

Symposium 7: 6<sup>th</sup>  
International Symposium  
on Nanostructured  
Materials and  
Nanocomposites

Monday, January 23, 2012

**Nanomaterials for  
Photocatalysis, Solar  
Hydrogen and  
Thermoelectrics I**

1:30 PM-3:20 PM

Room: Coquina Salon B

Session Chair(s): Palani Balaya, Gongxuan Lu

**1:30 PM**

**(ICACC-S7-001-2012) Mesoporous Titanium Oxide Spheres for High Efficiency Dye Sensitized Solar Cells (Invited)**

Yi-Bing Cheng\*, Fuzhi Huang, Monash University, Australia; Dehong Chen, The University of Melbourne, Australia; Yang Chen, Monash University, Australia; Lu Cao, The University of Melbourne, Australia; Xiaoli Zhang, Monash University, Australia; Rachel Caruso, The University of Melbourne, Australia

**2:00 PM**

**(ICACC-S7-002-2012) Engineered metal oxide photoanodes for highly efficient excitonic solar cells (Invited)**

Alberto Vomiero\*, Isabella Concina, CNR IDASC, Italy; Antonio Braga, Vardan Galstyan, Brescia University, Italy; Nafiseh Memarian, CNR IDASC, Italy; Guido Faglia, Giorgio Sberveglieri, Brescia University, Italy

**2:30 PM**

**(ICACC-S7-003-2012) Nanostructure and Nanoheterojunction for High-Efficiency Photocatalytic and Photoelectrochemical Water Splitting (Invited)**

Liejun Guo\*, Shaohua Shen, Xi'an Jiaotong University, China

**3:00 PM**

Break

**Nanomaterials for  
Photocatalysis, Solar  
Hydrogen and  
Thermoelectrics II**

3:20 PM-6:00 PM

Room: Coquina Salon B

Session Chair(s): Alberto Vomiero, Yi-Bing Cheng

**3:20 PM**

**(ICACC-S7-004-2012) Nanostructural Control in Conjugated Polymer/Metal Oxide Nanohybrid Solar Cells (Invited)**

Yasuhiro Tachibana\*, Ali Azarifar, Satoshi Makuta, RMIT University, Australia; Jun Terao, Kyoto University, Japan; Shu Seki, Osaka University, Japan

**3:50 PM**

**(ICACC-S7-005-2012) Energy Conversion using Nano-structured Solar Cells (Invited)**

Satyanarayana R Gajjela, Wong Kim Hai, Krishnamoorthy Ananthanarayanan, Palani Balaya\*, National University of Singapore, Singapore

**4:10 PM**

**(ICACC-S7-006-2012) High Efficient Visible Light Hydrogen Evolution over Dye-sensitized**

### **Reduced Graphene Oxide Photocatalyst**

Gongxuan Lu\*, Lanzhou Institute of Chemical Physics, CAS, China

**4:40 PM**

#### **(ICACC-S7-007-2012) Surface doping of W6+ for enhanced photoelectrochemical water splitting over $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanorod photoanodes**

Shaohua Shen\*, Jiangang Jiang, Xi'an Jiaotong University, China; Coleman X Kronawitter, Samuel S Mao, Lawrence Berkeley National Laboratory, USA; Liejin Guo, Xi'an Jiaotong University, China

**5:00 PM**

#### **(ICACC-S7-008-2012) In-situ Boron Nitride Nanotubes Growth on Commercial Silicon Carbide Fiber Tows**

Janet B Hurst\*, Ching-cheh Hung, NASA GRC, USA

**5:20 PM**

#### **(ICACC-S7-009-2012) Perovskite Nanosheets Produced by Chemical Exfoliation**

Jian Liu, Jiawanjun Shi, Victoria Knox, Scott Mixture\*, Alfred University, USA

**5:40 PM**

#### **(ICACC-S7-010-2012) Preparation of CdS sensitized TiO<sub>2</sub> mesoporous submicrotubes and enhanced photocatalytic properties for hydrogen production**

