

11:20–11:35, FA05.05

Fast Object recognition based on Corner Geometric Relationship

| Chin Sheng Chen | National Taipei University of Technology |

| Yu Hung Ku | National Taipei University of Technology |
| Shun-Hung Tsai | National Taipei University of Technology |

11:35–11:50, FA05.06

A Method of Object Tracking Based on Particle Filter and Optical Flow to Avoid Degeneration Problem

Takahiro Kodama	Kumamoto University
Teruo Yamaguchi	Kumamoto University
Hiroshi Harada	Kumamoto University

| **FA06** | Song Bo Room (10F) |
| **Healthcare and Welfare I** | |

| Chair: Taisuke Sakaki | Kyushu Sangyo University |
| Chair: Seiji Nishifuji | Yamaguchi University |

10:20–10:35, FA06.01

Robotic Stretcher for SMA Patient

Sakaki Taisuke	Kyushu Sangyo University
Takayuki Iribe	Kyushu Sangyo University
Kuniharu Ushijima	Kyushu Sangyo University
Kanta Aoki	Kyushu Sangyo University
Mihoko Sakuragi	Kitakyushu City Technical Aid Center
Keiichi Miyanaga	
	Disabled Citizens' Welfare Center of Kitakyushu City

10:35–10:50, FA06.02

Proposal of Non-restrictive Sleep Assessment Method for Children Using Video Images

Shima Okada	Ritsumeikan University
Shinya Furushima	Ritsumeikan University
Naruhiro Shiozawa	Ritsumeikan University
Masaaki Makikawa	Ritsumeikan University

10:50–11:05, FA06.03

Estimation of Feeling Based on EEG by Using NN and k-means Algorithm for Massage System

Tatsuya Teramae	Tottori University
Daisuke Kushida	Tottori University
Fumiaki Takemori	Tottori University
Akira Kitamura	Tottori University

11:05–11:20, FA06.04

Effect of Acoustic Stimuli and Mental Task on Alpha, Beta and Gamma Rhythms in Brain Wave

Seiji Nishifuji	Yamaguchi University
Masahiro Sato	Yamaguchi University
Daisuke Maino	Yamaguchi University
Shogo Tanaka	Yamaguchi University

11:20–11:35, FA06.05

Noncontact Measurement of Sleep Depth by Using Pressure Sensors

Yuji Shimada	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Hosei University
Kazuyuki Kobayashi	Hosei University

11:35–11:50, FA06.06

Noninvasive Biosignal Measurement of a Subject in Bed Using Ceramic Sensors

Toshihiro Shino	Hosei University
Kajiro Watanabe	Hosei University
Kazuyuki Kobayashi	Hosei University
Kaoru Suzuki	Hosei University
Yosuke Kurihara	Seikei University

| **FA07** | 101 (VF) |
| **Nonlinear System Control** | |

| Chair: Akira Nakashima | Nagoya University |
| Chair: Takayuki Tsuzuki | Shimane University |

10:20–10:35, FA07.01

A Sufficient Condition for Local Semiconcavity of Value Function of Nonlinear Optimal Regulator

| Takayuki Tsuzuki | Shimane University |
| Yuh Yamashita | Hokkaido University |

10:35–10:50, FA07.02

Analysis of Effects of Rebounds and Aerodynamics for Trajectory of Table Tennis Ball

Junko Nonomura	Nagoya University
Akira Nakashima	Nagoya University
Yoshikazu Hayakawa	Nagoya University

10:50–11:05, FA07.03

Minimum Projection Method for Asymptotic Stabilization toward A Set

Yoshiro Fukui	Nara Institute of Science and Technology
Hisakazu Nakamura	Nara Institute of Science and Technology
Hirokazu Nishitani	Nara Institute of Science and Technology

11:05–11:20, FA07.04

H_∞ Controllers using a Bilinear Y-K Observer for Heat Exchangers with a Bilinear Input and a Bilinear Disturbance

| Shin Nakayama | Meiji University |
| Hiroaki Kobayashi | Meiji University |

11:20–11:35, FA07.05

Design of Feedback Systems with Output Nonlinearity and with Inputs and Outputs Satisfying Bounding Conditions

Van Sy Mai	Chulalongkorn University
Suchin Arunsawatwong	Chulalongkorn University
Eyad H. Abed	University of Maryland

11:35–11:50, FA07.06

Iterative Learning Control Based Gradient Descent Control For Output Tracking of Nonlinear Non-minimum Phase Systems

| Janson Naiborhu | Institut Tekonologi Bandung |

| **FA08** | 102 (VF) |
| **Fuzzy System Analysis and Control Applications I** (Organized Session) | |

Organizer: Tzuu-Hseng S. Li	National United University
Chair: Shun-Hung Tsai	
	National Taipei University of Technology
Chair: Hirokazu Seki	Chiba Institute of Technology

10:20–10:35, FA08.01

Battery Friendly Driving Control of Electric Power Assisted Wheelchair Based on Fuzzy Algorithm

Naoki Tanohata	Chiba Institute of Technology
Hiroki Murakami	Chiba Institute of Technology
Hirokazu Seki	Chiba Institute of Technology

10:35–10:50, FA08.02

Stabilization of a Class of Fuzzy Bilinear Descriptor Systems with Time-Delay

Chin-Sheng Chen	National Taipei University of Technology
Shun-Hung Tsai	National Taipei University of Technology
Ming-Ying Hsiao	Fortune Institute of Technology
Chi-Hua Liu	Fortune Institute of Technology
Ta-Tau Chen	Kun Shan University

10:50–11:05, FA08.03

Wheeled Inverted Pendulum Control Based on Model-Free Fuzzy Control Strategy

| Chih-Hui Chiu | Yuan Ze University |
| Chun Chieh Chang | Yuan Ze University |

11:05–11:20, FA08.04

PCA and LDA Based Fuzzy Face Recognition System

| Ming-Yuan Shieh | Southern Taiwan University of Technology |

11:20–11:35, FA08.05

Design and Implementation of Interaction System between Humanoid Robot and Human Hand Gesture

| Min-Chi Kao | National Cheng Kung University |
| Tzuu-Hseng S. Li | National Cheng Kung University |

| **FA09** | 103 (VF) |
| **Evolutionary Algorithm** | |

| Chair: Keiichiro Yasuda | Tokyo Metropolitan University |
| Chair: Yan Chen | Waseda University |

10:20–10:35, FA09.01

Web Mining using Genetic Relation Algorithm

Eloy Gonzales	Waseda University
Shingo Mabu	Waseda University
Karla Taboada	Waseda University
Kotaro Hirasawa	Waseda University

10:35–10:50, FA09.02

Studies on Q Value-based Dynamic Programming with Boltzmann Distribution

Yelei Xu	Waseda University
Deng Zhang	Waseda University
Shingo Mabu	Waseda University
Shanqing Yu	Waseda University
Kotaro Hirasawa	Waseda University
Yong Fang	Shanghai University

10:50–11:05, FA09.03

An Application of Particle Swarm Optimization to Traveling Salesman Problem

Yuji Shigehiro	Osaka Institute of Technology
Takaaki Katsura	Osaka Institute of Technology
Tatsuya Masuda	Osaka Institute of Technology

11:05–11:20, FA09.04

An Evolutionary Algorithm for Posture Estimation of A Three-Dimensional Object

Yuya Kida	Yokohama National University
Noriko Yata	Yokohama National University
Tomoharu Nagao	Yokohama National University

11:20–11:35, FA09.05

Down-hill Simplex Method Based Differential Evolution

Daichi Kamiyama	Tokyo Metropolitan University
Kenichi Tamura	Tokyo Metropolitan University
Keiichiro Yasuda	Tokyo Metropolitan University

11:35–11:50, FA09.06

A Nature-Inspired Evolutionary Algorithm Based on Spiral Movements

Gang-Gyoo Jin	Korea Maritime University
Thanh-Do Tran	Korea Maritime University

FA10	104 (VF)
FLUCOME-J (Organized Session)	

Organizer: Toshiharu Kagawa	Tokyo Institute of Technology
Chair: Xin Li	Tokyo Institute of Technology
Chair: Tatsuya Funaki	AIST

10:20–10:35, FA10.01

Estimation of Fluid Transients in a Pipe using Kalman Filter based on Optimized Finite Element Model

Akira Ozawa	Yokohama National Univercity
Bingzhao Gao	Yokohama National University
Kazushi Sanada	Yokohama National University

10:35–10:50, FA10.02

Analysis of levitation using porous media

Wei Zhong	Tokyo Institute of Technology
Guoliang Tao	Zhejiang University
Xin Li	Tokyo Institute of Technology
Kenji Kawashima	Tokyo Institute of Technology
Toshiharu Kagawa	Tokyo Institute of Technology

10:50–11:05, FA10.03

Transient Pressure and Flow Rate Measurement of Pneumatic Power Supply Line in Shinkansen

Kenji Fujino	EAST JAPAN RAILWAY COMPANY
Kouji Taniguchi	Tokyu Car Corporation
Nobuaki Yamamoto	TOKYO METER CO, LTD.
Chongho Youn	Tokyo Institute of Technology
Toshiharu Kagawa	Tokyo Institute of Technology

11:05–11:20, FA10.04

Analysis of Pneumatic Pipeline Using CCUP (CIP-Combined and Unified Procedure) Method

Mitsuhiro Nakao	Tokyo Institute of Technology
Kenji Kawashima	Tokyo Institute of Technology
Toshiharu Kagawa	Tokyo Institute of Technology

11:20–11:35, FA10.05

Study on Flow Rate Control System of Oscillatory Gas Flow Generator

Tatsuya Funaki	AIST

11:35–11:50, FA10.06

Diagnosis of Aerated Flow at Water Line with Coriolis Flowmeter Using Hilbert Transform

Akira Uehara	Waseda University
Takumi Hashizume	Waseda University
Tetsuya Wakui	Osaka Prefecture University
Akinori Yoshino	Yokogawa Electric Corporation
Akimichi Kadoguchi	Yokogawa Electric Corporation
Nobuo Miyaji	Yokogawa Electric Corporation

FA11	105 (VF)
Analytical Measurement	

Chair: Yuichi Chida	Shinshu University
Chair: Daisuke Chugo	Kwansei Gakuin University

10:20–10:35, FA11.01

On-Line Distinction Methods of Human Falling Motions Based on Machine Learning

Shunichi Aoyagi	Shinshu University
Yuichi Chida	Shinshu University
Hidetoshi Kobayashi	
	Nishizawa Electric Meters Manufacturing CO.
Shunichi Yoshimatsu	Chikuma Central Hospital.
Masahiro Oya	Chikuma Central Hospital.

10:35–10:50, FA11.02

Error Analysis of FST for Accuracy Improvement

Kazuki Maeda	Osaka University
Koichi Osuka	Osaka University

10:50–11:05, FA11.03

Detection of a Person Hiding in an Automobile by Using Human-Generated Microvibrations

Kyousuke Imamura	Hosei University
Kajiro Watanabe	Hosei University
Kazuyuki Kobayashi	Hosei University
Yosuke Kurihara	Seikei University

11:05–11:20, FA11.04

A Single-shot Laser Rangefinder with Quadrature Reference Signals Sampling

Masahiro Ohishi	Topcon Corporation
Fumio Ohtomo	Topcon Corporation
Yosikatsu Tokuda	Topcon Corporation
Chikao Nagasawa	Tokyo Metropolitan University

11:20–11:35, FA11.05

The Analysis of Upper Arm Movement When a Human Lift Up a Dummy Doll

Yuki Sakaida	RIKEN
Daisuke Chugo	Kwansei Gakuin University
Ryojun Ikeura	Mie University

11:35–11:50, FA11.06

High-accuracy Shape Measurement by Whole-space Tabulation Board Applied to Electronic Packaging

Akihiro Masaya	Wakayama University
Motoharu Fujigaki	Wakayama University
Ryosuke Murakami	Wakayama University
Yoshiharu Morimoto	Moire Institute

FA12 — 107 (VF)
System Design based on "Further Benefit of a Kind of Inconvenience" I (Organized Session)

Organizer: Hiroshi Kawakami	Kyoto University
Chair: Hiroshi Kawakami	Kyoto University
Chair: Hidetsugu Suto	Muroran Institute of Technology

10:20–10:35, FA12.01
A Vowel and Semivowel Synthesizer for Prompt and Expressive Communication

Hisataka Yuasa	Kyoto University
Hiroshi Kawakami	Kyoto University
Osamu Katai	Kyoto University

10:35–10:50, FA12.02
Evolutionary Algorithms for Gesture Segmentation

Hisashi Handa	Okayama University
Hiroshi Kawakami	Kyoto University

10:50–11:05, FA12.03
Multi-agent Simulation on Relationship Between Individuals' Travel Behavior and Residential Choice Behavior

Tadahiro Taniguchi	Ritsumeikan University
Yusuke Takahashi	Ritsumeikan University
Ikuko Nishikawa	Ritsumeikan University

11:05–11:20, FA12.04
A System Design Based on Safety Benefit of Affording Inconvenience Affairs

Kohei Okabe	JNIOSH
Shigeo Umezaki	JNIOSH

11:20–11:35, FA12.05
Degrading Navigation System as an Explanatory Example of "Benefits of Inconvenience"

Hiroyuki Kitagawa	Kyoto University
Hiroshi Kawakami	Kyoto University
Osamu Katai	Kyoto University

FA13 — 108 (VF)
Identification and Estimation

Chair: Michihiko Kawanishi	Toyota Institute of Technology
Chair: Yukinori Nakamura	Tokyo University of Agriculture and Technology

10:20–10:35, FA13.01
Adaptive Estimation of Firing Patterns of Hindmarsh-Rose Neurons and Synchronization Detection with Instantaneous Lyapunov Exponents

Ryuta Ito	Oita University
Yusuke Totoki	Oita University
Haruo Suemitsu	Oita University
Takami Matsuo	Oita University

10:35–10:50, FA13.02
Gain Switching Observer for Compensating Outliers — Experimental Validation with Non-contact Sensor —

Yukinori Nakamura	Tokyo University of Agriculture and Technology
Kenji Sugimoto	Nara Institute of Science and Technology
Kensuke Nagai	Mitsubishi Heavy Industries, Ltd.
Shinji Wakui	Tokyo University of Agriculture and Technology

10:50–11:05, FA13.03
Zero Velocity Detection for Inertial Sensor-Based Personal Navigation Systems

Sang Kyeong Park	University of Ulsan
Young Soo Suh	University of Ulsan
Hee Jun Kang	University of Ulsan
Young Shick Ro	University of Ulsan

11:05–11:20, FA13.04
Comparison of Estimation Performance Between Single and Multiple Disturbance Observers for LTI Systems

Takahiko Ono	Hiroshima City University
Tadashi Ishihara	Fukushima University

11:20–11:35, FA13.05
Multi-Class System based on SVM for Real-Time Gas Mixture Classification

Guk Hee Kim	Kyungpook National University
Young-Wung Kim	Kyungpook National University
Sang-Jin Lee	Kyungpook National University
Gi Joon Jeon	Kyungpook National University

11:35–11:50, FA13.06
Design of a Digital Frequency Discriminator using Least Squares based Phase Calibration

Jin Oh Park	Hanyang University
Jae Beom Seo	Hanyang University
Jung Hee Kim	Hanyang University
Sang Won Nam	Hanyang University

FA14 — 109 (VF)
Application of Actuator and Sensor in Intelligent Technology (Organized Session)

Organizer: Mi-Ching Tsai	National Cheng Kung University
Chair: Mi-Ching Tsai	National Cheng Kung University
Chair: Tay-Sheng Jeng	National Cheng Kung University

10:20–10:35, FA14.01
Development of Mobile Robot for Intelligent Living Space

Mi-Ching Tsai	National Cheng-Kung University
Wu-Sung Yao	National Cheng-Kung University
Shih-Wei Hsiao	National Cheng-Kung University
Lien-Kai Chang	National Cheng-Kung University

10:35–10:50, FA14.02
Analysis of High Efficiency Piezoeletric Floor on Intelligent Buildings

Tsung-Tsi Wu	National Cheng-Kung University
Sheng-He Wang	National Cheng-Kung University
Wu-Sung Yao	National Cheng-Kung University
Mi-Ching Tsai	National Cheng-Kung University

10:50–11:05, FA14.03
IR Indoor Localization and Wireless Transmission for Motion Control in Smart Building Applications based on Wiimote Technology

