

Welcome

Welcome to PACRIM 10 in Coronado!

Welcome to the 10th Pacific Rim Conference on Ceramic and Glass Technology (PACRIM 10) in the great city of Coronado! This conference is the tenth in a series of international conferences that provide a global forum for presentations and information exchange on the latest emerging ceramic and glass technologies. The conference series began in 1993, and was last organized by The American Ceramic Society in 2009, in Vancouver, British Columbia. Over the years, PACRIM conferences have established a prominent reputation for state-of-the-art presentations and information exchange on the cutting-edge ceramic and glass technologies. They have facilitated global dialogue and discussion with leading global experts, practitioners, and end-users.

The plenary session titled **“Future Energy Challenges and Opportunities for Ceramics”** features Jeff Wadsworth, President and CEO of Battelle Memorial Institute; Hong-Kyu Park, Fellow of LG Chem Battery R&D, Korea; Tomoyoshi Motohiro, Toyota Central R&D, Japan; and M. K. Badrinarayan, VP & Research Director, Inorganic and Broad-based Technologies, Corning Incorporated. The PACRIM 10 technical program covers a variety of topics that identify global challenges and opportunities for various ceramic technologies. The program fosters discussions on the future of specific fields on a global scale. It delivers a forum for knowledge exchange and facilitates new contacts from around the world. PACRIM 10 also includes the 2nd International Richard M. Fulrath Symposium on Frontiers of Ceramics for Sustainable Development.

PACRIM 10 also includes the important topics covered in the Glass and Optical Materials Division (GOMD) Annual Meeting. See the GOMD section of this program for more information. In addition, we are pleased to host the inaugural Darshana and Arun Varshneya Frontiers of Glass Science lecture, which will be given by Walter Kob, University of Montpellier 2, France, as the opening lecture of the Glass & Optical Materials Division program.

I would like to sincerely invite all of you to take advantage of this unique opportunity to visit Coronado and actively participate in this conference. We hope to provide an excellent forum for interaction and developing friendships with participants from various continents, who are involved in research, development, engineering, manufacturing, and application of ceramic and glass materials.

I hope you enjoy the conference!



Dr. H.T. Lin
Chairman, PACRIM-10
Oak Ridge National Laboratory

Table of Contents

Sponsors	3
Schedule At A Glance	5
Plenary Speakers	6
Sessions by Day	7
Symposia List	12
GOMD Annual Meeting	15
Award Lecturers	16–17
Special Events	18
Hotel Map	19
Tabletop Exhibits	20
Presenting Author List	23–30

Final Program

Monday Morning	31
Monday Afternoon	31–39
Tuesday Morning	39–45
Tuesday Afternoon	45–58
Wednesday Morning	58–65
Thursday Morning	65–72
Thursday Afternoon	72–79
Friday Morning	79–84

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Schedule At A Glance

	Time	Room
Saturday – June 1, 2013		
*Sintering of Ceramics Short Course	8:30 a.m. – 5:30 p.m.	Tudor (Victorian)
Sunday – June 2, 2013		
*Sintering of Ceramics Short Course	8:30 a.m. – 4:30 p.m.	Tudor (Victorian)
Registration and Tabletops	3 – 7 p.m.	Coronet (Victorian)
Welcome Reception	5 – 7 p.m.	Windsor Lawn
Monday – June 3, 2013		
Registration and Tabletops	7:30 a.m. – 6 p.m.	Coronet (Victorian)
PACRIM Opening Remarks & Plenary	8:45 a.m. – 12:10 p.m.	Crown (Victorian)
Lunch on own	12:10 p.m. – 1:20 p.m.	
Varshneya Frontiers of Glass Science Lecture	1:00 – 1:50 p.m.	Seabreeze (California Cabanas)
Concurrent Technical Sessions	1:20 – 6 p.m.	
GOMD General Business Meeting	6 – 7 p.m.	Seabreeze (California Cabanas)
Student Career Roundtables	6 – 7 p.m.	Empress (Grande Hall)
Tuesday – June 4, 2013		
Registration and Tabletops	7:30 a.m. – 6 p.m.	Coronet (Victorian)
George W. Morey Award Lecture	8 – 8:50 a.m.	Seabreeze (California Cabanas)
Concurrent Technical Sessions	8:30 a.m. – Noon	
Lunch on own	Noon – 1:20 p.m.	
Poster Session Set-up	1 – 4 p.m.	Ballroom (Victorian)
Norbert J. Kreidl Award Lecture	1 – 1:50 p.m.	Seabreeze (California Cabanas)
Concurrent Technical Sessions	1:20 – 6 p.m.	
Poster Session	5:30 – 8 p.m.	Ballroom (Victorian)
Wednesday – June 5, 2013		
Registration and Tabletops	7:30 a.m. – 12:30 p.m.	Coronet (Victorian)
Concurrent Technical Sessions	8:30 a.m. – Noon	
Free Afternoon	Noon	
*Fundamentals of Glass Science Short Course	1 – 5:30 p.m.	Pointe (California Cabanas)
Thursday – June 6, 2013		
Registration and Tabletops	8 a.m. – 6 p.m.	Coronet (Victorian)
Stokey Lecture of Discovery	8 – 8:50 a.m.	Seabreeze (California Cabanas)
Concurrent Technical Sessions	8:30 a.m. – Noon	
*Fundamentals of Glass Science Short Course	8:30 a.m. – 4:30 p.m.	Pointe (California Cabanas)
Lunch on own	Noon – 1:20 p.m.	
Concurrent Technical Sessions	1:20 – 6 p.m.	
Conference Dinner	7 – 9:30 p.m.	Main Beach
Friday – June 7, 2013		
Registration and Tabletops	8 a.m. – Noon	Coronet (Victorian)
Concurrent Technical Sessions	8:30 a.m. – Noon	

* Additional registration fee required.

Plenary Speakers

Plenary Speaker

Title: "The Evolving R&D Model: Driving Energy Transformation Through Advances in Materials Science"

Monday, 9:10 AM



Jeff Wadsworth

CEO of Battelle Memorial Institute

Wadsworth formerly led Battelle's Global Laboratory Operations business, where he oversaw the management or co-management of six national labs, representing more than \$3B in annual business, and the DHS's National Biodefense Analysis and Countermeasures Center. He earned his BS (1972) and PhD (1975) from Sheffield University, England. He was awarded a Doctor of Metallurgy (1991) for his published work and received an honorary Doctor of Engineering degree (2004). He has worked at Stanford University, Lockheed Missiles and Space Company, and Lawrence Livermore National Laboratory. He has authored/co-authored nearly 300 scientific papers and one book, and he has been granted 4 US patents. He holds five honorary doctorates, two honorary professorships, and is a Fellow in three technical societies. He is a member of the National Academy of Engineering.

Plenary Speaker

Title: "Research Activities for Future Challenges in Global Energy and Environment in TCRDL"

Monday, 9:50 AM



Tomoyoshi Motohiro

Toyota Central R&D, Japan

Motohiro graduated from the University of Tokyo, Japan (1976). He earned his MS in 1978 and his PhD in 1986 from UT. In the same year, he joined Toyota Central R&D Labs., Inc., Japan. After his commission as a manager, he acceded a post of senior fellow as a manager in 2007. Since 2006, he has been serving concurrently as an affiliate professor of the graduate school in Toyota Technological Institute. He is author/co-author of 99 refereed papers and 4 books. He won the R&D 100 Awards in 2000 for the development of DVD-CD compatible CD-R based on exothermic redox reaction at metal-sulfide thin film interface. He is an advisory board member in the funding program: "CREST" in Japan Science and Technological Agency; a selection committee member of XFEL facility "SACLA", Japan; and a member of Surface Science Society of Japan, Society of Automotive Engineers of Japan, Society for Science on Form, Japan and MRS.

Plenary Speaker

Title: "Glass and Ceramics for Energy Applications"

Monday, 10:50 AM



M. K. Badrinarayan

VP & Research Director, Inorganic and Broad-based Technologies, Corning Incorporated

Dr. Badrinarayan is Vice President of Inorganic and Broad-based Technologies within the Research group at Corning Incorporated. He has 15 years with the company in management positions in Inorganic Materials, Optics and Modeling.

Badrinarayan graduated from the University of Kentucky with a master's degree in physics and a doctorate in electrical engineering. Prior to working at Corning, he held several management positions in Thomson CSF and Philips Display Components. He is a member of The Optical Society of America and The American Ceramic Society.

Plenary Speaker

Title: "Technology Trend in Lithium ion Battery for Electric Vehicle and Energy Storage System Application"

Monday, 11:30 AM



Hong-Kyu Park

Fellow of LG Chem Battery R&D, Korea

Dr. Park is in charge of Battery Materials Development for LIB and beyond LIB; LIB cathode materials by research and development; and material development of LIB for automobile applications at LG Chem. He earned his PhD in Materials Science & Engineering at KAIST (1996) and completed post doc work at the Korea Atomic Energy Research Institute and Iowa State University. He is a board member of the Korea Electrochemical Society.

