

2015 International Conference on Advanced Mechatronic Systems

August 22-24, 2015
Beijing, China



CONFERENCE PROGRAM

Friday, August 21, 2015

14:30 - 17:30 Registration (Beijing Fujian Hotel, Beijing)
18:30 - 20:30 Welcome Reception (Beijing Fujian Hotel, Beijing)

Saturday, August 22, 2015

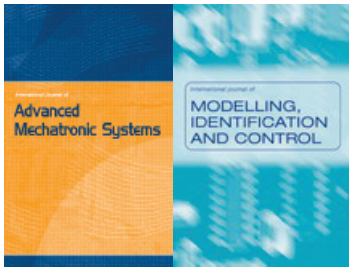
08:40-08:50 Opening Remarks			Main Conference Hall
08:50-09:50 Plenary Speech 1 (PS01)			Main Conference Hall
<p>Title: Intelligent Feedback Control for Operation of Complex Industrial Processes</p> <p>Speaker: Tianyou Chai, <i>Northeastern University, China</i> Chair: Hongnian Yu, <i>Bournemouth University, UK</i></p>			
09:50-10:00 Break			
10:00-11:00 Plenary Speech 2 (PS02)			Main Conference Hall
<p>Title: Modeling and Control of Hysteresis Nonlinearities in Smart Actuators</p> <p>Speaker: Chun-Yi Su, <i>Concordia University, Canada</i> Chair: Xinkai Chen, <i>Shibaura Institute of Technology, Japan</i></p>			
11:00-13:00 Lunch Break			
13:00-14:40 Parallel paper sessions			
Room No.01	Room No.02	Room No.03	
SatM01	SatM02	SatM03	
Renewable sources of energy	Advanced intelligent control in robotics and mechatronics	Optimization methods and applications I	
14:40-14:50 Break			
14:50-16:30 Parallel paper sessions			
Room No.01	Room No.02	Room No.03	
SatP01	SatP02	SatP03	
Optimization methods and applications II	Advanced nonlinear control in robotics	Control of mechatronic systems I	
16:30-16:40 Break			
16:40-18:20 (18:40) Parallel paper sessions			
Room No.01	Room No.02	Room No.03	
SatE01	SatE02	SatE03	
New developments on ESP	Information processing	Nonlinear systems modeling, control and applications	

Sunday, August 23, 2015

08:50-09:50 Plenary Speech 3 (PS03)		Main Conference Hall
Title: Designed to Fail: Incorporating Kinematic Redundancy into Robotic Systems		
Speaker: Anthony A. Maciejewski, <i>Colorado State University, USA</i>		
Chair: J. X. Zhang, <i>Swinburne University of Technology, Australia</i>		
09:50-10:20 Break		
10:20-11:30 Poster Session		Main Conference Hall
11:30-13:00 Lunch Break		
13:00-14:40 Parallel paper sessions		
Room No.01	Room No.02	Room No.03
SunM01	SunM02	SunM03
Advanced control systems design - theory and applications	Mechatronic systems analysis and control I	Complex systems control and applications I
14:40-14:50 Break		
14:50-16:50 Parallel paper sessions		
Room No.01	Room No.02	Room No.03
SunP01	SunP02	SunP03
Control of mechatronic systems II	Mechatronic systems analysis and control II	Complex systems control and applications II
16:50-17:00 Break		
17:00-18:00 Plenary Panel Discussion		Main Conference Hall
Title: New Developments in Advanced Mechatronic Systems		
Organizers: Mingcong Deng, <i>Tokyo University of Agriculture and Technology, Japan</i> Hongnian Yu, <i>Bournemouth University, UK</i>		
18:30-20:30 Banquet (Beijing Fujian Hotel, Beijing)		

Monday, August 24, 2015

Technical Tour to The Great Wall of China
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2015 International Conference on Advanced Mechatronic Systems

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TECHNICAL PROGRAM

ICAMechS 2015 Friday, August 21, 2015		ICAMechS 2015 Saturday, August 22, 2015	
14:30 - 17:30	Registration (Beijing Fujian Hotel, Beijing)	08:40 - 08:50	Main Conference Hall Opening Remarks
18:30 - 20:30	Welcome Reception (Beijing Fujian Hotel, Beijing)	08:50 - 09:50	Main Conference Hall Plenary Speech 1 <i>Intelligent Feedback Control for Operation of Complex Industrial Processes</i> Tianyou Chai <i>Northeastern University, China</i> Chair: Hongnian Yu <i>Bournemouth Univ., UK</i>
	End of the 1st Day	09:50 - 10:00	Break
		10:00 - 11:00	Main Conference Hall Plenary Speech 2 <i>Modeling and Control of Hysteresis Nonlinearities in Smart Actuators</i> Chun-Yi Su <i>Concordia University, Canada</i> Chair: Xinkai Chen <i>Shibaura Institute of Tech., Japan</i>
		11:00 - 13:00	Lunch Break
		Early Afternoon Technical Sessions 13:00-14:40, Saturday, August 22, 2015	
		SatM01	Session Room No.01 Renewable sources of energy Organized Session

Organizer: Zongxiao Yang *Henan Univ. of Sci. and Tech., China*
 Chair: Zongxiao Yang *Henan Univ. of Sci. and Tech., China*
 Co-Chair: Aihui Wang *Zhongyuan Univ. of Tech., China*

13:00 - 13:20 SatM01-01

Cluster analysis on the service oriented alliance enterprise manufacturing resource

Yunxia Wang *Nanjing Institute of Tech., China*
 Shenghai Qiu *Nanjing Institute of Tech., China*
 Chengchong Gao *Nanjing Institute of Tech., China*
 Jun Wei *Nanjing Institute of Tech., China*

