2012 International Conference on
Advanced Mechatronic Systems

September 18-21, 2012
Tokyo, Japan

CONFERENCE PROGRAM

Tuesday, September 18, 2012

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<th>Time</th>
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<tr>
<td>14:30 - 17:30</td>
<td>Registration</td>
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<tr>
<td>18:30 - 20:00</td>
<td>Welcome Reception (Union for Faculty of Engineering, Tokyo Univ. of Agriculture and Tech.)</td>
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**Wednesday, September 19, 2012**

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<tr>
<th>Time</th>
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<tr>
<td>08:40 - 08:50</td>
<td>Opening Remarks</td>
<td>Room No. 01</td>
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<tr>
<td>08:50 - 09:50</td>
<td>Plenary Speech 1 (PS01)</td>
<td>Room No. 01</td>
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<tr>
<td><strong>Title:</strong></td>
<td>The Cyborg Experiments</td>
<td>Room No. 01</td>
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<tr>
<td><strong>Speaker:</strong></td>
<td>Kevin Warwick, <em>University of Reading, England</em></td>
<td>Room No. 01</td>
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<tr>
<td>09:50 - 10:00</td>
<td><em>Break</em></td>
<td>Room No. 01</td>
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<tr>
<td>10:00 - 12:00</td>
<td>Parallel Paper Sessions</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
<td>Room No. 03</td>
<td>Room No. 04</td>
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<tr>
<td><strong>WedA01</strong></td>
<td>Robust control techniques</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
<td>Room No. 03</td>
<td>Room No. 04</td>
</tr>
<tr>
<td><strong>WedA02</strong></td>
<td>Power system I</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
<td>Room No. 03</td>
<td>Room No. 04</td>
</tr>
<tr>
<td><strong>WedA03</strong></td>
<td>Intelligent mechatronic systems</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<tr>
<td><strong>WedA04</strong></td>
<td>Recent advances in advanced control systems</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<td>Room No. 04</td>
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<tr>
<td>12:00 - 13:00</td>
<td><em>Break</em></td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<td>Room No. 04</td>
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<tr>
<td>13:00 - 14:00</td>
<td>Plenary Speech 2 (PS02)</td>
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<tr>
<td><strong>Title:</strong></td>
<td>Control Theory: A Key Technology for Innovation</td>
<td>Room No. 01</td>
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<tr>
<td><strong>Speaker:</strong></td>
<td>Masao Ikeda, <em>Osaka University, Japan</em></td>
<td>Room No. 01</td>
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<tr>
<td>14:00 - 14:10</td>
<td><em>Break</em></td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<tr>
<td>14:10 - 15:50</td>
<td>Parallel Paper Sessions</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<tr>
<td><strong>WedM01</strong></td>
<td>Mechatronics for renewable energy</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<tr>
<td><strong>WedM02</strong></td>
<td>Information safety</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<td>Room No. 04</td>
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<tr>
<td><strong>WedM03</strong></td>
<td>Robotics and mechatronics</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<td>Room No. 04</td>
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<tr>
<td><strong>WedM04</strong></td>
<td>Nonlinear control systems</td>
<td>Room No. 01</td>
<td>Room No. 02</td>
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<tr>
<td>15:50 - 16:00</td>
<td><em>Break</em></td>
<td>Room No. 01</td>
<td>Room No. 02</td>
<td>Room No. 03</td>
<td>Room No. 04</td>
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<tr>
<td>16:00 - 17:40</td>
<td>Parallel Paper Sessions</td>
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<td>Room No. 02</td>
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<tr>
<td><strong>WedP01</strong></td>
<td>Motion control</td>
<td>Room No. 01</td>
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<tr>
<td><strong>WedP02</strong></td>
<td>Measurement and sensors</td>
<td>Room No. 01</td>
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<tr>
<td><strong>WedP03</strong></td>
<td>Biomechatronics</td>
<td>Room No. 01</td>
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<tr>
<td><strong>WedP04</strong></td>
<td>Novel control techniques</td>
<td>Room No. 01</td>
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### Thursday, September 20, 2012

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<th>Time</th>
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<tr>
<td>08:50 - 09:50</td>
<td>Plenary Speech 3 (PS03)</td>
<td>Room No. 01</td>
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<tr>
<td>Title: Distributed Intelligent Systems: A Paradigm Shift</td>
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<tr>
<td>Speaker: William A. Gruver, Simon Fraser University, Canada</td>
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<tr>
<td>09:50 - 10:00</td>
<td>Break</td>
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<tr>
<td>10:00 - 12:00</td>
<td>Parallel Paper Sessions</td>
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<td>ThuA01</td>
<td>Power system II</td>
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<tr>
<td>ThuA02</td>
<td>Theories and methods of nonlinear analysis</td>
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<tr>
<td>ThuA03</td>
<td>Recent advances in advanced control systems II</td>
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<tr>
<td>ThuA04</td>
<td>Process modeling, optimization and system design</td>
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<td>12:00 - 13:00</td>
<td>Break</td>
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<td>13:00 - 15:00</td>
<td>Parallel Paper Sessions</td>
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<tr>
<td>ThuM01</td>
<td>Industrial system safety</td>
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<tr>
<td>ThuM02</td>
<td>Advanced intelligent control methods in robotics and mechatronics II</td>
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<tr>
<td>ThuM03</td>
<td>Advanced control systems design-theory and applications</td>
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<tr>
<td>ThuM04</td>
<td>Industrial application</td>
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<td>15:00 - 15:10</td>
<td>Break</td>
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<td>15:10 - 17:10</td>
<td>Parallel Paper Sessions</td>
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<tr>
<td>ThuP01</td>
<td>Vibration control</td>
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<td>ThuP02</td>
<td>Application of advanced system</td>
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<tr>
<td>ThuP03</td>
<td>Advanced intelligent control methods in robotics and mechatronics I</td>
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<tr>
<td>ThuP04</td>
<td>Process control</td>
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<tr>
<td>18:30 - 20:30</td>
<td>Banquet (Sunplaza Hotel, Tokyo)</td>
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**Friday, September 21, 2012**

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<td>09:30 - 11:00</td>
<td>Plenary Panel Discussion</td>
<td>01</td>
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<tr>
<td><strong>Title:</strong></td>
<td>New development on Agricultural Robotics and Automation</td>
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<tr>
<td><strong>Organizer:</strong></td>
<td>Mingcong Deng, <em>Tokyo University of Agriculture and Technology, Japan</em></td>
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<td>11:30 - 13:00</td>
<td>Closing Reception</td>
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TECHNICAL PROGRAM

ICAMechS 2012
Tuesday, September 18, 2012

14:30 - 17:30
Registration

18:30 - 20:00
Welcome Reception

End of the 1st Day

ICAMechS 2012
Wednesday, September 19, 2012

08:40 - 08:50
Room No. 01
Opening Remarks

08:50 - 09:50
Room No. 01
Plenary Speech 1
The Cyborg Experiments
Kevin Warwick
University of Reading, England
Chair: Hong Wang
The Univ. of Manchester, UK

09:50 - 10:00
Break

Morning Technical Sessions
10:00-12:00, Wednesday, September 19, 2012

WedA01
Robust control techniques
Lecture Session
Chair: Chun-Yi Su
Concordia Univ., Canada
Co-Chair: Changan Jiang
RIKEN-TRI Collaboration Center
for Human-Interactive Robot Research, Japan

