



2012 International Conference on Advanced Mechatronic Systems

September 18-21, 2012

Tokyo, Japan



CONFERENCE PROGRAM

Tuesday, September 18, 2012

14:30 - 17:30	Registration
18:30 - 20:00	Welcome Reception (Union for Faculty of Engineering, Tokyo Univ. of Agriculture and Tech.)

Wednesday, September 19, 2012

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

Thursday, September 20, 2012

08:50 - 09:50 Plenary Speech 3 (PS03) Room No. 01			
Title: Distributed Intelligent Systems: A Paradigm Shift Speaker: William A. Gruver, <i>Simon Fraser University, Canada</i>			
09:50 - 10:00 <i>Break</i>			
10:00 - 12:00 Parallel Paper Sessions			
Room No. 01	Room No. 02	Room No. 03	Room No. 04
ThuA01 Power system II	ThuA02 Theories and methods of nonlinear analysis	ThuA03 Recent advances in advanced control systems II	ThuA04 Process modeling, optimization and system design
12:00 - 13:00 <i>Break</i>			
13:00 - 15:00 Parallel Paper Sessions			
Room No. 01	Room No. 02	Room No. 03	Room No. 04
ThuM01 Industrial system safety	ThuM02 Advanced intelligent control methods in robotics and mechatronics II	ThuM03 Advanced control systems design-theory and applications	ThuM04 Industrial application
15:00 - 15:10 <i>Break</i>			
15:10 - 17:10 Parallel Paper Sessions			
Room No. 01	Room No. 02	Room No. 03	Room No. 04
ThuP01 Vibration control	ThuP02 Application of advanced system	ThuP03 Advanced intelligent control methods in robotics and mechatronics I	ThuP04 Process control
18:30 - 20:30 Banquet (Sunplaza Hotel, Tokyo)			

Friday, September 21, 2012

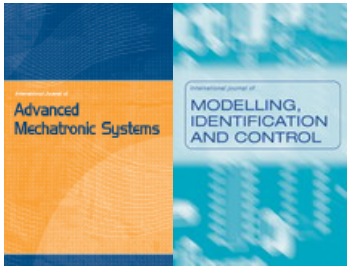
09:30 - 11:00 **Plenary Panel Discussion**

Room No. 01

Title: New development on Agricultural Robotics and Automation

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

11:30 - 13:00 **Closing Reception**



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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

Room No.01

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

Tomohito 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 Mavaahebi *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*
Yuanyuan 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

Lin Wang *Okayama Univ. of Sci., Japan*
Tetsuya Akagi *Okayama Univ. of Sci., Japan*
Shujiro Dohta *Okayama Univ. of Sci., Japan*
Takahiro Kawasaki *Okayama Univ. of Sci., Japan*

10:40-11:00 WedA03-03

Development of flexible spherical actuator using flexible pneumatic cylinder

Changjiang Liu *Okayama Univ. of Sci., Japan*
Shujiro Dohta *Okayama Univ. of Sci., Japan*
Tetsuya Akagi *Okayama Univ. of Sci., Japan*
Ayaka Ando *Okayama Univ. of Sci., Japan*

11:00-11:20 WedA03-04

3D quasi-passive walking of bipedal robot with flat feet quasi - passive walker driven by antagonistic pneumatic artificial muscle

Hiroyuki Watanabe *Okayama Univ. of Sci., Japan*
Shinsaku Fujimoto *Okayama Univ. of Sci., Japan*
Katsuya Kawamoto *Takeda Design and Manufacturing Co., Ltd, Japan*

11:20-11:40 WedA03-05

Development of hybrid FES walking assistive system - feasibility study

N. Kurokawa *Okayama Univ. of Sci., Japan*
N. Yamamoto *Kyushu Institute of Tech., Japan*
Y. Tagawa *Kyushu Institute of Tech., Japan*
T. Yamamoto *Okayama Univ. of Sci., Japan*
H. Kuno *Okayama Univ. of Sci., Japan*

11:40-12:00 WedA03-06

Development and control of a novel type diaphragm pump using a DSP

Valeri Kroumov *Okayama Univ. of Sci., Japan*
Yoshiro Kobayashi *Minoru Industrial Co. Ltd., Japan*