13:20 - 13:40 SatM01-02

Performance and exhaust emissions of a turbocharged common rail DI diesel engine fueled with alcohol

Bin Xu *Henan Univ. of Sci. and Tech., China*
 Yibin Liu *Henan Univ. of Sci. and Tech., China*
 Jian Wu *Henan Univ. of Sci. and Tech., China*
 Chuang Li *Henan Univ. of Sci. and Tech., China*
 Weiwei Shang *Henan Univ. of Sci. and Tech., China*
 Zhihao Ma *Henan Univ. of Sci. and Tech., China*

13:40 - 14:00 SatM01-03

Design and simulation of passive filter based on fundamental magnetic flux compensation

Qun Chen *Henan Univ. of Sci. and Tech., China*
 Zongxiao Yang *Henan Univ. of Sci. and Tech., China*

14:00 - 14:20 SatM01-04

Research on large supermarket fresh food supplier evaluation and selection based on SWOT-entropy weight fuzzy comprehensive model

Ying Yuan *Henan Univ. of Sci. and Tech., China*
 Yi Zhang *Henan Univ. of Sci. and Tech., China*
 Long Di *Henan Univ. of Sci. and Tech., China*
 Ganggang Wu *Henan Univ. of Sci. and Tech., China*
 Zongxiao Yang *Henan Univ. of Sci. and Tech., China*

14:20 - 14:40 SatM01-05

A novel outer rotor axial primary magnetic circuit permanent magnet generator

Ximei Li *Henan Univ. of Sci. and Tech., China*
 Zongxiao Yang *Henan Univ. of Sci. and Tech., China*
 Dongliang Song *Henan Univ. of Sci. and Tech., China*

mechatronics

Organized Session

Organizer: Luige Vladareanu *Romanian Acad., Romania*
 Chair: Luige Vladareanu *Romanian Acad., Romania*
 Co-Chair: Zengguang Hou *Chinese Acad. of Sci., China*

13:00 - 13:20 SatM02-01

Active training research of a lower limb rehabilitation robot based on constrained trajectory

Hongbo Wang *Yanshan Univ., China*
 Dong Zhang *Yanshan Univ., China*
 Hao Lu *Yanshan Univ., China*
 Yongfei Feng *Yanshan Univ., China*
 Peng Xu *Yanshan Univ., China*
 Razvan-Viorel Mihai *Romanian Acad., Romania*
 Luige Vladareanu *Romanian Acad., Romania*

13:20 - 13:40 SatM02-02

Fuzzy controller design of the wire feeder of invasive vascular interventional surgery robot

Hongbo Wang *Yanshan Univ., China*
 Shuaishuai Wang *Yanshan Univ., China*
 Wen Zhang *Yanshan Univ., China*
 Liyu Xie *Yanshan Univ., China*
 Xue Yang *Univ. of Jinan, China*
 Luige Vladareanu *Romanian Acad., Romania*
 Radu Munteanu *Romanian Acad., Romania*

13:40 - 14:00 SatM02-03

Advanced intelligent walking robot control through sliding motion control and bond graphs methods

Ionel Alexandru Gal *Romanian Acad., Romania*
 Luige Vladareanu *Romanian Acad., Romania*
 Hongbo Wang *Yanshan Univ., China*
 Hongnian Yu *Bournemouth Univ., UK*
 Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

14:00 - 14:20 SatM02-04

Versatile intelligent portable robot platform for flexible robotic cells with AGV

Luige Vladareanu *Romanian Acad., Romania*
 Cristian Spirileanu *Romanian Acad., Romania*
 Mihaiela Iliescu *Romanian Acad., Romania*
 Hongnian Yu *Bournemouth Univ., UK*
 Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
 Weizhong Guo *Shanghai Jiao Tong Univ., China*
 Feng Gao *Shanghai Jiao Tong Univ., China*

SatM02

Session Room No.02

Advanced intelligent control in robotics and

14:20 – 14:40

SatM02-05

Haptic intelligent interfaces for NAO robot hand control

Octavian Melinte	<i>Romanian Acad., Romania</i>
Luige Vladareanu	<i>Romanian Acad., Romania</i>
Ligia Munteanu	<i>Romanian Acad., Romania</i>
Hongnian Yu	<i>Bournemouth Univ., UK</i>
Shuang Cang	<i>Bournemouth Univ., UK</i>
Zengguang Hou	<i>Chinese Acad. of Sci., China</i>
GuiBin Bian	<i>Chinese Acad. of Sci., China</i>
Hongbo Wang	<i>Yanshan Univ., China</i>

SatM03

Session Room No.03

Optimization methods and applications I

Regular Session

Chair: Shuhui Bi *Univ. of Jinan, China*
 Co-Chair: Huimin Xiao *Henan Univ. of Economics and Law, China*

13:00 – 13:20

SatM03-01

Weak reachability of probabilistic boolean control networks

Zhiqiang Li	<i>Henan Univ. of Economics and Law, China</i>
Huimin Xiao	<i>Henan Univ. of Economics and Law, China</i>

13:20 – 13:40

SatM03-02

Oscillation criteria for a class of nonlinear impulsive parabolic system under Dirichlet boundary condition

Junhong Liu	<i>Acad. of Armored Force Eng., China</i>
Wenxue Liu	<i>Acad. of Armored Force Eng., China</i>
Lifeng Li	<i>Acad. of Armored Force Eng., China</i>
Qi Jin	<i>Acad. of Armored Force Eng., China</i>

13:40 – 14:00

SatM03-03

Operator-based left coprime factorization for nonlinear systems

Fazhan Tao	<i>Tokyo Univ. of Agri. and Tech., Japan</i>
Mingcong Deng	<i>Tokyo Univ. of Agri. and Tech., Japan</i>