10:00-10:20
WedA01-01
ELM-based parallel compensation control for perturbed plants
with hysteresis using robust right coprime factorization
Changan Jiang
RIKEN-TRI Collaboration Center for
Human-Interactive Robot Research, Japan
Mingcong Deng
Tokyo Univ. of Agriculture and Tech., Japan

10:20-10:40
WedA01-02
Method of robust nonlinear observer design
Alexey N. Zhirabok  Far Eastern Federal Univ., Russia
Alexey Ye. Shumsky  Far Eastern Federal Univ., Russia
Alexey Yu. Suvorov  Institute of Applied Mathematics, Russia

10:40-11:00  WedA01-03

Operator-based robust nonlinear control for an Ionic-Polymer
Metal Composite with hysteretic properties compensation
Tonomiho Hanawa  Tokyo Univ. of Agriculture and Tech., Japan
Aihui Wang  Tokyo Univ. of Agriculture and Tech., Japan
Mingcong Deng  Tokyo Univ. of Agriculture and Tech., Japan
Changan Jiang  IKEN-TRI Collaboration Center for Human-Interactive Robot Research, Japan

11:00-11:20  WedA01-04

Development of mechatronic system of pulsation flow for
mechanics evaluation of arterial vessel
Rahil Vali  Tokyo Univ. of Agriculture and Tech., Japan
Atsushi Sakuma  Tokyo Univ. of Agriculture and Tech., Japan
Keiichi Tanabe  Tokyo Univ. of Agriculture and Tech., Japan
Kenta Kawagoe  Tokyo Univ. of Agriculture and Tech., Japan
Takaya Shimpo  Tokyo Univ. of Agriculture and Tech., Japan
Kaoru Iwamoto  Tokyo Univ. of Agriculture and Tech., Japan
Takashi Saito  Yamaguchi Univ., Japan

11:20-11:40  WedA01-05

Control system design for nonlinear plants based on Generalized
H.S. Black formula using robust right coprime factorization
Kazuki Umemoto  Kyoto Univ., Japan
Fumitoshi Matsuno  Kyoto Univ., Japan
Mingcong Deng  Tokyo Univ. of Agriculture and Tech., Japan

11:40-12:00  WedA01-06

Design of quantized dynamic output feedback for decentralized
H∞ control systems
Guisheng Zhai  Shibaura Institute of Tech., Japan
Ning Chen  Central South Univ., China
Weihua Gui  Central South Univ., China

WedA02 Room No.02

Power system I  Special Session
Organizer: Ken Nagasaka  Tokyo Univ. of Agriculture and Tech., Japan
Chair: Ken Nagasaka  Tokyo Univ. of Agriculture and Tech., Japan
Co-Chair: Noel Estoperez  MSU-Iligan Institute of Tech., Philippines

10:00-10:20  WedA02-01

Prioritization decision for renewable energy development using
analytic hierarchy process and geographic information system
Meita Rumbayan  Tokyo Univ. of Agriculture and Tech., Japan
Ken Nagasaka  Tokyo Univ. of Agriculture and Tech., Japan

10:20-10:40  WedA02-02

A framework for supply-side management of CO2 emissions in a
power industry
H. Takamori  Waseda Univ. Environmental Research Center, Japan
E. Go  CSD Corporation, Japan
Ken Nagasaka  Tokyo Univ. of Agriculture and Tech., Japan

10:40-11:00  WedA02-03

A research on effectiveness of integrated renewable energy based
on regional IOM
Zulati Litifu  Xinjiang Institute of Finance and Economics Urumqi, China
Jie Li  Saitama Univ., Japan
Yutaka Tonooka  Saitama Univ., Japan

11:00-11:20  WedA02-04

A research on planning and installing scattered power into a local
power system
Zulati Litifu  Xinjiang Institute of Finance and Economics Urumqi, China
Ken Nagasaka  Tokyo Univ. of Agriculture and Tech., Japan

11:20-11:40  WedA02-05

Measuring business effectiveness of information technology
investment by using empirical artificial neural networks and expert
system
Mahmud Mavaahedi  Tokyo Univ. of Agriculture and Tech., Japan
Ken Nagasaka  Tokyo Univ. of Agriculture and Tech., Japan

11:40-12:00  WedA02-06

A new simulation phasor model of 18 MW offshore local area
grid of wind farm using doubly-fed induction generator driven by a
wind turbine
Xiaolei Wang  Zhongyuan Univ. of Tech., China
Feng Wu  Zhongyuan Univ. of Tech., China
Yuanjuan Wang  Zhongyuan Univ. of Tech., China

WedA03 Room No.03

Intelligent mechatronic systems  Special Session
Organizer: Valeri Kroumov  Okayama Univ. of Sci., Japan
Masahiro Tanaka  Konan Univ., Japan
Chair: Valeri Kroumov  Okayama Univ. of Sci., Japan
Co-Chair: Masahiro Tanaka  Konan Univ., Japan
Kazuyuki Ito  Hosei Univ., Japan

10:00-10:20  WedA03-01

Global localization of a mobile robot with a laser range scanner in
the outdoor environment
Masahiro Tanaka  Konan Univ., Japan
Keisuke Kochi  Konan Univ., Japan

10:20-10:40  WedA03-02

Development of slide type inspection robot using flexible pneumatic
cylinder
Development of flexible spherical actuator using flexible pneumatic cylinder
Changjiang Liu, Okayama Univ. of Sci., Japan
Shuiro Dohiga, Okayama Univ. of Sci., Japan
Tetsuya Akagi, Okayama Univ. of Sci., Japan
Ayaka Ando, Okayama Univ. of Sci., Japan
10:40-10:40 WedA03-03

An artificial finger robot motion control based on finger joint angle estimation from EMG signals for a robot prosthetic hand system
Nozomu Araki, Univ. of Hyogo, Japan
Yasuo Konishi, Univ. of Hyogo, Japan
10:40-10:40 WedA04-02

Iterative methods for the H2 and the mixed H2/H∞ control problems using a feasible direction
Yasushi Kami, Akashi National College of Tech., Japan
Eitaku Obuyama, Kyushu Institute of Tech., Japan
11:00-11:20 WedA04-03

Development of reclining wheelchair with transfer assistance functions
Yuki Iwano, Akashi National College of Tech., Japan
11:20-11:40 WedA04-04

Optimal filtering for linear continuous-time markovian jump systems with non-Gaussian noises by MPT approach
Gou Nakura, Japan
11:40-12:00 WedA04-05

An approach to noncausal hybrid estimation for linear discrete-time systems with non-Gaussian noises
Gou Nakura, Japan
11:40-12:00 WedA04-06
14:10-14:30 WedM01-01
Development of a power generation device for multi-mode vibration in automobiles
Seiji Hashimoto
Gunma Univ., Japan
Nobuyuki Nagai
Gunma Univ., Japan
Yoshimitsu Fujikura
Gunma Univ., Japan
Jyunpei Takahashi
Gunma Univ., Japan
Shunji Kumagai
Mitsuba Corporation, Japan
Makoto Kasai
Mitsuba Corporation, Japan
Kenji Suto
Mitsuba Corporation, Japan
Hiroaki Okada
Mitsuba Corporation, Japan

