



# 2014 International Conference on Advanced Mechatronic Systems

August 10-12, 2014  
Kumamoto, Japan



## CONFERENCE PROGRAM

**Saturday, August 9, 2014**

|                      |   |
|----------------------|---|
| <b>15:30 – 17:30</b> | <b>Registration (Hotel New Otani Kumamoto, Kumamoto)</b>      |
| <b>18:00 - 20:00</b> | <b>Welcome Reception (Hotel New Otani Kumamoto, Kumamoto)</b> |

## Sunday, August 10, 2014

|   |   |   |  |                      |
|---|---|---|--|----------------------|
| <b>08:40 - 08:50</b>  |   | <b>Opening Remarks</b>  |  | Main Conference Hall |
| <b>08:50 - 09:50</b>  |   | <b>Plenary Speech 1 (PS01)</b>                                  |  | Main Conference Hall |
| <b>Title:</b> Cooperative control for multi-agent systems in microgrid distributed generation |   |   |  |                      |
| <b>Speaker:</b> Frank L. Lewis, <i>The University of Texas at Arlington, USA</i>              |   |   |  |                      |
| <b>09:50 - 10:00</b>  |   | <b>Break</b>  |  |                      |
| <b>10:00 - 11:40</b>  |   | <b>Parallel Paper Sessions</b>                                  |  |                      |
| Room No. 01<br>2301   | Room No. 02<br>2302   | Room No. 03<br>2303   | Room No. 04<br>2304                                      |                      |
| <b>SunA01</b>   | <b>SunA02</b>   | <b>SunA03</b>   | <b>SunA04</b>  |                      |
| Complex system control and applications   | Nonlinear control and its application on robotics I             | Recent advances in adaptive applications                        | Novel techniques for control                             |                      |
| <b>11:40 - 13:00</b>  |   | <b>Lunch Break</b>  |  |                      |
| <b>13:00 - 14:00</b>  |   | <b>Plenary Speech2 (PS02)</b>                                   |  | Main Conference Hall |
| <b>Title:</b> On design, modelling and control of rescue robots                               |   |   |  |                      |
| <b>Speaker:</b> Hongnian Yu, <i>Bournemouth University, UK</i>                                |   |   |  |                      |
| <b>14:00 - 14:10</b>  |   | <b>Break</b>  |  |                      |
| <b>14:10 - 15:50</b>  |   | <b>Parallel Paper Sessions</b>                                  |  |                      |
| Room No. 01<br>2301   | Room No. 02<br>2302   | Room No. 03<br>2303   | Room No. 04<br>2304                                      |                      |
| <b>SunM01</b>   | <b>SunM02</b>   | <b>SunM03</b>   | <b>SunM04</b>  |                      |
| ESP research and education at Japanese universities of science and engineering in Japan       | Modeling, control and applications of nonlinear dynamic systems | Adaptive and advanced control systems - theory and applications | Information processing                                   |                      |
| <b>15:50 - 16:00</b>  |   | <b>Break</b>  |  |                      |
| <b>16:00 - 17:20</b>  |   | <b>Parallel Paper Sessions</b>                                  |  |                      |
| Room No. 01<br>2301   | Room No. 02<br>2302   | Room No. 03<br>2303   | Room No. 04<br>2304                                      |                      |
| <b>SunP01</b>   | <b>SunP02</b>   | <b>SunP03</b>   | <b>SunP04</b>  |                      |
| Control of mechatronic systems I  | Advanced control systems design - theory and applications I     | Soft computing and its applications I                           | Development of robotics and system engineering education |                      |