Sessions By Day

Session Title	Day & Date	Time	Room
2nd International Richard M. Fulrath Symposium on 'Frontiers of Ceramics for Sustainable Development'			
Ceramics for Sustainable Development I	Monday, June 3, 2013	1:20 - 5:30 PM	Crown
Ceramics for Sustainable Development II	Tuesday, June 4, 2013	8:30 AM - Noon	Crown
Ceramics for Sustainable Development III	Tuesday, June 4, 2013	1:20 - 5:10 PM	Crown
Ceramics for Sustainable Development IV	Wednesday, June 5, 2013	8:30 - 11:30 AM	Crown
Symposium 01: Advanced Characterization and Modeling of Ceramic Interfaces			
Modeling and Control of Ceramic Interfaces	Monday, June 3, 2013	1:20 - 5:40 PM	Continental
Advanced Characterization of Ceramic Interfaces	Tuesday, June 4, 2013	8:30 AM - Noon	Continental
Interface Structures and Properties in Ferroic Materials	Tuesday, June 4, 2013	1:20 - 5:10 PM	Continental
Advanced Theoretical Modeling of Ceramic Interfaces	Wednesday, June 5, 2013	8:30 AM - 12:10 PM	Continental
Symposium 02: Ceramics by Genome			
Functional Ceramics	Thursday, June 6, 2013	8:30 - 10:20 AM	Continental
Structural Ceramics	Thursday, June 6, 2013	10:20 AM - Noon	Continental
Methods in Genome Related Research	Thursday, June 6, 2013	1:20 - 3:40 PM	Continental
Surfaces, Interfaces and Glasses	Thursday, June 6, 2013	3:40 - 5:30 PM	Continental
Spectroscopy and Other Approaches in Genome Research	Friday, June 7, 2013	8:30 - 10:20 AM	Continental
Energy and Bio-ceramics	Friday, June 7, 2013	10:20 - 11:10 AM	Continental
Symposium 03: Novel, Green, and Strategic Processing and Manufacturing Technologies			
Advanced Composite and Hybrid Processes	Thursday, June 6, 2013	8:30 AM - 12:10 PM	Hanover
Design-oriented Manufacturing and Processing	Thursday, June 6, 2013	1:20 - 6:00 PM	Hanover
Novel Synthesis and Processing	Friday, June 7, 2013	8:30 - 11:50 AM	Hanover
Symposium 04: Polymer Derived Ceramics and Composites			
Chemistry of PDCs	Monday, June 3, 2013	1:20 - 3:40 PM	Garden
Chemistry and Thermodynamics of PDCs	Monday, June 3, 2013	3:40 - 6:00 PM	Garden
Modeling and Nano-Structure of PDCs	Tuesday, June 4, 2013	8:30 - 10:10 AM	Garden
Energy and Functional Applications I	Tuesday, June 4, 2013	10:10 AM - Noon	Garden
Energy and Functional Applications II	Tuesday, June 4, 2013	1:20 - 3:30 PM	Garden
Processing of PDCs: Coatings	Tuesday, June 4, 2013	3:30 - 6:00 PM	Garden
Processing of PDCs: Porous Ceramics and Membranes I	Wednesday, June 5, 2013	8:20 - 10:20 AM	Garden
Processing of PDCs: Porous Ceramics and Membranes II	Wednesday, June 5, 2013	10:20 AM - 12: 10 PM	Garden
Processing of PDCs: Fibers	Thursday, June 6, 2013	8:30 - 10:30 AM	Garden
Processing of PDCs: Composites and Nano-composites I	Thursday, June 6, 2013	10:30 - 11:50 AM	Garden
Processing of PDCs: Composites and Nano-composites II	Thursday, June 6, 2013	1:20 - 3:20 PM	Garden
Symposium 05: Advanced Powder Processing and Manufacturing Technologies			
Composite Structure Control by Powder Processing	Wednesday, June 5, 2013	8:30 - 10:20 AM	Stuart
Advanced Powder Processing for Functional Ceramics	Wednesday, June 5, 2013	10:20 - 11:50 AM	Stuart
Nano/Microstructure Control by Powder Processing I	Thursday, June 6, 2013	8:30 - 10:20 AM	Stuart
Advanced Powder Processing for Porous Ceramics	Thursday, June 6, 2013	10:20 - 11:10 AM	Stuart
Grinding and Dispersion Control	Thursday, June 6, 2013	11:10 - 11:50 AM	Stuart
Nano/Microstructure Control by Powder Processing II	Thursday, June 6, 2013	1:20 - 3:40 PM	Stuart

Sessions By Day

Nanoparticle and Powder Design and Synthesis	Thursday, June 6, 2013	3:40 - 6:00 PM	Stuart
Low Cost and Energy-saving Processing of Advanced Ceramics	Friday, June 7, 2013	8:30 - 10:20 AM	Stuart
Advanced Powder Processing for Non-oxides Ceramics	Friday, June 7, 2013	10:20 AM - Noon	Stuart

Symposium 06: Synthesis and Processing of Materials Using Electric Fields/Currents: A Symposium Honoring Prof. Zuhair Munir

Fundamentals Investigations in Current Assisted Densification I	Monday, June 3, 2013	1:20 - 5:40 PM	Hanover
Fundamentals Investigations in Current Assisted Densification II	Tuesday, June 4, 2013	8:30 - 10:30 AM	Hanover
Consolidation of Nanocrystalline Materials I	Tuesday, June 4, 2013	10:30 - 11:50 AM	Hanover
Consolidation of Nanocrystalline Materials II	Tuesday, June 4, 2013	1:20 - 3:40 PM	Hanover
Property Evaluation of Materials Processing using Electric Currents I	Tuesday, June 4, 2013	3:40 - 6:00 PM	Hanover
Property Evaluation of Materials Processing using Electric Currents II	Wednesday, June 5, 2013	8:30 - 11:50 AM	Hanover

Symposium 07: Multifunctional Metal Oxide Nanostructures and Heteroarchitectures for Energy and Device Applications

Nanomaterials for Photocatalysis, Solar Hydrogen and Thermoelectrics	Thursday, June 6, 2013	8:30 - 10:30 AM	Crown
Integration of Functional Metal Oxide Nanostructures in Sensors and Devices	Thursday, June 6, 2013	10:30 AM - Noon	Crown
Nanostructured Metal Oxides in Excitonic Solar Cells	Thursday, June 6, 2013	1:20 - 4:50 PM	Crown
Synthesis, Functionalization and Assembly of Metal Oxide Nano-materials	Friday, June 7, 2013	8:30 - 10:40 AM	Crown

Symposium 08: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications

Properties and Characterization I	Monday, June 3, 2013	1:20 - 6:10 PM	Windsor Complex
Properties and Characterization II	Tuesday, June 4, 2013	8:30 AM - Noon	Windsor Complex
Ultra High Temperature Ceramics and Composites	Tuesday, June 4, 2013	1:20 - 5:40 PM	Windsor Complex
Applications in Aeronautics, Space, Automotive, Microelectronics, Energy and Environmental Systems	Wednesday, June 5, 2013	8:30 AM - Noon	Windsor Complex
Joining and Environmental Effects	Thursday, June 6, 2013	8:30 - 11:40 AM	Windsor Complex

Symposium 09: Materials for Extreme Environments: Ultrahigh Temperature Ceramics (UHTCs) and Nanolaminated Ternary Carbides and Nitrides (MAX Phases)

Design of New Materials with Fascinating Properties	Thursday, June 6, 2013	1:20 - 3:30 PM	Windsor Complex
New Methods for Joining and Testing	Thursday, June 6, 2013	3:30 - 5:50 PM	Windsor Complex
Physical, Mechanical Properties and Oxidation Behavior	Friday, June 7, 2013	8:30 - 11:00 AM	Windsor Complex

Symposium 10: Advanced Ceramic Coatings: Processing, Properties, and Applications

Advanced Thermal and Environmental Barrier Coatings I	Thursday, June 6, 2013	8:30 AM - Noon	Tudor
Advanced Thermal and Environmental Barrier Coatings II	Thursday, June 6, 2013	1:20 - 3:20 PM	Tudor
Multifunctional Coatings, Processing and Advanced Surface Characterization	Thursday, June 6, 2013	3:20 - 5:50 PM	Tudor
Tribological, Wear- and Erosion-resistant Coatings	Friday, June 7, 2013	8:30 - 10:20 AM	Tudor
Advanced Hybrid Coatings and New Processing Methods	Friday, June 7, 2013	10:20 - 11:50 AM	Tudor

Sessions By Day

Symposium 11: Geopolymers: Low Energy, Environmentally Friendly, Inorganic Polymeric Ceramics

Processing and Characterization	Monday, June 3, 2013	1:20 - 5:00 PM	Tudor
Microstructure and Mechanical Properties	Tuesday, June 4, 2013	8:30 - 11:50 AM	Tudor

Symposium 12: Advances in Electroceramics

Fundamental and Processing of Electronic Ceramics and Oxide Thin Films	Tuesday, June 4, 2013	8:30 - 10:20 AM	Crystal
Ferroelectric Thin Films and MEMS devices	Tuesday, June 4, 2013	10:20 AM - Noon	Crystal
Advanced Processing	Tuesday, June 4, 2013	1:20 - 3:40 PM	Crystal
Fundamental and Multi-ferroic Materials and Their Applications	Tuesday, June 4, 2013	3:40 - 5:50 PM	Crystal
Nanomaterials and Composites	Wednesday, June 5, 2013	8:30 - 10:20 AM	Crystal
Dielectric Materials and Applications I	Wednesday, June 5, 2013	10:20 AM - Noon	Crystal
Piezoelectric Materials and Devices	Thursday, June 6, 2013	8:40 - 10:20 AM	Crystal
Dielectric Materials and Applications II	Thursday, June 6, 2013	10:20 AM - Noon	Crystal
Piezoelectric Materials (Lead-free I)	Thursday, June 6, 2013	1:20 - 3:40 PM	Crystal
Optical Properties and Their Applications	Thursday, June 6, 2013	3:40 - 5:50 PM	Crystal
Electrical or Magnetic Devices	Friday, June 7, 2013	8:30 - 10:40 AM	Crystal
Piezoelectric Materials (Lead-free II)	Friday, June 7, 2013	10:40 - 11:50 AM	Crystal

