## CONFERENCE PROGRAM

**Saturday, August 9, 2014**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:30 – 17:30</td>
<td>Registration (Hotel New Otani Kumamoto, Kumamoto)</td>
<td>Hotel New Otani Kumamoto, Kumamoto</td>
</tr>
<tr>
<td>18:00 - 20:00</td>
<td>Welcome Reception (Hotel New Otani Kumamoto, Kumamoto)</td>
<td>Hotel New Otani Kumamoto, Kumamoto</td>
</tr>
</tbody>
</table>
**Sunday, August 10, 2014**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:40 - 08:50</td>
<td>Opening Remarks</td>
<td>Main Conference Hall</td>
</tr>
<tr>
<td>08:50 - 09:50</td>
<td>Plenary Speech 1 (PS01)</td>
<td>Main Conference Hall</td>
</tr>
<tr>
<td><strong>Title:</strong></td>
<td>Cooperative control for multi-agent systems in microgrid distributed generation</td>
<td></td>
</tr>
<tr>
<td><strong>Speaker:</strong></td>
<td>Frank L. Lewis, <em>The University of Texas at Arlington, USA</em></td>
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</tr>
<tr>
<td>09:50 - 10:00</td>
<td>Break</td>
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<tr>
<td>10:00 - 11:40</td>
<td>Parallel Paper Sessions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Room No. 01 2301</td>
<td>Room No. 02 2302</td>
</tr>
<tr>
<td>SunA01</td>
<td>Complex system control and applications</td>
<td>SunA02</td>
</tr>
<tr>
<td>SunA02</td>
<td>Nonlinear control and its application on robotics</td>
<td></td>
</tr>
<tr>
<td>SunA03</td>
<td>Recent advances in adaptive applications</td>
<td></td>
</tr>
<tr>
<td>SunA04</td>
<td>Novel techniques for control</td>
<td></td>
</tr>
<tr>
<td>11:40 - 13:00</td>
<td>Lunch Break</td>
<td></td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>Plenary Speech2 (PS02)</td>
<td>Main Conference Hall</td>
</tr>
<tr>
<td><strong>Title:</strong></td>
<td>On design, modelling and control of rescue robots</td>
<td></td>
</tr>
<tr>
<td><strong>Speaker:</strong></td>
<td>Hongnian Yu, <em>Bournemouth University, UK</em></td>
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</tr>
<tr>
<td>14:00 - 14:10</td>
<td>Break</td>
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<tr>
<td>14:10 - 15:50</td>
<td>Parallel Paper Sessions</td>
<td></td>
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<tr>
<td></td>
<td>Room No. 01 2301</td>
<td>Room No. 02 2302</td>
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<tr>
<td>SunM01</td>
<td>ESP research and education at Japanese universities of science and engineering in Japan</td>
<td>SunM02</td>
</tr>
<tr>
<td>SunM02</td>
<td>Modeling, control and applications of nonlinear dynamic systems</td>
<td></td>
</tr>
<tr>
<td>SunM03</td>
<td>Adaptive and advanced control systems - theory and applications</td>
<td></td>
</tr>
<tr>
<td>SunM04</td>
<td>Information processing</td>
<td></td>
</tr>
<tr>
<td>15:50 - 16:00</td>
<td>Break</td>
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<td>16:00 - 17:20</td>
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<td></td>
<td>Room No. 01 2301</td>
<td>Room No. 02 2302</td>
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<tr>
<td>SunP01</td>
<td>Control of mechatronic systems I</td>
<td>SunP02</td>
</tr>
<tr>
<td>SunP02</td>
<td>Advanced control systems design - theory and applications I</td>
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<tr>
<td>SunP03</td>
<td>Soft computing and its applications I</td>
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<tr>
<td>SunP04</td>
<td>Development of robotics and system engineering education</td>
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### Monday, August 11, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>08:50 - 09:50</td>
<td>Plenary Speech 3 (PS03)</td>
<td>Main Conference Hall</td>
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<tr>
<td></td>
<td><strong>Title:</strong> Structure of intelligence - implicit control and explicit control</td>
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<tr>
<td></td>
<td><strong>Speaker:</strong> Koichi Osuka, Osaka University, Japan</td>
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<td>09:50 - 10:00</td>
<td>Break</td>
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<tr>
<td>10:00 - 11:40</td>
<td>Parallel Paper Sessions</td>
<td>Room No. 01 2301</td>
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<td>Room No. 03 2303</td>
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<td>Room No. 04 2304</td>
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<tr>
<td></td>
<td><strong>MonA01</strong></td>
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<tr>
<td></td>
<td>Fuzzy and neural methodologies</td>
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<tr>
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<td><strong>MonA02</strong></td>
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<tr>
<td></td>
<td>Robotics and mechatronics</td>
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<td></td>
<td><strong>MonA03</strong></td>
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<tr>
<td></td>
<td>Industrial control and application</td>
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<td></td>
<td><strong>MonA04</strong></td>
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<tr>
<td></td>
<td>Optimization methods and application</td>
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<tr>
<td>11:40 - 13:00</td>
<td>Lunch Break</td>
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<tr>
<td>13:00 - 14:00</td>
<td>Plenary Speech 4 (PS04)</td>
<td>Main Conference Hall</td>
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<tr>
<td></td>
<td><strong>Title:</strong> Advanced control for smart material-based actuators and its applications</td>
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<tr>
<td></td>
<td><strong>Speaker:</strong> Xinkai Chen, Shibaura Institute of Technology, Japan</td>
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<td>14:00 - 14:10</td>
<td>Break</td>
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<tr>
<td>14:10 - 15:30</td>
<td>Parallel Paper Sessions</td>
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<td><strong>MonM01</strong></td>
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<td></td>
<td>Control of mechatronic systems II</td>
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<td><strong>MonM02</strong></td>
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<tr>
<td></td>
<td>Advanced control systems design - theory and applications II</td>
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<td><strong>MonM03</strong></td>
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<tr>
<td></td>
<td>Soft computing and its applications II</td>
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<td><strong>MonM04</strong></td>
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<tr>
<td></td>
<td>Nonlinear control and its application on robotics II</td>
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<tr>
<td>15:30 - 16:10</td>
<td>Poster Session Room No. 05 (2202)</td>
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<td>16:10 - 16:20</td>
<td>Break</td>
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<tr>
<td>16:20 - 17:20</td>
<td>Plenary Panel Discussion</td>
<td>Main Conference Hall</td>
</tr>
<tr>
<td></td>
<td><strong>Title:</strong> New developments in nonlinear control systems</td>
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</table>
|               | **Speakers:** Mingcong Deng, *Tokyo Univ. of Agri. and Tech., Japan*  
Ikuro Mizumoto, *Kumamoto Univ., Japan* |                       |
| 19:00 – 21:00 | Banquet (The New Otani Kumamoto, Kumamoto) |                       |