## Monday, August 11, 2014

|  |  |   |   |                      |
|--|--|---|---|----------------------|
| <b>08:50 - 09:50      Plenary Speech 3 (PS03)</b>  |  |   |   | Main Conference Hall |
| <b>Title:</b> Structure of intelligence - implicit control and explicit control  |  |   |   |                      |
| <b>Speaker:</b> Koichi Osuka, <i>Osaka University, Japan</i>   |  |   |   |                      |
| <b>09:50 - 10:00      Break</b>  |  |   |   |                      |
| <b>10:00 - 11:40      Parallel Paper Sessions</b>  |  |   |   |                      |
| Room No. 01<br>2301  | Room No. 02<br>2302  | Room No. 03<br>2303                       | Room No. 04<br>2304                                     |                      |
| <b>MonA01</b>  | <b>MonA02</b>  | <b>MonA03</b>                             | <b>MonA04</b>   |                      |
| Fuzzy and neural<br>methodologies  | Robotics and<br>mechatronics                                       | Industrial control and<br>application     | Optimization methods and<br>application                 |                      |
| <b>11:40 - 13:00      Lunch Break</b>  |  |   |   |                      |
| <b>13:00 - 14:00      Plenary Speech4 (PS04)</b>   |  |   |   | Main Conference Hall |
| <b>Title:</b> Advanced control for smart material-based actuators and its applications                                       |  |   |   |                      |
| <b>Speaker:</b> Xinkai Chen, <i>Shibaura Institute of Technology, Japan</i>  |  |   |   |                      |
| <b>14:00 - 14:10      Break</b>  |  |   |   |                      |
| <b>14:10 - 15:30      Parallel Paper Sessions</b>  |  |   |   |                      |
| Room No. 01<br>2301  | Room No. 02<br>2302  | Room No. 03<br>2303                       | Room No. 04<br>2304                                     |                      |
| <b>MonM01</b>  | <b>MonM02</b>  | <b>MonM03</b>                             | <b>MonM04</b>   |                      |
| Control of mechatronic<br>systems II   | Advanced control systems<br>design - theory and<br>applications II | Soft computing and its<br>applications II | Nonlinear control and its<br>application on robotics II |                      |
| <b>15:30 - 16:10      Poster Session Room No. 05 (2202)</b>  |  |   |   |                      |
| <b>16:10 - 16:20      Break</b>  |  |   |   |                      |
| <b>16:20 - 17:20      Plenary Panel Discussion</b>   |  |   |   | Main Conference Hall |
| <b>Title:</b> New developments in nonlinear control systems  |  |   |   |                      |
| <b>Speakers:</b> Mingcong Deng, <i>Tokyo Univ. of Agri. and Tech., Japan</i><br>Ikuro Mizumoto, <i>Kumamoto Univ., Japan</i> |  |   |   |                      |
| <b>19:00 – 21:00      Banquet    (The New Otani Kumamoto, Kumamoto)</b>  |  |   |   |                      |

## Saturday, August 12, 2014

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| <b>09:30 – 15:00      Technical Tour to Aso</b> |  |
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# 2014 International Conference on Advanced Mechatronic Systems

August 10-12, 2014  
Kumamoto, Japan



## TECHNICAL PROGRAM

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ICAMechS 2014  
Saturday, August 9, 2014

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15:30 - 17:30

**Registration**

(Hotel New Otani Kumamoto, Kumamoto)

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18:00 - 20:00

**Welcome Reception**

(Hotel New Otani Kumamoto, Kumamoto)

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**End of the 1st Day**

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ICAMechS 2014  
Sunday, August 10, 2014

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08:40 - 08:50

Main Conference Hall

**Opening Remarks**

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08:50 - 09:50

Main Conference Hall

**Plenary Speech 1**

Cooperative control for multi-agent systems in  
microgrid distributed generation

**Frank L. Lewis**

*The Univ. of Texas at Arlington, USA*

Chair: Chun-Yi Su

*Concordia Univ., Canada*

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09:50 - 10:00

**Break**

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**Early Morning Technical Sessions**

**10:00-11:40, Sunday, August 10, 2014**

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**SunA01**

Session 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*

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10:00 - 10:20

SunA01-01

**Robust nonlinear tracking control design for IPMC using neural  
network based sliding mode approach**

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*

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| 10:20 - 10:40  | SunA01-02                                    |
| <b>Nonlinear water temperature control experiment for microreactor group actuated by Peltier devices</b> |  |
| Shotaro Kawahata   | <i>Tokyo Univ. of Agri. and Tech., Japan</i> |
| Mingcong Deng  | <i>Tokyo Univ. of Agri. and Tech., Japan</i> |
| Kazuki Takahashi   | <i>Tokyo Univ. of Agri. and Tech., Japan</i> |

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| 10:40 - 11:00  | SunA01-03                              |
| <b>Nonlinear tracking control design of a robot arm using robust right coprime factorization and sliding mode approaches</b> |  |
| Min Zheng  | <i>Zhongyuan Univ. of Tech., China</i> |
| Wudai Liao   | <i>Zhongyuan Univ. of Tech., China</i> |
| Changhai Yin   | <i>Zhongyuan Univ. of Tech., China</i> |
| Aihui Wang   | <i>Zhongyuan Univ. of Tech., China</i> |

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| 11:00 – 11:20  | SunA01-04                              |
| <b>Robust tracking control design to nonlinear plants with perturbation using operator-based observers</b> |  |
| Aihui Wang   | <i>Zhongyuan Univ. of Tech., China</i> |
| Yiwen Fu   | <i>Zhongyuan Univ. of Tech., China</i> |
| Liping Liu   | <i>Zhongyuan Univ. of Tech., China</i> |
| Junming Xiao   | <i>Zhongyuan Univ. of Tech., China</i> |

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| 11:20 – 11:40  | SunA01-05                              |
| <b>Optimization of PID control for DC motor based on artificial bee colony algorithm</b> |  |
| Wudai Liao   | <i>Zhongyuan Univ. of Tech., China</i> |
| Yingyue Hu   | <i>Zhongyuan Univ. of Tech., China</i> |
| Haiquan Wang   | <i>Zhongyuan Univ. of Tech., China</i> |

**SunA02** Session Room No.02  
2302

**Nonlinear control and its application on robotics I**  
Organized Session  
Organizer: Shuhui Bi *Shandong Acad. of Sci., China*  
Chair: Shuhui Bi *Shandong Acad. of Sci., China*  
Co-Chair: Hongbo Wang *Yanshan Univ., China*

