



# 4<sup>th</sup> International Congress on Ceramics Preliminary Program

This program is organized in the following order:

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See [www.ceramics.org/icc4](http://www.ceramics.org/icc4) for a complete schedule of events and details on receptions, ICC4 exhibit, Art Institute of Chicago Dinner, optional tours, etc.

## Sunday, July 15, 2012

Registration	2:30 to 8 p.m.
Opening Ceremony and Keynote ( <b>Co-sponsored by Northwestern University and Argonne National Lab</b> )	6 to 7:25 p.m.
Keynote Speaker - <b>Maxine Savitz</b>	
Welcome Reception	7:30 to 9:00 p.m.

## Monday, July 16, 2012

Registration	7:30 a.m. to 6 p.m.
Plenary Session Introduction	8:30 to 8:45 a.m.
Plenary Speaker - <b>Gary Calabrese</b>	8:45 to 9:40 a.m.
Break ( <b>Sponsored by Corning Incorporated</b> )	9:40 to 10 a.m.
Plenary Speaker - <b>Chang-Hoon Kim</b>	10 to 10:55 a.m.
Plenary Speaker - <b>John Tracy</b>	11 to 11:55 a.m.
Lunch ( <b>Sponsored by The Boeing Co.</b> )	Noon to 12:45 p.m.
Plenary Speaker - <b>Athanasios Konstandopoulos</b>	12:45 to 1:30 p.m.
Concurrent Sessions	1:40 to 3:40 p.m.
– Aerospace Session I	
– Nanostructured Ceramics Session I	
– Environment, Energy and Transportation Session I	
– Electronic, Optical and Magnetic Ceramics and Devices Session I	
– Workforce Development Session I	
Exhibit I	3:30 to 6:30 p.m.
Interactive Technology Forum ( <b>Sponsored by Samsung Electro-Mechanics</b> )	3:45 to 6:30 p.m.

## Tuesday, July 17, 2012

Registration	7:45 a.m. to 6 p.m.
Plenary Speaker - <b>Delbert Day</b>	8:45 to 9:40 a.m.
Break ( <b>Sponsored by Kyocera</b> )	9:40 to 10 a.m.
Concurrent Sessions	10 a.m. to Noon
– Aerospace Session II	
– Nanostructured Ceramics Session II	
– Environment, Energy and Transportation Session II	
– Electronic, Optical and Magnetic Ceramics and Devices Session II	
– 3rd Ceramic Leadership Summit Track ( <b>Sponsored by Morgan Crucible</b> )	
Lunch	Noon to 12:45 p.m.
Plenary Speaker - <b>Michael Murray</b>	12:45 to 1:30 p.m.
Concurrent Sessions	1:40 to 3:40 p.m.
– Aerospace Session III	
– Nanostructured Ceramics Session III	
– Environment, Energy and Transportation Session III	
– Electronic, Optical and Magnetic Ceramics and Devices Session III	

## **Tuesday, July 17, 2012 (continued)**

– Workforce Development Session II	
– 3rd Ceramic Leadership Summit Track ( <b>Sponsored by Morgan Crucible</b> )	
Exhibit II	3:30 to 6:30 p.m.
Interactive Technology Forum ( <b>Sponsored by Samsung Electro-Mechanics</b> )	3:45 to 6:30 p.m.

## **Wednesday, July 18, 2012**

Registration	7:45 a.m. to 4:30 p.m.
Plenary Speaker - <b>Yukio Sakabe</b>	8:45 to 9:40 a.m.
Break	9:40 to 10 a.m.
Concurrent Sessions	10 a.m. to Noon
– Aerospace Session IV	
– Security and Strategic Materials Session I	
– Environment, Energy and Transportation Session IV	
– Infrastructure Session I	
– Workforce Development Session III	
– Biology and Medicine Session I	
Lunch on Own	Noon to 1:30 p.m.
Plenary Speaker - <b>David Bem</b>	1:30 to 2:15 p.m.
Break	2:15 to 2:30 p.m.
Concurrent Sessions	2:30 to 4:30 p.m.
– Security and Strategic Materials Session II	
– Environment, Energy and Transportation Session V	
– Nanostructured Ceramics Session IV	
– Infrastructure Session II	
– Biology and Medicine Session II	
Art Institute of Chicago Dinner	6:30 to 9:30 p.m.

## **Thursday, July 19, 2012**

Registration	7:30 a.m. to Noon
Concurrent Sessions	8 to 9:20 a.m.
– Environment, Energy and Transportation Session VI	
– Environment, Energy and Transportation Session VII	
– Infrastructure Session III	
– Biology and Medicine Session III	
Break	9:20 to 9:40 a.m.
Plenary Speaker - <b>Michael Holman</b>	9:40 to 10:40 a.m.
Shaping the Future of Ceramics Wrap Up Session	10:40 a.m. to 12:15 p.m.

Sunday, July 15, 2012  
**Opening Ceremony and Keynote Session**  
Co-sponsored by Northwestern University and Argonne National Lab

6:00 PM-7:30 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**6:00 PM**

**Opening Ceremony**

Katherine T. Faber, ICC4 President; Gary Messing, ICF President; George Wicks, ACerS President; L. David Pye, ACerS Past President; Cewen Nan, ICF President-Elect; Longtu Li, ICC5 President.

**6:30 PM - KEYNOTE PRESENTATION**

**(ICC-001-2012) Materials: An Enabler**

Maxine Savitz\*, Honeywell, retired, USA

Monday, July 16, 2012

**Plenary Session I**

8:30 AM-1:30 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**8:30 AM**

**(ICC-002-2012) Inventing the Future with New Materials**

Gary S. Calabrese\*, Corning Incorporated, USA

**9:30 AM**

Break (Sponsored by Corning Incorporated)

**10:00 AM**

**(ICC-003-2012) The Technical Trend of Dielectrics of the Multi-Layer Ceramic Capacitors**

Chang-Hoon Kim\*, Samsung Electro-Mechanics Co., Ltd., Korea

**11:00 AM**

**(ICC-004-2012) Materials and Technical Achievement: An Aerospace Perspective**

John Tracy\*, The Boeing Company, USA

Monday, July 16, 2012  
**Plenary Session II**

12:00 PM-1:30 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**12:00 PM**

Lunch (Sponsored by The Boeing Co.)

**12:45 PM**

**(ICC-005-2012) Multifunctional Ceramic Reactors for Green Mobility and Clean Energy Production**

Athanasios G. Konstandopoulos\*, CERTH/CPERI, Greece

Tuesday, July 17, 2012  
**Plenary Session III**

8:45 AM-10:00 AM

Room: Chicago Ballroom 6 & 7 (Level 4)

**8:45 AM**

**(ICC-006-2012) From Academia to Business**

Delbert E. Day\*, Missouri University of Science and Technology/MO-SCI Corp., USA

**9:40 AM**

Break (Sponsored by Kyocera)

**Plenary Session IV**

12:00 PM-1:30 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**12:00 PM**

Lunch

**12:45 PM**

**Emerging Ceramic Technologies: A Perspective from Morgan Crucible Co.**

Michael Murray\*, Morgan Crucible Co., USA

Wednesday, July 18, 2012

## Plenary Session V

8:45 AM-10:00 AM

Room: Chicago Ballroom 6 & 7 (Level 4)

**8:45 AM**

**(ICC-007-2012) Development of Electro-ceramics of Today and the Future**

Yukio Sakabe\*, Tokyo Institute of Technology, Japan

## Plenary Session VI

1:30 PM-2:30 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**1:30 PM**

**(ICC-008-2012) Dow Materials Innovation - Impacting the Future of Energy**

David S Bem\*, The Dow Chemical Company, USA

**2:15 PM**

Break

Thursday, July 19, 2012

## Plenary Session VII and Wrap Up Session

9:40 AM-12:15 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**9:40 AM**

**(ICC-009-2012) New Material Opportunities from Emerging Technology**

Michael Holman\*, Lux Research, USA

**10:40 AM**

**(ICC-010-2012) Report from the Workshop on Emerging Areas of Ceramics Research (Invited Speaker)**

Gregory S. Rohrer\*, Carnegie Mellon University, USA

**11:10 AM**

Shaping the Future of Ceramics: Wrap Up

# 3<sup>rd</sup> Ceramic Leadership Summit Track

Sponsored by Morgan Crucible

Tuesday, July 17, 2012

Plenary Session III

8:45 AM-10:00 AM

Room: Chicago Ballroom 6 & 7 (Level 4)

**8:45 AM**

**(ICC-006-2012) From Academia to Business**

Delbert E. Day\*, Missouri University of Science and Technology/MO-SCI Corp., USA

## 3<sup>rd</sup> Ceramic Leadership Summit Panel Discussion

10:00 AM-12:00 PM

Room: Chicago Ballroom 10 (Level 4)

**10:00 AM**

**Panel Discussion: Technology Entrepreneurship - The Next Generation of Technology Transfer**

Many people perceive the USA as the leader in entrepreneurship and technology transfer from basic research to a commercial setting. This moderated panel discussion will explore the development of commercial products through directed R&D with a focus on US-based small business ventures. It will follow a plenary talk by the founder of a successful ceramic materials company that takes technologies from the lab bench to established commercial products. The panel members - entrepreneurs, investors and technology transfer experts - will each make brief opening remarks. They will be followed by a question and answer session in which the moderator will develop the theme of starting, funding, staffing and growing technology-based businesses. There will be time for questions from the audience.

Organizer: Richard Weber, Materials Development, Inc.

Moderator: Tim Lavengood, Evanston Technology Innovation Center

Panel Members:

Delbert Day, Mo-Sci Corporation; Collin Anderson, Digital Innovations; Alex Arzoumanidis, Psylotech, Inc.; Jonathan Goodman, Synthesis Intellectual Property, LLC; Leslie Millar, University of Illinois Urbana-Champaign; John Banta, IllinoisVentures, LLC

Tuesday, July 17, 2012

Plenary Session VI

12:45 PM-1:30 PM

Room: Chicago Ballroom 6 & 7 (Level 4)

**Emerging Ceramic Technologies: A Perspective from Morgan Crucible Co.**

Michael Murray\*, Morgan Crucible Co., USA

## International Technology Transfer and Entrepreneurship Case Studies

1:40 PM-4:10 PM

Room: Chicago Ballroom 10 (Level 4)

**1:40 PM**

**(ICC-088-2012) Entrepreneurial Success of Balder LTD - Electro-optic Light Shutters for Eye-protection (Invited Speaker)**

Janez Pirs\*, M. Kosec, Jozef Stefan Institute, Slovenia

**2:10 PM**

**(ICC-089-2012) Development and Commercialization of High Performance Ceramics for Oil and Natural Gas Recovery (Invited Speaker)**

John R Hellmann\*, Barry E Scheetz, Ryan P Koseski, Penn State, USA; Marty Bradley, Tim Hurley, Nittany Extraction Technologies LLC, USA

**2:40 PM**

**(ICC-090-2012) From technology innovation to industrialization: a case of ceramic microbeads based on gel-bead forming (Invited Speaker)**

Jinlong Yang\*, Xiaoqing Xi, Yong Huang, Tsinghua University, China

**3:10 PM**

**(ICC-091-2012) Neoker, a Spin-Out of the University of Santiago de Compostela (Spain) (Invited Speaker)**

Victor Valcarcel\*, Carmen Cerecedo, Neoker, Spain

**3:40 PM**

**(ICC-092-2012) Thermoelectric Power Generation in Wide Temperature Region (Invited Speaker)**

Ryoji Funahashi\*, National Institute of Advanced Industrial Science & Technology, Japan

**Related Presentation:** Angus Kingon, *What is the Role of Entrepreneurship in Workforce Development?*, Workplace Development I, Monday, 1:45 PM



Monday, July 16, 2012

## Aerospace I

1:40 PM-3:40 PM

Room: Michigan A & B ( Level 2)

**1:40 PM**

**(ICC-011-2012) Ceramics for Defense Aerospace Applications (Invited Speaker)**

Allan Katz\*, Air Force Research Laboratory, Materials and Manufacturing Directorate, USA

**2:20 PM**

**(ICC-012-2012) Research and Development of Structural Materials for Mach 5 Hypersonic Aircraft (Invited Speaker)**

Takuya Aoki\*, Takayuki Kojima, Hideyuki Taguchi, Japan Aerospace Exploration Agency, Japan;  
Toshio Ogasawara, Japan Aerospace Exploration Agency, Japan

Tuesday, July 17, 2012

## Aerospace II

10:00 AM-12:00 PM

Room: Michigan A & B ( Level 2)

**10:00 AM**

**(ICC-013-2012) Ceramic Innovations at Rolls-Royce (Invited Speaker)**

Jay Lane\*, Ann Bolcavage, Rolls-Royce Corporation, USA

**10:40 AM**

**(ICC-014-2012) Ceramic Matrix Composites for Structural Aerospace Applications (Invited Speaker)**

Miklos Petervary\*, Todd Steyer, Boeing Company, USA

**11:20 AM**

**(ICC-015-2012) Post Processing of Advanced Thermal Barrier Coatings (Invited Speaker)**

Christopher Berndt\*, Swinburne University of Technology, Australia

Tuesday, July 17, 2012

## Aerospace III

1:40 PM-3:40 PM

Room: Michigan A & B ( Level 2)

**1:40 PM**

**(ICC-016-2012) Potential and Limits of SiC Chopped Fiber-reinforced Ultra High Temperature Ceramics. (Invited Speaker)**

