

IUMRS-ICA 2016

The 17th International Conference in Asia

Qingdao International Convention Center, Qingdao, China
October 20-24, 2016



Organized by:

Chinese Materials Research Society(C-MRS)
International Union of Materials Research Societies (IUMRS)
Qingdao Science and Technology Association

Co-organized by

Materials Research Society-Taiwan (MRS-T)

Supported by:

Ministry of Science and Technology of China
China Association for Science and Technology
National Natural Science Foundation of China
Chinese Academy of Sciences
Chinese Academy of Engineering
China Council for the Promotion of International Trade, Qingdao Sub-council

Introduction

IUMRS International Conference in Asia (IUMRS-ICA) is one of the most important series conferences of International Union of Materials Research Societies (IUMRS).

Authorized by IUMRS, IUMRS-ICA 2016 will be organized by C-MRS and co-organized by MRS-T. The conference will be held in Qingdao International Convention Center, Qingdao, Shandong Province, China, Oct. 20-24, 2016.

There will be 28 symposia covering five fields of: Energy and environment materials, Advanced structural materials, Functional materials, Biological materials, Materials modeling, simulation and characterization.

Three forums including 5th IUMRS-World Materials Summit, Materials Education Forum and Innovation Actuating Industry Development Forum, as well as an exhibition on “Advanced Materials, Manufacturing and Testing Equipment” will be held simultaneously with the conference.

Symposia

Energy and Environment Materials

- A. Solar Energy Materials and Solar Cells
- B. Eco-materials
- C. Photocatalytic Materials for Energy Production
- D. Energy Conversion and Storage Materials
- E. Nuclear Materials

Advanced Structure Materials

- F. Structural Light Alloy Materials
- G. Amorphous and High-entropy Alloys
- H. Serration and Noise Behavior in Advanced Materials
- I. Pipe and Pressure Vessel Materials
- J. Superalloys
- K. Metal Matrix Composite

Functional Materials

- L. Nanomaterials and Energy Devices
- M. Advanced Carbon Materials
- N. High-performance Lead-free Piezoelectric Ceramics
- O. Microfiber Materials
- P. The Low-carbon Emission Cementitious Materials
- Q. Multifunctional Composites and Metamaterials
- R. Advanced Optoelectronic and Microelectronic Materials
- S. Polymer Materials and Engineering
- T. Advanced Fibers and Nanocomposites
- U. Smart Materials

Materials Modeling, Simulation and Characterization

- V. Materials Processing and Metastable Materials Technology
- W. Additive Manufacturing Materials and Technology
- X. Advanced Technologies of Materials Characterization
- Y. Surface and Interface
- Z. Materials Simulation, Computation and Design

Biological Materials

- AA. Biomaterials
- BB. Biobased Polymeric Materials

Forums

FA. 5th IUMRS-World Materials Summit

FB. Materials Education Forum

FC. Innovation Actuating Industry Development Forum

Working Language: The working language for this conference is English

Main Topics, Organizers of Symposia

A. Solar Energy Materials and Solar Cells

Main Topics: Photovoltaic materials and solar cells, solar thermal materials, solar catalysis, X-chromic materials and devices, transparent conductive films, solar energy storage materials

Organizers:

Dechun Zou, Kung-Hwa Wei, Cong Wang, Aline Rougier, Shinuk Cho, Greg Wilson

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B. Eco-materials

Main Topics: Environmental conscious materials and manufacturing technologies; Materials life-cycle engineering and applications for sustainability; Eco-design and eco-chemical technology; Production and application technique for material recycling; Environmental engineering materials; Industrial ecology theory and application; Metrics and policies for materials sustainability.

Organizers:

Zuoren Nie, Guanjun Qiao, Osamu UMEZAWA

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Yu Liu, Beijing University of Technology

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C. Photocatalytic Materials for Energy Production

Main Topics: Photocatalytic H₂ generation; Photocatalytic reduction of CO₂.

Organizers:

Zhaosheng Li, Jinhua Ye, Baibiao Huang, Zhigang Zou

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Zhaosheng Li, Nanjing University

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D. Energy Conversion and Storage Materials

Main Topics: rechargeable battery, fuel cell, hydrogen storage material, super capacitor.

Organizers:

Ying Wu, Hongge Pan, Yunhui Huang, Jian li

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Youhua Yan, Advanced Technology & Materials Co., Ltd.