14:30-14:50 WedM02-01
Development of multi-axis vibration power generation device for automobiles
Yoshimitsu Fujikura
Gunma Univ., Japan
Jyunpei Takahashi
Gunma Univ., Japan
Shunji Kumagai
Mitsuba Corporation, Japan
Makoto Kasai
Mitsuba Corporation, Japan
Kenji Suto
Mitsuba Corporation, Japan
Hiroaki Okada
Mitsuba Corporation, Japan
Seiji Hashimoto
Gunma Univ., Japan
Nobuyuki Nagai
Gunma Univ., Japan

14:50-15:10 WedM01-02
Construction of multi-axis vibration control system for vibration reproduction in vehicles
Shunji Kumagai
Mitsuba Corporation, Japan
Makoto Kasai
Mitsuba Corporation, Japan
Kenji Suto
Mitsuba Corporation, Japan
Hiroaki Okada
Mitsuba Corporation, Japan
Seiji Hashimoto
Gunma Univ., Japan
Nobuyuki Nagai
Gunma Univ., Japan
Yoshimitsu Fujikura
Gunma Univ., Japan
Jyunpei Takahashi
Gunma Univ., Japan
Shunji Kumagai
Mitsuba Corporation, Japan
Makoto Kasai
Mitsuba Corporation, Japan
Kenji Suto
Mitsuba Corporation, Japan
Hiroaki Okada
Mitsuba Corporation, Japan

15:10-15:30 WedM01-03
Wireless power management of small scale distributed hydrogen harvesting system with full digital control
Wei Jiang
Yangzhou Univ., China
Fangyan Yu
Yangzhou Univ., China
Yike Wu
Yangzhou Univ., China
Wen He
Yangzhou Univ., China
Yuepin Mo
Yangzhou Univ., China

15:30-15:50 WedM01-04
A study on dynamic characteristics of a permanent magnet hybrid magnetic bearing for a small-sized hydrodynamic generator
Nobuyuki Kurita
Gunma Univ., Japan
Takeo Ishikawa
Gunma Univ., Japan

14:10-14:30 WedM02-01
Information safety
Organizer: Zongxiao Yang
Lei Song
Chair: Zongxiao Yang
Co-Chair: Lei Song

14:30-14:50 WedM02-02
Discussion about commercial painting’s market value
Xin Jiang
Henan Univ. of Sci. & Tech., China

14:50-15:10 WedM02-03
Opening platform-based design for a framework of medium and small-sized enterprise supply chain management
Qin Liu
Zhongyuan Univ. of Tech., China
Chunli Zhao
Zhongyuan Univ. of Tech., China
Changrui Han
Housing Fund Management Center for Departments Under Henan Province, China

15:10-15:30 WedM02-04
Development of a flexible customized compression garment design system
M.N. Saleh
Univ. Utara Malaysia, Malaysia
H.M. Lazim
Univ. Utara Malaysia, Malaysia
S.N. Orthman
Univ. Utara Malaysia, Malaysia
A.F. Merican
Univ. of Malaya, Malaysia

15:30-15:50 WedM02-05
The exploration of performance management method suit for renewable energy generation construction project
Yunna Wu
North China Electric Power Univ., China
Heyun Dong
North China Electric Power Univ., China

14:10-14:30 WedM03-01
Robotics and mechatronics
Chair: Toru Yamamoto
Co-Chair: Shuhui Bi

14:30-14:50 WedM03-02
Development of circular-rail double inverted pendulum control platform with robust control

14:50-15:10 WedM03-03
Opening platform-based design for a framework of medium and small-sized enterprise supply chain management
Qin Liu
Zhongyuan Univ. of Tech., China
Chunli Zhao
Zhongyuan Univ. of Tech., China
Changrui Han
Housing Fund Management Center for Departments Under Henan Province, China

15:10-15:30 WedM03-04
Development of a flexible customized compression garment design system
M.N. Saleh
Univ. Utara Malaysia, Malaysia
H.M. Lazim
Univ. Utara Malaysia, Malaysia
S.N. Orthman
Univ. Utara Malaysia, Malaysia
A.F. Merican
Univ. of Malaya, Malaysia

15:30-15:50 WedM03-05
The exploration of performance management method suit for renewable energy generation construction project
Yunna Wu
North China Electric Power Univ., China
Heyun Dong
North China Electric Power Univ., China
Haiquan Wang                Zhongyuan Univ. of Tech., China
Xingfeng Wang               Zhongyuan Univ. of Tech., China
Yuyu Yang                   Zhongyuan Univ. of Tech., China
Wudai Liao                   Zhongyuan Univ. of Tech., China

14:30-14:50                                      WedM03-02
On the operator and passivity based robust control for robot manipulator
Shuhui Bi                     Institute of Automation, Shandong Academy of Sci., China
Mingcong Deng                 Tokyo Univ. of Agriculture and Tech., Japan
Lei Wang                      Institute of Automation, Shandong Academy of Sci., China
Yongguo Zhao                  Institute of Automation, Shandong Academy of Sci., China

14:50-15:10                                      WedM03-03
One circle trajectory planning method for palletizing robot
Wenguang Li                    Institute of Automation, Shandong Academy of Sci., China
Guangliang Liu                Institute of Automation, Shandong Academy of Sci., China
Shuhui Bi                     Institute of Automation, Shandong Academy of Sci., China
Tie Chen                      Institute of Automation, Shandong Academy of Sci., China
Chengye Liu                   Institute of Automation, Shandong Academy of Sci., China

15:10-15:30                                      WedM03-04
Performance comparison of velocity estimators with MEMS-based inertial sensors
Yasuhiro Kawakami             Oita Univ., Japan
Tsuyoshi Nimiya               Oita Univ., Japan
Haruo Suemitsu               Oita Univ., Japan
Takami Matsuo                Oita Univ., Japan

15:30-15:50                                      WedM03-05
Improvement of an apple sorting machine using PSNR criterion
Hiwa Golpira               Univ. of Kurdistan, Iran
Hènmin Golpira               Univ. of Kurdistan, Iran

14:30-14:50                                      WedM04-02
Formation and obstacles avoidance of leader-follower networks with time-varying coupling delays
Jing Yao                        Tongji Univ., China
Xu Han                         The Hong Kong Univ. of Sci. and Tech., China
Weisheng Xu                   Tongji Univ., China
Hua O. Wang                    Boston Univ., USA

14:50-15:10                                      WedM04-03
The criteria of robust right coprime factorization of the nonlinear operator in the generalized sense
Wudai Liao                Zhongyuan Univ. of Tech., China
Min Zheng                Zhongyuan Univ. of Tech., China
Yuyu Yang                Zhongyuan Univ. of Tech., China
Xingfeng Wang             Zhongyuan Univ. of Tech., China

15:10-15:30                                      WedM04-04
Robust adaptive control of a class of nonlinear system with an asymmetric shifted Prandtl-Ishlinskii hysteresis model
Sining Liu               Concordia Univ., Canada
Zhi Li                     Concordia Univ., Canada
Chun-Yi Su                Concordia Univ., Canada

15:30-15:50                                      WedM04-05
Robust fault tolerant thermal control system design of an aluminum plate with peltier device
Mingcong Deng           Tokyo Univ. of Agriculture and Tech., Japan
Akira Yanou                  Okayama Univ., Japan
Yoshiteru Tokuda            Okayama Univ., Japan
Aihui Wang               Tokyo Univ. of Agriculture and Tech., Japan

