

# WCAM-2012

*-A Dedicated Event for Material Professionals*

**Theme: Innovation, Cutting-Edge, and Smartness**

Time: June 6-8, 2012

Place: Beijing, China

## Keynote Forum

June 6, 2012 (Wednesday)

Time: 09:20-12:00

<b>Moderator:</b>	<b>Dr. Yunbing Wang</b> , Principal Research Scientist, Abbott Vascular, USA
09:20-09:30	<b>Moderator's Introduction</b>
09:30-09:55	<b>Title:</b> Recent Progress and Future Directions in Advanced Magnetic Materials <b>Dr. David C. Jiles</b> , Anson Marston Distinguished Professor; Palmer Endowed Departmental Chair, Iowa State University, USA
09:55-10:20	<b>Title:</b> Advanced Materials for High Temperature Solid Oxide Fuel Cells <b>Dr. Subhash C. Singhal</b> , Battelle Fellow and Director, Fuel Cells, Pacific Northwest National Laboratory; Member, U.S. National Academy of Engineering, USA
10:20-10:45	<b>Title:</b> Design of Heterogeneous Functional Materials for Fuel Cells <b>Dr. Ken Reifsnider</b> , Professor, University of South Carolina, USA
10:45-11:10	<b>Title:</b> Ultra-high Resolution Analysis of the Mechanisms of Oxidation of Zr Fuel Cladding Alloys <b>Dr. Chris Grovenor</b> , Professor, University of Oxford, UK
11:10-11:35	<b>Title:</b> Natural Composites for Bettering the Environment <b>Dr. Alan K. T. Lau</b> , Professor, Hong Kong Polytechnic University, Hong Kong, China; Professor and Executive Director, Centre of Excellence in Engineered Fibre Composites, University of Southern Queensland, Australia
11:35-12:00	<b>Title:</b> Nanomaterials for Clean Energy: Challenges and Opportunities <b>Dr. Meilin Liu</b> , Regents' Professor, Georgia Institute of Technology, USA

### ***Symposium 1: Hot Topics of Material Science***

#### **Session 1-1: Physical and Chemical Behaviors of Materials**

13:30-17:10, June. 6th, 2012 (Wednesday)

<b>Chair:</b>	<b>Dr. Xiongwei Ni</b> , Professor, School of Engineering and Physical Science, Heriot-Watt University, Edinburgh, UK
<b>Co-Chair:</b>	<b>Dr. Byron D. Gates</b> , Associate Professor; Research Chair, Simon Fraser University, Canada
13:30-13:35	<b>Chair's Introduction</b>

13:35-14:00	<b>Keynote Speaker:</b> <b>Title:</b> Stimuli-responsive Nanoparticles at Interfaces <b>Dr. Dayang Wang</b> , Professor, Ian Wark Research Institute, University of South Australia, Australia
14:00-14:25	<b>Title:</b> Global and Local Characterization of Lead Free Solders <b>Dr. Narayanaswami Ranganathan</b> , Director, Laboratory of Mechanics and Rheology, University Francois Rabelais of Tours, France
14:25-14:50	<b>Title:</b> Formation of Chromia on Copper-chromium Composites and Coatings <b>Dr. Kuang-Tsan Chiang</b> , Senior Research Scientist, Southwest Research Institute, USA
14:50-15:15	<a href="#">Speech Opportunity Available</a>
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<a href="#">Speech Opportunity Available</a>
15:55-16:20	<b>Title:</b> Quantitative Analysis of Gecko Inspired Adhesives <b>Dr. Byron D. Gates</b> , Associate Professor; Research Chair, Simon Fraser University, Canada
16:20-16:45	<b>Title:</b> Atomic-scale Engineering of Electronic Transports in Half-Heusler Nanocomposites <b>Dr. Pierre F. P. Poudeu</b> , Assistant Professor, Materials Science and Engineering Department, University of Michigan, USA
16:45-17:10	<a href="#">Speech Opportunity Available</a>

## Session 1-2: Surface & Interface Science, Mesoporous and Catalysis of Materials

08:30-12:30, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Axel Knop-Gericke</b> , Group Leader, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Germany
<b>Co-Chair:</b>	<b>Dr. Jung-Chun-Andrew Huang</b> , Professor, National Cheng Kung University, Taiwan; Visiting Professor, HeFei University of Technology, China
08:30-08:35	<b>Chair's Introduction</b>
08:35-08:55	<b>Title:</b> Exploring the Fundamentals and Applications of Solid-Stabilized Emulsions <b>Dr. Lenore L. Dal</b> , Associate Professor and Program Chair of Chemical Engineering, School for Engineering of Matter, Transport and Energy, Arizona State University, USA
08:55-09:15	<b>Title:</b> Recent Trends in All-inorganic Design of Colloidal Nanomaterials <b>Dr. Maksym V. Kovalenko</b> , Assistant Professor, ETH Zurich; EMPA-Swiss Federal Laboratories for Materials Science and Technology, Switzerland
09:15-09:35	<b>Title:</b> Use of Mesoporous Materials for the Design of a Bioreactor by the Immobilization of Lipase: Application to Transesterification Reaction <b>Dr. Jean-Luc Blin</b> , Professor, Lorraine University, France
09:35-09:55	<b>Title:</b> Playing with Solid Particle Wettability: Particle Interactions and Novel Materials <b>Dr. Tommy S. Horozov</b> , Lecturer, Surfactant & Colloid Group, Department of Chemistry, University of Hull, UK
09:55-10:15	<b>Title:</b> Characterization of Heterogeneous Catalytic Processes by near Ambient Pressure X-ray

	Photoelectron Spectroscopy <b>Dr. Axel Knop-Gericke</b> , Group Leader, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Germany
10:15-10:30	<b>Coffee Break</b>
10:30-10:50	<b>Title:</b> STM/STS Studies of Polar and Non-polar ZnO Surface <b>Dr. Jung-Chun-Andrew Huang</b> , Professor, National Cheng Kung University, Taiwan; Visiting Professor, HeFei University of Technology, China
10:50-11:10	<b>Title:</b> Nanoscale Order and Thin Film Processes in Organic Materials Investigated by Photoemission Electron Microscopy and Low Energy Electron Microscopy <b>Dr. Maria Benedetta Casu</b> , Senior Lecturer, University of Tuebingen, Germany
11:10-11:30	<b>Title:</b> Intrinsic Charge Carrier Transport in Conjugated Materials Probed by Electrode-less Conductivity Measurement Technique <b>Dr. Shu Seki</b> , Professor, Osaka University, Japan
11:30-11:50	<b>Title:</b> Applications of Mesoporous Thin Films to Nanofabrication and Nanodevices <b>Dr. Young-Uk Kwon</b> , Professor, Sungkyunkwan University, South Korea
11:50-12:10	<b>Title:</b> Structure Control of Shell Layer Constructed with Self-assembled Inorganic Nanoparticles on a Polymer-based Core Microsphere <b>Dr. Makoto Takafuji</b> , Associate Professor, Kumamoto University; Kumamoto Institute for Photo-Electro Organics (PHOENICS), Japan
12:10-12:30	<b>Title:</b> Function of Cocatalysts for Photocatalytic Overall Water Splitting <b>Dr. Kazuhiro Takanabe</b> , Assistant Professor, King Abdullah University of Science and Technology(KAUST), Saudi Arabia
12:30-12:50	<a href="#">Speech Opportunity Available</a>