Symposium 13: Microwave Materials and Their Applications

Effect of Structure and Microstructure on Microwave Characteristics	Monday, June 3, 2013	1:20 - 4:40 PM	Stuart
Tunable Dielectrics for Microwave Electronics I	Monday, June 3, 2013	4:40 - 6:20 PM	Stuart
Tunable Dielectrics for Microwave Electronics II	Tuesday, June 4, 2013	8:30 - 9:50 AM	Stuart
Ceramic Materials and Technology for Microwave and Millimeter Wave Devices	Tuesday, June 4, 2013	9:50 AM - 12:10 PM	Stuart
Characterization, LTCC and Other Issues	Tuesday, June 4, 2013	1:20 - 5:30 PM	Stuart

Symposium 14: Oxide Materials for Nonvolatile Memory Technology and Applications

Oxide Materials for Nonvolatile Memory I	Tuesday, June 4, 2013	1:20 - 3:40 PM	Tudor
Oxide Materials for Nonvolatile Memory II	Tuesday, June 4, 2013	3:40 - 6:00 PM	Tudor
Oxide Materials for Nonvolatile Memory III	Wednesday, June 5, 2013	8:30 - 10:20 AM	Tudor
Oxide Materials for Nonvolatile Memory IV	Wednesday, June 5, 2013	10:20 AM - Noon	Tudor

Symposium 15: Solid Oxide Fuel Cells and Hydrogen Technology

Electrolytes	Monday, June 3, 2013	1:20 - 6:00 PM	Bayside/Strand
Electrodes	Tuesday, June 4, 2013	8:30 AM - Noon	Bayside/Strand
Stacks, Interconnects, Sealants, Hydrogen Production	Tuesday, June 4, 2013	1:20 - 6:00 PM	Bayside/Strand

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications

Oxide Thermoelectric Materials	Monday, June 3, 2013	1:20 - 3:40 PM	Coastal
High Performance Bulk Thermoelectric Materials I	Monday, June 3, 2013	3:40 - 6:00 PM	Coastal
High Performance Bulk Thermoelectric Materials II	Tuesday, June 4, 2013	8:30 - 10:20 AM	Coastal
Thermoelectric Materials: Skutterudites	Tuesday, June 4, 2013	10:20 AM - Noon	Coastal
Nanoscale and Thin Film Thermoelectric Materials I	Tuesday, June 4, 2013	1:20 - 3:40 PM	Coastal
Thermoelectric Materials: Devices, Testing, and Materials	Tuesday, June 4, 2013	3:40 - 6:00 PM	Coastal
Thermoelectric Materials: Theory, Testing and New Materials	Wednesday, June 5, 2013	8:30 - 10:20 AM	Coastal

Sessions By Day

Various Aspects of Thermoelectric Materials Research	Wednesday, June 5, 2013	10:20 AM - 12:10 PM	Coastal
Nanoscale and Thin Film Thermoelectric Materials II	Thursday, June 6, 2013	8:30 - 10:20 AM	Coastal
Oxide Thermoelectric Materials and Theory	Thursday, June 6, 2013	10:20 AM - Noon	Coastal

Symposium 17: Photovoltaic Materials and Technologies

Sensitized Solar Cell Materials and Systems I	Thursday, June 6, 2013	1:20 - 3:40 PM	Coastal
Sensitized Solar Cell Materials and Systems II	Thursday, June 6, 2013	3:40 - 6:00 PM	Coastal
Thin Films for Solar Energy Applications	Friday, June 7, 2013	8:30 - 10:20 AM	Coastal
Materials Design and Characterization for Photovoltaic Applications	Friday, June 7, 2013	10:20 AM - Noon	Coastal

Symposium 18: Ceramics for Next Generation Nuclear Energy

Silicon Carbide Technology for Nuclear Energy	Wednesday, June 5, 2013	8:30 - 10:20 AM	Pacifica/Tide
Silicon Carbide Composites for Fuel Cladding	Wednesday, June 5, 2013	10:20 - 11:50 AM	Pacifica/Tide
Material Design and Characterization	Thursday, June 6, 2013	8:30 - 10:20 AM	Pacifica/Tide
Materials and Fuels Synthesis	Thursday, June 6, 2013	10:20 - 11:40 AM	Pacifica/Tide

Symposium 19: Advances in Photocatalytic Materials for Energy and Environmental Applications

Photocatalytic Materials for Energy and Environment I	Monday, June 3, 2013	1:20 - 6:00 PM	Pacifica/Tide
Photocatalytic Materials for Energy and Environment II	Tuesday, June 4, 2013	8:30 - 11:50 AM	Pacifica/Tide
Photocatalytic Materials for Energy and Environment III	Tuesday, June 4, 2013	1:20 - 6:00 PM	Pacifica/Tide

Symposium 20: Ceramics Enabling Environmental Protection: Clean Air and Water

Ceramics Enabling Environmental Protection: Clean Air and Water	Thursday, June 6, 2013	1:20 - 6:00 PM	Pacifica/Tide
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Symposium 21: Advanced Materials and Technologies for Electrochemical Energy Storage Systems

Electrochemical Energy Storage I	Monday, June 3, 2013	1:20 - 6:00 PM	Surf
Electrochemical Energy Storage II	Tuesday, June 4, 2013	8:30 AM - Noon	Surf
Electrochemical Energy Storage III	Tuesday, June 4, 2013	1:20 - 6:00 PM	Surf
Electrochemical Energy Storage IV	Wednesday, June 5, 2013	8:30 AM - Noon	Surf

Symposium 22: Glasses and Ceramics for Nuclear and Hazardous Waste Treatment

Nuclear Waste Glass Corrosion	Monday, June 3, 2013	1:20 - 6:00 PM	Crystal
Development and Characterization of Matrices for Waste Treatment and Immobilization	Thursday, June 6, 2013	1:20 - 5:00 PM	Surf
Nuclear Waste Glass Chemistry and Vitrification	Thursday, June 6, 2013	8:40 - 11:40 AM	Surf

Joint Session Symposium 23 and 24: Bioceramics

Joint Session I	Tuesday, June 4, 2013	1:20 - 6:00 PM	Pointe
Joint Session II	Wednesday, June 5, 2013	8:00 AM - Noon	Bayside/Strand

Symposium 23: Advances in Biomineralized Ceramics, Bioceramics, and Bioinspired Designs

Mineralization Processes, Self-assembly and Organic/Inorganic Structures	Thursday, June 6, 2013	8:30 AM - Noon	Bayside/Strand
Bioinspired and Biomimetic Ceramics and Composites and New Materials	Thursday, June 6, 2013	1:20 - 5:30 PM	Bayside/Strand
Natural Ceramics and Composites	Friday, June 7, 2013	8:30 AM - 12:20 PM	Bayside/Strand

Sessions By Day

Symposium 24: Nanostructured Bioceramics and Ceramics for Biomedical Applications

Nanostructured Bioceramics I	Monday, June 3, 2013	1:20 - 6:00 PM	Pointe
Nanostructured Bioceramics II	Tuesday, June 4, 2013	8:30 AM - Noon	Pointe

GOMD Symposium A: Glass Science

Darshana and Arun Varshneya Frontiers of Glass Science Lecture	Monday, June 3, 2013	1:00 - 1:50 PM	Seabreeze
Glass Transition and Relaxation I	Monday, June 3, 2013	2:00 - 6:00 PM	Seabreeze
George W. Morey Award Lecture	Tuesday, June 4, 2013	8:00 - 8:50 AM	Seabreeze
Glass Transition and Relaxation II	Tuesday, June 4, 2013	9:00 - 10:50 AM	Seabreeze
Non-Oxide Glasses I	Tuesday, June 4, 2013	10:50 - 11:50 AM	Seabreeze
Norbert J. Kreidl Award Lecture	Tuesday, June 4, 2013	1:00 - 1:50 PM	Seabreeze
Non-Oxide Glasses II	Tuesday, June 4, 2013	2:00 - 6:00 PM	Seabreeze
Glass Structure & Properties - Novel Glass Formers	Wednesday, June 5, 2013	8:40 - 10:20 AM	Seabreeze
Glass Structure & Properties - NMR studies	Wednesday, June 5, 2013	10:20 AM - Noon	Seabreeze
Stookey Lecture of Discovery Award	Thursday, June 6, 2013	8:00 - 8:50 AM	Seabreeze
Glass Structure & Properties - Mechanical Properties	Thursday, June 6, 2013	9:00 AM - Noon	Seabreeze
Glass Structure	Thursday, June 6, 2013	1:20 - 5:40 PM	Seabreeze
Theoretical & Numerical Modeling	Friday, June 7, 2013	8:30 AM - Noon	Seabreeze
Glass Structure & Properties - Characterization	Friday, June 7, 2013	8:40 - 11:00 AM	Pacifica/Tide