Diletta Sciti\*, Laura Silvestroni, Stefano Guicciardi, Alida Bellosi, National Research Council, Italy

**2:20 PM**

**(ICC-017-2012) Space Shuttle Tile Thermal Protection System History, Improvements & Future (Invited Speaker)**

Daniel Leiser\*, NASA Ames Research Center, USA

**3:00 PM**

**(ICC-018-2012) UBE's Ceramic Strategy for Aerospace and Other Applications (Invited Speaker)**

Toshihiro Ishikawa\*, Ube Industries, Ltd., Japan

Wednesday, July 18, 2012

## Aerospace IV

10:00 AM-12:00 PM

Room: Michigan A & B ( Level 2)

**10:00 AM**

**(ICC-019-2012) FAA Technology Development of Ceramic Matrix Composite Aircraft Components (Invited Speaker)**

Rhett Jefferies\*, Federal Aviation Administration, USA

**10:40 AM**

**(ICC-020-2012) Testing Developments for Ceramic Matrix Composites in Extreme Environments (Invited Speaker)**

John R Koenig\*, Jacques C Cuneo, Bhavesh V Patel, Southern Research Institute, USA

**11:20 AM**

**(ICC-021-2012) Overview of Industry Producability Roadmapping Efforts for Advanced Ceramics (Invited Speaker)**

Glen Mandigo\*, Doug Freitag, U.S. Advanced Ceramics Association, USA

Wednesday, July 18, 2012  
**Biology and Medicine I**

10:00 AM-12:00 PM

Room: Chicago Ballroom 10 (Level 4)

**10:00 AM**

**(ICC-022-2012) Biosilicate - a Highly Bioactive Glass-ceramic. In vitro, In Vivo and Clinical Tests (Invited Speaker)**

Edgar Dutra Zanotto\*, Federal University of Sao Carlos, Brazil

**10:40 AM**

**(ICC-023-2012) Apatite-based Ceramics for Orthopaedic Applications (Invited Speaker)**

Serena Michelle Best\*, University of Cambridge, United Kingdom

**11:20 AM**

**(ICC-024-2012) Bioceramic Scaffolds for Tissue Engineering Applications (Invited Speaker)**

Kajal Mallick\*, University of Warwick, United Kingdom

**Biology and Medicine II**

2:30 PM-3:50 PM

Room: Chicago Ballroom 10 (Level 4)

**2:30 PM**

**(ICC-025-2012) Nanoceramics in Dentistry (Invited Speaker)**

Richard P. Rusin\*, 3M, USA

**3:10 PM**

**(ICC-026-2012) An Innovative Shaping Technique to Build Ceramic Prosthesis for the Repair of Large Craniofacial Bone Defects (Invited Speaker)**

Christophe Chaput\*, 3dceram, France; Thierry Chartier, SPCTS CNRS, France; Joel Brie, CHU Limoges Hospital, France; Jean Baptiste Lafon, 3dceram, France

Thursday, July 19, 2012  
**Biology and Medicine III**

8:00 AM-9:20 AM

Room: Chicago Ballroom 10 (Level 4)

**8:00 AM**

**(ICC-027-2012) Silicon Nitride: A Novel Biomaterial (Invited Speaker)**

Ashok C Khandkar\*, BloXR, USA

**8:40 AM**

**(ICC-028-2012) Strong Oxide Ceramics for Medical Applications (Invited Speaker)**

Meinhard Helmut Kuntz\*, CeramTec GmbH, Germany

Monday, July 16, 2012  
Electronic, Optical and Magnetic Ceramics  
and Devices I

1:40 PM-3:40 PM

Room: Chicago Ballroom 9 (Level 4)

**1:40 PM**

**(ICC-029-2012) Rigid Electronic Materials for Stretchable Device Applications (Invited Speaker)**

John A. Rogers\*, University of Illinois at Urbana/Champaign, USA

**2:20 PM**

**Title TBD (Invited Speaker)**

Jon-Paul Maria\*, North Carolina State University, USA

**3:00 PM**

**(ICC-030-2012) Ceramic Packaging Morphs to Keep Up With The Challenges in the Semiconductor Industry (Invited Speaker)**

Chong Park\*, Kyocera America, Inc., USA

Tuesday, July 17, 2012  
Electronic, Optical and Magnetic Ceramics  
and Devices II

10:00 AM-12:00 PM

Room: Chicago Ballroom 9 (Level 4)

**10:00 AM**

**(ICC-031-2012) TSDC Analysis for Oxygen Vacancy Study in Rare Earth and Magnesium co-doped BaTiO<sub>3</sub> (Invited Speaker)**

Noriyuki Inoue\*, Russell A Maier, The Pennsylvania State University, USA; Atsushi Honda, Hiroshi Takagi, Murata Manufacturing Co.,Ltd., Japan; Clive A Randall, The Pennsylvania State University, USA

**10:40 AM**

**(ICC-032-2012) Recent Topics of Soft Ferrites (Invited Speaker)**

Takuya Aoki\*, Shenglai Che, TDK Corporation, Japan; Masahiko Watanabe, TDK-EPC Corporation, Japan; Kentaro Mori, Naoyoshi Sato, Katsushi Yasuhara, TDK Corporation, Japan; Taku Murase, TDK-EPC Corporation, Japan

**11:20 AM**

**(ICC-033-2012) Thermoelectric Oxides- From Materials Design to Modules (Invited Speaker)**

Anke Weidenkaff\*, Sascha Populoh, Lassi Karvonen, Matthias Trottman, Gesine Saucke, Empa, Switzerland

Tuesday, July 17, 2012  
Electronic, Optical and Magnetic Ceramics  
and Devices III

1:40 PM-3:40 PM

Room: Chicago Ballroom 9 (Level 4)

**1:40 PM**

**(ICC-034-2012) Future Directions in Piezoceramics (Invited Speaker)**

Juergen Roedel\*, Wook Jo, Robert Dittmer, TU Darmstadt, Germany

**2:20 PM**

**(ICC-035-2012) High Energy Dielectrics for Pulse Power and Power Electronic Applications (Invited Speaker)**

Michael Lanagan\*, Penn State, USA

**3:00 PM**

**(ICC-036-2012) Integration of Functional Materials into LTCC Multilayer Modules (Invited Speaker)**

Jorg Topfer\*, Timmy Reimann, Silvia Bierlich, University Appl. Science, Germany; Stefan Barth, Beate Pawlowski, Fraunhofer Institute IKTS, Germany; Heike Bartsch-de Torres, Jens Müller, Technical University Ilmenau, Germany

**Related Presentation:** Zhong Lin Wang, *Nanoceramics for New Energy and Piezotronics*, Nanostructured Ceramics IV, Wednesday, 2:30 PM

**Related Presentation:** Minoru Kanehira, *Thin Films and Nanostructures for Thermochromic Smart Window*, Environment, Energy, and Transportation VII, Thursday, 8 AM

**Related Presentation:** S. K. Sundaram, *THz Ceramics for Novel Applications*, Environment, Energy, and Transportation VII, Thursday, 8:40 AM

Monday, July 16, 2012

## Environment, Energy and Transportation I

1:40 PM-3:40 PM

Room: Chicago Ballroom 8 (Level 4)

**1:40 PM**

**(ICC-037-2012) Emerging Applications of Ceramics at General Electric (Invited Speaker)**

Krishan Lal Luthra\*, General Electric Global Research, USA

**2:20 PM**

**(ICC-038-2012) Change of Energy Mix - Challenges on the Materials Level (Invited Speaker)**

Wolfgang Rossner\*, Siemens AG, Germany

**3:00 PM**

**(ICC-039-2012) The Unique Role of Ceramics in Energy Technologies: Recent Developments and Opportunities (Invited Speaker)**

Juan C Nino\*, University of Florida, USA

Tuesday, July 17, 2012

## Environment, Energy and Transportation II

10:00 AM-12:00 PM

Room: Chicago Ballroom 8 (Level 4)

**10:00 AM**

**(ICC-040-2012) Future of Porous Ceramics in Environmental, Energy and Related Applications (Invited Speaker)**

Paolo Colombo\*, University of Padova, Italy

**10:40 AM**

**Trends and Opportunities for Advanced Ceramics in the Field of Energy and Environment (Invited Speaker)**

William Mustel\*, Saint-Gobain High Performance Refractories, France

**11:20 AM**

**(ICC-041-2012) Development Strategies for SiAlON Ceramics in Wear Applications: Challenges and Potentials (Invited Speaker)**

Hasan Mandal\*, Sabanci University, Turkey

Tuesday, July 17, 2012

## Environment, Energy and Transportation III

1:40 PM-3:40 PM

Room: Chicago Ballroom 8 (Level 4)

**1:40 PM**

**(ICC-042-2012) Facile Synthesis and Electrochemical Characterization of Oxide Nanostructures for Energy Storage Applications (Invited Speaker)**

Do Kyung Kim\*, KAIST (Korea Advanced Institute of Science and Technology), Korea

**2:20 PM**

**(ICC-043-2012) Microstructure Changes of Electrodes during Operation of Solid Oxide Fuel Cells (Invited Speaker)**

Koichi Eguchi\*, Hiroki Muroyama, Toshiaki Matsui, Kyoto University, Japan

**3:00 PM**

**(ICC-044-2012) Processing of Particulate Films for Solid Oxide Fuel Cell Application (Invited Speaker)**

Rajendra N. Basu\*, CSIR - Central Glass & Ceramic Research Institute, India

Wednesday, July 18, 2012

## Environment, Energy and Transportation IV

10:00 AM-12:00 PM

Room: Chicago Ballroom 8 (Level 4)

**10:00 AM**

**(ICC-045-2012) Micro and Mesoporous Ceramic Membranes for Energy Efficient Gas Separation, Pervaporation and Nanofiltration (Invited Speaker)**

Louis Winnubst\*, University of Twente, Netherlands

**10:40 AM**

**(ICC-046-2012) New Generation Ceramic Hot Gas Filters for Simultaneous Removal of Particulate Matter, SO<sub>x</sub> and NO<sub>x</sub> (Invited Speaker)**

Manfred Salinger\*, Pall GmbH, Germany

**11:20 AM**

**(ICC-047-2012) Precursors-derived Porous Ceramic-based Membranes for Gas Separation (Invited Speaker)**

Yuji Iwamoto\*, Nagoya Institute of Technology, Japan

**Related Presentation:** Lionel Lemay, *Innovations that Enhance the Sustainable Attributes of Concrete-based Materials, Infrastructure I, Wednesday, 11:20 AM*



Wednesday, July 18, 2012

## Environment, Energy and Transportation V

2:30 PM-4:30 PM

Room: Chicago Ballroom 8 (Level 4)

**2:30 PM**

**(ICC-048-2012) The Role of SiC Ceramics and Composites in Nuclear Energy for the Post-Fukushima Era (Invited Speaker)**

Yutai Katoh\*, Lance L Snead, Oak Ridge National Lab, USA

**3:10 PM**

**(ICC-049-2012) From Radiation Waste to Resource, a New Transmutation Strategy (Invited Speaker)**

Masaki Ozawa\*, Tokyo Institute of Technology, Japan

**3:50 PM**

**(ICC-050-2012) Designed Materials for Solar Thermochemical Redox Cycling (Invited Speaker)**

Alan W Weimer\*, Univ Colorado, USA

**Related Presentation:** [Liaurent Barcelo, \*Belite, Calcium Sulfoaluminate and Calcium Aluminoferrite Based Clinkers, a New Way to Address the Sustainability Challenges of the Cement Industry\*, Infrastructure II, Wednesday, 2:30 PM](#)

**Related Presentation:** [Zhong Lin Wang, \*Nanoceramics for New Energy and Piezotronics\*, Nanostructured Ceramics IV, Wednesday, 2:30 PM](#)

**Related Presentation:** [Andreas Tselebidis \*Belite, Sustainable Concrete\*, Infrastructure II, Wednesday, 3:10 PM](#)

Thursday, July 19, 2012

## Environment, Energy and Transportation VI

8:00 AM-9:20 AM

Room: Michigan A & B ( Level 2)

**8:00 AM**

**(ICC-051-2012) The Critical Role of Ceramics in Automotive Exhaust Particulate Emission Control (Invited Speaker)**

George Gabriel Muntean\*, Mark Stewart, Maruthi Devarakonda, PNNL, USA

**8:40 AM**

**(ICC-052-2012) Micron-Scale Tunable Acicular Mullite Ceramics for Filtration Applications (Invited Speaker)**

Jim O'Brien\*, Michael Malanga, Paul Vosejka, Clifford Todd, Ashish Kotnis, The Dow Chemical Company, USA

Thursday, July 19, 2012  
Environment, Energy and Transportation VII

8:00 AM-9:20 AM

Room: Superior A & B (Level 2)

**8:00 AM**

**(ICC-053-2012) Thin Films and Nanostructures for Thermochromic Smart Window: State of the Art and Outlook (Invited Speaker)**

Minoru Kanehira\*, Hongjie Luo, Yanfeng Gao, Shanghai Institute of Ceramics, China

**8:40 AM**

**(ICC-054-2012) THz Ceramics for Novel Applications (Invited Speaker)**

S. K Sundaram\*, Alfred University, USA

Wednesday, July 18, 2012

## Infrastructure I

10:00 AM-12:00 PM

Room: Chicago Ballroom 9 (Level 4)