### Session 1-3: Crystal Growth & Design and Liquid Crystals

13:30-15:50, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Daniel Guillon</b> , Director, Institute of Physics and Chemistry of Materials of Strasbourg (IPCMS), France
<b>Co-Chair:</b>	<b>Dr. Wei Lee</b> , Professor, College of Photonics, National Chiao Tung University, Taiwan
13:30-13:35	<b>Chair's Introduction</b>
13:35-13:55	<b>Keynote Speaker:</b> <b>Title:</b> Photonic Waveguide Engineering Using Pulsed Lasers—A Novel Approach for Non-clean Room Fabrication <b>Dr. Animesh Jha</b> , Professor, University of Leeds, UK
13:55-14:15	<b>Title:</b> Flow Chemistry Technology Handling Solids Including Crystallisation <b>Dr. Xlongwei Ni</b> , Founder and Technical Director, NiTech Solutions Ltd., UK
14:15-14:35	<b>Title:</b> Equilibrium and Kinetic Properties of GaN(0001) Surface in Vacuum and in Ammonia-rich Environment – DFT Study <b>Dr. Stanislaw Krukowski</b> , Professor, Institute for High Pressure Physics PAS, Interdisciplinary Center

	for ModelLing, University of Warsaw, Poland
14:35-14:55	<b>Title:</b> Advanced Photo-alignment Materials & Technologies for Liquid Crystal Applications <b>Dr. Mohammed Ibn-Elhaj</b> , Head, New Technologies at Rolic Technologies, Switzerland
14:55-15:15	<b>Title:</b> Structural and Device Properties of Polymer-dispersed Liquid Crystal Nanocomposites Hybridized with Nanoplatelets <b>Dr. Wei Lee</b> , Professor, College of Photonics, National Chiao Tung University, Taiwan
15:15-15:30	<b>Coffee Break</b>
15:30-15:50	<b>Title:</b> Functional Hybrid Nanomaterials Based on Liquid-crystalline Structures <b>Dr. Daniel Gullon</b> , Director, Institute of Physics and Chemistry of Materials of Strasbourg (IPCMS), France
15:50-16:10	<a href="#">Speech Opportunity Available</a>

### Session 1-4: Carbon, Graphite, and Graphene

13:30-15:55, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Karin Larsson</b> , Professor, Uppsala University, Sweden
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<b>Title:</b> Graphene on SiC <b>Dr. Lelf Johansson</b> , Professor, Linkoping University, Sweden
14:00-14:25	<b>Title:</b> Faradaic Adsorption of Lithium on the Surface of Carbon Electrode for Li-ion Batteries and Supercapacitors <b>Dr. Tsutomu Takamura</b> , Invited Guest Professor, Harbin Institute of Technology, Japan
14:25-14:50	<b>Title:</b> Epitaxial Graphene: Characterization and Functionalization <b>Dr. Chariya Virojanadara</b> , Associate Professor, Linkoping University, Sweden
14:50-15:15	<b>Title:</b> Functionalization of Multi-walled Carbon Nanotubes Using Water-assisted Chemical Vapor Deposition <b>Dr. Yan Liu</b> , Senior Research Fellow, Institute of Chemical and Engineering Sciences, Singapore
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<b>Title:</b> Theoretical Modeling of Graphene Formation on Diamond (111) Using a High-Temperature Sublimation Process under Various Gaseous and Doping Conditions <b>Dr. Karin Larsson</b> , Professor, Uppsala University, Sweden
15:55-16:20	<a href="#">Speech Opportunity Available</a>

### Session 1-5: Material Oxidation, Corrosion and Control

15:50-17:10, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Tetsuo Shoji</b> , Professor, New Industry Creation Hatchery Center (NICHe) Tohoku University; Member, Science Council of Japan and Japan Academy of Engineering, Japan
15:50-15:55	<b>Chair's Introduction</b>

15:55-16:20	<p><b>Title:</b> A Systematic Characterization of Advanced Chamber Materials for Plasma Dry Etching Processes in Semiconductor Wafer Fabrication</p> <p><b>Dr. Hong Shih</b>, Senior Technology Director, Etch Products Group, Lam Research Corporation, USA</p>
16:20-16:45	<p><b>Title:</b> Mussel Adhesive Protein and Ceria Nanoparticle Composite Films for Corrosion Protection</p> <p><b>Dr. Jinshan Pan</b>, Professor, Division of Surface and Corrosion Science, Royal Institute of Technology, Sweden</p>
16:45-17:10	<p><b>Title:</b> Oxidation Dynamics at Oxide/Metal Interface and Oxidation Localization and SCC initiation in High Temperature Water</p> <p><b>Dr. Tetsuo Shoji</b>, Professor, New Industry Creation Hatchery Center (NICHe) Tohoku University; Member, Science Council of Japan and Japan Academy of Engineering, Japan</p>
17:10-17:35	<a href="#">Speech Opportunity Available</a>

### ***Symposium 2: Leading-Edge Technologies for Materials***

#### **Symposium 2: Leading-Edge Technologies for Materials (Part I)**

13:30-17:10, June. 6th, 2012 (Wednesday)

<b>Chair:</b>	<b>Dr. Peter Dubruel</b> , Professor, Polymer Chemistry and Biomaterials Research Group, Ghent University, Belgium
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<p><b>Keynote Speaker:</b></p> <p><b>Title:</b> Nature-Inspired Design of Pseudo-Protein-based Biomaterials: Their Property and Performance</p> <p><b>Dr. Chih-Chang (C.C.) Chu</b>, Rebecca Q. Morgan '60 Professor, Cornell University, USA</p>
14:00-14:25	<p><b>Title:</b> Functionalized Materials in CMOS Technologies</p> <p><b>Dr. Christian Wenger</b>, Project Leader, IHP – Leibniz Institute for Innovative Microelectronics, Germany</p>
14:25-14:50	<p><b>Title:</b> Micropost Array Platforms for Cellular Mechanical Sensing and Actuation</p> <p><b>Dr. Raymond H. W. Lam</b>, Assistant Professor, City University of Hong Kong, Hong Kong, China</p>
14:50-15:15	<p><b>Title:</b> Personalized Medicine: From Material to Application and Back</p> <p><b>Dr. Peter Dubruel</b>, Professor, Polymer Chemistry and Biomaterials Research Group, Ghent University, Belgium</p>
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<p><b>Title:</b> Formation and Characterization of Electron-cyclotron-resonance Plasma-derived Germanium Nitride for Germanium-based CMOS Applications</p> <p><b>Dr. Yukio Fukuda</b>, Professor, Tokyo University of Science, Japan</p>
15:55-16:20	<p><b>Title:</b> Fe-based / Methyl Methacrylate Polymeric Nanocomposite Prepared by Laser Pyrolysis: Structural and Thermal Properties</p> <p><b>Dr. Rodica Alexandrescu</b>, Research Professor, NILPRP - National Institute for Laser, Plasma and Radiation Physics, Romania</p>

16:20-16:45	<b>Title:</b> Enhancing SRAM Performance by Using Independent-double-gate FinFET <b>Dr. Meishoku Masahara</b> , Group Leader, National Institute of Advanced Industrial Science and Technology, Japan
16:45-17:10	<b>Title:</b> Microtechnology in Chemical Process Industries: Feasibility Versus Controllability <b>Dr. Syamsul Rizal Abd Shukor</b> , Professor, Universiti Sains Malaysia, Malaysia
17:10-17:30	<a href="#">Speech Opportunity Available</a>

### Symposium 2: Leading-Edge Technologies for Materials (Part II)

08:30-10:50, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<a href="#">Call for Chair</a>
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
08:30-08:35	<b>Chair's Introduction</b>
08:35-08:55	<b>Title:</b> Noise-driven Signal Transmitter Using Nonlinear Effect of Functional Oxide Thin Films <b>Dr. Teruo Kanki</b> , Assistant Professor, Institute of Scientific and Industrial Research, Osaka University, Japan
08:55-09:15	<b>Title:</b> Piezoelectric Fibres for Energy Harvesting Textiles to Generate Electricity from the Environment <b>Dr. Limin Qian</b> , Professor, GK Opto-Electronics Co., Ltd. Chinese Academy of Science, China
09:15-09:35	<b>Title:</b> Organic Nanotubes for Polymer Nano-fabrication <b>Dr. Hirotaka Ihara</b> , Professor, Kumamoto University, Japan
09:35-09:55	<b>Title:</b> Fabrication of Sophisticated Two-dimensional H-bonded Organic Nanoarchitectures through Molecular Self-assembly <b>Dr. Fablen Silly</b> , Senior Researcher, CEA Saclay, France
09:55-10:15	<b>Title:</b> Molecularly-ordered Nanofibrils-mediated Spectral Conversion Film <b>Dr. Hirokuni Jintoku</b> , Postdoctoral Researcher, Kumamoto University, Japan
10:15-10:30	<b>Coffee Break</b>
10:30-10:50	<b>Title:</b> Rapid Manufacture of Ceramics: Status and Perspective <b>Dr. Jens Gunster</b> , Professor, Federal Institute for Materials Research and Testing BAM, Germany
10:50-11:10	<a href="#">Speech Opportunity Available</a>