Yubin Chen\*, Jinwen Shi, Liejin Guo, State Key Laboratory of Multiphase Flow in Power Engineering, Xi'an Jiaotong University, China

**8:00 AM**

#### **(ICACC-S7-011-2012) Toughening in Graphene Ceramic Composites (Invited)**

Luke S Walker, Victoria R Marotto, University of Arizona, USA; Mohammad A Rafiee, Nikhil Koratkar, Rensselaer Polytechnic Institute, USA; Erica L Corral\*, University of Arizona, USA

**8:30 AM**

#### **(ICACC-S7-012-2012) Lateral Growth of ZnO Nanorods in Solution and Their Application for High Performance Field Effect Transistors (Invited)**

Yoon-Bong Hahn\*, Yong Kyu Park, Han Seok Choi, Jin Hwan Kim, Chonbuk National University, Republic of Korea

**9:00 AM**

#### **(ICACC-S7-013-2012) Effects of the pulsation reactor process on the material properties of nanoscaled ZrO<sub>2</sub>**

Lars Leidolph\*, IBU-tec advanced materials AG, Germany

**9:20 AM**

#### **(ICACC-S7-014-2012) Properties of organic semiconductor-metal oxide nanowire composite transistors**

Cheng Sun\*, Nripan Mathews, Lydia H Wong, Subodh G Mhaisalkar, Nanyang Technological University, Singapore

**9:40 AM**

Break

## **Tuesday, January 24, 2012 Nanodevices and Industrial Application**

8:00 AM-10:00 AM

Room: Coquina Salon B

Session Chair(s): Anna Lahde, Erica Corral

## **Synthesis and Industrial Development of Nanoparticles**

10:00 AM-12:00 PM

Room: Coquina Salon B

Session Chair(s): Erica Corral, Yoon-Bong Hahn

**10:00 AM**

**(ICACC-S7-015-2012) Synthesis of silicon-carbon nanoceramics with high temperature aerosol reactor (Invited)**

Anna Lähde\*, Mirella Miettinen, University of Eastern Finland, Finland; Max Johansson, University of Åbo, Finland; Sari Suvanto, Joakim Riikonen, University of Eastern Finland, Finland; Unto Tapper, Technical Research Center of Finland, Finland; Tapani T Pakkanen, Veli-Pekka Lehto, Jorma Jokiniemi, University of Eastern Finland, Finland

**10:30 AM**

**(ICACC-S7-016-2012) Highly Specific Nanoparticles from gas phase synthesis - An Economic Route towards Sustainable Energy Technology (Invited)**

Tim P Huelser, Hartmut Wiggers\*, Christof Schulz, Institute of Energy and Environmental Technology, Germany

**11:00 AM**

**(ICACC-S7-017-2012) Phase evolution studies and ferroelectric properties of Lead Zirconate Titanate (PZT) nanopowder and films thereof (Invited)**

R. P Tandon\*, University of Delhi, India

**11:30 AM**

**(ICACC-S7-018-2012) Nanostructured Oxides from Natural Minerals for Industrial applications (Invited)**

V. Rajendran\*, P. Manivasakan, P. R Rauta, N. R Dhineshbabu, K S Rangasamy College of Technology, India

## **Industrial Application of Nanomaterials and One Dimensional Structures**

1:30 PM-3:20 PM

Room: Coquina Salon B

Session Chair(s): Ulf Jansson, Jyh-Ming Ting

**1:30 PM**

**(ICACC-S7-019-2012) Nanostructured Coatings by Cluster Beam Deposition: Method and Applications (Invited)**

Emanuele Barborini\*, Simone Vinati, Roberta Carbone, Tethis spa, Italy

**2:00 PM**

**(ICACC-S7-020-2012) Copper (II) heteroarylalkenolates: From Molecule to Material.**

Irina Giebelhaus\*, Thomas Fischer, University of Cologne, Germany; Elena Varechkina, Marina Rumyantseva, Alexander Gaskov, Moscow State University, Russian Federation; Wieland Tyrra, Sanjay Mathur, University of Cologne, Germany