GOMD Symposium B: Glass Technology and Cross-Cutting Topics

Glass Melting and Thermal Processing	Thursday, June 6, 2013	8:30 - 11:10 AM	Sunset
Glass and Ceramics for Novel Applications I	Thursday, June 6, 2013	11:10 AM - Noon	Sunset
Ultrafast Science of Glass, Ceramics, and Materials	Thursday, June 6, 2013	1:20 - 3:20 PM	Sunset
Surface Reactions and Corrosion	Thursday, June 6, 2013	3:20 - 6:00 PM	Sunset
Glass and Ceramics for Novel Applications II	Friday, June 7, 2013	8:30 - 10:20 AM	Sunset
Glass Strengthening (Chemical, Mechanical, and Thermal)	Friday, June 7, 2013	10:20 AM - Noon	Sunset

GOMD Symposium C: Glasses for Optoelectronic and Optical Applications

Glasses for Sensing	Monday, June 3, 2013	2:00 - 3:40 PM	Sunset
Photo-induced Glass Modifications	Monday, June 3, 2013	3:40 - 6:00 PM	Sunset
Glasses with Nanoparticles	Tuesday, June 4, 2013	9:00 - 10:20 AM	Sunset
Photoluminescent Materials I	Tuesday, June 4, 2013	10:20 AM - Noon	Sunset
Photoluminescent Materials II	Tuesday, June 4, 2013	2:00 - 3:40 PM	Sunset
Glass Surface Modifications and Films	Tuesday, June 4, 2013	3:40 - 6:00 PM	Sunset
Novel Optical Fibers I	Wednesday, June 5, 2013	8:30 - 10:20 AM	Sunset
Novel Optical Fibers II	Wednesday, June 5, 2013	10:20 AM - Noon	Sunset

GOMD Symposium D: James C. Phillips Honorary Symposium

Topological Constraint Theory of Glass I	Monday, June 3, 2013	2:00 - 5:50 PM	Palm
Topological Constraint Theory of Glass II	Tuesday, June 4, 2013	9:00 - 11:50 AM	Palm
Exponential Complexity in Materials Science and Biology	Tuesday, June 4, 2013	2:00 - 5:50 PM	Palm
Superconductivity	Wednesday, June 5, 2013	8:30 - 10:20 AM	Palm
Semiconductors, Pseudopotentials, and Dielectric Theory I	Wednesday, June 5, 2013	10:20 - 11:50 AM	Palm
Semiconductors, Pseudopotentials and Dielectric Theory II	Thursday, June 6, 2013	9:00 - 11:50 AM	Palm
Intermediate Phase I	Thursday, June 6, 2013	1:00 - 5:50 PM	Palm
Intermediate Phase II	Friday, June 7, 2013	8:30 AM - Noon	Palm

Symposia

PACRIM10 Program Chair: H.T. Lin, Oak Ridge National Laboratory

2nd International Richard M. Fulrath Symposium on “Frontiers of Ceramics for Sustainable Development”

Organizers: Mrityunjay Singh, Ohio Aerospace Institute, NASA Glenn Research Center, USA; N. Ichinose, Waseda University, Japan; M. Naito, Osaka University, Japan; Andrew L. Gyekenyesi, Ohio Aerospace Institute, NASA GRC, USA; Y. Imanaka, Fujitsu Corporation, Japan; N. Ohasi, National Institute of Materials Science, Japan; Roger Narayan, North Carolina State University, USA

Multi Scale Modeling and Simulation

Symposium 1: Advanced Characterization and Modeling of Ceramic Interfaces

Organizers: Naoya Shibata, The University of Tokyo, Japan; Katsuyuki Matsunaga, Nagoya University, Japan; Klaus van Benthem, University of California, Davis, USA; Albina Borisevich, Oak Ridge National Laboratory, USA; Wai-Yim Ching, University of Missouri-Kansas City, USA; Si-Young Choi, Korea Institute of Materials Science, Korea; Suk-Joong Kang, Korea Advanced Institute of Science and Technology, Korea; X.L. Ma, Institute of Metal Research, Chinese Academy of Sciences, China; Jingyang Wang, Institute of Metal Research, Chinese Academy of Sciences, China; Masahito Yoshiya, Osaka University, Japan

Symposium 2: Ceramics by Genome

Organizers: Wai-Yim Ching, University of Missouri-Kansas City, USA; Isao Tanaka, Kyoto University, Japan; Jingyang Wang, Institute of Metal Research, Chinese Academy of Sciences, China; Anil Misra, University of Kansas, USA; Masanori Kohyama, AIST, Japan; Kwang-Ryeol Lee, KIST, Korea

Innovative Processing and Manufacturing

Symposium 3: Novel, Green, and Strategic Processing and Manufacturing Technologies

Organizers: Tatsuki Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan; Mrityunjay Singh, Ohio Aerospace Institute, NASA Glenn Research Center, USA; Shaoming Dong, Shanghai Institute of Ceramics, China; Jow-Lay Huang, National Cheng Kung University, Taiwan; Hai-Doo Kim, Korea Institute of Materials Science, Korea; Eugene Medvedovski, Umicore Thin Film Products, USA; Alexander Michaelis, Fraunhofer IKTS, Germany; Lalit Kumar Sharma, Central Glass & Ceramic Research Institute, India; Richard D. Sisson, Jr., Worcester Polytechnic Institute, MA, USA; Hisayuki Suematsu, Nagaoka University of Technology, Japan; Nahum Travitzky, University of Erlangen-Nuremberg, Germany

Symposium 4: Polymer Derived Ceramics and Composites

Organizers: Paolo Colombo, University of Padova, Italy; Yigal Blum, SRI International, USA; Gian Domenico Sorarù, University of Trento, Italy; Ralf Riedel, Technical University Darmstadt, Germany; Philippe Miele, University of Montpellier 2, France; Isabel Kinski, Fraunhofer Institute for Ceramic Technologies and Systems (IKTS), Germany; Raj Bordia, University of Washington, USA; Peter Kroll, The University of Texas Arlington, USA; Yuji Iwamoto, Nagoya Institute of Technology, Japan; Dong-Pyo Kim, Pohang University of Science and Technology, Korea; Yingde Wang, National University of Defence Technology, Changsha, China

Symposium 5: Advanced Powder Processing and Manufacturing Technologies

Organizers: Makio Naito, Joining and Welding Research Institute (JWRI), Osaka University, Japan; Junichi Tatami, Yokohama National University, Japan; Lennart Bergstroem, Stockholm University, Sweden; Yuji Hotta, National Institute of Advanced Industrial Science and Technology (AIST), Japan; C. C. Huang, Hosokawa Micron Powder Systems, USA; Norifumi Isu, LIXIL Corp., Japan; Hai-Doo Kim, Korea Institute of Machinery & Materials (KIMM), Korea; Satoshi Tanaka, Nagaoka University of Technology, Japan; Tetsuo Uchikoshi, National Institute of Materials Science (NIMS), Japan; Sujanto Widjaja, Corning Incorporated, USA; Di Zhang, Shanghai Jiao Tong University, China

Symposium 6: Synthesis and Processing of Materials Using Electric Fields/Currents: A Symposium Honoring Prof. Zuhair Munir

Organizers: Javier E. Garay, University of California, CA; Manshi Ohyanagi, Ryukoku University, Japan; Eugene A. Olevsky, San Diego State University, CA; Masao Tokita, SPS SYNTEX INC, Japan

Nanotechnology and Structural Ceramics

Symposium 7: Multifunctional Metal Oxide Nanostructures and Heteroarchitectures for Energy and Device Applications

Organizers: Sanjay Mathur, University of Cologne, Germany; Taejin Huang, Korea Institute of Industrial Technology, Korea; Hidehiro Kamiya, University of Tokyo, Japan; Yasuhiro Tachibana, RMIT, Australia; Gregory Loh, A*Star, Singapore; Z. Jiao, Shanghai University, China; Jow-Lay Huang, NCKU, Taiwan; Giorgio Sberveglieri, University of Brescia, Italy

Symposium 8: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications

Organizers: Dileep Singh, Argonne National Laboratory, USA; Laifei Cheng, Northwestern Polytechnical University, China; Yi-Bing Cheng, Monash University, Australia; Shaoming Dong, Shanghai Institute of Ceramics, China; Andrew Gyekeneski, NASA Glenn Research Center, USA; Michael Halbig, NASA Glenn Research Center, USA; Wei-Hsing Tuan, National Taiwan University, Taiwan; Yutaka Kagawa, University of Tokyo, Japan; Hagen Klemm, ITRS, Dresden, Germany; Walter Krenkel, University of Bayreuth, Germany; Gregory Morscher, University of Akron, USA; Raj Tandon, Sandia National Laboratories, USA; Shanghua Wu, Guangdong University of Technology, China

Symposium 9: Materials for Extreme Environments: Ultrahigh Temperature Ceramics (UHTCs) and Nanolaminated Ternary Carbides and Nitrides (MAX Phases)

Organizers: Yanchun Zhou, Aerospace Research Institute of Material & Processing Technology, China; Jon Binner, Loughborough University, UK; Erica L. Corral, The University of Arizona, USA; Per Eklund, Linköping University, Sweden; William G. Fahrenholtz, Missouri University of Science and Technology, USA; Frederic Monteverde, Institute of Science and Technology of Ceramics-CNR, Italy; Miladin Radovic, Texas A&M University, USA; Jochen Schneider, Materials Chemistry, RWTH Aachen, Germany; Luc J Vandeperre, Imperial College London, UK; Guo-Jun Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

Symposium 10: Advanced Ceramic Coatings: Processing, Properties, and Applications