WedA04 Room No.04

Recent advances in advanced control systems I

Special Session

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

Takao Sato *Univ. of Hyogo, Japan*

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

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

10:00-10:20 WedA04-01

Two-degree-of-freedom multirate control system with integral compensation for improvement in steady-state intersample response

Shuhei Kimura *Univ. of Hyogo, Japan*
Takao Sato *Univ. of Hyogo, Japan*
Akira Yanou *Okayama Univ., Japan*

Shiro Masuda *Tokyo Metropolitan Univ., Japan*
Nozomu Araki *Univ. of Hyogo, Japan*
Yasuo Konishi *Univ. of Hyogo, Japan*

10:20-10:40 WedA04-02

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*
Kenji Inaya *Univ. of Hyogo, Japan*
Yasuo Konishi *Univ. of Hyogo, Japan*
Kunihiko Mabuchi *The Univ. of Tokyo, Japan*

10:40-11:00 WedA04-03

Iterative methods for the H_2 and the mixed H_2/H_∞ control problems using a feasible direction

Yasushi Kami *Akashi National College of Tech. Japan*
Eitaku Nobuyama *Kyushu Institute of Tech., Japan*

11:00-11:20 WedA04-04

Development of reclining wheelchair with transfer assistance functions

Yuki Iwano *Akashi National College of Tech. Japan*

11:20-11:40 WedA04-05

Optimal filtering for linear continuous-time markovian jump systems with non-Gaussian noises by MPT approach

Gou Nakura *Japan*

11:40-12:00 WedA04-06

An approach to noncausal hybrid estimation for linear discrete-time systems with non-Gaussian noises

Gou Nakura *Japan*

12:00 - 13:00 Break

13:00 - 14:00 Room No. 01

Plenary Speech 2

Control Theory: A Key Technology for Innovation

Masao Ikeda

Osaka University, Japan

Chair: Hongnian Yu

Staffordshire Univ., UK

14:00 - 14:10 Break

Early Afternoon Technical Sessions

14:10-15:50, Wednesday, September 19, 2012

WedM01 Room No.01

Mechatronics for renewable energy

Special Session

Organizer: Seiji Hashimoto

Gunma Univ., Japan

Chair: Seiji Hashimoto

Gunma Univ., Japan

Co-Chair: Wei Jiang

Yangzhou Univ., China

14:10-14:30 WedM01-01

Development of a power generation device for multi-mode vibration in automobiles

Seiji Hashimoto	<i>Gunma Univ., Japan</i>
Nobuyuki Nagai	<i>Gunma Univ., Japan</i>
Yoshimitsu Fujikura	<i>Gunma Univ., Japan</i>
Jyunpei Takahashi	<i>Gunma Univ., Japan</i>
Shunji Kumagai	<i>Mitsuba Corporation, Japan</i>
Makoto Kasai	<i>Mitsuba Corporation, Japan</i>
Kenji Suto	<i>Mitsuba Corporation, Japan</i>
Hiroaki Okada	<i>Mitsuba Corporation, Japan</i>

14:30-14:50 WedM01-02

Development of multi-axis vibration power generation device for automobiles

Shunji Kumagai	<i>Mitsuba Corporation, Japan</i>
Makoto Kasai	<i>Mitsuba Corporation, Japan</i>
Kenji Suto	<i>Mitsuba Corporation, Japan</i>
Hiroaki Okada	<i>Mitsuba Corporation, Japan</i>
Seiji Hashimoto	<i>Gunma Univ., Japan</i>
Nobuyuki Nagai	<i>Gunma Univ., Japan</i>
Yoshimitsu Fujikura	<i>Gunma Univ., Japan</i>
Jyunpei Takahashi	<i>Gunma Univ., Japan</i>

14:50-15:10 WedM01-03

Construction of multi-axis vibration control system for vibration reproduction in vehicles

Nobuyuki Nagai	<i>Gunma Univ., Japan</i>
Seiji Hashimoto	<i>Gunma Univ., Japan</i>
Yusuke Hiroki	<i>Gunma Univ., Japan</i>
Yoshimitsu Fujikura	<i>Gunma Univ., Japan</i>
Jyunpei Takahashi	<i>Gunma Univ., Japan</i>
Shunji Kumagai	<i>Mitsuba Corporation, Japan</i>
Makoto Kasai	<i>Mitsuba Corporation, Japan</i>
Kenji Suto	<i>Mitsuba Corporation, Japan</i>
Hiroaki Okada	<i>Mitsuba Corporation, Japan</i>