**2:20 PM**

**(ICACC-S7-021-2012) Use of Copper Nanoparticles to Enhance Thermal Performance of Solar Heat Transfer Fluids**

Sreeram Cingarapu\*, Elena V Timofeeva, Michael R Moravek, Michael J Nawrocki, Dileep Singh, Thomas Fischer, Sanjay Mathur, Argonne National Laboratory, USA

**2:40 PM**

**(ICACC-S7-022-2012) Development of nanowire based solar cell on multilayer transparent conducting films**

Diptiranjan Sahu\*, University of the Witwatersrand, South Africa

**3:00 PM**

Break

## **Nanostructured Membranes, Functional Coatings and Nanocomposites**

3:20 PM-6:00 PM

Room: Coquina Salon B

Session Chair(s): Emanuele Barborini, Tim Van Gestel

**3:20 PM**

**(ICACC-S7-023-2012) Design of  
Multifunctional Carbide-based  
Nanocomposite Coatings (Invited)**

Ulf Jansson\*, Uppsala University, Sweden

**3:50 PM**

**(ICACC-S7-024-2012) Synthesis and  
Electrochemical Performance of SiOC-Carbon  
Nanotube Composite Nanowire Coatings**

Romil Bhandavat\*, Gurpreet Singh, Kansas State University, USA

**4:10 PM**

**(ICACC-S7-025-2012) Superhard  
Nanostructured Coatings Ti-Hf-Si-N, Their  
Structure and Properties**

Alexander D Pogrebnjak\*, Sumy State University, Ukraine; Anatolii P Shpak, Institute for Metal Physics G.V.Kurdyumov NAS of Ukraine, Ukraine; Vyacheslav M Beresnev, Kharkov National University, Ukraine; Fadey F Komarov, Belarus State University, Belarus; Petr Konarski, Tele-Radio Research Institute, Poland; Vladimir V Uglov, Belarus State University, Belarus; Mikhail V Kaverin, Sumy State University, Ukraine; Dmitrii A Kolesnikov, Belgorod State University, Russian Federation; Nemat A Makhmudov, Samarkand Branch of

Tashkent University of Information, Uzbekistan; Ivan V Yakyschenko, Sumy State University, Ukraine; Vadim V Grudnitskii, Kharkov National University, Ukraine

**4:30 PM**

**(ICACC-S7-026-2012) P-type conductivity of  
Mg-doped CuAlO<sub>2</sub> (Invited)**

Eun Dong Kim\*, Min Soo Kim, Min Wook Oh, Sang Cheol Kim, Korea Electrotechnology Research Institute, Republic of Korea

**4:50 PM**

**(ICACC-S7-027-2012) Investigation on hybrid  
composite membrane consisting ammonium  
phosphate and their characterization**

Uma Thanganathan\*, Fengxiang Yin, Okayama University, Japan

**5:10 PM**

**(ICACC-S7-028-2012) Synthesis of  
Nanostructured Oxidizers for Controlling the  
Explosive Reactivity of Nanoenergetic  
Materials**

Soo Kim, Ji Young Ahn\*, Yang Do Kim, Pusan National University, Republic of Korea

## **Wednesday, January 25, 2012 Nanotubes, Nanowires and Other One-dimensional Structures**

8:00 AM-10:00 AM

Room: Coquina Salon B

Session Chair(s): Aleksander Gurlo, Jason Graetz

**8:00 AM**

**(ICACC-S7-029-2012) Exploring organic-  
inorganic interfaces in silica-based  
nanomaterials by a combined spectroscopic  
and modelling approach (Invited)**

Florence Babonneau\*, N. Folliet, T. Azais, C. Gervais, LCMCP / UPMC-Paris6 & CNRS, France; F. Tielens, Université Pierre et Marie Curie and CNRS, France; C. Bonhomme, LCMCP / UPMC-Paris6 & CNRS, France

