



Call for Papers

16th International Conference on Mechatronics Technology

October 16–19, 2012, Tianjin, China

Organizers:

State Key Laboratory of Precision Measuring Technology and Instruments; Tianjin University,

Co-organizers:

Chinese Instruments and Control Society
Chinese Society for Measurements
Chinese Society of Micro and Nano Technology
National Institute of Metrology P.R. China
Beijing Information Science & Tech. University
Shanghai Jiao Tong University
Tianjin Key Lab. for Control Theory & Appl. in Compl. Systems; Tianjin Univ. of Technology
Tianjin Engineering Research Center of Micro/Nano Manufacturing Technology
Eng. Research Center of Micro/Nano Manuf. and Measuring Technology, Ministry of Education

Honorable Chairmen:

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Acad. Bingheng Lu, Xi'an Jiao Tong University
Acad. Shenghua Ye, Tianjin University
Acad. Zhonghua Zhang, Nat. Inst. of Metrology
Acad. Tongbao Li, Tongji University

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Thailand: Manukid Parnichkun, Nitin Afzulpurkar
Turkey: Okyay Kaynak
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USA: Jay Lee, Masayoshi Tomizuka, Oussama Khatib, Kazuo Yamazaki
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Secretariat: Chunguang Hu, Sen Wu, Linyan Xu, Gang Zhao, Kun Chen

Date:

October 16 (Tuesday) – October 19 (Friday), 2012

Conference Site:

Holiday Inn Tianjin Riverside

Scope of the Conference:

The technical term, Mechatronics, was coined by Mr. Tetsuro Mori, CEO/President, Seibu Electric and Machinery Co. Ltd., in 1969 when he worked for Yaskawa Electric Corporation in Kitakyushu, Japan. The purpose was to promote the new technology to produce new machine tools by integrating machines and electronics. "Mechatronics" is therefore a means to open up a brighter future through innovation in technology.

The ICMT is an annual international mechatronics and technology conference that has been successfully held for 15 years. ICMT offers a forum to discuss state-of-the-art technologies and emerging application trends, and provides great opportunities for professional interactions and networking in a friendly and hospitable setting. The first ICMT was convened in Santa Clara, USA, in 1996, and subsequently in Yokohama, Hsinchu, Pusan, Singapore, Kitakyushu, Taiwan, Hanoi, Kuala Lumpur, Mexico City, Ulsan, Sudbury, Cebu City, Osaka and Melbourne. The objective of ICMT is to facilitate close dialogues, networking and collaborations among experts on issues related to research and technological development in mechatronics, as well as in human resource development and education.

ICMT 2012 continues to follow the rich tradition of ICMT with the following conference theme:

Advanced Mechatronics, Precision Measurement and NanoManufacturing

Technical Sessions:

In addition to the regular tracks of technical presentations, the technical program will also feature invited sessions with technology and industry specific themes. Special emphasis will be placed on the innovative usage of mechatronics technology. Topics of interest include, but are not limited to the followings:

