

# ICPMAT2012 Scientific Programme

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## Monday 18<sup>th</sup> June

### Opening ceremony (Lecture hall R5)

Chair: Randi Holmestad

0845-0915      Opening ceremony. Short greetings from some of the universities represented at ICPMAT2012.

### Session 1 (Lecture hall R5)

Chair: Knut Marthinsen

- 0915-0945      **Gary Shiflet**, Reynolds Professor, University of Virginia, Charlottesville, VA, USA  
“Thermodynamic conditions for the formation of metastable pearlite”
- 0945-1015      **Yong Zou**, Professor, Shandong University, Jinan, China  
“Preparation Fe-Al coating by laser cladding iron and aluminum powder mixtures”
- 1015-1030      *Coffee break*

### Session 2 (Lecture hall R5)

Chair: Kenji Matsuda

- 1030-1100      **Ragnvald Mathiesen**, Associate Professor, NTNU, Trondheim, Norway  
“In-situ X-ray video microscopy studies of Al-Si eutectic solidification”
- 1100-1130      **Jostein Røyset**, Hydro Aluminium Research and Technology Development, Sunndalsøra, Norway  
“Hydro Aluminium – company profile and research on Al-Mg-Si alloys”
- 1130-1200      **Xuele Tian**, Professor, Shandong University, Jinan, China  
“Structure of Cu-20at. % Sb and Cu-80at. % Sb melts”
- 1200-1300      *Lunch*

### Session 3 (Lecture hall R5)

Chair: Gary Shiflet

- 1300-1330      **Odd Sture Hopperstad**, Professor, NTNU, Trondheim, Norway  
“Material modelling at different scales for large-scale numerical simulations of aluminium structures”
- 1330-1400      **Toshiya Shibayanagi**, Professor, University of Toyama, Toyama, Japan  
“Metal flow and high temperature deformation during friction stir spot welding of pure aluminium”
- 1400-1415      *Coffee break*

## Parallel sessions

### Session 4A (Lecture hall R5)

Chair: Ruben Bjørge

- 1415-1435      **Kenji Matsuda**, Professor, Toyama University, Toyama, Japan  
“Effect of minor addition of Mn or Fe on the age-hardening in Al-Mg-Si alloys”

- 1435-1455 **Satoshi Sunada**, Professor, University of Toyama, Toyama, Japan  
 “Corrosion characteristics of sintered 7075 aluminum alloy under SSRT test”
- 1455-1515 **Yanjun Li**, Senior Scientist, SINTEF Materials and Chemistry, Trondheim, Norway  
 “Crystallography and interfacial energy of Al<sub>6</sub>(Fe,Mn) dispersoids precipitated in AA5182 alloy”
- 1515-1535 **Katsumi Watanabe**, University of Toyama, Toyama, Japan  
 “Effect of Ag and Cu contents on the age hardening behavior of Al-Zn-Mg-Si alloys”
- 1535-1555 **Flemming Ehlers**, NTNU, Trondheim, Norway  
 “Modelling large fully coherent hardening precipitates in age hardenable Al alloys within an *ab initio* based framework”
- 1555-1615 **Šárka Mikmeková**, Institute of Scientific Instruments of the ASCR, Brno, Czech Republic  
 “SLEEM as a key for deeper understanding of materials microstructure”

### Session 4B (Lecture hall R8)

Chair: Randi Holmestad

- 1415-1435 **Eliška Mikmeková**, Institute of Scientific Instruments of the ASCR, Brno, Czech Republic  
 “Structural relaxation of sputtered hydrogenated carbon nitride films during annealing”
- 1435-1455 **Zhijiu Xing**, Shanghai University, Shanghai, China  
 “Magnetic behavior of the orthochromite Yb<sub>0.85</sub>Ca<sub>0.15</sub>CrO<sub>3</sub>”
- 1455-1515 **Norio Nunomura**, Associate Professor, University of Toyama, Toyama, Japan  
 “*Ab initio* modeling of aqueous corrosion for iron surfaces”
- 1515-1535 **Shujuan Yuan**, Associate Professor, Shanghai University, Shanghai, China  
 “Characterization and spin reorientation of single crystal rare-earth orthoferrites”
- 1535-1555 **Jostein Bø Fløystad**, NTNU, Trondheim, Norway  
 “*In situ* X-ray coherent diffractive imaging”
- 1555-1615 **Katsuhiko Nishimura**, University of Toyama, Toyama, Japan  
 “Superconductivity of MgB<sub>2</sub> composited with Mg-based alloys”

### Session 5: Poster session

Chair: Flemming Ehlers

1630-1800

## Tuesday 19<sup>th</sup> June

### Session 6 (Lecture hall R5)

Chair: Katsuhiko Nishimura

- 0830-0900 **Kazimierz Przybylski**, Professor, AGH University of Science and Technology, Krakow, Poland  
 “Oxidation properties of TiAl and TiAl<sub>3</sub>Nb at high temperature”
- 0900-0930 **Zenji Horita**, Professor, Kyushu University, Fukuoka, Japan  
 “High-pressure torsion for production of bulk nanostructured materials”

- 0930-1000 **Sotomi Ishihara**, Professor, University of Toyama, Toyama, Japan  
“Bending fatigue behavior of carbon fiber reinforced plastic”
- 1000-1030 **Guanghui Min**, Professor, Shandong University, Jinan, China  
“Surface modification of nanosized LaB<sub>6</sub> particles using silane coupling”
- 1030-1045 *Coffee break*

### Session 7 (Lecture hall R5)

Chair: Yong Zou

- 1045-1115 **Maxim Morozov**, NTNU, Trondheim, Norway  
“Lead-free ferroelectric ceramics”
- 1115-1145 **Calin Marioara**, Research Scientist, SINTEF Materials and Chemistry, Trondheim, Norway  
“HAADF-STEM investigations of metastable precipitates in a commercial Al-Mg-Zn-Cu alloy”
- 1145-1215 **Marisa Di Sabatino**, Associate Professor, NTNU, Trondheim, Norway  
“Crystallization, defects and characterization of solar cell silicon – review of the research work at NTNU”
- 1215-1330 *Lunch, including taking of a group photo*

### Session 8 (Lecture hall R5)

Chair: Shixun Cao

- 1330-1400 **Makoto Shiojiri**, Professor Emeritus, Kyoto Institute of Technology, Kyoto, Japan  
“Scattering of electrons and photons – HAADF-STEM and colouration of butterfly scales”
- 1400-1430 **Francis Pratt**, ISIS Facility, Rutherford Appleton Laboratory, Didcot, UK  
“μSR spectroscopy techniques for advanced materials research”
- 1430-1500 **Williams Lefebvre**, Université de Rouen, Saint Etienne de Rouvray, France  
“Advanced characterization by scanning transmission electron microscopy and atom probe tomography”
- 1500-1515 *Coffee*

### Session 9 (Lecture hall R5)

Chair: Kazimierz Przybylski

- 1515-1545 **Tom Henning Johansen**, Professor, University of Oslo, Oslo, Norway  
“Avalanche dynamics in superconducting films”
- 1545-1615 **Shixun Cao**, Professor, Shanghai University, Shanghai, China  
“Structural transition induced large magnetocaloric effect in Dy<sub>1-x</sub>Ho<sub>x</sub>MnO<sub>3</sub> system”
- 1615-1645 **Thomas Tybell**, Professor, NTNU, Trondheim, Norway  
“Thin film epitaxy: A key to oxide electronics”

### 1645-1700 Summary and announcement of next ICPMAT