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E. Nuclear Materials

Main Topics: Nuclear Materials.

Organizers:

Enhou Han, Xinchun Lai, Wei Liu, Guanghong Lu, Wenjun Ma, Farong Wan

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Yue Yuan, Beihang University

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F. Structural Light Alloy Materials

Main Topics: High performance aluminum alloy, magnesium alloy, titanium alloy, light metal matrix composite materials applied to aerospace, aviation, automobile, rail vehicle, shipping and ocean engineering.

Organizers:

Baiqing Xiong, J. C. Huang, Fusheng Pan, Yong-Tai Lee, Linzhong Zhuang

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G. Amorphous and High-entropy Alloys

Main Topics: Amorphous alloys: structure, deformation and fracture mechanism, mechanical properties, characterization and processing, glass-forming ability, glassy matrix composites and nanocrystalline materials, physical properties and chemical properties, Fe-based soft magnetic amorphous alloy; High-entropy alloys:

alloy design, phase selection and stability, mechanical properties, strengthening and toughening, functional high entropy alloys.

Organizers:

KeFu Yao, Shian-Ching Jang, ZhaoPing Lu, XunLi Wang, Eun Soo Park

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H. Serration and Noise Behavior in Advanced Materials

Main Topics: In this meeting, we intend to provide comprehensive studies related to the serration and noise behavior of various advanced materials. Topics include Plastic deformation and serration behavior, high entropy and amorphous alloys, shape memory alloys and TWIP steel, barkhausen noise, structural units for plastic deformation, PLC serrations in AlMg alloys and low carbon steels.

Organizers:

Weihua Wang, Yong Zhang, Gang Wang, Peter K. Liaw, Junwei Qiao

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Junwei Qiao, Taiyuan University of Technology

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I. Pipe and Pressure Vessel Materials

Main Topics: Pipe and Pressure Vessel Materials.

Organizers:

Changxue Xu, Jinyang Zheng, Qingyou Liu

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J. Superalloys

Main Topics: advanced high temperature metal structure materials.

Organizers:

Jun Zhang, Qiang Feng, Chengbo Xiao, Jian Zhang, Jinhui Du

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Haijun Su, Northwestern Polytechnical University

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K. Metal Matrix Composite

Main Topics: Metal Matrix Composite.

Organizers:

Gaohui Wu, Lin Geng

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Qiang Zhang, Harbin Institute of Technology

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L. Nanomaterials and Energy Devices

Main Topics: Nanomaterials synthesis and characterization; Nanomaterials for renewable energy applications; Nanomaterials for devices applications.

Organizers:

Zhiyong Fan, Hong-Ming Lin, Guozhen Shen, Jiatao Zhang, Yu-Lun Chueh, Hyunhyub Ko, Sang-Woo Kim, Kuniharu Takei

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M. Advanced Carbon Materials

Main Topics: Graphene, nanocarbons; Carbon fiber and Carbon-based composites; Porous carbon; Industry application of carbon materials.

Organizers:

Hejun Li, Huiming Cheng, Jyh-Ming Ting, Feiyu Kang

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N. High-performance Lead-free Piezoelectric Ceramics

Main Topics: Fundamentals of lead-free ferroelectrics and piezoelectrics; Processing of high-performance lead-free piezoelectric ceramics including thin/thick films, composites, TGG, and single crystals; Characterization techniques and property-structure relationship studies; Applications of lead-free piezoelectric ceramics.

Organizers:

Jing-Feng Li, Satoshi Wada, Jae-Ho Jeon, Jae-Shin Lee

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O. Microfiber Materials

Main Topics: Electrospinning, nanofiber, function and application.

Organizers:

Ce Wang, Seeram Ramakrishna, Il-Doo Kim, Hao Fong

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Yong Liu, Beijing University of Chemical Technology

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P. The Low-carbon Emission Cementitious Materials

Main Topics: The Low-carbon Emission Cementitious Materials.

Organizers:

Zhonglun Zhang, Guang Ye

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Jiayuan Ye, China Building Materials Academy

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Q. Multifunctional Composites and Metamaterials

Main Topics: Composite materials with unusual mechanical, thermal, electrical, magnetic, microwave, optical, acoustic, catalysis, corrosion properties. The main topics include but not limited to: thermal structural materials, metamaterials in a broad sense, wave transparent materials, wave absorbing materials, thermal conducting/insulating materials etc.