**10:00 AM**

**(ICC-055-2012) Models and Measurements with Implications to Understanding Mechanisms**

**(Invited Speaker)**

Hamlin Jennings\*, Massachusetts Institute of Technology, USA

**10:40 AM**

**(ICC-056-2012) Cellulose Nanomaterials an Opportunity for Cements? (Invited Speaker)**

Robert Moon\*, U.S. Forest Service, USA; J. Weiss, J. Youngblood, P. D Zavattieri, Purdue University, USA

**11:20 AM**

**(ICC-057-2012) Innovations that Enhance the Sustainable Attributes of Concrete-based Materials**

**(Invited Speaker)**

Lionel Lemay\*, National Ready Mixed Concrete Association, USA

## Infrastructure II

2:30 PM-4:30 PM

Room: Chicago Ballroom 9 (Level 4)

**2:30 PM**

**(ICC-058-2012) Belite, Calcium Sulfoaluminate and Calcium Aluminoferrite Based Clinkers, a New Way to Address the Sustainability Challenges of the Cement Industry (Invited Speaker)**

Laurent Barcelo\*, John Kline, Lafarge Canada Inc, Canada; Gunther Walenta, Ellis Gartner, Lafarge Research Center, France

**3:10 PM**

**(ICC-059-2012) Sustainable Concrete (Invited Speaker)**

Andreas Tselebidis\*, BASF CORP, USA

**3:50 PM**

**(ICC-060-2012) Materials Research at the U.S. Army Engineer Research and Development Center (Invited Speaker)**

Todd S Rushing\*, U.S. Army ERDC, USA

Thursday, July 19, 2012

## Infrastructure III

8:00 AM-9:20 AM

Room: Chicago Ballroom 9 (Level 4)

**8:00 AM**

**(ICC-061-2012) Making Super-hydrophobic Building Materials: Static and Dynamic Behaviour of Nanostructured Surfaces (Invited Speaker)**

Mariarosa Raimondo\*, CNR ISTEC, Italy

**8:40 AM**

**(ICC-062-2012) Superabsorbent Polymers in Portland Cement-based Composites (Invited Speaker)**

Wilasa Vichit-Vadakan\*, Jirawan Siramanont, Siam Research and Innovation Co. Ltd., Thailand

Monday, July 16, 2012  
Nanostructured Ceramics I

1:40 PM-3:40 PM

Room: Superior A & B (Level 2)

**1:40 PM**

**(ICC-063-2012) Nanotechnology Research at NIOSH: Supporting Safe Development of the Business (Invited Speaker)**

Charles L. Geraci\*, NIOSH, USA

**2:20 PM**

**(ICC-064-2012) Nanotoxicology and Nanomedicine: Risk Assessment and Therapy (Invited Speaker)**

Lang Tran\*, Institute of Occupational Medicine, United Kingdom

**3:00 PM**

**(ICC-065-2012) Mesoporous Silica Nanoparticles and the Quest to Deliver Biomedical Benefits (Invited Speaker)**

Kathleen Eggleston\*, University of Notre Dame, USA

Tuesday, July 17, 2012  
Nanostructured Ceramics II

10:00 AM-12:00 PM

Room: Superior A & B (Level 2)

**10:00 AM**

**(ICC-066-2012) International Standardization Efforts in NanoEHS (Invited Speaker)**

Angela Hight Walker\*, National Institute of Standards and Technology, USA

**10:40 AM**

**(ICC-067-2012) Environmental, Health, and Safety Assessment of Engineered Nanomaterials (Invited Speaker)**

Debra Lee Kaiser\*, NIST, USA

**11:20 AM**

**(ICC-068-2012) Carbon Nanotubes, and the Importance of Material Characterization for NanoEHS Measurements (Invited Speaker)**

Jeffrey Fagan\*, National Institute of Standards and Technology, USA

Tuesday, July 17, 2012  
Nanostructured Ceramics III

1:40 PM-3:40 PM

Room: Superior A & B (Level 2)

**1:40 PM**

**(ICC-069-2012) Nano-OEHS Insights & AssuredNano® Accreditation (Invited Speaker)**

Donald Ewert\*, nanoTox, Inc., USA

**2:20 PM**

**(ICC-070-2012) Evaluating Toxicity of Graphene Oxides (Invited Speaker)**

Sudipta Seal\*, S. Das, L. Zhai, S. Khondekar, J. Dowding, D. Jong, W. Self, University Of Central Florida, USA

**3:00 PM**

**(ICC-071-2012) Priorities for Nanoscale Ceramics (Invited Speaker)**

Lynnette D Madsen\*, National Science Foundation, USA

**Related Presentation:** Robert Moon, *Cellulose Nanomaterials an Opportunity for Cements?*, Infracstructure I, Wednesday, 10:40 AM

Wednesday, July 18, 2012  
Nanostructured Ceramics IV

2:30 PM-4:30 PM

Room: Michigan A & B ( Level 2)

**2:30 PM**

**(ICC-072-2012) Nanoceramics for New Energy and Piezotronics (Invited Speaker)**

Zhong Lin Wang\*, Georgia Institute of Technology, USA

**3:10 PM**

**(ICC-073-2012) Materials Development: Paving the Way to New Innovation (Invited Speaker)**

Anne Hardy\*, Compagnie de Saint Gobain, France

**3:50 PM**

**(ICC-074-2012) Nanostructured Ceramics and Hybrid Materials in Toyota Central R&D Labs (Invited Speaker)**

Masaya Kawasumi\*, TOYOTA Central R&D Labs. Inc., Japan

**Related Presentation:** Mariatosa Raimondo, *Making Super-hydrophobic Building Materials: Static and Dynamic Behaviour of Nanostructured Surfaces*, Infracstructure III, Thursday, 8:00 AM

Wednesday, July 18, 2012  
Security and Strategic Materials I

10:00 AM-12:00 PM  
Room: Superior A & B (Level 2)

**10:00 AM**

**(ICC-097-2012) New Functionalities in Abundant Element Oxides: Ubiquitous Element Strategy (Invited Speaker)**

Hideo Hosono\*, Tokyo Institute of Technology, Japan

**10:40 AM**

**(ICC-094-2012) Securing Rare Earth Elements and Strategic Minerals: Assessing Supply Risks and the Role of Government (Invited Speaker)**

Marc Humphries\*, Congressional Research Service, USA

**10:40 AM**

**(ICC-093-2012) The Role of a Transformed National Defense Stockpile in Securing the U.S. Supply of Strategic and Critical Materials (Invited Speaker)**

Richard A. Lowden\*, Oak Ridge National Laboratory, USA

Security and Strategic Materials II

2:30 PM-4:30 PM  
Room: Superior A & B (Level 2)

**2:30 PM**

**(ICC-095-2012) Advanced Materials Research for Extreme Loading (Invited Speaker)**

Stanley C. Woodson\*, U.S. Army Engineer Research and Development Center, USA

**3:10 PM**

**(ICC-096-2012) Ceramics and Ceramic Matrix Composites for National Security Applications (Invited Speaker)**

Douglas Freitag\*, United States Advanced Ceramic Association; Bayside Materials Technology, USA

Monday, July 16, 2012

## Workforce Development I - Global Challenges

1:40 PM-3:40 PM

Room: Erie (Level 2)

**1:40 PM**

### **Introduction**

B. Erik Svedberg, The National Academies

**1:45 PM**

### **(ICC-075-2012) What is the Role of Entrepreneurship in Workforce Development? (Invited Speaker)**

Angus Kingon\*, Brown University, USA

**2:20 PM**

### **(ICC-076-2012) Integrated Computational Materials Science and Engineering (Invited Speaker)**

Umesh V. Waghmare\*, J Nehru Centre for Advanced Scientific Research, India

**3:00 PM**

### **(ICC-077-2012) Foresight in Materials: the European Materials Science and Engineering Expert Committee (Invited Speaker)**

Patrick Bressler\*, Fraunhofer Gesellschaft, Belgium

**3:20 PM**

### **(ICC-078-2012) Materials Science in the Developing World: Challenges and Perspectives (Invited Speaker)**

Federico Rosei\*, INRS, Canada



Tuesday, July 17, 2012

## Workforce Development II - Creating an Effective, Competitive Workforce

1:40 PM-3:40 PM

Room: Erie (Level 2)

**1:40 PM**

### **Introduction**

Tom N. Oder, Youngstown State University

**1:45 PM**

### **(ICC-079-2012) Why So Few? Women in Science, Technology, Engineering, and Mathematics (Invited Speaker)**

Catherine Hill, Christianne Corbett\*, Andresse St. Rose, American Association of University Women, USA

**2:20 PM**

### **(ICC-080-2012) Diversity and Degree Production in Materials Science and Engineering (Invited Speaker)**

Keith J. Bowman\*, Illinois Institute of Technology, USA

**2:40 PM**

### **(ICC-081-2012) Involving Undergraduates in Research (Invited Speaker)**

Mario Affatigato\*, Coe College, USA

**3:00 PM**

### **(ICC-082-2012) Career Opportunities in Glass: The Random Network Model (Invited Speaker)**

Louis Mattos\*, The Coca-Cola Company, USA

Wednesday, July 18, 2012

## Workforce Development III - International Challenges and Opportunities

10:00 AM-11:40 AM

Room: Erie (Level 2)

**10:00 AM**

### **Introduction**

Martha Mecartney, University of Irvine, California

**10:05 AM**

### **(ICC-083-2012) Dual Doctoral Programs in the Field of Glasses and Ceramics Between France and USA or China (Invited Speaker)**

Jean-Luc Adam, Xiang-Hua Zhang\*, Université de Rennes / CNRS, France

**10:20 AM**

### **(ICC-084-2012) Programs to Support Young Post-doctoral researchers in Japan (Invited Speaker)**

Fumiyo Kaneko\*, Japan Society for the Promotion of Science, USA

**10:40 AM**

### **(ICC-085-2012) Programs for Foreign Scientists from Chinese Academy of Sciences (CAS) (Invited Speaker)**

Hongjie Luo\*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

**11:00 AM**

### **(ICC-086-2012) Mentoring of Postdoctoral Scholars (Invited Speaker)**

Judith A Todd\*, Penn State University, USA

**11:20 AM**

### **(ICC-087-2012) Strategies to Encourage International Cooperation (Invited Speaker)**

Mary Lynn Realff\*, Georgia Institute of Technology, USA

Monday, July 16, 2012  
**Interactive Technology Forum I**  
Sponsored by Samsung Electro-Mechanics

3:45 PM-6:30 PM

Room: River Exhibition Hall B (Level 1)

### *Interactive Presentations*

**(ICC-P097-2012) Assessing Damage in Ceramic Matrix Composites For Jet Engine Applications after Impact**

Christopher Richard Baker\*, Gregory N Morscher, University of Akron, USA

**(ICC-P098-2012) Ultra-High Temperature Ceramics for Thermal Management and Protection in Hypersonic Aviation Applications: Tailoring Thermal Transport Properties of ZrB<sub>2</sub>**

Gregory John Kenneth Harrington\*, Matthew J Thompson, Greg E Hilmas, William G Fahrenholtz, Missouri University of Science and Technology, USA

**(ICC-P099-2012) Study on Al<sub>2</sub>O<sub>3</sub> coating deposited onto carbon fiber reinforced polymer matrix substrate**

Guanhong Sun\*, Xiaodong He, Jiuxing Jiang, Yue Sun, Harbin Institute of Technology, China

**(ICC-P100-2012) Processing, Microstructure, Mechanical and Thermal Properties of Porous Ti<sub>2</sub>AlC with Controlled Porosity and Pore Size**

Liangfa Hu\*, Rogelio Benitez, Sandip Basu, Ibrahim Karaman, Miladin Radovic, Texas A&M University, USA

**(ICC-P101-2012) Oxidation Behavior of Zirconium Diboride with Transition Metal Additions**

Maryam Kazemzadeh Dehdashti\*, William G Fahrenholtz, Gregory E Hilmas, Missouri University of Science and Technology, USA

**(ICC-P102-2012) GdBr<sub>3</sub>(Ce) Glass-Ceramic Scintillators for Gamma-ray Spectroscopy**

Brooke Barta\*, Georgia Institute of Technology, USA; Jason H Nadler, Zhitao Kang, Brent Wagner, Bernd Kahn, Georgia Tech Research Institute, USA

**(ICC-P103-2012) Analysis of the sintering stresses and shape distortion produced in co-firing of CGO-LSM/CGO bi-layer porous structures**

De Wei Ni\*, Vincenzo Esposito, Cristine G Schmidt, Tesfaye T Molla, Severine Ramousse, Technical University of Denmark, Denmark

**(ICC-P104-2012) Characterisation of Bi/Gd-doped BaTiO<sub>3</sub> ceramics**

Giorgio Schileo\*, Antonio Feteira, Sheffield Hallam University, United Kingdom; Klaus Reichmann, Institute for Chemistry and Technology of Materials, Graz University of Technology, Austria

## *ICC4 Interactive Presentations - Monday*

### **(ICC-P105-2012) Preparation and properties of translucent YAG:Ce ceramics obtained by solid state reaction sintering**

Malgorzata Sopicka-Lizer\*, Daniel Michalik, Tomasz Pawlik, Silesian University of Technology, Poland

### **(ICC-P106-2012) Gelcasting of Large and Complex Submicron-Grained Bodies**

Martin Trunec\*, Karel Maca, Brno University of Technology, Czech Republic

### **(ICC-P107-2012) Powder Injection Molding of translucent ceramic parts**

Anne Mannschatz, Axel Müller, Matthias Ahlhelm\*, Tassilo Moritz, Alexander Michaelis, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany

### **(ICC-P108-2012) Bottom-electrode Assisted Sintering in PLZT Thin Films**

Sheng Tong\*, University of Cincinnati, USA; Beihai Ma, Manoj Narayanan, Shanshan Liu, Uthamalingam Balachandran, Argonne National Laboratory, USA; Donglu Shi, University of Cincinnati, USA

### **(ICC-P109-2012) High Temperature Piezoelectric Ceramics based on $(1-x)[\text{BiScO}_3 + \text{Bi}(\text{Ni}_{1/2}\text{Ti}_{1/2})\text{O}_3] - x\text{PbTiO}_3$**

Troy Ansell\*, Oregon State University, USA

### **(ICC-P110-2012) Processing of IR transparent ZnS bulk materials**

Yiquan Wu, Shi Chen\*, Alfred University, USA

### **(ICC-P111-2012) Induced Piezoelectricity in Tunable $\text{Ba}_{1-x}\text{Sr}_x\text{TiO}_3$ Thin Film Dielectrics**

Lauren Garten\*, Susan Trolrier-McKinstry, Pennsylvania State University, USA; Jon-Paul Maria, North Carolina State University, USA

### **(ICC-P112-2012) Two-Stage Master Sintering Curve as a Robust Grey-Box Tool for Setting Sintering Strategies**

Karel Maca\*, Vaclav Pouchly, Brno University of Technology, Czech Republic; Zhijian J Shen, Stockholm University, Sweden

### **(ICC-P113-2012) Freeze foaming - A direct foaming technique achieving cellular structures for versatile applications**

Matthias Ahlhelm\*, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany; Erwin Gorjup, Hagen von Briesen, Fraunhofer Institute for Biomedical Engineering (IBMT), Germany; Tassilo Moritz, Alexander Michaelis, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany

*ICC4 Interactive Presentations - Monday*

**(ICC-P114-2012) Processing Ceramic Porous Structures by Emulsion Templating**

Omer Van der Biest\*, Bram Neirinck, Jan Fransaer, Jef Vleugels, K. U. Leuven, Belgium

**(ICC-P115-2012) Synthesis of Homogeneous Plate-like Ceria Particles and Their Multifunction as Cosmetic Materials**

Shu Yin\*, Yoshihiro Minamidate, Shunsuke Tonouchi, Tsugio Sato, Tohoku University, Japan

**(ICC-P116-2012) Utilizing Pressure-Induced Transformations for Toughening of Ceramics**

Subramanian Ramalingam\*, Ivar E Reimanis, Colorado School of Mines, USA

**(ICC-P117-2012) Novel surface-coating technique of a morphology controlled zinc oxide**

Takehiro Goto\*, Shu Yin, Tsugio Sato, Tohoku University, Japan; Takumi Tanaka, Daito Kasei Kogyo CO., LTD., Japan

Monday, July 16, 2012  
Interactive Technology Forum I

Sponsored by Samsung Electro-Mechanics

3:45 PM-6:30 PM

Room: River Exhibition Hall B (Level 1)

## *Poster Presentations*

**(ICC-P001-2012) High strength porous YSZ ceramics reinforced by YSZ fibers**

Chang-An Wang\*, Jun Zhou, Yanhao Dong, Ying Lang, Yong Huang, Tsinghua University, China

**(ICC-P002-2012) Microstructure/property changes in TZP and TZP/Lanthanum zirconate composites by two-step firing schedules**

Elsa Antunes\*, Innovnano, S.A., Portugal; Teresa Carvalho, Ceramics Dep. University of Aveiro, Portugal; João Calado, Innovnano, S.A., Portugal; Filipe Figueiredo, Ceramics Dep. University of Aveiro, Portugal; Dachamir Hotza, Dep. Chem. Eng., UFSC,, Brazil; Jorge Frade, Sónia Rosa, Ceramics Dep. University of Aveiro, Portugal

**(ICC-P003-2012) Spark Plasma Sintering (SPS) of SiC - Magnesium Alloy Composites**

Eric J. Faierson\*, James W Sears, Quad City Manufacturing Lab - Western Illinois University, USA

**(ICC-P004-2012) Functionally Graded Ultra-High Temperature Ceramics Based on "Ridge-Effect" Phenomenon**

Igor Logan Shabalin\*, Yu Wang, University of Salford, United Kingdom; Lingfei Zhang, EDF R&D Matériaux et Mécanique des Composants, France

**(ICC-P005-2012) Fabrication and Properties of Nano-Porous SiO<sub>2</sub> Insulation Materials by Modified Freeze-Drying Method**

Jie Tang, Yufeng Chen\*, Maoqiang Li, Liming Hu, China Building Materials Academy, China

**(ICC-P006-2012) The Effect of Cure Period on the Mechanical Properties of Silica/Phenolic Composites Prepared via Compression Molding Method**

Onder Guney\*, Erdem Demirkesen, Istanbul Technical University, Turkey

**(ICC-P007-2012) Evaluation of impact bending strength of ceramic composites at ultra-high temperatures from 1800-2200 K in air**

Wan Detian\*, Bao Yiwang, Liu Xiaogen, Qiu Yan, China Building Materials Academy, China

**(ICC-P008-2012) The Influence of t' Phase on Mechanical Properties in 8 wt% YSZ Thermal Barrier Coatings**

Xiaorui Ren\*, Wei Pan, Tsinghua University, China

## *ICC4 Poster Presentations - Monday*

### **(ICC-P009-2012) Sol-gels as Image Plates**

Christian Foerster\*, Jacqueline Johnson, University of Tennessee Space Institute, USA

### **(ICC-P010-2012) Nanopowders of dental zirconia obtained by different synthesis routes**

Federica Bondioli\*, Università di Modena e Reggio Emilia, Italy; Claudia Volpato, Federal University of Santa Catarina, Brazil; Davide Sighinolfi, Expert System Solution srl, Italy; Marcio Fredel, Federal University of Santa Catarina, Brazil

### **(ICC-P011-2012) Preparation of novel calcium silicate ceramics with interlayers for biomaterial applications**

Hiroataka Maeda\*, Tomoyuki Tamura, Akiko Obata, Toshihiro Kasuga, Nagoya Institute of Technology, Japan

### **(ICC-P012-2012) Modified calcium phosphate materials for medical applications**

Vita Zalite\*, Janis Locs, Liga Berzina-Cimdina, Dagnija Loca, Daina Vempere, Riga Technical University, Latvia

### **(ICC-P013-2012) The Effect of Alkaline Treatment on Biomimetic Apatite Formation and Adhesive Strength**

Kambiz Fatehi\*, Fathollah Moztarzadeh, Tehran Polytechnic Univ, Islamic Republic of Iran

### **(ICC-P014-2012) Biofabrication of glass scaffolds by 3D printing**

Liliana S O Pires, Maria H V Fernandes, Jose M M Oliveira\*, University of Aveiro, Portugal

### **(ICC-P015-2012) Influence of defect concentration on dielectric and polarization property in Hydroxyapatite**

Naohiro Horiuchi\*, Kosuke Nozaki, Miho Nakamura, Akiko Nagai, Kimihiro Yamashita, Tokyo Medical and Dental University, Japan

### **(ICC-P016-2012) Radical Annihilation Performance of Ceria Nanosols Produced by Photochemical Reaction**

Naoko Fujita\*, Koji Horiguchi, Yuji Hamasaki, Kai Kamada, Nagasaki University, Japan

### **(ICC-P017-2012) Fabrication of Wollastonite Glass-Ceramic Scaffolds by New Method**

Parvin Alizadeh\*, Davud Abadkar, Tarbiat Modares University, Islamic Republic of Iran

## ICC4 Poster Presentations - Monday

### **(ICC-P018-2012) Enhancement of handling and mechanical property of chelate-setting $\alpha$ -calcium phosphate cement by addition of citric acid and chitosan to mixing solution and its *in vitro/vivo* evaluations.**

Toshiisa Konishi\*, Minori Mizumoto, Honda Mihiyo, Kanagawa Academy of Science and Technology (KAST), Japan; Yasuhiro Takeuchi, Hiroshi Nagashima, Mamoru Aizawa, Meiji University, Japan

### **(ICC-P019-2012) Dielectric and non-linear characteristics of La-doped BaTiO<sub>3</sub> ceramics**

Adelina Ianculescu\*, University Politehnica of Bucharest, Romania; Zina Mocanu, Lavinia Curecheriu, Liliana Mitoseriu, "Alexandru Ioan Cuza" University, Romania; Catalina Vasilescu, University Politehnica of Bucharest, Romania; Roxana Trusca, S.C. METAV - Research & Development, Romania

### **(ICC-P020-2012) Fabrication and Transport Study of Atomically Thin MoS<sub>2</sub> Field Effect Transistors**

Alex C Freedman\*, Bin Liu, Dattatray J Late, Northwestern University, USA; C. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, India; Vinayak P Dravid, Northwestern University, USA

### **(ICC-P021-2012) Crystal structure and dielectric properties of Bi<sub>0.8</sub>Ba<sub>0.2</sub>Fe<sub>0.95</sub>Nb<sub>0.05</sub>O<sub>3</sub> multiferroic**

Ashish Agarwal\*, Reetu Dahiya, Sujata Sanghi, Ashima Hooda, Guru Jambheshwar University of Science and Technology, India

### **(ICC-P022-2012) The effect of different rare earth oxides on optical property of hot pressed $\alpha/\beta$ SiAlON ceramics**

Bhupendra Joshi\*, Sun Moon University, Korea; Hao Wang, Zhengyi Fu, Department of Metallurgy and Material Engineering, Sunmoon University, Korea. 2State Key Lab of Advanced Technology for Material Synthesis and Processing, Wuhan University of Technology, China; Soo W Lee, Sun Moon University, Korea

### **(ICC-P023-2012) Influences of Multiple Doping on Spark Plasma Sintered Transparent Alumina**

Burcu Apak\*, Halide E Kanbur, Istanbul Technical University, Turkey; Esra O Zayim, Istanbul Technical University, Turkey; Gültekin Göller, Onuralp Yücel, Filiz C Sahin, Istanbul Technical University, Turkey

### **(ICC-P024-2012) Study of nanostructured Ba(Ti,Zr)O<sub>3</sub> ceramics produced by spark plasma sintering**

Catalina Vasilescu\*, Adelina Ianculescu, University Politehnica of Bucharest, Romania; Lavinia Curecheriu, Cristina Ciomaga, Liliana Mitoseriu, "Alexandru I. Cuza" University, Romania; Daniela Berger, University Politehnica of Bucharest, Romania; Gilbert Fantozzi, Guillaume Bonnefont, University of Lyon, France



## *ICC4 Poster Presentations - Monday*

### **(ICC-P025-2012) Synthesis of lanthanum silicate oxyapatite ceramic powder as a solid oxide fuel cell electrolyte by a new modified sol gel method**

D. R Elias, Nuclear and Energy Research Institute, Brazil; Sabrina L Lira, University of Sao Paulo, Brazil; Mayara Paiva, Centro Universitario Sao Camilo, Brazil; Agatha Misso, Faculdades Oswaldo Cruz, Brazil; Chieko Yamagata\*, University of Sao Paulo, Brazil

### **(ICC-P026-2012) Dielectric Properties of Complex Barium Neodymium Titanates in Microwave Regime**

Dalveer Kaur Dhanjal\*, Punjab Technical University, India

### **(ICC-P027-2012) Fabrication and characterization of Yb:LuAG transparent laser ceramics**

Dewei Luo\*, Jian Zhang, Changwen Xu, Hao Yang, Hui Lin, Haiyong Zhu, Dingyuan Tang, Jan Ma, NTU, Singapore

### **(ICC-P028-2012) Influence of Nd<sub>2</sub>O<sub>3</sub> and Y<sub>2</sub>O<sub>3</sub> on the Synthesis of Ba<sub>2</sub>Ti<sub>9</sub>O<sub>20</sub> Microwave Dielectric Ceramic Bodies**

Doaa Abdel Aziz\*, National Research Centre, Egypt

### **(ICC-P029-2012) Processing & Characterization of Textured Barium Ferrite Ceramics**

Eda Aydogan\*, Arcan F Dericioglu, Muharrem Timucin, Middle East Technical University, Turkey

### **(ICC-P030-2012) Mechanochemical Synthesis of Multiferroic BiMnO<sub>3</sub> and YMnO<sub>3</sub> Powders**

Goran Brankovic\*, Zorica Brankovic, Zorica Marinkovic Stanojevic, Milica Pocuca, Institute for multidisciplinary research - University of Belgrade, Serbia; Zvonko Jaglicic, Institute of Mathematics, Physics and Mechanics, Slovenia; Lidija Mancic, Institute of Technical Sciences SASA, Serbia; Slavko Bernik, Jozef Stefan Institute, Slovenia; Marcio De Sousa Goes, Instituto de Quimica, UNESP, Brazil

### **(ICC-P031-2012) Transparent AlON Ceramics Fabricated by Reactive Spark Plasma Sintering**

Halide Esra Kanbur\*, Burcu Apak, Gultekin Goller, Onuralp Yucel, Filiz Cinar Sahin, ITU, Turkey

### **(ICC-P032-2012) Rapid synthesis of rare-earth doped LNT (Li-Nb-Ti-O system) phosphors by millimeter-wave heating**

Hiromi Nakano\*, Keita Ozono, Toyohashi University of Technology, Japan; Tasaburo Saji, Shoji Miyake, MSP Corp., Japan