14:00 – 14:20

SatM03-04

Passivity-based robust control for uncertain nonlinear feedback systems

Ni Bu	<i>Qingdao Univ. of Sci. and Tech., China</i>
Mingcong Deng	<i>Tokyo Univ. of Agri. and Tech., Japan</i>

14:20 – 14:40

SatM03-05

Correlated neural activity in spiking networks with topographic couplings

Jinli Xie	<i>Univ. of Jinan, China</i>
Qinjun Zhao	<i>Univ. of Jinan, China</i>
Jianyu Zhao	<i>Univ. of Jinan, China</i>

14:40 - 14:50**Break****Middle Afternoon Technical Sessions****14:50-16:30, Saturday, August 22, 2015****SatP01**

Session Room No.01

Optimization methods and applications II

Regular Session

Chair: Guangdong Tian *Northeast Forestry Univ., China*Co-Chair: Zongxiao Yang *Henan Univ. of Sci. and Tech., China*

14:50 – 15:10

SatP01-01

Scheduling of rescue vehicles to forest fires via multi-objective particle swarm optimization

Yaping Ren	<i>Northeast Forestry Univ., China</i>
Guangdong Tian	<i>Northeast Forestry Univ., China</i>
Mengchu Zhou	<i>New Jersey Institute of Tech., USA</i>

15:10 – 15:30

SatP01-02

An effective VNSSA algorithm for the blocking flowshop scheduling problem with makespan minimization

Chaoyong Zhang	<i>Huazhong Univ. of Sci. & Tech., China</i>
Zhanpeng Xie	<i>Huazhong Univ. of Sci. & Tech., China</i>
Xinyu Shao	<i>Huazhong Univ. of Sci. & Tech., China</i>
Guangdong Tian	<i>Northeast Forestry Univ., China</i>

15:30 – 15:50

SatP01-03

Simulation modeling of shuttle racking system based on automod

Bingfeng Sang	<i>Beijing Univ. of Posts and Telecommunications, China</i>
Yukun Liu	<i>Beijing Univ. of Posts and Telecommunications, China</i>

15:50 – 16:10

SatP01-04

An expected value multi-objective optimization model to locate a vehicle inspection station

Guangdong Tian	<i>Northeast Forestry Univ., China</i>
MengChu Zhou	<i>New Jersey Institute of Tech., USA</i>

16:10 – 16:30

SatP01-05

Experimental study on nonlinear vibration control of an L-shape arm

Yanfeng Wu	<i>Tokyo Univ. of Agri. and Tech., Japan</i>
Mingcong Deng	<i>Tokyo Univ. of Agri. and Tech., Japan</i>
Longguo Jin	<i>Qingdao Technical College, China</i>

SatP02

Session Room No.02

Advanced nonlinear control in robotics

Regular Session

Chair: Hongnian Yu

*Bournemouth Univ., UK*Co-Chair: Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*

14:50 – 15:10

SatP02-01

The mechatronic system of eco-dolphin - a fleet of autonomous underwater vehiclesHong Liu *Embry-Riddle Aeronautical Univ., USA*Xudong Shi *Civil Aviation Univ. of China, China*Junzhen Shao *Embry-Riddle Aeronautical Univ., USA*Qi Zhou *Embry-Riddle Aeronautical Univ., USA*Stacey Joseph-Ellison *Embry-Riddle Aeronautical Univ., USA*Johnathan Jaworski *Embry-Riddle Aeronautical Univ., USA*Ci Wen *Embry-Riddle Aeronautical Univ., USA*

15:10 – 15:30

SatP02-02

Extended development of LinuxCNC for control of a delta robotFeng Huo *National Univ. of Singapore, Singapore*Geoksoon Hong *National Univ. of Singapore, Singapore*Aunneow Poo *National Univ. of Singapore, Singapore*

15:30 – 15:50

SatP02-03

Minimizing energy consumption in a U-shaped robotic assembly lineJ Mukund Nilakantan *Monash Univ. Malaysia, Malaysia*S.G. Ponnambalam *Monash Univ. Malaysia, Malaysia*George Q Huang *The Univ. of Hong Kong, China*

15:50 – 16:10

SatP02-04

Charged system search algorithm for robotic drill path optimizationG Kanagaraj *Thiagarajar College of Eng., India*S.G. Ponnambalam *Monash Univ. Malaysia, Malaysia*C.K. Loo *Univ. of Malaya, Malaysia*

16:10 – 16:30

SatP02-05

Implementation of remotely controllable mobile robot system over mobile Ad-hoc NetworkMohammad Shahidul Hasan *Staffordshire Univ., UK*Hongnian Yu *Bournemouth Univ., UK*

SatP03

Session Room No.03

Control of mechatronic systems I

Regular Session

Chair: Shinji Wakui

Tokyo Univ. of Agri. and Tech., Japan

Co-Chair: Kazuyuki Ito

Hosei Univ., Japan

14:50 – 15:10

SatP03-01

An interpretation of unbalance vibration compensator for five-axes active magnetic bearing systems based on internal model principleTaiki Nakamura *Tokyo Univ. of Agri. and Tech., Japan*Shinji Wakui *Tokyo Univ. of Agri. and Tech., Japan*Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*

15:10 – 15:30

SatP03-02

Vibration suppression of galvano mirror considering whirling of shaftKeisuke Nakade *Tokyo Univ. of Agri. and Tech., Japan*Taiki Nakamura *Tokyo Univ. of Agri. and Tech., Japan*Shinji Wakui *Tokyo Univ. of Agri. and Tech., Japan*Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*

15:30 – 15:50

SatP03-03

A consideration of parameter identification of a linear stage using particle swarm optimizationMarino Watanabe *Tokyo Univ. of Agri. and Tech., Japan*Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*Shinji Wakui *Tokyo Univ. of Agri. and Tech., Japan*