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| 10:00 – 10:20   | SunA02-01  |
| <b>Relational polarity analysis for the anti-respiratory syncytial virus effect of baikal skullcap root</b> |  |
| Ke Li   | <i>Shandong Acad. of Sci., China</i>             |
| Enguang Hou   | <i>Shandong Acad. of Sci., China</i>             |
| Lei Wang  | <i>Shandong Acad. of Sci., China</i>             |
| Yong Li   | <i>Shandong Acad. of Sci., China</i>             |
| Yan Gao   | <i>Shandong Acad. of Chinese Medicine, China</i> |
| Bianli Wang   | <i>Shandong Acad. of Chinese Medicine, China</i> |
| Bonian Zhao   | <i>Shandong Acad. of Chinese Medicine, China</i> |

Zongyuan Yu *Shandong Acad. of Chinese Medicine, China*

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|---|---|
| 10:20 – 10: 40  | SunA02-02                                 |
| <b>Kinematics analysis for tube-type DEAs based parallel link mechanism</b> |   |
| Changan Jiang   | <i>RIKEN, Japan</i>                       |
| Kentaro Takagi  | <i>Nagoya Univ., Japan</i>                |
| Shinya Hirano   | <i>RIKEN, Japan</i>                       |
| Tatsuya Suzuki  | <i>Nagoya Univ., Japan</i>                |
| Shigeyuki Hosoe   | <i>RIKEN, Japan</i>                       |
| Kazunobu Hashimoto  | <i>Tokai Rubber Industries Ltd, Japan</i> |
| Akitoshi Nozawa   | <i>Tokai Rubber Industries Ltd, Japan</i> |

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| 10:40 – 11:00  | SunA02-03                            |
| <b>Operator-based robust nonlinear control for system with generalized PI hysteresis</b> |                                      |
| Shuhui Bi  | <i>Shandong Acad. of Sci., China</i> |
| Xuelin Wang  | <i>Shandong Acad. of Sci., China</i> |
| Jianghua Zheng   | <i>Shandong Acad. of Sci., China</i> |
| Lei Wang   | <i>Shandong Acad. of Sci., China</i> |

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| 11:00 – 11:20  | SunA02-04  |
| <b>Improvement of the walking robot dynamic stability using the DS<sub>m</sub>T and the neutrosophic logic</b> |  |
| Luige Vladareanu   | <i>Institute of Solid Mechanics of the Romanian Acad., Romania</i> |
| Alexandru Gal  | <i>Institute of Solid Mechanics of the Romanian Acad., Romania</i> |
| Hongnian Yu  | <i>Bournemouth Univ., UK</i>                                       |
| Mingcong Deng  | <i>Tokyo Univ. of Agri. and Tech., Japan</i>                       |

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| 11:20 – 11:40  | SunA02-05   |
| <b>Design and analysis of a multi-joint lower limbs rehabilitation robot</b> |   |
| Hongbo Wang  | <i>Yanshan Univ., China</i>   |
| Fuhai Deng   | <i>Yanshan Univ., China</i>   |
| Lingxue Ren  | <i>Yanshan Univ., China</i>   |
| Xiaohua Shi  | <i>Key Laboratory of Advanced Forging &amp; Stamping Tech. and Sci. of Ministry of Education, China</i> |
| Hao Zhang  | <i>Key Laboratory of Advanced Forging &amp; Stamping Tech. and Sci. of Ministry of Education, China</i> |
| Liyu Xie   | <i>Key Laboratory of Advanced Forging &amp; Stamping Tech. and Sci. of Ministry of Education, China</i> |

**SunA03** Session Room No.03  
2303

**Recent advances in adaptive applications**  
Organized Session  
Organizer: Takami Matsuo *Oita Univ., Japan*

Chair: Takami Matsuo *Oita Univ., Japan*  
Co-Chair: Kenji Sugimoto *Nara Institute of Sci. and Tech., Japan*

10:00 – 10:20 SunA03-01

**Feedforward control with on-line tuning: a perspective on two-degree-of-freedom structure**

Kenji Sugimoto *Nara Institute of Sci. and Tech., Japan*  
Fuyuki 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 *Saga Univ., Japan*  
Masanori Tanaka *Saga 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 Ohba *Oita Univ., Japan*  
Risa Matsuda *Oita Univ., Japan*  
Haruo Suemitsu *Oita Univ., Japan*  
Takami Matsuo *Oita Univ., Japan*

**SunA04** Session Room No.04  
2304

**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**

**velocity and position**

Zi-Jiang Yang *Ibaraki Univ., Japan*  
Pan Qin *Faculty of Electrical Info. Electrical Eng., China*

10:20 – 10:40 SunA04-02

**Constrained tracking control by continuous resets of the state of a gain-scheduled controller and its experimental verification**

Nobutaka Wada *Hiroshima Univ., Japan*  
Hidekazu Miyahara *Hiroshima Univ., Japan*  
Masami Saeki *Hiroshima Univ., Japan*