Po-Wei Chen	National Cheng Kung University

| Kuang-Shun Ou | National Cheng Kung University |
| Kuo-Shen Chen | National Cheng Kung University |

11:05–11:20, FA14.04

Recurrent Fuzzy Neural Network Controller For Linear Ultrasonic Motor

Tien-Chi Chen	Kun-Shan University
Tsai-Jiun Ren	Kun-Shan University
Pon-Loon Chen	National Chen-Kung University
Yi-Wei Lou	Kun-Shan University

11:20–11:35, FA14.05

A Robotic and Kinetic Design for Interactive Architecture

| Taysheng Jeng | National Cheng Kung University |
| Cheng-An Pan | National Cheng Kung University |

FA15 110 (VF)
Robot Walking

| Chair: Akinori Sekiguchi | Tokyo University of Technology |
| Chair: Tung-Yung Huang | Southern Taiwan University |

10:20–10:35, FA15.01

Gait Generation of Compass-type Biped Robot via Angle Control of Hip Joint

Hiromu Takai	Nara Institute of Science and Technology
Hisakazu Nakamura	Nara Institute of Science and Technology
Nami Nakamura	Nara Institute of Science and Technology
Hirokazu Nishitani	Nara Institute of Science and Technology

10:35–10:50, FA15.02

Gait and Path Planning for MOS-2009 Humanoid Soccer Robot

| Shunan Ren | Harbin Institute of Technology |
| Jinjiao Xie | Harbin Institute of Technology |

10:50–11:05, FA15.03

A Prototype Foot Shape for Human-like Walk of Humanoid Robot

| Akinori Sekiguchi | Tokyo University of Technology |
| Yuichi Tsumaki | Yamagata University |

11:05–11:20, FA15.04

Global Stability Analysis for Plane Limit Cycle Walking Models with Feet and Actuation

Yonggwon Jeon	KAIST
Youn-sik Park	KAIST
Youngjin Park	KAIST

11:20–11:35, FA15.05

Walk Control of a Four-legged Machine

Akira Ono	Hosei University
Kajiro Watanabe	Hosei University
Kazuyuki Kobayashi	Hosei University
Yosuke Kurihara	Hosei University

11:35–11:50, FA15.06

Gait Control of a Biped Robot Using an Exact Limit Cycle Trajectory and the Backstepping Method

Tung-Yung Huang	Southern Taiwan University
Ssu-Hsien Wu	Southern Taiwan University
Huu Khoa Tran	Southern Taiwan University

FA16 West Gallery (VF)
Interactive Session II

10:20–11:50, FA16.01

Non-invasive Measurement of Blood Glucose of Diabetic Based on IR Spectroscopy

Shouhei Koyama	Shinshu University
Hiroaki Ishizawa	Shinshu University
Yuki Miyauchi	Shinshu University
Takuro Horiguchi	Shinshu University

10:20–11:50, FA16.02

Basis Examination for Development of Noninvasive Blood Glucose Measuring Instrument by Near-Infrared Confocal Optical System

Yuki Miyauchi	Shinshu University
Takuro Horiguchi	Shinshu University
Hiroaki Ishizawa	Shinshu University
Shin-ichirou Tezuka	Yokogawa Electric Corporation
Hitoshi Hara	Yokogawa Electric Corporation

10:20–11:50, FA16.03

Prompt Quantitative Analysis of Fiber Mixtures Based on Infrared Absorption Features

Shota Tokutake	Shinshu University
Tomomi Dozono	Shinshu University
Hiroaki Ishizawa	Shinshu University
Shouhei Koyama	Shinshu University
Takashi Miki	
	Japan Textile Products Quality and Technology Center

10:20–11:50, FA16.04

Recognition of Breathing Route During Snoring for Simple Monitoring of Sleep Apnea

Tsuyoshi Mikami	Tomakomai College of Technology
Yohichiro Kojima	Tomakomai College of Technology
Masahito Yamamoto	Hokkaido University
Masashi Furukawa	Hokkaido University

10:20–11:50, FA16.05

Development of Magnetic Field Sensor System for Lateral Position Estimation on Power Supplying Road

Sunjong Lee	KAIST
Choi Youjun	KAIST
Jinkyu Kim	KAIST

10:20–11:50, FA16.06

3-dimensional Real-time BSS-microphone with Spatio-temporal Gradient Analysis

Kenbu Teramoto	Saga University
Shota Inoue	Saga University
Takanori Yokowo	Saga University

10:20–11:50, FA16.07

Holonic MAXCS and its Application to Hot Strip Roller Scheduling

Elias Mohammad Abu Hasnat	Tokyo Institute of Technology
Takashi Yamada	Tokyo Institute of Technology
Takao Terano	Tokyo Institute of Technology

10:20–11:50, FA16.08

Trajectory Tracking Control of the Four-Wheeled Vehicle according

to Speed Change

Misawa Kasahara

Tokyo Metropolitan College of Industrial echnology

Yasuchika Mori Tokyo Metropolitan University

10:20–11:50, FA16.09

On Partial State Setting for the Improvement of Transient Response: Experimental Evaluation with an Inverted Pendulum

Shintarou Mochizuki Tokyo Metropolitan University

Akira Kojima Tokyo Metropolitan University

10:20–11:50, FA16.10

A New Parametrization of A Class of Causal Stabilizing Controllers

Kazuyoshi Mori The University of Aizu

10:20–11:50, FA16.11

A Multivariable Adaptive Control Strategy for a Recycled Depollution Bioprocess

Emil Petre University of Craiova

Dan Selisteanu University of Craiova

Dorin Sendrescu University of Craiova

10:20–11:50, FA16.12

Bifurcation Analysis of Time-Delayed Parabolic Heat-Transfer with 2D Transfer Function

Boe-Shong Hong National Chung Cheng University

Po-Jen Su National Cheng Kung University

Chia-Yu Chou National Chung Cheng University

Chen-I Hung National Cheng Kung University

10:20–11:50, FA16.13

Task Execution of a Wheelchair Mounted Robotic Arm Incorporated with Active Compliance Control

Wei Wang Waseda University

Yuuki Nishi Waseda University

Shigeki Sugano Waseda University

10:20–11:50, FA16.14

Robustness of Pole Assignment of an Interval Polynomial Using Like $\bar{\lambda}$-Degree Feedback Gain Based on the Kharitonov Theorem

Bin Yih Juang St. John's University/National Taiwan University

10:20–11:50, FA16.15

Variational Calculation for Optimal Feedback Synthesis

Teturo Itami Hiroshima International University

10:20–11:50, FA16.16

Parametrization of All Three Impulse Zero Vibration Input Shapers

Milos Schlegel University of West Bohemia in Pilsen

Lukas Blaha University of West Bohemia in Pilsen

Chi-Sheng Tsai Chienkuo Technology University

10:20–11:50, FA16.17

ILQ Servo Design Method Incorporating Min-Max Type Optimal Observer

Sadaaki Kunimatsu Kumamoto University

Kosuke Tateishi Kumamoto University

Takehiro Araki Kumamoto University

Makoto Kumon Kumamoto University

Mitsuaki Ishitobi Kumamoto University

10:20–11:50, FA16.18

An Identification Method of Generalized Electromechanical Coupling Coefficient with Compact Structure and Simple Procedure

Yoshiki Sugawara Aoyama Gakuin University

Takeshi Baba Aoyama Gakuin University

Nobuyuki Kobayashi Aoyama Gakuin University

10:20–11:50, FA16.19

YUV Luma/Chroma Quantization and Sparse Correspondence for Real Time Video Stereo Matching

Kunio Takaya University of Saskatchewan

10:20–11:50, FA16.20

Object Identification by Hough Data Verification

Kazuki Ueno Kagawa University

Jun'ichi Yamaguchi Kagawa University

10:20–11:50, FA16.21

A New Collision-free Path Planning for a Shape-shifting Robot

Tonglin Liu Chinese Academy of Sciences

Chengdong Wu Shenyang Institute of Automation

Bin Li Shenyang Institute of Automation

Minghui Wang Shenyang Institute of Automation

10:20–11:50, FA16.22

Development of Cellular Phone Based JAUS-Compliant Unmanned System Controller

Kenji Sawada Hosei University

Kazuyuki Kobayashi Hosei University

Kajiro Watanabe Hosei University

Tomoyuki Ohkubo Hosei University

Yosuke Kurihara Seikei University

10:20–11:50, FA16.23

Development of a Generic Procedure Model for the Enterprise Resource Planning Implementation in Small and Medium Enterprises

Kuo-En Fu Diwan University

10:20–11:50, FA16.24

Design of Microprocessor-based Communication Interface and Local-loop Control System for Intelligent Humanoid Robot

Hsiung-Cheng Lin National Chin-Yi University of Technology

G. S. Huang National Chin-Yi University of Technology

C. K. Tung National Chin-Yi University of Technology

C. H. Chen Chienkuo Technology University

L. Y. Liu Chienkuo Technology University

FA17	Fu-Chuon Room (BF)

Motion/Function Control in Biological and Mechanical Systems I (Organized Session)

Organizer: Masato Ishikawa Osaka University

Chair: Masato Ishikawa Osaka University

Chair: Satoru Sakai Shinshu University

10:20–10:35, FA17.01

Experimental Analysis of 3D Passive Dynamic Walking

Tetsuya Kinugasa Okayama University of Science

Tetsuya Akiyama Okayama University of Science

Muhammad Atif Jauhari Bin Idris

Okayama University of Science

Koji Yoshida Okayama University of Sicence

Masatsugu Iribe Osaka Electro-Communication University

10:35–10:50, FA17.02

Natural Entrainment of Mechanical Systems with Tensegrity Structure

Yoshiaki Futakata — The University of Tokyo
Tetsuya Iwasaki — University of California, Los Angeles

10:50–11:05, FA17.03

Emergence of Hysteresis in Gait Transition by Changing Walking Speed of an Oscillator-Driven Quadruped Robot

Tsuyoshi Yamashita — Kyoto University
Shinya Aoi — Kyoto University
Akira Ichikawa — Kyoto University
Kazuo Tsuchiya — Doshisha University

11:05–11:20, FA17.04

Implicit Control Law and Explicit Control Law of Swiss Robot

Yuichiro Sueoka — Osaka University
Koichi Osuka — Osaka University
Yasuhiro Sugimoto — Osaka University
Akio Ishiguro — Tohoku University

FA18	Der-Hou Room East (BF)
Robotic Control and Robots (Organized Session)	

Organizer: Wen-June Wang — National Chi-Nan University
Chair: Wen-June Wang — National Chi-Nan University
Chair: Cheng-Yuan Chang — Chung Yuan Christian University

10:20–10:35, FA18.01

A Robot Arm for Pushing Elevator Buttons

Wen-June Wang — National Chi-Nan University
Cheng-Hao Huang — National Central University
I-Hsian Lai — National Central University
Han-Chun Chen — National Central University

10:35–10:50, FA18.02

CMAC-Based Dynamic-Balancing Design for Humanoid Robot

Chih-Min Lin — Yuan-Ze University
Chih-Hsuan Chen — Yuan Ze University
Ming-Hung Lin — Yuan Ze University
Jia-Jung Chang — Yuan Ze University

10:50–11:05, FA18.03

Visual Tracking on Adaptive Fuzzy Sliding Mode Control for The Antiswing of An Overhead Crane System

Handra Wijaya Lie — Chung Yuan Christian University
Cheng-Yuan Chang — Chung Yuan Christian University

11:05–11:20, FA18.04

A Squeezing Control for Snake-like Robots to Climb Up Trees

Yuta Suzuki — Tokyo Denki University
Masami Iwase — Tokyo Denki University
Teruyoshi Sadahiro — Tokyo Denki University
Shoshiro Hatakeyama — Tokyo Denki University

FA19	Der-Hou Room East (BF)
Measurement and Control	

Chair: Tzon-Shi Liu — National Chiao Tung University
Chair: Po-Lei Lee — National Central University

10:20–10:35, FA19.01

Motion Control to Phase Variable Filter

Yoichi Ishigami — Kagawa University
Toshiaki Matsumoto — Kagawa University
Satoru Takahashi — Kagawa University

10:35–10:50, FA19.02

Bending-Characteristic Measurement of Flexible Electronics by Using Fast Optimal Sliding Mode Control Method

Bor-Jiunn Wen — Industrial Technology Research Institute
Tzong-Shi Liu — National Chiao Tung University

10:50–11:05, FA19.03

Integration Both PI and PD Type Fuzzy Controllers for a Scanning Probe Microscope System Design

Jium-Ming Lin — Chung-Hua University.
Po-Kuang Chang — Chung-Hua University

11:05–11:20, FA19.04

Duplicating the Skills of Hand Yarn Spinning Using a Robot

Purev-Ulzii Chimeddorj — Shinshu University
Junichiro Yoshida — Shinshu University
Takashi Kawamura — Shinshu University

11:20–11:35, FA19.05

Real-Time Control of an SSVEP-Actuated Remote-Controlled Car

Hsiang-Chih Chang — National Central University
Hua-Ting Deng — National Central University
Po-Lei Lee — National Central University
Chi-Hsun Wu — National Central University
Kuo-Kai Shyu — National Central University

11:35–11:50, FA19.06

A System of Microwave Cylindrical Cavity Resonator for Granular Material Dielectric Measurement using Two Waveguide Transmitters

Navapadol Kittiamornkul — King Mongkut's University of Technology Thonburi
Kosin Chamnongthai — King Mongkut's University of Technology Thonburi
Kamon Jirasereeamornkul — King Mongkut's University of Technology Thonburi
Kohji Higuchi — University of Electro-Communications

FB01	Sky Lounge (12F)
New Design and Methods in Domestic and Assistive Robotics (Organized Session)	

Organizer: Kai-Tai Song — National Chiao-Tung University
Chair: Kai-Tai Song — National Chiao Tung University
Chair: Ping-Lang Yen — National Taiwan University

14:30–14:45, FB01.01

Human-Oriented Navigation for Service Providing in Home Environment

Kuo-Chen Huang — National Taiwan University
Jiun-Yi Li — National Taiwan University
Li-Chen Fu — National Taiwan University

14:45–15:00, FB01.02

An Intelligent Bone Cutting Tool in Robot-Assisted Knee Replacement

Ping-Lang Yen — National Taiwan University

Shuo-Suei Hung   Buddhist Xindian Tzu Chi General Hospital

15:00–15:15, FB01.03

Skill Learning for Assistive Robotics

Hsien-I Lin

National Taipei University of Sicence and Technology

15:15–15:30, FB01.04

Human Gait Estimation Using a Reduced Number of Accelerometers

Jwu-Sheng Hu   National Chiao Tung University
Sun Kuan-Chun   National Chiao Tung University

15:30–15:45, FB01.05

Concurrent Multiple Cameras Calibration and Robot Localization from Visual and 3D Inertial Measurements

Hsiang-Wen Hsieh   Industrial Technology Research Institute
Chin-Chia Wu   National Chiao Tung University
Hung-Hsiu Yu   Industrial Technology Research Institute
Jwu-Sheng Hu   National Chiao Tung University

15:45–16:00, FB01.06

Mobile Robot Loop Closing Using Monocular Vision SLAM

Kai-Tai Song   National Chiao-Tung University
Li-Deh Yuan   National Chiao Tung University

FB02	North Foyer (12F)

Designing the Service Engineering in Post Ubiquitous Society II (Organized Session)

Organizer: Sakae Yamamoto   Tokyo University of Science
Chair: Sakae Yamamoto   Tokyo University of Science
Chair: Hirohiko Mori   Tokyo City University

14:30–14:45, FB02.01

Universal Communication Service for Inclusive Use

Hosono Naotsune   Oki Consulting Solutions Co., Ltd.
Hiromitsu Inoue Chiba Prefectural University of Health Sciences
Miki Hiroyuki   Oki Electric Ind. Co., Ltd.
Michio Suzuki   AAJD
Yuji Nagashima   Kogakuin University
Yutaka Tomita   Keio University

14:45–15:00, FB02.02

Distributed Autonomous System for Victims of The Earthquake

Yuichi Takahashi   Tokyo University of Science
Daiji Kobayashi   Chitose Institute of Science and Technology
Sakae Yamamoto   Tokyo University of Science

15:00–15:15, FB02.03

Deployment of Remote-control Slit Lamp Microscopes and its Effect on Local Medical Service