15:50 - 16:00                  Break

16:00-17:40, Wednesday, September 19, 2012

WedP01                                      Room No.01
Motion control                          Special Session
Organizer: Yukinori Nakamura              Tokyo Univ. of Agriculture and Tech., Japan
Chair: Yukinori Nakamura                Tokyo Univ. of Agriculture and Tech., Japan
Co-Chair: Seiji Hashimoto              Gunma Univ., Japan

16:00-16:20                                      WedP01-01
Position control of a vacuum gate valve and its evaluation
Yusuke Imai                     Tokyo Univ. of Agriculture and Tech., Japan
Yukinori Nakamura              Tokyo Univ. of Agriculture and Tech., Japan
Shinji Wakui                Tokyo Univ. of Agriculture and Tech., Japan

16:20-16:40                                      WedP01-02
Verification of the damping effect of base plate jerk feedback scheme on the self-oscillation of a pneumatic positioning stage

Mohibullah Wali  
Tokyo Univ. of Agriculture and Tech., Japan

Yukinori Nakamura  
Tokyo Univ. of Agriculture and Tech., Japan

Shinji Waku  
Tokyo Univ. of Agriculture and Tech., Japan

17:20-17:40  WedP02-03

Implementation of a dual disturbance observer for pneumatic stage

Yoshiki Santo  
Tokyo Univ. of Agriculture and Tech., Japan

Yukinori Nakamura  
Tokyo Univ. of Agriculture and Tech., Japan

Shinji Waku  
Tokyo Univ. of Agriculture and Tech., Japan

17:00-17:20  WedP02-04

Flow disturbance rejection of pneumatic vibration isolators using compensation input

Yukinori Nakamura  
Tokyo Univ. of Agriculture and Tech., Japan

Ryo Fukuda  
Tokyo Univ. of Agriculture and Tech., Japan

Shinji Waku  
Tokyo Univ. of Agriculture and Tech., Japan

17:20-17:40  WedP02-05

Termination test of feedback error learning for automation of learning and positioning

Kazuki Morimoto  
Tokyo Univ. of Agriculture and Tech., Japan

Yukinori Nakamura  
Tokyo Univ. of Agriculture and Tech., Japan

Shinji Waku  
Tokyo Univ. of Agriculture and Tech., Japan

17:00-17:20  WedP02-06

Measurement and sensors  Lecture Session

Chair: Zi-Jiang Yang  
Ibaraki Univ., Japan

Co-Chair: Shuoyu Wang  
Kochi Univ. of Tech., Japan

16:00-16:20  WedP02-01

Proportional band considering starting time for temperature controller

Yusuke Hiraoka  
Kogakuin Univ., Japan

Hirotu Hamane  
Kogakuin Univ., Japan

Kazuyoshi Miyazaki  
TOHO electronics Inc., Japan

16:20-16:40  WedP02-02

The determination on DC capacitor parameter in active power filter

Fuzhuan Wu  
Zhongyuan Univ. of Tech., China

Sheng Peng  
Zhongyuan Univ. of Tech., China

Binbin Wang  
Zhongyuan Univ. of Tech., China

16:40-17:00  WedP02-03

Utilizing Azadi controller to stabilize the speed of a DC motor

Sassan Azadi  
Semnan Univ., Iran

Mosa Nouri  
Islamic Azad Univ., Iran

17:00-17:20  WedP02-04

Minimum time trajectory optimization of a tail-sitter aerial vehicle using nonlinear programming

Afshin Banazadeh  
Sharif Univ. of Tech., Iran

Nima Assadian  
Sharif Univ. of Tech., Iran

Fariborz Saghafi  
Sharif Univ. of Tech., Iran

Yongping Dan  
Zhongyuan Univ. of Tech., China

Qun Jiang  
Zhongyuan Univ. of Tech., China

Dongyun Wang  
Zhongyuan Univ. of Tech., China

17:20-17:40  WedP02-05

Biomechatronics  Lecture Session

Chair: Xinkai Chen  
Shibaura Institute of Tech., Japan

Co-Chair: Akira Inoue  
Okayama Univ., Japan

16:00-16:20  WedP03-01

Passive walking-assistance device operated by regenerating the potential energy of the upper body

Yasuyuki Yamada  
Keio Univ., Japan

Toshio Morita  
Keio Univ., Japan

16:20-16:40  WedP03-02

Aging effect on pedal errors of driving under different visual conditions

Masayuki Yoshitake  
Okayama Univ., Japan

Jiayia Yang  
Okayama Univ., Japan

Jinglong Wu  
Okayama Univ., Japan

16:40-17:00  WedP03-03

Measurement of motion quantity from human movement and detection of the sign language word

Miwa Takai  
Tokyo Institute of Tech., Japan

17:00-17:20  WedP03-04

SVR based estimation modeling and robust nonlinear control for a miniature pneumatic curling rubber actuator

Toshihiro Kawashima  
Tokyo Univ. of Agriculture and Tech., Japan

Aihui Wang  
Tokyo Univ. of Agriculture and Tech., Japan

Shuichii Wakinoto  
Okayama Univ., Japan

Mingcong Deng  
Tokyo Univ. of Agriculture and Tech., Japan

17:20-17:40  WedP03-05

Sequence splicing techniques and their applications for information encryption

Junling Sun  
Henan Finance and Taxation College, China

17:40-18:00  WedP03-06

Novel control techniques  Lecture Session

Chair: Hong Wang  
The Univ. of Manchester, UK

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

16:00-16:20  WedP04-01

Proportional band considering starting time for temperature controller

Yusuke Hiraoka  
Kogakuin Univ., Japan

Hirotu Hamane  
Kogakuin Univ., Japan

Kazuyoshi Miyazaki  
TOHO electronics Inc., Japan

16:20-16:40  WedP04-02

The determination on DC capacitor parameter in active power filter

Fuzhuan Wu  
Zhongyuan Univ. of Tech., China

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Zhongyuan Univ. of Tech., China

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16:40-17:00  WedP04-03

Utilizing Azadi controller to stabilize the speed of a DC motor

Sassan Azadi  
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17:00-17:20  WedP04-04

Minimum time trajectory optimization of a tail-sitter aerial vehicle using nonlinear programming

Afshin Banazadeh  
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Zhongyuan Univ. of Tech., China

Qun Jiang  
Zhongyuan Univ. of Tech., China

Dongyun Wang  
Zhongyuan Univ. of Tech., China

17:20-17:40  WedP04-05

Development and design of CO2 concentration measurement device based on MSP430

Yongping Dan  
Zhongyuan Univ. of Tech., China

Qun Jiang  
Zhongyuan Univ. of Tech., China

Dongyun Wang  
Zhongyuan Univ. of Tech., China

Shengjun Wen  
Tokyo Univ. of Agriculture and Tech., Japan

Huiqin Liu  
Zhongyuan Univ. of Tech., China

17:40-18:00  WedP04-06
16:00-16:20                    WedP04-01
Model-free controller tuning based on frequency response data
Zi-Jiang Yang                  Ibaraki Univ., Japan