### **(ICC-P033-2012) NKLNT Ceramics for Multi-Layer Piezoelectric Actuator**

Jae-Sung Song\*, Min-Soo Kim, In-Sung Kim, Soon-Jong Jeong, Korea Electrotechnology Research Institute, Korea

### **(ICC-P034-2012) Fabrication of Tm:YAG ceramics for mid-infrared solid state laser applications**

Jian Zhang\*, Nanyang Technological University, Singapore

*ICC4 Poster Presentations - Monday*

**(ICC-P035-2012) Deterioration Behavior Analysis of Dysprosium and Thulium co-doped Barium Titanate ceramics for Multilayer Ceramic Capacitors**

Jinseong Kim\*, Dowan Kim, Taimin Noh, Seol Jeon, Heesoo Lee, Pusan national university, Korea

**(ICC-P036-2012) Laser Sintering of Ceramic YAG Fiber**

Jonathan Goldstein\*, Geoff Fair, Air Force Research Lab, USA; Heedong Lee, Hyun Jun Kim, UES, Inc., USA

**(ICC-P037-2012) Luminescence properties of Eu<sup>2+</sup> doped M-silicate (M=Ca, Ba, Sr) phosphors for application possibility to white LEDs**

Jong Wong Chung\*, Yeqing Chen, Sung Wook Park, Byung Kee Moon, Byung Chun Choi, Jung Hyun Jeong, Pukyong National University, Korea; Kiwan Jang, Changwon National University, Korea; Soung Soo Yi, Silla University, Korea

**(ICC-P038-2012) Luminescence of pulsed laser deposited NaY(MoO<sub>4</sub>)<sub>2</sub>:Eu<sup>3+</sup> thin film red phosphors on sapphire substrates**

Sung Wook Park\*, Jong Won Chung, Byung Kee Moon, Byung Chun Choi, Jung Hyun Jeong, Pukyong National University, Korea

**(ICC-P039-2012) Modification of h-BN filler and the several properties in composite material with epoxy resin**

Kenji Miyata\*, Toshitaka Yamagata, Denki Kagaku Kogyo Kabushiki Kaisha, Japan; Tadafumi Adschiri, Tohoku university, Japan

**(ICC-P040-2012) Impedance spectroscopy analysis of p-type Li-doped ZnO thin film effect**

Kuo Chuang Chiu\*, Industrial Technology Research Institute, Taiwan

**(ICC-P041-2012) Dielectric Study of Ferroelectric Ceramics of Calcium Doped Barium Titanate Ba<sub>1-x</sub>Ca<sub>x</sub>TiO<sub>3</sub>: BCT**

Lhoussain Kadir\*, CPR, Morocco; Abdelilah Elmesbahi, FST, Morocco; Salahedine Sayouri, FSTM, Morocco

**(ICC-P042-2012) Development of low cost method of synthesis for microwave dielectric applications**

Manisha Yogesh Khaladkar\*, Namrata S Saraf, College of Engineering Pune, India

**(ICC-P043-2012) Texture and Anisotropy in Novel Lead-Free Piezoelectrics**

Matthias Ehmke, Christopher Fancher, John E Blendell, Purdue University, USA; Keith J Bowman\*, Illinois Institute of Technology, USA

## *ICC4 Poster Presentations - Monday*

### **(ICC-P044-2012) Structural and functional properties of multiferroic B-site substituted BiFeO<sub>3</sub>-based solid solutions**

Mihai Calugaru\*, Felicia Gheorghiu, Adelina Ianculescu, University Politehnica of Bucharest, Romania; Petronel Postolache, "Alexandru I. Cuza" University, Romania; Ovidiu Oprea, University Politehnica of Bucharest, Romania; Liliana Mitoseriu, "Alexandru I. Cuza" University, Romania

### **(ICC-P045-2012) Hydrothermal synthesis of BiFeO<sub>3</sub> fine particles**

Miyabi Kobayashi\*, Nobuhiro Kumada, Akira Miura, Yoshinori Yonesaki, Takahiro Takei, Ichiro Fujii, Satoshi Wada, University of Yamanashi, Japan

### **(ICC-P046-2012) Preparation and dielectric property of (Li<sub>0.12</sub>Na<sub>0.88</sub>)NbO<sub>3</sub>-based solid solutions**

Naoko Ito\*, Nobuhiro Kumada, Akira Miura, Yoshinori Yonesaki, Takahiro Takei, Satoshi Wada, University of Yamanashi, Japan

### **(ICC-P047-2012) The Benefits of Polyalkylene Carbonate Binders (QPAC®) for Low Temperature Glass Frit or Powdered Glass in Low Temperature Processed Thick Film Applications**

Peter Ferraro\*, Empower Materials, USA

### **(ICC-P048-2012) Effect of sol ageing on dielectric properties of nanocrystalline CaCu<sub>3</sub>Ti<sub>4</sub>O<sub>12</sub> ceramic**

Ranjit Kumar\*, T. D Senguttuvan, National Physical Laboratory, India; M. Zulfequar, Jamia Millia Islamia, India

### **(ICC-P049-2012) The observation of high Seebeck coefficient in BiFeO<sub>3</sub> Bulk Ceramics**

Rempei Imura\*, Takeshi Yokota, Nagoya Institute of Technology, Japan; Andres Osvet, Miloslaw Batentschuk, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; Manabu Gomi, Nagoya Institute of Technology, Japan; Christoph J Brabec, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

### **(ICC-P050-2012) Electric properties and crystal structure of CaWO<sub>4</sub> ceramics prepared from powders synthesized by two processes: a traditional solid reaction method and a refined hydrothermal method**

Rie Shimanouchi\*, Noriyuki Kobayashi, Hitoshi Nishizawa, Kochi University, Japan

### **(ICC-P051-2012) Negative Permittivity and Negative Permeability of ceramic-metal composites**

Run-hua Fan\*, Shandong University, China

### **(ICC-P052-2012) Electrical functionality via metallisation of glass by Laser Ablation Backwriting**

Ruth Lahoz\*, Luis A Angurel, Center of Chemistry and Materials of Aragon, Spain; Jose M Pedra, Maruxa Peiro, Juan B Carda, University Jaume I, Spain; German F de la Fuente, Center of Chemistry and Materials of Aragon, Spain

*ICC4 Poster Presentations - Monday*

**(ICC-P053-2012) Ni-based films by electrophoretic deposition of Nickel hydroxide nanoflowers and nanoflakes**

Sandra Cabanas-Polo, Antonio Javier Sanchez-Herencia\*, Begoña Ferrari, Instituto de Ceramica y Vidrio (CSIC), Spain

**(ICC-P054-2012) Microstructure and electrical properties of LaNiO<sub>3</sub> thin films formed by RF sputtering for the growth of PLZT on silicon and nickel substrates**

Shanshan Liu\*, Beihai Ma, Manoj Narayanan, Sheng Tong, Uthamalingam Balachandran, Argonne National Laboratory, USA

**(ICC-P055-2012) Effect of oxygen vacancy on the dielectric relaxation of BaTiO<sub>3</sub> thin films in a quenched state**

Shenghong Yao\*, CNRS-G2E lab, France; JinKai Yuan, CNRS-Lab MSSMAT, France; Alain Sylvestre, CNRS-G2E lab, France; Patrice Gonon, CNRS-LTM, UJF, France; Jinbo Bai, CNRS-Lab MSSMAT, France

**(ICC-P056-2012) Electrical characterization of sol-gel derived Na<sub>0.5</sub>Bi<sub>0.5</sub>TiO<sub>3</sub>-NaTaO<sub>3</sub> thin films**

Spela Kunej\*, Asja Veber, Danilo Suvorov, Jozef Stefan Institute, Slovenia

**(ICC-P057-2012) Phase formation and characteristics of La-doped BaTiO<sub>3</sub> powders prepared via sol-gel route**

Stefania Stoleriu\*, Adelina Ianculescu, Catalina Vasilescu, University Politehnica of Bucharest, Romania; Maria Crisan, Malina Raileanu, Dorel Crisan, Nicolae Dragan, Institute of Physical Chemistry Ilie Murgulescu, Romanian Academy, Romania; Bogdan Vasile, University Politehnica of Bucharest, Romania

**(ICC-P058-2012) Rietveld analysis, dielectric and magnetic properties of La/Ti co-doped BiFeO<sub>3</sub> ceramic**

Sujata Sanghi\*, Ashish Agarwal, Reetu Dahiya, Ashima Hooda, Guru Jambheshwar University of Science & Technology, India

**(ICC-P059-2012) Synthesis and Luminescence of Eu-doped Condensed Lanthanum-Calcium Phosphates**

Takehiro Funamoto\*, Hiroaki Onoda, Kyoto Prefectural University, Japan

**(ICC-P060-2012) Electric field induced resistance changes in CaFeO<sub>3-x</sub> thin film**

Takeshi Yokota\*, Rempei Imurqa, Koji Ichikawa, Manabu Gomi, Graduate school of Engineering, Nagoya Institute of Technology, Japan

*ICC4 Poster Presentations - Monday*

**(ICC-P061-2012) Preceramic Polymer Route to Macroporous Monoliths Based on Oxygen-Deficient Titanium Oxide**

Tatsuya Sato\*, George Hasegawa, Kazuyoshi Kanamori, Kazuki Nakanishi, Kyoto University, Japan

**(ICC-P062-2012) Piezoelectric Metrology at High Temperature**

Tim Stevenson\*, Tim Comyn, University of Leeds, United Kingdom

**(ICC-P063-2012) Studies of Sputter Deposited ZnO Films**

Tom N Oder\*, Michael McMaster, Andrew Smith, Joshua Petrus, Nagaraju Velpukonda, Youngstown State University, USA

**(ICC-P064-2012) Preparation and patterning characteristics of organic-inorganic hybrid film containing latent pigments by using microwave and photo acid generator**

Tomoji Ohishi\*, Shibaura Institute of Technology, Japan

**(ICC-P065-2012) Effects of Transition-Metal Species on Single-Phase Formation of (Pb,M)Sr<sub>2</sub>(Y,Ca)Cu<sub>2</sub>O<sub>z</sub> (M: Fe, Co, Ni, Cu or Zn)**

Toshihiko Maeda\*, Tairiku Tashiro, Toshiya Takahashi, Shinpei Yabe, Yasutomo Takahashi, Masakazu Haruta, Shigeru Horii, Kochi University of Technology, Japan

**(ICC-P066-2012) Low Temperature Optical Thermometry through Fluorescence Intensity Ratio in Er<sup>3+</sup>, Sm<sup>3+</sup>-co doped-Yttria Stabilized Zirconia**

Yang Shen\*, Tsinghua University, China; Xing Wang, Hongcai He, University of Electronic Science and Technology China, China; Yuanhua Lin, Ce-Wen Nan, Tsinghua University, China

**(ICC-P067-2012) Synthesis of Monolithic Macroporous Iron Oxide via Sol-Gel Process from Ionic Precursors**

Yasuki Kido\*, Kazuki Nakanishi, Akira Miyasaka, Kazuyoshi Kanamori, Kyoto University, Japan

**(ICC-P068-2012) Upconversion and Photostimulated Luminescence in afterglow ceramics Tb, Sr co-doped Lu<sub>2</sub>O<sub>3</sub>**

Shi Chen, Yiquan Wu\*, Alfred University, USA

**(ICC-P069-2012) Effect of Additives on Electrical Resistivity of Silicon Carbide Ceramics**

Young-Wook Kim\*, Kwang-Young Lim, Jung-Hye Eom, University of Seoul, Korea; Kwang Joo Kim, Konkuk University, Korea

**(ICC-P070-2012) Control on the doping site in BaTiO<sub>3</sub> with a water-soluble precursor**

Yuta Matsushima\*, Katsuhiko Iwase, Shinnosuke Kasuga, Takahiro Kawai, Yamagata University, Japan

## *ICC4 Poster Presentations - Monday*

### **(ICC-P071-2012) Hydrothermal Synthesis of the Multiferroic $\text{YMn}_2\text{O}_5$ Nanopowders**

Zorica Brankovic\*, Goran Brankovic, Zorica Marinkovic Stanojevic, Milica Pocuca-Nesic, Institute for Multidisciplinary Research-University of Belgrade, Serbia; Maria Aparecida Zaghete, Jose Arana Varela, Instituto de Quimica-UNESP, Brazil

### **(ICC-P072-2012) Getting the substrate material based on silicon carbide for nitride LEDs**

Zulkhair Mansurov\*, Institute of Combustion Problems, Kazakhstan; Alex Ignatiev, University of Houston, USA; Serekbol Tokmoldin, Physical Technical Institute, Kazakhstan; Renat Beissenov, al-Farabi Kazakh National University, Kazakhstan

### **(ICC-P073-2012) Effects of $\text{Fe}_2\text{O}_3$ on properties of novel heat insulation materials synthesized by molten salt method**

Chengji Deng\*, Jun Ding, Wenjie Yuan, Jun Li, Hongxi Zhu, Wuhan University of Science and Technology, China

### **(ICC-P074-2012) Improving of WC Based Hard Materials by Spark Plasma Sintering**

Emrah Arslankara\*, Ahmet Turan, Gultekin Goller, Onuralp Yucel, Filiz Cinar Sahin, Istanbul Technical University, Turkey

### **(ICC-P075-2012) Mechanism of the carbothermal synthesis of $\text{MgAl}_2\text{O}_4$ -SiC refractory composite powders**

Hongxi Zhu\*, Hongjuan Duan, Wenjie Yuan, Chengji Deng, Wuhan University of Science and Technology, China