### Saturday, August 12, 2014

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>09:30 – 15:00</td>
<td>Technical Tour to Aso</td>
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## TECHNICAL PROGRAM

### ICAMechS 2014
Saturday, August 9, 2014

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**End of the 1st Day**

### ICAMechS 2014
Sunday, August 10, 2014

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<td>Main Conference Hall</td>
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<td></td>
<td>Cooperative control for multi-agent systems in</td>
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<td>microgrid distributed generation</td>
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<td></td>
<td>Frank L. Lewis</td>
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<td><em>The Univ. of Texas at Arlington, USA</em></td>
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<td></td>
<td>Chair: Chun-Yi Su</td>
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<tr>
<td></td>
<td>Concordia Univ., Canada</td>
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<tr>
<td>09:50 - 10:00</td>
<td>Break</td>
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</tbody>
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**Early Morning Technical Sessions**

**SunA01**

**Room No.01 2301**

**Complex system control and applications**

Organized Session

Organizer: Shengjun Wen  
Zhongyuan Univ. of Tech., China

Aihui Wang  
Zhongyuan Univ. of Tech., China

Chair: Shengjun Wen  
Zhongyuan Univ. of Tech., China

Co-Chair: Aihui Wang  
Zhongyuan Univ. of Tech., China

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 - 10:20</td>
<td>Robust nonlinear tracking control design for IPMC using neural network based sliding mode approach</td>
<td>Zhongyuan Univ. of Tech., China</td>
</tr>
</tbody>
</table>

Dongyun Wang  
Zhongyuan Univ. of Tech., China

Qiang Zhang  
Zhongyuan Univ. of Tech., China

Aihui Wang  
Zhongyuan Univ. of Tech., China

Tongbin Yan  
Zhongyuan Univ. of Tech., China

**End of the 2nd Day**
Nonlinear control and its application on robotics I

Shotaro Kawahata (Tokyo Univ. of Agri. and Tech., Japan)
Mingcong Deng (Tokyo Univ. of Agri. and Tech., Japan)
Kazuki Takahashi (Tokyo Univ. of Agri. and Tech., Japan)

Nonlinear water temperature control experiment for microreactor group actuated by Peltier devices
Shan Yu

Nonlinear tracking control design of a robot arm using robust right coprime factorization and sliding mode approaches
Min Zheng (Zhongyan Univ. of Tech., China)
Wudai Liao (Zhongyan Univ. of Tech., China)
Changhai Yin (Zhongyan Univ. of Tech., China)
Aihui Wang (Zhongyan Univ. of Tech., China)

Optimization of PID control for DC motor based on artificial bee colony algorithm
Aihui Wang (Zhongyan Univ. of Tech., China)
Yiwen Fu (Zhongyan Univ. of Tech., China)
Liping Liu (Zhongyan Univ. of Tech., China)
Junming Xiao (Zhongyan Univ. of Tech., China)

Nonlinear control and its application on robotics I

Organizer: Shuhui Bi
Chair: Shuhui Bi
Co-Chair: Hongbo Wang

Relational polarity analysis for the anti-respiratory syncytial virus effect of baikal skullcap root
Ke Li (Shandong Acad. of Sci., China)
Enguang Hou (Shandong Acad. of Sci., China)
Lei Wang (Shandong Acad. of Sci., China)
Yong Li (Shandong Acad. of Sci., China)
Yan Gao (Shandong Acad. of Chinese Medicine, China)
Bianli Wang (Shandong Acad. of Chinese Medicine, China)
Bonian Zhao (Shandong Acad. of Chinese Medicine, China)