10:40 – 11:00 SunA04-03

**Chaotic vibration and control in nonlinear half-vehicle suspension under consecutive humps excitation**

Zhiyong Yang *Chongqing Univ., China*  
Shan Liang *Chongqing Univ., China*  
Yongsheng Sun *Chongqing Univ., China*  
Qin Zhu *Oyama National College of Tech., Japan*

11:00 – 11:20 SunA04-04

**A direct control parameter tuning method using generalized minimum variance evaluation**

Kazuma Ando *Tokyo Metropolitan Univ., Japan*  
Shiro Masuda *Tokyo Metropolitan Univ., Japan*

11:20 – 11:40 SunA04-05

**Photovoltaic generation power improvement using Fresnel condenser lens**

Amin Mohammadirad *Tokyo Univ. of Agri. and Tech., Japan*  
Ken Nagasaka *Tokyo Univ. of Agri. and Tech., Japan*

**11:40 - 13:00 Lunch Break**

**13:00 - 14:00** Main Conference Hall

**Plenary Speech 2**

On design, modelling and control of rescue robots

**Hongnian Yu**

*Bournemouth Univ., UK*

Chair: Yegui Xiao *Prefectural Univ. of Hiroshima, Japan*

**14:00 - 14:10 Break**

**Early Afternoon Technical Sessions**

**14:10-15:50, Sunday, August 10, 2014**

**SunM01** Session Room No.01

2301

**ESP research and education at Japanese**

## universities of science and engineering in Japan

Invited Session

Organizer: Jie Shi *Univ. of Electro-Communications, Japan*  
Yan Yu *Univ. of Electro-Communications, Japan*  
Chair: Jie Shi *Univ. of Electro-Communications, Japan*  
Co-Chair: Yan Yu *Univ. of Electro-Communications, Japan*

14:10 – 14:30 SunM01-01

### The assessment of the vocabulary size of Japanese university students of science and engineering in an ESP program

Shinichi Hashimoto *Univ. of Electro-Communications, Japan*  
Yan Yu *Univ. of Electro-Communications, Japan*  
Jie Shi *Univ. of Electro-Communications, Japan*

14:30 – 14:50 SunM01-02

### A critical analysis of the ESP textbooks for Japanese university students of science and engineering

Yan Yu *Univ. of Electro-Communications, Japan*  
Jie Shi *Univ. of Electro-Communications, Japan*

14:50 – 15:10 SunM01-03

### Genre-based framework to reach a more succinct and objective decision in peer review of a research article

Uma Maheswari Rajagopalan *Univ. of Electro-Communications, Japan*  
Jie Shi *Univ. of Electro-Communications, Japan*

15:10 – 15:30 SunM01-04

### A corpus-based analysis of the scientific RA genre and RA introduction

Sébastien Louvigné *The Univ. of Electro-Communications, Japan*  
Jie Shi *The Univ. of Electro-Communications, Japan*  
Sonia Sharmin *The Univ. of Electro-Communications, Japan*

15:30 – 15:50 SunM01-05

### An investigation into problems in the writing of conference abstracts by Japanese graduate students

Jie Shi *Univ. of Electro-Communications, Japan*  
John Cross *Univ. of Electro-Communications, Japan*

**SunM02** Session Room No.02  
2302

## Modeling, control and applications of nonlinear dynamic systems

Regular Session

Chair: Chun-Yi Su *Concordia Univ., Canada*  
Co-Chair: Tomohiro Henmi *National Institute of Tech. Kagawa College, Japan*

14:10 – 14:30 SunM02-01

### Online state estimation of flexible beams based on particle filtering and camera images

Torstein A. Myhre *NTNU, Norway*  
Aksel A. Transeth *SINTEF ICT Applied Cybernetics, Norway*  
Terje K. Lien *NTNU, Norway*  
Olav Egeland *NTNU, Norway*

14:30 – 14:50 SunM02-02

### A stochastic model for performance and energy consumption analysis of rejuvenation and migration-enabled cloud

Yunni Xia *Chongqing Univ., China*  
Yakai Han *Chongqing Univ., China*  
Mengchu Zhou *New Jersey Institute of Tech., USA*  
Jia Li *Chongqing Tech. and Business Institute, China*

14:50 – 15:10 SunM02-03

### Design of spatial adaptive fingered gripper using spherical five-bar mechanism

Tae-Uk Kim *Korea Institute of Sci. and Tech., Korea*  
Yonghwan Oh *Korea Institute of Sci. and Tech., Korea*

15:10 – 15:30 SunM02-04

### Finite element modeling of dynamic loading on osseointegration to different bone density

Cho-Pei Jiang *National Formosa Univ., Taiwan*  
Yung-Chang Cheng *National Kaohsiung First Univ. of Sci. and Tech., Taiwan*