Kentaro Go   University of Yamanashi
Kenji Kashiwagi   University of Yamanashi
Naohiko Tanabe   University of Yamanashi

15:15–15:30, FB02.04

A Study on Selection Ability in the 3D Space by the Finger

Ryuta Yamada   Tokyo City University
Hidetaka Kuriiwa   Tokyo City University
Makoto Oka   Tokyo City University
Hirohiko Mori   Tokyo City University

FB03	South Foyer (12F)

Computational Intelligence and Its Applications II (Organized Session)

Organizer: Eitaro Aiyoshi   Keio University
Chair: Keigo Watanabe   Okayama University
Chair: Eitaro Aiyoshi   Keio University

14:30–14:45, FB03.01

Acquisition of Deterministic Exploration and Purposive Memory through Reinforcement Learning with a Recurrent Neural Network

Katsunari Shibata   Oita University
Kenta Goto   Oita University

14:45–15:00, FB03.02

Acquisition of Active Perception and Recognition through Actor-Q Learning Using a Movable Camera

Ahmad Afif Mohd Faudzi   Oita University
Katsunari Shibata   Oita University

15:00–15:15, FB03.03

Intelligent Chaos Fish-Catching Based on Neural-Network-Differential-Equation

Ryohei Endo   University of Fukui
Jun Hirao   University of Fukui
Mamoru Minami   Okayama University

15:15–15:30, FB03.04

Attentive and Corrective Feedback for Adapting Robot's Perception on Fuzzy Linguistic Information

Kiyotaka Izumi   Saga University
Buddhika Jayasekara   Saga University
Keigo Watanabe   Okayama University
Kazuo Kiguchi   Saga University

15:30–15:45, FB03.05

Analysis of Various Interestingness Measures in Classification Rule Mining for Traffic Prediction

Xianneng Li   Waseda University
Shingo Mabu   Waseda University
Huiyu Zhou   Waseda University
Kaoru Shimada   Waseda University
Kotaro Hirasawa   Waseda University

FB04	Auditorium (10F)

Panel Discussion: Glocal Control

14:30–16:00

Panelist: Graham Goodwin   University of Newcastle
Panelist: Roberto Tempo   IEIIT-CNR, Politecnico di Torino
Panelist: Koichiro Deguchi   Tohoku University
Panelist: Keiko Takahashi   JAMSTEC
Panelist: Shinji Hara   The University of Tokyo

FB05	Chang Chin Room (10F)

Vision Systems II

Chair: Satoru Goto   Saga University
Chair: Kazunori Sakurama

University of Electro-Communications

14:30–14:45, FB05.01
Teleoperation System of Robot Arms Combined with Remote Control and Visual Servo Control

Satoru Goto	Saga University
Takuya Naka	Saga University
Yoshitaka Matsuda	Saga University
Naruto Egashira	Kurume National College of Technology

14:45–15:00, FB05.02
A Quantitative Evaluation of Robust Detecting and Tracking Methods under Illumination Changes Using Color Stereo Camera

Yuta Kimura	Tokyo University of Science
Hiroshi Takemura	Tokyo University of Science
Hiroshi Mizoguchi	Tokyo University of Science

15:00–15:15, FB05.03
Robust Tracking Method by MeanShift using Spatiograms

Kazuki Tada	Tokyo University of Science
Hiroshi Takemura	Tokyo University of Science
Hiroshi Mizoguchi	Tokyo University of Science

15:15–15:30, FB05.04
Map Building by 3D Map Matching

Tetsuya Ishimaru	University of Fukui
Kanji Tanaka	University of Fukui
Kenichi Saeki	University of Fukui
Takehiro Daitou	University of Fukui

15:30–15:45, FB05.05
Robot Self-Localization Using Simulated Experience

Tomomi Nagasaka	University of Fukui
Kanji Tanaka	University of Fukui
Tetsuya Ishimaru	University of Fukui
Ikuyo Uesaka	University of Fukui

15:45–16:00, FB05.06
The Robot Visual Servoing Control Systems with Double Cameras for the Grasping Task

Suolin Duan	Changzhou University
Lanping Chen	Changzhou University
Guirong Lu	Changzhou University
Zhenhua Ma	Changzhou University
Lanping Chen	Shanghai Jiaotong University

FB06	Song Bo Room (10F)
Healthcare and Welfare II	

Chair: Kentaro Hirata Nara Institute of Science and Technology
Chair: Takakazu Ishimatsu Nagasaki University

14:30–14:45, FB06.01
Energy-Efficient Power Assist Control for Periodic Motions

Kazuyoshi Hatada	Nara Institute of Science and Technology
Kentaro Hirata	Nara Institute of Science and Technology

14:45–15:00, FB06.02
Sway Suppression Control to Passenger with Muscle Weakness on Electrical Wheelchair

Koumei Yamashita	Toyohashi University of Technology
Yoshiyuki Noda	Toyohashi University of Technology
Takanori Miyoshi	Toyohashi University of Technology
Kazuhiko Terashima	Toyohashi University of Technology

15:00–15:15, FB06.03
Modeling and Control on Passenger Posture Behavior Considering Seat Angle of Electrical Wheelchair

Masaya Yamada	Toyohashi University of Technology
Yoshiyuki Noda	Toyohashi University of Technology
Takanori Miyoshi	Toyohashi University of Technology
Kazuhiko Terashima	Toyohashi University of Technology

15:15–15:30, FB06.04
Movement Analysis of Power-Assistive Machinery with High Strength-Amplification

Tomoyuki Ishida	Osaka University
Tsuyoshi Kiyama	Osaka University
Koichi Osuka	Osaka University
Go Shirogauchi	Activelink Co.,Ltd.
Reishi Oya	Activelink Co.,Ltd.
Hiromichi Fujimoto	Activelink Co.,Ltd.

15:30–15:45, FB06.05
A Dynamic Model of Power-Assistive Machinery with High Strength-Amplification

Atsushi Okubo	Osaka University
Tsuyoshi Kiyama	Osaka University
Koichi Osuka	Osaka University
Go Shirogauchi	Activelink Co., Ltd.
Reishi Oya	Activelink Co., Ltd.
Hiromichi Fujimoto	Activelink Co., Ltd.

15:45–16:00, FB06.06
An Electrical Prehension Orthosis Operated through Activity of Mastication Muscle

Shunnji Moromugi	Nagasaki University
T. Ishimatsu	Nagasaki University
Hideki Matsui	Nagasaki University
Tsunaki Ikeda	Nagasaki University
Masao Mizuta	Nagasaki University
Takayoshi Koga	Nagasaki University
Tomoaki Tateishi	Nagasaki University
Takeshi Saoyama	Nagasaki University
T. Takashima	Nagasaki University

FB07	101 (VF)
Advances in Nonlinear Systems Analysis and Controller Design (Organized Session)	

Organizer: Hisakazu Nakamura
  Nara Institute of Science and Technology
Chair: Hisakazu Nakamura
  Nara Institute of Science and Technology
Chair: Noboru Sakamoto Nagoya University

14:30–14:45, FB07.01
On Negative Definiteness of Derivatives of Lyapunov Functions

Hisakazu Nakamura	Nara Institute of Science and Technology

14:45–15:00, FB07.02
Global Observability of Polynomial Systems

| Yu Kawano | Osaka University |
| Toshiyuki Ohtsuka | Osaka University |

15:00–15:15, FB07.03

Optimal Control Designs for Systems with Input Saturations and Rate Limiters

Yuto Yuasa	Nagoya University
Noboru Sakamoto	Nagoya University
Yoshio Umemura	AISIN AW CO.,LTD.

15:15–15:30, FB07.04

Consensus Control Problem of Nonlinear Sampled-data Fullyactuated Ships

| Hitoshi Katayama | Shizuoka University |
| Tatsuya Moriguchi | Shizuoka University |

15:30–15:45, FB07.05

Linearization based on Relative Degree Structure

| Kazuma Sekiguchi | Tokyo Institute of Technology |
| Mitsuji Sampei | Tokyo Institute of Technology |

15:45–16:00, FB07.06

Control of Multiple Left-Invariant Systems on Lie Groups Using Less Control Inputs

Masato Ishikawa	Osaka University
Ryota Yoshimura	Kyoto University
Toshiharu Sugie	Kyoto University

| **FB08** | 102 (VF) |
| **Fuzzy System Analysis and Control Applications II** (Organized Session) | |

Organizer: Tzuu-Hseng S. Li	National United University
Chair: Chung-Cheng Chen	National Chiayi University
Chair: Chih-Yang Chen	National Cheng Kung University

14:30–14:45, FB08.01

Improvement Performance of Marine Vehicle's Autopilot Using Piecewise Fuzzy Control

DaeYeong Lim	Chonbuk National University
SungGoo Yoo	Chonbuk National University
KilTo Chong	Chonbuk National University

14:45–15:00, FB08.02

Solution of Almost Disturbance Decoupling Problem for Nonlinear Systems Based on Fuzzy Feedback Linearization Control

T. L. Chien	Wufeng Institute of Technology
S. L. Wu	National Chiayi University
Chung-Cheng Chen	National Chiayi University

15:00–15:15, FB08.03

Combination of Fuzzy Logic Control and Back Propagation Neural Networks for the Autonomous Driving Control of Car-Like Mobile Robot Systems

Tzuu-Hseng S. Li	National Cheng Kung University
Chih-Yang Chen	National Cheng Kung University
Kai-Chuin Lim	National Cheng Kung University

15:15–15:30, FB08.04

The Analysis of a Semi-Active Suspension System

| Yaojung Shiao | National Taipei University of Technology |
| Chun-chi Lai | National Taipei University of Technology |

| Quang-Anh Nguyen | National Taipei University of Technology |

15:30–15:45, FB08.05

Application of the GA-PSO with the Fuzzy Controller to the Robot Soccer

| Juing Shian Chiou | Southern Taiwan University |

15:45–16:00, FB08.06

Prediction-based Neural Fuzzy Controller Design Using Modified Electromagnetism-like Algorithm

Ching-Hung Lee	Yuan Ze University
Feng-Yu Chang	Yuan Ze University
Hsin-Wei Chiu	Yuan Ze University
Fu-Kai Chang	Yuan Ze University

| **FB09** | 103 (VF) |
| **Applications of Evolutionary Optimization** (Organized Session) | |

Organizer: Tung-Kuan Liu	
National Kaohsiung First University of Science and Technology	
Chair: Jyh-Horng Chou	
National Kaohsiung First University of Science and Technology	
Chair: Tung-Kuan Liu	
National Kaohsiung First University of Science and Technology	

14:30–14:45, FB09.01

Fuzzy Control of Nonlinear Plants through Rule-Based Cooperative Particle Swarm Optimization

Chia-Feng Juang	National Chung Hsing University
Lu Chun-Feng	Chung Chou Institute of Technology
Che-Meng Hsiao	National Chung-Hsing University
Chia Hung Hsu	National Chung-Hsing University

14:45–15:00, FB09.02

Dynamic Size-Based Multiobjective Genetic Algorithm to Solve the Crew Pairing Problem

Ta-Yuan Chou	National Sun Yat-sen University
Chung-Nan Lee	National Sun Yat-sen University
Tung-Kuan Liu	
National Kaohsiung First University of Science and Technology	
Chiu-Hung Chen	
National Kaohsiung First University of Science and Technology	
Fu-Sheng Chang	National Sun Yat-sen University

15:00–15:15, FB09.03

Intelligent Design of Adjustable Six-Bar Mechanisms Using Genetic Algorithms

Tung-Kuan Liu	
National Kaohsiung First University of Science and Technology	
Chiu-Hung Chen	
National Kaohsiung First University of Science and Technology	
Dai De-Young	
National Kaohsiung First University of Science and Technology	
Jyh-Horng Chou	
National Kaohsiung First University of Science and Technology	

15:15–15:30, FB09.04

Application of Differential Evolution to Tolerance Design

| Jinn-Tsong Tsai | National Pingtung University of Education |

Kuo-Ming Lee
 National Kaohsiung First University of Science and Technology
Tung-Kuan Liu
 National Kaohsiung First University of Science and Technology
Jyh-Horng Chou
 National Kaohsiung First University of Science and Technology
15:30–15:45, FB09.05

Evolutionary Robot Action Development based upon Intelligent Composite Action Control

Masakazu Suzuki   Tokai University

FB10	104 (VF)
Monitoring and Diagnosis	

Chair: Huang-Lian Tsai   Da-Yeh University
Chair: Noboru Sebe   Kyushu Institute of Technology
14:30–14:45, FB10.01

Bridge Diagnosis System by Using Nonlinear Independent Component Analysis

Juanqing Zheng   Waseda University
Qingwen Wang   Shanghai University
Harutoshi Ogai   Waseda University
Shao Chen   Waseda University
Jingqiu Huang   Waseda University
14:45–15:00, FB10.02

On Vibration Signal Analysis in Bridge Health Monitoring System by Using Independent Component Analysis

Jingqiu Huang   Waseda University
Harutoshi Ogai   Waseda University
Chen Shao   Waseda University
Juanqing Zheng   Waseda University
Izumi Maruyama   Fukuyama Consultant Company
Shinji Nagata   Measurement Examination Company
Hiroshi Inujima   Waseda University
15:00–15:15, FB10.03

Landslide Disaster Monitoring by Distributed Sensing Nodes

Tuan Sariff Syarifah Sarina   Ritsumeikan University
Shigeru Takayama   Ritsumeikan University
15:15–15:30, FB10.04

The Health Monitoring System based on Distributed Data Aggregation for WSN used in Bridge Diagnosis

Haitao Xiao   Waseda University
Tansheng Li   Waseda University
Harutoshi Ogai   Waseda University
Xiaohong Zou   Logical Product Corporation
Takenari Otawa   Logical Product Corporation
Shinya Umeda   Logical Product Corporation
Takunori Tsuji   Logical Product Corporation
15:30–15:45, FB10.05

Model-Based Performance Diagnosis for PV Systems

Chih-Hao Chang   Da-Yeh UInversity
Jia-Jun Zhu   Da-Yeh University
Huan-Liang Tsai   Da-Yeh University
15:45–16:00, FB10.06

Verification of Damage Identification Technique Based on Transfer Function and Using on a Real Bridge

Chen Shao   Waseda University
Harutoshi Ogai   Waseda University
Juan qing Zheng   Waseda University
Jingqiu Huang   Waseda University

FB11	105 (VF)
Pattern Analysis	

Chair: Kazuyoshi Yoshino   Kanagawa Institute of Technology
Chair: Toru Kurihara   University of Tokyo
14:30–14:45, FB11.01

GPU Based High-Speed and High-Precision Visual Tracking

Eisuke Ito   Tohoku University
Satoshi Saga   Tohoku University
Takayuki Okatani   Tohoku University
Koichiro Deguchi   Tohoku University
14:45–15:00, FB11.02

An Automatic Through-hole Inspection System by Analyzing Laser Diffraction Pattern

Kazuyoshi Yoshino   Kanagawa Institute of Technology
Motoatsu Miwa   Kanagawa Institute of Technology
Akihiro Kanamaru   Kanagawa Institute of Technology
Norikane Kanai   Kanagawa Institute of Technology
15:00–15:15, FB11.03

Single-Frame Coaxial Projection 3D Profilometry System Using Correlation Detection of Depth-Dependent MTF

Toru Kurihara   The University of Tokyo
Kazuaki Ochiai   The University of Tokyo
Shigeru Ando   The University of Tokyo
15:15–15:30, FB11.04

Determination of Optimal Compensation for Velocity Measurement Based on Compensation Method

Daiki Shibata   Kumamoto University
Teruo Yamaguchi   Kumamoto University
Hiroshi Harada   Kumamoto University
15:30–15:45, FB11.05

Acceleration of Ceramic Tiles Machine Vision Quality Control Algorithm using CUDA

Zeljko Hocenski   J. J. Strossmayer University of Osijek
Tomislav Matic   J. J. Strossmayer University in Osijek
15:45–16:00, FB11.06

FPGA Based Hybrid System for Visual Inspection of Ceramic Tiles Using Moving Average Method

Zeljko Hocenski   J. J. Strossmayer University of Osijek
Robert Mijaković   J. J. Strossmayer University in Osijek
Alfonzo Baumgartner   J. J. Strossmayer University in Osijek