### Symposium 2: Leading-Edge Technologies for Materials (Part III)

08:30-12:10, June. 8th, 2012 (Friday)

<b>Chair:</b>	<b>Dr. Hanns-Ulrich Habermeler</b> , Professor, MPI-FKF, Germany
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Keynote Speaker:</b> <b>Title:</b> The Role of Dimensionality in Heavy-fermion Quantum Criticality

	<b>Dr. Silke Paschen</b> , Professor, Vienna University of Technology, Austria
09:00-09:25	<b>Title:</b> Phase Gap in Pseudo-Ternary R <sub>1-y</sub> R' <sub>y</sub> Mn <sub>2</sub> X <sub>2</sub> -xX' <sub>x</sub> Compounds <b>Dr. S. J. Kennedy</b> , Technical Director, Australian Nuclear Science and Technology Organisation, Australia
09:25-09:50	<b>Title:</b> Complex Phases for Systems with Competing Repulsive and Attractive Interactions: Implications for Vortex Matter and Charge Ordering Systems <b>Dr. Charles Reichhardt</b> , Technical Staff Member, Los Alamos National Laboratory, USA
09:50-10:15	<b>Title:</b> Oxide Interface Engineering-A Route towards Superconductivity at Ambient Temperatures? <b>Dr. Hanns-Ulrich Habermeier</b> , Professor, MPI-FKF, Germany
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> High Intensity Pulse Ion Beams Production and Application <b>Dr. G. E. Remnev</b> , Professor, Tomsk Polytechnic University, Russia
10:55-11:20	<b>Title:</b> Separation and Optical Property Investigation of Colloidal Nanoparticles <b>Dr. Xiaoming Sun</b> , Professor, Beijing University of Chemical Technology, China
11:20-11:45	<b>Title:</b> Investigations on the Effect of Process Parameters in Micro-electrochemical Discharge Machining and Fluid Structure Interaction in Electrohydraulic Servovalve <b>Dr. Somashekhar S. Hiremath</b> , Head, Precision Engineering, and Instrumentation Laboratory, Indian Institute of Technology Madras, India
11:45-12:10	<a href="#">Speech Opportunity Available</a>

### ***Symposium 3: Chemical Reaction/Synthetic Methods, Welding and Joining/Brazing***

<b>Symposium 3: Chemical Reaction/Synthetic Methods, Welding and Joining/Brazing</b>	
13:30-17:10, June. 6th, 2012 (Wednesday)	
<b>Chair:</b>	<b>Dr. Jean-Francois Gerard</b> , Vice President, INSA, France
<b>Co-Chair:</b>	<b>Dr. Emile Van Der Helde</b> , Professor, University of Twente; Senior Scientist, Dutch Organization for Applied Scientific Research TNO, The Netherlands
13:30-13:35	<b>Chair's Introduction</b>
13:35-13:55	<a href="#">Speech Opportunity Available</a>
13:55-14:15	<b>Title:</b> Creating Reactivity at Surfaces and Interfaces by Photochemical Methods <b>Dr. Wolfgang Kern</b> , Professor, University of Leoben, Austria
14:15-14:35	<b>Title:</b> Recent Progress in Liquid Chromatography of Synthetic Polymers <b>Dr. Dusan Berek</b> , Professor, Polymer Institute of the Slovak Academy of Science, Slovakia
14:35-14:55	<b>Title:</b> Addressing Current Challenges in Solution Based Synthesis of Nanostructured Metal Oxides <b>Dr. Marlies Van Bael</b> , Full Professor, Institute for Materials Research, Hasselt University, Belgium
14:55-15:15	<b>Title:</b> Sol-gel Reactions of Silicon Alkoxides as a Tool for Design Nanocomposites Based on a Biopolymer (PLA) <b>Dr. Jean-Francois Gerard</b> , Vice President, INSA, France

15:15-15:30	<b>Coffee Break</b>
15:30-15:50	<b>Title:</b> Materials for Skin Tribology <b>Dr. Emile Van Der Heide</b> , Professor, University of Twente; Senior Scientist, Dutch Organization for Applied Scientific Research TNO, The Netherlands
15:50-16:10	<b>Title:</b> Tribological Study on 3D Porous Scaffold for Functional Tissue Regeneration <b>Dr. Xiangqiong Zeng</b> , Assistant Professor, University of Twente, The Netherlands
16:10-16:30	<a href="#">Speech Opportunity Available</a>
16:30-16:50	<b>Title:</b> Oxide Nanotubes Obtained by Sol-gel and Hydrothermal Methods <b>Dr. Maria Zaharescu</b> , Head, Ilie Murgulescu Institute of Physical Chemistry of the Romanian Academy, Romania
16:50-17:10	<a href="#">Speech Opportunity Available</a>

***Symposium 4: Material Property Characterization, Simulation and Control***

<b>Symposium 4: Material Property Characterization, Simulation and Control</b> 13:30-17:10, June. 6th, 2012 (Wednesday)	
<b>Chair:</b>	<b>Dr. Urs Meier</b> , Emeritus Professor, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
<b>Co-Chair:</b>	<b>Dr. Serguei V. Savilov</b> , Associate Professor, Chemistry Department of M.V.Lomonosov Moscow State University, Russia
13:30-13:35	<b>Chair's Introduction</b>
13:35-13:55	<b>Title:</b> Seeing the Invisible-Ultrasonic Force Microscopy for True Nanoscale Subsurface Elastic Imaging of Semiconductor Nanostructures <b>Dr. Oleg V. Kolosov</b> , Reader, Lancaster University, UK
13:55-14:15	<b>Title:</b> A Novel Method to Obtain Yield Strength and Work Hardening Rate from Nanoindentation <b>Dr. Alexander Hartmaler</b> , Professor, Ruhr-Universitaet Bochum; Director, Interdisciplinary Centre for Advanced Materials Simulation (ICAMS); Germany
14:15-14:35	<b>Title:</b> Accurate Evaluation of Intermolecular Properties in van der Waals and H-bonded Complexes <b>Dr. B. Fernandez</b> , Professor, University of Santiago de Compostela, Spain
14:35-14:55	<b>Title:</b> The Application of Innovative Photo-catalytic Materials for the Degradation of Atmospheric Pollutants <b>Dr. Dimitris Kotzias</b> , Professor, European commission-Joint Research Center, Italy
14:55-15:15	<b>Title:</b> Monitoring the Reliability of Carbon Fiber Reinforced Polymer Components in Civil-structures with the Means of Structural Health Monitoring <b>Dr. Urs Meier</b> , Emeritus Professor, Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
15:15-15:30	<b>Coffee Break</b>
15:30-15:50	<b>Title:</b> Electron Microscopy and Related Techniques in Study of Structured Carbon Materials



	<b>Dr. Serguel V. Savilov</b> , Associate Professor, Chemistry Department of M.V.Lomonosov Moscow State University, Russia
15:50-16:10	<b>Title:</b> Atomic Column-to-column Compositional Analysis of Materials from High Resolution Scanning Transmission Electron Microscopy <b>Dr. Sergio I. Molina</b> , Professor, University of Cadiz, Spain
16:10-16:30	<b>Title:</b> pH Dependent Conformation and Intramolecular Dynamics of PAMAM Dendrimers <b>Dr. Yi Liu</b> , Director, Materials and Process Simulation Center, California Institute of Technology, USA
16:30-16:50	<b>Title:</b> Quick Observation of Nano-scaled Chemical States by Micro-X-ray Absorption Spectroscopy <b>Dr. Yuji Baba</b> , Principal Scientist, Japan Atomic Energy Agency, Japan
16:50-17:10	<b>Title:</b> Development in a New Electrochemical Coating Process Using Zn-Al-Ag Alloy and Its Applications <b>Dr. Said Robles Casolco</b> , Materials Researcher, Monterrey Institute of Technology and Higher Education, Campus Puebla, Mexico
17:10-17:30	<a href="#">Speech Opportunity Available</a>