Kinematics analysis for tube-type DEAs based parallel link mechanism
Changan Jiang (RIKEN, Japan)
Kentaro Takagi (Nagoya Univ., Japan)
Shinya Hirano (RIKEN, Japan)
Tatsuya Suzuki (Nagoya Univ., Japan)
Shigeyuki Hosoe (RIKEN, Japan)
Kazunobu Hashimoto (Tokai Rubber Industries Ltd, Japan)
Akitoshi Nozawa (Tokai Rubber Industries Ltd, Japan)

Operator-based robust nonlinear control for system with generalized PI hysteresis
Shuhui Bi (Shandong Acad. of Sci., China)
Xuelin Wang (Shandong Acad. of Sci., China)
Jianghua Zheng (Shandong Acad. of Sci., China)
Lei Wang (Shandong Acad. of Sci., China)

Improvement of the walking robot dynamic stability using the DSmT and the neutrosophic logic
Luige Vladareanu (Institute of Solid Mechanics of the Romanian Acad., Romania)
Alexandru Gal (Institute of Solid Mechanics of the Romanian Acad., Romania)
Hongnian Yu (Bournemouth Univ., UK)
Mingcong Deng (Tokyo Univ. of Agri. and Tech., Japan)

Design and analysis of a multi-joint lower limbs rehabilitation robot
Hongbo Wang (Yanshan Univ., China)
Fuhai Deng (Yanshan Univ., China)
Lingxue Ren (Yanshan Univ., China)
Xiaohua Shi (Key Laboratory of Advanced Forging & Stamping Tech. and Sci. of Ministry of Education, China)
Hao Zhang (Key Laboratory of Advanced Forging & Stamping Tech. and Sci. of Ministry of Education, China)
Liyu Xie (Key Laboratory of Advanced Forging & Stamping Tech. and Sci. of Ministry of Education, China)

Recent advances in adaptive applications
Organizer: Takami Matsuo
Oita Univ., Japan
Feedforward control with on-line tuning: a perspective on two-degree-of-freedom structure

Kenji Sugimoto, Nara Institute of Sci. and Tech., Japan
Fuuki Ito, Nara Institute of Sci. and Tech., Japan
Lorlynn A. Mateo, Nara Institute of Sci. and Tech., Japan

10:20 – 10:40
SunA03-02

An adaptive control of a robotic system to prevent sleep apnea syndrome

Kazuya Sato, Suga Univ., Japan
Masanori Tanaka, Suga Univ., Japan

10:40 – 11:00
SunA03-03

On the adaptive observer for summational type state space equations

Kenji Sawada, The Univ. of Electro-Communications, Japan
Ryo Yanagawa, The Univ. of Electro-Communications, Japan
Seiichi Shin, The Univ. of Electro-Communications, Japan

11:00 – 11:20
SunA03-04

Parameter estimation of heart rhythm dynamics using adaptive observer

Keisuke Imamasu, Oita Univ., Japan
Chisato Matoba, Oita Univ., Japan
Haruo Suemitsu, Oita Univ., Japan
Takami Matsuo, Oita Univ., Japan

11:20 – 11:40
SunA03-05

Improvement of EMC in MPPT control of photovoltaic system using adaptive observer

Tsuyoshi Obba, Oita Univ., Japan
Risa Matsuda, Oita Univ., Japan
Haruo Suemitsu, Oita Univ., Japan
Takami Matsuo, Oita Univ., Japan

10:00 – 10:20
SunA04-01

Novel techniques for control

Regular Session
Chair: Zi-Jiang Yang, Ibaraki Univ., Japan
Co-Chair: Shiro Masuda, Tokyo Metropolitan Univ., Japan

