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4th International Congress on Ceramics

including 3rd Ceramic Leadership Summit Track



Shaping the Future of Ceramics



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July 15-19, 2012 | Sheraton Chicago Hotel & Towers | Chicago, Illinois, USA

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Slovak Silicate Society
Slovenian Ceramic Society
Swedish Association for Materials
Technology
The Ceramics Society, A Division of IOM³
Turkish Ceramic Society
World Academy of Ceramics

Sunday, July 15, 2012

Opening Ceremony

Co-Sponsored by Northwestern University and Argonne National Lab
Room: Chicago Ballroom 6 & 7 (Level 4)

6:00 PM

Keynote Address

Room: Chicago Ballroom 6 & 7 (Level 4)
Session Chair: Katherine Faber, Northwestern University

6:30 PM

(ICC-001-2012) Materials: An Enabler
M. Savitz*, Honeywell, ret., USA

7:20 PM

Q&A
Katherine Faber

Welcome Reception

Sheraton Ballroom 4 & 5 (Level 4)

7:30 – 9:00 PM

Monday, July 16, 2012

Plenary Session I

Room: Chicago Ballroom 6 & 7 (Level 4)
Session Chair: Edgar Lara-Curzio, ORNL

8:30 AM

Introduction Edgar Lara-Curzio

8:45 AM

(ICC-002-2012) Inventing the Future with New Materials
G. S. Calabrese*, Corning Incorporated, USA

9:40 AM

Break
Sponsored by Corning Incorporated

10:00 AM

(ICC-003-2012) The Technical Trend of Dielectrics of the Multi-Layer Ceramic Capacitors (MLCCS)
C. Choi, C. Kim, B. Koh*, Samsung Electro-Mechanics Co., Ltd., Republic of Korea

11:00 AM

(ICC-004-2012) Materials and Technical Achievement: An Aerospace Perspective
J. Tracy*, The Boeing Company, USA

Lunch

Sponsored by The Boeing Co.
Room: Chicago Ballroom 6 & 7 (Level 4)

12:00 PM

Plenary Session II

Room: Chicago Ballroom 6 & 7 (Level 4)
Session Chair: Gary Messing, Penn State University

12:45 PM

Introduction by Gary Messing

12:50 PM

(ICC-005-2012) Multifunctional Ceramic Reactors for Green Mobility and Clean Energy Production
A. G. Konstandopoulos*, CERTH/CPERI, Greece

Aerospace I

Room: Michigan A & B (Level 2)
Session Chair: Todd Steyer, Boeing

1:40 PM

(ICC-011-2012) Ceramics for Defense Aerospace Applications
A. 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
T. Aoki*, T. Kojima, H. Taguchi, T. Ogasawara, Japan Aerospace Exploration Agency, Japan

Nanostructured Ceramics I

Room: Superior A & B (Level 2)
Session Chair: Gary Fischman, Future Strategy Solutions LLC

1:40 PM

(ICC-063-2012) Nanotechnology Research at NIOSH: Supporting Safe Development of the Business
C. L. Geraci*, NIOSH, USA

2:20 PM

(ICC-064-2012) Nanotoxicology and Nanomedicine: Risk Assessment and Therapy
L. Tran*, Institute of Occupational Medicine, United Kingdom

3:00 PM

(ICC-065-2012) Mesoporous Silica Nanoparticles and the Quest to Deliver Biomedical Benefits
K. Eggleston*, University of Notre Dame, USA

Environment, Energy and Transportation: Ceramics as Leading and Enabling Materials in Energy

Room: Chicago Ballroom 8 (Level 4)
Session Chair: Celio Costa, COPPE/POLI/UFRJ

1:40 PM

(ICC-037-2012) Emerging Applications of Ceramics at General Electric
K. L. Luthra*, General Electric Global Research, USA

2:20 PM

(ICC-038-2012) Change of Energy Mix - Challenges on the Materials Level
W. Rossner*, Siemens AG, Germany

3:00 PM

(ICC-039-2012) The Unique Role of Ceramics in Energy Technologies: Recent Developments and Opportunities
J. C. Nino*, University of Florida, USA

Electronic, Optical and Magnetic Ceramics and Devices I

Room: Chicago Ballroom 9 (Level 4)
Session Chair: Susan Trolrier-McKinstry, Penn State University

1:40 PM

(ICC-029-2012) Rigid Electronic Materials for Stretchable Device Applications
J. A. Rogers*, University of Illinois at Urbana/Champaign, USA

2:20 PM

(ICC-100-2012) Flux and surfactant-assisted physical vapor deposition: new approaches for improving complex oxide thin film growth
J. Maria*, E. A. Paisley, B. E. Gaddy, North Carolina State University, USA; M. D. Biegalski, Oak Ridge National Laboratory, USA; D. L. Irving, A. R. Rice, R. Collazo, Z. Sitar, North Carolina State University, USA

3:00 PM

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

C. Park*, Kyocera America, Inc., USA

Workforce Development I: Global Challenges

Room: Erie (Level 2)

Session Chair: Erik Svedberg, The National Academies

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?

A. Kingon*, Brown University, USA

2:20 PM

(ICC-076-2012) Integrated Computational Materials Science and Engineering

U. 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

P. Bressler*, Fraunhofer Gesellschaft, Belgium

3:20 PM

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

F. Rosel*, INRS, Canada

Interactive Technology Forum**Interactive Presentations I**

Sponsored by Samsung Electro-Mechanics Co.

Room: River Exhibition Hall B (Level 1)

3:30 PM

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

C. R. Baker*, G. 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 ZrB₂

G. J. Harrington*, M. J. Thompson, G. E. Hilmas, W. G. Fahrenholtz, Missouri University of Science and Technology, USA

(ICC-P099-2012) Study on Al₂O₃ coating deposited onto carbon fiber reinforced polymer matrix substrate

G. Sun*, X. He, J. Jiang, Y. Sun, Harbin Institute of Technology, China

(ICC-P100-2012) Processing, Microstructure, Mechanical and Thermal Properties of Porous Ti₂AlC with Controlled Porosity and Pore Size

L. Hu*, R. Benitez, S. Basu, I. Karaman, M. Radovic, Texas A&M University, USA

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

M. Kazemzadeh Dehdashti*, W. G. Fahrenholtz, G. E. Hilmas, Missouri University of Science and Technology, USA

(ICC-P207-2012) Fast Healing, Strong and Resorbable Bioglasses for Regenerative Medicine

J. M. Ferreira*, A. Goel, University of Aveiro, Portugal

(ICC-P102-2012) GdBr₃(Ce) Glass-Ceramic Scintillators for Gamma-ray Spectroscopy

B. Barta*, Georgia Institute of Technology, USA; J. H. Nadler, Z. Kang, B. Wagner, B. 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

D. Ni*, V. Esposito, C. G. Schmidt, T. T. Molla, S. Ramousse, Technical University of Denmark, Denmark

(ICC-P104-2012) Characterisation of Bi/Gd-doped BaTiO₃ ceramics

G. Schileo*, A. Feteira, Sheffield Hallam University, United Kingdom; K. Reichmann, Institute for Chemistry and Technology of Materials, Graz University of Technology, Austria

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

M. Sopiccka-Lizer*, D. Michalik, T. Pawlik, Silesian University of Technology, Poland

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

M. Trunec*, K. Maca, Brno University of Technology, Czech Republic

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

A. Mannschatz, A. Müller, M. Ahlhelm*, T. Moritz, A. Michaelis, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany

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

S. Tong*, University of Cincinnati, USA; B. Ma, M. Narayanan, S. Liu, U. Balachandran, Argonne National Laboratory, USA; D. Shi, University of Cincinnati, USA

(ICC-P109-2012) High Temperature Piezoelectric Ceramics based on (1-x)[BiScO₃+Bi(Ni_{1/2}Ti_{1/2})O₃]-xPbTiO₃