FB12	107 (VF)
System Design based on "Further Benefit of a Kind of Inconvenience" II (Organized Session)	

Organizer: Hiroshi Kawakami   Kyoto University
Chair: Hiroshi Kawakami   Kyoto University

Chair: Hisashi Handa   Okayama University
14:30–14:45, FB12.01

Media designing analogous with Biotope

Hidetsugu Suto   Muroran Institute of Technology
14:45–15:00, FB12.02

A Communication Medium Using Pictograms for Media Biotope

Makiko Okita   Hokkaido University of Education
Hidetsugu Suto   Muroran Institute of Technology
15:00–15:15, FB12.03

Social Simulation Based on Perceptual Balance on the Influence of Communication Styles

Akira Notsu   Osaka Prefecture University
Katsuhiro Honda   Osaka Prefecture University
Hidetomo Ichihashi   Osaka Prefecture University
15:15–15:30, FB12.04

Communication Media Based on the media Biotope

Makiba Sakamoto   Muroran Institute of Technology
Hidetsugu Suto   Muroran Institute of Technology
Masahiro Sawai   Muroran Institute of Technology

FB13	108 (VF)
Estimation	

Chair: Takami Matsuo   Oita University
Chair: Takahiko Ono   Hiroshima City University
14:30–14:45, FB13.01

Estimation of Continuous-time Nonlinear Systems by using the Unscented Kalman Filter

Min Zheng   The University of Tokushima
Kenji Ikeda   The University of Tokushima
Shimomura Takao   The University of Tokushima
14:45–15:00, FB13.02

Altitude Estimation Method using Assumed Altitude Reliability Based on Multipath Propagation Model

Yuki Takabayashi   Mitsubishi Electric Corporation
Takashi Matsuzaki   Mitsubishi Electric Corporation
Hiroshi Kameda   Mitsubishi Electric Corporation
15:00–15:15, FB13.03

Quasi-Optimal Recursive Time Delay Estimator for Real Sinusoids

Seul Ki Han   Yonsei University
Won Sang Ra   Handong Global University
Jin Bae Park   Yonsei University
Tae Sung Yoon   Changwon National University
15:15–15:30, FB13.04

Unknown Input Observer Design Using Descriptor System Approach

Huan-Chan Ting   National Chiao-Tung University
Jeang-Lin Chang   Oriental Institute of Technology
Yon-Ping Chen   National Chiao-Tung University
15:30–15:45, FB13.05

Adaptive Information Matrix Filtering Fusion with Nonlinear Classifier

Li-Wei Fong   Yu Da University
15:45–16:00, FB13.06

Risk-Sensitive Multiple Model Particle Filter for Jump Markov Nonlinear Systems

Wenling Li   Beihang University
Yingmin Jia   Beihang University
Junping Du Beijing University of Posts and Telecommunications
Fashan Yu   Henan Polytechnic University

FB14	109 (VF)
Petri Nets and Discrete Event Systems (Organized Session)	

Organizer: Kunihiko Hiraishi
     Japan Advanced Institute of Science and Technology
Chair: Kunihiko Hiraishi
     Japan Advanced Institute of Science and Technology
Chair: Shiro Masuda   Tokyo Metropolitan University
14:30–14:45, FB14.01

Modeling and Control of Autonomous Soccer Robots Using High-level Petri Nets

Chung-Hsien Kuo
     National Taiwan University of Science and Technology
Ting-Shou Chen
     National Taiwan University of Science and Technology
14:45–15:00, FB14.02

On-line Calculation of the Latest Starting Time for Repetitive Process Progress Schedule Based on Feedback Control Approach

Shiro Masuda   Tokyo Metropolitan University
Atsuya Tanaka   Tokyo Metropolitan University
Hiroyuki Goto   Nagaoka University of Technology
15:00–15:15, FB14.03

A Study on Modeling and Analysis of Production Order and Process Deadlock Free Control for an Automated Production System using Petri Net Technique

YiShuo Huang   Diwan University
ShihSen Peng   Diwan University
WenLong Yao
     National Kaohsiung First University of Science and Technology
15:15–15:30, FB14.04

Data based Construction of Bayesian Network for Fault Diagnosis of Event-Driven Systems

Takuma Yamaguchi   Nagoya University
Shinkichi Inagaki   Nagoya University
Tatsuya Suzuki   Nagoya University
15:30–15:45, FB14.05

A Graph-based Deadlock Prevention Technique for FMSs Using Petri Nets

Yi-Sheng Huang   National Defense University
Ter-Chan Row   National Defense University
Pin-June Su   National Defense University
15:45–16:00, FB14.06

On Analysis of a Class of Timed Continuous Petri nets and Its Applications

Kunihiko Hiraishi
     Japan Advanced Institute of Science and Technology

FB15	110 (VF)
Humanoid Robot System Design (Organized Session)	

Organizer: Ching-Chang Wong	Tamkang University
Chair: Ching-Chang Wong	Tamkang University
Chair: Chih-Lyang Hwang	Tamkang University

14:30–14:45, FB15.01

The Stepping over an Obstacle for the Humanoid Robot with the Consideration of Dynamic Balance

Chih-Lyang Hwang	Tamkang University
Han-Chen Wu	Tamkang University
Ming-Lung Lin	Tamkang University

14:45–15:00, FB15.02

An Efficient Object Recognition and Self-Localization System for Humanoid Soccer Robot

Jen-Shiun Chiang	Tamkang University
Chih-Hsien Hsia	Tamkang University
Shih-Hung Chang	Tamkang University
Wei-Hsuan Chang	Tamkang University
Hung-Wei Hsu	Tamkang University
Yi-Che Tai	Tamkang University
Chun-Yi Li	Tamkang University
Meng-Hsuan Ho	Tamkang University

15:00–15:15, FB15.03

Research of Multi-thread Applications for Real-Time Control Systems on Humanoid Robot Embedded Platforms

Wei-Tsong Lee	Tamkang University
Tin-Yu Wu	Tamkang University
Ming-Yang Chen	Tamkang University
Yan-Bo Wang	Tamkang University
Hung-Yi Lin	Tamkang University
Kuo-Hung Liao	Tamkang University

15:15–15:30, FB15.04

Behaviors Design for Vision-Based Humanoid Robot

Yueh-Yang Hu	Tamkang University
Kai-Hsiang Huang	Tamkang University
Hsiang-Min Chan	Tamkang University
Chih-Hui Hung	Tamkang University
Ching-Chang Wong	Tamkang University

15:30–15:45, FB15.05

Penalty Kick of a Humanoid Robot by a Neural-Network-Based Active Embedded Vision System

Chih-Lyang Hwang	Tamkang University
Nien-Wen Lu	Tamkang University
Tim-Chia Hsu	Tamkang University
Chun-Hao Huang	Tamkang University

15:45–16:00, FB15.06

Image Feature Tracker for SLAM with Monocular Vision

Yin-Tien Wang	Tamkang University
Duen-Yan Hung	Tamkang University
Sheng-Hsien Cheng	Tamkang University

FB17	Fu-Chuon Room (BF)
Motion/Function Control in Biological and Mechanical Systems II (Organized Session)	

Organizer: Masato Ishikawa	Osaka University
Chair: Tetsushi Kamegawa	Okayama University
Chair: Yoshiaki Futakata	University of Tokyo

14:30–14:45, FB17.01

Development of a Musculoskeletal Model of the Hind Legs of the Rat Based on Anatomical Data and Generation of Locomotion Based on Kinematic Data

Takahiro Kondo	Kyoto University
Shinya Aoi	Kyoto University
Dai Yanagihara	University of Tokyo
Sho Aoki	University of Tokyo
Hiroshi Yamaura	University of Tokyo
Naomichi Ogihara	Keio University
Akira Ichikawa	Kyoto University
Kazuo Tsuchiya	Doshisha University

14:45–15:00, FB17.02

Dynamic Rolling Locomotion by Spherical Mobile Robots Considering its Generalized Momentum

Masato Ishikawa	Osaka University
Ryohei Kitayoshi	Kyoto University
Toshiharu Sugie	Kyoto University

15:00–15:15, FB17.03

An Impedance Control for Simplified Hydraulic Model with Casimir Functions

Sakai Satoru	Shinshu University

15:15–15:30, FB17.04

A Snake Robot Propelling Inside of a Pipe with Helical Rolling Motion

Toshimichi Baba	Okayama University
Yoshihide Kameyama	Okayama University
Tetsushi Kamegawa	Okayama University
Akio Gofuku	Okayama University

FB18	Der-Hou Room East (BF)
Robot Control and Sensing (Organized Session)	

Organizer: Han-Pang Huang	National Taiwan University
Chair: Han Pang Huang	National Taiwan University
Chair: Pei Chun Lin	National Taiwan University

14:30–14:45, FB18.01

Development of the Multi-Axis Control Platform for Robot Arm

Han-Pang Huang	National Taiwan University
Yen-Tsung Chen	National Taiwan University
Ren-Jeng Wang	National Taiwan University
Meng-Ku Chi	National Taiwan University

14:45–15:00, FB18.02

Using Dual Lights for Robotic Pavement Inspection

Yung-Shun Su	National Taiwan University
Shih Chung Kang	National Taiwan University
Jia-Ruey Change	

| | Minghsin University of Science and Technology |
| Shang-Hsien Hsieh | National Taiwan University |

15:00–15:15, FB18.03

Realization of a 9-axis Inertial Measurement Unit toward Robotic Applications

Jau-Ching Lu	National Taiwan University
Chia-Hung Tsai	National Taiwan University
Pei-Chun Lin	National Taiwan University

15:15–15:30, FB18.04

An Artificial Iris for Light Intensity Modulation of Humanoid Robot Vision

Wen-Pin Shih	National Taiwan University
Tsung-Chun Hsu	National Taiwan University
Ching-Heng Lu	National Taiwan University
Yu-Ting Huang	National Taiwan University
Wen-Shiang Chen	National Taiwan University

15:30–15:45, FB18.05

Human Intention Estimation Method for a New Compliant Rehabilitation and Assistive Robot

Jiun-Yih Kuan	National Taiwan University
Tz-How Huang	National Taiwan University
Han-Pang Huang	National Taiwan University

FB19	Der-Hou Room East (BF)
Sensing, Control and Safety System for Intelligent Vehicle	
(Organized Session)	

Organizer: Naoki Suganuma	Kanazawa University
Chair: Naoki Suganuma	Kanazawa University
Chair: Masatoshi Hatano	Nihon University

14:30–14:45, FB19.01

Robust Environment Perception Based on Occupancy Grid Maps for Autonomous Vehicle

| Naoki Suganuma | Kanazawa University |
| Toshiki Matsui | Okayama Prefectural University |

14:45–15:00, FB19.02

Research on Hitting Tasks Performed by the Tennis Robot

| Masatoshi Hatano | Nihon University |

15:00–15:15, FB19.03

Probabilistic Appearance Based Object Modeling and its Application to Car Recognition

Mamoru Saito	Osaka Municipal Technical Research Institute
Katsuhisa Kitaguchi	
	Osaka Municipal Technical Research Institute

15:15–15:30, FB19.04

Arbitrary 3D View Image Generation Using a Single Camera and a Spin Mirror

Fei Gu	Tokyo City University
Takayuki Nakata	Toyama Prefectural University
Yue Bao	Tokyo City University

15:30–15:45, FB19.05

Modelling and Control of Hyper-Redundancy Mobile Manipulator Bracing Multi-Elbows for High Accuracy/Low-Energy Consumption

| Geng Wang | Okayama University |

| Mamoru Minami | Okayama University |

15:45–16:00, FB19.06

Availability of Multi-Preview Control of PA10 with Avoidance Manipulability Analyses

Yang Hou	University of Fukui
Yusaku Nakamura	University of Fukui
Maki Yamazaki	University of Fukui
Tongxiao Zhang	University of Fukui
Mamoru Minami	Okayama University

Technical Program for Saturday August 21, 2010

	Grand Ballroom (12F)
Plenary Talk III	

Chair: Koichi Osuka — Osaka University

9:00–9:50

Mechatronics for Rehabilitation and Mobile Assistive Systems

Masayoshi Tomizuka — University of California

	Sky Lounge (12F)
SA01	
Advanced Industrial Control I (Organized Session)	

Organizer: Chi Huang Lu — Hsiuping Institute of Technology

Chair: Ruxu Du — Chinese University of Hong Kong

Chair: Pang-Chia Chen — Kao Yuan University

10:20–10:35, SA01.01

Unified Motion Controller Design and FPGA-Based Implementation for Nonholonomic Mobile Robots

Ching-Chih Tsai — National Chung Hsing University

Feng-Chun Tai — National Chung Hsing University

Shih-Min Hsieh — National Chung Hsing University

10:35–10:50, SA01.02

A TSK-Type Recurrent Fuzzy Neural Network Adaptive Inverse Modeling Control for a Class of Nonlinear Discrete-Time Time-Delay Systems

Ya-Ling Chang — National Chung-Hsing University

Ching-Chih Tsai — National Chung-Hsing University

10:50–11:05, SA01.03

Cascaded Fuzzy Control for Air Source Heat Pumps

Kuei-I Tsai — National Chin-Yi University of Technology

Ching-Chih Tsai — National Chung-Hsing University

11:05–11:20, SA01.04

Adaptive Node Placement for Optimal Control on System of Multi-Degree of Freedom

Pui Hang Ko — The Chinese University of Hong Kong

Ruxu Du — The Chinese University of Hong Kong

11:20–11:35, SA01.05

Robust Output Feedback Control for Saturated Linear Systems with Magnitude and Rate Constraints

Pang-Chia Chen — Kao Yuan University

11:35–11:50, SA01.06

Trajectory Tracking and Regulation of a Self-Balancing Two-Wheeled Robot : A Backstepping Sliding-Mode Control Approach

Ching-Chih Tsai — National Chung Hsing University

Shang-Yu Ju — National Chung Hsing University

	North Foyer (12F)
SA02	
Information Systems for Transportation I	

Chair: Stephen P. Tseng

National Taipei University of Technology

Chair: Toshihiko Sasama — Tottori University

10:20–10:35, SA02.01

A DSP Based Real-Time Front Car Detection Driving Assistant System

Stephen P. Tseng — National Taipei University of Technology

Derek Fong — National Taipei University of Technology

10:35–10:50, SA02.02

Mobile Phone Application for Ecodriving

Noriaki Ishikawa — Hosei University

Keisuke Onda — Hosei University

Kajiro Watanabe — Hosei University

Kazuyuki Kobayashi — Hosei University

Yousuke Kurihara — Seikei University

10:50–11:05, SA02.03

Mobile Phone Application for Safe Driving at an Intersection

Keisuke Onda — Hosei University

Noriaki Ishikawa — Hosei University

Kajiro Watanabe — Hosei University

Kazuyuki Kobayashi — Hosei University

Yousuke Kurihara — Seikei University

11:05–11:20, SA02.04

Development of Bus Location System Using Smart Phones

Naoki Kanatani — Tottori University

Kazunori Sugahara — Tottori University

Takao Kawamura — Tottori University

Toshihiko Sasama — Tottori University

11:20–11:35, SA02.05

Markup Language for Designing Layout of Bus Timetables

Takeshi Yamane — Tottori University

Toshihiko Sasama — Tottori University

Takao Kawamura — Tottori University

Kazunori Sugahara — Tottori University

11:35–11:50, SA02.06

Determining Location of Bus and Path Planning Considering Bus Delay

Yoshifumi Ishizaki — Tottori University

Toshihiko Sasama — Tottori University

Takao Kawamura — Tottori University

Kazunori Sugahara — Tottori University

	South Foyer (12F)
SA03	
Image-based Applications in Food and Agriculture (Organized Session)	

Organizer: Atsushi Hashimoto — Mie University

Chair: Takaharu Kameoka — Mie University

Chair: Masayuki Hirafuji — National Agricultural Research Center

10:20–10:35, SA03.01

Construction of the Prototype System for the Chromatic Image Analysis using Color Distribution Entropy

Yoshitsugu Kimura — Mie University

Kyosuke Yamamoto — Mie University

Takashi Togami — Mie University

Yosuke Yoshioka

National Agriculture and Food Research Organization

Atsushi Hashimoto — Mie University

Takaharu Kameoka — Mie University

10:35–10:50, SA03.02

Web-based Image Viewer for Agricultural High-definition Monitoring

Shohei Toda — Shinshu Univercity
Kazuki Kobayashi — Shinshu Univercity
Fumitoshi Kobayashi — Shinshu Univercity
Yasunori Saitoh — Shinshu Univercity