**8:30 AM**

**(ICACC-S7-030-2012) Use of Nanotubular Electrodes in Electrochemical Applications (Invited)**

B. Saruhan\*, Y. Gönüllü, S. Özkan, German Aerospace Center, Germany

**9:00 AM**

**(ICACC-S7-031-2012) Investigation of Optical and Electronic Properties of Mn Doped ZnO Nanowires and Devices**

Rajiv Ramanujam Prabhakar\*, Nripan Mathews, Girish Karthik Kr, Stevin Snellius Pramana, Jinesh Kochupurackal, NTU, Singapore; Binni Varghese, Chornghaur Sow, NUS, Singapore; Subodh Mhaisalkar, NTU, Singapore

**9:20 AM**

**(ICACC-S7-032-2012) Recent advances in membrane development for CO<sub>2</sub> free fossil power plants**

Tim Van Gestel\*, Stefan Baumann, Mariya Ivanova, Wilhelm Meulenbergh, Hans Peter Buchkremer, Forschungszentrum Jülich, Germany

**9:40 AM**

Break

## **Nanostructured Materials and Their Application**

10:00 AM-12:10 PM

Room: Coquina Salon B

Session Chair(s): Florence Babonneau, Bilge Saruhan-Brings

**10:00 AM**

**(ICACC-S7-033-2012) Preparation of n- and p-type metal oxide nanowires and nanostructures for chemical sensing (Invited)**

Elisabetta Comini\*, Guido Faglia, Matteo Ferroni, Andrea Ponzoni, Dario Zappa, Giorgio Sberveglieri, Brescia University CNR-IDASC, Italy

**10:30 AM**

**(ICACC-S7-034-2012) Selective Chemical Vapor Deposition for Enhanced Gas Sensing Applications**

Thomas Fischer\*, Irina Giebelhaus, Sanjay Mathur, University of Cologne, Germany

**10:50 AM**

**(ICACC-S7-035-2012) Catalysts, Membranes and Sensors for the Hydrogen Economy: Design, Synthesis and Characterization (Invited)**

Aleksander Gurlo\*, Mahdi Seifollahi Bazarjani, Ralf Riedel, Technische Universität Darmstadt, Germany

**11:20 AM**

**(ICACC-S7-036-2012) Nano-scale lithium batteries for in operando electron microscopy studies (Invited)**

Jason Graetz\*, Feng Wang, Dongli Zeng, Brookhaven Natl Lab, USA; Thomas McGilvray, University of California San Diego, USA; Nancy Dudney, Oak Ridge National Laboratory, USA; Ying S Meng, University of California San Diego, USA; Yimei Zhu, Brookhaven Natl Lab, USA

**11:40 AM**

**(ICACC-S7-037-2012) A Simple Greener Route to Metal Chalcogenide Nanoparticles (Invited)**

N. Revaprasadu\*, M. N Mntungwa, P. V S. R. Rajasekhar, O. A Nejo, A. A Nejo, University of Zululand, South Africa

# Bio-active Nanomaterials and Nanostructured Materials for Bio-medical Applications

1:30 PM-3:20 PM

Room: Coquina Salon B

Session Chair(s): Sonia Estrade, Cheng Sun

**1:30 PM**

## **(ICACC-S7-038-2012) Optimizing Iron Oxide Nanoparticles as Diagnostic Tracers for Magnetic Particle Imaging (Invited)**

Dirk Burdinski\*, Cologne University of Applied Sciences, Germany; Carmen Bohlender, Nicole Haex, Holger Gröll, Philips Research, Netherlands

**2:00 PM**

## **(ICACC-S7-039-2012) Water-soluble and Biocompatible Superparamagnetic Magnetite Nanoparticles for Enhanced Magnetic Resonance Imaging (MRI)**