T. Ansell*, Oregon State University, USA

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

Y. Wu, S. Chen*, Alfred University, USA

(ICC-P111-2012) Induced Piezoelectricity in Tunable Ba_{1-x}Sr_xTiO₃ Thin Film Dielectrics

L. Garten*, S. Trolrier-McKinstry, Pennsylvania State University, USA; J. Maria, North Carolina State University, USA

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

K. Maca*, V. Pouchly, Brno University of Technology, Czech Republic; Z. J. Shen, Stockholm University, Sweden

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

M. Ahlhelm*, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany; E. Gorjup, H. von Briesen, Fraunhofer Institute for Biomedical Engineering (IBMT), Germany; T. Moritz, A. Michaelis, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany

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

O. Van der Biest*, B. Neirincx, J. Franssaer, J. Vleugels, K. U. Leuven, Belgium

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

S. Yin*, Y. Minamidate, S. Tonouchi, T. Sato, Tohoku University, Japan

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

S. Ramalingam*, I. E. Reimanis, Colorado School of Mines, USA

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

T. Goto*, S. Yin, T. Sato, Tohoku University, Japan; T. Tanaka, Daito Kasei Kogyo CO., LTD., Japan

Interactive Technology Forum**Poster Presentations I**

Room: River Exhibition Hall B (Level 1)

3:30 PM

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

E. Antunes*, Innovnano, S.A., Portugal; T. Carvalho, Ceramics Dep. University of Aveiro, Portugal; J. Calado, Innovnano, S.A., Portugal; F. Figueiredo, Ceramics Dep. University of Aveiro, Portugal; D. Hotza, Dep. Chem. Eng., UFSC, Brazil; J. Frade, S. Rosa, Ceramics Dep. University of Aveiro, Portugal

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

I. L. Shabalin*, Y. Wang, University of Salford, United Kingdom; L. Zhang, EDF R&D Matériaux et Mécanique des Composants, France

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

O. Guney*, E. 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

W. Detian*, B. Yiwang, L. Xiaogen, Q. Yan, China Building Materials Academy, China

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

X. Ren*, W. Pan, Tsinghua University, China

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

F. Bondioli*, Università di Modena e Reggio Emilia, Italy; C. Volpato, Federal University of Santa Catarina, Brazil; D. Sighinolfi, Expert System Solution srl, Italy; M. Fredel, Federal University of Santa Catarina, Brazil

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

H. Maeda*, T. Tamura, A. Obata, T. Kasuga, Nagoya Institute of Technology, Japan

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

V. Zalite*, J. Locs, L. Berzina-Cimdina, D. Loca, D. Vempere, Riga Technical University, Latvia

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

L. Pires, M. Fernandes, J. Oliveira*, University of Aveiro, Portugal

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

N. Horiuchi*, K. Nozaki, M. Nakamura, A. Nagai, K. Yamashita, Tokyo Medical and Dental University, Japan

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

N. Fujita*, K. Horiguchi, Y. Hamasaki, K. Kamada, Nagasaki University, Japan

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

P. Alizadeh*, D. Abadkar, Tarbiat Modares University, Islamic Republic of Iran

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

T. Konishi*, M. Mizumoto, H. Mihiyo, Kanagawa Academy of Science and Technology (KAST), Japan; Y. Takeuchi, H. Nagashima, M. Aizawa, Meiji University, Japan

(ICC-P019-2012) Dielectric and non-linear characteristics of La-doped BaTiO₃ ceramics

A. Ianculescu*, University Politehnica of Bucharest, Romania; Z. Mocanu, L. Curecheriu, L. Mitoseriu, "Alexandru Ioan Cuza" University, Romania; C. Vasilescu, University Politehnica of Bucharest, Romania; R. Trusca, S.C. METAV – Research & Development, Romania

(ICC-P020-2012) Fabrication and Transport Study of Atomically Thin MoS₂ Field Effect Transistors

A. C. Freedman*, B. Liu, D. J. Late, Northwestern University, USA; C. Rao, Jawaharlal Nehru Centre for Advanced Scientific Research, India; V. P. Dravid, Northwestern University, USA

(ICC-P021-2012) Crystal structure and dielectric properties of Bi_{0.8}Ba_{0.2}Fe_{0.95}Nb_{0.05}O₃ multiferroic

A. Agarwal*, R. Dahiya, S. Sanghi, A. 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 α/β SiAlON ceramics

B. Joshi*, Sun Moon University, Republic of Korea; H. Wang, 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; Z. 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; S. W. Lee, Sun Moon University, Republic of Korea

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

B. Apak*, H. E. Kanbur, Istanbul Technical University, Turkey; E. O. Zayim, Istanbul Technical University, Turkey; G. Göller, O. Yücel, F. C. Sahin, Istanbul Technical University, Turkey

(ICC-P024-2012) Study of nanostructured Ba(Ti,Zr)O₃ ceramics produced by spark plasma sintering

C. Vasilescu*, A. Ianculescu, University Politehnica of Bucharest, Romania; L. Curecheriu, C. Ciomaga, L. Mitoseriu, "Alexandru I. Cuza" University, Romania; D. Berger, University Politehnica of Bucharest, Romania; G. Fantozzi, G. Bonnefont, University of Lyon, France

(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; S. L. Lira, University of Sao Paulo, Brazil; M. Paiva, Centro Universitário Sao Camilo, Brazil; A. Misso, Faculdades Osvaldo Cruz, Brazil; C. Yamagata*, University of Sao Paulo, Brazil

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

D. K. Dhanjal*, Punjab Technical University, India

(ICC-P028-2012) Influence of Nd₂O₃ and Y₂O₃ on the Synthesis of Ba₂Ti_{0.20} Microwave Dielectric Ceramic Bodies

D. Abdel Aziz*, National Research Centre, Egypt

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

E. Aydogan*, A. F. Dericioglu, M. Timucin, Middle East Technical University, Turkey

(ICC-P030-2012) Mechanochemical Synthesis of Multiferroic BiMnO₃ and YMnO₃ Powders

G. Brankovic*, Z. Brankovic, Z. Marinkovic Stanojevic, M. Pocuca, Institute for multidisciplinary research - University of Belgrade, Serbia; Z. Jaglicic, Institute of Mathematics, Physics and Mechanics, Slovenia; L. Mancic, Institute of Technical Sciences SASA, Serbia; S. Bernik, Jozef Stefan Institute, Slovenia; M. De Sousa Goes, Instituto de Quimica, UNESP, Brazil

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

H. Kanbur*, B. Apak, G. Goller, O. Yucel, F. Cinar Sahin, ITU, Turkey

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

H. Nakano*, K. Ozono, Toyohashi University of Technology, Japan; T. Saji, S. Miyake, MSP Corp., Japan

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

J. Song*, M. Kim, I. Kim, S. Jeong, Korea Electrotechnology Research Institute, Republic of Korea

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

J. Zhang*, Nanyang Technological University, Singapore

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

J. Kim*, D. Kim, T. Noh, S. Jeon, H. Lee, Pusan national university, Republic of Korea

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

J. Goldstein*, G. Fair, Air Force Research Lab, USA; H. Lee, UES, Inc., USA; H. Kim, UES, Inc., USA

(ICC-P037-2012) Luminescence properties of Eu²⁺ doped M-silicate (M=Ca, Ba, Sr) phosphors for application possibility to white LEDs

J. Chung*, Y. Chen, S. Park, B. Moon, B. Choi, J. Jeong, Pukyong National University, Republic of Korea; K. Jang, Changwon National University, Republic of Korea; S. Yi, Silla University, Republic of Korea

(ICC-P038-2012) Luminescence of pulsed laser deposited NaY(MoO₄)₂:Eu³⁺ thin film red phosphors on sapphire substrates