10:50–11:05, SA03.03

Color Appearance Evaluation of Agricultural Products Image Based on Spectral Information of Lighting

Kentarou Furusawa — Mie University
Ken-ichiro Suehara — Mie University
Takaharu Kameoka — Mie University
Atsushi Hashimoto — Mie University

11:05–11:20, SA03.04

Color Image Database Construction for the Strawberry Breeding

Kyosuke Yamamoto — Mie University
Yoshitsugu Kimura — Mie University
Takashi Togami — Mie University
Yosuke Yoshioka — National Agriculture and Food Research Organization
Atsushi Hashimoto — Mie University
Takaharu Kameoka — Mie University

11:20–11:35, SA03.05

Color Chart of European Pear 'Le Lectier' based on the Color Image Analysis

Yoshitaka Motonaga — Niigata University
Tatsuya Matsumoto — Niigata Agricultural Research Institute
Naohiko Motonaga — Niigata Agricultural Research Institute

11:35–11:50, SA03.06

Low Cost Image Acquisition System for Field Monitoring

Ryoei Ito — Mie University
Chiaki Yamaguchi — Mie University

SA04 — Auditorium (10F)
Plant Modeling (Organized Session)

Organizer: Kazushi Nakano — The University of Electro-Communications
Chair: Kazushi Nakano — The University of Electro-Communications
Chair: Masaki Yamakita — Tokyo Institute of Technology

10:20–10:35, SA04.01

Frequency Domain Analysis of Plant Model Using Closed-Loop Step Response

Yoshihiro Matsui — Tokyo National College of Technology
Tomohiko Kimura — Tokyo National College of Technology
Kazushi Nakano — The University of Electro-Communications

10:35–10:50, SA04.02

Integrated Actuator-Sensor System of Bucky Gel Device

Kazuhiro Tanaka — Tokyo Institute of Technology
Sugiura Motonobu — Tokyo Institute of Technology
Yamakita Masaki — Tokyo Institute of Technology
Norihiro Kamamichi — Tokyo Denki University

Toshiharu Mukai — RIKEN

10:50–11:05, SA04.03

Robust Falling-down Avoidance Control for Acrobat Robot Using Switching Controller

Yusuke Yashiro — Tokyo Institute of Technology
Masaki Yamakita — Tokyo Institute of Technology
Shinya Hirano — RIKEN
Zhi Wei Luo — Kobe University

11:05–11:20, SA04.04

Modeling and Calibration of Automatic Guided Vehicle

Kosuke Tanaka — The University of Electro-Communications
Kenji Sawada — The University of Electro-Communications
Seiichi Shin — The University of Electro-Communications
Kenji Kumagai — Murata Machinery, LTD.
Naoto Yoneda — Murata Machinery, LTD.

11:20–11:35, SA04.05

Shared Engine Model for Automotive Engine Calibration Platform Development in JCUG

Akira Ohata — Toyota Motor Co.

SA05 — Chang Chin Room (10F)
Vision Systems III

Chair: Seiji Ishikawa — Kyushu Institute of Technology
Chair: Seungbin Moon — Sejong University

10:20–10:35, SA05.01

Face-Recognition Based on Higher-Order Local Auto Correlation Feature for Speaker Array System

Yusuke Kitano — Tokyo University of Science
Hiroshi Takemura — Tokyo University of Science
Hiroshi Mizoguchi — Tokyo University of Science

10:35–10:50, SA05.02

Development of a Time-sharing-based Color-assisted Vision System for Persons with Color-vision Deficiency

Tomoyuki Ohkubo — Hosei University
Kazuyuki Kobayashi — Hosei University
Kajiro Watanabe — Hosei University
Yosuke Kurihara — Seikei University

10:50–11:05, SA05.03

Creating an Entire Object Model Employing Virtual See-through Cameras

Toshimasa Sone — Kyushu Institute of Technology
Meishan Piao — Kyushu Institute of Technology
Joo Kooi Tan — Kyushu Institute of Technology
Hyongseop Kim — Kyushu Institute of Technology
Seiji Ishikawa — Kyushu Institute of Technology

11:05–11:20, SA05.04

A Study on Obstacle Detection Using 3D Hough Transform with Corner

Sun Min Hwang — Pusan National University
Chiyen Kim — Pusan National University
JunYoung Baek — Pusan National University
Hyeon Seob Eom — Pusan National University
Mincheol Lee — Pusan National University

11:20–11:35, SA05.05

Improved Face Recognition Algorithm Employing SURF Descrpitors

Minku Kang	Sejong University
Wonkook Choo	Sejong University
Seungbin Moon	Sejong University

11:35–11:50, SA05.06

A Fast Feature Extraction Algorithm for Omni-directional Vision System

Zhu Jinhui	South China University of Technology
Liang Mingjie	South China University of Technology
Liang Yingju	South China University of Technology
Min Huaquhing	South China University of Technology
Zhang Mei	South China University of Technology

SA06	Song Bo Room (10F)
Healthcare and Welfare III	

Chair: Naruhiro Shiozawa	Ritsumeikan University
Chair: Shigeru Takayama	Ritsumeikan University

10:20–10:35, SA06.01

A Study on Gait Analysis by Measuring Axis Rotation Based on 3D Magnetic and Acceleration Sensors

Akira Minami	Hosei University
Teruo Horikawa	Hosei University
Tomoyuki Ohkubo	Hosei University
Kazuyuki Kobayashi	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Seikei University

10:35–10:50, SA06.02

Measurement of impacts on legs in walking

Nobuaki Takahashi	Ritsumeikan University
Tomohiro Tanaka	Ritsumeikan University
Yuuki Matsuda	Ritsumeikan University
Shigeru Takayama	Ritsumeikan University

10:50–11:05, SA06.03

Construction of Advice System to Keep Walking Ability for Physical Health

Tomohiro Tanaka	Ritsumeikan University
Nobuaki Takahashi	Ritsumeikan University
Yuuki Matsuda	Ritsumeikan University
Shigeru Takayama	Ritsumeikan University

11:05–11:20, SA06.04

Development of a Rehabilitation Support System with a Shoe-Type Measurement Device for Walking

Chikamune Wada	Kyushu Institute of Technology
Yukinobu Sugimura	Kyushu Institute of Technology
Takafumi Ienaga	
Institute of System, Information Technologies and Nanotechnologies	
Yoshihiko Kimuro	
Institute of System, Information Technologies and Nanotechnologies	
Futoshi Wada	
University of Occupational and Environmental Health	
Kenji Hachisuka	
University of Occupational and Environmental Health	
Takunori Tsuji	Logical Product Corporation

11:20–11:35, SA06.05

Gait Assessment for Elderly Using a Portable Acceleration Monitoring Device

Naruhiro Shiozawa	Ritsumeikan University
Shima Okada	Ritsumeikan University
Masaaki Makikawa	Ritsumeikan University

11:35–11:50, SA06.06

Measurement of Side Unbalance of Body in Walking

Yuuki Matsuda	Ritsumeikan University
Nobuaki Takahashi	Ritsumeikan University
Tomohiro Tanaka	Ritsumeikan University
Shigeru Takayama	Ritsumeikan University

SA07	101 (VF)
Control Synthesis for Robustness, Synchronization, and Intelligent Adaptation (Organized Session)	

Organizer: Chung-Yao Kao	National Sun Yat-Sen University
Chair: Chung-Yao Kao	National Sun Yat-Sen University
Chair: Hisaya Fujioka	Kyoto University

10:20–10:35, SA07.01

A Disturbance Attenuation Controller Design for Two-inertia Systems which Explicitly Depends on Physical Parameters

Yasuhide Kobayashi	Nagaoka University of Technology
Yuta Sugano	Nagaoka University of Technology
Tetsuya Kimura	Nagaoka University of Technology

10:35–10:50, SA07.02

Design of Adaptive Backstepping Tracking Controllers for a Class of Mismatched Perturbed Chaotic Synchronization Systems

Yan-Si Lin	National Sun Yat-Sen University
Chih-Chiang Cheng	National Sun Yat-Sen University

10:50–11:05, SA07.03

Design and Control of a RGB LED System

Chun-Wen Tang	National Taiwan University
Fu-Cheng Wang	National Taiwan University
Bin-Juine Huang	National Taiwan University

11:05–11:20, SA07.04

Robust Control of a Furuta Pendulum

Chung-Huang Yu	National Yang-Ming University
Fu-Cheng Wang	National Taiwan University
Yu-Ju Lu	National Taiwan University

11:20–11:35, SA07.05

A SVD Based Controller Reduction Method

Kin Cheong Sou	Lund University
Anders Rantzer	Lund University

11:35–11:50, SA07.06

Verification of Consensus in Networks of Heterogeneous LTI Agents

Ulf Torbjorn Jönsson	Royal Institute of Technology
Chung-Yao Kao	National Sun Yat-Sen University

Fuzzy PID Controller Design using Self Adaptive Bacterial Foraging Optimization

Te-Jen Su   National Kaohsiung University of Applied Sciences
Li-Wei Chen National Kaohsiung University of Applied Sciences
Chia-Jung YuNational Kaohsiung University of Applied Sciences
Jui-Chuan Cheng
        National Kaohsiung University of Applied Sciences

SA08	102 (VF)
Fuzzy Systems Analysis and Control (Organized Session)	

Organizer: Ching Hsiang Lee
        National Kaohsiung University of Applied Sciences
Chair: Ching Hsiang Lee
        National Kaohsiung University of Applied Sciences

10:20–10:35, SA08.01

Self-constructing Recurrent Fuzzy Neural Network for Ultrasonic Motor Drive

Lin Hong   National Kaohsiung University of Applied Sciences
Wei-Han Weng
        National Kaohsiung University of Applied Sciences
Yu-Che ChanNational Kaohsiung University of Applied Sciences
Chun-Hsiung Fang   National Kaohsiung University of Applied Sciences

10:35–10:50, SA08.02

Optimal Control of Uncertain Fuzzy Model Based Delay Systems

Ming-Ren Hsu
        National Kaohsiung University of Applied Sciences
Wen-Hsien Ho   Kaohsiung Medical University
Ming-Chang Zheng
 National Kaohsiung First University of Science and Technology
Jyh-Horng Chou
 National Kaohsiung First University of Science and Technology

10:50–11:05, SA08.03

Control of Singular Fuzzy Systems with Time Delays

Ching Hsiang Lee
        National Kaohsiung University of Applied Science
Jine-Hua Wang
        National Kaohsiung University of Applied Sciences
Yen-Jen Chiu
        National Kaohsiung University of Applied Sciences
Shun-Yuan Hsu
        National Kaohsiung University of Applied Sciences

11:05–11:20, SA08.04

The Design of an Autonomous Parallel Parking Neuro-Fuzzy Controller for a Car-Like Mobile Robot

Zhi-Long Wang
        National Kaohsiung University of Applied Sciences
Chih-Hsiung Yang
        National Kaohsiung University of Applied Sciences
Tong-Yi Guo
        National Kaohsiung University of Applied Sciences

11:20–11:35, SA08.05

A New Approach to Stabilization of T-S Fuzzy Systems

Shih-Wei Kau
        National Kaohsiung University of Applied Sciences
Chung-Chih Yeh
        National Kaohsiung University of Applied Sciences
Yi-Min Su   National Kaohsiung University of Applied Sciences
Chun-Hsiung Fang
        National Kaohsiung University of Applied Sciences

SA09	103 (VF)
Genetic Network Programming I	

Chair: Shingo Mabu   Waseda University
Chair: Yan Chen   Waseda University

10:20–10:35, SA09.01

Genetic Network Programming with Exception Control

QingBiao Meng   Waseda University
Shingo Mabu   Waseda University
Kotaro Hirasawa   Waseda University

10:35–10:50, SA09.02

Hybrid Rule Mining based on Fuzzy GNP and Probabilistic Classification for Intrusion Detection

Nannan Lu   Waseda University
Shingo Mabu   Waseda University
Wenjing Li   Waseda University
Kotaro Hirasawa   Waseda University

10:50–11:05, SA09.03

A Bidding Strategy based on Genetic Network Programming in Continuous Double Auctions

Chuan Yue   Waseda University
Shingo Mabu   Waseda University
geng dong Yu   Waseda University
Yu Wang   Waseda University
Kotaro Hirasawa   Waseda University

11:05–11:20, SA09.04

Functionally Distributed Systems Using Parallel Genetic Network Programming

Yiwen Zhang   Waseda University
Xianneng Li   Waseda University
Yang Yang   Waseda University
Shingo Mabu   Waseda University
Kotaro Hirasawa   Waseda University

11:20–11:35, SA09.05

Generalized Rule Accumulation Based On Genetic Network Programming Considering Different Population Size and Rule Length

Lutao Wang   Waseda University
Shingo Mabu   Waseda University
Fengming Ye   Waseda University
Kotaro Hirasawa   Waseda University

11:35–11:50, SA09.06

Time Related Association Rules Mining with Attributes Accumulation Mechanism Applied to Large-scale Traffic System

Xiaoli Wang   Waseda University
Shingo Mabu   Waseda University

| Huiyu Zhou | Waseda University |
| Kotaro Hirasawa | Waseda University |

Masaya Izuchi	AIST
Jun Tamba	AIST
Masaru Arai	AIST

SA10 — 104 (VF)
Recent Development of Core Technology for Energy-saving Wheel Motors in Taiwan (Organized Session)

Organizer: Ming-Yang Cheng	National Cheng Kung University
Chair: Ming-Yang Cheng	National Cheng Kung University
Chair: Shyh-Jier Huang	National Cheng Kung University

10:20–10:35, SA10.01
Analysis of Iron Loss in a Wheel Motor with High Quality Silicon Steel Plates

Po Wei Huang	National Cheng Kung University
Mi-Ching Tsai	National Cheng Kung University
Ming-Yang Cheng	National Cheng Kung University

10:35–10:50, SA10.02
A Matching Design for Ultra-Capacitor and Li-Ion Battery Cooperation in Electric Wheel Motors

Shyh-Jier Huang	National Cheng Kung University
Fu-Sheng Pai	National University of Tainan
Bo-Ke Huang	National Cheng Kung University

10:50–11:05, SA10.03
A Novel Changeover Technique for Variable-Winding Brushless DC Motor Drives

Ming-Shyan Wang	Southern Taiwan University
Nai-Chiu Hsu	Southern Taiwan University
Cheng-Yi Chiang	Southern Taiwan University
Shih-Hao Wang	National Cheng Kung University
Tzu-Chang Shau	National Cheng Kung University

11:05–11:20, SA10.04
Driving and Regenerative Braking Method for Energy-Saving Wheel Motor

Tien-Chi Chen	Kung Shan University
Tsai-Jiun Ren	Kung Shan University
Yi-Shuo Chen	National Cheng Kung University
Yi-Wei Lou	Kung Shan University

SA11 — 105 (VF)
Recent Advances in Temperature Measurement (Organized Session)

Organizer: Masato Sugiura	Nippon Steel Corp.
Chair: Masato Sugiura	Nippon Steel Corp.
Chair: Naohiko Sasajima	AIST

10:20–10:35, SA11.01
Evaluation of Fluorescent Inorganic Materials in Low Temperature Region

Hiroaki Aizawa	Toyo University
Yukari Miyazaki	Toyo University
Tooru Katsumata	Toyo University
Shuji Komuro	Toyo University

10:35–10:50, SA11.02
Thermoelectric Stability of Pt/Pd Thermocouples around $1500°C$

| Hideki Ogura | AIST |

10:50–11:05, SA11.03
High-Temperature Tungsten-Cell Fixed Points for on Site Calibration of Pyrometers for the Measurement of Melting Temperature of Nuclear Fuels

Naohiko Sasajima	AIST
Yoshiro Yamada	AIST
Juntaro Ishii	AIST

11:05–11:20, SA11.04
Automatic Measurement Apparatus for Clinical Electrical Thermometers

Shu-Fei Tsai	Center for Measurement Standards
Wei-Jeng Chang	Center for Measurement Standards
Zong-Ying Chung	Center for Measurement Standards

11:20–11:35, SA11.05
Standard source for skin type clinical thermometers

| Hsinyi Ko | Industrial Technology Research Institute |

SA12 — 107 (VF)
Recent Progress in Mechanical Metrology I (Organized Session)