### **(ICC-P076-2012) Cellulose Ether Binders as Plasticization Aid for the Extrusion of Ceramic Catalysts or Diesel Particulate Filters - Status and New Developments**

Roland Bayer\*, Dow Wolff Cellulosics GmbH, Germany

### **(ICC-P077-2012) Preparation of MgO-SiC composite powders and its effect on the properties of low-carbon MgO-SiC-C refractories**

Wenjie Yuan\*, Zhijiang Lv, Hongxi Zhu, Chengji Deng, Wuhan University of Science and Technology, China

### **(ICC-P078-2012) Description of titanium carbides sintering process using Kuczynski and Frenkel sintering models**

Agnieszka Gubernat\*, AGH - University of Science and Technology, Poland

### **(ICC-P079-2012) The Production and Characterization of Boron Carbide-Titanium Diboride Composites by Reactive Spark Plasma Sintering**

Asli Ustunova\*, Gultekin Goller, Onuralp Yucel, Filiz Cinar Sahin, Istanbul Technical University, Turkey

*ICC4 Poster Presentations - Monday*

**(ICC-P080-2012) Influence of nitrogen pressure on SHS synthesis of  $\gamma$ -AlON**

Dariusz Zientara\*, Jakub Domagala, Mirosław M Bucko, AGH University of Science and Technology, Poland

**(ICC-P081-2012) High toughness TiB<sub>2</sub>-40%TiC ceramic composite prepared by two-step pressureless sintering**

Yujin Wang\*, Haixia Li, Songjie Wang, Zhiyi Hu, Yu Zhou, Harbin Institute of Technology, China

**(ICC-P082-2012) Densification of Ti6Al4V Bio-Material Alloy by Spark Plasma Sintering**

Mehmet Kemal Coskun, Burcu Apak, Gultekin Goller, Onuralp Yucel, Filiz Cinar Sahin\*, Istanbul Technical University, Turkey

**(ICC-P083-2012) Different Ceramic Fibers Under Thermal Shock**

Henry A Colorado\*, UCLA, USA

**(ICC-P084-2012) Development of thermochromic ceramic powder by controlling structural phase transition and thermal expansion**

Ikuo Yanase\*, Seitarou Ooshima, Tatsunari Mizuno, Kouki Oomori, Hideohiko Kobayashi, Saitama University, Japan

**(ICC-P085-2012) Carbon Nanotube Addition to Zirconium Carbide-Silicon Carbide Composites**

Sumbule Sagdic, Ipek Akin, Filiz Sahin, Onuralp Yucel, Gultekin Goller\*, Istanbul Technical University, Turkey

**(ICC-P086-2012) Ceramics in Colombia**

Jairo Arturo Escobar\*, Mariana Morales, David Carvajal, University of Los Andes, Colombia

**(ICC-P087-2012) Physical properties of Latvian clays**

Inga Dusenkova, Valentina Stepanova, Janis Locs\*, Juris Malers, Liga Berzina-Cimdina, Riga Technical University, Latvia

**(ICC-P088-2012) Study on Thermal Properties of Aluminium Nitride/Polymer Composites for Thermal Interface Material Application**

Janqkang Chen\*, Liyueh Chen, Yihao Lin, CSIST, Taiwan; Mannfu Rau, AG Materials Inc., Taiwan

**(ICC-P089-2012) Comparative study on microstructures and densification of SiO<sub>2</sub>-Si<sub>3</sub>N<sub>4</sub> ceramic compounds sintered by direct hot pressing and conventional hot pressing**

Jong-Won Shin\*, Christian Frei, Umicore Thin Film Products AG, Liechtenstein

*ICC4 Poster Presentations - Monday*

**(ICC-P090-2012) Synthesis of high-density AlN by direct nitridation of molten Al with Mg vapor supply**

Kohei Mizuno\*, Hiroaki Matsubara, Yukihiisa Takeuchi, Shunta Harada, Toru Ujihara, Nagoya University, Japan; Yuuichi Aoki, Kimio Kohara, DENSO CORP., Japan

**(ICC-P091-2012) Effect of NH<sub>4</sub>F on synthesis mullite porous ceramic from kaolinite**

Lei Yuan\*, Tao Liu, Chun Wang, Jingkun Yu, Northeastern university, China

**(ICC-P092-2012) High Alumina Refractory Lining Performance In a Caustic Incinerator**

Manabendra Maity\*, Eissa Al-Zahrani, Jitendra Lohit, SABIC Technology Center, Saudi Arabia

**(ICC-P093-2012) Sandblasting of 3Y-TZP: influence on roughness, damage and strength**

RaviKiran Chintapalli, Fernando M Garcia, Marc Anglada\*, Universitat Politècnica de Catalunya, Spain

**(ICC-P094-2012) Development of Tabular Yttria for Melting and Casting of High Purity Titanium**

Wenbin Dai\*, Xinli Wang, Northeastern University, China; Dexuan Sun, Jiangchun Ye, Dongfang Electric Machinery Co. Ltd, China; Dexin Zhang, Northern Engineering and Technology Co. Ltd., China; Jingkun Yu, Northeastern University, China

**(ICC-P095-2012) Direct Solid Sampling Chemical Analysis of High Purity Advanced Ceramics**

Deborah Dunn\*, Mary Halstead, DeAnn Barnhart, Glyn Churchill, Xinwei Wang, Karol Putyera, Evans Analytical Group, USA

**(ICC-P096-2012) Dense Alumina/Vanadium Carbide Composite**

Zbigniew Pedzich\*, AGH-University of Science & Technology, Poland

**(ICC-P182-2012) Simultaneous effect of transformation toughening and nanotubes on the 3Y-TZP/ CNTs fracture toughness**

Mahdiar Taheri, Iran University of Science and Technology, Islamic Republic of Iran; Mehdi Mazaheri\*, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; Farhad Golestani-fard, Iran University of Science and Technology, Islamic Republic of Iran



Tuesday, July 17, 2012  
**Interactive Technology Forum II**

Sponsored by Samsung Electro-Mechanics

3:45 PM-6:30 PM

Room: River Exhibition Hall B (Level 1)

*Interactive Presentations*

**(ICC-P208-2012) Diffusion and Adsorption Limited Simulation of Copper Electrodeposition in a High-Aspect Ratio Channel**

Amanda E Sall\*, Northwestern University, USA

**(ICC-P209-2012) Grain Size Contributions to Lithium Ionic Conductivity in Lithium Containing Garnet Ceramics ( $\text{Li}_5\text{La}_3\text{Ta}_2\text{O}_{12}$ )**

Brian Ray\*, University of Kentucky, USA

**(ICC-P210-2012) The near infrared absorption properties of tungsten bronzes**

Chongshen Guo\*, Shu Yin, Tsugio Sato, Tohoku University, Japan

**(ICC-P211-2012) Photocatalytic property of  $\text{CaAl}_2\text{O}_4:(\text{Eu},\text{Nd})/(\text{Ta},\text{N})$ -doped  $\text{TiO}_2/\text{Fe}_2\text{O}_3$  for persistent NO decomposition**

Huihui Li\*, Shu Yin, Tsugio Sato, Tohoku University, Japan

**(ICC-P212-2012) Thermal Measurements of 2-, 3- and 4-Phase Ceramic Composites using OOF2 Analyses**

Jesse P Angle\*, Martha L Mecartney, University of California, Irvine, USA

**(ICC-P213-2012) Thermal Conductivity of Wood-Derived Graphitic Carbon and Carbon/Copper Composites**

Matthew Johnson\*, Katherine Faber, Northwestern University, USA

**(ICC-P214-2012) Improvement of glass making refractories**

Rolf Weigand\*, Heiko Hessenkemper, Anne-Katrin Rössel, TU Bergakademie Freiberg, Germany

**(ICC-P215-2012) Three-dimensional microstructural evolution of lithium-ion battery cathodes on cycling**

Zhao Liu\*, James R Wilson, J. S Cronin, Kyle J Yakal-Kremski, Katherine T Faber, Scott A Barnett, Northwestern University, USA

**(ICC-P216-2012) Processing of Single Solid Oxide Fuel Cells**

Jonathan Torres\*, Yan Chen, Andres Correa, Anthony Terracciano, Nina Orlovskaya, University of Central Florida, USA

*ICC4 Interactive Presentations - Tuesday*

**(ICC-P217-2012) Thermomechanical Response of Sintering SOFC Materials**

H. Lee, E. R Kupp, Gary Messing\*, Penn State University, USA

**(ICC-P218-2012) Characterization of crack healing in porous ceramics due to thermal cycling**

Amit Pandey, Amit Shyam, Thomas R Watkins, Edgar Lara-Curzio\*, ORNL, USA

**(ICC-P219-2012) Facile synthesis of flexible macroporous monolith from tri- and di-functional organoalkoxysilanes: controlling pore and surface properties for applications**

Gen Hayase\*, Kazuyoshi Kanamori, Kazuki Nakanishi, Kyoto Univ/Grad Schl Sci, Japan

**(ICC-P220-2012) New Concept of Low Cost Ceramics made from Traditional Ceramic Fillers and Synthesized at Room Temperature**

Henry A Colorado\*, UCLA, USA

**(ICC-P221-2012) Development of New Body Formulations in Ceramic Tile Production for Zero Carbon Dioxide Emission**

Ozgur Cengiz\*, Alpogut Kara, Anadolu University, Turkey

**(ICC-P222-2012) Green fabrication of complex-shaped ceramic components by room-temperature injection molding of ceramic suspension gels**

Valerie L Wiesner\*, Jeffrey Youngblood, Rodney Trice, Purdue University, USA

**(ICC-P223-2012) Tapping the potential of Carbon Nano Tubes implanted in Ceramic Pore Channels for Oily Water Treatment**

Xinwei Chen\*, Liang Hong, National University of Singapore, Singapore

**(ICC-P224-2012) Relevance of surface chemistry of inorganic colloids in liquid-phase processing under an Electric Field**

Begoña Ferrari\*, Maria Verde, Sandra Cabanas-Polo, Juan Antonio Escribano, Isabel Gonzalo-Juan, Amador C. Caballero, Antonio Javier Sanchez-Herencia, Instituto de Ceramica y Vidrio (CSIC), Spain

**(ICC-P225-2012) De-Sintering of Tin Dioxide under Two-Step Sintering Conditions**

Chi Hsiu Chang\*, Ricardo Castro, University of California, Davis, USA

**(ICC-P226-2012) Nanoionic enhancement of  $\text{BaCe}_{0.7}\text{Zr}_{0.1}\text{Y}_{0.1}\text{Yb}_{0.1}\text{O}_{3-\delta}$  using reduced nickel**

Daniel Clark\*, Jianhua Tong, Amy Morrissey, Ivar Riemanis, Ryan O'Hayre, Colorado School of Mines, USA

**(ICC-P227-2012) Synthesis of metal oxides by means of non-hydrolytic sol-gel reaction**

Davide Morselli\*, Nicola Florini, Federica Bondioli, University of Modena and Reggio Emilia, Italy

*ICC4 Interactive Presentations – Tuesday*

**(ICC-P228-2012) Processing of nanostructured ceramics**

Jon Binner\*, Bala Vaidhyanathan, Loughborough University, United Kingdom

**(ICC-P229-2012) Electric field effects on the sintering of high  $\kappa$  magnesium aluminate nanoparticles**

Jorgen Rufner\*, Cecile Bonifacio, Klaus van Benthem, Ricardo Castro, University of California, Davis, USA

**(ICC-P230-2012) Mechanical properties of carbon nanotube/ alumina nanocomposites: From room to high temperatures**

Mehdi Mazaheri\*, Daniele Mari, Robert Schaller, EPFL: Swiss Federal Institute of Technology in Lausanne, Switzerland; Guillaume Bonnefont, Gilbert Fantozzi, INSA - Lyon: Institut National des Sciences Appliquées de Lyon, France

**(ICC-P231-2012) Estimation of microstructure development of CNTs/alumina composites by electrical conductivity measurement**

Naoki Ueda\*, Tomohiko Yamakami, Tomohiro Yamaguchi, Morinobu Endo, Shinshu University, Japan; Naoto Saito, Shinshu University School of Health Sciences, Japan; Seiichi Taruta, Shinshu University, Japan

**(ICC-P232-2012) In-situ synthesis of oxide-oxide  $[\text{Y}_3\text{Al}_5\text{O}_{12}]_{0.5}[\text{Al}_2\text{O}_3]_{0.5}$  and  $[\text{Y}_3\text{Al}_5\text{O}_{12}]_{0.09}[\text{MgAl}_2\text{O}_4]_{0.91}$  nanocomposites**

Nathan Taylor\*, Richard M Laine, University of Michigan, USA

**(ICC-P233-2012) Dispersion of ceramic particles into metallic matrix by colloidal control of powders in water**

Antonio Javier Sanchez-Herencia\*, Instituto de Ceramica y Vidrio (CSIC), Spain; Elena Gordo, Roberto García das Neves, University Carlos III of Madrid,, Spain; Juan Antonio Escribano, Begoña Ferrari, Instituto de Ceramica y Vidrio (CSIC), Spain

Tuesday, July 17, 2012  
Interactive Technology Forum II

Sponsored by Samsung Electro-Mechanics

3:45 PM-6:30 PM

Room: River Exhibition Hall B (Level 1)

### *Poster Presentations*

**(ICC-P118-2012) VO<sub>x</sub> /TiO<sub>2</sub> anode catalyst for oxidation of CH<sub>4</sub> containing 5000 ppm H<sub>2</sub>S in SOFC cells**