15:30 – 15:50 SunM02-05

### Research on the theory and simulation of Piezo-hydraulic actuator

Zheng Li *Jilin Univ., Jilin Jian Zhu Univ., China*  
Zhigang Yang *Jilin Univ., China*  
Junwu Kan *Zhejiang Normal Univ., China*  
Shaofeng Peng *Jilin Univ., China*  
Sheng Li *Qingyang Chemical Industry Co., China*

**SunM03** Session Room No.03  
2303

## Adaptive and advanced control systems - theory and applications

Regular Session

Chair: Hansheng Wu *Prefectural Univ. of Hiroshima, Japan*  
Co-Chair: Masahiro Oya *Kyushu Institute of Tech., Japan*

14:10 – 14:30 SunM03-01

### Performance analysis for operational optimal control for complex industrial processes under small loop control errors

Aiping Wang *Anhui Univ., China*  
Ping Zhou *Northeastern Univ., China*

Hong Wang *Univ. of Manchester, UK*

14:30 – 14:50 SunM03-02

**Adaptive robust stabilization for a class of uncertain nonlinear systems with unknown virtual control coefficients**

Yuchao Wang *Prefectural Univ. of Hiroshima, Japan*

Hansheng Wu *Prefectural Univ. of Hiroshima, Japan*

14:50 – 15:10 SunM03-03

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

Takahiro Takamatsu *Keio Univ., Japan*

Koushirou Kubo *Keio Univ., Japan*

Hiromitsu Ohmori *Keio Univ., Japan*

15:10 – 15:30 SunM03-04

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

Qiang Wang *Shanghai Dianji Univ., China*

Guang Tong *Shanghai Dianji Univ., China*

Masahiro Oya *Kyushu 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*

**SunM04** Session Room No.04

2304

**Information processing**

Regular Session

Chair: Yegui Xiao *Prefectural Univ. of Hiroshima, Japan*

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*

Shinji Wakui *Tokyo Univ. of Agri. and Tech., Japan*

Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*

14:30 – 14:50 SunM04-02

**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*

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

14:50 -15:10 SunM04-03

**Finite-time multi-cell formation using optical traps**

Reza Haghighi *Nanyang Technological Univ., Singapore*

Chien Chern Cheah *Nanyang Technological Univ., Singapore*

Hwee Choo Liaw *National Univ. of Singapore, Singapore*

15:10 – 15:30 SunM04-04

**A nonlinear adaptive noise canceller for speech enhancement using Volterra filter**

Yegui Xiao *Prefectural Univ. of Hiroshima, Japan*

Ran Xiao *Prefectural Univ. of Hiroshima, Japan*

Boyan Huang *Harbin Institute of Tech., China*

Koji Hasegawa *Hiroshima Prefectural Tech. Research Institute, Japan*

15:30 – 15:50 SunM04-05

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

Nur Safwati Mohd Nor *Shibaura Institute of Tech., Japan*

Haeyeon Lee *Toyota Motor Co., Japan*

Makoto Mizukawa *Shibaura Institute of Tech., Japan*

**15:50 - 16:00 Break**

**Late Afternoon Technical Sessions**

**16:00-17:20, Sunday, August 10, 2014**

**SunP01** Session Room No.01

2301

**Control of mechatronic systems I**

Organized Session

Organizer: Masahiro Oya *Kyushu Institute of Tech., Japan*

Chair: Masahiro Oya *Kyushu Institute of Tech., Japan*

Co-Chair: Xinkai Chen *Shibaura Institute of Tech., Japan*

16:00 – 16:20 SunP01-01

**Control scheme to improve ride comfort for four-wheel vehicles**

Keisuke Inomata *Kyushu Institute of Tech., Japan*

Yasutaka Yosihara *Kyushu Institute of Tech., Japan*

Masahiro Oya *Kyushu Institute of Tech., Japan*

Katsuhiro Okumura *Fukuoka Industrial Tech. Center, Japan*

16:20 – 16:40 SunP01-02

**Experimental study on oscillation control of a contact scanning scanners system**

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

Katsuhiro Okumura *Fukuoka Industrial Tech. Center, Japan*

Keita Yamamoto *Kyushu Institute of Tech., Japan*

Masahiro Oya *Kyushu Institute of Tech., 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*  
Ipei 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*

**SunP02** Session Room No.02  
2302

**Advanced control systems design - theory and applications I**

Organized Session  
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*

Junpei Tsunematsu

*Kumamoto Univ., Japan*

**SunP03** Session Room No.03  
2303

**Soft computing and its applications I**

Organized Session  
Organizer: Yan Shi *Tokai Univ., Japan*  
Takashi Samatsu *Tokai Univ., Japan*  
Chair: Yan Shi *Tokai Univ., Japan*  
Co-Chair: Takashi Samatsu *Tokai Univ., Japan*

16:00 – 16:20 SunP03-01

**Identification of directional intention for a wheelchair robot using a distance fuzzy reasoning algorithm**

Yina Wang *Kochi Univ. of Tech., Japan*  
Shuoyu Wang *Kochi Univ. of Tech., Japan*