Organizer: Yoshitaka Morimoto	
	Kanazawa Institute of Technology
Chair: Takanori Yamazaki	
	Oyama National College of Technology
Chair: Yoshitaka Morimoto	Kanazawa Institute of Technology

10:20–10:35, SA12.01
Performance Evaluation of a Mass Comparator with a Readability of 0.1 µg

Masaaki Ueki	AIST
Jian-Xin Sun	AIST
Kazunaga Ueda	AIST

10:35–10:50, SA12.02
Improvement in Precise Estimation of the Pressure Distortion Coefficient for Controlled-Clearance Piston-Cylinders at Higher Pressures

Hiroaki Kajikawa	AIST
Kazunori Ide	AIST
Tokihiko Kobata	AIST

10:50–11:05, SA12.03
Long-Term Evaluation of Effective Area Ratio of Pressure Balances

Tokihiko Kobata	AIST
Momoko Kojima	AIST
Hiroaki Kajikawa	AIST

11:05–11:20, SA12.04
Development of Calibration System for Pressure Transducers in the Range of 10 kPa Absolute Pressure

| Momoko Kojima | AIST |
| Tokihiko Kobata | AIST |

11:20–11:35, SA12.05
Proposal and Evaluation of the Center of Gravity Estimate Method

by Using the Lower Limb Positional Data

| Yukinobu Sugimura | Kyushu Institute of Technology |
| Chikamune Wada | Kyushu Institute of Technology |

SA13   108 (VF)

Modeling and System Identification I

| Chair: Masaaki Kanno | Niigata University |
| Chair: Der-Cherng Liaw | National Chiao Tung University |

10:20–10:35, SA13.01

A New Discrete-Time Model for a van der Pol Oscillator

| Triet Nguyen Van | University of Tsukuba |
| Noriyuki Hori | University of Tsukuba |

10:35–10:50, SA13.02

$\mathcal{H}_2$ Model Reduction Using an Algebraic Approach

| Masaaki Kanno | Niigata University |

10:50–11:05, SA13.03

Distributed Control Architecture for "Multi-Agent Transportation (MAT) System" with $\{3,6\}$ Configuration

| Keizo Miyahara | Shibaura Institute of Technology |

11:05–11:20, SA13.04

Active Noise Control with Noise Power Scheduling for Online Acoustic Feedback Path Modeling

Sang-Won Nam	Hanyang University
Jaebeom Seo	Hanyang University
Kyoung Jae Kim	Hanyang University
Jinoh Park	Hanyang University

11:20–11:35, SA13.05

Dynamical Analysis of a Third-Order Nonlinear Amplitude Equation for Plasma Torch

Der-Cherng Liaw	National Chiao Tung University
Shih-Tse Chang	National Chiao Tung University
Heng-Yi Li	Institute of Nuclear Energy Research
Chin-Ching Tzeng	Institute of Nuclear Energy Research
Shiaw-Huei Chen	Institute of Nuclear Energy Research

11:35–11:50, SA13.06

Accuracy Improvement of Practical PV Model

Huan-Liang Tsai	Da-Yeh University
Po-Wen Hsiao	Da-Yeh University
Chih-Hao Chang	Da-Yeh University

SA14   109 (VF)

Inverse Problems I (Organized Session)

Organizer: Kenbu Teramoto	Saga University
Chair: Kenbu Teramoto	Saga University
Chair: Tadashi Ito	Gunma University

10:20–10:35, SA14.01

Nondestructive Measurement of Diameter of Reinforcing Bars in Concrete Using an Electromagnetic Wave Radar Under the Effect of Cross Bars

| Shogo Tanaka | Yamaguchi University |
| Halima Begum | Yamaguchi University |

10:35–10:50, SA14.02

Measurement of Body Fat Distribution by Using 3-D Electrical

Impedance Tomography: Numeric and Phantom Experiments

Tadashi Ito	Gunma University
Toshihide Sakui	Gunma University
Tokichika Inose	Gunma University

10:50–11:05, SA14.03

Near-field Acoustical Imaging of Cracks over the A0-mode Lamb-wave Field

| Kenbu Teramoto | Saga University |
| Naohiro Tamachi | Saga University |

11:05–11:20, SA14.04

Free Viewpoint Video Synthesis on Human Action Using Shape From Silhouette Method

| Taku Watanabe | Keio University |
| Toshiyuki Tanaka | Keio University |

11:20–11:35, SA14.05

Direct estimation of wave source location from weighted integral measurements on finite boundary

| Shigeru Ando | The University of Tokyo |
| Toru Kurihara | The University of Tokyo |

11:35–11:50, SA14.06

Partially Filled Flow Tomography with Electro-Magnetic Induction

| Miki Sakuratani | Keio University |
| Satoshi Honda | Keio University |

SA15   110 (VF)

Nexus System Design: New Interaction among Humans, Agents, and Robots I (Organized Session)

Organizer: Keiki Takadama	
	The University of Electro-Communications
Chair: Keiki Takadama	
	The University of Electro-Communications
Chair: Katsunori Shimohara	Doshisha University

10:20–10:35, SA15.01

Towards an Objective Generation as an Autonomous Agent Architecture

Ayano Kanamaru	The University of Electro-Communications
Kiyohiko Hattori	The University of Electro Communications
Hiroyuki Sato	The University of Electro Communications
Keiki Takadama	The University of Electro-Communications

10:35–10:50, SA15.02

Entrainment Between Speech and Gestures in Human-Robot Interaction

Takamasa Iio	ATR/Doshisha University
Masahiro Shiomi	
	ATR Intelligent Robotics and Communication Laboratories
Kazuhiko Shinozawa	
	ATR Intelligent Robotics and Communication Laboratories
Takaaki Akimoto	
	ATR Intelligent Robotics and Communication Laboratories
Katsunori Shimohara	Doshisha University
Norihiro Hagita	
	ATR Intelligent Robotics and Communication Laboratories

10:50–11:05, SA15.03

Comic Live Chat: Communication Tool Based on Concept of Downgrading

Misaki Matsuda	Doshisha University
Ivan Tanev	Doshisha University
Katsunori Shimohara	Doshisha University

11:05–11:20, SA15.04

Context Dependency of Facial Expressions in Communications

Hiroto Fukushima	Doshisha University
Ivan Tanev	Doshisha University
Katsunori Shimohara	Doshisha University

11:20–11:35, SA15.05

Proposal of Highly Accurate Position Estimation System Using Movement History of Wireless Terminals and Wireless Communications

Kiyohiko Hattori	The University of Electro Communications
Nobuo Nakajima	The University of Electro-Communications
Keiki Takadama	The University of Electro-Communications

SA16	West Gallery (VF)
Interactive Session III	

10:20–11:50, SA16.01

Non-Contact and Non-Attached Human Hand Motion Sensing Technique for Application to the Human Machine Interface

Koichi Kurita	Kochi National College of Technology

10:20–11:50, SA16.02

A Sensing System Using Resonant Sensor That is Excited and Detected by Semiconductor Laser Lights through Optical Fibers

Hideto Iwaoka	Kanazawa Institute of Technology

10:20–11:50, SA16.03

A Low-cost Noncontact Potentiometer with Fault Isolation for Electric Scooter Speed Regulation

Chi-Sheng Tsai	Chienkuo Technology University
Lukas Blaha	University of West Bohemia in Pilsen

10:20–11:50, SA16.04

Research and Practice about Positioning Algorithms of Humanoid Robot in Robocup Soccer Stadium

Xu Ying Kong	Beijing Information Technology College
Zhi Bin Zhang	Beijing Information Technology College
Zhi Hong Lin	Beijing Information Technology College
Li Jun Gao	Beijing Information Technology College

10:20–11:50, SA16.05

Research on Improvement of Algorithm about Identifying Robot Soccer

Zhi Hong Lin	Beijing Information Technology College
Xu Ying Kong	Beijing Information Technology College
Peng Chang	Beijing Information Technology College

10:20–11:50, SA16.06

Ethernet for Networked Control

Cosmin Ionete	University of Craiova
Dorin Sendrescu	University of Craiova
Dorin Popescu	University of Craiova
Adina Ionete	ELPREST SRL

10:20–11:50, SA16.07

Estimation Strategies for Kinetic Parameters of an Alcoholic Fermentation Bioprocess

Dan Selisteanu	University of Craiova
Emil Petre	University of Craiova
Monica Roman	University of Craiova
Cosmin Ionete	University of Craiova
Dorin Popescu	University of Craiova

10:20–11:50, SA16.08

Autonomous Steering Control Simulator for On-Line Electric Vehicle

Choi Youjun	KAIST
Sunjong Lee	KAIST
Jinkyu Kim	KAIST

10:20–11:50, SA16.09

Integral Sliding Mode Control for Underactuated Robots

Dong Sang Yoo	Hankyong National University

10:20–11:50, SA16.10

Robustness of Pole Assignment for an Interval Polynomial in a Damping-Cone Based on the Positive Interval Routh-Table

Bin Yih Juang St. John's University/National Taiwan University	

10:20–11:50, SA16.11

Control Characteristics of Cooperative Conveyance System for Multiple Mobile Robots using Complex-Valued Neural Network

Hiroshi Suzuki	The University of Tokushima
Takashi Yasuno	The University of Tokushima
Shiro Urushihara	Nagaoka University of Technology
Emiko Yasuno	Anan National College of Technology
Akinobu Kuwahara	The University of Tokushima

10:20–11:50, SA16.12

A Simultaneous Design of Structural and Control Systems Using an Infeasible Controller Sequence

Yasushi Kami	Akashi National College of Technology
Takashi Terada	Akashi National College of Technology
Eitaku Nobuyama	Kyushu Institute of Technology

10:20–11:50, SA16.13

Robust Stabilizing PID Controllers Design for Networked Control Systems with Time-Varying Communication Delays

Yuan-Jay Wang	Tungnan University
Song-Hong Shih	Tungnan University

10:20–11:50, SA16.14

Parameterization for Multi-Degree of Freedom Control in State Space

Rui Wang	Northeastern University
Tianyou Chai	Northeastern University
Heng Yue	Northeastern University
Keiji Watanabe	

10:20–11:50, SA16.15

An Image Processing for Surface Inspection

Tomoko Fujidai	Kagawa University
Jun'ichi Yamaguchi	Kagawa University
Motoki Nagai	
	West Nippon Expressway Engineering Shikoku, Co.Ltd

10:20–11:50, SA16.16

Adaptive Walking Control Using CPG Network for Quadruped

Robot with Bi-articular Muscles Model

Yong Zhang	The University of Tokushima
Takashi Yasuno	The University of Tokushima
Ryohei Nogami	The University of Tokushima
Hiroshi Suzuki	The University of Tokushima

10:20–11:50, SA16.18

Output Prediction of Wind Power Generation System Using Complex-valued Neural Network

Takahiro Kitajima	The University of Tokushima
Takashi Yasuno	The University of Tokushima

10:20–11:50, SA16.19

Orientation Measurement Method for a Car Using its License Plate Image

Nozomu Araki	University of Hyogo
Takao Sato	University of Hyogo
Yasuo Konishi	University of Hyogo
Hiroyuki Ishigaki	University of Hyogo

10:20–11:50, SA16.20

Development of a Remote Visitor Robot System — Attending a Remote Conference and Visiting to an Aged Care Center —

Kyoichi Tatsuno	Meijo University
Tatsuya Kawai	Meijo University
Mikio Nako	Meijo University
Yuki Yasuda	Meijo University
Takahisa Fukuta	Meijo University

10:20–11:50, SA16.20

Study of a Vehicular Drive-by-Wire System Based on FlexRay Protocol

Chau-Chung Song	National Formosa University
Wei-Chi Chen	National Formosa University
Chen-Fu Feng	National Formosa University
Der-Cherng Liaw	National Chiao Tung University

10:20–11:50, SA16.21

Transceiver Design for the Bus Driver of the FlexRay Communication System

Shi-Hao Zheng	National Changhua University of Education
Zhi-Ming Lin	National Changhua University of Education
Der-Cherng Liaw	National Chiao Tung University

10:20–11:50, SA16.22

Study on Dedicated Radio Frequency for Railway Use

Zhong-Hua Quan	POSCO ICT
Myung-Seon Ryou	POSCO ICT
Duk-Kyu Park	Mokwon University

SA17	Fu-Chuon Room (BF)
Passive Dynamic Walk (Organized Session)	

Organizer: Kazuyuki Hyodo	Toyota Technological Institute
Chair: Kazuyuki Hyodo	Toyota Technological Institute
Chair: Koichi Osuka	Osaka University

10:20–10:35, SA17.01

Implicit Control Law in Passive Dynamic Walking

Koichi Osuka	Osaka University
Yasuhiro Sugimoto	Osaka University

Akio Ishiguro	Tohoku University
Dai Owaki	Tohoku University
Xin-Zhi Zheng	ASTEM RI

10:35–10:50, SA17.02

Realization and Motion Analysis of Multi-legged Passive Dynamic Walking

Yasuhiro Sugimoto	Osaka University
Hidetaka Yoshioka	Kobe University
Koichi Osuka	Osaka University

10:50–11:05, SA17.03

Modification of Learning Optimal Gait Generation Method in Considering Discontinuous Velocity Transitions

Satoshi Satoh	Hiroshima University
Masahito Ikeda	Nagoya University
Kenji Fujimoto	Nagoya University
Yoshikazu Hayakawa	Nagoya University

11:05–11:20, SA17.04

Dynamical Model Verification of Passive Dynamic Walking with a Compass Model Prototype

Masatsugu Iribe	Osaka Electro-Communication University
Tetsuya Kinugasa	Okayama University of Science
Yasuhiro Sugimoto	Osaka University
Koichi Osuka	Osaka University

11:20–11:35, SA17.05

Turning Motion by Control Constraint Mechanism of Passive Dynamic Walking

Kazuyuki Hyodo	Toyota Technological Institute
Sadayoshi Mikami	Future University–Hakodate
Tatsuo Narikiyo	Toyota Technological Institute
Michihiro Kawanishi	Toyota Technological Institute

SA18	Der-Hou Room East (BF)
Networked and/or Embedded Systems	

Chair: Wataru Uemura	Ryukoku University
Chair: Takashi Yoshimi	Shibaura Institute of Technology

10:20–10:35, SA18.01

Design and Development of RT-Component Plug and Play system for USB devices

Yusuke Zama	Shibaura Institute of Technology
Motomasa Tanaka	Shibaura Institute of Technology
Tsunehiko Fujita	Shibaura Institute of Technology
Makoto Mizukawa	Shibaura Institute of Technology
Takashi Yoshimi	Shibaura Institute of Technology
Yoshinobu Ando	Shibaura Institute of Technology

10:35–10:50, SA18.02

Design of the Redundant RTC-CANopen Component

Yuhki Ishiguro	Shibaura Institute of Technology
Motomasa Tanaka	Shibaura Institute of Technology
Makoto Mizukawa	Shibaura Institute of Technology
Takashi Yoshimi	Shibaura Institute of Technology
Yoshinobu Ando	Shibaura Institute of Technology

10:50–11:05, SA18.03

Design of Firmware Update System of RT-Middleware for Embed-

ded System

Katsuhiro Mayama	Shibaura Institute of Technology
Motomasa Tanaka	Shibaura Institute of Technology
Yoshinobu Ando	Shibaura Institute of Technology
Takashi Yoshimi	Shibaura Institute of Technology
Makoto Mizukawa	Shibaura Institute of Technology

11:05–11:20, SA18.04

Development of the Protocol System for the Data Communication in the Ship

HagTae Kim	Chonbuk National University
Vista Felipe	Chonbuk National University
MoonKyou Song	Wonkwang University
KilTo Chong	Chonbuk National University

11:20–11:35, SA18.05

Ad-hoc Network Routing Protocol for an Application Layer

Wataru Uemura	Ryukoku University
Masashi Murata	Ryukoku University

11:35–11:50, SA18.06

Evaluation of Intelligent battery using CANopen

Koji Ishida	Shibaura Institute of Technology
Motomasa Tanaka	Shibaura Institute of Technology
Yoshinobu Ando	Shibaura Institute of Technology
Takashi Yoshimi	Shibaura Institute of Technology
Makoto Mizukawa	Shibaura Institute of Technology