S. Park*, J. Chung, B. Moon, B. Choi, J. Jeong, Pukyong National University, Republic of Korea

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

K. Miyata*, T. Yamagata, Denki Kagaku Kogyo Kabushiki Kaisha, Japan; T. Adschiri, Tohoku university, Japan

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

K. Chiu*, Industrial Technology Research Institute, Taiwan

(ICC-P041-2012) Dielectric Study of Ferroelectric Ceramics of Calcium Doped Barium Titanate Ba_{1-x}Ca_xTiO₃: BCT

L. Kadira*, CPR, Morocco; A. Elmesbahi, FST, Morocco; S. Sayouri, FSTM, Morocco

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

M. Y. Khaladkar*, N. S. Saraf, College of Engineering Pune, India

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

M. Ehmke, C. Fancher, J. E. Blendell, Purdue University, USA; K. J. Bowman*, Illinois Institute of Technology, USA

(ICC-P044-2012) Structural and functional properties of multiferroic B-site substituted BiFeO₃-based solid solutions

M. Calugaru*, F. Gheorghiu, A. Ianculescu, University Politehnica of Bucharest, Romania; P. Postolache, "Alexandru I. Cuza" University, Romania; O. Oprea, University Politehnica of Bucharest, Romania; L. Mitoseriu, "Alexandru I. Cuza" University, Romania

(ICC-P045-2012) Hydrothermal synthesis of BiFeO₃ fine particles

M. Kobayashi*, N. Kumada, A. Miura, Y. Yonesaki, T. Takei, I. Fujii, S. Wada, University of Yamanashi, Japan

(ICC-P046-2012) Preparation and dielectric property of (Li_{1-0.12}Na_{0.88})NbO₃-based solid solutions

N. Ito*, N. Kumada, A. Miura, Y. Yonesaki, T. Takei, S. 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

P. Ferraro*, Empower Materials, USA

(ICC-P048-2012) Effect of sol ageing on dielectric properties of nanocrystalline CaCu₃Ti₄O₁₂ ceramic

R. Kumar*, T. D. Senguttuvan, National Physical Laboratory, India; M. Zulfeqar, Jamia Millia Islamia, India

(ICC-P049-2012) The observation of high Seebeck coefficient in BiFeO₃ Bulk Ceramics

R. Imura*, T. Yokota, Nagoya Institute of Technology, Japan; A. Osvet, M. Batentschuk, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; M. Gomi, Nagoya Institute of Technology, Japan; C. J. Brabec, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

(ICC-P050-2012) Electric properties and crystal structure of CaWO₄ ceramics prepared from powders synthesized by two processes: a traditional solid reaction method and a refined hydrothermal method

R. Shimanouchi*, N. Kobayashi, H. Nishizawa, Kochi University, Japan

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

R. Fan*, Shandong University, China

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

S. Cabanas-Polo, A. Sanchez-Herencia*, B. Ferrari, Instituto de Ceramica y Vidrio (CSIC), Spain

(ICC-P054-2012) Microstructure and electrical properties of LaNiO₃ thin films formed by RF sputtering for the growth of PLZT on silicon and nickel substrates

S. Liu*, B. Ma, M. Narayanan, S. Tong, U. Balachandran, Argonne National Laboratory, USA

(ICC-P055-2012) Effect of oxygen vacancy on the dielectric relaxation of BaTiO₃ thin films in a quenched state

S. Yao*, CNRS-G2E lab, France; J. Yuan, CNRS-Lab MSSMAT, France; A. Sylvestre, CNRS-G2E lab, France; P. Gonon, CNRS-LTM, UJF, France; J. Bai, CNRS-Lab MSSMAT, France

(ICC-P056-2012) Electrical characterization of sol-gel derived Na_{0.5}Bi_{0.5}TiO₃-NaTaO₃ thin films

S. Kunej*, A. Veber, D. Suvorov, Jozef Stefan Institute, Slovenia

(ICC-P057-2012) Phase formation and characteristics of La-doped BaTiO₃ powders prepared via sol-gel route

S. Stoleriu*, A. Ianculescu, C. Vasilescu, University Politehnica of Bucharest, Romania; M. Crisan, M. Raileanu, D. Crisan, N. Dragan, Institute of Physical Chemistry Ilie Murgulescu, Romanian Academy, Romania; B. Vasile, University Politehnica of Bucharest, Romania

(ICC-P058-2012) Rietveld analysis, dielectric and magnetic properties of La/Ti co-doped BiFeO₃ ceramic

S. Sanghi*, A. Agarwal, R. Dahiya, A. Hooda, Guru Jambheshwar University of Science & Technology, India

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

T. Funamoto*, H. Onoda, Kyoto Prefectural University, Japan

(ICC-P060-2012) Electric field induced resistance changes in CaFeO_{3-x} thin film

T. Yokota*, R. Imurqa, K. Ichikawa, M. Gomi, Graduate school of Engineering, Nagoya Institute of Technology, Japan

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

T. Sato*, G. Hasegawa, K. Kanamori, K. Nakanishi, Kyoto University, Japan

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

T. Stevenson*, T. Comyn, University of Leeds, United Kingdom

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

T. N. Oder*, M. McMaster, A. Smith, J. Petrus, N. 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

T. Ohishi*, Shibaura Institute of Technology, Japan

(ICC-P066-2012) Low Temperature Optical Thermometry through Fluorescence Intensity Ratio in Er³⁺, Sm³⁺-co doped-Yttria Stabilized Zirconia

Y. Shen*, Tsinghua University, China; X. Wang, H. He, University of Electronic Science and Technology China, China; Y. Lin, C. Nan, Tsinghua University, China

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

Y. Kido*, K. Nakanishi, A. Miyasaka, K. Kanamori, Kyoto University, Japan

(ICC-P068-2012) Upconversion and Photostimulated Luminescence in afterglow ceramics Tb, Sr co-doped Lu₂O₃

S. Chen, Y. Wu*, Alfred University, USA

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

Y. Kim*, K. Lim, J. Eom, University of Seoul, Republic of Korea; K. Kim, Konkuk University, Republic of Korea

(ICC-P070-2012) Control on the doping site in BaTiO₃ with a water-soluble precursor

Y. Matsushima*, K. Iwase, S. Kasuga, T. Kawai, Yamagata University, Japan

(ICC-P071-2012) Hydrothermal Synthesis of the Multiferroic YMn₂O₅ Nanopowders

Z. Brankovic*, G. Brankovic, Z. Marinkovic Stanojevic, M. Pocuca-Nesic, Institute for Multidisciplinary Research-University of Belgrade, Serbia; M. Zaghele, J. Varela, Instituto de Quimica-UNESP, Brazil

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

Z. Mansurov*, Institute of Combustion Problems, Kazakhstan; A. Ignatiev, University of Houston, USA; S. Tokmoldin, Physical Technical Institute, Kazakhstan; R. Beissenov, al-Farabi Kazakh National University, Kazakhstan

(ICC-P073-2012) Effects of Fe₂O₃ on properties of novel heat insulation materials synthesized by molten salt method

C. Deng*, J. Ding, W. Yuan, J. Li, H. Zhu, Wuhan University of Science and Technology, China

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

E. Arslankara*, A. Turan, G. Goller, O. Yucel, F. Sahin, Istanbul Technical University, Turkey

(ICC-P075-2012) Mechanism of the carbothermal synthesis of MgAl₂O₄-SiC refractory composite powders

H. Zhu*, H. Duan, W. Yuan, C. 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

R. 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

W. Yuan*, Z. Lv, H. Zhu, C. Deng, Wuhan University of Science and Technology, China

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

A. Ustunova*, G. Goller, O. Yucel, F. Cinar Sahin, Istanbul Technical University, Turkey

(ICC-P081-2012) High toughness TiB₂-40%TiC ceramic composite prepared by two-step pressureless sintering