### ***Symposium 5: Materials for Low Carbon and Environment Industries***

<b>Session 5-1: Renewable/Recycling/ Photodegradable/Biodegradable Materials</b>	
13:30-17:10, June. 6th, 2012 (Wednesday)	
<b>Chair:</b>	<b>Dr. Leszek Moscicki</b> , Professor, Lublin University of Life Sciences, Poland
<b>Co-Chair:</b>	<b>Dr. Marko Likon</b> , Managing Director, Company Insol Ltd., Slovenia
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<b>Title:</b> A New Biolubricant from Rice Straw <b>Dr. Jeng-Haur Horng</b> , Professor, National Formosa University, Taiwan
14:00-14:25	<b>Title:</b> Bamboo Guadua Laminated as Construction Material for Housing <b>Dr. Caori Patricia Takeuchi</b> , Professor, National University of Colombia, Colombia
14:25-14:50	<a href="#">Speech Opportunity Available</a>
14:50-15:15	<b>Title:</b> Thermoplastic Starch-An Alternative Material for Packaging <b>Dr. Leszek Moscicki</b> , Professor, Lublin University of Life Sciences, Poland
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<b>Title:</b> Poplar Seed Fibers as Natural Super Absorbent for Oil Spilling Sanitation <b>Dr. Marko Likon</b> , Managing Director, Company Insol Ltd., Slovenia
15:55-16:20	<b>Title:</b> The Physical Properties of Thermoplastic Starchy Films Fortified with Functional Additives <b>Dr. Andrzej Rejak</b> , Senior Lecturer, Lublin University of Life Sciences, Poland
16:20-16:45	<b>Title:</b> Processing of Thermoplastic Starch Enriched with Natural Fibers <b>Dr. Tomasz Oniszczyk</b> , Research Worker, Lublin University of Life Sciences, Poland
16:45-17:10	<a href="#">Speech Opportunity Available</a>

## Session 5-2: Magnetocaloric Materials

13:30-15:15, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Slawomir Maksymilian Kaczmarek</b> , Professor, West Pomeranian University of Technology, Poland
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<b>Title:</b> Mixed Magnetism in Transition Metal Based Magnetocaloric Materials <b>Dr. Ekkes Bruck</b> , Professor, Delft University of Technology, The Netherlands
14:00-14:25	<a href="#">Speech Opportunity Available</a>
14:25-14:50	<b>Title:</b> Constraints in Assessing Performance of Giant Magnetocaloric Materials for Near Room-Temperature Applications <b>Dr. Joaquim M. Vieira</b> , Professor, Department of Ceramics and Glass Engineering/CICECO, University of Aveiro, Portugal
14:50-15:15	<b>Title:</b> Synthesis and Characterization of $\text{NaIn}(\text{WO}_4)_2$ and $\text{LiIn}(\text{WO}_4)_2$ Nanopowders and Single Crystals Doped with Chromium <b>Dr. Slawomir Maksymilian Kaczmarek</b> , Professor, West Pomeranian University of Technology, Poland
15:15-15:30	<b>Coffee Break</b>

## Symposium 6: Optical, Electronic and Magnetic Materials

### Session 6-1: Optoelectronic and Optical Materials(Part I)

13:30-17:10, June. 6th, 2012 (Wednesday)

<b>Chair:</b>	<a href="#">Call for Chair</a>
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<b>Title:</b> Electronic Properties and Applications of Quasi-One-Dimensional Graphene-based Systems <b>Dr. Eugene H. Kim</b> , Associate Professor, University of Windsor, Canada
14:00-14:25	<b>Title:</b> Nano-scale Surface Plasmon Polariton Structures Interrogated by Conventional Microscopy Methods <b>Dr. Kenneth Chau</b> , Assistant Professor, The University of British Columbia, Canada
14:25-14:50	<b>Title:</b> Integration of Crystalline II-VI and III-V Materials for Optoelectronic Application <b>Dr. Xinyu Liu</b> , Research Assistant Professor, University of Notre Dame, USA
14:50-15:15	<b>Title:</b> Natural Photonic Structures: A Tool for Bioinspired Devices <b>Dr. Serge Berthier</b> , Professor, Institute of NanoSciences of Paris, CNRS - University Pierre and Marie Curie, France
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<b>Title:</b> Infrared Emitting Er-doped $\text{SnO}_2$ for Silicon Photonics <b>Dr. Yusui Nakamura</b> , Professor, Graduate School of Science and Technology, Kumamoto University,

	Japan
15:55-16:20	<b>Title:</b> Manufacturing Technology and Applications of Optical Micro-Structured PMMA Sheet <b>Dr. Stanley Tsai</b> , Director, R&D Center, Forhouse Corporation, Taiwan
16:20-16:45	<b>Title:</b> Preparation of High-Luminance Thin-film Phosphors at Low Temperature by Using Laser Annealing <b>Dr. Yoichiro Nakanishi</b> , Professor, Research Institute of Electronics, Shizuoka University; Member, The Electrochemical Society; Society of Information Display, Japan
16:45-17:10	<b>Title:</b> Light Emission Characteristics of Phosphors with a Microcavity <b>Dr. Hidenori Mimura</b> , Professor; Director, Research Institute of Electronics, Shizuoka University; Member, IEEE; SID, Japan
17:10-17:35	<a href="#">Speech Opportunity Available</a>

### Session 6-1: Optoelectronic and Optical Materials(Part II)

15:55-17:15, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<a href="#">Call for Chair</a>
15:55-16:00	<b>Chair's Introduction</b>
16:00-16:25	<b>Title:</b> Study of Efficiency Droop in the InGaN-based Light-emitting Diodes <b>Dr. Ray-Ming Lin</b> , Associate Professor, Chang Gung University, Taiwan
16:25-16:50	<b>Title:</b> Helicene Derivatives, A Novel Group of Electroluminescent Material for Organic Light-emitting Diode <b>Dr. Thanasat Sooksimuang</b> , Researcher, National Metal and Materials Technology Center (MTEC), National Science and Technology Development Agency (NSTDA), Thailand
16:50-17:15	<b>Title:</b> High Pressure Study of Localized States Related to Ln <sup>3+</sup> and Ln <sup>2+</sup> ions in Solids <b>Dr. Marek Grinberg</b> , Professor, University of Gdansk, Poland
17:15-17:40	<a href="#">Speech Opportunity Available</a>

### Session 6-2: Organic Materials, Organic and Printed Electronics

13:30-17:10, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Bertram Batlogg</b> , Professor, ETH Zurich, Switzerland
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<a href="#">Speech Opportunity Available</a>
14:00-14:25	<b>Title:</b> Printed Flexible Organic Photovoltaic Modules <b>Dr. Tommi Vuorinen</b> , Senior Scientist, VTT Technical Research Centre of Finland, Finland
14:25-14:50	<b>Title:</b> Ambipolar Transport and Charge Transfer at the Interface between Sexithiophene (T6) and N,N'-bis (n-octyl)- dicyanoperylene diimide (PDI-8CN2) Films <b>Dr. Antonio Cassinese</b> , Researcher, University of Naples "Federico II", Italy

14:50-15:15	<b>Title:</b> Improved Organic FETs through Charge Trap Analysis and Reduction <b>Dr. Bertram Batlogg</b> , Professor, ETH Zurich, Switzerland
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<b>Title:</b> Organic Single-crystal Light-emitting Transistors <b>Dr. Taisi Takenobu</b> , Associate Professor, Waseda University, Japan
15:55-16:20	<b>Title:</b> Electrical and Optical Engineering to Improve Performances in Low- $\gamma$ Photorefractive Polymers <b>Dr. Takafumi Sassa</b> , Senior Research Scientist, RIKEN (The Institute of Physical and Chemical Research), Japan
16:20-16:45	<b>Title:</b> Ag Nanomaterials: Synthesis and Application in Printed Electronics <b>Dr. Jinting Jlu</b> , Investigator, The Institute of Scientific and Industrial Research (ISIR), Osaka University, Japan
16:45-17:10	<b>Title:</b> Materials and Techniques for Printed Devices <b>Dr. Manabu Yoshida</b> , Senior Researcher, National Institute of Advance Industrial Science and Technology, Japan