SA19	Der-Hou Room East (BF)
Intelligent System and Control	

Chair: Chi-Ying Lin	
	National Taiwan University of Science and Technology
Chair: Toshihiro Shinohara	Kinki University

10:20–10:35, SA19.01

Control System Design Based on Distributed Probabilitic Model-Building Genetic Algorithm

Michihiro Kawanishi	Toyota Technological Institute
Tomohiro Kaneko	Toyota Technological Institute
Tatsuo Narikiyo	Toyota Technological Institute

10:35–10:50, SA19.02

Balance Control for Two-Wheeled Robot via Neural-Fuzzy Technique

Kuo-Ho Su	Chinese Culture University
Yih-Young Chen	Chinese Culture University

10:50–11:05, SA19.03

Neural Network Adaptive Control and Repetitive Control for High Performance Precision Motion Control

Chi-Ying Lin	
	National Taiwan University of Science and Technology

11:05–11:20, SA19.04

Repetitive Tracking Control of DC Motors Using a Fuzzy Iterative Learning Controller

Chiang-Ju Chien	Huafan University
Ssu-Lung Hsu	Huafan University

11:20–11:35, SA19.05

A Study of Color Features for Reading a Resistor

Yoshihiro Mitani	Ube National College of Technology
Yoshihiko Hamamoto	Yamaguchi University

11:35–11:50, SA19.06

Automatic Construction of Weave Diagram of Warp-knitted Fabric Using Positional Information on Yarn

Toshihiro Shinohara	Kinki University

	Grand Ballroom (12F)
Invited Lecture III	

Chair: Tatsuya Suzuki	Nagoya University

13:20–14:10

Design and Evolution of Autonomous Molecular Systems in DNA Nanoengineering and Synthetic Biology

Masami Hagiya	University of Tokyo

	Auditorium (10F)
Invited Lecture IV	

Chair: Tadashi Ito	Gunma University

13:20–14:10

Toward the Redefinition of the SI Base Units

Kenichi Fujii

National Institute of Advanced Industrial Science and Technology

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SB01	Sky Lounge (12F)
Advanced Industrial Control II (Organized Session)	

Organizer: Chi Huang Lu	Hsiuping Institute of Technology
Chair: Chi-Huang Lu	Hsiuping Institute of Technology
Chair: Hsu-Chih Huang	HungKuang University

14:30–14:45, SB01.01

Neural-Network-Based Predictive Control for Nonlinear Processes

Chi-Huang Lu	Hsiuping Institute of Technology
Yuan-Hai Charng	Hsiuping Institute of Technology
Chi-Ming Liu	Hsiuping Institute of Technology

14:45–15:00, SB01.02

Trajectory Planning and Motion Control of a Two-Armed Robot

Ching-Chih Tsai	National Chung-Hsing University
Liang Ting-Ting	National Chung Hsing University
YiYu Li	National Chung Hsing University

15:00–15:15, SB01.03

Particle Swarm Optimization Algorithm for Optimal Configurations of an Omnidirectional Mobile Service Robot

Hsu-Chih Huang	HungKuang University
Ching-Chih Tsai	National Chung Hsing University

15:15–15:30, SB01.04

FPGA Implementation of a Real-Time Image Tracking System

Yuan-Pao Hsu	National Formosa University
Hsiao-Chun Miao	National Formosa University
Ching-Chih Tsai	National Chung-Hsing University

SB02	North Foyer (12F)
Information Systems for Transportation II	

Chair: Hikaru Shimizu	Fukuyama University
Chair: Li Sheng Wang	National Taiwan University

14:30–14:45, SB02.01

The Next Generation Digital Road Map Creation Support System Using a Mobile Mapping System

Kiichiro Ishikawa	Waseda University
Masashi Takano	Waseda University
Yoshiharu Amano	Waseda University
Takumi Hashizume	Waseda University

14:45–15:00, SB02.02

Navigation System Based on GPS and Dead-Reckoning Data Fusion

Tase Yeong Kim	Chonbuk National University
Young Chul Kim	Kunsan National University
Kil To Chong	Chonbuk national University

15:00–15:15, SB02.03

Intelligent Collision Risk Assessment Based on Neural Network Ensemble

Bumsung Kim	Yonsei University
Seongkeun Park	Yonsei University
Baehoon Choi	Yonsei University
Euntai Kim	Yonsei University

15:15–15:30, SB02.04

Collision Risk Assessment for Pedestrians' Safety: Neural Network with Interacting Multiple Model Apporach

Seongkeun Park	Yonsei University
Beomseong Kim	Yonsei University
Baehoon Choi	Yonsei University
Euntai Kim	Yonsei University

15:30–15:45, SB02.05

An Estimation of Link Travel Time in Urban Road Networks

Hikaru Shimizu	Fukuyama University
Yoshiyuki Moritou	Fukuyama University
Masa-aki Kobayashi	Fukuyama University

15:45–16:00, SB02.06

Long-term Prediction of GPS Satellite Orbit

Tin-An Hsu	National Taiwan University
Li-Sheng Wang	National Taiwan University
Fan-Ren Chang	National Taiwan University
Yi-Fen Tseng	Fujitsu Microelectronics Pacific Asia Ltd.

SB03	South Foyer (12F)
ICT Applications in Food and Agriculture (Organized Session)	

Organizer: Takaharu Kameoka	Mie University
Chair: Atsushi Hashimoto	Mie University
Chair: Hiroaki Ishizawa	Shinshu University

14:30–14:45, SB03.01

Visual Guideware as an Information Tools in the Farm

Takashi Togami	Mie University
Yasuhiro Sakakibara	Mie University
Kyosuke Yamamoto	Mie University
Yoshitsugu Kimura	Mie University
Ryoei Ito	Mie University
Atsushi Hashimoto	Mie University

Takaharu Kameoka	Mie University

14:45–15:00, SB03.02

Thermal Image Utilization on the Vigor Diagnosis of Mandarin Orange Tree

Yuichi Ohtani	Mie University
Takashi Togami	Mie University
Yoshitsugu Kimura	Mie University
Atsushi Hashimoto	Mie University
Takaharu Kameoka	Mie University

15:00–15:15, SB03.03

Conceptualization and Implementation of Food User Experience Technologies

Shih-Chieh Li	Academia Sinica
Hajime Nagai	Suntory Holdings Ltd.
Yoshinori Sato	Tohoku Gakuin University
Takaharu Kameoka	Mie University

15:15–15:30, SB03.04

Deployment and Improvement of Field Servers in India

Masayuki Hirafuji	National Agricultural Research Center
Hideo Yoichi	
	National Agriculture and Food Research Organization
Yugo Miki	
	National Agriculture and Food Research Organization
Takuji Kiura	
	National Agriculture and Food Research Organization
Kei Tanaka	
	National Agriculture and Food Research Organization
Tokihiro Fukatsu	
	National Agriculture and Food Research Organization
Seishi Ninomiya	
	National Agriculture and Food Research Organization

15:30–15:45, SB03.05

Laser Speckle Pattern Measurement for Plant State Monitoring

Hiroaki Ishizawa	Shinshu University
Masaki Kawamura	Shinshu University
Takuro Horiguchi	Shinshu University
Shouhei Koyama	Shinshu University

SB04	Auditorium (10F)
Advances in Industrial Applications	

Chair: Takayuki Ohta	Wakayama University
Chair: Soichiro Shimoda	Yokogawa Electric Corporation

14:30–14:45, SB04.01

A Design Method for Minimum Cost Path of Flying Probe In-circuit Testers

Yuki Hiratsuka	The Univercity of Electro-Communications
Fumihiko Kato	The University of Electro-Communications
Katsumi Konishi	Kogakuin University
Seiichi Shin	The University of Electro-Communications

14:45–15:00, SB04.02

Temperature Monitoring of Si Wafer Using Optical Low-Coherence Interferometry

Takayuki Ohta	Wakayama University

Masafumi Ito	Meijo University
Chisio Koshimizu	Tokyo Electron AT Ltd.

15:00–15:15, SB04.03

Average Trajectory Calculation for Batch Processes Using Dynamic Time Warping

Toru Kashima	Yamatake Corporation

15:15–15:30, SB04.04

Development of Innovative Two-Dimensional Absolute Intensity Measurement System for Fluorescence Measurement of Biomolecules

Soichiro Shimoda	Yokogawa Electric Corporation
Toshio Iino	Yokogawa Electric Corporation
Takeo Tanaami	Yokogawa Electric Corporation

15:30–15:45, SB04.05

Recovery of Micro Gas Sensor Array Response from Drift Effect by Means of DWT and Feature Extraction for Discriminating Gas Mixture

Sang Jin Lee	Kyungpook National University
Young Wung Kim	Kyungpook National University
Guk Hee Kim	Kyungpook National University
In Soo Lee	Kyungpook National University

15:45–16:00, SB04.06

A Study of Efficient Power Generation by Utilizing Temperature Difference

Tetsuya Otaki	Hosei University
Kajiro Watanabe	Hosei University
Kazuyuki Kobayashi	Hosei University
Yosuke Kurihara	Hosei University

SB05	Chang Chin Room (10F)
Vision Systems IV	
Chair: Taro Suzuki	Waseda University
Chair: Ming-Tzu Ho	National Cheng Kung University

14:30–14:45, SB05.01

A Study of Real-Time Path Planning for Mobile Robots Based on Environmental Recognition by Using Omni-Directional Images

Kosuke Hasegawa	Hosei University
Tomoyuki Ohkubo	Hosei University
Kazuyuki Kobayashi	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Seikei University

14:45–15:00, SB05.02

A Study of Visual Odometry for Mobile Robot Using Omni-Directional Camera

Takahito Nakada	Hosei University
Tomoyuki Ohkubo	Hosei University
Kazuyuki Kobayashi	Hosei University
Kajiro Watanabe	Hosei University
Yosuke Kurihara	Seikei University

15:00–15:15, SB05.03

Vision Based Localization of a Small UAV for Generating a Large Mosaic Image

Taro Suzuki	Waseda University
Yoshiharu Amano	Waseda University
Takumi Hashizume	Waseda University

15:15–15:30, SB05.04

Design and Implementation of a Stereo Vision-Guided Omnidirectional Mobile Robot for Real-Time Object Tracking

Sho-Tsung Kao	National Cheng Kung University
Chung-Yi Yen	National Cheng Kung University
Ming-Tzu Ho	National Cheng Kung University

15:30–15:45, SB05.05

Three-dimensional Modeling of a Non-rigid Object Employing a Single Camera

Tsukasa Horinouchi	Kyushu Institute of Technology
Heewook Jung	Kyushu Institute of Technology
Joo Kooi Tan	Kyushu Institute of Technology
Hyongseop Kim	Kyushu Institute of Technology
Seiji Ishikawa	Kyushu Institute of Technology

15:45–16:00, SB05.06

Omnidirectional Vision-based Robot Localization on Soccer Field by Particle Filter

Chia-Yang Chen	Tamkang University
Cheng-Yao Ho	Tamkang Universtiy
Ching-Chang Wong	Tamkang University
Hisayuki Aoyama	The University of Electro-Communications

SB06	Song Bo Room (10F)
Healthcare and Welfare IV	
Chair: Piyamas Suapang	Rangsit University
Chair: Ikuko Eguchi Yairi	Sophia University

14:30–14:45, SB06.01

Tele-Care System for Man and Machine in Isolated Island

Kazuya Miura	Nagasaki University
Yoshitaka Yamaguchi	Nagasaki University
H. Nakashima	Nagasaki University
K. Endoh	Nagasaki University
T. Takakura	Nagasaki University
Yu Nakamura	Nagasaki University
S. Moromugi	Nagasaki University
Takakazu Ishimtsu	Nagasaki University
Motohiro Tanaka	Nagasaki University

14:45–15:00, SB06.02

Web-based 3D Visualization and Interaction of Medical Data using Web3D

Sittapong Settapat	Shibaura Institute of Technology
Tiranee Achalakul	
	King Mongkut's University of Technology Thonburi
Michiko Ohkura	Shibaura Institute of Technology

15:00–15:15, SB06.03

Sound Presentation Method for Touch Panels Regarding The Use of Visually Impaired People

Keijiro Usui	Sophia University
Masamitsu Takano	Sophia University
Ikuko Eguchi Yairi	Sophia University

15:15–15:30, SB06.04

Investigation of figure recognition with touch panel of visually impaired people from the perspective of braille proficiency

Kumi Naoe	Sophia University
Masamitsu Takano	Sophia University
Ikuko Eguchi Yairi	Sophia University

15:30–15:45, SB06.05

A Web-based DICOM-Format Image Archive, Medical Image Compression and DICOM Viewer System for Teleradiology Application

Piyamas Suapang
      King Mongkut's Institute of Technology Ladkrabang
Kobchai Dejhan
      King Mongkut's Institute of Technology Ladkrabang
Surapun Yimmun
   King Mongkut's University of Technology North Bangkok

15:45–16:00, SB06.06

Development of a Multi-Channel Wireless Medical Data Acquisition System

Wei Xu	University of Surrey
Chun Liu	Shenyang Aerospace University
Hong Wei	University of Reading

SB07   101 (VF)
Robust Control

Chair: Masami Saeki	Hiroshima University
Chair: Takao Fujii	Fukui University of Technology

14:30–14:45, SB07.01

Effects Induced by Noncausality of Scaling on Robust Stability Analysis of Discrete-Time Periodically Time-Varying Systems

Yohei Hosoe	Kyoto University
Tomomichi Hagiwara	Kyoto University

14:45–15:00, SB07.02

A Search Method for a Fixed-Order Controller of H_2/H_∞ Control Problems

Masami Saeki	Hiroshima University
Keisuke Kawanishi	Sumitomo Metal Industries
Nobutaka Wada	Tottori University

15:00–15:15, SB07.03

An Improved SOS-Based Stabilization Condition for Uncertain Polynomial Systems

Tanagorn Jennawasin	Toyota Technological Institute
Tatsuo Narikiyo	Toyota Technological Institute
Michihiro Kawanishi	Toyota Technological Institute

15:15–15:30, SB07.04

Exact Robust $\mathcal{H}_2$ Performance Analysis for Linear Parameter Dependent Systems

Hiroko Fukumoto	Kobe University
Yasumasa Fujisaki	Kobe University

15:30–15:45, SB07.05

Inverse LQ Approach to Robust Stabilization of Linear Systems with Input Delay

Takao Fujii	Fukui University of Technology
Sadaaki Kunimatsu	Kumamoto University

Taro Tsujino	Fukuoka Institute of Technology

15:45–16:00, SB07.06

On Robust Synthesis of Gain-Scheduled Controllers under Stochastic Measurement Noise on the Scheduling Parameter

Izumi Masubuchi	Hiroshima University
Yoshihisa Fujimoto	Hiroshima University

SB08   102 (VF)
Applications of Sliding Mode and T-S Fuzzy Control (Organized Session)

Organizer: Shun-Hung Tsai
      National Taipei University of Technology
Chair: Shun-Hung Tsai
      National Taipei University of Technology

Chair: Ming-Ying Hsiao	Fortune Institute of Technology

14:30–14:45, SB08.01

Design of Simplex-Type Adaptive Sliding-Mode Controller

Ming-Ying Hsiao	Fortune Institute of Technology
Chi-Hua Liu	Fortune Institute of Technology
Shun-Hung Tsai	National Taipei University of Technology
Ta-Tau Chen	Kun Shan University
Shun-Tsai Liu	Fortune Institute of Technology

14:45–15:00, SB08.02

Design of Simplex-Type Adaptive Fuzzy Sliding-Mode Controller

Ta-Tau Chen	Kun Shan University
Ming-Ying Hsiao	Fortune Institute of Technology
Chi-Hua Liu	Fortune Institute of Technology
Shun-Hung Tsai	National Taipei University of Technology
Chih-Chia Fan	National Taipei University of Technology
Chih-Hsiang Chang	National Taipei University of Technology
Chan-Hong Chao	National Cheng Kung University

15:00–15:15, SB08.03

Composite Observer-Based Feedback Design for Singularly Perturbed Systems via LMI Approach

Kuo Jung Lin	Fortune Institute of Technology

15:15–15:30, SB08.04

Simplex-Type Sliding-Mode Control for A Class of Linear Discrete-Time Systems

Ta-Tau Chen	Kun Shan University
Ming-Ying Hsiao	Fortune Institute of Technology
Chi-Hua Liu	Fortune Institute of Technology
Shun-Hung Tsai	National Taipei University of Technology
Tzu-Ming Huang	Fortune Institute of Technology