Y. Wang*, H. Li, S. Wang, Z. Hu, Y. Zhou, Harbin Institute of Technology, China

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

M. Coskun, B. Apak, G. Goller, O. Yucel, F. C. Sahin*, Istanbul Technical University, Turkey

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

H. A. Colorado*, UCLA, USA

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

I. Yanase*, S. Ooshima, T. Mizuno, K. Oomori, H. Kobayashi, Saitama University, Japan

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

S. Sagdic, I. Akin, F. Sahin, O. Yucel, G. Goller*, Istanbul Technical University, Turkey

(ICC-P086-2012) Ceramics in Colombia

J. A. Escobar*, M. Morales, D. Carvajal, University of Los Andes, Colombia

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

I. Dusenkovska, V. Stepanova, J. Locs*, J. Malers, L. Berzina-Cimdina, Riga Technical University, Latvia

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

J. Chen*, L. Chen, Y. Lin, CSIST, Taiwan; M. Rau, AG Materials Inc., Taiwan

(ICC-P089-2012) Comparative study on microstructures and densification of SiO₂-Si₃N₄ ceramic compounds sintered by direct hot pressing and conventional hot pressing

J. Shin*, C. Frei, Umicore Thin Film Products AG, Liechtenstein

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

K. Mizuno*, H. Matsubara, Y. Takeuchi, S. Harada, T. Ujihara, Nagoya Univ., Japan; Y. Aoki, K. Kohara, DENSO CORP., Japan

(ICC-P091-2012) Effect of NH₄F on synthesis mullite porous ceramic from kaolinite

L. Yuan*, T. Liu, C. Wang, J. Yu, Northeastern university, China

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

R. Chintapalli, F. M. Garcia, M. Anglada*, Universitat Politècnica de Catalunya, Spain

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

W. Dai*, X. Wang, Northeastern University, China; D. Sun, J. Ye, Dongfang Electric Machinery Co. Ltd, China; D. Zhang, Northern Engineering and Technology Co. Ltd., China; J. Yu, Northeastern University, China

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

D. Dunn*, M. Halstead, D. Barnhart, G. Churchill, X. Wang, K. Putyera, Evans Analytical Group, USA

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

Z. Pedzich*, AGH-University of Science & Technology, Poland

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

M. Taheri, Iran University of Science and Technology, Islamic Republic of Iran; M. Mazaheri*, Swiss Federal Institute of Technology Lausanne (EPFL), Switzerland; F. Golestani-fard, Iran University of Science and Technology, Islamic Republic of Iran

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

Room: Chicago Ballroom 6 & 7 (Level 4)

Session Chair: Cewen Nan, Tsinghua University

8:45 AM**Introduction by Cewen Nan****8:50 AM****(ICC-006-2012) From Academia to Business**

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

9:40 AM**Break****Sponsored by Kyocera****Aerospace II**

Room: Michigan A & B (Level 2)

Session Chair: A. Javier Sanchez Herencia, Instituto de Ceramics y Vidrio, CSIC

10:00 AM**(ICC-013-2012) Ceramic Innovations at Rolls-Royce**

J. Lane*, A. Bolcavage, Rolls-Royce Corporation, USA

10:40 AM**(ICC-014-2012) Ceramic Matrix Composites for Structural Aerospace Applications**

M. Petervary*, T. Steyer, Boeing Company, USA

11:20 AM**(ICC-015-2012) Post Processing of Advanced Thermal Barrier Coatings**

C. Berndt*, Swinburne Univ. of Technology, Australia

Nanostructured Ceramics II

Room: Superior A & B (Level 2)

Session Chair: Lang Tran, Institute of Occupational Medicine

10:00 AM**(ICC-066-2012) International Standardization Efforts in NanoEHS**

A. High Walker*, National Institute of Standards and Technology, USA

10:40 AM**(ICC-069-2012) Nano-OEHS Insights & AssuredNano® Accreditation**

D. Ewert*, nanoTox, Inc., USA

11:20 AM**(ICC-068-2012) Carbon Nanotubes, and the Importance of Material Characterization for NanoEHS Measurements**

J. Fagan*, National Institute of Standards and Technology, USA

Environment, Energy and Transportation: Ceramics in Energy, Environment, and Transportation I

Room: Chicago Ballroom 8 (Level 4)

Session Chair: Aleksander Pyzik, The Dow Chemical Co.

10:00 AM**(ICC-040-2012) Future of Porous Ceramics in Environmental, Energy and Related Applications**

P. Colombo*, University of Padova, Italy

10:40 AM**(ICC-098-20012) Trends and Opportunities for Advanced Ceramics in the fields of Energy and Environment**

W. Mustel*, Saint-Gobain High Performance Refractories, France

11:20 AM**(ICC-041-2012) Development Strategies for SiAlON Ceramics in Wear Applications: Challenges and Potentials**

H. Mandal*, Sabanci University, Turkey

Electronic, Optical and Magnetic Ceramics and Devices II

Room: Chicago Ballroom 9 (Level 4)

Session Chair: Tom Mason, Northwestern University

10:00 AM**(ICC-031-2012) TSDC analysis for oxygen vacancy study in rare earth and magnesium co-doped BaTiO₃**

N. Inoue*, R. A. Maier, The Pennsylvania State University, USA; A. Honda, H. Takagi, Murata Manufacturing Co., Ltd., Japan; C. A. Randall, The Pennsylvania State University, USA

10:40 AM**(ICC-032-2012) Recent Topics of Soft Ferrite**

T. Aoki*, S. Che, TDK Corporation, Japan; M. Watanabe, TDK-EPC Corporation, Japan; K. Mori, N. Sato, K. Yasuhara, TDK Corporation, Japan; T. Murase, TDK-EPC Corporation, Japan

11:20 AM**(ICC-033-2012) Thermoelectric Oxides- From materials design to modules**

A. Weidenkaff*, S. Populoh, L. Karvonen, M. Trottmann, G. Saucke, Empa, Switzerland

3rd Ceramic Leadership Summit: Technology Entrepreneurship - The Next Generation of Technology Transfer

Sponsored by Morgan Crucible

Room: Chicago Ballroom 10 (Level 4)

Session Chair: Tim Lavengood, Evanston Technology Innovation Center

10:00 AM

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

T. Lavengood*, Evanston Technology Innovation Center, USA; D. Day, Mo-Sci Corporation, USA; C. Anderson, Digital Innovations, USA; A. Arzoumanidis, Psylotech, Inc., USA; J. Goodman, Synthesis Intellectual Property, LLC, USA; L. Millar, University of Illinois, Urbana-Champaign, USA; J. Banta, IllinoisVentures, LLC, USA

Lunch

Room: Chicago Ballroom 6 & 7 (Level 4)

12:00 PM

Plenary Session IV

Room: Chicago Ballroom 6 & 7 (Level 4)

Session Chair: George Wicks, Savannah River National Lab

12:45 PM

Introduction by George Wicks

12:50 PM

(ICC-099-2012) Emerging Ceramic Technologies: A Perspective from Morgan Crucible Co

M. Murray*, The Morgan Crucible Company plc, United Kingdom

Aerospace III

Room: Michigan A & B (Level 2)

Session Chair: Kathleen Sevener, Valparaiso University

1:40 PM

(ICC-016-2012) Potential and limits of SiC chopped fiber-reinforced Ultra High Temperature Ceramics

D. Sciti*, L. Silvestroni, S. Guicciardi, A. Bellosi, National Research Council, Italy

2:20 PM

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

D. Leiser*, NASA Ames Research Center, USA

3:00 PM

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

T. Ishikawa*, Ube Industries, Ltd., Japan

Nanostructured Ceramics III

Room: Superior A & B (Level 2)