15:50 – 16:10

SatP03-04

Development of a torque-sensorless viscometer for food processing applicationsSeiji Hashimoto *Gunma Univ., Japan*Yuqi Jiang *Gunma Univ., Japan*Amat Basari *Gunma Univ., Japan*Wei Jiang *Yangzhou Univ., China*

16:10 – 16:30

SatP03-05

Study on detection of earthquake using DI value and its application to switching control for air type anti-vibration apparatusMasayuki Kubota *Tokyo Univ. of Agri. and Tech., Japan*Hirokazu Mineo *Tokyo Univ. of Agri. and Tech., Japan*Shinji Wakui *Tokyo Univ. of Agri. and Tech., Japan*Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*

16:30 - 16:40**Break**

Last Afternoon Technical Sessions
16:40-18:20, Saturday, August 22, 2015

SatE01

Session Room No.01

New developments on ESP

Invited Session

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

16:40 - 17:00 SatE01-01

An overview of supplementary teaching materials for advanced EST students in japan

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

17:00 - 17:20 SatE01-02

Profiling japanese EST students' vocabulary ability using the new general service list test (NGSLT) and the new academic word list test (NAWLT)

Shin'ichi Hashimoto *Univ. of Electro-Communications, Japan*
Yan Yu *Univ. of Electro-Communications, Japan*
Jie Shi *Univ. of Electro-Communications, Japan*
Haiyan Zhan *Univ. of Electro-Communications, Japan*

17:20 - 17:40 SatE01-03

Peer evaluation of academic presentations by japanese graduate students: qualitative evaluation

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

17:40 - 18:00 SatE01-04

Teaching poster by using genre approach to science and technology students of a japanese university

Toyo Univ., Univ. of Electro-Communications

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

18:00 - 18:20 SatE01-05

Corpus-based analysis of academic RA Genre: the "Results" sub-genre

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

18:20 - 18:40 SatE01-06

Understanding the most essential types of words for Physics undergraduate students

Sonia Sharmin *Univ. of Tsukuba, Japan*

SatE02

Session Room No.02

Information processing

Regular Session

Chair: S.G. Ponnambalam *Monash Univ. Malaysia, Malaysia*
Co-Chair: Ken Nakasaka *Tokyo Univ. of Agri. and Tech., Japan*

16:40 - 17:00 SatE02-01

Modelling a 20MW scale solar farm in an unused angled area near fukushima nuclear power plant

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

17:00 - 17:20 SatE02-02

Temporal and spatial projection of wind speed based on modular netrowk SOM for installation of off-shore wind generation

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

17:20 - 17:40 SatE02-03

A household load priority scheduling model based on real-time electricity price

Bo Hu *State Grid Energy Research Institute, China*
Xiao Zhong *North China Electric Power Univ., China*
Song Liu *North China Electric Power Univ., China*

17:40 - 18:00 SatE02-04

Study on cutting surface stripe and wettability of AZ91D magnesium alloy by WEDM-HS

Jinkai Xu *Changchun Univ. of Sci. and Tech., China*
Kui Xia *Changchun Univ. of Sci. and Tech., China*
Rongxian Qiu *Changchun Univ. of Sci. and Tech., China*
Linshuai Zhang *Changchun Univ. of Sci. and Tech., China*
Zhanjiang Yu *Changchun Univ. of Sci. and Tech., China*
Huadong Yu *Changchun Univ. of Sci. and Tech., China*

18:00 - 18:20 SatE02-05

Influence of microstructure on surface wettability

Xinxin Zhang *Changchun Univ. of Sci. and Tech., China*
Jinkai Xu *Changchun Univ. of Sci. and Tech., China*
Zhongxu Lian *Changchun Univ. of Sci. and Tech., China*
Zhanjiang Yu *Changchun Univ. of Sci. and Tech., China*
Huadong Yu *Changchun Univ. of Sci. and Tech., China*

SatE03

Session Room No.03

Nonlinear systems modeling control and applications

Organized Session

Organizer: Shiwen Tong *Beijing Union Univ., China*
Chair: Shiwen Tong *Beijing Union Univ., China*
Co-Chair: Dianwei Qian *North China Electric Power Univ., China*

16:40 – 17:00

SatE03-01

Influences from LCL filter on behaviors of Three-phase

Three-level PWM rectifier

Dongsheng Yu *China Univ. of Mining and Tech., China*
Hong Zhu *China Univ. of Mining and Tech., China*
Ciyang Zheng *China Univ. of Mining and Tech., China*

17:00 – 17:20

SatE03-02

Sliding mode output tracking control based on a fuzzy clustering model

Shiwen Tong *Beijing Union Univ., China*
Dianwei Qian *North China Electric Power Univ., China*
Jianjun Fang *Beijing Union Univ., China*

17:20 – 17:40

SatE03-03

PID control of air tank temperature system with parameters tuning through network

Shiwen Tong *Beijing Union Univ., China*
Yushan Li *Beijing Union Univ., China*
Junjie Ren *Beijing Union Univ., China*
Yinong Zhang *Beijing Union Univ., China*

17:40 – 18:00

SatE03-04

Sliding-mode-based disturbance rejection control of nonlinear power systems with renewable sources

Hong Liu *North China Electric Power Univ., China*
Dianwei Qian *North China Electric Power Univ., China*

18:00 – 18:20

SatE03-05

Research and application of predictive control algorithm based on fuzzy model

Yuan Li *Beijing union Univ., China*
Sen Cong *Beijing union Univ., China*
Shiwen Tong *Beijing union Univ., China*
Jianjun Fang *Beijing union Univ., China*