Organizers: Dongming Zhu, NASA Glenn Research Center, USA; Yutaka Kagawa, University of Tokyo, Japan; Daniel R. Mumm, University of California, Irvine, USA; Douglas E. Wolfe, The Pennsylvania State University, USA; Andi M. Limarga, United Technologies Research Center, USA; Dong-Soo Park, Korea Institute of Materials Science, Korea; Ping Xiao, University of Manchester, UK; Charles Lewinsohn, Ceramtec, Inc., USA; Byung-Koog Jang, National Institute for Materials Science, Japan; Diptiranjana Sahu, University of the Witwatersrand Johannesburg, South Africa; Kyoung Il Moon, Korea Institute of Industrial Technology, Korea

Symposium 11: Geopolymers – Low Energy, Environmentally Friendly, Inorganic Polymeric Ceramics

Organizers: Waltraud M. Kriven, University of Illinois at Urbana-Champaign, USA; Arie van Riessen, Curtin University, Australia; Dan Perera, ANSTO, Australia; Kyoshi Okada, Tokyo Institute of Technology, Japan; Wanchai Yodsudjai, Kasetsart University, Thailand; Tomas Hanzlicek, Academy of Science of the Czech Republic, Czech Republic; Ken MacKenzie, Victoria University of Wellington, New Zealand

Multifunctional Materials and Systems

Symposium 12: Advances in Electroceramics

Organizers: Jun Akedo, National Institute of Advanced Industrial Science & Technology, Japan; Yuji Noguchi, University of Tokyo, Japan; David Cann, Oregon State University, USA; Paul Murali, Materials Institute EPFL, Switzerland; Sang Sub Kim, Inha University, Korea; Haosu Luo, Chinese Academy of Science, China; Ling-bing Kong, Nanyang Technological University of Singapore, Malaysia

Symposium 13: Microwave Materials and Their Applications

Organizers: Xiang Ming Chen, Zhejiang University, China; Robert Freer, University of Manchester, UK; David Cruikshank, Skyworks, USA; Danilo Suvorov, Jozef Stefan Institute, Slovenia; Heli Jantunen, University of Oulu, Finland; Eung Soo Kim, Kyonggi University, Republic of Korea; Mailadil T. Sebastian, National Institute for Interdisciplinary Science and Technology, India; Takeshi Shimada, Hitachi Metals, Ltd., Japan; Rick Uvic, Boise State University, USA; Hitoshi Ohsato, Nagoya Institute of Technology, Japan; Hong Wang, Xi'an Jiaotong University, China

Symposium 14: Oxide Materials for Nonvolatile Memory Technology and Applications

Organizers: Tseung-Yuen Tseng, National Chiao Tung University, Taiwan; Ryuji Ohba, Toshiba Corporation, Japan; Daniele Ielmini, Politecnico di Milano, Italy; I-Wei Chen, University of Pennsylvania, USA; Jean-Pierre Leburton, University of Illinois at Urbana-Champaign, USA; Fu-Liang Yang, National Nano Device Laboratories, Taiwan; Ming Liu, Chinese Academy of Sciences, China

Ceramics for Energy and Environment

Symposium 15: Solid Oxide Fuel Cells and Hydrogen Technology

Organizers: Fatih Dogan, Missouri University of Science and Technology, USA; Masanobu Awano, National Institute of Advanced Industrial Science and Technology, Japan; Mogens B. Mogensen, Technical University of Denmark, Denmark; Alexander Michaelis, Fraunhofer Institute of Ceramic Technologies and Systems (IKTS), Germany; Jooho Moon, Yonsei University, Korea; Sea-Fue Wang, National Taipei University of Technology, Taiwan

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications

Organizers: Terry M. Tritt, Clemson University, USA; Kunihiro Koumoto, Nagoya University, Japan; T. J. Zhu, Zhejiang University, China; Chan Park, Seoul National University, Korea; Sidney Lin, Lamar University, USA

Symposia

Symposium 17: Photovoltaic Materials and Technologies

Organizers: Tohru Sekino, Tohoku University, Japan; Yoshikazu Suzuki, Tsukuba University, Japan; Udo Bach, Monash University, Australia; Yi-Bing Cheng, Monash University, Australia; Nam-Gyu Park, Sungkyunkwan University, Korea; Shinobu Fujihara, Keio University, Japan; Yanfeng Gao, Shanghai Institute of Ceramics, China; Jyh-Ming Ting, National Cheng Kung University, Taiwan; Young-Ho Choa, Hanyang University, Korea; Michael Scheffler, Brandenburg Technical University of Cottbus, Germany; Franziska Scheffler, Bavarian Center for Applied Energy Research, Germany

Symposium 18: Ceramics for Next Generation Nuclear Energy

Organizers: Yutai Katoh, Oak Ridge National Laboratory, USA; Charles Henager, Pacific Northwest National Laboratory, USA; Akira Kohyama, Muroran Institute of Technology, Japan; Christina Back, General Atomics, USA; Shannon Bragg-Sitton, Idaho National Laboratory, USA; Yi-Bing Cheng, Monash University, Australia; Shaoming Dong, Shanghai Institute of Ceramics, CAS, China; Michael Jenkins, Fresno State University, USA; Ji-Jung Kai, National Tsing Hua University, Taiwan; Fumihisa Kano, Toshiba Corporation, Japan; Ji Yeon Park, Korea Atomic Energy Research Institute, Korea; Shuming Peng, Institute of Nuclear Physics and Chemistry, China; Lance Snead, Oak Ridge National Laboratory, USA; Toyohiko Yano, Tokyo Institute of Technology, Japan

Symposium 19: Advances in Photocatalytic Materials for Energy and Environmental Applications

Organizers: Lianzhou Wang, The University of Queensland, Australia; Xiaobo Chen, University of Missouri—Kansas City, USA; Seong-Ju Hwang, Ewha Womans University, Korea; Gongxuan Lu, Lanzhou Institute of Chemical Physics, China; Lionel Vayssieres, National Institute for Materials Science, Japan; Michael Wark, Ruhr University Bochum, Germany; Songyuan Dai, Institute of Plasma Physics, China

Symposium 20: Ceramics Enabling Environmental Protection: Clean Air and Water

Organizers: Aleksander J. Pyzik, The Dow Chemical Company, USA; Michael J. Lance, Oak Ridge National Laboratory, USA; Hai-Doo Kim, Korea Institute of Materials Science, Korea; Hasan Mandal, Sabanci University, Turkey; Louis Winnubst, University of Twente, Netherlands; Yuji Iwamoto, Nagoya Institute of Technology, Japan; Kevin Plucknett, Dalhousie University, Canada

Symposium 21: Advanced Materials and Technologies for Electrochemical Energy Storage Systems

Organizers: Ilias Belharouak, Argonne National Laboratory, USA; Palani Balaya, National University of Singapore, Singapore; Sung-Yoon Chung, Inha University, Korea; Yoshio Ukyo, Toyota, Japan; She-Huang Wu, Tatung University, Taiwan

Symposium 22: Glasses and Ceramics for Nuclear and Hazardous Waste Treatment

Organizers: Aldo R. Boccaccini, University of Erlangen-Nuremberg, Germany; James Marra, Savannah River National Laboratory, USA; Russell Hand, University of Sheffield, UK; Bill Lee, Imperial College London, UK; John Vienna, Pacific Northwest National Laboratory, USA

Ceramics in Biology, Medicine, and Human Health

Symposium 23: Advances in Biomineralized Ceramics, Bioceramics, and Bioinspired Designs

Organizers: Po-Yu Chen, National Tsing Hua University, Taiwan, ROC; Laurie Gower, University of Florida, USA; Joanna McKittrick, University of California, USA; Rizhi Wang, University of British Columbia, Canada; Hyoun-Ee Kim, Seoul National University, Korea

Symposium 24: Nanostructured Bioceramics and Ceramics for Biomedical Applications

Organizers: Roger J. Narayan, University of North Carolina and North Carolina State University, USA; Min Wang, The University of Hong Kong; Markus Reiterer, Medtronic, USA; Suwan Jayasinghe, University College London, United Kingdom; Chikara Ohtsuki, Nagoya University, Japan; Akiyoshi Osaka, Okayama University, Japan; Rizhi Wang, University of British Columbia, Canada

2013 Glass and Optical Materials Division Annual Meeting

SYMPOSIUM A: Glass Science

Organizers: Jincheng Du, University of North Texas, USA; Pierre Lucas, University of Arizona, USA; Kostya Trachenko, Queen Mary's College, UK; John McCloy, Pacific Northwest National Laboratory, USA

SYMPOSIUM B: Glass Technology and Cross-Cutting Topics

Organizers: Kelly Simmons-Potter, University of Arizona, USA; Steve W. Martin, University of Iowa, USA; S. K. Sundaram, Alfred University, USA

SYMPOSIUM C: Glasses for Optoelectronic and Optical Applications

Organizers: Mark Davis, Schott, USA; Norman Anheier, PNNL, USA; Kathleen Richardson, Clemson University, USA; John Ballato, Clemson University, USA; Hideo Hosono, Tokyo Institute of Technology, Japan; Heike Ebendorff-Heidepriem, University of Adelaide, Australia

SYMPOSIUM D: James C. Phillips Honorary Symposium

Organizers: John C. Mauro, Corning Incorporated, USA; Punit Boolchand, University of Cincinnati, USA; Matthieu Micoulaut, Université Pierre et Marie Curie, France

GOMD 2013 Annual Meeting

Welcome to the 2013 Glass & Optical Materials Division Annual Meeting, which we are glad to have as part of PACRIM10! We have a record-setting number of talks and posters this year presented by leading glass science researchers, from industry, governmental laboratories, and academic institutions from around the world. Divided into four broad symposia: Glass Science, Optical Materials and Devices, Cross-Cutting Topics, and the James C. Phillips Honorary Symposium; you will find talks covering the latest advances in glass science, the technology of optical materials, and a focused examination of the nature and properties of the amorphous state.