Session Chair: Ricardo Castro, University of California, Davis

1:40 PM

(ICC-070-2012) Evaluating Toxicity of Graphene Oxides

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

2:20 PM

(ICC-101-2012) Graphene Oxide: Curiosities, Challenges and Solutions

J. Huang*, Northwestern University, USA

3:00 PM

(ICC-071-2012) Priorities for Nanoscale Ceramics

L. D. Madsen*, National Science Foundation, USA

Environment, Energy and Transportation: Energy Production and Storage I

Room: Chicago Ballroom 8 (Level 4)

Session Chair: Rajendra Basu, CSIR-Central Glass & Ceramic Research Institute

1:40 PM

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

D. Kim*, KAIST(Korea Advanced Institute of Science and Technology), Republic of Korea

2:20 PM

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

K. Eguchi*, H. Muroyama, T. Matsui, Kyoto University, Japan

3:00 PM

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

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

Electronic, Optical and Magnetic Ceramics and Devices III

Room: Chicago Ballroom 9 (Level 4)

Session Chair: Christian Hoffmann, TDK Corporation

1:40 PM

(ICC-034-2012) Future directions in piezoceramics

J. Roedel*, W. Jo, R. Dittmer, TU Darmstadt, Germany

2:20 PM

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

M. Lanagan*, Penn State, USA

3:00 PM

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

J. Topfer*, T. Reimann, S. Bierlich, Univ. Appl. Science, Germany; S. Barth, B. Pawlowski, Fraunhofer Institute IKTS, Germany; H. Bartsch-de Torres, J. Müller, Technical University Ilmenau, Germany

Workforce Development II: Creating an Effective, Competitive Workforce

Room: Erie (Level 2)

Session Chair: Tom Oder, Youngstown State University

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

C. Hill, C. Corbett*, A. St. Rose, American Association of University Women, USA

2:20 PM

(ICC-080-2012) Diversity and Degree Production in Materials Science and Engineering

K. J. Bowman*, Illinois Institute of Technology, USA

2:40 PM

(ICC-081-2012) Involving Undergraduates in Research

M. Affatigato*, Coe College, USA

3:00 PM

(ICC-082-2012) Career Opportunities in Glass: The Random Network Model

L. Mattos*, The Coca-Cola Company, USA

3rd Ceramic Leadership Summit: International Technology Transfer and Entrepreneurship Case Studies

Sponsored by Morgan Crucible

Room: Chicago Ballroom 10 (Level 4)

Session Chair: Richard Weber, Materials Development Inc.

1:40 PM

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

J. 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

J. R. Hellmann*, B. E. Scheetz, R. P. Koseski, Penn State, USA; M. Bradley, T. 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

J. Yang*, X. Xi, Y. Huang, Tsinghua University, China

3:10 PM

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

V. Valcarcel*, C. Cerecedo, Neoker, Spain

3:40 PM

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

R. Funahashi*, National Institute of Advanced Industrial Science & Technology, Japan

Interactive Technology Forum Interactive Presentations II

Sponsored by Samsung Electro-Mechanics Co.

Room: River Exhibition Hall B (Level 1)

3:30 PM

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

A. E. Sall*, Northwestern University, USA

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

B. Ray*, University of Kentucky, USA

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

C. Guo*, S. Yin, T. 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

H. Li*, S. Yin, T. Sato, Tohoku University, Japan

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

J. P. Angle*, M. L. Mecartney, University of California, Irvine, USA

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

M. Johnson*, K. Faber, Northwestern University, USA

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

R. Weigand*, H. Hessenkemper, A. Rössel, TU Bergakademie Freiberg, Germany

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

Z. Liu*, J. R. Wilson, J. S. Cronin, K. J. Yakal-Kremksi, K. T. Faber, S. A. Barnett, Northwestern University, USA

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

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

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

S. M. Miller*, K. T. Faber, Northwestern University, USA

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

A. Pandey, A. Shyam, T. R. Watkins, E. 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

G. Hayase*, K. Kanamori, K. 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

H. A. Colorado*, UCLA, USA

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

O. Cengiz*, A. Kara, Anadolu University, Turkey

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

V. L. Wiesner*, J. Youngblood, R. Trice, Purdue University, USA

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

X. Chen*, L. Hong, National University of Singapore, Singapore

(ICC-P208-2012) Is the ubiquitous presence of barium carbonate responsible for the poor aqueous processing ability of barium titanate?

J. M. Ferreira*, University of Aveiro, Portugal; S. M. Olhero, University of Porto, Portugal

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

B. Ferrari*, M. Verde, S. Cabanas-Polo, J. Escribano, I. Gonzalo-Juan, A. Caballero, A. Sanchez-Herencia, Instituto de Ceramica y Vidrio (CSIC), Spain

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

C. Chang*, R. 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

D. Clark*, J. Tong, A. Morrissey, I. Riemanis, R. O'Hayre, Colorado School of Mines, USA

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

D. Morselli*, N. Florini, F. Bondioli, University of Modena and Reggio Emilia, Italy

(ICC-P228-2012) Processing of nanostructured ceramics

J. Binner*, Loughborough University, United Kingdom; B. Vaidyanathan, Loughborough University, United Kingdom

(ICC-P229-2012) Electric field effects on the sintering of high κ magnesium aluminate nanoparticles

J. Rüfner*, C. Bonifacio, K. van Benthem, R. Castro, University of California, Davis, USA

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

M. Mazaheri*, D. Mari, R. Schaller, EPFL: Swiss Federal Institute of Technology in Lausanne, Switzerland; G. Bonnefont, G. 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

N. Ueda*, T. Yamakami, T. Yamaguchi, M. Endo, Shinshu University, Japan; N. Saito, Shinshu University School of Health Sciences, Japan; S. 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

N. Taylor*, R. M. Laine, University of Michigan, USA

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

A. Sanchez-Herencia*, Instituto de Ceramica y Vidrio (CSIC), Spain; E. Gordo, R. Garcia das Neves, University Carlos III of Madrid, Spain; J. Escribano, B. Ferrari, Instituto de Ceramica y Vidrio (CSIC), Spain

Interactive Technology Forum Poster Presentations II

Room: River Exhibition Hall B (Level 1)

3:30 PM

(ICC-P118-2012) VO_x/TiO₂ anode catalyst for oxidation of CH₄ containing 5000 ppm H₂S in SOFC cells

A. A. Garcia Rojas*, A. Vincent, J. Luo, K. Chuang, A. Sanger, University of Alberta, Canada

(ICC-P119-2012) Electrochemical Characterization of Spinel LiMn₂O₄ Particles as a Cathode Material for Lithium-Ion Batteries Prepared by Ultrasonic Spray Pyrolysis

B. Ebin*, G. Sebahattin, Istanbul Technical University, Turkey

(ICC-P120-2012) Pressureless Sintering of Ti₃SiC₂: Microstructure and Mechanical Properties

E. V. Rodrigues*, C. A. Costa, COPPE/POLI/UFRJ, Brazil; E. Lara-Curzio, Oak Ridge National Laboratory, USA

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

C. Kaps*, A. Tasch, M. Heidenreich, Bauhaus-Universität Weimar, Germany

(ICC-P122-2012) Using epitaxial growth to stabilize δ-Bi₂O₃ on single crystal oxide substrates

D. Proffit*, Northwestern University, USA; M. Highland, S. Kim, G. Bai, P. Baldo, P. Fuoss, Argonne National Laboratory, USA; T. O. Mason, Northwestern University, USA; D. Fong, J. Eastman, Argonne National Laboratory, USA

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

E. M. Tejado*, Technical University of Madrid - CISDEM, Spain; T. Orellana Pérez, Fraunhofer Institute for Solar Energy Systems, Germany; J. Y. Pastor, Technical University of Madrid - CISDEM, Spain; C. Funke, W. Fütterer, Institute for Experimental Physics, Germany

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

J. Y. Pastor, E. M. Tejado*, Technical University of Madrid-CISDEM, Spain; T. Orellana Pérez, Fraunhofer Institute for Solar Energy Systems, Germany; C. Funke, W. Fütterer, Institute for Experimental Physics, Germany