10:00 – 10:20
SunA04-01

Distributed robust synchronization tracking control of networked Euler-Lagrange systems by cascaded estimation of reference
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Authors</th>
<th>Affiliations</th>
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<tbody>
<tr>
<td>14:10 – 14:30</td>
<td>SunM01</td>
<td>The assessment of the vocabulary size of Japanese university students of science and engineering in an ESP program</td>
<td>Shinichi Hashimoto, Yan Yu, Jie Shi</td>
<td>Univ. of Electro-Communications, Japan</td>
</tr>
<tr>
<td>14:30 – 14:50</td>
<td>SunM02</td>
<td>A critical analysis of the ESP textbooks for Japanese university students of science and engineering</td>
<td>Yan Yu, Jie Shi</td>
<td>Univ. of Electro-Communications, Japan</td>
</tr>
<tr>
<td>14:50 – 15:10</td>
<td>SunM03</td>
<td>Genre-based framework to reach a more succinct and objective decision in peer review of a research article</td>
<td>Uma Maheswari Rajagopalan, Jie Shi</td>
<td>Univ. of Electro-Communications, Japan</td>
</tr>
<tr>
<td>15:10 – 15:30</td>
<td>SunM04</td>
<td>A corpus-based analysis of the scientific RA genre and RA introduction</td>
<td>Sébastien Louvigné, Jie Shi, Sonia Sharmin</td>
<td>The Univ. of Electro-Communications, Japan</td>
</tr>
<tr>
<td>15:30 – 15:50</td>
<td>SunM05</td>
<td>An investigation into problems in the writing of conference abstracts by Japanese graduate students</td>
<td>Jie Shi, John Cross</td>
<td>Univ. of Electro-Communications, Japan</td>
</tr>
<tr>
<td>14:10 – 14:30</td>
<td>SunM02-01</td>
<td>Online state estimation of flexible beams based on particle filtering and camera images</td>
<td>Jie Shi, Hua Chen, Ping Zhou</td>
<td>Univ. of Electro-Communications, Japan</td>
</tr>
<tr>
<td>14:30 – 14:50</td>
<td>SunM02-02</td>
<td>A stochastic model for performance and energy consumption analysis of rejuvenation and migration-enabled cloud</td>
<td>Yunnii Xia, Yakai Han, Mengchu Zhou, Jia Li</td>
<td>Chongqing Univ., China, USA</td>
</tr>
<tr>
<td>14:50 – 15:10</td>
<td>SunM02-03</td>
<td>Design of spatial adaptive fingered gripper using spherical five-bar mechanism</td>
<td>Tae-Uk Kim, Yonghwan Oh</td>
<td>Korea Institute of Sci. and Tech., Korea</td>
</tr>
<tr>
<td>15:10 – 15:30</td>
<td>SunM02-04</td>
<td>Finite element modeling of dynamic loading on osseointegration to different bone density</td>
<td>Cho-Pei Jiang, Yung-Cheng Cheng</td>
<td>National Kaohsiung First Univ. of Sci. and Tech., Taiwan</td>
</tr>
<tr>
<td>15:30 – 15:50</td>
<td>SunM02-05</td>
<td>Research on the theory and simulation of Piezo-hydraulic actuator</td>
<td>Zheng Li, Zhigang Yang, Junwu Kan, Shaofeng Peng, Sheng Li</td>
<td>Jilin Univ., Jilin normal Univ., China</td>
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<tr>
<td></td>
<td>SunM03</td>
<td>Session Room No.03</td>
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<tr>
<td>14:10 – 14:30</td>
<td>SunM03-01</td>
<td>Performance analysis for operational optimal control for complex industrial processes under small loop control errors</td>
<td>Aiping Wang, Ping Zhou</td>
<td>Anhui Univ., China, Northeastern Univ., China</td>
</tr>
</tbody>
</table>
Adaptive robust stabilization for a class of uncertain nonlinear systems with unknown virtual control coefficients

Yuchao Wang  
Prefectural Univ. of Hiroshima, Japan

14:30 – 14:50  
SunM03-02

Finite-time multi-cell formation using optical traps

Reza Haghighi  
Nanyang Technological Univ., Singapore

15:10 – 15:30  
SunM04-04

Design of fractional order sliding mode controller via non-integer order backstepping by fractional order derivative of Lyapnov function

Takahiro Takeshita  
Keio Univ., Japan

14:50 – 15:10  
SunM03-03

A nonlinear adaptive noise canceller for speech enhancement using Volterra filter

Yegui Xiao  
Prefectural Univ. of Hiroshima, Japan

15:30 – 15:50  
SunM04-05

Adaptive steering control for combined vehicles with steer-by-wire system

Qiang Wang  
Shanghai Dianji Univ., China

15:10 – 15:30  
SunM03-04

Automatic 3D space initialization system using depth camera and catalogue database

Nur Safwati Mohd Nor  
Shibaura Institute of Tech., Japan

15:30 – 15:50  
SunM03-05

A nonlinear exact disturbance observer inspired by sliding mode techniques

Xinkai Chen  
Shibaura Institute of Tech., Japan

15:30 – 15:50  
SunM03-05

Information processing

Chair: Yegui Xiao  
Prefectural Univ. of Hiroshima, Japan

14:10 – 14:30  
SunM04-01

Co-Chair: Chien Chern Cheah  
Nanyang Tech. Univ., Singapore

14:10 – 14:30  
SunM04-01

Development and performance evaluation of a photography system for measurement of steam turbine blades

Masao Ogaki  
Electron and Photon Laboratory Inc., Japan

14:30 – 14:50  
SunM04-02

Katsushiro Okumura  
Fukuoka Industrial Tech. Center, Japan

16:20 – 16:40  
SunP01-02

Wind speed prediction and determination of wind power output with multi-area weather data by deterministic chaos

M. Hayashi  
Tokyo Univ. of Agri. and Tech., Japan

14:50 – 15:10  
SunM04-03

Keita Yamanoto  
Kyushu Institute of Tech., Japan

16:40 – 17:00  
SunP01-03

Ken Nagasaka  
Tokyo Univ. of Agri. and Tech., Japan

14:50 – 15:10  
SunM04-03

Experimental study on oscillation control of a contact scanning scanners system

Hideki Wada  
Shin-Nippon Nondestructive Inspection Co. LTD., Japan

16:40 – 17:00  
SunP01-03

Xiao Chien Chern Cheah  
Prefectural Univ. of Hiroshima, Japan

14:30 – 14:50  
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Wind speed prediction and determination of wind power output with multi-area weather data by deterministic chaos