Lisong Xiao\*, University of Cologne, Germany; Dermot F Brougham, Eoin K Fox, Dublin City University, Ireland; Fabian Kiessling, University Hospital Aachen-RWTH, Germany; Neus Feliu, Bengt Fadeel, Karolinska Institutet, Sweden; Sanjay Mathur, University of Cologne, Germany

**2:20 PM**

## **(ICACC-S7-040-2012) Application of Nanomaterials in Drug Targeting (Invited)**

Nagia Nagib Afifi\*, German University in Cairo, Egypt

**2:40 PM**

## **(ICACC-S7-041-2012) Biological application of nanomaterials: Benefits versus risk**

Ola Heikal\*, German University in Cairo, Egypt

**3:00 PM**

Break

# Synthesis and Characterization Techniques for Nanostructures

3:20 PM-6:00 PM

Room: Coquina Salon B

Session Chair(s): Eun Dong Kim, Dirk Burdinski

**3:20 PM**

## **(ICACC-S7-042-2012) Advanced Transmission Electron Microscopy Solutions for Nanoscience Problems**

Sonia Estrade\*, José M Rebled, Lluís Yedra, Alberto Eljarrat, Lluís López Conesa, Francesca Peiró, Universitat de Barcelona, Spain

**3:50 PM**

## **(ICACC-S7-043-2012) Electrical characterization of individual metal-oxide nanowires using AC impedance spectroscopy**

Girish Karthik Karra Raveendran\*, Jinesh Kochupurackal, Huang Yizhong, Subodh G Mhaisalkar, Nanyang Technological University, Singapore

**4:10 PM**

## **(ICACC-S7-044-2012) Mobility Edge in High-Performance Transistors Based on Aligned Tin Oxide Nanonets (Invited)**

Cheng Sun\*, Nripan Mathews, Lydia H Wong, Subodh G Mhaisalkar, Nanyang Technological University, Singapore

**4:30 PM**

## **(ICACC-S7-045-2012) Low temperature (< 150 deg C) synthesis of TiO<sub>2</sub> photoanodes for use in plastic substrate flexible dye-sensitized solar cells (Invited)**

Jyh-Ming Ting\*, Chiung-Wen Hsu, National Cheng Kung University, Taiwan

**5:00 PM**

**(ICACC-S7-046-2012) Electrospinning of Nanocomposite Scaffolds for Bone Tissue Engineering: Emitting Electrode Polarity and Charge Retention**

Ho-Wang Tong, Min Wang\*, The University of Hong Kong, Hong Kong

**5:20 PM**

**(ICACC-S7-047-2012) Nanoparticle Toxicity for Mycobacteria in Biofilms and the Planktonic State**

Ian Nettleship\*, Curtis Larimer, Mohammad Shyful Islam, Anil Ojha, University of Pittsburgh, USA

**5:40 PM**

**(ICACC-S7-048-2012) Antimicrobial properties of copper and silver loaded silica nanomaterials**

Swadeshmukul Santra\*, Pavithra Maniprasad, Roseline Menezes, University of Central Florida, USA

## **Symposium 7: Poster Session**

5:00 PM-7:30 PM

Room: Exhibition Hall, Ocean Center

**(ICACC-S7-P072-2012) Evolution of structure, microstructure and hyperfine properties of nanocrystalline FeAl powders**

Zineb Hamlati\*, University of Blida, Algeria; Abderrahim Guittoum, Nuclear Research Center of Algiers, Algeria; Said Bergheul, University of Blida, Algeria; Mohamed Azzaz, U.S.T.H.B, Algeria

**(ICACC-S7-P073-2012) Low Temperature Solution based Synthesis of ZnO and Ag**

**admixed ZnO Nanoparticles (NPs) their Structural and Optical Characterization**

Jai Singh\*, P. Kumar, R. S Tiwari, O. N Srivastava, B H U, India

**(ICACC-S7-P074-2012) Physical-Chemical, Mechanical, Thermal, and Radiation Resistance of Hard and Super-Hard Nano-Structured Coatings**