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

E. Jacques*, Y. Le Petitcorps, L. Maillé, E. Martin, LCTS, France; C. Lorrette, C. Sauder, CEA, France; E. Savary, S. Marinel, CRISMAT, France

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

E. Gregorova*, W. Pabst, Z. Sofer, I. 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

F. Stolzenburg*, Northwestern University, USA; J. Almer, Argonne National Lab, USA; K. N. Lee, Rolls Royce Corp, USA; K. T. Faber, Northwestern University, USA

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

G. Tabatadze, Georgian Technical University, Georgia; U. G. Heinrich, Technical University of Clausthal, Germany; Z. Kovziridze*, Z. Mestvirishvili, Georgian Technical University, Georgia

(ICC-P129-2012) Effect of nano SiO₂ on the polymer Ni-MH battery based on PVA/PEG-composite microporous alkaline polymer electrolyte

L. Li*, Y. Zhu, R. Wu, Nanjing University of Technology, China

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

L. B. Caliman*, D. Gouvêa, Universidade de São Paulo - USP, Brazil

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

S. Mixture*, Alfred University, USA

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

S. Somov*, Solid Cell Inc., USA; S. Ghosh, RocCera LLC, USA; M. Alberga, J. P. Kelly, O. A. Graeve, Alfred University, USA

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

S. Beaudet Savignat*, J. Vulliet, M. Groisil, T. Piquero, CEA Le Ripault, France

(ICC-P135-2012) Double Perovskite Sr₂Fe_{2-x}Mo_xO_{6-δ} as anode material for solid oxide fuel cells

A. Dorai, S. Kim, D. Seo, I. Han, J. Yu, S. Kim, S. Woo*, Korea Institute of Energy Research, Republic of Korea

(ICC-P136-2012) Synthesis and characterization of perovskite-type cathode La_{0.8}Sr_{0.2}Mn_{1-x}Cu_xO_{3-δ} (0 ≤ x ≤ 0.3) for intermediate-temperature solid oxide fuel cells

T. Noh*, J. Jiseung, J. Kim, H. Lee, Pusan National University, Republic of Korea

(ICC-P137-2012) Characterization of Sr_{0.9}Ho_{0.1}CoO_{3-δ} as a potential cathode material for intermediate-temperature solid oxide fuel cells

T. Liu*, Northeastern University, China; L. Li, Shenyang Aerospace University, China; J. Goodenough, The University of Texas at Austin, USA; J. Yu, Northeastern University, China

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

W. Pabst*, Institute of Chemical Technology, Prague (ICT Prague), Czech Republic; E. Gregorova, Institute of Chemical Technology, Prague (ICT Prague), Czech Republic; J. 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

A. Miura*, T. Furuya, A. Sogo, T. Takei, N. Kumada, University of Yamanashi, Japan

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

C. A. Costa, M. F. Costa*, M. S. Beltrao, COPPE/POLI/UFRJ, Brazil

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

E. Prud'homme*, A. Autef, F. Gouny, P. Michaud, GEMH, France; E. Joussein, GRESE, France; F. Fouchal, S. Rossignol, GEMH, France

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

G. M. Sedmale*, Riga Technical University, Latvia; I. Steins, Riga Technical University, Latvia; I. Sperberga, Riga Technical University, Latvia; A. Patmalnieks, Latvian University, Latvia

(ICC-P143-2012) Thermokinetic analysis of the CO₂ Chemisorption on Li₂ZrO₃. Effect of the Oxygen Addition

L. Martínez-díaz, H. Pfeiffer*, Universidad Nacional Autónoma de México, México

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

H. Onoda*, R. Matsumoto, Kyoto Prefectural University, Japan; M. Tafu, Toyama National College of Technology, Japan

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

I. Sperberga*, A. Cimmers, G. Sedmale, D. Ulme, Riga Technical University, Latvia; I. Vircava, University of Latvia, Latvia

(ICC-P146-2012) Effect of Y₂O₃ on the sintering of natural magnesia

J. Yu*, L. Yuan, X. Wang, W. Dai, P. Ma, Northeastern University, China

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

K. Kamada*, A. Moriyasu, T. Nakamura, S. Tsukahara, Nagasaki University, Japan

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

M. Tafu*, M. Nakai, Toyama National College of Technology, Japan; T. Okazaki, University of Toyama, Japan; T. Toshima, T. Chohji, Toyama National College of Technology, Japan

(ICC-P149-2012) Honeycomb reactor washcoated with spinel catalysts for the reduction of NO_x by C₂H₄

M. H. 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

N. Lairaksa*, N. Makul, Phranakhon Rajabhat University, Thailand

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

S. A. Kwok, University of Melbourne, Australia; P. Parente, Instituto de Ceramica y Vidrio (CSIC), Spain; C. Tallón, G. V. Franks, University of Melbourne, Australia; A. Sanchez Herencia*, Instituto de Ceramica y Vidrio (CSIC), Spain

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

T. Takei*, A. Sogo, A. Miura, N. Kumada, University of Yamanashi, Japan

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

T. Klein*, L. Treccani, K. Rezwani, University of Bremen, Germany

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

T. Comyn*, T. Stevenson, A. Bell, University of Leeds, United Kingdom

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

P. Pawlik*, M. Sopicka-Lizer, D. Michalik, G. Moskal, J. Wiecek, Silesian University of Technology, Poland

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

T. Sato*, Q. Dong, S. Yin, Tohoku University, Japan

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

W. Buggakupta*, P. Umponpanarat, Faculty of Science, Chulalongkorn University, Thailand; W. Panpa, Faculty of Industrial Technology, Thepsatri Rajabhat University, Thailand

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

W. Junbin*, X. Xiang Xing, J. Tao, Northeastern University, China

(ICC-P159-2012) Study on Rheological Properties of Suspension with α -Sialon Powder for Gel Casting

W. Junbin*, X. Xiang Xin, J. Tao, Z. Qing, Northeastern University, China

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

X. Gao*, P. Michaud, GEMH, France; E. Joussein, GRESE, France; S. Rossignol, GEMH, France

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

Y. Hirano*, M. Tafu, T. Masutani, T. Chohji, Toyama National College of Technology, Japan

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

E. Izci*, C. E. Ozbilgin, Z. Murat, Anadolu University, Turkey

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

E. Izci*, Z. Murat, C. E. Ozbilgin, Anadolu University, Turkey

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

G. Sua-iam*, Phranakhon Rajabhat University, Thailand; N. Makul, Phranakhon Rajabhat University, Thailand

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

N. Makul, Phranakhon Rajabhat University, Thailand; A. 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

A. Pottebaum, N. Taylor, R. Laine, E. Yi*, University of Michigan, USA

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

B. Mehdikhani*, standard research institute, Islamic Republic of Iran; B. Mirhadi, Imam khomeini international university, Islamic Republic of Iran

(ICC-P168-2012) Development of low thermal conductivity ZrO₂ ceramics by La₂O₃ addition

B. Jang*, Y. Sakka, H. Murakami, National Institute for Materials Science, Japan; S. Kim, Y. Oh, H. Kim, Korea Institute of Ceramic Engineering and Technology, Republic of Korea

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

D. Charles*, Y. Huang, S. Fang, A. Srivastava, J. Huang, V. P. Dravid, Northwestern University, USA

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

D. Jia*, Z. Sun, Y. Zhou, X. Duan, Q. Zhang, D. Ye, Harbin Institute of Technology, China

(ICC-P171-2012) Effect of Mg²⁺ ion as a dopant on the stability of amorphous phase transition of gamma-alumina

D. C. Rosário*, D. Gouvea, University of São Paulo, Brazil

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

E. Rocha-Rangel*, J. A. Rodríguez-García, Universidad Politécnica de Victoria, Mexico; E. Refugio-García, Universidad Autónoma Metropolitana, Mexico