End of the 2nd Day

ICAMechS 2015
Sunday, August 23, 2015

08:50 - 09:50 Main Conference Hall
Plenary Speech 3

Designed to Fail: Incorporating Kinematic
Redundancy into Robotic Systems

Anthony A. Maciejewski
Colorado State University, USA

Chair: J. X. Zhang *Swinburne University of Technology, Australia*

09:50 - 10:20 **Break**

Technical Poster Session

10:20-11:30, Sunday, August 23, 2015

Poster Main Conference Room

Chair: Changan Jiang *Ritsumeikan Univ., Japan*
Xiaoguang Zhou *Beijing Univ. of Posts and
Telecommunications, China*

Co-Chair: Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*
Yixin Yin *Univ. of Sci. and Tech. Beijing, China*

10:20 – 11:30 Poster-01

**Bipolar neutrosophic sets and their application based on
multi-criteria decision making problems**

Irfan Deli *Aralik University, Turkey*
Mumtaz Ali *Quaid-e-azam Univ., Pakistan*
Florentin Smarandache *Univ. of New Mexico, USA*

10:20 – 11:30 Poster-02

**Evaluation method of main production resource in society and
industrial park of extreme arid region (1)**

Litifu Zulati *Xinjiang Univ. of Finance and
Economics, China*

10:20 – 11:30 Poster-03

**Research on control methods of permanent magnet synchronous
motor position servo system**

Fen Yang *Xidian Univ., China*
Zhengfeng Ming *Xidian Univ., China*
Tao Wen *Xidian Univ., China*
Tong Zhang *Xidian Univ., China*
Zhanxia Zhu *Northwestern Polytechnical Univ., China*

10:20 – 11:30 Poster-04

**Comprehensive functions of eco-industrial park in conserving
energy and improving ecology**

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

10:20 – 11:30 Poster-05

**Study on fuzzy-logic PID control system of synchronous jack-up
system of turbine runner static equilibrium experiment**

Yongxing Hao *North China Univ. of Water Resources and
Electric Power, China*
Chaofeng Wang *North China Univ. of Water Resources and
Electric Power, China*
Lihui Song *North China Univ. of Water Resources and
Electric Power, China*

10:20 – 11:30 Poster-06

**The straight line mechanism base on peaucellier inversion
instrument**

Kai He *Beijing Univ. of Posts and
Telecommunications, China*
Lei Guo *Beijing Univ. of Posts and
Telecommunications, China*
Yuan Song *Beijing Univ. of Posts and
Telecommunications, China*

10:20 – 11:30 Poster-07

**Mechanical design and realization of automatic docking
mechanism**

Xinhu Mo *Beijing Univ. of Posts and
Telecommunications, China*
Lei Guo *Beijing Univ. of Posts and
Telecommunications, China*
Yuan Song *Beijing Univ. of Posts and
Telecommunications, China*
Ying Zhang *Beijing Univ. of Posts and
Telecommunications, China*

10:20 – 11:30 Poster-08

**Design and implementation of a mechanical calculator for
quadratic equation with one unknown**

Bin Xing *Beijing Univ. of Posts and
Telecommunications, China*
Lei Guo *Beijing Univ. of Posts and
Telecommunications, China*
Shimin Wei *Beijing Univ. of Posts and
Telecommunications, China*
Yuan Song *Beijing Univ. of Posts and*

Ying Zhang
Telecommunications, China
Beijing Univ. of Posts and
Telecommunications, China

10:20 – 11:30 Poster-09

A comparative study on inter-tern short circuit fault of PMSM using finite element analysis and experiment

Yongcan Li *Hebei Univ. of Sci. and Tech., China*
Yongchun Liang *Hebei Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-10

A research on construction of 30 bus large-scale smart grid model

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

10:20 – 11:30 Poster-11

Modeling a lithium-ion battery based on a threshold model

Zhi Zhang *Beijing Jiaotong Univ., China*

10:20 – 11:30 Poster-12

Modelling the relationship between constituents and anti-RSV effect of baikal skullcap root

Ke Li *Shandong Acad. of Sci., China*
Bonian Zhao *Shandong Acad. of Chinese Medicine, China*
Yan Gao *Shandong Acad. of Chinese Medicine, China*
Bianli Wang *Shandong Acad. of Chinese Medicine, China*
Zongyuan Yu *Shandong Acad. of Chinese Medicine, China*
Hongpeng Zhao *Qianfo Mountain Hospital of Shandong Province, China*

10:20 – 11:30 Poster-13

Energy-saving improvement and simulation study on digital hydraulic system

Fei Song *Naval Univ. of Eng., China*
Jingjun Lou *Naval Univ. of Eng., China*
Likun Peng *Naval Univ. of Eng., China*

10:20 – 11:30 Poster-14

Path planning of airfoil surface for robotic fibre placement

Lina Li *Chinese Acad. of Sci., China*
Xingang Wang *Chinese Acad. of Sci., China*
De Xu *Chinese Acad. of Sci., China*
Min Tan *Chinese Acad. of Sci., China*

10:20 – 11:30 Poster-15

Strongly stable GPC with suppression of steady state gain and closed-loop poles

Akira Inoue *Okayama Univ., Japan*
Tomohiro Henmi *National Institute of Tech., Kagawa College, Japan*
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

10:20 – 11:30 Poster-16

Model free fault detection using one set of reference input and output data

Akira Inoue *Okayama Univ., Japan*
Tomohiro Henmi *National Institute of Tech., Kagawa College, Japan*
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

10:20 – 11:30 Poster-17

Research on algorithm of nonlinear self-adaptive flight control system

Hao Long *Beijing Union Univ., China*
Shujie Song *Aviation Industry Co. of China, China*