Several special activities have been planned in addition to the outstanding technical program:

- Renew acquaintances and get to know new faces within the GOMD community during the Welcome Reception held on Sunday from 5 to 7 pm.
- Special Award Lectures: The inaugural Darshana and Arun Varshneya Frontiers of Glass Science lecture (Monday afternoon), the George W. Morey Award (Tuesday morning), the Norbert J. Kreidl Award (Tuesday afternoon) and the Stookey Lecture of Discovery Award (Thursday morning), feature exceptional lectures by the honorees.
- Continue your learning experience by attending the Poster Session on Tuesday evening, with detailed technical presentations.
- GOMD attendees are invited to be our guests and continue networking with their colleagues during the conference dinner on Thursday evening on the Main Beach at the Hotel Del Coronado. This event is included in your conference registration fee.

Prior to the conference, “Sintering of Ceramics” short course will be taught by Dr. Len Rahaman of Missouri University of Science and Technology. During the conference get a primer on glass science by attending the “Fundamentals of Glass Science and Technology” short course taught by Dr. Arun Varshneya of Saxon Glass Technologies. A separate registration fee is required to attend these courses.

Special thanks go to our sponsors including PPG Industries, Inc. for sponsoring the George W. Morey Award, Coe College and Corning Incorporated for sponsoring the Stookey Lecture of Discovery Award, SCHOTT North America for sponsoring refreshments for the Norbert J. Kreidl Award, and *Journal of Non-Crystalline Solids* for the Poster Session. We also thank the *International Journal of Applied Glass Science*, UBE, Battelle, Shanghai Institute of Ceramics, Chaozhouthree-Circle (Group) Co., LTD, Duckseong Green Tech, Geniatech Inc., Northwestern Polytechnical University, The University of Tokyo, and GMIC for their generous support.

The American Ceramic Society and the Glass & Optical Materials Division thank you for participating in this year’s meeting.



2013 GOMD Program Chair:
John McCloy
Pacific Northwest National Laboratory

Varshneya Award Lecturer

Darshana and Arun Varshneya Frontiers of Glass Science Lecture

Title: "The Properties of Glassforming Systems at the Kauzmann Temperature"

Monday, 1:00 PM



Walter Kob

Full Professor, Department of Physics,
University of Montpellier 2, France

Kob earned his diploma in Theoretical Condensed Matter Physics, Universität Basel, Switzerland in 1985 and his PhD in Theoretical Condensed Matter Physics (magna cum laude), Universität Basel in 1989 and his Habilitation in Theoretical Condensed Matter Physics, Universität Mainz, Germany in 1997. He has been a full professor since 2003. Previously, Kob was an associate professor conducting research in statistical mechanical properties of disordered systems (supercooled liquids, glasses, Potts-glasses, oxide glasses). He held an assistant professor position in Professor Kurt Binder's group at Universität Mainz for six years. Among his many achievements, Kob was the 2011 recipient of the Ivan Pechés Award of the French Academy of Science and the 2007 recipient of the Otto Schott Research Award for "Outstanding research achievements in glass science." He has more than 170 publications, including one textbook, and more than 7400 citations.

Glass & Optical Materials Division Officers

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call for papers

DGG-ACerS GOMD 2014

Aachen, Germany • May 25–30, 2014

The German Society of Glass Technology and The American Ceramic Society announce a call for papers for the 88th DGG annual meeting and GOMD 2014, together with the 10th International Conference on Advances in Fusion and Processing of Glass (AFPG) and the 2nd International Glass Fiber Symposium.

Submit your 200-word abstract by September 30, 2013.

Points of contact:

Steve W. Martin, Iowa State University of Science & Technology, Ames, IA, swmartin@iastate.edu
Gang Chen, Ohio University, Athens, OH, cheng3@ohio.edu

www.dgg-gomd.org



GOMD Award Lectures

Tuesday, June 4 at 8 a.m. – Seabreeze (California Cabanas)

The GOMD **George W. Morey Award** recognizes new and original work in the field of glass science and technology. The criteria for winning the award is excellence in publication of work, either experimental or theoretical, done by an individual.

**Award Winner: Denise M. Krol, Professor,
Department of Chemical Engineering and Materials Science,
University of California, Davis, USA
Lecture Title: “Focus> and Flash!
Changing the structure of glass with light”
Sponsored by PPG Industries Inc.**

Tuesday, June 4 at 1 p.m. – Seabreeze (California Cabanas)

The GOMD **Norbert J. Kreidl Award for Young Scholars** recognizes excellence in research by graduate students in the fields of glass and optical materials. Dr. Kreidl’s lifelong mission was to enhance the education, achievement and advancement of young people.

**Award Winner: Lina Ma, PhD Student,
Missouri University of Science & Technology, USA
Lecture Title: “Structural Study of Na₂O-FeO-Fe₂O₃-P₂O₅ Glasses
by HPLC and Raman Spectroscopy”
Refreshments* sponsored by SCHOTT North America Inc.**

*Note: Light refreshments will be available at no cost on a first come, first served basis to attendees of the Kreidl Award Lecture.

Thursday, June 6 at 8 a.m. – Seabreeze (California Cabanas)

The GOMD **Stookey Lecture of Discovery**, named in honor of materials pioneer Dr. S. Donald Stookey, recognizes an individual's lifetime of innovative exploratory work or noteworthy contributions of outstanding research on new materials, phenomena, or processes involving glass, that have commercial significance or the potential for commercial impact.

**Award Winner: G. Clinton Shay, Retired Consultant,
Corning Incorporated, USA
Lecture Title: “The Torturous Path of the Fusion Sheet Process Development”
Sponsored by Corning Incorporated and Coe College**

Special Events



PACRIM Student Activity: Career Discussion Roundtables

Students attending PACRIM are invited to an informal group discussion with industry, national laboratory and academic professionals. This is a chance for students to ask questions of professionals in a casual environment on a number of diverse topics (work-life balance, career opportunities, etc.). The career professionals will rotate every 15 minutes so students will get a chance to have candid discussions with several professionals during this session. Light refreshments will be served.

The roundtable discussions will take place on **Monday, June 3rd from 6:00-7:00 pm** at the Hotel Del Coronado, Empress Room (Grande Hall).

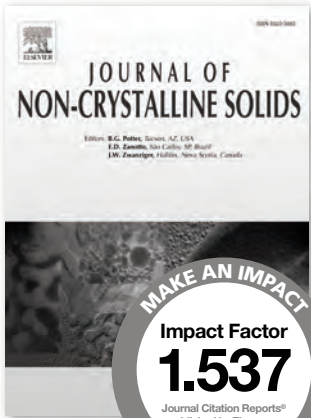
Pre-registration was required for this event. If you did not pre-register and wish to attend, check with ACerS staff at the meeting to see if there are any open seats left.

The event is organized by the ACerS Ceramic Education Council (CEC) and the President's Council of Student Advisors (PCSA).



JOURNAL OF NON-CRYSTALLINE SOLIDS

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MEET THE EDITORS:

B. G. Potter
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Universidade Federal de São Carlos, Vitreous Materials Lab,
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Email: dedz@ufscar.br

J.W. Zwanziger
Dept. of Chemistry, Dalhousie University,
Halifax, B3H 4J3, Canada
Email: jzwanzig@gmail.com

TIME & DATE:
Tuesday, June 4, 2013
5:30-8:00 pm

LOCATION:
Ballroom (poster session room)