16:20-16:40                    WedP04-02
An adaptive disturbance observer design on motion control systems
Akira Shimada                  Shibaura Institute of Tech., Japan
Danai Phoohurubhansa          Shibaura Institute of Tech., Japan

16:40-17:00                    WedP04-03
Swing-up and stabilizing control of an inverted pendulum by two step control method
Kotaro Mihara                  Oita Univ., Japan
Junichi Yokoyama               Oita Univ., Japan
Haruo Suemitsu                 Oita Univ., Japan
Takami Matsuo                  Oita Univ., Japan

17:00-17:20                    WedP04-04
Reachability and controllability of mix-valued control networks
Zhiqiang Li                    Henan Univ. of Economics and Law, China
Hui Mi Xiao                    Henan Univ. of Economics and Law, China
Jinli Song                     Henan Univ. of Economics and Law, China

17:20-17:40                    WedP04-05
Design of intelligent control system of eight-way wireless remote control crane based on RF technology
Pingjun Wei                    Zhongyuan Univ. of Tech., China
Xiaojing Li                    Zhongyuan Univ. of Tech., China
Zhoufeng Liu                   Zhongyuan Univ. of Tech., China
Jiangbo Zhu                    Zhongyuan Univ. of Tech., China

End of the 2nd Day
08:50 - 09:50  Room No. 01

Plenary Speech 3

Distributed Intelligent Systems: A Paradigm Shift

William A. Gruver

Simon Fraser University, Canada

Chair: Mengchu Zhou
New Jersey Institute of Tech., USA

09:50 - 10:00  Break

Morning Technical Sessions
10:00-12:00, Thursday, September 20, 2012

ThuA01  Room No.01

Power system II  Special Session

Organizer: Ken Nagasaka
Tokyo Univ. of Agriculture and Tech., Japan

Chair: Ken Nagasaka
Tokyo Univ. of Agriculture and Tech., Japan
Co-Chair: Hiroshi Takamori
LEC Tokyo Legal Mind Univ., Japan

10:00-10:20  ThuA01-01

Photovoltaic integration in a micro-wind turbine system

Marven E. Jabian
Mindanao State Univ.-Iligan Institute of Tech., Philippines

Noel R. Estoperez
Mindanao State Univ.-Iligan Institute of Tech., Philippines

10:20-10:40  ThuA01-02

Web enabled smart microgrid model with renewable energy resources in bangladesh power system

Md. Atikur Rahman Sarker
Tokyo Univ. of Agriculture and Tech., Japan

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

10:40-11:00  ThuA01-03

A research on operation planning of multi smart micro grid

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

K. Ando
Tokyo Univ. of Agriculture and Tech., Japan

YB. Xu
CSD Corporation, Japan

H.Takamori
Waseda Univ., Japan

J. Wang
CSD Corporation, Japan

A. Mitsuta
CSD Corporation, Japan

O. Saito
CSD Corporation, Japan

E. Go
CSD Corporation, Japan

11:00-11:20  ThuA01-04

Allocation of greenhouse gas emission allowance for Japanese electric utility industry under kyo protocol by grandfathering/benchmarking rule approach

Jeff Huang
Tokyo Univ. of Agriculture and Tech., Japan

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

11:20-11:40  ThuA01-05

Potential evaluation and long-run installation scheduling of offshore wind power of entire Japan

Asifiajiang Abudureyimu
Tokyo Univ. of Agriculture and Tech., Japan

Yoshiki Hayashi
Tokyo Univ. of Agriculture and Tech., Japan

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

11:40-12:00  ThuA01-06

Real-time VAR control using ANN with Web-based power monitoring

Carl John O. Salaan
Mindanao State Univ.-Iligan Institute of Tech., Philippines

Mark Joseph M. Victoria
Mindanao State Univ.-Iligan Institute of Tech., Philippines

Noel R. Estoperez
Mindanao State Univ.-Iligan Institute of Tech., Philippines

ThuA02  Room No.02

Theories and methods of nonlinear analysis  Special Session

Organizer: Wanli Yang
Academy of Armored Force Engineering, China

Chair: Wanli Yang
Academy of Armored Force Engineering, China

Co-Chair: Haiyun Zhou
Academy of Armored Force Engineering, China

10:00-10:20  ThuA02-01

Robust finite time functional observers in uncertain systems

Guosheng Wang
Academy of Armored Force Engineering, China

Wanli Yang
Academy of Armored Force Engineering, China

Qiang Lv
Academy of Armored Force Engineering, China

10:20-10:40  ThuA02-02

Rescue strategy of multimode transportation for equipment material supply problem

Tiening Wang
Academy of Armored Force Engineering, China

Liya Jin
Academy of Armored Force Engineering, China
### Recent advances in advanced control systems II

**Special Session**

Organizer: Tomohiro Henmi  
*Kagawa National College of Tech., Japan*

Taka Sato  
*Univ. of Hyogo, Japan*

Chair: Tomohiro Henmi  
*Kagawa National College of Tech., Japan*

Co-Chair: Taka Sato  
*Univ. of Hyogo, Japan*

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Affiliation</th>
<th>Location</th>
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<tr>
<td>10:00-10:20</td>
<td>Tomohiro Henmi</td>
<td>Kagawa National College of Tech., Japan</td>
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<td>10:20-10:40</td>
<td>Taka Sato</td>
<td>Univ. of Hyogo, Japan</td>
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<td>10:40-11:00</td>
<td>Nozomu Araki</td>
<td>Univ. of Hyogo, Japan</td>
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<td>11:00-11:20</td>
<td>Yasuo Konishi</td>
<td>Univ. of Hyogo, Japan</td>
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### Development of a trimmer-type mowing robot

Yuki Iwano  
*Akashi National College of Tech., Japan*

Atsunari Kobayashi  
*Akashi National College of Tech., Japan*

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<td>Yuki Iwano</td>
<td>Akashi National College of Tech., Japan</td>
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<td>10:40-11:00</td>
<td>Nozomu Araki</td>
<td>Univ. of Hyogo, Japan</td>
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### Tuning method for control parameters of adaptive nonlinear model predictive controller

Tomohiro Henmi  
*Kagawa National College of Tech., Japan*

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<td>11:00-11:20</td>
<td>Tomohiro Henmi</td>
<td>Kagawa National College of Tech., Japan</td>
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### Solving optimal power flow problems subject to distributed generator failures via particle swarm intelligence

Qi Kang  
*Tongji Univ., China*

MengChu Zhou  
*Tongji Univ., China*

Chi Xu  
*New Jersey Institute of Tech., USA*

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<td>11:20-11:40</td>
<td>Qi Kang</td>
<td>Tongji Univ., China</td>
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<td>11:40-12:00</td>
<td>MengChu Zhou</td>
<td>Tongji Univ., China</td>
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### Maximally permissive control of flexible manufacturing systems with fewest disjunctive constraints

Yufeng Chen  
*Xidian Univ., China*

MengChu Zhou  
*Tongji Univ., China*

Xiaou Li  
*New Jersey Institute of Tech., USA*

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<tr>
<td>11:40-12:00</td>
<td>Yufeng Chen</td>
<td>Xidian Univ., China</td>
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**ThuA04 Room No.04**