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

G. Xu*, T. Yamaguchi, M. Endo, S. Taruta, I. Kubo, Shinshu University, Japan

(ICC-P174-2012) Diameter-Dependent Photocatalytic Activity of Electrospun TiO₂ Nanofiber

H. Li*, W. Zhang, W. Pan, Tsinghua University, China

(ICC-P175-2012) Spark plasma sintering of Si₃N₄-based nanopowders

I. Zalite*, I. Steins, N. Zilinska, J. Krastins, RTU Institute of Inorganic Chemistry, Latvia

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

I. Zalite*, J. Grabis, RTU Institute of Inorganic Chemistry, Latvia; E. Palcevskis, Plasma & Ceramic Technologies, Latvia

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

J. Hong*, H. Wagata, K. Katsumata, Tokyo Institute of Technology, Japan; N. Ohashi, National Institute for Materials Science, Japan; K. Kim, Gachon University, Republic of Korea; K. Okada, N. Matsushita, Tokyo Institute of Technology, Japan

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

J. A. Escribano, I. Gonzalo-Juan, A. Sanchez-Herencia*, B. Ferrari, Instituto de Ceramica y Vidrio (CSIC), Spain

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

K. Kanamori*, H. Shigeno, T. Tanaka, K. Nakanishi, Kyoto University, Japan

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

Y. Komatsubara, K. Katsumata, N. Matsushita, K. Okada*, Tokyo Institute of Technology, Japan

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

M. Verde, I. Gonzalo-Juan, M. Villegas, A. Caballero, B. Ferrari*, Instituto de Ceramica y Vidrio (CSIC), Spain

(ICC-P185-2012) Zircon-Zirconia (ZrSiO₄-ZrO₂) dense ceramic composites by Spark Plasma Sintering

N. M. Rendtorff*, CETMIC, Centro de Tecnologia de Recursos Minerales y Ceramica, Argentina; S. Grasso, C. Hu, Fine Particle Processing Group, Nano Ceramics Center, National Institute for Materials Science (NIMS), Japan; G. Suárez, E. Aglietti, CETMIC, Centro de Tecnologia de Recursos Minerales y Ceramica, Argentina; Y. Sakka, Fine Particle Processing Group, Nano Ceramics Center, National Institute for Materials Science (NIMS), Japan

(ICC-P186-2012) Preparation of M₃O₄ (M=Fe, Co) Particles by Using Iron and Cobalt Naphthenate by Hydrothermal Reaction

N. Kumada*, University of Yamanashi, Japan; Q. Dong, Tohoku University, Japan; A. Miura, T. Takei, University of Yamanashi, Japan

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

E. Andronescu*, C. Ghitulica, O. R. Vasile, B. S. Vasile, University Politehnica from Bucharest, Romania; E. Vasile, R. Trusca, METAV Research and Development, Romania

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

R. Beissenov*, Al-Farabi Kazakh National University, Kazakhstan; Z. Mansurov, N. Mofa, S. Aknazarov, B. Sadykov, Institute of Combustion Problems, Kazakhstan

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

R. M. Laine*, N. Taylor, A. Pottebaum, University of Michigan, USA

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

R. Abdulkarimova*, Z. Mansurov, Al-Farabi Kazakh National University, Kazakhstan

(ICC-P192-2012) Synthesis and Reactive Sintering of ZrB₂-Based Ceramics

R. Li*, Y. Jiang, B. Zhao, Beihang University, China

(ICC-P194-2012) Influence of Ag₂O addition on crystallization process and microstructure of transparent mica glass-ceramics

S. Taruta*, A. Mizoguchi, T. Yamakami, T. Yamaguchi, Shinshu University, Japan; K. Okada, Tokyo Institute of Technology, Japan

(ICC-P195-2012) Influence of oxygen non stoichiometry on the dielectric properties of BaTiO_{3.5} nanoceramics

S. Guillemet-Fritsch, C. Voisin*, P. Dufour, C. Tenailleau, CIRIMAT/CNRS, France

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

T. Ikeda*, S. Tsukahara, Nagasaki University, Japan; N. Soh, Saga University, Japan; K. Kamada, Nagasaki University, Japan

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

T. Kawamata*, K. Koizumi, Y. Umemura, T. Toyama, Nihon University, Japan

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

T. 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

Y. Zhu*, T. Detani, K. Nakanishi, K. Kanamori, Kyoto University, Japan

(ICC-P200-2012) Study of superhydrophilic TiO₂ thin films prepared by reactive sputtering

Y. Jung*, Gachon University, Republic of Korea; J. Hong, Tokyo Institute of Technology, Japan; K. Kim, Gachon University, Republic of Korea

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

Z. Yan*, Northeastern University, China; W. Dai, Northeastern University, China; T. Liu, Northeastern University, China; J. Yu, Northeastern University, China

(ICC-P202-2012) Study of preparation and effect of Si₂ON₂ phase on the properties of SiC composite

Z. Kovziridze*, Georgian Technical University, Georgia; J. G. Heinrich, Technical University of Clausthal, Germany; N. Nizharadze, Georgian Technical University, Georgia

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

E. Timofeeva, M. Moravek, D. Singh*, Argonne National Laboratory, USA

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

F. O. Orgaz*, Instituto de Ceramica y Vidrio, Spain; M. Gomez del Rio, Universidad Rey Juan Carlos, Spain; R. Moronta, Instituto de Ceramica y Vidrio, Spain; J. Rodriguez, P. Poza, Universidad Rey Juan Carlos, Spain

(ICC-P205-2012) Investigation of MoS₂ and BN nanolubricants and their effect on tribological behavior of combustion engine parts

E. Timofeeva*, N. Demas, J. Routbort, G. Fenske, Argonne National Laboratory, USA

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

H. Ikeda*, H. Kasa, H. Mayama, H. Hishiyama, J. Nishii, Hokkaido University, Japan

Wednesday, July 18, 2012**Plenary Session V**

Room: Chicago Ballroom 6 & 7 (Level 4)

Session Chair: Danilo Suvorov, European Ceramic Society and Jozef Stefan Institute

8:45 AM

Introduction by Danilo Suvorov

8:50 AM

(ICC-007-2012) Development of Electro-ceramics of today and the future

Y. Sakabe*, Murata Manufacturing Co., Japan

9:40 AM

Break

Aerospace IV

Room: Michigan A & B (Level 2)

Session Chair: Steve Gonczy, Gateway Materials

10:00 AM

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

R. Jefferies*, Federal Aviation Administration, USA

10:40 AM

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

J. R. Koenig*, J. C. Cuneo, B. V. Patel, Southern Research Institute, USA

11:20 AM

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

G. Mandigo*, D. Freitag, U.S. Advanced Ceramics Association, USA

Security and Strategic Materials I

Room: Superior A & B (Level 2)

Session Chair: David Cammarota, Oak Ridge National Lab

10:00 AM

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

H. 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

M. Humphries*, Congressional Research Service, USA

11:20 AM

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

R. A. Lowden*, Oak Ridge National Laboratory, USA

Environment, Energy and Transportation: Ceramics in Energy, Environment, and Transportation II

Room: Chicago Ballroom 8 (Level 4)

Session Chair: Hasan Mandal, Sabanc University

10:00 AM

(ICC-045-2012) Micro and mesoporous ceramic membranes for energy efficient gas separation, pervaporation and nanofiltration

L. Winnubst*, University of Twente, Netherlands

10:40 AM

(ICC-046-2012) New Generation Ceramic Hot Gas Filters for Simultaneous Removal of Particulate Matter, SO_x and NO_x

M. Salinger*, Pall GmbH, Germany

11:20 AM

(ICC-047-2012) Precursors-derived porous ceramic-based membranes for gas separation

Y. Iwamoto*, Nagoya Institute of Technology, Japan

Infrastructure I

Room: Chicago Ballroom 9 (Level 4)

Session Chair: Wilasa Vichit-Vadakan, Siam Research and Innovation Co. Ltd.