M. Hayashi  
Tokyo Univ. of Agri. and Tech., Japan

14:50 – 15:10  
SunM04-03

Keita Yamanoto  
Kyushu Institute of Tech., Japan

16:40 – 17:00  
SunP01-03

Ken Nagasaka  
Tokyo Univ. of Agri. and Tech., Japan

14:50 – 15:10  
SunM04-03

Experimental study on oscillation control of a contact scanning scanners system

Hideki Wada  
Shin-Nippon Nondestructive Inspection Co. LTD., Japan

16:40 – 17:00  
SunP01-03
Transhumeral prosthesis prototype with 3D printing and sEMG-based elbow joint control method

Teppakorn Sittiwanchai
King Mongkut’s Univ. of Tech., North Bangkok, Thailand
Ippei Nakayama
Kyushu Institute of Tech., Japan
Shinichi Inoue
Kyushu Institute of Tech., Japan
Jun Kobayashi
Kyushu Institute of Tech., Japan

17:00 – 17:20 SunP01-04
Digital resolved acceleration control of underwater robot with multiple manipulators
Shinichi Sagara
Kyushu Institute of Tech., Japan
Radzi Bin Ambar
Kyushu Institute of Tech., Japan

Advanced control systems design - theory and applications I

Organizer: Takao Sato
Univ. of Hyogo, Japan
Yoshihiro Ohnishi
Ehime Univ., Japan
Chair: Yoshihiro Ohnishi
Ehime Univ., Japan
Co-Chair: Toru Yamamoto
Hiroshima Univ., Japan

16:00 – 16:20 SunP02-01
Design and experimental evaluation of a human skill-based controller
Yuntao Liao
Hiroshima Univ., Japan
Takuya Kinoshita
Hiroshima Univ., Japan
Toru Yamamoto
Hiroshima Univ., Japan

16:20 – 16:40 SunP02-02
Adaptive position control of quad-rotor helicopter in quaternion based on input-output linearization
Yuta Kutsuna
Nagoya Institute of Tech., Japan
Makoto Ando
Nagoya Institute of Tech., Japan
Manabu Yamada
Nagoya Institute of Tech., Japan

16:40 – 17:00 SunP02-03
Performance driven switching control based on the gain monitoring
Yoshihiro Ohnishi
Ehime Univ., Japan
Toru Yamamoto
Hiroshima Univ., Japan

17:00 – 17:20 SunP02-04
Performance-driven adaptive output feedback control and its application to two-tank system
Taro Takagi
Maizuru National College of Tech., Japan
Ikuro Mizumoto
Kumamoto Univ., Japan
Co-Chair: Yoshihiro Ohnishi  
*Ehime Univ., Japan*

<table>
<thead>
<tr>
<th>16:00 – 16:20</th>
<th>SunP04-01</th>
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<tbody>
<tr>
<td><strong>Development of an experimental robot for kindergarteners</strong></td>
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<tr>
<td>Hiroyuki Kawakami</td>
<td>Tokai Univ., Japan</td>
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<tr>
<td>Masanori Takahashi</td>
<td>Tokai Univ., Japan</td>
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<tr>
<td>Takashi Samatsu</td>
<td>Tokai Univ., Japan</td>
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<tr>
<td>Kumi Nakamura</td>
<td>Tokai Univ. Fuzoku Kamome</td>
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<tr>
<td>Mutsuko Takeuchi</td>
<td>Kindergarten, Japan</td>
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<tr>
<th>16:20 – 16:40</th>
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<tr>
<td><strong>Effects on engineering education of group learning</strong></td>
<td></td>
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<tr>
<td>Akira Inoue</td>
<td>Okayama Univ., Japan</td>
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<tr>
<td>Mingcong Deng</td>
<td>Tokyo Univ. of Agri. and Tech., Japan</td>
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<th>16:40 – 17:00</th>
<th>SunP04-03</th>
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<tbody>
<tr>
<td><strong>Trial of the PBL education for elementary school children by a workshop to assemble mini-robots</strong></td>
<td>Disassemble and reassemble a mini-robot</td>
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<tr>
<td>Tomohiro Henmi</td>
<td>National Institute of Tech. Kagawa College, Japan</td>
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<tr>
<td>Yoshihiro Ohnishi</td>
<td>Ehime Univ., Japan</td>
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<tr>
<td>Yojiro Yamasaki</td>
<td>National Institute of Tech. Kagawa College, Japan</td>
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<tr>
<td>Hiroyuki Sogo</td>
<td>National Institute of Tech. Kagawa College, Japan</td>
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<th>17:00 – 17:20</th>
<th>SunP04-04</th>
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<tbody>
<tr>
<td><strong>A practical report of programing experiment class for elementary school children</strong></td>
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<tr>
<td>Yoshihiro Ohnishi</td>
<td>Ehime Univ., Japan</td>
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<tr>
<td>Shinnosuke Mori</td>
<td>Ehime Univ., Japan</td>
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**End of the 2nd Day**
08:50 - 09:50  Main Conference Hall
Plenary Speech 3
Structure of intelligence - implicit control and explicit control
**Osaka Univ., Japan**
**Chair:** Shiro Masuda  **Tokyo Metropolitan Univ., Japan**
**Co-Chair:**