- (1) Advanced Mechatronics Devices
Robotics, Robot factory, Mobile Robots, Motion control, Intelligent Mechanism, Parallel Mechanisms in Machine Tools, Man-Machine Interfaces.
- (2) Mechatronics Sensing and Control
Sensors, Computer Vision and Recognition, Automated Navigation, Modeling, Tele-operation, Intelligent and Advanced Control, Adaptive Control, Artificial Intelligence, Vehicle Dynamics.
- (3) Smart Actuators and Materials
Actuators using Functional Fluid, SMA Actuators, Piezo-Electric Actuators, Electro-Static Actuators, Magneto-Strictive Actuators, Smart Materials and Structures.
- (4) MEMS/NEMS and Micro/Nano-Manufacturing
Precision Mechatronics, Micro/Nano-Electro Mechanical Systems, Opto-Mechatronics, Ultra High Precision Machining, Focus Ion Beam Manufacturing.
- (5) Precision Measurement Technologies
Dimensional Measurement, Micro/Nano Measurement, Ultra High Precision Positioning, Optical and Laser Technology, Scanning Probe Microscopy Technology, Measurement for Extreme Environments, Precision Instrumentation, Metrology.
- (6) Production Systems
Automation Science and Technology, Intelligent Machine Tools, Flexible Manufacturing Systems, Agile Manufacturing, Production Planning & Control, Fault Monitoring & Diagnosis, e-Maintenance, e-Manufacturing, Rapid Prototyping, Remote Manuf. with Internet, Free Form Surface Machining.
- (7) Bioengineering and Mechatronics Applications in Life Sciences
Biosensors, Biochip Manipulation, Medical equipment, Human-Friendly Mechatronics, Human Adaptive Mechatronics, Life Cycle Design, Recycle Technology, Ecological Design and Production.
- (8) Information and Networking
Network-Based Control Systems, Real-Time Systems, Embedded Systems, Self-Configuring Wireless Sensor Networks.
- (9) Human Resource Development and Education on Mechatronics Technology
Strategy on Mechatronics Technology, Mechatronics Education, Computer-Aided Instruction, Virtual reality Applications on Education, Policy and Strategy Studies.

Sponsors:

State Key Laboratory of Precision Measuring Technology and Instruments

Conference Website:

More details are available in the following conference website: <http://ICMT2012.tju.edu.cn>

Venue:

Holiday Inn Tianjin Riverside
East Haihe Rd. Hebei District, Tianjin City, Tianjin
300141 P.R. China.
Tel. +86 22-2627-8888
<http://www.holidayinn.com/hotels/us/en/tianjin/tsn/cr/hoteldetail>

Conference fees:

The attendee conference fee includes registration, proceedings, welcome reception, lunches, banquet, and tour.

Fees are shown in Chinese Yuan.

| | Early | Late |
|--|----------|----------|
| All attendee (including speaker) | 3500 CNY | 4000 CNY |
| Student attendee (including speaker) | 2500 CNY | |
| Banquet fee for an additional guest (including tour) | 300 CNY | |

Optional programs:

A Ladies Program will be arranged. Additional tourism routes will be announced soon. Tourism services can be arranged depending on the number of interested participants.

Conference Secretariat:

If you have any questions, inquires or proposals on ICMT2012, you can contact the General Secretary:

Assoc. Prof. Chunguang Hu
College of Precision Instruments & Opto-Electronics Engineering,
Tianjin University
92 Weijin Road, Nankai District, Tianjin,
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Additional information:

Visa applications: We recommend applying for your visa in the Chinese Embassy at least two months before the intended travel date to China. Please, refer to the following website to look for the nearest Chinese Embassy to your location:

<http://www.fmprc.gov.cn/eng/wjw/zwjg/2490/>

Information about Tianjin:

<http://www.tj.gov.cn/english/>
<http://en.wikipedia.org/wiki/Tianjin>
<http://wikitravel.org/en/Tianjin>



Contributed Papers and Invited Session Proposals:

The organizing committee is soliciting contributed papers and invited session proposals. Review of the contributed papers will be based on Extended Abstracts of 3 to 4 pages. Invited session proposals should include a session title, and the abstracts of 5 to 6 papers with the contact information of the session proposer.

Special Publication in Journals:

Selected extended papers will be recommended to the following journals for review and publication:

- (1) Proc. of the Institute of Mechanical Engineers, Part I, Journal of Systems and Control Engineering (SCI);
- (2) International Journal of Automation Technology; (3) Nanotechnology & Precision Engineering; and
- (4) International Journal of Nanomanufacturing.

All accepted papers will be sent to be indexed by Ei Compendex and Thomson Reuters Conference Proceedings Citation Index (ISI Proceedings).