10:00 AM

(ICC-055-2012) Models and measurements with implications to understanding mechanisms

H. Jennings*, Massachusetts Institute of Technology, USA

10:40 AM**(ICC-056-2012) Cellulose Nanomaterials an Opportunity for Cements?**

R. 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**

L. Lemay*, National Ready Mixed Concrete Association, USA

Workforce Development III: International Challenges and Opportunities

Room: Erie (Level 2)

Session Chair: Martha Mecartney, University of California, Irvine

10:00 AM**Introduction: Martha Mecartney, University of California, Irvine****10:05 AM****(ICC-083-2012) Dual doctoral programs in the field of glasses and ceramics between France and USA or China**

J. Adam, X. Zhang*, Université de Rennes / CNRS, France

10:20 AM**(ICC-084-2012) Programs to Support Young Post-doctoral researchers in Japan**

F. 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)**

H. Luo, C. Ning*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

11:00 AM**(ICC-086-2012) Mentoring of Postdoctoral Scholars**

J. A. Todd*, Penn State University, USA

11:20 AM**(ICC-087-2012) Strategies to Encourage International Cooperation**

M. L. Realf*, Georgia Institute of Technology, USA

Biology and Medicine I

Room: Chicago Ballroom 10 (Level 4)

Session Chair: Masahiro Yoshimura, Tokyo Institute of Technology

10:00 AM**(ICC-022-2012) Biosilicate – a highly bioactive glass-ceramic. In vitro, in vivo and clinical tests**

E. D. Zanotto*, Federal University of Sao Carlos, Brazil

10:40 AM**(ICC-023-2012) Apatite-based Ceramics for Orthopaedic Applications**

S. M. Best*, University of Cambridge, United Kingdom

11:20 AM**(ICC-024-2012) Bioceramic Scaffolds for Tissue Engineering Applications**

K. Mallick*, University of Warwick, United Kingdom

Plenary Session VI

Room: Chicago Ballroom 6 & 7 (Level 4)

Session Chair: Kyoshi Okada, Tokyo Institute of Technology

1:30 PM**Introduction by Kyoshi Okada****1:35 PM****(ICC-008-2012) Dow Materials Innovation – Impacting the Future of Energy**

D. S. Bem*, The Dow Chemical Company, USA

2:15 PM**Break****Security and Strategic Materials II**

Room: Superior A & B (Level 2)

Session Chair: Carmen Baudin, Instituto de Cerámica y Vidrio

2:30 PM**(ICC-095-2012) Advanced Materials Research for Extreme Loading**

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

3:10 PM**(ICC-096-2012) Advanced Ceramics for National Security**

D. Freitag*, Bayside Materials Technology, USA

Environment, Energy and Transportation: Energy Production and Storage II

Room: Chicago Ballroom 8 (Level 4)

Session Chair: Juan Nino, University of Florida

2:30 PM**(ICC-048-2012) The Role of SiC Ceramics and Composites in Nuclear Energy for the Post-Fukushima Era**

Y. Katoh*, L. L. Snead, Oak Ridge National Lab, USA

3:10 PM**(ICC-049-2012) From Radiation Waste to Resource, a New Transmutation Strategy**

M. Ozawa*, Tokyo Institute of Technology, Japan

3:50 PM**(ICC-050-2012) Designed Materials for Solar Thermochemical Redox Cycling**

A. W. Weimer*, Univ Colorado, USA

Nanostructured Ceramics IV

Room: Michigan A & B (Level 2)

Session Chair: Jon Binner, Loughborough University

2:30 PM**(ICC-072-2012) Nanoceramics for new energy and piezotronics**

Z. Wang*, Georgia Institute of Technology, USA

3:10 PM**(ICC-073-2012) Materials development: Paving the way to new innovation**

A. Hardy*, Compagnie de Saint Gobain, France

3:50 PM**(ICC-074-2012) Nanostructured Ceramics and Hybrid Materials in Toyota Central R&D Labs**

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

Infrastructure II

Room: Chicago Ballroom 9 (Level 4)

Session Chair: Hamlin Jennings, Massachusetts Institute of Technology

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**

L. Barcelo*, J. Kline, Lafarge Canada Inc, Canada; G. Walenta, E. Gartner, Lafarge Research Center, France

3:10 PM**(ICC-059-2012) Sustainable concrete**
A. Tselebidis*, BASF CORP, USA**3:50 PM****(ICC-060-2012) Materials Research at the U.S. Army Engineer Research and Development Center**
T. S. Rushing*, U.S. Army ERDC, USA**Biology and Medicine II**Room: Chicago Ballroom 10 (Level 4)
Session Chair: Michael Drory, Philips Healthcare**2:30 PM****(ICC-025-2012) Nanoceramics in Dentistry**
R. 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**
C. Chaput, 3dceram, France; T. Chartier, SPCTS CNRS, France; J. Brie, CHU Limoges Hospital, France; J. Lafon*, 3dceram, France**Thursday, July 19, 2012****Environment, Energy and Transportation: Ceramics in Energy, Environment, and Transportation III**Room: Michigan A & B (Level 2)
Session Chair: Yuji Iwamoto, Nagoya Institute of Technology**8:00 AM****(ICC-051-2012) The critical role of ceramics in automotive exhaust particulate emission control**
G. G. Muntean*, M. Stewart, M. Devarakonda, PNNL, USA**8:40 AM****(ICC-052-2012) Micron-Scale Tunable Acicular Mullite Ceramics for Filtration Applications**
J. O'Brien*, M. Malanga, P. Vosejpk, C. Todd, A. Kotnis, The Dow Chemical Company, USA**Energy, Environment and Transportation: Novel Ceramics for Energy and Environmental Applications**Room: Superior A & B (Level 2)
Session Chair: Jennifer Mawdsley, Argonne National Lab**8:00 AM****(ICC-053-2012) Thin films and nanostructures for thermochromic smart window: state of the art and outlook**
M. Kanehira*, H. Luo, Y. Gao, Shanghai Institute of Ceramics, China**8:40 AM****(ICC-054-2012) THz Ceramics for Novel Applications**
S. K. Sundaram*, Alfred University, USA**Infrastructure III**Room: Chicago Ballroom 9 (Level 4)
Session Chair: Tate Coverdale, BASF**8:00 AM****(ICC-061-2012) Making super-hydrophobic building materials: static and dynamic behaviour of nanostructured surfaces**
M. Raimondo*, CNR ISTECC, Italy**8:40 AM****(ICC-062-2012) Superabsorbent polymers in Portland cement-based composites**
W. Vichit-Vadakan*, J. Siramanont, Siam Research and Innovation Co. Ltd., Thailand**Biology and Medicine III**Room: Chicago Ballroom 10 (Level 4)
Session Chair: Jose Ferreira, University of Aveiro**8:00 AM****(ICC-027-2012) Novel Biomaterials for Healthcare applications**
A. C. Khandkar*, BloXR, USA**8:40 AM****(ICC-028-2012) Strong oxide ceramics for medical applications**
M. H. Kuntz*, CeramTec GmbH, Germany**Plenary Session VII and Wrap Up Session**Room: Chicago Ballroom 6 & 7 (Level 4)
Session Chair: David Johnson, Journal of the American Ceramic Society**9:40 AM****Introduction by David W. Johnson****9:45 AM****(ICC-009-2012) New Material Opportunities from Emerging Technology**
M. Holman*, Lux Research, USA**10:40 AM****(ICC-010-2012) Report from the Workshop on Emerging Areas of Ceramics Research**
G. S. Rohrer*, Carnegie Mellon University, USA**11:10 AM****Shaping the Future of Ceramics: Wrap Up Session**
D. W. Johnson*, Journal of the American Ceramic Society, USA