15:10-15:30 WedM01-04

Wireless power management of small scale distributed hydrogen harvesting system with full digital control

Wei Jiang	<i>Yangzhou Univ., China</i>
Fangyan Yu	<i>Yangzhou Univ., China</i>
Yike Wu	<i>Yangzhou Univ., China</i>
Wen He	<i>Yangzhou Univ., China</i>
Yuepin Mo	<i>Yangzhou Univ., China</i>

15:30-15:50 WedM01-05

A study on dynamic characteristics of a permanent magnet hybrid magnetic bearing for a small-sized hydrodynamic generator

Nobuyuki Kurita	<i>Gunma Univ., Japan</i>
Takeo Ishikawa	<i>Gunma Univ., Japan</i>

Keisuke Ooshio

Gunma Univ., Japan

WedM02

Room No.02

Information safety

Special Session

Organizer: Zongxiao Yang	<i>Henan Univ. of Sci. & Tech., China</i>
Lei Song	<i>Henan Univ. of Sci. & Tech., China</i>
Chair: Zongxiao Yang	<i>Henan Univ. of Sci. & Tech., China</i>
Co-Chair: Lei Song	<i>Henan Univ. of Sci. & Tech., China</i>

14:10-14:30 WedM02-01

Study on digital image watermark algorithm based on chaos mapping and DWT

Zhifeng Gu	<i>Henan Univ. of Sci. & Tech., China</i>
Guanfeng Li	<i>Henan Univ. of Sci. & Tech., China</i>
Zongxiao Yang	<i>Henan Univ. of Sci. & Tech., China</i>

14:30-14:50 WedM02-02

Discussion about commercial painting's market value

Xin Jiang	<i>Henan Univ. of Sci. & Tech., China</i>
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14:50-15:10 WedM02-03

Opening platform-based design for a framework of medium and small-sized enterprise supply chain management

Qin Liu	<i>Zhongyuan Univ. of Tech., China</i>
Chunli Zhao	<i>Zhongyuan Univ. of Tech., China</i>
Changrui Han	<i>Housing Fund Management Center for Departments Under Henan Province, China</i>

15:10-15:30 WedM02-04

Development of a flexible customized compression garment design system

M.N. Salleh	<i>Univ. Utara Malaysia, Malaysia</i>
H.M. Lazim	<i>Univ. Utara Malaysia, Malaysia</i>
S.N. Othman	<i>Univ. Utara Malaysia, Malaysia</i>
A.F. Merican	<i>Univ. of Malaya, Malaysia</i>

15:30-15:50 WedM02-05

The exploration of performance management method suit for renewable energy generation construction project

Yunna Wu	<i>North China Electric Power Univ., China</i>
Heyun Dong	<i>North China Electric Power Univ., China</i>

WedM03

Room No.03

Robotics and mechatronics

Lecture Session

Chair: Toru Yamamoto	<i>Hiroshima Univ., Japan</i>
Co-Chair: Shuhui Bi	<i>Institute of Automation, Shandong Academy of Sci., China</i>

14:10-14:30 WedM03-01

Development of circular-rail double inverted pendulum control platform with robust control

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 Golpîra *Univ. of Kurdistan, Iran*
 Hêmin Golpîra *Univ. of Kurdistan, Iran*

**WedM04 Room No.04
 Nonlinear control systems Lecture Session**

Chair: Mengchu Zhou *New Jersey Institute of Tech., USA*
 Co-Chair: Hongbo Wang *Yanshan Univ., China*

14:10-14:30 WedM04-01

Adaptive control for uncertain systems in the presence of actuator and sensor hysteresis represented by Prandtl-Ishlinskii model

Ryo Oshima *Shibaura Institute of Tech., Japan*
 Xinkai Chen *Shibaura Institute of Tech., Japan*

14:30-14:50 WedM04-02

Formation and obstacles avoidance of leader-follower networks with time-varying coupling delays

Jing Yao *Tongji Univ., China*
The Hong Kong Univ. of Sci. and Tech., China
 Xu Han *Tongji Univ., 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

**Late Afternoon Technical Sessions
 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

Mohebullah Wali *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*

16:40-17:00 WedP01-03

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 Wakui *Tokyo Univ. of Agriculture and Tech., Japan*