Program:

| | | |
|------------|-------|--|
| October 16 | (Tue) | Registration and Welcome party |
| October 17 | (Wed) | Opening Ceremony. Keynote Speeches and Technical Sessions. International Steering Committee Meeting |
| October 18 | (Thu) | Keynote Speeches and Technical sessions Banquet |
| October 19 | (Fri) | Tours (Scientific Labs / Great Wall) |

Submission Procedure:

1. **Extended Abstract stage:** Following the format requirements of the *Author's Guide*, an electronic copy of the *Extended Abstract* (of 3 to 4 pages) of your paper in PDF format along with the properly fulfilled *Registration Form* must be sent as attachments to ICMT2012@tju.edu.cn specifying:

Subject of the e-Mail: **contact author's full name and affiliation**

Name of the attachments: **contact author's full name.pdf / .xls**

2. **Final Camera-Ready Paper stage:** An electronic copy of your final *Camera-Ready Paper* in both PDF and Word files along with the properly fulfilled *Copyright Form* must be sent in attachment to the ICMT2012 Organizing Committee e-mail, specifying its subject and name attachments as show above. Since all accepted papers will be sent to be indexed by Ei Compendex and other indexing services, it is strongly recommended that authors follow the format requirements of the *Author's Guide*. Please, find the *Authors' Guide and Template*, the *Registration Form* and the *Copyright Form* in the conference web site. An Invitation Letter will be then sent to you after receiving these files. Please, be advised that at least one author should attend the venue and present the paper, otherwise the paper will be withdrawn.

3. **Registration Fee stage:** Once the Secretariat confirms the reception of your *Copyright Form* properly fulfilled, and your *final camera-ready paper* accomplishing the required format (final condition to accept a paper), you can proceed to make your *bank transfer*. Please see section "Registration Fee" to see account details to pay in US Dollars, Euro from other countries, or in RMB for domestic participants.

Once your registration fee has been successfully transferred, please, send a *scanned copy of the bank transfer receipt* to the conference e-mail ICMT2012@tju.edu.cn. After the reception and verification of the registration fee, authors will be sent an official conference registration fee receipt.

Important Dates:

| | |
|--|---------------------|
| Proposal for Invited Sessions | April 30, 2012 |
| Notification of acceptance of Invited Sessions | May 15, 2012 |
| Extended Abstract due date | July 15, 2012 |
| Notification of Extended Abstract acceptance | July 30, 2012 |
| Submission of camera ready manuscripts | August 31, 2012 |
| Deadline for early conference fee payment (early bird) | September 15, 2012 |
| Deadline for late conference fee payment | September 28, 2012 |
| Conference | October 16-19, 2012 |



Editorial Policies

Peer-review Process

From a total of 175 contributions submitted to ICMT2012, 120 papers have survived a rigorous peer-review process, first as extended abstracts and then again as full manuscripts. They have been given a final polish in the light of the second round of the peer-reviewing process so conference proceedings can be submitted for indexation. Grateful thanks are owed to the members of the International Scientific Committee of ICMT2012 for their diligence in assessing the papers.

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Free Access

ICMT2012 Proceedings are available online for free to all readers.

Mobile Robots and Automated Navigation

AMD23 Changing Formations Shapes for Multiple Robots via Synchronization

Ibrahim M.H. Sanhoury, Shamsudin H.M. Amin and Abdul Rashid Husain
(invited paper)

AMD07 Tri-rotors UAV Stabilization for Vertical Takeoff and Hovering

J. Cristofol, Y. Hertienne, M. Lafleur, B. Verguet and S. Vitu

AMD20 Monocular Vision, Optical Blur and Visual Looming as a Basis for Mobile Robot Obstacle Avoidance

Iain J. Brookshaw and Dr. Tobias Low

ROB08 Experiment Research of Robot Biological-Inspired Active Olfaction Strategy Based on Wandering Albatross Behavior

Guang-Da Lu, Ai-Mei Zhang, Jing Zhou, Shi-Gang Cui, Li Zhao

NET07 The Trajectory Tracking Problem for Quadrotor System

Na Zhang and Qing-He Wu

Biomedical Applications

HUM04 Study on EEG Signal Processing for Visual P300-Speller

Long Chen, Dong Ming, Min-Peng Xu, Yu-Feng Ke, Nan-Nan Li, Hong-Zhi Qi, Bai-Kun Wan (invited paper)