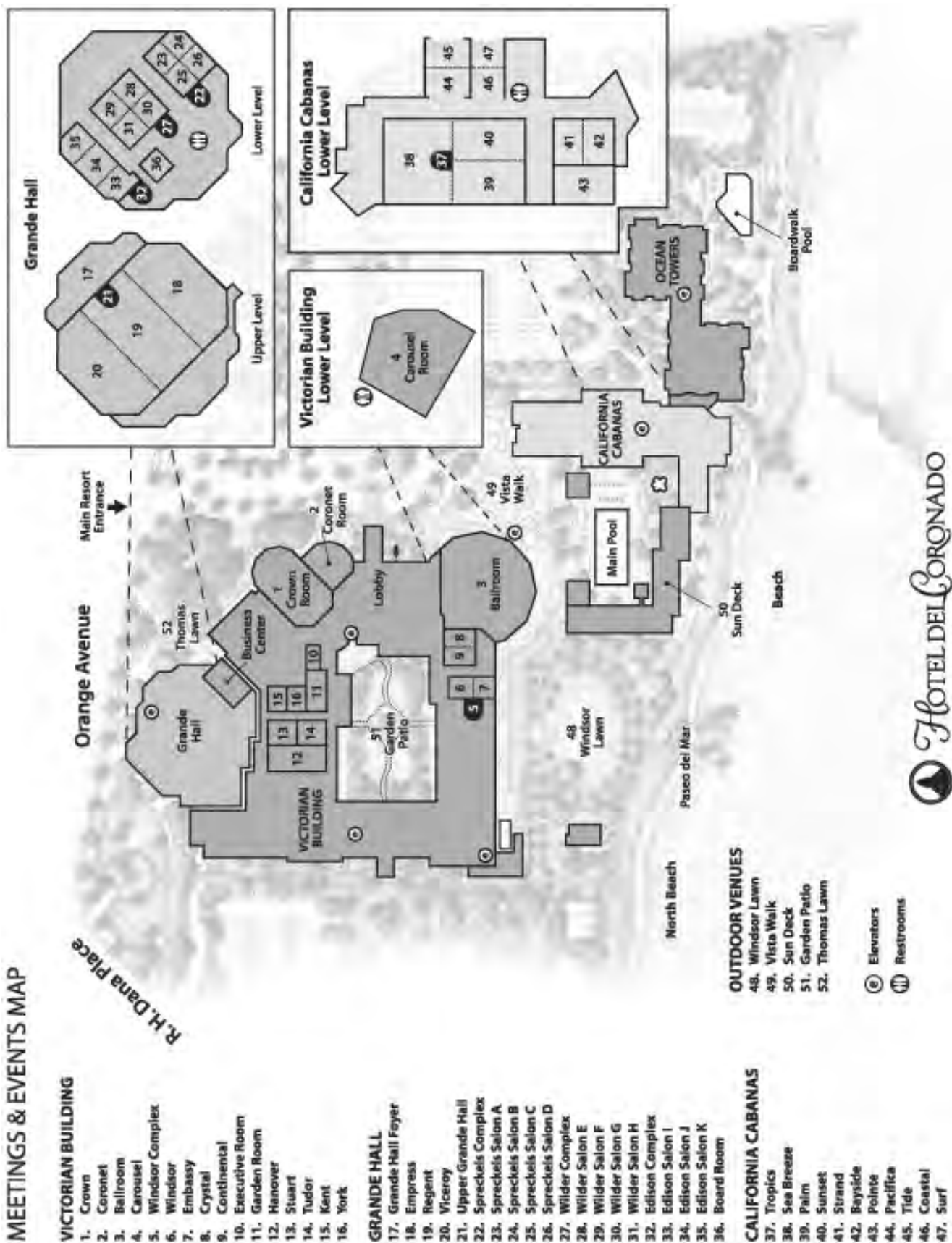
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Hotel Del Coronado Property Map



Exhibitors

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ACerS Event Calendar



June 19–20, 2013
NSF Ceramic Materials PI Workshop
Arlington, Virginia, USA
www.ceramics.org/nsfworkshop

July 8–10, 2013
Cements Division Annual Meeting (Cements 2013)
Urbana, Illinois, USA
www.ceramics.org/cements2013

July 28–August 1, 2013
Materials Challenges in Alternative and Renewable Energy (MCARE 2013)
Dunhuang, China
mcare2013-dunhuang.dconference.cn

August 4–7, 2013
12th International Conference on Ceramic Processing Science (ICCPs-12)
Portland, Oregon, USA
www.ceramics.org/iccps12

September 10–13, 2013
UNITECR 2013
Victoria, British Columbia, Canada
www.unitecr2013.org

October 14–17, 2013
74th Conference on Glass Problems
Columbus, Ohio, USA
www.glassproblemsconference.org

October 27–31, 2013
MS&T'13 and ACerS 115th Annual Meeting
Montréal, Québec, Canada
www.matscitech.org

January 22–24, 2014
Electronic Materials and Applications (EMA 2014)
Orlando, Florida, USA
www.ceramics.org/ema2014

January 26–31, 2014
38th International Conference and Expo on Advanced Ceramics and Composites (ICACC'14)
Daytona Beach, Florida, USA
www.ceramics.org/icacc2014

February 16–20, 2014
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Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
A					Chang, C.	4-Jun	2:40PM	Tudor	48
Abe, H.	6-Jun	10:50AM	Stuart	66	Chang, C.	5-Jun	10:50AM	Surf	62
Abouimrane, A.	4-Jun	4:10PM	Surf	50	Chang, R.P.	6-Jun	1:20PM	Coastal	75
Abraham, D.	4-Jun	8:30AM	Surf	43	Chaysuwan, D.	4-Jun	10:20AM	Tudor	41
Aitken, B.	5-Jun	9:00AM	Seabreeze	63	Chelikkowsky, J.	4-Jun	5:20PM	Palm	53
Akedo, J.	4-Jun	3:00PM	Crystal	47	Chen, C.	3-Jun	2:20PM	Windsor Complex	32
Akhtar, F.	6-Jun	10:20AM	Stuart	66	Chen, C.	4-Jun	9:00AM	Stuart	41
Alberga, M.	6-Jun	9:00AM	Crown	67	Chen, F.	3-Jun	2:40PM	Windsor Complex	32
Alshareef, H.	4-Jun	1:50PM	Coastal	49	Chen, G.	4-Jun	4:50PM	Palm	53
Angeli, F.	5-Jun	10:20AM	Seabreeze	64	Chen, P.	7-Jun	9:50AM	Bayside/Strand	82
Arreguin, S.	5-Jun	9:20AM	Garden	59	Chen, W.	3-Jun	3:00PM	Windsor Complex	33
Aryal, S.	7-Jun	9:20AM	Continental	79	Chen, Z.	4-Jun	10:20AM	Surf	43
Atchison, J.	5-Jun	8:30AM	Garden	59	Cheng, K.	4-Jun	3:50PM	Pointe	51
Awano, M.	4-Jun	8:30AM	Bayside/Strand	42	Cheng, L.	5-Jun	9:20AM	Crystal	61
B					Cheng, L.	6-Jun	4:50PM	Windsor Complex	74
Babonneau, F.	3-Jun	4:00PM	Pointe	37	Cheng, X.	6-Jun	10:50AM	Continental	65
Babonneau, F.	6-Jun	10:20AM	Bayside/Strand	70	Cheng, X.	6-Jun	3:40PM	Sunset	78
Badrinarayan, M.K.	3-Jun	10:50AM	Crown	31	Cheng, Y.	4-Jun	1:50PM	Windsor Complex	47
Balachandran, U.	5-Jun	10:20AM	Crystal	61	Cheng, Y.	6-Jun	1:50PM	Coastal	75
Balaya, P.	4-Jun	2:40PM	Surf	50	Cherifi, A.	4-Jun	4:00PM	Bayside/Strand	49
Ballato, J.	4-Jun	9:20AM	Sunset	45	Ching, W.	5-Jun	8:30AM	Continental	58
Ballato, J.	5-Jun	8:30AM	Sunset	64	Ching, W.	6-Jun	10:20AM	Continental	65
Ballato, J.	5-Jun	9:00AM	Sunset	64	Ching, W.	6-Jun	5:10PM	Continental	72
Bao, D.	4-Jun	5:00PM	Tudor	49	Cho, G.	7-Jun	11:10AM	Hanover	80
Bauchy, M.	7-Jun	9:30AM	Palm	84	Cho, S.	4-Jun	8:30AM	Tudor	40
Bechelany, M.	6-Jun	3:00PM	Garden	72	Choi, B.	4-Jun	2:20PM	Stuart	48
Bell, L.E.	5-Jun	10:20AM	Coastal	61	Choi, S.	4-Jun	4:20PM	Continental	46
Belmonte, M.	5-Jun	11:10AM	Hanover	60	Chou, P.	6-Jun	4:20PM	Bayside/Strand	77
Belmonte, M.	6-Jun	9:10AM	Hanover	65	Chu, J.P.	4-Jun	1:50PM	Tudor	48
Bernard-Granger, G.	4-Jun	2:50PM	Hanover	46	Chubynsky, M.V.	6-Jun	4:20PM	Palm	79
Bernard, F.	4-Jun	1:20PM	Hanover	46	Clark, B.M.	6-Jun	2:00PM	Surf	77
Bernard, F.	4-Jun	10:10AM	Hanover	40	Cohen, M.L.	5-Jun	10:20AM	Palm	65
Bernard, S.	3-Jun	4:30PM	Garden	32	Colombo, P.	4-Jun	2:10PM	Garden	46
Bernholz, J.	6-Jun	10:50AM	Palm	71	Colombo, P.	5-Jun	9:00AM	Garden	59
Bernik, S.	3-Jun	3:00PM	Coastal	34	Colombo, P.	6-Jun	8:50AM	Garden	66
Bezold, A.	6-Jun	9:20AM	Windsor Complex	67	Combes, C.	4-Jun	1:20PM	Pointe	51
Bhatt, R.T.	4-Jun	4:40PM	Windsor Complex	47	Compson, C.	6-Jun	2:10PM	Stuart	73
Bian, J.	3-Jun	3:10PM	Stuart	33	Conradt, R.	6-Jun	10:40AM	Seabreeze	70
Bianconi, A.	5-Jun	9:30AM	Palm	64	Cornu, D.	6-Jun	4:40PM	Pacifica/Tide	76
Bignozzi, M.C.	4-Jun	10:50AM	Tudor	41	Cruickshank, D.B.	4-Jun	11:20AM	Stuart	41
Bischoff, C.	4-Jun	11:30AM	Seabreeze	44	D				
Bizios, R.	3-Jun	2:20PM	Pointe	36	Daivis, P.	3-Jun	3:40PM	Seabreeze	38
Blum, Y.	3-Jun	1:50PM	Garden	31	Damjanovic, D.	4-Jun	10:50AM	Crystal	41
Boccaccini, A.	4-Jun	9:30AM	Pointe	43	Dandeneau, C.	3-Jun	2:20PM	Coastal	34
Boccaccini, A.	6-Jun	3:40PM	Surf	77	Day, D.E.	6-Jun	2:40PM	Bayside/Strand	77
Bonhomme, C.	3-Jun	1:20PM	Pointe	36	de Sousa, J.S.	5-Jun	9:00AM	Tudor	61
Bonhomme, C.	5-Jun	10:50AM	Continental	58	DeBusk, M.M.	6-Jun	1:50PM	Pacifica/Tide	76
Bonhomme, C.	5-Jun	11:20AM	Seabreeze	64	Deck, C.	5-Jun	9:00AM	Pacifica/Tide	62
Boolchand, P.	3-Jun	2:00PM	Palm	38	Dehkordi, A.	6-Jun	11:20AM	Coastal	68
Boolchand, P.	6-Jun	1:00PM	Palm	78	Dejneka, M.	7-Jun	10:20AM	Sunset	83
Borisevich, A.	4-Jun	1:50PM	Continental	45	Dharmawardhana, C.C.	6-Jun	11:40AM	Continental	65
Boussard-Plédel, C.	5-Jun	11:00AM	Sunset	64	DiAntonio, C.	5-Jun	10:50AM	Stuart	59
Bradt, R.	4-Jun	9:30AM	Crown	44	Ding, Y.	4-Jun	9:00AM	Windsor Complex	40
Braun, H.	4-Jun	10:40AM	Stuart	41	Doeff, M.	4-Jun	3:40PM	Surf	50
Braun, J.	5-Jun	8:30AM	Pacifica/Tide	62	Dogan, F.	4-Jun	10:50AM	Bayside/Strand	42
Breede, F.	5-Jun	9:00AM	Windsor Complex	60	Dollé, M.	5-Jun	9:00AM	Surf	62
Brogli, G.	4-Jun	2:20PM	Tudor	48	Dong, S.	4-Jun	8:30AM	Windsor Complex	40
Brogli, G.	6-Jun	4:40PM	Seabreeze	78	Dong, Y.	6-Jun	3:20PM	Tudor	74
Brown-Shaklee, H.J.	6-Jun	10:20AM	Crystal	68	Downs, J.	3-Jun	3:40PM	Hanover	32
Buggakupta, W.	6-Jun	5:00PM	Hanover	72	Du, J.	5-Jun	11:30AM	Continental	58
Bureau, B.	4-Jun	2:50PM	Seabreeze	52	Du, P.	3-Jun	5:30PM	Stuart	34
C					Du, P.	4-Jun	8:30AM	Stuart	41
Cahyanto, A.	5-Jun	8:50AM	Bayside/Strand	63	Dupuy, A.D.	3-Jun	5:00PM	Hanover	32
Cao, W.	3-Jun	4:10PM	Pacifica/Tide	35	E				
Cardinal, T.	3-Jun	4:10PM	Sunset	38	Ebendorff-Heidepriem, H.	5-Jun	10:40AM	Sunset	64
Carney, C.	6-Jun	10:00AM	Garden	66	Ebert, W.L.	3-Jun	1:40PM	Crystal	36
Chaim, R.	4-Jun	9:20AM	Hanover	40	Ebert, W.L.	3-Jun	2:00PM	Crystal	36
Chakraborty, S.	7-Jun	10:20AM	Palm	84	Edwards, T.	4-Jun	10:50AM	Seabreeze	44
Chambliss, K.	7-Jun	10:40AM	Sunset	83	Egami, T.	3-Jun	4:30PM	Seabreeze	38
					Elhadj, S.	4-Jun	5:20PM	Sunset	53