### Process modeling, optimization and system design

**Lecture Session**

Chair: Guisheng Zhai  
*Shibaura Institute of Tech., Japan*

Co-Chair: Shengjun Wen  
*Zhongyuan Univ. of Tech., China*
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<thead>
<tr>
<th>Time</th>
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<tr>
<td>10:00-10:20</td>
<td>ThuA04-01</td>
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<tr>
<td></td>
<td>Stochastic stability of genetic regulatory networks with multiple</td>
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<td>time-varying delays</td>
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<td>Yan Wang</td>
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<td>10:20-10:40</td>
<td>ThuA04-02</td>
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<td></td>
<td>The transformer’s electromagnetic optimized calculation based on</td>
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<td>genetic algorithm</td>
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<td>Hongwei Jiang</td>
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<td>Huiliang Zhou</td>
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<td>10:40-11:00</td>
<td>ThuA04-03</td>
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<td>Application of genetic algorithm on IC substrate drilling path</td>
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<td>optimization</td>
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<td>C. Y. Tsai</td>
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<td>C. H. Liu</td>
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<td>Y. C. Wang</td>
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<td>11:00-11:20</td>
<td>ThuA04-04</td>
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<td></td>
<td>Research on acoustic positioning system in the process of AUV</td>
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<td>recovery</td>
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<td>Shiguang Ma</td>
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<td>Guangliang Liu</td>
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<td>11:20-11:40</td>
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<td>Model output following control for an aluminum plate cooling</td>
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<td>process with a pellet device</td>
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<td>Shengjun Wen</td>
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<td>Yongping Dan</td>
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<td>Mingcong Deng</td>
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<td>11:40-12:00</td>
<td>ThuA04-06</td>
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<tr>
<td></td>
<td>MWGR: a new method for real-time detection of cord fabric defects</td>
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<td>Wuyi Zhang</td>
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<td>Jichao Zhang</td>
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<td>Yuanshao Hou</td>
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<td>Shiyong Geng</td>
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<td>12:00 - 13:00</td>
<td>Break</td>
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**Early Afternoon Technical Sessions**
13:00-15:00, Thursday, September 20, 2012