Organizers:

Runhua Fan, Wei-Hsing Tuan, Soon-Yong Kwon

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R. Advanced Optoelectronic and Microelectronic Materials

Main Topic: Substrate materials such as Si, Ge, SOI, GOI, SiC and compound semiconductors; High-k, Low-k, GeSi, GeSn, PCRAM, RRAM, STT-MRAM, and other materials used in Integrated circuits and optoelectronic devices; New display material; Carbon nanotubes, graphene and other carbon based functional materials; Photoresist, DSA, CVD and ALD precursor, CMP materials, process chemicals and targets for of integrated circuit fabrication material; Special packaging material; Materials testing technology and method; Materials design theory and simulation; Novel two

dimensional material; Options post-CMOS.

Organizers:

Xi Wang, Ching Ping Wong, Qinghuang Lin, Chao Zhao, Deren Yang

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S. Polymer Materials and Engineering

Main Topics: Polymer materials, Functional Elastomer Materials, Microcellular Plastics, Shape Memory and Self-Healing Polymeric Materials

Organizers:

Guangxian Li, Chul B. Park, Guangye Liu, Shugao Zhao

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T. Advanced Fibers and Nanocomposites

Main topics: High-performance fibers and composites; Functional and smart fibers and composites; Nano-technology for new composites; Nanofibers, films and application.

Organizers:

Meifang Zhu, Benjamin S. Hsiao, Brigitte Voit, Yi Li

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U. Smart Materials

Main topics: Shape memory materials, Magnetic shape memory alloys, Magnetostrictive alloys, Ferroic materials and glasses, Applications of smart materials

Organizers:

Chengbao Jiang, Xiaobing Ren

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V. Materials Processing and Metastable Materials Technology

Main Topics: Basic theory of materials processing; Integrated computational materials engineering; Intelligent processing of materials; Compact and near-net-shape processing technology; Solidification, Plastic forming, Joining, Welding; Heat treatment, Surface engineering; Processing mold, equipment and control technology; Advanced technologies and processes in materials processing; Additive manufacturing, 3D printing, Micro/nanofforming technology; Metastable materials technology.

Organizers:

Jianxin Xie, Xuefeng Liu, Feng Liu, Zhongchun Chen

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W. Additive manufacturing materials and technology

Main Topics: Materials science fundamental for additive manufacturing; Additive manufacturing materials; Metal additive manufacturing; Non-metal additive manufacturing; Biomaterials additive manufacturing ; Novel additive manufacturing technology ; Process modelling for additive manufacturing; Design for additive manufacturing; Detection and evaluation on the additive manufactured materials.

Organizers:

Weidong Huang, Hong-Jen Lai, Xin Lin, Qian Ma, Bo Gu

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X. Advanced Technologies of Materials Characterization

Main Topics: Include but not limit: Synchrotron radiation, Neutron diffraction, Three dimensional atom probe etc.
and their applications on materials science.

Organizers:

Tongmin Wang, Shou-Yi Chang, Chuan-Pu Liu, Yandong Wang, Gang Sha

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Y. Surface and interface

Main Topics: Preparation and application of surface/interface of materials; surface/interface structure and properties of materials; surface/interface effects on material properties; computer simulation of material surface/interface behavior.

Organizers:

Bingshe Xu, Jinn P. Chu, Chuang Dong, Di Zhang, Min Liu

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Z. Materials Simulation, Computation and Design

Main Topics: Materials Genomes, Materials by Computational Design, Multiscale Simulations of Materials.

Organizers:

Jijun Zhao, Jeffrey Reimers, Chun-Hway Hsueh, Cesare Franchini, Yasushi Shibuta, Gilberto Teobaldi, Xingqiu Chen, Limin Liu, Yi Liu, Guanghong Lu

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AA. Biomaterials

Main Topics: Biomaterials for drug/gene delivery, Tissue engineering and Regenerative medicine, Biomaterials surfaces and interfaces, Nanobiomaterials, Biofabrication, Hydrogel, New design on biomaterials, Biomaterials and translational medicine.

Organizers:

Zhongwei Gu, San-Yuan Chen, Chengtie Wu, Doo Sung Lee, Yoshiki Katayama, Yong Han, Xiaofeng Chen

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BB. Biobased Polymeric Materials

Main Topics: Polymers synthesized from biobased feedstock; Carbohydrate polymers; Biomimetic Polymers; Bionanocomposites; Natural rubber; Biobased additives for polymers.