09:50 - 10:00  Break

10:00-11:10, Monday, August 11, 2014

**MonA01**  Session Room No.01  2301

**Fuzzy and neural methodologies**  Regular Session
**Chair:** Jin-Wei Lian  **Ming Chi Univ. of Tech., Taiwan**
**Co-Chair:** Xiaoguang Zhou  **Beijing Univ. of Posts and Telecommunications, China**

10:00 – 10:20  MonA01-01
Design of the LQR controller and observer with fuzzy logic GA and GA-PSO algorithm for triple an inverted pendulum and cart system
**Vahid. R. Molazadeh**  **Sharif Univ. of Tech., Iran**
**Afshin Banazadeh**  **Sharif Univ. of Tech., Iran**
**Iman Shafieenejad**  **K. N. Toosi Univ. of Tech., Iran**

10:20 – 10:40  MonA01-02
Barrier Lyapunov based control of dual-arm exoskeleton robots performing asymmetric bimanual tasks
**Zhijun Li**  **South China Univ. of Tech., China**
**Hang Su**  **South China Univ. of Tech., China**
**Hongbin Zhang**  **South China Univ. of Tech., China**
**Chun-Yi Su**  **Northeastern Univ., China**
**Tianyou Chai**  **Northeastern Univ., China**

10:40 – 11:00  MonA01-03
Fuzzy logic-based supervisory control of ball mill grinding circuit
**Wenzhi Zhu**  **Xidian Univ., China**
**Tao Wen**  **Xidian Univ., China**
**Pengshuai Han**  **Xidian Univ., China**
**Zhengfeng Ming**  **Xidian Univ., China**
**Hangyu Li**  **Shaanxi Univ. of Tech., China**

11:00 – 11:20  MonA01-04
Feedforward and feedback control for Piezoelectric-actuated systems using inverse Prandtl-Ishlinskii model and particle swarm optimization
**Jin-Wei Lian**  **Ming Chi Univ. of Tech., Taiwan**
**Hung-Yi Chen**  **Ming Chi Univ. of Tech., Taiwan**

11:20 – 11:40  MonA01-05
The modeling and controller design of an angular servo robot based on the RBF neural network adaptive control
**Zeyan Hu**  **Beijing Univ. of Posts and Telecommunications, China**
**Xiaoguang Zhou**  **Beijing Univ. of Posts and Telecommunications, China**
**Shimin Wei**  **Beijing Univ. of Posts and Telecommunications, China**

**MonA02**  Session Room No.02  2302

**Robotics and mechatronics**  Regular Session
**Chair:** Hirofumi Ohtsuka  **Kumamoto National College of Tech., Japan**
**Co-Chair:** Widodo Budiharto  **Bina Nusantara Univ., Indonesia**

10:00 – 10:20  MonA02-01
Platoon driving experiment of electric wheelchair in narrow space by using model error compensator
**Tatsuya Sugano**  **Kumamoto Univ., Japan**
**Yusuke Dan**  **Kumamoto Univ., Japan**
**Hiroshi Okajima**  **Kumamoto Univ., Japan**
**Nobutomo Matsunaga**  **Kumamoto Univ., Japan**
**Zhencheng Hu**  **Kumamoto Univ., Japan**

10:20 – 10:40  MonA02-02
Steering control of piggyback type wheelchair using avoidance intention detected by weight shift
**Hirotaka Miyamoto**  **Kumamoto Univ., Japan**
**Kazuki Nabekura**  **Kumamoto Univ., Japan**
**Hiroshi Okajima**  **Kumamoto Univ., Japan**
**Nobutomo Matsunaga**  **Kumamoto Univ., Japan**

10:40 – 11:00  MonA02-03
A design of bilateral servo system with self-tuning function
**Hirofumi Ohtsuka**  **Kumamoto National College of Tech., Japan**
**Tomoki Nakamura**  **Kumamoto National College of Tech., Japan**

11:00 – 11:20  MonA02-04
Design of tracked robot with remote control for surveillance
**Widodo Budiharto**  **Bina Nusantara Univ., Indonesia**
MonA03  Session Room No.03  2303

Industrial control and application  
Regular Session

Chair: Shinji Wakui  Tokyo Univ. of Agri. and Tech., Japan  
Co-Chair: Yukinori Nakamura  Tokyo Univ. of Agri. and Tech., Japan

10:00 – 10:20  MonA03-01

Minimal order observer based sensorless control for air spring type anti-vibration apparatus  
Ziyue Wang  Tokyo Univ. of Agri. and Tech., Japan  
Yukinori Nakamura  Tokyo Univ. of Agri. and Tech., Japan  
Shinji Wakui  Tokyo Univ. of Agri. and Tech., Japan