16:20 – 16:40 SunP03-02

**Analysis of Japanese national consumer price index using fuzzy autocorrelation model with fuzzy confidence intervals**

Yoshiyuki Yabuuchi *Shimonoseki City Univ., Japan*  
Takayuki Kawaura *Kansai Medical Univ., Japan*

16:40 – 17:00 SunP03-03

**Image segmentation algorithm for disease detection of wheat leaves**

Xiaojing Niu *Northwest A & F Univ., China*  
Shihui Guo *Bournemouth Univ., UK*  
Meili Wang *Northwest A & F Univ., China*  
Hongming Zhang *Northwest A & F Univ., China*  
Xianqiang Chen *Northwest A & F Univ., China*  
Dongjian He *Northwest A & F Univ., China*

17:00 – 17:20 SunP03-04

**Model free adaptive fuzzy supervisory control design for electric power system**

Zhichao Yang *Nanjing Institute of Tech., China*  
Chenglong Zhang *Nanjing Institute of Tech., China*  
Le Ge *Nanjing Institute of Tech., China*

**SunP04** Session Room No.04  
2304

**Development of robotics and system engineering education**

Invited Session  
Organizer: Masanori Takahashi *Tokai Univ., Japan*  
Yoshihiro Ohnishi *Ehime Univ., Japan*  
Chair: Masanori Takahashi *Tokai Univ., Japan*

Co-Chair: Yoshihiro Ohnishi

*Ehime Univ., Japan*

16:00 – 16:20

SunP04-01

**Development of an experimental robot for kindergarteners**

Hiroyuki Kawakami *Tokai Univ., Japan*

Masanori Takahashi *Tokai Univ., Japan*

Takashi Samatsu *Tokai Univ., Japan*

Kumi Nakamura *Tokai Univ. Fuzoku Kamome  
Kindergarten, Japan*

Mutsuko Takeuchi *Tokai Univ. Fuzoku Kamome  
Kindergarten, Japan*

16:20 – 16:40

SunP04-02

**Effects on engineering education of group learning**

Akira Inoue *Okayama Univ., Japan*

Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

16:40 – 17:00

SunP04-03

**Trial of the PBL education for elementary school children by a workshop to assemble mini-robots** Disassemble and reassemble a mini-robot

Tomohiro Henmi *Natinal Institute of Tech. Kgawa College, Japan*

Yoshihiro Ohnishi *Ehime Univ., Japan*

Yojiro Yamasaki *Natinal Institute of Tech. Kgawa College, Japan*

Hiroyuki Sogo *Natinal Institute of Tech. Kgawa College, Japan*

17:00 – 17:20

SunP04-04

**A practical report of programing experiment class for elementary school children**

Yoshihiro Ohnishi *Ehime Univ., Japan*

Shinnosuke Mori *Ehime Univ., Japan*

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**End of the 2nd Day**

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ICAMechS 2014  
Monday, August 11, 2014

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08:50 - 09:50 Main Conference Hall

**Plenary Speech 3**

Structure of intelligence - implicit control and explicit control

**Koichi Osuka**

*Osaka Univ., Japan*

Chair: Shiro Masuda *Tokyo Metropolitan Univ., Japan*

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09:50 - 10:00 Break

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**Early Morning Technical Sessions**

**10:00-11:40, Monday, August 11, 2014**

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**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*

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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 Shaficenejad *K. N. Toosi Univ. of Tech., Iran*

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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*

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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*

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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*

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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*

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**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*

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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*

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10:20 – 10:40 MonA02-02

**Steering control of piggyback type wheelchair using avoidance intension detected by weight shift**

Hiroataka Miyamoto *Kumamoto Univ., Japan*

Kazuki Nabekura *Kumamoto Univ., Japan*

Hiroshi Okajima *Kumamoto Univ., Japan*

Nobutomo Matsunaga *Kumamoto Univ., Japan*

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10:40 – 11:00 MonA02-03

**A design of bilateral servo system with self-tuning function**

Hirofumi Ohtsuka *Kumamoto National College of Tech., Japan*

Tomoaki Nakamura *Kumamoto National College of Tech., Japan*

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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 Ortmaier *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*

Co-Chair: Makoto Kumon

*Kumamoto Univ., Japan*

10:00 – 10:20 MonA04-01

**Optimal path planning method with attitude constraints for quadrotor helicopters**

Toru Hirata *Kumamoto Univ., Japan*  
Makoto Kumon *Kumamoto Univ., Japan*

10:20 – 10:40 MonA04-02

**Operator based MPPT scheme of power generation system using thermoelectric devices**

Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*  
Atsushi Ichikawa *Tokyo Univ. of Agri. and Tech., Japan*  
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

10:40 – 11:00 MonA04-03

**Optimal configuration of a Mega-Solar farm considering the landscape**

Amin Mohammadirad *Tokyo Univ. of Agri. and Tech., Japan*  
Ken Nagasaka *Tokyo Univ. of Agri. and Tech., Japan*