10:20 – 11:30 Poster-18

The indoor real-time 3D localization algorithm using UWB

Xuehong Li *Univ. of Sci. and Tech. Beijing, China*
Shuhua Yang *Univ. of Sci. and Tech. Beijing, China*

10:20 – 11:30 Poster-19

Operator and sliding mode based nonlinear control for cooling and heat-retention system actuated by Peltier devices

Takafumi Hatano *Tokyo Univ. of Agri. and Tech., Japan*
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*

10:20 – 11:30 Poster-20

Control system design for ionic polymer metal composite using a single neuron based adaptive PID approach

Yiping Chang *Zhongyuan Univ. of Tech., China*
Hui Wang *Zhongyuan Univ. of Tech., China*

10:20 – 11:30 Poster-21

Evaluation method of main production resource of society and industrial park of extreme arid region (2)

Litifu Zulati *Xinjiang Univ. of Finance and Economics, China*

10:20 – 11:30 Poster-22

Dynamic and energy analysis based on bumper system low-speed collision test

Zhiming Wang *Shanghai Univ., China*
Li Chen *Shanghai Univ., China*

10:20 – 11:30 Poster-23

Feasibility of neucube spiking neural network architecture for EMG pattern recognition

Long Peng *Chinese Acad. of Sci., China*
Zengguang Hou *Chinese Acad. of Sci., China*
Nikola Kasabov *Auckland Univ. of Tech., New Zealand*
Guibin Bian *Chinese Acad. of Sci., China*
Luige Vladareanu *Romanian Acad., Romania*
Hongnian Yu *Bournemouth Univ., UK*

10:20 – 11:30 Poster-24

Optimal fiber orientations and topology of compliant mechanisms using lamination parameters

Xinxing Tong *Northwestern Polytechnical Univ., China*
Wenjie Ge *Northwestern Polytechnical Univ., China*
Yonghong Zhang *Northwestern Polytechnical Univ., China*

10:20 – 11:30 Poster-25

A software platform for interactive analysis on 3D medical data

Wei Cheng *Shandong Acad. of Sci., China*
Yongfei Xiao *Shandong Acad. of Sci., China*
Youlei Zhao *Taikoo (Shandong) Aircraft Eng. Co., Ltd., China*

10:20 – 11:30 Poster-26

Master-slave force control based on Grey GM(1,1) Model of robot gripper

Wei Cheng *Shandong Acad. of Sci., China*
Xuelin Wang *Shandong Acad. of Sci., China*
Haiyan Ma *Shandong Acad. of Sci., China*

10:20 – 11:30 Poster-27

Remote automatic test system based on MATLAB using VISA over LAN

Wei Cheng *Shandong Acad. of Sci., China*
Fenggui Wang *Shandong Acad. of Sci., China*
Haiyan Ma *Shandong Acad. of Sci., China*

10:20 – 11:30 Poster-28

Cubic spline solution for a class of boundary value problems using spectral collocation method

Tianjun Wang *Henan Univ. of Sci. and Tech., China*

Qixian Zhou *Henan Univ. of Sci. and Tech., China*
Tengteng Cui *Henan Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-29

Maximum efficiency control method of permanent magnet synchronous motor based on three-dimensional table

Gensheng Li *Henan Univ. of Sci. and Tech., China*
Jinfa Xie *Henan Univ. of Sci. and Tech., China*
Liyou Xu *Henan Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-30

Modeling and simulation of hydro-mechanical continuously variable transmission system based on Simscape

Zhili Zhou *Henan Univ. of Sci. and Tech., China*
Jiazhen Zhang *Henan Univ. of Sci. and Tech., China*
Zhiqiang Guo *YTO Group Corporation, China*
Liyou Xu *Henan Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-31

Performance comparison for savonius type wind turbines by numerical analysis approaches

Lei Song *Henan Univ. of Sci. and Tech., China*
Hongzhao Liu *Xi'an Univ. of Tech., China*
Zongxiao Yang *Henan Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-32

Fuzzy clustering analysis of batch production recipe

Shanzhong Liu *Henan Univ. of Sci. and Tech., China*
Xiaonan Song *Henan Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-33

Fully discrete subgrid stabilized finite element method for the Darcy-Brinkman equations in Double-Diffusion convection

Yunzhang Zhang *Henan Univ. of Sci. and Tech., China*
Zhoufeng Wang *Henan Univ. of Sci. and Tech., China*
Qili Tang *Henan Univ. of Sci. and Tech., China*

10:20 – 11:30 Poster-34

The simplified homogeneous balance method and its application to Whitham-Broer-Kaup-Like equations

Wei Li *Henan Univ. of Sci. and Tech., China*
Xinrui Wang *Univ. of Chicago, USA*

11:30 - 13:00

Lunch Break

Early Afternoon Technical Sessions
13:00-14:40, Sunday, August 23, 2015

SunM01

Session Room No.01

Advanced control systems design - theory and applications

Organized Session

Organizer: Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*
Takao Sato *Univ. of Hyogo*
Chair: Shiro Masuda *Tokyo Metropolitan Univ., Japan*
Co-Chair: Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*

13:00 – 13:20

SunM01-01

Tracking control of quad-rotor helicopters suspended a power supply cable with on-line estimation of disturbances

Hayami Hayakawa *Nagoya Institute of Tech., Japan*
Shogo Obata *Nagoya Institute of Tech., Japan*
Manabu Yamada *Nagoya Institute of Tech., Japan*

13:20 – 13:40

SunM01-02

Multivariable controller design evaluating closed-loop interaction by iterative LMI optimization using frequency response data

Shogo Shinoda *Mie Univ., Japan*
Kazuhiro Yubai *Mie Univ., Japan*
Daisuke Yashiro *Mie Univ., Japan*
Junji Hirai *Mie Univ., Japan*