Alexander D Pogrebnjak\*, Sumy Institute for Surface Modification, Ukraine; Mannab Tashmetov, Institute of Nuclear Physics, NAS of Uzbekistan, Uzbekistan; Maxim Il'yashenko, Sumy State University, Ukraine; Nemat Makhmudov, Samarkand Branch of Tashkent State University of Information, Uzbekistan; Vyacheslav Beresnev, Kharkov National University, Ukraine; Andrii Shypylenko, Sumy State University, Ukraine; Igor Kulik, Mikhail Kaverin, Sumy Institute for Surface Modification, Ukraine; Vyacheslav Baidak, Artem Dem'yanenko, Sumy State University, Ukraine

**(ICACC-S7-P075-2012) Real-Time Oxidation Kinetics of Dielectric-Embedded Ag Nanoparticles: Revealing Physicochemical Properties via In Situ Optical Microspectroscopy**

Katherine McAlpine\*, Jose A Jimenez, Mariana Sendova, New College of Florida, USA

**(ICACC-S7-P076-2012) Insitu Synthesis of Multi-Walled Carbon Nanotubes/ Al<sub>2</sub>O<sub>3</sub> Nanocomposite With Non-metallic ZrO<sub>2</sub> Catalyst by Chemical Vapor Deposition**

Ajay Kumar\*, Jeffry Karpf, Datye Amit, Kuang-Hsi Wu, Florida International University, USA

**(ICACC-S7-P077-2012) Synthesis and Characterization of Boron/Nitrogen Incorporated Diamond-Like-Carbon Thin Films**

Linlin Zhang\*, Qiaoqin Yang, Yuanshi Li, Yongji Tang, Chunzi Zhang, Lezhi Yang, University of

Saskatchewan, Canada

**(ICACC-S7-P078-2012) Photocatalytic degradation of waste liquid from biomass gasification in supercritical water with simultaneous hydrogen production**

Wendong Tang\*, Dengwei Jing, Simao Guo, Jiarong Yin, Liejin Guo, State Key Laboratory of Multiphase Flow in Power Engineering, China

**(ICACC-S7-P079-2012) Graphitic Carbon Nitride Doped with Silicon for Improved Visible-light-Driven Photocatalysis**

Po Wu\*, Jinwen Shi, Liejin Guo, Xi'an Jiaotong University, China

**(ICACC-S7-P080-2012) Remarkable enhancement of photocatalytic hydrogen evolution over Cd<sub>0.5</sub>Zn<sub>0.5</sub>S by bismuth-doping**

Shaoqin Peng, Ran An, Yuexiang Li\*, Nanchang University, China; Gongxuan Lu, Shuben Li, Lanzhou Institute of Chemical Physics, Chinese Academy of Science, Lanzhou, China

**(ICACC-S7-P081-2012) Fabrication of CdS-ZnO core/shell Nanofibers by Electrospinning and Their Photocatalytic Activity**

Wei Yan\*, Guori Yang, Xi'an Jiaotong University, China

**(ICACC-S7-P082-2012) Structural, Optical and Photoelectrochemical Characterization of Hydrogen Plasma Treated TiO<sub>2</sub> Thin Films**

Andreas Mettenboerger\*, Aadesh P Singh, Peter Golus, Nurguel Tosun, Sanjay Mathur, University of Cologne, Germany

**(ICACC-S7-P083-2012) One-dimensional heterostructures based on SnO<sub>2</sub>@Nb<sub>2</sub>O<sub>5</sub> and SnO<sub>2</sub>@Fe<sub>2</sub>O<sub>3</sub> core-shell architectures and functional applications**

Raquel Fiz\*, Thomas Fischer, Martin Hoffmann, Aadesh P Singh, Sanjay Mathur,

University of Cologne, Germany

**(ICACC-S7-P084-2012) Fabrication and Characterization of a Novel Nanostructured Solar Diode Sensor**

Alaa El Din Gad\*, Martin Hoffmann, Hao Shen, Sanjay Mathur, University of Cologne, Germany