Organizers:

Liqun Zhang, Tzong-Ming Lee, Jin Zhu, Michael A. R.

Meier, Marc A. Hillmyer

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Organizers: Bingbo Wei, Duan Weng, Hanns-Ulrich
Habermeier

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**FA . 5th IUMRS-World Materials Summit-Advanced
Materials in Intelligent Society**

Main Topics: Intelligent Biomaterials, Intelligent
Building Materials, Intelligent Manufacturing Materials,
Intelligent Information Materials

FB. Materials Education Forum

**FC. Innovation Actuating Industry Development
Forum**

Important dates

Oct.20, 2015	First Announcement
Mar.15, 2016	Second Circular and Call for Papers
Mar.15, 2016	Online abstract submission system open
July.31, 2016	Abstract submission deadline
Aug.20, 2016	Notification of acceptance, Full paper submission
Aug.31, 2016	Early-bird registration deadline
Oct.19, 2016	Online registration close

General Program

Date	Moring	Afternoon	Evening
Oct 20, 2016	Registration* (09:00-22:00) City tour (13:00-18:00)		
Oct 21, 2016	Opening Ceremony (08:30-08:50) Plenary Lectures (09:00-12:00)	Parallel Sessions (13:30-17:30)	Banquet (18:00-22:00)
Oct 22, 2016	Parallel Sessions(08:30-12:00)	Parallel Sessions(13:30-16:30) Poster Session(16:30-18:00)	Symp. Chairs Meeting
Oct 23, 2016	Parallel Sessions(08:30-12:00)	Parallel Sessions(13:30-18:00)	
Oct 24, 2016	Parallel Sessions(08:30-11:00) Closing and Awards Ceremony (11:00-12:00)	City tour	

*Registration Time during Oct.21-Oct.23: 07:30-17:00

Registration fees

Classification	Before Aug. 31	After Sept. 1
Regular participant(Overseas)	USD \$500	USD \$600
Students(Overseas)	USD \$280	USD \$350
Regular participant (Domestic)	RMB ¥2600	RMB ¥2800
Students (Domestic)	RMB ¥1600	RMB ¥1800

Registration fees include:

An abstract book, program book, banquet, lunches from 21-24, coffee break during the conference, city tour.

Method of Payment

Early registration fee is applied for those people who completed the payment on/by 31 Aug 2016.

Overseas participant

(1) Payment online

Please login the website <http://www.c-mrs.org.cn/iumrs-ica2016/en>, registration and payment.

(2) Payment in conference site

You may pay the fee in cash when registering on site. The Check-in counter does not provide credit card service.

Domestic participant

(1) Payment online

Please login the website <http://www.c-mrs.org.cn/iumrs-ica2016/cn>, registration and payment.

(2) Telegraphic transfer

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ACCOUNT WITH BANK'S NAME: 北京银行魏公村支行

(3) Payment in conference site

Both cash(RMB) and credit card payment are acceptable.

**Please note: for those who have paid the pre-registration fee and cannot attend the meeting, 30% of the pre-registration fee will be deducted for bank charges during the refund process.*

Publication

The received full papers will be reviewed and recommended to be published in the following journals or proceedings

1. *Progress in Natural Science: Materials International (SCI)*

The papers for each symposium with high quality and academic significance may be recommended to be published in the journal of Progress in Natural Science: Materials International (PNS: MI) which is co-sponsored by IUMRS and C-MRS. One or two special issues may be published. The recommended papers will be reviewed by normal procedure of the journal to decide that if the paper can be published in this journal.

2. *Rare Metal (SCI)*

A supplemental issue in related area may be published in this journal. The symposium organizer may contact with conference secretariat if the papers of your symposium like to be published in this journal.

3. *Materials Science Forum (EI, ISTP, etc.)*

Proceedings Published by Trans Tech Publications Ltd, Switzerland (TTP). The papers which meet the requirement of this proceedings publication may be published.

4. Others

Some symposium organizers may recommend some papers of own symposium to be published on other journals different from the journals and proceedings above. The details may be found in the Menu of "Symposia" on the conference website.

Visa Application

If you need to apply the visa, please visit the website of the conference. Fill out the form of Invitation Letter of Duly Authorized Unit (the part in red) and send it back to the e-mail of ica2016@126.com.

Contacts:

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