13:40 – 14:00

SunM01-03

Flow disturbance suppression for a pneumatic vibration isolator using a central pattern generator

Yukinori Nakamura *Tokyo Univ. of Agri. and Tech., Japan*
Daishi Funaki *Tokyo Univ. of Agri. and Tech., Japan*
Mami Kimura *Tokyo Univ. of Agri. and Tech., Japan*
Shinji Wakui *Tokyo Univ. of Agri. and Tech., Japan*

14:00 – 14:20

SunM01-04

Design of a fault tolerant control system using mahalnobis-taguchi(MT) System

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

14:20 – 14:40

SunM01-05

Data-driven PID gain tuning for unknown impulse disturbance attenuation

Shiro Masuda *Tokyo Metropolitan Univ., Japan*

SunM02

Session Room No.02

Mechatronic systems analysis and control I

Regular Session

Chair: Xinkai Chen *Shibaura Institute of Tech., Japan*
Co-Chair: Hongbo Wang *Yanshan Univ., China*

13:00 – 13:20

SunM02-01

Size and weight reduction of semicircular duplex manipulator for rescue operation

Soichiro Kimura *Hosei Univ., Japan*
Kazuyuki Ito *Hosei Univ., Japan*

13:20 – 13:40

SunM02-02

Adaptive fault diagnosis for continuous time-delay repetitive system subject to sensor fault

Haigang Zhang *Univ. of Sci. and Tech. Beijing, China*
Sen Zhang *Univ. of Sci. and Tech. Beijing, China*
Yixin Yin *Univ. of Sci. and Tech. Beijing, China*

13:40 – 14:00

SunM02-03

Model identification and adaptive control design for a 6 DOFs manipulator

Weilaing Ge *Univ. of Electronic Sci. and Tech. of China, China*
Wei He *Univ. of Sci. and Tech. Beijing, China*
Yunchuan Li *Univ. of Maryland College Park, USA*
Chenguang Yang *Plymouth Univ., UK*

14:00 – 14:20

SunM02-04

Precise tracking control for Piezo-actuated stage using inverse compensation and model predictive control

Nguyen Manh Linh *Shibaura Institute of Tech., Japan*
Tran Vu Minh *Shibaura Institute of Tech., Japan*
Xinkai Chen *Shibaura Institute of Tech., Japan*

14:20 – 14:40

SunM02-05

Oscillatory behavior based fault feature extraction for bearing fault diagnosis

Juanjuan Shi *Univ. of Ottawa, Canada*
Ming Liang *Univ. of Ottawa, Canada*

SunM03

Session Room No.03

Complex systems control and applications I

Regular Session

Chair: Ni Bu *Qingdao Univ. of Sci. and Tech., China*
Co-Chair: Zhengfeng Ming *Xidan Univ., China*

13:00 – 13:20

SunM03-01

Switched reluctance motor/generator simulation research based

on compressed air energy storage system

Xiaoshu Zan *China Univ. of Mining and Tech., China*
 Hong Zhu *China Univ. of Mining and Tech., China*

13:20 – 13:40 SunM03-02

Surface flaws detection algorithms for large aperture optical element

Zhengtao Zhang *Chinese Acad. of Sci., China*
 De Xu *Chinese Acad. of Sci., China*
 Xian Tao *Chinese Acad. of Sci., China*
 Feng Zhang *Chinese Acad. of Sci., China*

13:40 – 14:00 SunM03-03

An adaptive observer-based fault detection and diagnosis for nonlinear systems with sensor and actuator faults

Xiaomo Yan *Univ. of Manchester, UK*
 Bailing Tian *Tianjing Univ., China*
 Hong Wang *Univ. of Manchester, UK*

14:00 – 14:20 SunM03-04

Minimum mutual information control for multi-variable non-Gaussian stochastic systems

Qichun Zhang *Univ. of Manchester, UK*
 Aiping Wang *Anhui Univ., China*
 Hong Wang *Univ. of Manchester, UK*

14:20 – 14:40 SunM03-05

Design and simulation of dual fuzzy self-adjusting immune PID controller for grain drying system

Aini Dai *Beijing Univ. of Posts and Telecommunications, China*
 Xiaoguang Zhou *Beijing Univ. of Posts and Telecommunications, China*
 Chi Zhang *Beijing Univ. of Posts and Telecommunications, China*
 Xiangdong Liu *Beijing Univ. of Posts and Telecommunications, China*
 Huiling Zhou *Beijing Univ. of Posts and Telecommunications, China*

14:40 - 14:50 Break

Middle Afternoon Technical Sessions
14:50-16:50, Sunday, August 23, 2015

SunP01 Session Room No.01

Control of mechatronic systems II

Regular Session

Chair: Changan Jiang *Ritsumeikan Univ., Japan*
 Co-Chair: Junming Xiao *Zhongyuan Univ. of Tech., China*

14:50 – 15:10 SunP01-01

A brushless DC motor speed control system based on DSP controller

Songming Cao *Beijing Univ. of Posts and Telecommunications, China*
 Yong Liu *Beijing Univ. of Posts and Telecommunications, China*
 Ming Hu *Beijing Univ. of Posts and Telecommunications, China*
 Xin Fu *Beijing Univ. of Posts and Telecommunications, China*

15:10 – 15:30 SunP01-02

Precision size measurement instrument for irregular objects

Wanji Liu *SIPO, China*
 Xian Tao *Chinese Acad. of Sci., China*

15:30 – 15:50 SunP01-03

A new method of periodicity estimation for mechanical acoustic data

Zhipan Hong *Shandong Univ., China*
 Guoliang Lu *Shandong Univ., China*

15:50 – 16:10 SunP01-04

Acoustic emission signal harr wavelet denoise research

Kenan Shen *Southwest Forestry Univ., China*
 Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
 Ming Li *Southwest Forestry Univ., China*