10:20 – 10:40  MonA03-02

Implementation of model following control for a pneumatic stage: improvement of repeatability and positioning speed  
Naoki Ito  Tokyo Univ. of Agri. and Tech., Japan  
Shinji Wakui  Tokyo Univ. of Agri. and Tech., Japan  
Yukinori Nakamura  Tokyo Univ. of Agri. and Tech., Japan

10:40 – 11:00  MonA03-03

Suppression and qualitative interpretation of temperature change in an air spring  
Shota Katayama  Tokyo Univ. of Agri. and Tech., Japan  
Shinji Wakui  Tokyo Univ. of Agri. and Tech., Japan  
Yukinori Nakamura  Tokyo Univ. of Agri. and Tech., Japan

11:00 – 11:20  MonA03-04

Application of a proximate time-optimal controller to an electromechanical throttle  
Steffen Bosselmann  Leibniz Univ., Germany  
Matthias Dagen  Leibniz Univ., Germany  
Tobias Ortmayer  Leibniz Univ., Germany  
Matthias Feldt  Leibniz Univ., Germany

11:20 – 11:40  MonA03-05

A fictitious reference iterative tuning for disturbance attenuation based on disturbance feed-forward and PID control  
Ryo Namba  TOSHIBA Co., Japan  
Osamu Yamanaka  TOSHIBA Co., Japan  
Katsuya Yokokawa  TOSHIBA Co., Japan  
Toshiharu Sugino  TOSHIBA Co., Japan

MonA04  Session Room No.04  2304

Optimization methods and application  
Regular Session

Chair: Zong-Xiao Yang  Henan Univ. of Sci. and Tech., China
### MonM01  Session Room No.01  2301

**Control of mechatronic systems II**  
Organized Session

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<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
<th>Affiliation</th>
</tr>
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<tr>
<td>14:10 – 14:30</td>
<td>MonM01-01</td>
<td>Shinn-Liang Chang, Duy-Hoang Nguyen, Ya-Huei Wang, Hong-Jia Huang</td>
<td>National Formosa Univ., Taiwan</td>
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<tr>
<td>14:30 – 14:50</td>
<td>MonM01-02</td>
<td>Yasunori Ishigaki, Kazuyuki Itto</td>
<td>Hosei Univ., Japan</td>
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<tr>
<td>14:50 – 15:10</td>
<td>MonM01-03</td>
<td>Yuichiro Taia, Shinichi Sagara, Masahiro Oya</td>
<td>Sojo Univ., Japan, Kyushu Institute of Tech., Japan</td>
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<tr>
<td>15:10 – 15:30</td>
<td>MonM01-04</td>
<td>Kento Shimada, Takeshi Nishida</td>
<td>Kyushu Institute of Tech., Japan</td>
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</tbody>
</table>

**A novel five-bar mechanism driven by a cam mechanism**
- Shinn-Liang Chang  
- Duy-Hoang Nguyen  
- Ya-Huei Wang  
- Hong-Jia Huang  

**Proposal for semi-autonomous centipede-like robot for rubble-development of an actual scale robot and validation of its mobility**
- Yasunori Ishigaki  
- Kazuyuki Itto

**A robust controller with integral action for underwater vehicle-manipulator systems including thruster dynamics**
- Yuichiro Taia  
- Shinichi Sagara  
- Masahiro Oya

### MonM02  Session Room No.02  2302

**Advanced control systems design - theory and applications II**  
Organized Session

<table>
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<tbody>
<tr>
<td>14:10 – 14:30</td>
<td>MonM02-01</td>
<td>Yoshimi Shibata</td>
<td>National Defense Acad., Japan</td>
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**A model reference control system with superior intersample performance to conventional system**
- Yoshimi Shibata

### MonM03  Session Room No.03  2303

**Soft computing and its applications II**  
Organized Session

<table>
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<tr>
<td>14:30 – 14:50</td>
<td>MonM03-01</td>
<td>Quiyu Tao, Mingcong Deng</td>
<td>Tokyo Un. of Agri. and Tech., Japan</td>
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<tr>
<td>14:50 – 15:10</td>
<td>MonM03-02</td>
<td>Hiroshi Tajika, Takao Sato, Yoshihiro Ohnishi, Toru Yamamoto, Nozomu Araki, Yasuo Konishi</td>
<td>Univ. of Hyogo, Japan</td>
</tr>
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**A design method of a performance-adaptive control system for a weigh feeder**
- Hiroshi Tajika  
- Takao Sato  
- Yoshihiro Ohnishi  
- Toru Yamamoto  
- Nozomu Araki  
- Yasuo Konishi

**Proposal for semi-autonomous centipede-like robot for rubble-development of an actual scale robot and validation of its mobility**
- Yasunori Ishigaki  
- Kazuyuki Itto

**A robust controller with integral action for underwater vehicle-manipulator systems including thruster dynamics**
- Yuichiro Taia  
- Shinichi Sagara  
- Masahiro Oya