<table>
<thead>
<tr>
<th>Time</th>
<th>Room No.01</th>
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<tbody>
<tr>
<td>13:00-13:20</td>
<td>ThuM01-01</td>
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<tr>
<td></td>
<td>Industrial system safety</td>
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<td></td>
<td>Organizer: Zongxiao Yang</td>
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<td>Co-Chair: Lei Song</td>
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<td>13:20-13:40</td>
<td>ThuM01-02</td>
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<td></td>
<td>Numerical study of viscoelastic flow between eccentrically rotating</td>
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<td>Chunlei Ruan</td>
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<td>Wei Li</td>
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<td>14:00-14:20</td>
<td>ThuM01-04</td>
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<td></td>
<td>Research on decoupling control for electro-hydraulic load simulator</td>
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<td>Geqiang Li</td>
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<td>14:20-14:40</td>
<td>ThuM01-05</td>
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<td>Research and application on the frequency automatic tracking of</td>
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<td>ultrasonic power based on DSP</td>
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<td>14:40-15:00</td>
<td>ThuM01-06</td>
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<td>Applications of G'/G expansion method to traveling wave solutions</td>
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<td>for Klein-Gordon- Schrödinger equations</td>
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<td>Xinrui Wang</td>
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<td>15:00-15:20</td>
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<td></td>
<td>Computational fluid dynamic analysis for three-hastate vertical</td>
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<td>axis wind wheel</td>
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<td>Hanghang Yang</td>
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<td>Mengyang Li</td>
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<td>ThuM02</td>
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<tr>
<td>Organizer: Luige Vladareanu</td>
<td>Romanian Academy, Institute of Solid Mechanics, Romania</td>
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<tr>
<td>13:00-13:20 ThuM02-01</td>
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<tr>
<td>Synthesis of lifting mechanisms for hand pallets trucks</td>
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<tr>
<td>Iulian Tabiră</td>
<td>Univ. Politehnica, Romania</td>
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<td>Victor Moise</td>
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<td>Ileana Dugășescu</td>
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<td>13:20-13:40 ThuM02-02</td>
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<tr>
<td>The navigation mobile robot systems using bayesian approach through the virtual projection method</td>
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<tr>
<td>Luige Vladareanu</td>
<td>Romanian Academy, Institute of Solid Mechanics, Romania</td>
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<td>Gabriela Tont</td>
<td>Univ. of Oradea, Romanian</td>
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<td>Victor Vladareanu</td>
<td>“Politehnica” Univ. of Bucharest, Romanian</td>
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<td>Florentin Smarandache</td>
<td>The Univ. of New Mexico, UK</td>
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<td>Lucian Capitanu</td>
<td>Institute of Solid Mechanics of the Romanian Academy, Romanian</td>
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<td>13:40-14:00 ThuM02-03</td>
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<tr>
<td>The optimizing space trajectory by using the inverse kinematics, direct dynamics and intelligent damper controlling with proper neural network</td>
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<tr>
<td>Adrian Olaru</td>
<td>Politehnica Univ. of Bucharest, Romanian</td>
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<tr>
<td>14:00-14:20 ThuM02-04</td>
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<tr>
<td>Control of multi-legged robot using reinforcement learning with body image-realization of generalization capability by utilizing properties of the body</td>
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<tr>
<td>Kazuya Nishigai</td>
<td>Hosei Univ., Japan</td>
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<td>Hiroki Nakatsuka</td>
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<td>Kazuyuki Ito</td>
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<td>14:20-14:40 ThuM02-05</td>
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<tr>
<td>Nonlinear cooling control for a pelett actuated aluminum plate thermal system by considering radiation heat transfer</td>
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<td>Kazuki Takahashi</td>
<td>Tokyo Univ. of Agriculture and Tech., Japan</td>
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<td>Shengjun Wen</td>
<td>Tokyo Univ. of Agriculture and Tech., Japan</td>
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<tr>
<td>Masahiro Sanada</td>
<td>Tokyo Univ. of Agriculture and Tech., Japan</td>
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<tr>
<td>Mingcong Deng</td>
<td>Tokyo Univ. of Agriculture and Tech., Japan</td>
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<tr>
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<th>Room No.03</th>
<th>Advanced control systems design - theory and applications</th>
<th>Special Session</th>
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<tr>
<td>Organizer: Ikuro Mizumoto</td>
<td>Kumamoto Univ., Japan</td>
<td>Chair: Ikuro Mizumoto</td>
<td>Kumamoto Univ., Japan</td>
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<tr>
<td>Shiro Masuda</td>
<td>Tokyo Metropolitan Univ., Japan</td>
<td>Co-Chair: Shiro Masuda</td>
<td>Tokyo Metropolitan Univ., Japan</td>
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<tr>
<td>13:00-13:20 ThuM03-01</td>
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<tr>
<td>Adaptive design method of multirate PD controller</td>
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<tr>
<td>Takao Sato</td>
<td>Univ. of Hyogo, Japan</td>
<td>Nozomu Araki</td>
<td>Univ. of Hyogo, Japan</td>
</tr>
<tr>
<td>Hiroshi Shibata</td>
<td>Kyushu Institute of Tech., Japan</td>
<td>Yasuo Konishi</td>
<td>Univ. of Hyogo, Japan</td>
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<tr>
<td>13:20-13:40 ThuM03-02</td>
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<tr>
<td>Adaptive tracking control scheme for wheeled mobile robots without measurement of longitudinal velocity</td>
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<tr>
<td>Panfeng Shu</td>
<td>Kyushu Institute of Tech., Japan</td>
<td>Yoshihiko Sakamoto</td>
<td>Kumamoto Univ., Japan</td>
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<tr>
<td>Hiroshi Shibata</td>
<td>Kyushu Institute of Tech., Japan</td>
<td>Ikuro Mizumoto</td>
<td>Kumamoto Univ., Japan</td>
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<tr>
<td>13:40-14:00 ThuM03-03</td>
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<tr>
<td>Robust high gain adaptive control of mechanical systems with uncertain nonholonomic constraints</td>
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<tr>
<td>Ryuji Michino</td>
<td>Kumamoto Industrial Research Institute, Japan</td>
<td>Yoshiko Sakamoto</td>
<td>Kumamoto Univ., Japan</td>
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<tr>
<td>14:00-14:20 ThuM03-04</td>
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<tr>
<td>Self-repairing control using a nonlinear unstable filter</td>
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<tr>
<td>Masanori Takahashi</td>
<td>Tokai Univ. at Kumamoto, Japan</td>
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<tr>
<td>14:20-14:40 ThuM03-05</td>
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<tr>
<td>Design and application of a direct GMV-based PID controller</td>
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<tr>
<td>Shin Wakisani</td>
<td>Hiroshima Univ., Japan</td>
<td>Shintaro Hanata</td>
<td>Hiroshima Univ., Japan</td>
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<tr>
<td>Toru Yamamoto</td>
<td>Hiroshima Univ., Japan</td>
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<tr>
<td>14:40-15:00 ThuM03-06</td>
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<tr>
<td>A position control of 2 DOF flexible link robot arms based on computed torque method</td>
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<tr>
<td>Masataka Sawada</td>
<td>National Defense Academy, Japan</td>
<td>Keietsu Itamiya</td>
<td>National Defense Academy, Japan</td>
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<th>Lecture Session</th>
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<td>Chair: Akira Inoue</td>
<td>Oyama Univ., Japan</td>
<td>Co-Chair: Hansheng Wu</td>
<td>Prefectural Univ. of Hiroshima, Japan</td>
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<tr>
<td>13:00-13:20 ThuM04-01</td>
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<tr>
<td>Dynamic model identification and control of small turbojet engines using frequency response analysis</td>
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<tr>
<td>A. Banazadeh</td>
<td>Sharif Univ. of Tech., Iran</td>
<td>H. Abdollahi Gol</td>
<td>Sharif Univ. of Tech., Iran</td>
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<tr>
<td>Time</td>
<td>Session</td>
<td>Location</td>
<td>Speaker(s)</td>
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<tr>
<td>13:20 - 13:40</td>
<td>Linear multi-variable control technique for smart power management of wind turbines</td>
<td>ThuM04-02</td>
<td>H. Ramazani, Sharif Univ. of Tech., Iran, S. A. Emami, A. Banazadeh, Sharif Univ. of Tech., Iran</td>
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<tr>
<td>13:40 - 14:00</td>
<td>The micro-grid islanding detection based on the principle of impedance voltage divider</td>
<td>ThuM04-03</td>
<td>Shinya Okubo, Tokyo Univ. of Agriculture and Tech., Japan, Yukinori Nakamura, Tokyo Univ. of Agriculture and Tech., Japan, Shinji Wakui, Tokyo Univ. of Agriculture and Tech., Japan</td>
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<tr>
<td>14:00 - 14:20</td>
<td>The implementation of dynamic voltage restorer (DVR) based on DSP</td>
<td>ThuM04-04</td>
<td>Suping Pei, Zhongyuan Univ. of Tech., China, Fuzhuan Wu, Zhongyuan Univ. of Tech., China, Tingting Hou, Zhongyuan Univ. of Tech., China</td>
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<td>14:40 - 15:00</td>
<td>Medical drop speed monitoring system design based on an eccentric wheel</td>
<td>ThuM04-06</td>
<td>Huanlin He, Zhongyuan Univ. of Tech., China, Yuguo Chen, Zhongyuan Univ. of Tech., China</td>
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<td>15:00 - 15:10</td>
<td>Break</td>
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<td>15:10 - 17:10, Thursday, September 20, 2012</td>
<td>Late Afternoon Technical Sessions</td>
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<td>15:10 - 15:30</td>
<td>Vibration control Special Session</td>
<td>Room No.01</td>
<td>Organizer: Shinji Wakui, Tokyo Univ. of Agriculture and Tech., Japan, Chair: Shinji Wakui, Tokyo Univ. of Agriculture and Tech., Japan, Co-Chair: Hiroyuki Takanashi, Akita Prefectural Univ., Japan</td>
</tr>
<tr>
<td>15:30 - 15:50</td>
<td>Development and evaluation of a simulator for pneumatic anti-vibration apparatuses with six degrees-of-freedom using mode control</td>
<td>ThuP01-02</td>
<td>Yuka Kaneko, Tokyo Univ. of Agriculture and Tech., Japan, Yukinori Nakamura, Tokyo Univ. of Agriculture and Tech., Japan, Shinji Wakui, Tokyo Univ. of Agriculture and Tech., Japan, Byung Sub Kim, Tokyo Univ. of Agriculture and Tech., Japan, Chang Kyu Song, Korean Institute of Machinery and Materials, Korea</td>
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<tr>
<td>16:10 - 16:30</td>
<td>Root locus analysis of absolute displacement sensors and bandwidth expansion with hybrid detector system</td>
<td>ThuP01-04</td>
<td>Takashi Kai, Tokyo Univ. of Agriculture and Tech., Japan, Yukinori Nakamura, Tokyo Univ. of Agriculture and Tech., Japan, Shinji Wakui, Tokyo Univ. of Agriculture and Tech., Japan</td>
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<tr>
<td>16:30 - 16:50</td>
<td>Control of a pneumatic isolation table by flow meter: Improvement of repeatability in various switching points of the feedforward compensator</td>
<td>ThuP01-05</td>
<td>Habiburahman Shirani, Tokyo Univ. of Agriculture and Tech., Japan, Yukinori Nakamura, Tokyo Univ. of Agriculture and Tech., Japan, Shinji Wakui, Tokyo Univ. of Agriculture and Tech., Japan</td>
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<tr>
<td>16:50 - 17:10</td>
<td>A consideration of shape of sensor holder for portable braille reading sensor</td>
<td>ThuP01-06</td>
<td>Hiroyuki Takanashi, Akita Prefectural Univ., Japan, Ryosuke Mimura, Akita Prefectural Univ., Japan, Hiroshi Sugiyama, Akita Prefectural Univ., Japan, Tetsushi Mimuro, Akita Prefectural Univ., Japan</td>
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<tr>
<td>Application of advanced system</td>
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<td>Organizer: Tsu-Tian Lee</td>
<td>National Taipei Univ. of Tech., Taiwan</td>
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<td>Chair: Tsu-Tian Lee</td>
<td>National Taipei Univ. of Tech., Taiwan</td>
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<td>Co-Chair: Jinglong Wu</td>
<td>Okayama Univ., Japan</td>
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15:10-15:30 ThuP02-01