17:00-17:20 WedP01-04

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 Wakui *Tokyo Univ. of Agriculture and Tech., Japan*

17:20-17:40 WedP01-05

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 Wakui *Tokyo Univ. of Agriculture and Tech., Japan*

**WedP02 Room No.02
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 Hirama *Kogakuin Univ., Japan*
Hirotō 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*

17:20-17:40 WedP02-05

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*

**WedP03 Room No.03
Biomechanics 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*
Jiajia 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*
Shuichi Wakimoto *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*

**WedP04 Room No.04
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

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 Phaoharuhansa *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*

Huimi 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

ICAMechS 2012
Thursday, September 20, 2012

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 kyoto 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

Asifujiang 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*

Haiyun Zhou *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*

	<i>Engineering, China</i>
Ronghui Wang	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
10:40-11:00	ThuA02-03
Oscillation criteria of solutions for a class of impulsive delay parabolic equations about boundary value problems	
Wanli Yang	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Junhong Liu	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Suwen Zheng	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
11:00-11:20	ThuA02-04
Variable smoothing parameter of the double exponential smoothing forecasting model and its application	
Feiyang Chen	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Qian Li	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Junhong Liu	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Jiuyong Zhang	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
11:20-11:40	ThuA02-05
Evaluation on fighting efficiency of self-propelled artillery based on projection pursuit method	
Jiaying Du	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Yucui Dong	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Ping Chen	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Ling Zhang	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
11:40-12:00	ThuA02-06
The monitor of abrasion and monitor to armored carrier's Gearbox based on the model of projection pursuit	
Shixin Zhang	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Yile Liu	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Yucui Dong	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>
Gehua Fan	<i>Academy of Armored Force</i>
	<i>Engineering, China</i>

ThuA03

Room No.03

Recent advances in advanced control systems II

Special Session

Organizer: Tomohiro Henmi *Kagawa National College of Tech., Japan*
 Takao Sato *Univ. of Hyogo, Japan*
 Chair: Tomohiro Henmi *Kagawa National College of Tech., Japan*
 Co-Chair: Takao Sato *Univ. of Hyogo, Japan*

10:00-10:20 ThuA03-01

Development of a trimmer-type mowing robot

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

10:20-10:40 ThuA03-02

Application of adaptive control using GPGPU to Hammerstein model

Daiki Kurahashi *Univ. of Hyogo, Japan*
 Takao Sato *Univ. of Hyogo, Japan*
 Nozomu Araki *Univ. of Hyogo, Japan*
 Yasuo Konishi *Univ. of Hyogo, Japan*

10:40-11:00 ThuA03-03

Anti-windup compensator for nonlinear model predictive control

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

11:00-11:20 ThuA03-04

Tuning method for control parameters of adaptive nonlinear model predictive controller

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

11:20-11:40 ThuA03-05

Solving optimal power flow problems subject to distributed generator failures via particle swarm intelligence

Qi Kang *Tongji Univ., China*
 MengChu Zhou *Tongji Univ., China*
New Jersey Institute of Tech., USA
 Chi Xu *New Jersey Institute of Tech., USA*

11:40-12:00 ThuA03-06

Maximally permissive control of flexible manufacturing systems with fewest disjunctive constraints

Yufeng Chen *Xidian Univ., China*
 MengChu Zhou *Tongji Univ., China*
New Jersey Institute of Tech., USA
 Xiaou Li *Departamento de Computacion, Mexico*

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*

10:00-10:20 ThuA04-01

Stochastic stability of genetic regulatory networks with multiple time-varying delays

Yan Wang *Beihang Univ., China*
Hong Wang *The Univ. of Manchester, UK*
Linkun Wang *Instrumentation Tech. & Economy Institute
Beijing, China*

10:20-10:40 ThuA04-02

The transformer's electromagnetic optimized calculation based on genetic algorithm

Hongwei Jiang *Zhongyuan Univ. of Tech., China*
Huiliang Zhou *Central-South China Transmission & Distribution
Equipment Co.Ltd, China*