### Session 6-3: Semiconductors

08:30-12:10, June 8th, 2012 (Friday)

<b>Chair:</b>	<b>Dr. Irene D'Amico</b> , Professor, University of York, UK
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
08:30-08:35	<b>Chair's Introduction</b>
08:35-08:55	<a href="#">Speech Opportunity Available</a>
08:55-09:15	<b>Title:</b> Gallium Nitride Crystals Grown under Pressure for Applications in Laser Diodes <b>Dr. Izabella Grzegory</b> , Director, Institute of High Pressure Physics Polish Academy of Sciences, Poland
09:15-09:35	<b>Title:</b> Development of II-VI Compound Semiconductors on InP Substrates for Green and Yellow Lasers <b>Dr. Ichirou Nomura</b> , Associate Professor, Sophia University, Japan
09:35-09:55	<b>Title:</b> Recent Progress in Si-based Spintronic Materials <b>Dr. C. Y. Fong</b> , Distinguished Professor, University of California, Davis Campus, USA
09:55-10:15	<b>Title:</b> Spin Coulomb Drag and Optical Excitations in Low Dimensional Structures <b>Dr. Irene D'Amico</b> , Professor, University of York, UK
10:15-10:30	<b>Coffee Break</b>
10:30-10:50	<a href="#">Speech Opportunity Available</a>
10:50-11:10	<b>Title:</b> Photo-control of Spin, Charge, And Orbital in Transition-metal Oxides and Diluted Magnetic Semiconductors <b>Dr. Takashi Mizokawa</b> , Associate Professor, University of Tokyo, Japan
11:10-11:30	<b>Title:</b> Surface Plasmons on Transparent Oxides for Optical Applications <b>Dr. Hiroaki Matsui</b> , Assistant Professor, University of Tokyo, Japan

11:30-11:50	<p><b>Title:</b> Enhanced Field-emission Properties of Wide Bandgap Nanostructured CuAlO<sub>2</sub> Thin Film for Field-emission Display Applications</p> <p><b>Dr. Arghya Narayan Banerjee</b>, Assistant Professor, School of Mechanical Engineering, Yeungnam University, South Korea</p>
11:50-12:10	<p><b>Title:</b> Materials and Devices for Semiconductor Spintronics: Si-based Spintronics</p> <p><b>Dr. Ryosho Nakane</b>, Project Research Lecturer, University of Tokyo, Japan</p>

### Session 6-4: Superconductors

08:30-12:10, June 8th, 2012 (Friday)

<b>Chair:</b>	<b>Dr. Ming Shi</b> , Senior Scientist, Paul Scherrer Institute, Switzerland
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
08:30-08:35	<b>Chair's Introduction</b>
08:35-08:55	<p><b>Keynote Speaker:</b></p> <p><b>Title:</b> High Resolution Analysis of Phase Separation Phenomena in Fe-based Superconducting Compounds</p> <p><b>Dr. Chris Grovenor</b>, Professor, Oxford University, UK</p>
08:55-09:15	<p><b>Title:</b> Comparative Study of High-T<sub>c</sub> Superconductivity in Cuprate and Fe-based Materials Investigated by Microwave to THz Frequency Charge Dynamics</p> <p><b>Dr. Atsutaka Maeda</b>, Professor, University of Tokyo, Japan</p>
09:15-09:35	<p><b>Title:</b> Measurement of the Phonon Density of States of Superconducting Thin Films via Inelastic Scattering of Resonant X-rays</p> <p><b>Dr. Kristiaan Temst</b>, Professor, Instituut voor Kern- en Stralingsfysica, KU Leuven, Belgium</p>
09:35-09:55	<p><b>Title:</b> Progress in the Processing of Thin Wall YBCO Superconducting Cryomagnets</p> <p><b>Dr. J. G. Noudem</b>, Professor, Caen University, France</p>
09:55-10:15	<p><b>Title:</b> The Fermi Surface and the Band Renormalization of Pnictide Superconductors</p> <p><b>Dr. Ming Shi</b>, Senior Scientist, Paul Scherrer Institute, Switzerland</p>
10:15-10:30	<b>Coffee Break</b>
10:30-10:50	<a href="#">Speech Opportunity Available</a>
10:50-11:10	<p><b>Title:</b> Superconductivity in Materials without Inversion Symmetry</p> <p><b>Dr. Ernst Bauer</b>, Professor, Institute of Solid State Physics, Vienna University of Technology, Austria</p>
11:10-11:30	<p><b>Title:</b> Locally Probing the Magnetization of Hybrid Magnet-superconductor Systems</p> <p><b>Dr. Margriet J. Van Bael</b>, Professor, Laboratory of Solid State Physics and Magnetism, KU Leuven, Belgium</p>
11:30-11:50	<p><b>Title:</b> Orbital and Spin Correlation in Fe-based Superconductors and Recent Findings from First-principles Studies</p> <p><b>Dr. Wei Ku</b>, Assistant Professor, Brookhaven National Laboratory, USA</p>
11:50-12:10	<p><b>Title:</b> Superconductivity Stemming from Coulomb Interaction</p> <p><b>Dr. Jiangdi Fan</b>, Chief Scientist, Chongqing Academy of Science and Technology, China; Professor,</p>

	Southern university and A&M College, USA
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### Session 6-5: Thin Films and Hard Magnetic Materials

08:30-09:50, June. 8th, 2012 (Friday)

<b>Chair:</b>	<b>Dr. Frank Klose</b> , Professor / Group Leader, Bragg Institute, Australian Nuclear Science & Technology Organisation, Australia
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> Perpendicularly Magnetized Magnetic Tunnel Junctions Using L1 <sub>0</sub> -ordered Alloy <b>Dr. Hiroshi Naganuma</b> , Assistant Professor, Tohoku University, Japan
09:00-09:25	<b>Title:</b> Magnetic Properties of Oxide Waste-derived Isotropic Strontium Hexaferrites <b>Dr. Hai Song Woon</b> , Senior Lecturer, Universiti Tenaga Nasional, Malaysia
09:25-09:50	<b>Title:</b> Magnetic Order in Exchange Biased Thin Films <b>Dr. Frank Klose</b> , Professor / Group Leader, Bragg Institute, Australian Nuclear Science & Technology Organisation, Australia
09:50-10:15	<a href="#">Speech Opportunity Available</a>

### Symposium 7: Nano-materials and Non-Crystal Materials

#### Session 7-1: Nano Magnetic Materials

08:30-12:10, June. 7th, 2012 (Thursday)

<b>Chair</b>	<b>Dr. Sunil K Sinha</b> , Professor, University of California San Diego, USA
<b>Co-Chair</b>	<b>Dr. Tseung-Yuen Tseng</b> , Chair Professor, National Chiao-Tung University, Taiwan
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> Recent Progress of Molecular Magnetism Studied by NMR <b>Dr. Yuji Furukawa</b> , Associate Professor, Iowa State University; Associate Scientist, Ames Laboratory, USA
09:00-09:25	<a href="#">Speech Opportunity Available</a>
09:25-09:50	<b>Title:</b> Transport Properties of Melt Spun Commercial Alnico V Magnetic Ribbons <b>Dr. Feroz Alam Khan</b> , Professor, Bangladesh University of Engineering and Technology, Bangladesh
09:50-10:15	<b>Title:</b> X-Ray and Neutron Characterization of Magnetic Nanostructures <b>Dr. Sunil K Sinha</b> , Professor, University of California San Diego, USA
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Metal Embedded in Metal Oxide Resistive Switching Memory <b>Dr. Tseung-Yuen Tseng</b> , Chair Professor, National Chiao-Tung University, Taiwan
10:55-11:20	<b>Title:</b> Two Important Discoveries <b>Dr. Vojko Matko</b> , Professor, Member of IEEE, Slovenia
11:20-11:45	<b>Title:</b> Magnetostriction and DE Effect of Some Magnetic Metallic Glasses

	<b>Dr. Shien-Uang Jen</b> , Research Fellow, Institute of Physics, Academia Sinica, Taiwan
11:45-12:10	<a href="#">Speech Opportunity Available</a>