**Advanced control systems design - theory and applications II**  
Organized Session

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</tr>
</tbody>
</table>

**A model reference control system with superior intersample performance to conventional system**
- Yoshimi Shibata
Nonlinear control and its application on robotics II

Organized Session
Organizer: Shuhui Bi
Chair: Hongnian Yu
Co-Chair: Ikuro Mizumoto

Visual navigation and control of mobile robots based on environment mapping
Wen-Chung Chang National Taipei Univ. of Tech., Taiwan
Huan-Chen Ling National Taipei Univ. of Tech., Taiwan

Deadbeat control with (almost) no sensing in a hybrid model of legged locomotion
George Council Univ. of Michigan, United States
Shi yi Yang Univ. of Michigan, United States
Shai Revzen Univ. of Michigan, United States

State of the art in excavators
Vivek Chacko Bournemouth Univ., UK
Hongnian Yu Bournemouth Univ., UK
Shuang Cang Bournemouth Univ., UK
Luige Vladareanu Romanian Acad., Romania

Intelligent extended control of the walking robot motion
Victor Vladareanu Politehnica Univ. of Bucharest, Romania
Paul Schiopu Politehnica Univ. of Bucharest, Romania
Mingcon g Deng Tokyo Univ. of Agri. and Tech., Japan
Hongnian Yu Bournemouth Univ., UK
15:30 – 16:10  Poster-07
The study on consensus control of supply chain system based on multi-agent model
Junming Xiao  Zhongyuan Univ. of Tech., China
Xiang Chen  Zhongyuan Univ. of Tech., China

15:30 – 16:10  Poster-08
Control effectiveness investigation of a ducted-fan aerial vehicle using model predictive controller
Afshin Banazadeh  Sharif Univ. of Tech., Iran
Seyyed Ali Emami  Sharif Univ. of Tech., Iran

15:30 – 16:10  Poster-09
Zero dynamics of sampled-data models for nonlinear systems with FOH
Cheng Zeng  Univ. of Chongqing, China
Shan Liang  Univ. of Chongqing, China

15:30 – 16:10  Poster-10
Online estimation of arriving time for robot to soccer ball in RoboCup soccer using PSO-SVR
Mingcong Deng  Tokyo Univ. of Agri. and Tech., Japan
Naoyuki Matsumoto  Okayama Univ., Japan
Michinobu Kitayama  Okayama Univ., Japan
Akira Inoue  Okayama Univ., Japan

15:30 – 16:10  Poster-11
Short-term prediction of the output power of PV system based on improved grey prediction model
Yanbin Li  Zhongyuan Univ. of Tech., China
Jiujun Zhang  Zhongyuan Univ. of Tech., China
Junming Xiao  Zhongyuan Univ. of Tech., China
Yang Tan  Zhongyuan Univ. of Tech., China

15:30 – 16:10  Poster-12
Optimal configuration for distributed generations in micro-grid system considering diesel as the main control source
Yanbin Li  Zhongyuan Univ. of Tech., China
Xiang Chen  Zhongyuan Univ. of Tech., China
Junming Xiao  Zhongyuan Univ. of Tech., China
Xuehui Wei  Zhongyuan Univ. of Tech., China

15:30 – 16:10  Poster-13
Distributed PV power forecasting using genetic algorithm based neural network approach
Yuqi Tao  Xinyang Power Supply Co., China
Yuguo Chen  Zhongyuan Univ. of Tech., China

15:30 – 16:10  Poster-14
DC-DC converter based on real-time PWM control for a fuel cell system
Junming Xiao  Zhongyuan Univ. of Tech., China
Xiangming Zhang  Zhongyuan Univ. of Tech., China
Shengjun Wen  Zhongyuan Univ. of Tech., China
Dongyun Wang  Zhongyuan Univ. of Tech., China

15:30 – 16:10  Poster-15
Optimal tracking control for a Peltier refrigeration system based on PSO
Shengjun Wen  Zhongyuan Univ. of Tech., China
Ping Liu  Zhongyuan Univ. of Tech., China
Dongyun Wang  Zhongyuan Univ. of Tech., China
Fang Cao  Okayama Univ., Japan

15:30 – 16:10  Poster-16
Unified method for swing-up control of double inverted pendulum systems
Tomohiro Henni  National Institute of Tech. Kagawa College, Japan
Mingcong Deng  Tokyo Univ. of Agri. and Tech., Japan
Akira Inoue  Okayama Univ., Japan

15:30 – 16:10  Poster-17
Nonlinear compensation of uncertain DC-DC converter with bilinear dynamics
Michiya Takahashi  Tokyo Univ. of Agri. and Tech., Japan
Mingcong Deng  Tokyo Univ. of Agri. and Tech., Japan

16:10 - 16:20  Break

16:20 - 17:20  Main Conference Hall
Plenary Panel Discussion
New developments in nonlinear control systems
Speaker: Mingcong Deng  Tokyo Univ. of Agri. and Tech., Japan
Ikuro Mizumoto  Kumamoto Univ., Japan

19:00 - 21:00  Banquet
(Hotel New Otani Kumamoto, Kumamoto)

End of the 3rd Day
Technical Tour to Aso

End of the Conference