10:40-11:00 ThuA04-03

Application of genetic algorithm on IC substrate drilling path optimization

C. Y. Tsai *Yuan-Ze Univ., Taiwan*
C. H. Liu *Yuan-Ze Univ., Taiwan*
Y. C. Wang *Yuan-Ze Univ., Taiwan*

11:00-11:20 ThuA04-04

Research on acoustic positioning system in the process of AUV recovery

Shiguo Ma *Institute of Automation, Shandong
Academy of Sci., China*
Guangliang Liu *Institute of Automation, Shandong
Academy of Sci., China*
Dong Yang *Institute of Automation, Shandong
Academy of Sci., China*
Yali Wang *Institute of Automation, Shandong
Academy of Sci., China*

11:20-11:40 ThuA04-05

Model output following control for an aluminum plate cooling process with a peltier device

Shengjun Wen *Zhongyuan Univ. of Tech., China*
Guotao Zhang *Zhongyuan Univ. of Tech., China*
Yongping Dan *Zhongyuan Univ. of Tech., China*
Dongyun Wang *Zhongyuan Univ. of Tech., China*
Mingcong Deng *Tokyo Univ. of Agriculture and Tech., Japan*

11:40-12:00 ThuA04-06

MWGR: a new method for real-time detection of cord fabric defects

Wuyi Zhang *Zhongyuan Univ. of Tech., China*
Jichao Zhang *Zhongyuan Univ. of Tech., China*
Yuanshao Hou *Zhongyuan Univ. of Tech., China*
Shiyong Geng *Zhongyuan Univ. of Tech., China*

12:00 - 13:00 Break

**Early Afternoon Technical Sessions
13:00-15:00, Thursday, September 20, 2012**

**ThuM01 Room No.01
Industrial system safety Special Session**

Organizer: Zongxiao Yang *Henan Univ. of Sci. & Tech., China*
Lei Song *Henan Univ. of Sci. & Tech., China*
Chair: Zongxiao Yang *Henan Univ. of Sci. & Tech., China*
Co-Chair: Lei Song *Henan Univ. of Sci. & Tech., China*

13:00-13:20 ThuM01-01

Semi-classical limits of the riesz means of N-body schrodinger operators

Xiaoyao Jia *Henan Univ. of Sci. and Tech., China*
Feiyan Guo *Jiyuan Vocational and Technical College, China*

13:20-13:40 ThuM01-02

Numerical study of viscoelastic flow between eccentrically rotating cylinders

Chunlei Ruan *Henan Univ. of Sci. & Tech., China*
Wei Li *Henan Univ. of Sci. & Tech., China*

13:40-14:00 ThuM01-03

Research on decoupling control for electro-hydraulic load simulator

Geqiang Li *Henan Univ. of Sci. & Tech., China*
Hongyan Yang *Henan Univ. of Sci. & Tech., China*
Shuicong Li *Henan Univ. of Sci. & Tech., China*
Yun Zhao *Henan Univ. of Sci. & Tech., China*

14:00-14:20 ThuM01-04

Research and application on the frequency automatic tracking of ultrasonic power based on DSP

Guanqiang Dong *Henan Univ. of Sci. & Tech., China*
Lei Song *Henan Univ. of Sci. & Tech., China*
Zongxiao Yang *Henan Univ. of Sci. & Tech., China*

14:20-14:40 ThuM01-05

Applications of G'/G expansion method to traveling wave solutions for Klein-Gordon- Schrödinger equations

Wei Li *Henan Univ. of Sci. & Tech., China*
Cunlei Ruan *Henan Univ. of Sci. & Tech., China*
Xinrui Wang *Univ. of Kent, UK*

14:40-15:00 ThuM01-06

Computational fluid dynamic analysis for three-hastate vertical axis wind wheel

Hanghang Yang *Henan Univ. of Sci. & Tech., China*
Zongxiao Yang *Henan Univ. of Sci. & Tech., China*
Lei Song *Henan Univ. of Sci. & Tech., China*
Lixiang Hao *Henan Univ. of Sci. & Tech., China*
Mengyang Li *Henan Univ. of Sci. & Tech., China*

ThuM02 Room No.02
Advanced intelligent control methods in robotics and mechatronics II **Special Session**

Organizer: Luige Vladareanu *Romanian Academy, Institute of Solid Mechanics, Romania*
Hongnian Yu *Staffordshire Univ., UK*
Chair: Luige Vladareanu *Romanian Academy, Institute of Solid Mechanics, Romania*
Co-Chair: Hongnian Yu *Staffordshire Univ., UK*