### Session 7-2: Nanotube and Nanostructured Materials

08:30-12:10, June. 8th, 2012 (Friday)

<b>Chair:</b>	<b>Dr. Fabrice Gourbilleau</b> , CNRS Director of Research, CIMAP, UMRCNRS/CEA/ENSICAEN/UCBN, France
<b>Co-Chair:</b>	<b>Dr. Jonas Fransson</b> , Associate Professor, Uppsala University, Sweden
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> Experimental and Theoretical Analysis of Carbon Nanotubes Grown from Catalytic Nanoparticles of Defined Size Distribution <b>Dr. Arne Rosen</b> , Professor, University of Gothenburg, Sweden
09:00-09:25	<b>Title:</b> Large Scans without Stitching: The Nanometer Coordinate Measuring Machine (NCMM) <b>Dr. Hendrik Rothe</b> , Professor, University of the Federal Armed Forces Hamburg; Senior Member, the Academy of Sciences in Hamburg, Germany
09:25-09:50	<b>Title:</b> NanoCarbon Materials for Energy Application <b>Dr. Jun Chen</b> , Senior Research Fellow, University of Wollongong, Australia
09:50-10:15	<b>Title:</b> Rare Earth-Si Nanocluster Coupling for CMOS Compatible Photonic Applications <b>Dr. Fabrice Gourbilleau</b> , CNRS Director of Research, Centre for Research on Ions, Materials and Photonics, France
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Inelastic Electron Tunneling Spectroscopy in Spin-polarized Environment <b>Dr. Jonas Fransson</b> , Associate Professor, Uppsala University, Sweden
10:55-11:20	<b>Title:</b> Functional Oxide Materials for Environmental Challenges: Sensors, Catalysts and Mechanistic Insights <b>Dr. Greta R. Patzke</b> , SNSF Professor, Institute of Inorganic Chemistry, University of Zurich, Switzerland
11:20-11:45	<b>Title:</b> H <sup>+</sup> and D <sup>+</sup> ions Irradiation in Fe-0.2wt.%V alloy <b>Dr. Yongqin Chang</b> , Associate Professor, School of Materials Science and Engineering, University of Science and Technology Beijing, China
11:45-12:10	<b>Title:</b> The Massive Fabrication of Silicon Carbide Nanowires <b>Dr. Jianjun Chen</b> , Associate Professor, Zhejiang Sci-Tech University, China
12:10-12:30	<a href="#">Speech Opportunity Available</a>

### Session 7-3: Nanocomposites

08:30-12:10, June. 8th, 2012 (Friday)

<b>Chair</b>	<a href="#">Call for Chair</a>
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>

08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> Light Emitting Dots Based on CSSQ <b>Dr. He Chaobin</b> , Associate Professor, National University of Singapore; Principal Scientist, Institute of Materials Research & Engineering, A-star, Singapore
09:00-09:25	<a href="#">Speech Opportunity Available</a>
09:25-09:50	<b>Title:</b> Dyes in Nanostructured 1-D and 2-D Systems <b>Dr. Virginia Martinez Martinez</b> , Scientist, The Basque Country University UPV-EHU, Spain
09:50-10:15	<b>Title:</b> Enhanced Photo Electrochemical Activity of the TiO <sub>2</sub> /ITO Nanocomposite Films Grown onto Single-walled Carbon Nanotubes at a Low Temperature by Nanocluster Deposition <b>Dr. Soon-Gil Yoon</b> , Professor, Chungnam National University, South Korea
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Electrically Controllable Metal-Insulator-Like Transition in Nanoparticle Compacts <b>Dr. Wen-Hsien LI</b> , Professor, National Central University, Taiwan
10:55-11:20	<b>Title:</b> Synthesis, Characterization and Applications of Polymer-Semiconductor Nanoparticle Composites: Issues and Challenges for Applications in Sensors and Energy Storage Devices <b>Dr. P. K. Bajpa</b> , Professor/Head, Guru Ghasidas University, India
11:20-11:45	<b>Title:</b> New Technology for Aerospace Composite Materials <b>Dr. Nikoloz Jalabadze</b> , Professor, Georgian Technical University, Georgia
11:45-12:10	<a href="#">Speech Opportunity Available</a>

### ***Symposium 8: New Catalytic Materials***

<b>Symposium 8: New Catalytic Materials</b>	
08:30-12:10, June. 7th, 2012 (Thursday)	
<b>Chair:</b>	<b>Dr. H. J. Heeres</b> , Professor, University of Groningen, The Netherlands
<b>Co-Chair:</b>	<b>Dr. Nora Ellzondo</b> , Professor, Member of MAS, México
08:30-08:35	<b>Chair's Introduction</b>
08:35-08:55	<b>Keynote Speaker:</b> <b>Title:</b> Nano Materials as Catalysts for Refining and Environmental Applications <b>Mr. Alak Bhattacharyya</b> , R&D Fellow, UOP LLC, USA
08:55-09:15	<b>Title:</b> Nanonickels: Synthesis and Catalysis <b>Dr. Mohammed M. Bettahar</b> , Professor, Nancy University, France
09:15-09:35	<b>Title:</b> Direct Decomposition of Nitrogen Monoxide on C-type Cubic Rare Earth Oxides Catalysts <b>Dr. Nobuhito Imanaka</b> , Professor, Osaka University, Japan
09:35-09:55	<b>Title:</b> Conversion of 2nd Generation Renewable Feedstocks to Transportation Fuels <b>Dr. Joseph A. Kocal</b> , Corporate Fellow, Performance Materials and Technologies, Honeywell-UOP, USA



09:55-10:15	<b>Title:</b> Catalytic Hydrotreatment of Fast-Pyrolysis Oil <b>Dr. H. J. Heeres</b> , Professor, University of Groningen, The Netherlands
10:15-10:30	<b>Coffee Break</b>
10:30-10:50	<b>Title:</b> Green Chemistry Used in the Synthesis of Metallic Nanoparticles as of Plants Extracts <b>Dr. Nora Ellzondo</b> , Research Professor, Faculty of Physical and Mathematical Sciences, Autonomous University of Nuevo Leon, Mexico
10:50-11:10	<b>Title:</b> Computer Simulation of Hydrogen Adsorption and Storage in Porous Carbons, Clean and Doped with Metal Nanoparticles <b>Dr. Julio A. Alonso</b> , Professor, University of Valladolid, Spain
11:10-11:30	<b>Title:</b> Applications of an Inorganic Ion-Exchanger via Selective Metal Uptake <b>Dr. Jian Luo</b> , Director of Technology, KL Chemical Technologies, Inc., USA; President, Tianjin Binhai EnviroTechnologies, China.
11:30-11:50	<b>Title:</b> Understanding Structure and Function of Ni/CeO <sub>2</sub> Catalysts A Theoretical Perspective <b>Dr. Javier Carrasco</b> , Chemist, Petrochemistry-CSIC, Spain
11:50-12:10	<b>Title:</b> Hydrogen Peroxide as Potential Oxidant of Pd(II) Into Pd(IV): Kinetic and DFT Investigation <b>Dr. Elena Evstigneeva</b> , Professor, Moscow University of Fine Chemical Technologies, Russia
12:10-12:30	<b>Title:</b> New Business Opportunities and Challenges for Isobutane/Isobutene Based Chemicals : An Approach Towards Sustainable Solution <b>Dr. M. Rafiuddin Ansari</b> , Director, SABIC Research & Technology Pvt. Ltd., India
12:30-12:50	<a href="#">Speech Opportunity Available</a>

### ***Symposium 9: Multifunctional Composites and Other Improved Materials***

<b>Symposium 9: Multifunctional Composites and Other Improved Materials</b>	
08:30-12:10, June. 7th, 2012 (Thursday)	
<b>Chair</b>	<b>Dr. Guenter Stephani</b> , Professor, Fraunhofer-Institute for Manufacturing Technologies and Advanced Materials Winterbergstrasse, Germany
<b>Co-Chair</b>	<b>Dr. Han Yong Jeon</b> , Professor, Inha University, South Korea
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Keynote Speaker:</b> <b>Title:</b> Natural Composites for Bettering the Environment <b>Dr. Alan K. T. Lau</b> , Professor, Hong Kong Polytechnic University, Hong Kong, China; Professor and Executive Director, University of Southern Queensland, Australia
09:00-09:25	<b>Title:</b> Preparation and Characterizations of Superhydrophobic Fabrics Treated with CNT-Teflon <b>Dr. Chung Hee Park</b> , Professor, Seoul National University and Intelligent Textile System Research Center, South Korea
09:25-09:50	<a href="#">Speech Opportunity Available</a>
09:50-10:15	<b>Title:</b> New Multifunctional Lightweight Materials based on Cellular Metals-Manufacturing, Properties and