16:10 – 16:30 SunP01-05

Operator-based nonlinear networked control system with packet error

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

16:30 – 16:50 SunP01-06

Optimal control of non-prehensile manipulation control by two cooperative arms

Changan Jiang *Ritsumeikan Univ., Japan*
 Satoshi Ueno *Ritsumeikan Univ., Japan*
 Yoshikazu Hayakawa *Nagoya Univ., Japan*

SunP02 Session Room No.02

Mechatronic systems analysis and control II

Regular Session

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

14:50 – 15:10 SunP02-01

SVR-based input-output mapping of a micro-hand

Kou Fujita *Tokyo Univ. of Agri. and Tech., Japan*
 Shuichi Wakimoto *Okayama Univ., Japan*
 Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
 Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*

15:10 – 15:30 SunP02-02

Nonlinear remote temperature control of a spiral plate heat exchanger

Ryohei Fujii *Tokyo Univ. of Agri. and Tech., Japan*
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*

15:30 – 15:50 SunP02-03

Operator based voltage control experiments of thermoelectric generation system

Ryuji Yoshida *Tokyo Univ. of Agri. and Tech., Japan*
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
Shin Wakitani *Tokyo Univ. of Agri. and Tech., Japan*

15:50 – 16:10 SunP02-04

Robust controller design for networked control system with packet dropout and quantization error

Haiquan Wang *Zhongyuan Univ. of Tech., China*
Rongxiang Gao *Zhongyuan Univ. of Tech., China*
Qian Zhang *Zhongyuan Univ. of Tech., China*
Shengjun Wen *Zhongyuan Univ. of Tech., China*

16:10 – 16:30 SunP02-05

Active power filter design for improving power quality

Junming Xiao *Zhongyuan Univ. of Tech., China*
Xiangming Zhang *Zhongyuan Univ. of Tech., China*
Shengjun Wen *Zhongyuan Univ. of Tech., China*
Zhengbo Liu *Zhongyuan Univ. of Tech., China*

16:30 – 16:50 SunP02-06

Fractional PID based stability control for a single link rotary inverted pendulum

Wudai Liao *Zhongyuan Univ. of Tech., China*
Zhengbo Liu *Zhongyuan Univ. of Tech., China*
Shengjun Wen *Zhongyuan Univ. of Tech., China*
Shuhui Bi *Univ. of Jinan, China*
Dongyun Wang *Zhongyuan Univ. of Tech., China*

SunP03 Session Room No.03

Complex systems control and applications II

Regular Session

Chair: Aihui Wang *Zhongyuan Univ. of Tech., China*
Co-Chair: Hong Wang *Univ. of Manchester, UK*

14:50 – 15:10 SunP03-01

Design of the automatic sample preparation system

Xin Fu *Beijing Univ. of Posts and Telecommunications, China*
Shimin Wei *Beijing Univ. of Posts and Telecommunications, China*

Yong Liu *Beijing Univ. of Posts and Telecommunications, China*

Ming Hu *Beijing Univ. of Posts and Telecommunications, China*

Songming Cao *Beijing Univ. of Posts and Telecommunications, China*

15:10 – 15:30 SunP03-02

IPMC robust nonlinear tracking control design based on a multi-objective particle swarm optimization-based RRCF approach

Wudai Liao *Zhongyuan Univ. of Tech., China*
Tongbin Yan *Zhongyuan Univ. of Tech., China*
Aihui Wang *Zhongyuan Univ. of Tech., China*
Yiwen Fu *Zhongyuan Univ. of Tech., China*

15:30 – 15:50 SunP03-03

Robot arm with micro-hand robust control design using operator-based robust right coprime factorization approach

Aihui Wang *Zhongyuan Univ. of Tech., China*
Hongnian Yu *Bournemouth Univ., UK*
Dongyun Wang *Zhongyuan Univ. of Tech., China*
Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*

15:50 – 16:10 SunP03-04

Complex event processing on uncertain data streams in product manufacturing process

Na Mao *Chinese Acad. of Sci., China*
Jie Tan *Chinese Acad. of Sci., China*

16:10 – 16:30 SunP03-05

Detecting cracks on a concrete surface using histogram of oriented gradients

Lin Meng *Ritsumeikan Univ., Japan*
Zhongkui Wang *Ritsumeikan Univ., Japan*
Yoshiyuki Fujikawa *Ritsumeikan Univ., Japan*
Shigeru Oyanagi *Ritsumeikan Univ., Japan*

16:30 – 16:50 SunP03-06

Power balance control for switched reluctance generator integrated in DC microgrid

T. Wang *Lanzhou Institute of Physics and National Key Lab. of Vacuum and Cryogenic, China*
D. He *Lanzhou Institute of Physics and National Key Lab. of Vacuum and Cryogenic, China*
Q. Wang *China Univ. of Mining and Tech., China*
Y. Huo *Lanzhou Institute of Physics and National Key Lab. of Vacuum and Cryogenic, China*
L. Lu *China Univ. of Mining and Tech., China*
J. Li *China Univ. of Mining and Tech., China*

16:50 - 17:00 **Break**

17:00 - 18:00

Plenary Panel Discussion

New Developments in Advanced Mechatronic Systems

Speaker: Mingcong Deng *Tokyo Univ. of Agri. and Tech., Japan*
 Hongnian Yu *Bournemouth Univ., UK*

18:30 - 20:30

Banquet

(Beijing Fujian Hotel, Beijing)

End of the 3rd Day

ICAMechS 2015
Monday, August 24, 2015

Technical Tour to The Great Wall of China

End of the Conference