13:00-13:20 ThuM02-01

Synthesis of lifting mechanisms for hand pallets trucks

Iulian Tabără *Univ. Politehnica, Romania*
Victor Moise *Univ. Politehnica, Romania*
Ileana Dugăeșescu *Univ. Politehnica, Romania*

13:20-13:40 ThuM02-02

The navigation mobile robot systems using bayesian approach through the virtual projection method

Luige Vladareanu *Romanian Academy, Institute of Solid Mechanics, Romania*
Gabriela Tont *Univ. of Oradea, Romanian*
Victor Vladareanu *"Politehnica" Univ. of Bucharest, Romanian*
Florentin Smarandache *The Univ. of New Mexico, UK*
Lucian Capitanu *Institute of Solid Mechanics of the Romanian Academy, Romanian*

13:40-14:00 ThuM02-03

The optimizing space trajectory by using the inverse kinematics, direct dynamics and intelligent damper controlling with proper neural network

Adrian Olaru *Politehnica Univ. of Bucharest, Romanian*

14:00-14:20 ThuM02-04

Control of multi-legged robot using reinforcement learning with body image-realization of generalization capability by utilizing properties of the body

Kazuya Nishigai *Hosei Univ., Japan*
Hiroki Nakatsuka *Hosei Univ., Japan*
Kazuyuki Ito *Hosei Univ., Japan*

14:20-14:40 ThuM02-05

Nonlinear cooling control for a peltier actuated aluminum plate thermal system by considering radiation heat transfer

Kazuki Takahashi *Tokyo Univ. of Agriculture and Tech., Japan*
Shengjun Wen *Tokyo Univ. of Agriculture and Tech., Japan*
Masahiro Sanada *Tokyo Univ. of Agriculture and Tech., Japan*
Mingcong Deng *Tokyo Univ. of Agriculture and Tech., Japan*

ThuM03 Room No.03
Advanced control systems design - theory and

applications **Special Session**

Organizer: Ikuro Mizumoto *Kumamoto Univ., Japan*
Shiro Masuda *Tokyo Metropolitan Univ., Japan*
Chair: Ikuro Mizumoto *Kumamoto Univ., Japan*
Co-Chair: Shiro Masuda *Tokyo Metropolitan Univ., Japan*

13:00-13:20 ThuM03-01

Adaptive design method of multirate PD controller

Takao Sato *Univ. of Hyogo, Japan*
Nozomu Araki *Univ. of Hyogo, Japan*
Yasuo Konishi *Univ. of Hyogo, Japan*

13:20-13:40 ThuM03-02

Adaptive tracking control scheme for wheeled mobile robots without measurement of longitudinal velocity

Panfeng Shu *Kyushu Institute of Tech., Japan*
Yuki Ishibashi *Kyushu Institute of Tech., Japan*
Hiroshi Shibata *Kyushu Institute of Tech., Japan*
Masahiro Oya *Kyushu Institute of Tech., Japan*

13:40-14:00 ThuM03-03

Robust high gain adaptive control of mechanical systems with uncertain nonholonomic constraints

Ryuji Michino *Kumamoto Industrial Research Institute, Japan*
Yoshihiko Sakamoto *Kumamoto Univ., Japan*
Ikuro Mizumoto *Kumamoto Univ., Japan*

14:00-14:20 ThuM03-04

Self-repairing control using a nonlinear unstable filter

Masanori Takahashi *Tokai Univ. at Kumamoto, Japan*

14:20-14:40 ThuM03-05

Design and application of a direct GMV-based PID controller

Shin Wakitani *Hiroshima Univ., Japan*
Shintaro Hanata *Hiroshima Univ., Japan*
Toru Yamamoto *Hiroshima Univ., Japan*

14:40-15:00 ThuM03-06

A position control of 2 DOF flexible link robot arms based on computed torque method

Masataka Sawada *National Defense Academy, Japan*
Keietsu Itamiya *National Defense Academy, Japan*

ThuM04 Room No.04
Industrial application **Lecture Session**

Chair: Akira Inoue *Okuyama Univ., Japan*
Co-Chair: Hansheng Wu *Prefectural Univ. of Hiroshima, Japan*

13:00-13:20 ThuM04-01

Dynamic model identification and control of small turbojet engines using frequency response analysis