	Applications <b>Dr. Guenter Stephani</b> , Professor, Fraunhofer-Institute for Manufacturing Technologies and Advanced Materials Winterbergstrasse, Germany
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Field Applicability Evaluation of Geosynthetic Composites for Geotechnical Engineering Application through Performance Test <b>Dr. Han Yong Jeon</b> , Professor, Inha University, South Korea
10:55-11:20	<b>Title:</b> Synthesis of Nano Oxide Powders by Molten Salt Methods <b>Dr. Farhad Golestani Fard</b> , Professor, Iran University of Science and Technology, Iran
11:20-11:45	<b>Title:</b> Ionic Liquid's Effect on Structure Control and Reinforcement of Epoxy Based Nanocomposites <b>Dr. Libor Matejka</b> , Head of Department, Academy of Sciences of Czech Republic, Czech Republic
11:45-12:10	<b>Title:</b> Efficient Nucleating Agent for Poly (butylene succinate-co-butylene adipate) <b>Zhiguo Qi</b> , Lecturer, Beijing Institute of Technology, China

### ***Symposium 10: Smart Materials***

#### **Symposium 10: Smart Materials**

08:30-12:10, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Oliver Brueggemann</b> , Professor, Johannes Kepler University Linz, Austria
<b>Co-Chair:</b>	<b>Dr. Veronique Vitry</b> , Assistant Professor, University of Mons, Belgium
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> Advanced Ceramic Coatings: from "Passive" to "Engineered" Layers and from Micrometer-Sized to Nanometer-Sized Structural Scale <b>Dr. Ghislain Montavon</b> , Professor, Université de Technologie de Belfort-Montbéliard, France
09:00-09:25	<a href="#">Speech Opportunity Available</a>
09:25-09:50	<b>Title:</b> UV-curable Nanocasting Technique to Prepare Advanced Anticorrosive Coatings with Bio-mimicked Leaf-like Non-fluorinated Super-hydrophobic Polymeric Surfaces <b>Dr. Jul-Ming Yeh</b> , Professor, Chung-Yuan Christian University, Taiwan
09:50-10:15	<b>Title:</b> pH-sensitive Polyphosphazene-Drug-Conjugates for Cancer Therapies <b>Dr. Oliver Brueggemann</b> , Professor, Johannes Kepler University Linz, Austria
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Surface Reinforcement of Steel Substrate by Electroless Nickel-boron <b>Dr. Veronique Vitry</b> , Assistant Professor, University of Mons, Belgium
10:55-11:20	<b>Title:</b> Magnetostrictive Vibrational Energy Harvesting Device Using Iron-Gallium Alloy <b>Dr. Toshiyuki Ueno</b> , Associate Professor, Kanazawa University, Japan
11:20-11:45	<b>Title:</b> Nanomaterial Synthesis and Printing for Future Devices <b>Dr. Taeyoon Lee</b> , Assistant Professor, Yonsei University, South Korea

11:45-12:10	<a href="#">Speech Opportunity Available</a>
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### ***Symposium 10: Smart Materials***

<b>Symposium 10: Smart Materials</b>	
08:30-12:10, June. 7th, 2012 (Thursday)	
<b>Chair:</b>	<b>Dr. Oliver Brueggemann</b> , Professor, Johannes Kepler University Linz, Austria
<b>Co-Chair:</b>	<b>Dr. Veronique Vitry</b> , Assistant Professor, University of Mons, Belgium
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> Advanced Ceramic Coatings: from "Passive" to "Engineered" Layers and from Micrometer-Sized to Nanometer-Sized Structural Scale <b>Dr. Ghislain Montavon</b> , Professor, Université de Technologie de Belfort-Montbéliard, France
09:00-09:25	<a href="#">Speech Opportunity Available</a>
09:25-09:50	<b>Title:</b> UV-curable Nanocasting Technique to Prepare Advanced Anticorrosive Coatings with Bio-mimicked Leaf-like Non-fluorinated Super-hydrophobic Polymeric Surfaces <b>Dr. Jui-Ming Yeh</b> , Professor, Chung-Yuan Christian University, Taiwan
09:50-10:15	<b>Title:</b> pH-sensitive Polyphosphazene-Drug-Conjugates for Cancer Therapies <b>Dr. Oliver Brueggemann</b> , Professor, Johannes Kepler University Linz, Austria
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Surface Reinforcement of Steel Substrate by Electroless Nickel-boron <b>Dr. Veronique Vitry</b> , Assistant Professor, University of Mons, Belgium
10:55-11:20	<b>Title:</b> Magnetostrictive Vibrational Energy Harvesting Device Using Iron-Gallium Alloy <b>Dr. Toshiyuki Ueno</b> , Associate Professor, Kanazawa University, Japan
11:20-11:45	<b>Title:</b> Nanomaterial Synthesis and Printing for Future Devices <b>Dr. Taeyoon Lee</b> , Assistant Professor, Yonsei University, South Korea
11:45-12:10	<a href="#">Speech Opportunity Available</a>

### ***Symposium 11: Biomaterials***

<b>Symposium 11: Biomaterials</b>	
08:30-12:35, June. 7th, 2012 (Thursday)	
<b>Chair:</b>	<b>Dr. Heinz C. Schroder</b> , Professor, University Medical Center of the Johannes Gutenberg University, Germany; Professor, National Research Center for Geoanalysis, China
<b>Co-Chair:</b>	<b>Dr. Kuo-Kang Liu</b> , Professor, University of Warwick, UK
08:30-08:35	<b>Chair's Introduction</b>
08:35-09:00	<b>Title:</b> A Peep into the World of Carbon Nanotubes <b>Dr. Saion K. Sinha</b> , Associate Professor/University Research Scholar, University of New Haven, USA

09:00-09:25	<b>Title:</b> 3D in Vitro Technology for Biomaterials and Pharmaceutical Sciences <b>Dr. Hossein Hosseinkhani</b> , Associate Professor, Graduate School of Biomedical Engineering, National Taiwan University of Science and Technology, Taiwan
09:25-09:50	<a href="#">Speech Opportunity Available</a>
09:50-10:15	<b>Title:</b> Polymeric Inorganic Biomaterials: Anti-osteoporotic Potential of Biosilica and PolyP via Modulation of RANK/RANKL/OPG Pathway <b>Dr. Heinz C. Schroder</b> , Professor, University Medical Center of the Johannes Gutenberg University, Germany; Professor, National Research Center for Geoanalysis, China
10:15-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Nanomechanics and Nanomanipulation of Soft Biological Materials for Tissue Engineering Applications <b>Dr. Kuo-Kang Liu</b> , Professor, University of Warwick, UK
10:55-11:20	<a href="#">Speech Opportunity Available</a>
11:20-11:45	<b>Title:</b> Resorbable Ceramic Scaffolds Generated by 3D Printing <b>Dr. Cynthia M. Gomes</b> , Research Scientist, BAM Federal Institute for Materials Research and Testing, Germany
11:45-12:10	<b>Title:</b> The Failure Load of CAD/CAM Generated Zirconia and Glass-ceramic Laminate Veneers with Different Preparation Designs <b>Dr. Tariq Alghazzawi</b> , Vice Dean and Assistant Professor, College of Dentistry Taibah University, Saudi Arabia
12:10-12:35	<b>Title:</b> The Application of Calcium Phosphate Cements in Medicine <b>Dr. Liga Berzina-Cimdina</b> , Professor, Riga Technical University, Latvia