Online hybrid intelligent tracking control for uncertain nonlinear dynamical systems
Yihsing Chien National Taiwan Normal Univ., Taiwan
Weiyen Wang National Taiwan Normal Univ., Taiwan
Ihsun Li Lee-Ming Institute of Tech., Taiwan
Kuangyow Lian National Taiwan Normal Univ., Taiwan
Kuangyang Kou National Central Police Univ., Taiwan
Tsutian Lee Chung Yuan Christian Univ., Taiwan

15:30-15:50 ThuP02-02

Adaptive fuzzy sliding mode control of linear induction motors with unknown end effect consideration
Chini Huang Fu Jen Catholic Univ., Taiwan
Koucheng Hsu Fu Jen Catholic Univ., Taiwan
Hsinhan Chiang Fu Jen Catholic Univ., Taiwan
Kuangyang Kou National Central Police Univ., Taiwan
Tsutian Lee National Taipei Normal Univ., Taiwan

15:50-16:10 ThuP02-03

Mobile wavelet support vector machine tool systems with C#
Jintsong Jeng National Formosa Univ., Taiwan
Chenchia Chuang National I-Lan Univ., Taiwan
Pinglun Liao National Formosa Univ., Taiwan
Jenglang Wu National Taiwan Ocean Univ., Taiwan

16:10-16:30 ThuP02-04

Accompanist detection and following for wheelchair robots with fuzzy controller
Bingfei Wu National Chiao Tung Univ., Taiwan
Chengleng Jen National Chiao Tung Univ., Taiwan
Taiyu Tsou National Chiao Tung Univ., Taiwan
Wunfang Li National Chiao Tung Univ., Taiwan
Pinyi Tseng National Chiao Tung Univ., Taiwan

16:30-16:50 ThuP02-05

Adaptive TSK-type self-evolving neural control for unknown nonlinear systems
Yuhsiung Lin Chung Hua Univ., Taiwan
Chunfei Hsu Tamkang Univ., Taiwan

16:50-17:10 ThuP02-06

Reinforcement learning algorithm application and multi-body system design by using mapleSim and modelica
Onder Tutsoy The Univ. of Manchester, UK
Martin Brown The Univ. of Manchester, UK
Hong Wang The Univ. of Manchester, UK

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<td>Advanced intelligent control methods in robotics and mechatronics I</td>
<td>Special Session</td>
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<tr>
<td>Organizer: Luige Vladareanu</td>
<td>Romanian Academy, Institute of Solid Mechanics, Romania</td>
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<tr>
<td>Hongnian Yu</td>
<td>Staffordshire Univ., UK</td>
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<tr>
<td>Chair: Luige Vladareanu</td>
<td>Romanian Academy, Institute of Solid Mechanics, Romania</td>
</tr>
<tr>
<td>Co-Chair: Hongnian Yu</td>
<td>Staffordshire Univ., UK</td>
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15:10-15:30 ThuP03-01

Weighted multiple model adaptive LQG and PI control for a hydro turbine plant
Chalang Hamarasheed Univ. Kebangsaan Malaysia, Malaysia
Sallehuddin Mohamed Haris Univ. Kebangsaan Malaysia, Malaysia
Zulkiifi Mohd Nopiah Univ. Kebangsaan Malaysia, Malaysia

15:30-15:50 ThuP03-02

Complex software for command and control of the anthropomorphic gripper for robots
Ionel Steretu Transilvania Univ. of Brasov, Romania
Alexandru Itu Transilvania Univ. of Brasov, Romania

15:50-16:10 ThuP03-03

An upper limb rehabilitation robot based on 3-RRC parallel mechanism
Hongbo Wang Yanshan Univ., China
Ning Du Yanshan Univ., China
Huina Hou Yanshan Univ., China
Jiangshun Zhao Yanshan Univ., China
Hongnian Yu Yanshan Univ., China

16:10-16:30 ThuP03-04

Neutrosophic masses & indeterminate models. applications to information fusion
Florentin Smarandache The Univ. of New Mexico, USA

16:30-16:50 ThuP03-05

New approach to estimate friction caused by biped robot walking based on electrostatic induction
K. Kurita Kinki Univ., Japan

16:50-17:10 ThuP03-06

Adaptive control method for a walking support machine considering center-of-gravity shifts and load changes
Y. N. Wang Kochi Univ. of Tech., Japan
S. Y. Wang Kochi Univ. of Tech., Japan
R. P. Tan Kochi Univ. of Tech., Japan
Y. L. Jiang Kochi Univ. of Tech., Japan
K. Ishida Kochi Univ., Japan
M. G. Fujie Waseda Univ., Japan

ThuP04 | Room No.04
### Process control Special Session

**Chair:** Yonghong Tan  
Shanghai Normal Univ., China  
**Co-Chair:** Wudai Liao  
Zhongyuan Univ. of Tech., China

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<tr>
<th>Time</th>
<th>Session</th>
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Research on hydraulic power plant monitor and control system based on NC2000  
Junming Xiao  
Zhongyuan Univ. of Tech., China  
Yihua Yu  
Zhongyuan Univ. of Tech., China  
Liping Liu  
Zhongyuan Univ. of Tech., China  
Pengcheng Liu  
Zhongyuan Univ. of Tech., China  
Yinghu Du  
Zhongyuan Univ. of Tech., China  
Liangbao Jia  
Zhongyuan Univ. of Tech., China |
| 15:30-15:50   | ThuP04-02  
Control of multi-dimensional micro-positioning stages  
Yonghong Tan  
Shanghai Normal Univ., China  
Yangqiu Xie  
Xidian Univ., China  
Ruili Dong  
Shanghai Normal Univ., China  
Hong He  
Shanghai Normal Univ., China |
| 15:50-16:10   | ThuP04-03  
Reconfigurable fault-tolerant control of a vehicle with a steer-by-wire system  
Nobutaka Wada  
Hiroshima Univ., Japan  
Kosuke Fujii  
Hiroshima Univ., Japan  
Masami Sacki  
Hiroshima Univ., Japan |
| 16:10-16:30   | ThuP04-04  
Rapid vibration attenuation and height level compensation control for a pneumatic isolation table with quantized input  
Masakazu Koike  
Shinshu Univ., Japan  
Yuichi Chida  
Shinshu Univ., Japan |
| 16:30-16:50   | ThuP04-05  
Design and experiment of a generating system using Bi-Te based on thermoelectric conversion element  
Atsushi Ichikawa  
Tokyo Univ. of Agriculture and Tech., Japan  
Mingcong Deng  
Tokyo Univ. of Agriculture and Tech., Japan |
| 16:50-17:10   | ThuP04-06  
Modeling and operator based nonlinear tracking control using DCS device of a spiral heat exchange process  
Junya Okazaki  
Tokyo Univ. of Agriculture and Tech., Japan  
Shengjun Wen  
Tokyo Univ. of Agriculture and Tech., Japan  
Mingcong Deng  
Tokyo Univ. of Agriculture and Tech., Japan |
| 18:30-20:30   | Conference Banquet (XX Hotel) |

**End of the 3rd Day**
09:30 - 11:00

**Plenary Panel Discussion**
New development on Agricultural Robotics and Automation

**Organizer:** Mingcong Deng  
*Tokyo University of Agriculture and Technology, Japan*

11:30 - 13:00

**Closing Reception**

End of the Conference