Alfonso Andres Garcia Rojas\*, Adrien Vincent, Jing-Li Luo, Karl Chuang, Alan Sanger, University of Alberta, Canada

**(ICC-P119-2012) Electrochemical Characterization of Spinel LiMn<sub>2</sub>O<sub>4</sub> Particles as a Cathode Material for Lithium-Ion Batteries Prepared by Ultrasonic Spray Pyrolysis**

Burçak Ebin\*, Gürmen Sebahattin, Istanbul Technical University, Turkey

**(ICC-P120-2012) Pressureless Sintering of Ti<sub>3</sub>SiC<sub>2</sub>: Microstructure and Mechanical Properties**

Eduardo V Rodrigues, Celio A Costa\*, COPPE/POLI/UFRJ, Brazil; Edgar Lara-Curzio, Oak Ridge National Laboratory, USA

**(ICC-P121-2012) Preparation of Copper Ferrite Ceramics**

Christian Kaps\*, Alexander Tasch, Manuel Heidenreich, Bauhaus-Universität Weimar, Germany

**(ICC-P122-2012) Using epitaxial growth to stabilize δ-Bi<sub>2</sub>O<sub>3</sub> on single crystal oxide substrates**

Danielle Proffit\*, Northwestern University, USA; Matthew Highland, Seong Keun Kim, Guo-Ren Bai, Peter Baldo, Paul Fuoss, Argonne National Laboratory, USA; Thomas O Mason, Northwestern University, USA; Dillon Fong, Jeffrey Eastman, Argonne National Laboratory, USA

**(ICC-P123-2012) Mechanical characterization of multicrystalline silicon wafers**

Elena Maria Tejado\*, Technical University of Madrid - CISDEM, Spain; Teresa Orellana Pérez, Fraunhofer Institute for Solar Energy Systems, Germany; José Y Pastor, Technical University of Madrid - CISDEM, Spain; Claudia Funke, Wolfgang Fütterer, Institute for Experimental Physics, Germany

**(ICC-P124-2012) Joining Thin Silicon Carbide Substrates by Silicides Compounds**

Elodie Jacques\*, Yann Le Petitcorps, Laurence Maillé, Eric Martin, LCTS, France; Christophe Lorrette, Cédric Sauder, CEA, France; Etienne Savary, Sylvain Marinel, CRISMAT, France

## *ICC4 Poster Presentations - Tuesday*

### **(ICC-P125-2012) Porosity dependence of thermal conductivity of oxide and silicate ceramics up to 1000 °C**

Eva Gregorova\*, Willi Pabst, Zdenek Sofer, Ivona Sedlarova, Institute of Chemical Technology, Prague (ICT Prague), Czech Republic

### **(ICC-P126-2012) The effect of calcium-magnesium-aluminosilicate deposits on stress states and lifetimes of ytterbium silicate environmental barrier coatings**

Fabian Stolzenburg\*, Northwestern University, USA; Jonathan Almer, Argonne National Lab, USA; Kang N Lee, Rolls Royce Corp, USA; Katherine T Faber, Northwestern University, USA

### **(ICC-P127-2012) Improvement of boron carbide mechanical properties in B-C-Ti-Zr system**

Gulnazi Tabatadze, Georgian Technical University, Georgia; Urgan G Heinrich, Technical University of Clausthal, Germany; Zviad Kovziridze\*, Zviad Mestvirishvili, Georgian Technical University, Georgia

### **(ICC-P128-2012) Impact of impurities on the mechanical behavior of multicrystalline silicon for solar cells**

José Ygnacio Pastor, Elena M Tejado\*, Technical University of Madrid-CISDEM, Spain; Teresa Orellana Pérez, Fraunhofer Institute for Solar Energy Systems, Germany; Claudia Funke, Wolfgang Fütterer, Institute for Experimental Physics, Germany

### **(ICC-P129-2012) Effect of nano SiO<sub>2</sub> on the polymer Ni-MH battery based on PVA/PEG-composite microporous alkaline polymer electrolyte**

Liquan Li\*, Yunfeng Zhu, Renxiang Wu, Nanjing University of Technology, China

### **(ICC-P130-2012) Surface Effects In Beta-Alumina Synthesis And Sintering For Electronic Applications**

Lorena Batista Caliman\*, Douglas Gouvêa, Universidade de São Paulo - USP, Brazil

### **(ICC-P131-2012) Effect of Freezing Gradients on Pore Network Characteristics for Freeze-Cast Alumina**

Sarah M Miller\*, Katherine T Faber, Northwestern University, USA

### **(ICC-P132-2012) Oxide nanosheet composites for solar energy harvesting**

Scott Mixture\*, Alfred University, USA

### **(ICC-P133-2012) Composite Ceramic Materials for SOFC Components.**

Sergey Somov\*, Solid Cell Inc., USA; Sam Ghosh, RocCera LLC, USA; Michael Alberga, James P Kelly, Olivia A Graeve, Alfred University, USA

*ICC4 Poster Presentations - Tuesday*

**(ICC-P134-2012) Elaboration and electrochemical study of LSCF / 10ScSZ symmetrical cells for SOFC applications**

Sophie Beaudet Savignat\*, Julien Vulliet, Max Groisil, Thierry Piquero, CEA Le Ripault, France

**(ICC-P135-2012) Double Perovskite  $\text{Sr}_2\text{Fe}_{2-x}\text{Mo}_x\text{O}_{6-\delta}$  as anode material for solid oxide fuel cells**

Arun Kumar Dorai, Sun-Dong Kim, Doo-Won Seo, In-sub Han, Ji-Haeng Yu, Se-Young Kim, Sang-Kuk Woo\*, Korea Institute of Energy Research, Korea

**(ICC-P136-2012) Synthesis and characterization of perovskite-type cathode**

**$\text{La}_{0.8}\text{Sr}_{0.2}\text{Mn}_{1-x}\text{Cu}_x\text{O}_{3-\delta}$  ( $0 \leq x \leq 0.3$ ) for intermediate-temperature solid oxide fuel cells**

Taimin Noh\*, Jiseung Jiseung, Jinseong Kim, Heesoo Lee, Pusan National University, Korea

**(ICC-P137-2012) Characterization of  $\text{Sr}_{0.9}\text{Ho}_{0.1}\text{CoO}_{3-\delta}$  as a potential cathode material for intermediate-temperature solid oxide fuel cells**

Tao Liu\*, Northeastern University, China; Lin Li, Shenyang Aerospace University, China; John B Goodenough, The University of Texas at Austin, USA; Jingkun Yu, Northeastern University, China

**(ICC-P138-2012) Elastic constants and anelastic effects of oxide and silicate ceramics and composites at elevated temperature**

Willi Pabst\*, Eva Gregorova, Jakub Cerny, Institute of Chemical Technology, Prague (ICT Prague), Czech Republic

**(ICC-P139-2012) Adsorption of rare earth metals from aqueous solution on sepiolite-based composite sheets**

Akira Miura\*, Taiyo Furuya, Ayaka Sogo, Takahiro Takei, Nobuhiro Kumada, University of Yamanashi, Japan

**(ICC-P140-2012) The Effect of Yttria and Alumina Powder on the Transformation Behavior of Polydimethylsiloxane Derived Ceramics**

Celio A Costa, Marysilvia F Costa\*, Marilia S Beltrao, COPPE/POLI/UFRJ, Brazil

**(ICC-P141-2012) Investigation of geopolymer binder formation through infrared spectroscopy**

Elodie Prud'homme\*, Alexandre Auteuf, Fabrice Gouny, Philippe Michaud, GEMH, France; Emmanuel Joussein, GRESE, France; Fazia Fouchal, Sylvie Rossignol, GEMH, France

**(ICC-P142-2012) Effect of different sintering processes on mullite -zirconia ceramics development**

Gaida Maruta Sedmale\*, Riga Technical University, Latvia; Ints Steins, Riga Technical University, Latvia; Ingunda Sperberga, Riga Technical University, Latvia; Aloizis Patmalnieks, Latvian University, Latvia

*ICC4 Poster Presentations - Tuesday*

**(ICC-P143-2012) Thermokinetic analysis of the CO<sub>2</sub> Chemisorption on Li<sub>2</sub>ZrO<sub>3</sub>. Effect of the Oxygen Addition**

Lorena Martinez-dlcruz, Heriberto Pfeiffer\*, Universidad Nacional Autonoma de Mexico, Mexico

**(ICC-P144-2012) Removal of phosphorus with corbicula shells from resemble waste water and powder properties of by-products**

Hiroaki Onoda\*, Ryuta Matsumoto, Kyoto Prefectural University, Japan; Masamoto Tafu, Toyama National College of Technology, Japan

**(ICC-P145-2012) Synthesis and characterization of materials obtained from alkali activated illite-based clays**

Ingunda Sperberga\*, Andris Cimmers, Gaida Sedmale, Dainida Ulme, Riga Technical University, Latvia; Ilze Vircava, University of Latvia, Latvia

**(ICC-P146-2012) Effect of Y<sub>2</sub>O<sub>3</sub> on the sintering of natural magnesia**

Jingkun Yu\*, Lei Yuan, Xiaoying Wang, Wenbin Dai, Pengcheng Ma, Northeastern University, China

**(ICC-P147-2012) Photo-activated Enzymatic Reaction of Peroxidase Immobilized on Semiconductors**

Kai Kamada\*, Ayano Moriyasu, Takuya Nakamura, Suguru Tsukahara, Nagasaki University, Japan

**(ICC-P148-2012) Removal of fluoride ion in waste water by using reaction of calcium phosphate**

Masamoto Tafu\*, Miki Nakai, Toyama National College of Technology, Japan; Takuya Okazaki, University of Toyama, Japan; Takeshi Toshima, Tetsuji Chohji, Toyama National College of Technology, Japan

**(ICC-P149-2012) Honeycomb reactor washcoated with spinel catalysts for the reduction of NO<sub>x</sub> by C<sub>2</sub>H<sub>4</sub>**

Md. Hasan Zahir\*, King Fahd University of Petroleum & Minerals, Saudi Arabia

**(ICC-P150-2012) Synthesis and characterization of cement clinker containing funnel glass from cathode ray tube**

Nirut Lairaksa\*, Natt Makul, Phranakhon Rajabhat University, Thailand

**(ICC-P151-2012) Fabrication of Porous Ceramics by employing food additives and ceramic slurries**

Shuk-Man A Kwok, University of Melbourne, Australia; Paola Parente, Instituto de Ceramica y Vidrio (CSIC), Spain; Carolina Tallón, George V Franks, University of Melbourne, Australia; Antonio Javier Sanchez Herencia\*, Instituto de Ceramica y Vidrio (CSIC), Spain

*ICC4 Poster Presentations - Tuesday*

**(ICC-P152-2012) Adsorption of Rare Earth Elements by Inorganic Compounds for Futural Recovery from Wastes**

Takahiro Takei\*, Ayuka Sogo, Akira Miura, Nobuhiro Kumada, University of Yamanashi, Japan

**(ICC-P153-2012) Ceramic microbeads with high specific surface area as adsorbents for purification technologies: Antibacterial doping with Copper**

Tanja Yvonne Klein\*, Laura Treccani, Kurosch Rezwani, University of Bremen, Germany

**(ICC-P154-2012) Characterisation of Lead Free Piezoelectrics for Commercial Applications**

Tim Comyn\*, Tim Stevenson, Andrew Bell, University of Leeds, United Kingdom

**(ICC-P155-2012) Wear properties of silicon nitride ceramics prepared by pressureless densification**

Tomasz Pawlik\*, Malgorzata Sopicka-Lizer, Daniel Michalik, Grzegorz Moskal, Jakub Wieczorek, Silesian University of Technology, Poland

**(ICC-P156-2012) Solvothermal Synthesis and Oxygen Storage Capacity of Ce and Zr-based Mixed Oxide Nanoparticles**

Tsugio Sato\*, Qiang Dong, Shu Yin, Tohoku University, Japan

**(ICC-P157-2012) Improvement in Water Resistance and Compressive Strength of the Waste-based Gypsum Mix**

Wantanee Buggakupta\*, Pinsiri Umponpanarat, Faculty of Science, Chulalongkorn University, Thailand; Withaya Panpa, Faculty of Industrial Technology, Thepsatri Rajabhat University, Thailand

**(ICC-P158-2012) Research on Pressureless Sintering of  $\alpha$ -Sialon-AlN-BN Powder Synthesized from Boron-rich Slag-based Mixture**

Wu Junbin\*, Xue Xiang Xing, Jiang Tao, Northeastern University, China

**(ICC-P159-2012) Study on Rheological Properties of Suspension with  $\alpha$ -Sialon Powder for Gel Casting**

Wu Junbin\*, Xue Xiang Xin, Jiang Tao, Zhang Qing, Northeastern University, China

**(ICC-P160-2012) Geopolymer synthesis by the choice of mix compositions**

Xiaoxiao Gao\*, Philippe Michaud, GEMH, France; Emmanuel Joussein, GRESE, France; Sylvie Rossignol, GEMH, France

**(ICC-P161-2012) Evaluation of removal efficiency of calcium phosphate with fluoride and heavy metal ions**

Yuki Hirano\*, Masamoto Tafu, Takaaki Masutani, Tetsuji Chohji, Toyama National College of Technology, Japan