11:00 – 11:20 MonA04-04

**Global shortest path visualization approach with obstructions**

Guan-Qiang Dong *Henan Univ. of Sci. and Tech., China*  
Zong-Xiao Yang *Henan Univ. of Sci. and Tech., China*  
Lei Song *Henan Univ. of Sci. and Tech., China*  
Kun Ye *Henan Univ. of Sci. and Tech., China*

11:20 – 11:40 MonA04-05

**Scheduling on a superscalar processor using the chain technique**

Lin Meng *Ritsumeikan Univ., Japan*  
Nobihito Moriwaki *Ritsumeikan Univ., Japan*  
Shigeru Oyanagi *Ritsumeikan Univ., Japan*

**11:40 - 13:00**

**Lunch Break**

**13:00 - 14:00**

Main Conference Hall

**Plenary Speech 4**

Advanced control for smart material-based actuators and its applications

**Xinkai Chen**

*Shibaura Institute of Tech., Japan*

Chair: Zijiang Yang

*Ibaraki Univ., Japan*

**14:00 - 14:10**

**Break**

**Early Afternoon Technical Sessions**

**14:10-15:30, Monday, August 11, 2014**

MonM01

Session Room No.01  
2301

## Control of mechatronic systems II

### Organized Session

Organizer: Masahiro Oya *Kyushu Institute of Tech., Japan*  
Chair: Masahiro Oya *Kyushu Institute of Tech., Japan*  
Co-Chair: Kazuyuki Ito *Hosei Univ., Japan*

14:10 – 14:30 MonM01-01

#### A novel five-bar mechanism driven by a cam mechanism

Shinn-Liang Chang *National Formosa Univ., Taiwan*  
Duy-Hoang Nguyen *National Formosa Univ., Taiwan*  
You-Huang Syu *National Formosa Univ., Taiwan*  
Ya-Huei Wang *National Formosa Univ., Taiwan*  
Hong-Jia Huang *National Formosa Univ., Taiwan*

14:30 – 14:50 MonM01-02

#### Proposal for semiautonomous centipede-like robot for rubble-development of an actual scale robot and validation of its mobility-

Yasunori Ishigaki *Hosei Univ., Japan*  
Kazuyuki Ito *Hosei Univ., Japan*

14:50 – 15:10 MonM01-03

#### A robust controller with integral action for underwater vehicle-manipulator systems including thruster dynamics

Yuichiro Taira *Sojo Univ., Japan*  
Shinichi Sagara *Kyushu Institute of Tech., Japan*  
Masahiro Oya *Kyushu Institute of Tech., Japan*

15:10 – 15:30 MonM01-04

#### Particle filter-model predictive control of quadcopters

Kento Shimada *Kyushu Institute of Tech., Japan*  
Takeshi Nishida *Kyushu Institute of Tech., Japan*

MonM02

Session Room No.02  
2302

## Advanced control systems design - theory and applications II

### Organized Session

Organizer: Takao Sato *Univ. of Hyogo, Japan*  
Yoshihiro Ohnishi *Ehime Univ.*  
Chair: Keietsu Itamiya *National Defense Acad., Japan*  
Co-Chair: Masanori Takahashi *Tokai Univ., Japan*

14:10 – 14:30 MonM02-01

#### A model reference control system with superior intersample performance to conventional system

Yoshimi Shibuta *National Defense Acad., Japan*

Keietsu Itamiya  
Masataka Sawada

*National Defense Acad., Japan*  
*Japan Air Self-Defense Force, Japan*

14:30 – 14:50

MonM02-02

#### Lu operator-based the right coprime factorization for nonlinear systems

Fazhan Tao *Tokyo Univ. of Agri. and Tech., Japan*  
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

14:50 – 15:10

MonM02-03

#### Self-repairing control via nonlinear high-gain feedback

Masanori Takahashi *Tokai Univ., Japan*

15:10 – 15:30

MonM02-04

#### A design method of a performance-adaptive control system for a weigh feeder

Hiroshi Tajika *Univ. of Hyogo, Japan*  
Takao Sato *Univ. of Hyogo, Japan*  
Yoshihiro Ohnishi *Ehime Univ., Japan*  
Toru Yamamoto *Hiroshima Univ., Japan*  
Nozomu Araki *Univ. of Hyogo, Japan*  
Yasuo Konishi *Univ. of Hyogo, Japan*

MonM03

Session Room No.03  
2303

## Soft computing and its applications II

### Organized Session

Organizer: Yan Shi *Tokai Univ., Japan*  
Takashi Samatsu *Tokai Univ., Japan*  
Chair: Takashi Samatsu *Tokai Univ., Japan*  
Co-Chair: Yan Shi *Tokai Univ., Japan*

14:10 – 14:30

MonM03-01

#### Robust vision-based detection and grasping object for manipulator using SIFT keypoint detector

Widodo Budiharto *Bina Nusantara Univ., Indonesia*

14:30 – 14:50

MonM03-02

#### An effect roughness degree-based fuzzy decision-making method

Fachao Li *Hebei Univ. of Sci. and Tech., China*  
Jianning Yin *Hebei Univ. of Sci. and Tech., China*  
Chenxia Jin *Hebei Univ. of Sci. and Tech., China*  
Takashi Samatsu *Tokai Univ., Japan*