MED03 A Wireless Acquisition System for Surface Bio-Electrical Signals

Chun-Fang Wang, Li-Xin Zhang, Tian-Chen Zhai, Zheng Liu, Hong-Zhi Qi, Bai-Kun Wan, Dong Ming

ROB06 A Novel Tool for Force/Torque Sensing in Robotic Surgery

W. Schwalb, B. Shirinzadeh, Y. Qin and J. Smith

AMD09 The Effect of Hand Load on Orientation of Arm Muscles

Zheng-Hui Zhang and Yu-Zhen Cao

ROB01 A High Effective Bone-Muscle Model of Upper Limb for Rehabilitation Robot

Zheng-Hui Zhang and Yu-Zhen Cao

Electronic Design, Signal Processing and Fault Diagnosis

DIA03 Adaptive Stochastic Resonance Based on Particle Swarm Optimization with Application in Parameters Optimization

Zhong-Hai Zhang, Duo Wang, Tai-Yong Wang

MAN08 Effects of the High Order Terms on Periodic Solution Bifurcations of the Generalized Duffing Systems

Shi-Dong Chen, Zhi-Qiang Wu and Ming Gao

MES21 The Design and Implementation of Multitasking Based on UCOS-II in Chlorophyll Meter

Ming-Xia He and Yu-Qiao Chen

NET08 **Research of Fault Diagnosis for the Electronic Equipment Maintenance Training System**

Zhe Rao, Jin-Hua Hu

AUT01 **Improving (1+l)-ES Using the Clonal Selection Theory of Immunity**

Chuan-Tao Li, Jian-An Lou, Yong-Xue Zhou and Yang Li

Production and Manufacturing Systems (part 1)

MFA02 **Development of a Quasi Hydrodynamic Polishing Process on a Machining Center**

Fang-Jung Shiou, Mao-Min Fu and Sun-Peng Lin

MAN05 **A New Forecasting Method for Hard Disk Drive Manufacturing Throughput with a Hybrid Neural Network Model (invited paper)**

Nara Samattapong, Nitin Afzulpurkar, Manukid Parnichkun and Erik L.J. Bohez

MAN11 **Analysis of the Cutting Mechanism in Gear Hobbing**

Junsuke Fujiwara, Bunpei Takemura, Soichi Tsuchikabe and Kouji Watari

MAN12 **Drilling of CFRP/Ti6Al4V Stack Board**

Junsuke Fujiwara, Ryuichi Nagaura, Kohei Kuroda and Tetsuya Tashiro

HUM03 **A New Method for Evaluating Product Adaptability Based on Carbon Footprint Calculation**

Yao Han, Yong-Liang Chen, Pei-Hua Gu, Jian Zhang, Neng-Sheng Bao and De-Yi Xue

Production and Manufacturing Systems (part 2)

AMD25 **Study on Development of Proportional Control Valve System for Forklift**

Young-Man Jeong, Chan-Se Jeong and Soon-Yong Yang

MAN13 **An Application of B2MML in Computer Integrated Manufacturing Systems**

Dazhuang He, Andrei Lobov and Jose L. Martinez Lastra

MEC04 **Tracking Control of Hydraulic Actuator with Energy Saving using Independent Metering Valves**

Tien-Hoang Huu, Mashruk Ahamad, Jong Il Yoon, Kyoung Kwan Ahn, Kichang Jin

MAN14 **Effect of Crystal Orientations on Nanocutting Based on Quasicontinuum Multiscale Method**

Xiao-Wei Chen, Xiao-Dong Zhang, Feng-Zhou Fang, Min Lai and Fei-Fei Xu

MEM05 **Experimental Investigation of the Dynamic Characteristics of a Dual-rotary-spindle Milling Head**

Yi-Qing Yang, Wei Dai and Tian-Tian Chen