**(ICACC-S7-P085-2012) Novel Precursor Libraries for Gas Phase Synthesis of Functional Metal Oxide Coatings and Nanostructures**

Lisa Brueckmann\*, Corinna Hegemann, Johannes Schlaefer, Irina Giebelhaus, Gregor Fornalczyk, Linus Appel, Wieland Tyrra, Stefan Stucky, Sanjay Mathur, University of Cologne, Germany

**(ICACC-S7-P086-2012) Metal Oxide Nanoparticles for Biomedical Applications**

Laura Wortmann\*, Lisong Xiao, Osman Arslan, Sanjay Mathur, University of Cologne, Germany

**(ICACC-S7-P087-2012) Preparation of Fe-MgAl<sub>2</sub>O<sub>4</sub>-CNT composite powders and investigation of ion replacement in spinel lattice**

Mehran Bolourian Kashi, Iran University of Science and Technology (IUST), Islamic Republic of Iran; Roya Aghababazadeh, Institute for Color Science and Technology, Islamic Republic of Iran; Alireza Mirhabibi\*, Hossein Arabi, Iran University of Science and Technology, Islamic Republic of Iran

**(ICACC-S7-P088-2012) Structural and Optical Studies of ZnO & Mg doped ZnO Nanowires**

Jai Singh\*, R. S Tiwari, O. N Srivastava, B H U, India

**(ICACC-S7-P089-2012) Strengthening Effect of Kaolinite on Porous Kaolinite-Silica**



## **Nanocomposites**

Kathy Lu\*, Wenle Li, John Walz, Virginia Tech, USA

### **(ICACC-S7-P090-2012) Preparation of novel SiC nanostructures by arc plasma heat treatment method**

Bijan Bihari Nayak, B. K Mishra\*, IMMT, India

### **(ICACC-S7-P091-2012) Nanostructured Zr-doped Hematite Thin Films for Photoelectrochemical Water Splitting**

Praveen Kumar\*, Poonam Sharma, Rohit Shrivastav, Sahab Dass, Vibha R Satsangi, Dayalbagh Educational Institute, India

### **(ICACC-S7-P092-2012) Enhanced Photoelectrochemical Response of Doped BaTiO<sub>3</sub> for Solar Hydrogen Generation: Experiments and First-Principles Analysis**

Sahab Dass, Sumant Upadhyay\*, Jaya Shrivastava, Anjana Solanki, Surbhi Choudhary, Nirupama Singh, Vidhika Sharma, Pushpendra Kumar, Deemed University, India; Vibha R Satsangi, Dayalbagh Educational Institute, Deemed University, India; Rohit Shrivastav, Deemed University, India; Umesh V Waghmare, Jawaharlal Nehru Centre for Advanced Scientific Research, India

### **(ICACC-S7-P093-2012) Solubility of NiO in Pechini-derived ZrO<sub>2</sub> Examined with SQUID Magnetometry**

Joshua T White, Ivar E Reimanis, Colorado School of Mines, USA; James R O'Brien, Quantum Design, Incorporated, USA; Amy Morrissey\*, Colorado School of Mines, USA

### **(ICACC-S7-P094-2012) Optimisation of Spray Freeze Dried Nanozirconia Granules**

Yifei Zhang\*, Jon Binner, Chris Rielly, Bala Vaidhyanathan, Loughborough University, United Kingdom

### **(ICACC-S7-P095-2012) Chemical Vapor Deposition Growth of Carbon Nanotubes on Carbon Fiber**

Walter McKinley\*, Kuang-Hsi Wu, Florida International University, USA; Amit Datye, University of Tennessee, USA; Michael Gomes, Jeffrey Karpf, Aliaksander Zaretski, Florida International University, USA