14:50 – 15:10

MonM03-03

#### High-speed min-max bilateral filter-based image dehazing by using GPGPU

Shota Furukawa *Yamaguchi Univ., Japan*  
Takahiro Fukuda *Yamaguchi Univ., Japan*

Takanori Koga *Tokuyama College, Japan*  
 Noriaki Suetake *Yamaguchi Univ., Japan*  
 Eiji Uchino *Yamaguchi Univ., Japan*

15:10 – 15:30 MonM03-04

**An improvement of opposition-based differential evolution with archive solutions**

Jun-ichi Kushida *Hiroshima City Univ., Japan*  
 Akira Hara *Hiroshima City Univ., Japan*  
 Tetsuyuki Takahama *Hiroshima City Univ., Japan*

**MonM04** Session Room No.04  
 2304

**Nonlinear control and its application on robotics II**

**Organized Session**

Organizer: Shuhui Bi *Shandong Acad. of Sci., Japan*  
 Chair: Hongnian Yu *Bournemouth Univ., UK*  
 Co-Chair: Ikuro Mizumoto *Kumamoto Univ., Japan*

14:10 – 14:30 MonM04-01

**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*

14:30 – 14:50 MonM04-02

**Deadbeat control with (almost) no sensing in a hybrid model of legged locomotion**

George Council *Univ. of Michigan, United States*  
 Shiyi Yang *Univ. of Michigan, United States*  
 Shai Revzen *Univ. of Michigan, United States*

14:50 – 15:10 MonM04-03

**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*

15:10 – 15:30 MonM04-04

**Intelligent extended control of the walking robot motion**

Victor Vladareanu *Politehnica Univ. of Bucharest, Romania*  
 Paul Schiopu *Politehnica Univ. of Bucharest, Romania*  
 Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*  
 Hongnian Yu *Bournemouth Univ., UK*

**Technical Poster Sessions**  
**15:30-16:10, Sunday, August 11, 2014**

**Poster** Session Room No.05

2202

Chair: Shan Liang *Chongqing Univ.*  
 Masanori Takahashi *Tokai Univ., Japan*  
 Co-Chair: Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*  
 Changan Jiang *RIKEN, Japan*

15:30 – 16:10 Poster-01

**Stability of asynchronous boolean networks**

Zhiqiang Li *Henan Univ. of Economics and Law, China*  
 Huimin Xiao *Henan Univ. of Economics and Law, China*

15:30 – 16:10 Poster-02

**Methology of introducing renewable energy sources into local power system in energy-deficient area**

Zulati Litifu *Xinjiang Univ. of Finance and Economics, China*  
 Ken Nagasaka *Tokyo Univ. of Agri. and Tech., Japan*

15:30 – 16:10 Poster-03

**Planning of wind power for a rural system under the constraint of stability indexes**

Zulati Litifu *Xinjiang Univ. of Finance and Economics, China*  
 Ken Nagasaka *Tokyo Univ. of Agri. and Tech., Japan*

15:30 – 16:10 Poster-04

**A combined 2D-3D vision system for automatic robot picking**

Xinjian Fan *Shandong Acad. of Sci., China*  
 Xuelin Wang *Shandong Acad. of Sci., China*  
 Yongfei Xiao *Shandong Acad. of Sci., China*

15:30 – 16:10 Poster-05

**Feedback synchronization of coupled reaction-diffusion system**

Hongyan Li *Acad. of Armored Force Eng., China*  
 Wanli Yang *Acad. of Armored Force Eng., China*  
 Yucui Dong *Acad. of Armored Force Eng., China*  
 Junzhi Luo *Acad. of Armored Force Eng., China*

15:30 – 16:10 Poster-06

**Adaptive tracking control for switched systems with uncertainties and time-delay**

Junzhi Luo *Acad. of Armored Force Eng., China*  
 Wanli Yang *Acad. of Armored Force Eng., China*  
 Hongyan Li *Acad. of Armored Force Eng., China*  
 Yanxia Liu *Acad. of Armored Force Eng., China*

15:30 – 16:10 Poster-07

**The study on consensus control of supply chain system based on multi-agent model**

Junzhi Luo *Acad. of Armored Force Eng., China*  
Wanli Yang *Acad. of Armored Force Eng., China*  
Guiling Ju *Acad. of Armored Force Eng., China*  
Xiangjuan Min *Acad. of Armored Force Eng., 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*  
Jiuju 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 *Northeastern Univ., China*

15:30 – 16:10 Poster-16

**Unified method for swing-up control of double inverted pendulum systems**

Tomohiro Henmi *Natinal Institute of Tech. Kgawa 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*

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**16:10 - 16:20 Break**

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**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*

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**19:00 - 21:00**

**Banquet**

**(Hotel New Otani Kumamoto, Kumamoto)**

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**End of the 3rd Day**

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ICAMechS 2014  
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**09:30 - 15:00**

**Technical Tour to Aso**

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**End of the Conference**

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