*ICC4 Poster Presentations - Tuesday*

**(ICC-P162-2012) Study of Raw and Thermally Treated Wolastonite - Based Ceramics: XRD and FTIR Studies**

Ertugrul Izci\*, Cem E Ozbilgin, Zeynep Murat, Anadolu University, Turkey

**(ICC-P163-2012) XRD and FTIR Spectral Investigations of Raw and thermally treated Pyrophyllite from the Poturge Area, Malatya, Turkey**

Ertugrul Izci\*, Zeynep Murat, Cem E Ozbilgin, Anadolu University, Turkey

**(ICC-P164-2012) Self-compacting Mortar Incorporating Rice Husk Ash Waste subjected to Elevated Temperatures**

Gritsada Sua-iam\*, Natt Makul, Phranakhon Rajabhat University, Thailand

**(ICC-P165-2012) Microstructure and mechanical characteristics of microwave-assisted heating brick made from combined coal-biomass ash-limestone**

Natt Makul, Apichit Krajangyao\*, Phranakhon Rajabhat University, Thailand

**(ICC-P166-2012) Processing of alumina-rich spinel nanopowders by liquid-feed flame spray pyrolysis (LF-FSP) to fine-grained ceramic composites.**

Andrew Pottebaum\*, Nathan Taylor, Richard Laine, University of Michigan, USA

**(ICC-P167-2012) Synthesis nano bio ceramic powder pyro calcium phosphate via sol gel method**

Behzad Mehdikhani\*, standard research institute, Islamic Republic of Iran; Bahman Mirhadi, Imam khomeini international university, Islamic Republic of Iran

**(ICC-P168-2012) Development of low thermal conductivity ZrO<sub>2</sub> ceramics by La<sub>2</sub>O<sub>3</sub> addition**

Byung-Koog Jang\*, Yoshio Sakka, Hideyuki Murakami, National Institute for Materials Science, Japan; Seongwon Kim, Yoon-Suk Oh, Hyung-Tae Kim, Korea Institute of Ceramic Engineering and Technology, Korea

**(ICC-P169-2012) Nanostructured Ceramic Oxides and Composites for High Performance Chemical Sensing**

Daniel Charles\*, Yi-Kai Huang, Shan-Wei Fang, Arvind Srivastava, Jiaying Huang, Vinayak P Dravid, Northwestern University, USA

**(ICC-P170-2012) Effect of sintering temperature on the properties and structure of SiCNO ceramics**

Dechang Jia\*, Zhenlin Sun, Yu Zhou, Xiaoming Duan, Qian Zhang, Dan Ye, Harbin Institute of Technology, China

**(ICC-P171-2012) Effect of Mg<sup>2+</sup> ion as a dopant on the stability of amorphous phase transition of gamma-alumina**

Deise Cristina Carvalho do Rosário\*, Douglas Gouvea, University of São Paulo, Brazil

*ICC4 Poster Presentations - Tuesday*

**(ICC-P172-2012) Synthesis of Alumina-Matrix Composites Reinforced with Nanometric Titanium and Titanium Nitride Dispersions**

Enrique Rocha-Rangel\*, Jose A Rodríguez-García, Universidad Politécnica de Victoria, Mexico; Elizabeth Refugio-García, Universidad Autónoma Metropolitana, Mexico

**(ICC-P173-2012) Fabrication of SiC/carbon nanofiber composites by gel-casting and their properties**

Guosheng Xu\*, Tomohiro Yamaguchi, Morinobu Endo, Seiichi Taruta, Isao Kubo, Shinshu University, Japan

**(ICC-P174-2012) Diameter-Dependent Photocatalytic Activity of Electrospun TiO<sub>2</sub> Nanofiber**

Heping Li\*, Wei Zhang, Wei Pan, Tsinghua University, China

**(ICC-P175-2012) Spark plasma sintering of Si<sub>3</sub>N<sub>4</sub>-based nanopowders**

Ilmars Zalite\*, Ints Steins, Natalja Zilinska, Janis Krastins, RTU Institute of Inorganic Chemistry, Latvia

**(ICC-P176-2012) Plasma synthesis of nanosize powders of refractory compounds**

Ilmars Zalite\*, Janis Grabis, RTU Institute of Inorganic Chemistry, Latvia; Eriks Palceviskis, Plasma & Ceramic Technologies, Latvia

**(ICC-P177-2012) Comparison of crystallographic and electrical properties of ZnO films fabricated by dry and wet processes**

JeongSoo Hong\*, Hajime Wagata, Ken-ichi Katsumata, Tokyo Institute of Technology, Japan; Naoki Ohashi, National Institute for Materials Science, Japan; KyungHwan Kim, Gachon University, Korea; Kiyoshi Okada, Nobuhiro Matsushita, Tokyo Institute of Technology, Japan

**(ICC-P178-2012) An AFM study of nanoparticle arrangement with deposition time**

Juan Antonio Escribano, Isabel Gonzalo-Juan, Antonio Javier Sanchez-Herencia\*, Begoña Ferrari, Instituto de Ceramica y Vidrio (CSIC), Spain

**(ICC-P179-2012) Preparation of polymethylsilsesquioxane xerogel spheres by suspension polymerization**

Kazuyoshi Kanamori\*, Hiroki Shigeno, Takahiro Tanaka, Kazuki Nakanishi, Kyoto University, Japan

**(ICC-P180-2012) Synthesis of Rutile Nanotubes by Solvothermal Method**

Yukihiro Komatsubara, Ken-ichi Katsumata, Nobuhiro Matsushita, Kiyoshi Okada\*, Tokyo Institute of Technology, Japan

**(ICC-P181-2012) Influence of Precursors Stoichiometry on SHS Synthesis of Ti<sub>2</sub>AlC Powders**

Leszek Chlubny\*, Jerzy Lis, AGH-University of Science and Technology, Poland

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### **(ICC-P183-2012) Assembling and Packing of Nanoparticles under an Electric Field**

Maria Verde, Isabel Gonzalo-Juan, Marina Villegas, Amador C. Caballero, Begoña Ferrari\*, Instituto de Ceramica y Vidrio (CSIC), Spain

### **(ICC-P184-2012) Experimental Investigation of Fracture Toughness in AL356-SiCp Aluminium Matrix Composite**

Mohammad M Ranjbaran\*, Shahid Rajaei Teacher Training university, Islamic Republic of Iran

### **(ICC-P185-2012) Zircon-Zirconia ( $ZrSiO_4$ - $ZrO_2$ ) dense ceramic composites by Spark Plasma Sintering**

Nicolas Maximiliano Rendtorff\*, CETMIC, Centro de Tecnologia de Recursos Minerales y Ceramica, Argentina; Salvatore Grasso, Chunfeng Hu, Fine Particle Processing Group, Nano Ceramics Center, National Institute for Materials Science (NIMS), Japan; Gustavo Suárez, Esteban Aglietti, CETMIC, Centro de Tecnologia de Recursos Minerales y Ceramica, Argentina; Yoshio Sakka, Fine Particle Processing Group, Nano Ceramics Center, National Institute for Materials Science (NIMS), Japan

### **(ICC-P186-2012) Preparation of $M_3O_4$ ( $M=Fe, Co$ ) Particles by Using Iron and Cobalt Naphthenate by Hydrothermal Reaction**

Nobuhiro Kumada\*, University of Yamanashi, Japan; Qiang Dong, Tohoku University, Japan; Akira Miura, Takahiro Takei, University of Yamanashi, Japan

### **(ICC-P187-2012) Influence of PECS Temperature Variation on the Properties of the Compacted Hybrid Coreshell Powders**

Norsuria Mahmed\*, Juha Larismaa, Aalto University School of Chemical Technology, Finland; Oleg Heczko, Academy of Science Czech Republic, Czech Republic; Simo-Pekka Hannula, Aalto University School of Chemical Technology, Finland

### **(ICC-P188-2012) New route synthesis of zinc oxide nanostructured particles and their characterization**

Ecaterina Andronescu\*, Cristina Ghitulica, Otilia Ruxandra Vasile, Bogdan S Vasile, University Politehnica from Bucharest, Romania; Eugeniu Vasile, Roxana Trusca, METAV Research and Development, Romania

### **(ICC-P189-2012) Nanostructured SHS-Ceramic on Basic of Mechanoactivated Mixtures Quartz-Calcite**

Renat Beissenov\*, Al-Farabi Kazakh national University, Kazakhstan; Zulkahir Mansurov, Nina Mofa, Sestager Aknazarov, Bakhtiyar Sadykov, Institute of Combustion Problems, Kazakhstan

### **(ICC-P190-2012) The bottom up approach to processing ceramics is not always the best solution**

Richard M. Laine\*, Nathan Taylor, Andrew Pottebaum, University of Michigan, USA

*ICC4 Poster Presentations - Tuesday*

**(ICC-P191-2012) Self-Propagating High Temperature Synthesis of Ceramic Composites Based on Silicon Carbide**

Roza Abdulkarimova\*, Zulkhair Mansurov, Al-Farabi Kazakh National University, Kazakhstan

**(ICC-P192-2012) Synthesis and Reactive Sintering of ZrB<sub>2</sub>-Based Ceramics**

Ruixing Li\*, Yanshan Jiang, Bin Zhao, Beihang University, China

**(ICC-P194-2012) Influence of Ag<sub>2</sub>O addition on crystallization process and microstructure of transparent mica glass-ceramics**

Seiichi Taruta\*, Aya Mizoguchi, Tomohiko Yamakami, Tomohiro Yamaguchi, Shinshu University, Japan; Kiyoshi Okada, Tokyo Institute of Technology, Japan

**(ICC-P195-2012) Influence of oxygen non stoichiometry on the dielectric properties of BaTiO<sub>3</sub>- $\delta$  nanoceramics**

Sophie Guillemet-Fritsch, Christophe Voisin\*, Pascal Dufour, Christophe Tenailleau, CIRIMAT/CNRS, France

**(ICC-P196-2012) Layered Iron-titanate as a Physicochemically Stable Support for Hydrolase**

Takaharu Ikeda\*, Suguru Tsukahara, Nagasaki University, Japan; Nobuaki Soh, Saga University, Japan; Kai Kamada, Nagasaki University, Japan

**(ICC-P197-2012) Preparation of calcium carbonate spherical hollow particles by spray drying and their properties**

Tomoya Kawamata\*, Koushiro Koizumi, Yasuhiro Umemura, Takeshi Toyama, Nihon University, Japan

**(ICC-P198-2012) Spark Plasma Sintering of SiC-Carbon Nanotube Composite - Simulations Versus Experiments**

Thomas Carlson\*, J. Allen, ERDC-CERL, USA; B. Devine, ERDC-ITL, USA; C. P Marsh, ERDC-CERL, USA; W. M Kriven, UIUC, USA; C. R Welch, ERDC-ITL, USA

**(ICC-P199-2012) Introduction of Silver Nanoparticles into High-porosity Hierarchically Porous Silica Monolith**

Yang Zhu\*, Takanori Detani, Kazuki Nakanishi, Kazuyoshi Kanamori, Kyoto University, Japan

**(ICC-P200-2012) Study of superhydrophilic TiO<sub>2</sub> thin films prepared by reactive sputtering**

Yu Sup Jung\*, Gachon University, Korea; Jeong Soo Hong, Tokyo Institute of Technology, Japan; Kyung Hwan Kim, Gachon University, Korea

**(ICC-P201-2012) Preparation of Zirconium Diboride Powder by Sol - gel Method**

Zhengguo Yan\*, Wenbin Dai, Tao Liu, Jingkun Yu, Northeastern University, China

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**(ICC-P202-2012) Study of preparation and effect of Si<sub>2</sub>ON<sub>2</sub> phase on the properties of SiC composite**

Zviad Kovziridze\*, Georgian Technical University, Georgia; Jurgen G Heinrich, Technical University of Clausthal, Germany; Natela Nizharadze, Georgian Technical University, Georgia

**(ICC-P203-2012) Heat Transfer Nanofluids by Design: Copper Decorated Graphene Suspensions**

Elena Timofeeva, Michael Moravek, Dileep Singh\*, Argonne National Laboratory, USA

**(ICC-P204-2012) Aqueous tape casting processing on the level of transparency of ceramics**

Felipe Orgaz Orgaz\*, Instituto de Ceramica y Vidrio, Spain; Maria Teresa Gomez del Rio, Universidad Rey Juan Carlos, Spain; Rosa Moronta, instituto de Ceramica y Vidrio, Spain; Jesus Rodriguez, Pedro Poza, Universidad Rey Juan Carlos, Spain

**(ICC-P205-2012) Investigation of MoS<sub>2</sub> and BN nanolubricants and their effect on tribological behavior of combustion engine parts**

Elena Timofeeva\*, Nicholaos Demas, Jules Routbort, George Fenske, Argonne National Laboratory, USA

**(ICC-P206-2012) Investigation of deformation and demolding behaviors for precision glass molding**

Hiroshi Ikeda\*, Haruya Kasa, Hiroyuki Mayama, Hiroaki Hishiyama, Junji Nishii, Hokkaido University, Japan

**(ICC-P207-2012) Laser Synthesis of Rare Earth Aluminate Coatings**

Isabel de Francisco, V. V Lennikov, Instituto de Ciencia de Materiales de Aragón (CSIC-University Zaragoza), Spain; J. A Bea, Aragon Institute of Engineering Research (I3A), University of Zaragoza, Spain; A. Vegas, Instituto de Química-Física Rocasolano, CSIC, Spain; J. B Carda, Universitat Jaume I, Spain; German F de la Fuente\*, Instituto de Ciencia de Materiales de Aragón (CSIC-University Zaragoza), Spain