### **(ICACC-S7-P096-2012) Titania Suspension for Fabrication of Micron Feature Arrays via Template-assisted Approach**

Kathy Lu\*, Yongxuan Liang, Virginia Tech, USA

### **(ICACC-S7-P097-2012) Enhanced Properties of Multiferroic Nanocomposite Materials**

Justin Starr, Jennifer S Andrew\*, University of Florida, USA

### **(ICACC-S7-P098-2012) Laser-Induced Enhanced Plasmonic Response in Ag Nanocomposite Glasses Monitored in Real Time via In Situ Optical Microspectroscopy**

Jose A Jimenez\*, University of North Florida, USA; Mariana Sendova, New College of Florida, USA

Thursday, January 26, 2012

## **Synthesis, Functionalization, Processing and Self- assembly of Nanoparticles I**

8:00 AM-10:00 AM

Room: Coquina Salon B

Session Chair(s): Gunnar Westin, Kathy Lu

**8:00 AM**

### **(ICACC-S7-049-2012) ZnO nanoparticle-based surface templating**

Kathy Lu\*, Bo Chen, Kelly Ramsburg, Virginia Tech, USA

**8:20 AM**

**(ICACC-S7-050-2012) Thin complex oxide, composite and metal coatings through solution processes (Invited)**

Gunnar Westin\*, Uppsala University, Sweden;  
Kjell Jansson, Stockholm University, Sweden;  
Annika Pohl, Uppsala University, Sweden

**8:50 AM**

**(ICACC-S7-051-2012) Hot wire and spark pyrolysis as simple new routes to silicon nanoparticle synthesis (Invited)**

Manfred Rudolf Scriba\*, CSIR, South Africa;  
David T Britton, Margit Harting, University of Cape Town, South Africa

**9:20 AM**

**(ICACC-S7-052-2012) Materials modelling for electrochemical applications (Invited)**

Tommi T. Jaervi\*, Leonhard Mayrhofer, Lars Pastewka, Michael Moseler, Fraunhofer Institute for Mechanics of Materials IWM, Germany; Thomas Kaib, Sima Kaib-Haddadpour, Stefanie Dehnen, Philipps-University Marburg, Germany; H. F Andersen, Kai-Christian Möller, Fraunhofer Institute for Silicate Research (ISC), Germany

**9:40 AM**

Break

## **Synthesis, Functionalization, Processing and Self- assembly of Nanoparticles II**

10:00 AM-12:00 PM

Room: Coquina Salon B

Session Chair(s): Kathy Lu, Ashok Singh

**10:00 AM**

**(ICACC-S7-053-2012) Mechanism-Based Design of Precursors for the Deposition of Inorganic Films and Nanoparticles (Invited)**

Lisa McElwee-White\*, David Wei, Timothy J Anderson, University of Florida, USA

**10:30 AM**

**(ICACC-S7-054-2012) Plasma-enabled, environment-friendly nanomaterials synthesis: from precursor-free silicon nanowires to catalyst-free vertical nanotubes and graphenes (Invited)**

Kostya Ostrikov\*, CSIRO Materials Science and Engineering, Australia

**11:00 AM**

**(ICACC-S7-055-2012) CNT based nanocomposite strain sensor for structural health monitoring**

Ashok K Singh\*, Defence Institute of Advanced Technology, India

**11:20 AM**

**(ICACC-S7-056-2012) Microwave Assisted Synthesis of Si(B)CN-MWCNT Free-Standing Paper for High Temperature Applications**

Romil Bhandavat\*, Gurpreet Singh, William Kuhn, Kansas State University, USA; Elisabeth Mansfield, National Institute of Standards and Technology, USA

**11:40 AM**

**(ICACC-S7-057-2012) Carbon nanotube - Nanocrystalline diamond composite coatings: processing conditions and growth mechanism**

Sugeetha Vasudevan\*, Janet Rankin, Brown University, USA; Barbara Walden, Trinity college, USA; Brian W Sheldon, Brown University, USA