15:30–15:45, SB08.05

Model Reference T-S Fuzzy Tracking Control in an Eccentric Mechanism

Chin-Sheng Chen	National Taipei University of Technology
Shun-Hung Tsai	National Taipei University of Technology

SB09   103 (VF)
Genetic Network Programming II

Chair: Shingo Mabu	Waseda University
Chair: Yan Chen	Waseda University

14:30–14:45, SB09.01

Face Recognition using PCA with GNP-Fuzzy Data Mining

Deng Zhang	Waseda University
Shingo Mabu	Waseda University
Karla Taboada	Waseda University
Feng Wen	Waseda University
Kotaro Hirasawa	Waseda University

14:45–15:00, SB09.02

Enhancing Global Portfolio Optimization using Genetic Network Programming

Victor Parque	Waseda University
Shingo Mabu	Waseda University
Kotaro Hirasawa	Waseda University

15:00–15:15, SB09.03

Trading Rules on Stock Markets Using Genetic Network Programming with Subroutines

JianHua Li	Waseda University/Shanghai University
QinBiao Meng	Waseda University
Yang Yang	Waseda University
Shingo Mabu	Waseda University
Yifei Wang	Shanghai University
Kotaro Hirasawa	Waseda University

15:15–15:30, SB09.04

Automatic Program Generation with Genetic Network Programming using Subroutines

Bing Li	Waseda University
Shingo Mabu	Waseda University
Kotaro Hirasawa	Waseda University

15:30–15:45, SB09.05

Generating Trading Rules on the Stock Markets with Robust Genetic Network Programming Using Variance of Fitness Values

Yan Chen	Waseda University
Kotaro Hirasawa	Waseda University

SB10	104 (VF)
Manufacturing Systems and System Development Support	

Chair: Masafumi Miwa	The University of Tokushima
Chair: Yoichi Shiraishi	Gunma University

14:30–14:45, SB10.01

MDA Development of Manufacturing Execution System Based on Automatic Code Generation

Kenji Mizuoka	Kyushu Institute of Technology
Masanobu Koga	Kyushu Institute of Technology

14:45–15:00, SB10.02

Embedded Program Development Environment for Windshield Wiper Controller

Youg Zhe Chu	Gunma University
Masaya Nishikawa	Gunma University
Mona Abo El Dahb	Gunma University
Yoichi Shiraishi	Gunma University
Takanori Saito	Realize Computer Engineering, co., ltd.

15:00–15:15, SB10.03

Evaluation of Remote Control Support System for R/C Helicopter

Masafumi Miwa	The University of Tokushima
Kentaro Kinohita	The University of Tokushima
Kenichi Tokuda	Wakayama University

15:15–15:30, SB10.04

A Uniform Laser Energy Control for Ceramic Sintering Rapid Prototyping

Stephen P. Tseng	National Taipei University of Technology
Hwa-Hsing Tang	National Taipei University of Technology

15:30–15:45, SB10.05

Simulation based Design for Inverter Power Supply

Mona Abo El Dahb	Gunma University
Yoichi Shiraishi	Gunma University
Shoji Tatsuno	Tokyo Seiden, co., ltd

15:45–16:00, SB10.06

Development of a SOFC Dynamic Simulation Environment

Yousuke Iida	Yamatake Corporation
Kenji Otsuka	Yamatake Corporation
Yousuke Komatsu	Shibaura Institute of Technology
Shinji Kimijima	Shibaura Institute of Technology

SB11	105 (VF)
Sensors and Transducers	

Chair: Masahiro Tanaka	Konan University
Chair: Hiroo Wakaumi	
	Tokyo Metropolitan College of Industrial Technology

14:30–14:45, SB11.01

Development of Traffic Counters by Laser Range Scanners

Masahiro Tanaka	Konan University

14:45–15:00, SB11.02

An Advanced Laser Rangefinder Equipped with a Scanning Simulator

Ohtani Kozo	Hiroshima Institute of Technology
Yamamoto Shin	Hiroshima Institute of Technology
Li Li	Ibaraki University
Baba Mitsuru	Ibaraki University

15:00–15:15, SB11.03

A High-Density Ternary Barcode Detection System with a Fixed Period Delay Method

Hiroo Wakaumi	
	Tokyo Metropolitan College of Industrial Technology

15:15–15:30, SB11.04

3D Reconstruction of Reflective Surface on Reflection Type Tactile Sensor Using Constraints of Geometrical Optics

Ryosuke Taira	Tohoku University
Satoshi Saga	Tohoku University
Takayuki Okatani	Tohoku University
Koichiro Deguchi	Tohoku University

15:30–15:45, SB11.05

Position and Orientation Sensor for Two-Dimensional Communication Network

Kei Nakatsuma	The University of Tokyo
Hiroyuki Shinoda	The University of Tokyo

15:45–16:00, SB11.06

Enhanced Differential Voltage-to-Frequency Converter for Telemetry Applications

Amphawan Julsereewong
King Mongkut's Institute of Technology Ladkrabang
Wandee Petchmaneelumka
King Mongkut's Institute of Technology Ladkrabang

SB12	107 (VF)
Recent Progress in Mechanical Metrology II (Organized Session)	

Organizer: Yoshitaka Morimoto
Kanazawa Institute of Technology
Chair: Tokihiko Kobata   AIST
Chair: Masaaki Ueki   AIST

14:30–14:45, SB12.01
Evaluation of stroke and force of enlargement mechanism

Yoshitaka Morimoto   Kanazawa Institute of Technology
Okada Suguru   Kanazawa Institute of Technology

14:45–15:00, SB12.02
Variable speed control of hydraulically driven weight stacks in the 540 kN force standard machine

Toshiyuki Hayashi   AIST
Yoshihisa Katase   AIST
Hiroshi Maejima   AIST
Yukio Yamaguchi   AIST
Kazunaga Ueda   AIST

15:00–15:15, SB12.03
Introduction to Research Activities on Traceable Force Measurements below 10 micronewton in Center for Measurement Standards

Sheng-Jui Chen   Industrial Technology Research Institute
Sheau-Shi Pan   Industrial Technology Research Instiyute

15:15–15:30, SB12.04
Improvement of Formability by Servo Die Cushion in Deep Drawing

Akihiro Watanabe   Gunma University
Hisaki Watari   Gunma University
Yuji Kotani   Gunma Industrial Technology Center
Takehiro Shimizu   Komatsu Industries Corporation
Takanori Yamazaki   Oyama National College of Technology

15:30–15:45, SB12.05
The Design and Characteristic Study of a 3-dimensional Piezoelectric Nano-Positioner

Yu-Chi Wang   National Chiao Tung University
Li-Kang Chen   National Chiao Tung University
Shao-Kang Hung   National Chiao Tung University

15:45–16:00, SB12.06
Combination of VCA based Micro Force Generator and Micro Robot for Micro Hardness and Stiffness Test

Montree Pakkratoke   The University of Electro-Communications
Natchapon Luekiatphaisan
The University of Electro-Communications
Hisayuki Aoyama   The University of Electro-Communications

SB13	108 (VF)
Modeling and System Identification II	

Chair: Hiroshi Harada   Kumamoto University
Chair: Pau-Lo Hsu   National Chiao-Tung University

14:30–14:45, SB13.01
An Application of System Identification Theory to the Ultrasound Doppler Image Processing System

Tatsuro Baba   Toshiba Medical Systems Corp.
Fumiya Mukai   Keio University
Shuichi Adachi   Keio University
Naohisa Kamiyama   Toshiba Medical Systems Corporation

14:45–15:00, SB13.02
A Method for On-line Identification of Mechanical System by Use of M-sequence

Yukio Toyozawa   FANUC Corp.
Naoto Sonoda   FANUC Corp.
Hiroshi Harada   Kumamoto University
Hiroshi Kashiwagi

15:00–15:15, SB13.03
The Identification of the Magnetic Bearing System with the Real Coded Genetic Algorithm

HwangHun Jeong   Korea Institute of Machinery & Materials
JooHo Yang   Pukyong National University
YoungBok Kim   Pukyong National University
SoNam Yun   Korea Institute of Machinery & Materials

15:15–15:30, SB13.04
Embedded Spectrum Identification for Lightly-Damped Systems

Wei-Chih Hsu   National Chiao-Tung University
Chien-Liang Lai   National Chiao-Tung University
Wei-Sheng Huang   National Chiao-Tung University
Pau-Lo Hsu   National Chiao-Tung University

15:30–15:45, SB13.05
Radial Quantization Method for Just-In-Time Approach

Atsushi Kidono   Keio University
Shuichi Adachi   Keio University

15:45–16:00, SB13.06
Model Reduction of Biochemical Networks

Chun-Liang Lin   National Chung Hsing University
Yen-Chang Liu   National Chung Hsing University

SB14	109 (VF)
Inverse Problems II (Organized Session)	

Organizer: Kenbu Teramoto   Saga University
Chair: Tadashi Ito   Gunma University
Chair: Kenbu Teramoto   Saga University

14:30–14:45, SB14.01
Two-dimensional Localization of a Magnetic Dipole from its First Order Fourier Coefficients of the Magnetic Flux Density

Takaaki Nara   The University of Electro-Communications
Yuushi Takanashi   The University of Electro-Communications
Hirotoshi Watanabe   The University of Electro-Communications

14:45–15:00, SB14.02

Source Reconstruction with Spatial Filter and Reduction of Artifacts in Fluorescence/Bioluminescence Diffuse Optical Tomography

Shinpei Okawa	The University of Electro-Communications
Yukio Yamada	The University of Electro-Communications

15:00–15:15, SB14.03

Show-through Cancellation in Scanned Images of Thick-printed Documents

Kousuke Kojima	Shibaura Institute of Technology
Masanobu Takahashi	Shibaura Institute of Technology

15:15–15:30, SB14.04

Electrical Capacitance Tomography System for Monitoring Process Flow in Pipe

Apinai Rerkratn	King Mongkut's Institute of Technology Ladkrabang
Kitiphol Chitsakul	King Mongkut's Institute of Technology Ladkrabang
Anek Soisup	King Mongkut's Institute of Technology Ladkrabang
Virot Wuti	King Mongkut's Institute of Technology Ladkrabang

SB15	110 (VF)

Nexus System Design: New Interaction among Humans, Agents, and Robots II (Organized Session)

Organizer: Keiki Takadama	The University of Electro-Communications
Chair: Keiki Takadama	The University of Electro-Communications
Chair: Katsunori Shimohara	Doshisha University

14:30–14:45, SB15.01

Harmonic Pulse Analysis to detect biologically plausible gene regulatory networks

Tetsuya Maeshiro	University of Tsukuba
Shin-ichi Nakayama	University of Tsukuba

14:45–15:00, SB15.02

Threshold Learning in the Improved Penalty Avoiding Rational Policy Making Algorithm

Kazuteru Miyazaki	National Institution for Academic Degrees and University Evaluation
Ryouhei Kobayashi	Hitachi Engineering & Service Co. Ltd.
Hiroaki Kobayashi	Meiji University

15:00–15:15, SB15.03

Automatic Tuning of Judgement Parameter in Continuous State Explitation-oriented Learning

Miyazaki Kazuteru	National Institution for Academic Degrees and University Evaluation

15:15–15:30, SB15.04

Scene Evaluation of a Ball Game for Solving Batting Order Optimization

Yuya Kakui	Chiba University
Sachiyo Arai	Chiba University

15:30–15:45, SB15.05

Towards Care Plans of Aged Person by Multi-Objective Optimization

Tomohiro Shimada	University of Electro Communications
Hiroyasu Matsushima	University of Electro Communications
Hiroyuki Sato	University of Electro Communications
Kiyohiko Hattori	University of Electro Communications
Keiki Takadama	University of Electro Communications

SB17	Fu-Chuon Room (BF)

Biomimetic Approach in Robotics and Machines (Organized Session)

Organizer: Kiyotaka Izumi	Saga University
Chair: Kiyotaka Izumi	Saga University

14:30–14:45, SB17.01

Visual Feedback Robot System via Fuzzy Control

Kyouhei Sakai	Kansai University
Yutaka Maeda	Kansai University
Seiji Miyoshi	Kansai University
Hiroomi Hikawa	Kansai University

14:45–15:00, SB17.02

Visual Servoing with Quick Eye-Vergence to Enhance Trackability and Stability

Fujia Yu	Fukui University
Wei Song	University of Shanghai
Mamoru Minami	Okayama University

15:00–15:15, SB17.03

A Formation Method for Heterogeneous Multiple Robots by Specifying the Relative Position of Each Robot

Tatsuya Kato	Okayama University
Keigo Watanabe	Okayama University
Shoichi Maeyama	Okayama University

15:15–15:30, SB17.04

A Switching Control Method for Stabilizing a Nonholonomic Mobile Robot Using Invariant Manifold Method

Takahiro Yamamoto	Okayama University
Keigo Watanabe	Okayama University

SB18	Der-Hou Room East (BF)

Advances in System Integration

Chair: Ruilin Lin	Chienkuo Technology University
Chair: Kai Essig	Bielefeld University

14:30–14:45, SB18.01

Anti-theft Thermal Box for Dairy Bottles

Ruilin Lin	Chienkuo Technology University
Jingchen Xie	Chienkuo Technology University

14:45–15:00, SB18.02

The Design of a Display Device for Swimming Caps

Ruilin Lin	Chienkuo Technology University
Jingchen Xie	Chienkuo Technology University

15:00–15:15, SB18.03

Projection and Least Square Fitting with Perpendicular Offsets based Vehicle License Plate Tilt Correction

Kaushik Deb	University of Ulsan

Andrey Vavilin	University of Ulsan
Jong-Won Kim	University of Ulsan
Taeho Kim	University of Ulsan
Kang-Hyun Jo	University of Ulsan

15:15–15:30, SB18.04

Development of Contact-type Alcohol Checking System

Yasufumi Hamada	Hosei University
Kajiro Watanabe	Hosei University
Kazuyuki Kobayashi	Hosei University
Yousuke Kurihara	Hosei University

15:30–15:45, SB18.05

A Position-Varied Plate Utilized for a Thai License Plate Recognition

Adisorn Leelasantitham	
	University of the Thai Chamber of Commerce
Supaporn Kiattisin	
	University of the Thai Chamber of Commerce

15:45–16:00, SB18.06

Full-Automatic Annotation of Scene Videos — Establish Eye Tracking Effectively in Various Industrial Applications

Kai Essig	Bielefeld University
Norbert Sand	Bielefeld University
Joern Kuensemoeller	Bielefeld University
Matthias Weigelt	Saarland University
Helge Ritter	Bielefeld University
Thomas Schack	Bielefeld University

SB19	Der-Hou Room East (BF)

Nonlinear Control and Information Systems (Organized Session)

Organizer: Fu-Kuang Yeh	Chung Chou Institute of Technology
Chair: Fu-Kuang Yeh	Chung Chou Institute of Technology
Chair: Chao-Shu Liu	
	National Kaohsiung University of Applied Sciences

14:30–14:45, SB19.01

Adaptive-Sliding-Mode Semi-Active Bicycle Suspension Fork

Fu-Kuang Yeh	Chung Chou Institute of Technology
Jian-Ji Huang	Chung Chou Institute of Technology
Chia-Wei Huang	Chung Chou Institute of Technology

14:45–15:00, SB19.02

Fuzzy Sliding-Mode Control for a Mini-UAV

Fu-Kuang Yeh	Chung Chou Institute of Technology
Ching-Mu Chen	Chung Chou Institute of Technology
Jian-Ji Huang	Chung Chou Institute of Technology

15:00–15:15, SB19.03

A Manifold Deformation Design Scheme for the Controls of Nonlinear Systems

Chao-Shu Liu	
	National Kaohsiung University of Applied Sciences
Chao Chung Liu	Chung Chou Institute of Technology

15:15–15:30, SB19.04

Embedded Control System Development Using UML for Automatic Doors

Chih-Min Lo	Chung Chou Institute of Technology
Sun-Jen Huang	
	National Taiwan University of Science and Technology

15:30–15:45, SB19.05

Applied Object-Oriented Programming Technology to ICT Application Development

Chih-Min Lo	Chung Chou Institute of Technology
Sun-Jen Huang	
	National Taiwan University of Science and Technology