A. Banazadeh *Sharif Univ. of Tech., Iran*
H. Abdollahi Gol *Sharif Univ. of Tech., Iran*

H. Ramazani *Sharif Univ. of Tech., Iran*
13:20-13:40 ThuM04-02

Linear multi-variable control technique for smart power management of wind turbines

S. A. Emami *Sharif Univ. of Tech., Iran*
A. Banazadeh *Sharif Univ. of Tech., Iran*

13:40-14:00 ThuM04-03

The micro-grid islanding detection based on the principle of impedance voltage divider

Yanbin Li *Zhongyuan Univ. of Tech., China*
Yanqing Guo *Zhongyuan Univ. of Tech., China*
Yang Yuan *Zhongyuan Univ. of Tech., China*
Ruisheng Li *Xuji Electric Co., Ltd, China*

14:00-14:20 ThuM04-04

The implementation of dynamic voltage restorer (DVR) based on DSP

Suping Pei *Zhongyuan Univ. of Tech., China*
Fuzhuan Wu *Zhongyuan Univ. of Tech., China*
Tingting Hou *Zhongyuan Univ. of Tech., China*

14:20-14:40 ThuM04-05

Influence of shot peening on rolling fatigue life of case-hardened steel

Lei Wang *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*

14:40-15:00 ThuM04-06

Medical drop speed monitoring system design based on an eccentric wheel

Huanlin He *Zhongyuan Univ. of Tech., China*
Yuguo Chen *Zhongyuan Univ. of Tech., China*

15:00 - 15:10 Break

Late Afternoon Technical Sessions
15:10-17:10, Thursday, September 20, 2012

ThuP01 Room No.01
Vibration control Special Session

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*

15:10-15:30 ThuP01-01

Control of five-axes active magnetic bearing systems using parameter adjustment of mode matrices

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*

15:30-15:50 ThuP01-02

Development and evaluation of a simulator for pneumatic anti-vibration apparatuses with six degrees-of-freedom using mode control

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*

15:50-16:10 ThuP01-03

Development of next generation apparatus for measurement of curve degree in idiopathic scoliosis

Hiroyuki Takanashi *Akita Prefectural Univ., Japan*
Sumito Musaka *Akita Prefectural Univ., Japan*
Hideyuki Boyashiki *Akita Prefectural Univ., Japan*
Yuki Ide *Akita Prefectural Univ., Japan*
Michio Hongo *Akita Prefectural Univ., Japan*
Akiko Misawa *Akita Prefectural Univ., Japan*
Yoichi Shimada *Akita Prefectural Univ., Japan*
Tetsushi Mimuro *Akita Prefectural Univ., Japan*

16:10-16:30 ThuP01-04

Root locus analysis of absolute displacement sensors and bandwidth expansion with hybrid detector system

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*

16:30-16:50 ThuP01-05

Control of a pneumatic isolation table by flow meter: Improvement of repeatability in various switching points of the feedforward compensator

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*

16:50-17:10 ThuP01-06

A consideration of shape of sensor holder for portable braille reading sensor

Hiroyuki Takanashi *Akita Prefectural Univ., Japan*
Ryosuke Mimura *Akita Prefectural Univ., Japan*
Hiroshi Sugiyama *Akita Prefectural Univ., Japan*
Tetsushi Mimuro *Akita Prefectural Univ., Japan*

ThuP02 Room No.02

Application of advanced system Special Session

Organizer: Tsu-Tian Lee *National Taipei Univ. of Tech., Taiwan*

Chair: Tsu-Tian Lee *National Taipei Univ. of Tech., Taiwan*

Co-Chair: Jinglong Wu *Okayama Univ., Japan*

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*

Ihsum 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 ILan 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*

Chenglung 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

Yuhsung 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*

ThuP03 Room No.03

Advanced intelligent control methods in robotics and mechatronics I Special Session

Organizer: Luige Vladareanu *Romanian Academy, Institute of Solid Mechanics, Romania*

Hongnian Yu *Staffordshire Univ., UK*

Chair: Luige Vladareanu *Romanian Academy, Institute of Solid Mechanics, Romania*

Co-Chair: Hongnian Yu *Staffordshire Univ., UK*

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*

Zulkifli 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 Staretu *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

15:10-15:30

ThuP04-01

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 Saeki

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

ICAMechS 2012
Friday, September 21, 2012

09:30 - 11:00

Room No. 01

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