### ***Symposium 12: Materials for New Energy***

<b>Session 12-1: Materials for Solar Energy, Hydrogen Storage and Nuclear Energy</b>	
13:30-17:10, June. 7th, 2012 (Thursday)	
<b>Chair:</b>	<b>Dr. Zhiqun Lin</b> , Associate Professor, School of Materials Science and Engineering, Georgia Institute of Technology, USA
<b>Co-Chair</b>	<b>Dr. Barbara Bonelli</b> , Professor, Politecnico di Torino, Italy
13:30-13:35	<b>Chair's Introduction</b>
13:35-14:00	<b>Title:</b> Interface Energetics of Chalcopyrite Solar Cells Studied on Well Defined Model Systems using Synchrotron Radiation <b>Dr. Christian Pettenkofer</b> , Head, Helmholtz Zentrum Berlin, Germany
14:00-14:25	<b>Title:</b> New Dimensions in Hydrogen Storage Materials <b>Dr. Duncan H. Gregory</b> , West CHEM Chair, University of Glasgow, UK

14:25-14:50	<b>Title:</b> Novel Organosilicon Materials for Thin Film Photovoltaics and Wavelength Shifters <b>Dr. Sergei Ponomarenko</b> , Head of the Laboratory of Functional Materials for Organic Electronics and Photonics, Institute of Synthetic Polymeric Materials of Russian Academy of Sciences (ISPM RAS), Russia
14:50-15:15	<b>Title:</b> Low-cost Counter Electrodes based on Earth Abundant, Environmentally Friendly Quaternary Chalcogenide Semiconductor Copper Zinc Tin Sulfide (CZTS) for High-efficiency Dye Sensitized Solar Cells <b>Dr. Zhiqun Lin</b> , Associate Professor, Georgia Institute of Technology, USA
15:15-15:30	<b>Coffee Break</b>
15:30-15:55	<b>Title:</b> Nanoporous Carbon Materials for Hydrogen Physisorption <b>Dr. Barbara Bonelli</b> , Professor, Politecnico di Torino, Italy
15:55-16:20	<b>Title:</b> Development of Nuclear Fusion Functional Materials Utilizing Fission Reactors <b>Dr. Tatsuo Shikama</b> , Professor, Tohoku University, Japan
16:20-16:45	<b>Title:</b> Analysis of Key Defects in Multi Crystalline Silicon for Solar Applications Influencing the Performance of the Solar Cell <b>Dr. Elke Melssner</b> , Senior Scientist, Fraunhofer Institute of Integrated Systems and Device Technology, Germany
16:45-17:10	<b>Title:</b> Preparation and Analytical Electron Microscopy of SiC Continuous-fiber Reinforced SiC-based Matrix Composite for Fusion Application <b>Dr. Goran Drazic</b> , Senior Scientist, Jozef Stefan Institute, Slovenia
17:10-17:35	<a href="#">Speech Opportunity Available</a>

## Session 12-2: Materials for Fuel Cells, Primary Battery and Secondary Battery

09:50-12:10, June. 8th, 2012 (Friday)

<b>Chair:</b>	<b>Dr. Zhun Ma</b> , Analyst, Lux Research Inc., USA
<b>Co-Chair:</b>	<a href="#">Call for Co-Chair</a>
09:50-09:55	<b>Chair's Introduction</b>
09:55-10:20	<b>Keynote speaker:</b> <b>Title:</b> Rational Design of Surfaces and Interfaces for Energy Storage and Conversion <b>Dr. Meilin Liu</b> , Regents' Professor, Georgia Institute of Technology, USA
10:20-10:30	<b>Coffee Break</b>
10:30-10:55	<b>Title:</b> Sol-Gel Synthesis of Li <sub>2</sub> FeSiO <sub>4</sub> /C Nanocomposite Powders-Significance of Morphology, Carbon Content and Impurities <b>Dr. Fride Vullum-Bruer</b> , Associate Professor, Norwegian University of Science and Technology, Norway
10:55-11:20	<b>Title:</b> Rechargeable Lithium-ion Batteries for Wireless Smart Energy Devices <b>Dr. Helene Rouault</b> , R & D Project Manager, French Alternative Energies and Atomic Energy Commission (CEA)-Grenoble, France

11:20-11:45	<b>Title:</b> Superstructure, Thin Films and Interstitial Oxides: Potential for High Performance Oxide Ion Conducting Materials for IT-SOFCs <b>Dr. Stephen Skinner</b> , Reader, Imperial College London, UK
11:45-12:10	<b>Title:</b> Materials Innovation and Cost Cutting Strategies for Li-ion Batteries in Transportation <b>Dr. Zhun Ma</b> , Analyst, Lux Research Inc., USA
12:10-12:35	<a href="#">Speech Opportunity Available</a>

### Session for Young Scientist

13:30-17:00, June. 7th, 2012 (Thursday)

<b>Chair:</b>	<b>Dr. Andrew M. Smith</b> , Postdoctoral Fellow, Emory University, USA
<b>Co-Chair:</b>	<b>Mr. Spiridon D. Pappas</b> , Researcher, Ph.D. candidate, University of Patras, Greece
13:30-13:35	<b>Chair's Introduction</b>
13:35-13:50	<b>Title:</b> Fatigue-Creep Behavior of SAC(Ni) Solder <b>Ms. Ma Ze</b> , Ph.D. Student, Tours University, France
13:50-14:05	<b>Title:</b> Interactions (Uptake and Re-Release in Gaseous and Aqueous Phase) of Inorganic and Organic Iodine Species (E.G. Methyl Iodide) Formed During Severe Nuclear Accidents with Epoxy Paint Films and Paint Ingredients under Severe Accident Containment Conditions <b>Dr. Sabrina Tietze</b> , Ph.D. Student, Chalmers University of Technology, Sweden
14:05-14:20	<b>Title:</b> How an Alkali Metal Acetate Works in OLEDs <b>Dr. Chieh-Tze Sun</b> , Ph.D. Student, National Cheng Kung University, Taiwan
14:20-14:35	<b>Title:</b> Sb Doping Effects on the Piezoelectric and Ferroelectric Characteristics of Lead-free Na <sub>0.5</sub> K <sub>0.5</sub> Nb <sub>1-x</sub> Sb <sub>x</sub> O <sub>3</sub> Piezoelectric Ceramics <b>I-Hao Chan</b> , Ph.D. Student, National Cheng Kung University, Taiwan
14:35-14:50	<b>Title:</b> Size and Morphology Control for the Zeolitic Imidazolate Framework-8 Nanocrystals and Their Applications on the Self-assembly <b>Zheng Li</b> , Ph.D. Candidate, National University of Singapore, Singapore
14:50-15:05	<b>Title:</b> Bio-inspired Synthesis and Applications of Calcium Carbonate Complex Structures <b>Xuan Qi Li</b> , Ph.D. Candidate, National University of Singapore, Singapore
15:05-15:20	<b>Title:</b> Imaging Quantum Dots in Living Cells and Living Animals <b>Dr. Andrew M. Smith</b> , Postdoctoral Fellow, Emory University, USA
15:20-15:30	<b>Coffee Break</b>
15:30-15:45	<b>Title:</b> Magnetic Properties of Naturally Produced Ni/Nio Multilayers <b>Mr. Spiridon D. Pappas</b> , Researcher/Ph.D. Candidate, University of Patras, Greece
15:45-16:00	<b>Title:</b> The Effect of Structural Parameters on Mixing Performance in Interdigital-Zigzag Type Micromixer <b>Hallong Hou</b> , Doctoral Student, Beijing Institute of Technology, China
16:00-16:15	<b>Title:</b> Effects of Processing Parameters on Properties of Polypropylene Single Polymer Composites Produced by Injection Molding

	<b>Qianchao Mao</b> , Ph.D. Student, Beijing Institute of Technology, China
16:15-16:30	<b>Title:</b> A MWCNT–poly (4-vinyl pyridine) Modified Glassy Carbon Electrode for the Detection of Diphenols <b>Hanieh Ghadimi</b> , Ph.D. Candidate, Universiti Sains Malaysia, Malaysia
16:30-16:45	<b>Title:</b> Advanced Carbon Based Materials in Electrochemistry <b>Dr. Qing-Gong Zhu</b> , PhD Candidate, Universiti Sains Malaysia, Malaysia
16:45-17:00	<a href="#">Speech Opportunity Available</a>