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Elissalde, C.	4-Jun	5:20PM	Hanover	47	Hamasaki, Y.	7-Jun	10:00AM	Crown	80
Endo, J.	6-Jun	10:20AM	Seabreeze	70	Han, L.	6-Jun	2:30PM	Crown	73
Estournès, C.	3-Jun	4:40PM	Hanover	32	Han, L.	6-Jun	9:50AM	Crown	67
Estournès, C.	4-Jun	5:00PM	Hanover	47	Han, S.	6-Jun	9:30AM	Continental	65
F					Haneda, H.	3-Jun	1:50PM	Crown	37
Fan, S.	6-Jun	10:40AM	Windsor Complex	67	Hapis, S.	3-Jun	5:00PM	Garden	32
Fan, T.	6-Jun	4:40PM	Bayside/Strand	77	Hardin, C.	4-Jun	2:30PM	Hanover	46
Feller, S.	5-Jun	8:40AM	Seabreeze	63	Harrington, G.J.	7-Jun	8:50AM	Windsor Complex	81
Ferlat, G.	3-Jun	4:50PM	Palm	38	Harrison, M.	3-Jun	4:40PM	Crystal	36
Fey, T.	5-Jun	10:20AM	Garden	59	Hashimoto, S.	6-Jun	5:40PM	Pacifica/Tide	76
Fey, T.	5-Jun	9:40AM	Garden	59	Hay, R.	4-Jun	11:20AM	Windsor Complex	40
Florea, C.M.	4-Jun	4:10PM	Sunset	53	Hayase, S.	6-Jun	3:00PM	Crown	73
Florea, C.M.	6-Jun	4:00PM	Tudor	74	He, J.	3-Jun	3:00PM	Garden	31
Flores, O.	6-Jun	9:10AM	Garden	66	He, J.	4-Jun	2:20PM	Coastal	49
Fong, A.	5-Jun	9:00AM	Hanover	60	Hellmann, K.	6-Jun	9:00AM	Seabreeze	70
Fortner, J.A.	3-Jun	2:20PM	Crystal	36	Hemmer, E.	4-Jun	2:10PM	Pointe	51
Fotheringham, U.	4-Jun	4:10PM	Stuart	48	Heo, J.	4-Jun	9:00AM	Sunset	45
Friederich, A.	3-Jun	5:10PM	Stuart	34	Hermansen, C.	4-Jun	10:20AM	Palm	45
Fu, C.	4-Jun	4:30PM	Coastal	50	Higgins, B.	6-Jun	4:20PM	Surf	77
Fu, M.	3-Jun	4:10PM	Stuart	33	Hinuma, Y.	6-Jun	2:20PM	Continental	71
Fu, Q.	7-Jun	9:20AM	Sunset	83	Hiraga, T.	4-Jun	2:20PM	Crown	51
Fukushima, M.	6-Jun	2:50PM	Stuart	73	Hirata, Y.	3-Jun	4:30PM	Crown	37
Fukushima, M.	7-Jun	8:50AM	Hanover	79	Hirose, S.	5-Jun	10:50AM	Crown	63
Funabiki, F.	6-Jun	1:40PM	Seabreeze	77	Ho, C.	5-Jun	9:40AM	Pacifica/Tide	62
G					Ho, S.	6-Jun	4:10PM	Coastal	76
Gaberscek, M.	5-Jun	11:20AM	Surf	62	Ho, W.	4-Jun	4:40PM	Hanover	47
Gao, J.	3-Jun	3:00PM	Continental	31	Hoffmann, M.J.	3-Jun	1:50PM	Continental	31
Gao, L.	4-Jun	4:20PM	Windsor Complex	47	Honda, S.	6-Jun	4:20PM	Pacifica/Tide	76
Gao, L.	6-Jun	1:20PM	Hanover	72	Honma, T.	6-Jun	5:00PM	Sunset	78
Gao, M.	3-Jun	3:40PM	Windsor Complex	33	Hotta, Y.	6-Jun	11:10AM	Stuart	66
Gao, Y.	7-Jun	9:00AM	Coastal	82	Hsu, J.	4-Jun	5:20PM	Bayside/Strand	49
Garay, J.E.	4-Jun	9:00AM	Hanover	40	Hu, L.	4-Jun	3:50PM	Pacifica/Tide	50
Garcia, V.	5-Jun	9:30AM	Tudor	61	Huang, C.	4-Jun	4:10PM	Tudor	49
Garrahan, J.P.	3-Jun	2:00PM	Seabreeze	37	Huang, C.	6-Jun	8:30AM	Stuart	66
George, J.	7-Jun	9:00AM	Pacifica/Tide	83	Huang, J.	4-Jun	11:40AM	Surf	43
Ghussn, L.	6-Jun	4:00PM	Seabreeze	78	Huang, J.	5-Jun	9:30AM	Surf	62
Gibson, D.	5-Jun	11:40AM	Sunset	64	Huang, K.	4-Jun	10:20AM	Bayside/Strand	42
Gin, S.	3-Jun	1:20PM	Crystal	36	Huang, L.	6-Jun	4:40PM	Continental	71
Giuntini, D.	3-Jun	4:00PM	Hanover	32	Huang, L.	7-Jun	9:20AM	Pacifica/Tide	83
Glad, B.E.	3-Jun	1:20PM	Tudor	33	Huang, S.	5-Jun	9:50AM	Bayside/Strand	63
Glebova, L.	5-Jun	10:20AM	Sunset	64	Huang, T.	3-Jun	4:00PM	Bayside/Strand	34
Glinsek, S.	4-Jun	2:40PM	Crystal	47	Huey, B.D.	3-Jun	4:40PM	Sunset	38
Glushenkov, A.M.	3-Jun	1:50PM	Surf	35	Huey, B.D.	4-Jun	3:00PM	Tudor	48
Goel, A.	4-Jun	3:00PM	Bayside/Strand	49	Huey, B.D.	4-Jun	4:10PM	Crystal	48
Goel, A.	5-Jun	9:20AM	Sunset	64	Huey, B.D.	4-Jun	4:50PM	Pacifica/Tide	50
Goel, A.	6-Jun	11:20AM	Sunset	71	Hwang, B.	3-Jun	3:00PM	Surf	35
Goetschius, K.	4-Jun	9:30AM	Seabreeze	44	Hwang, J.	4-Jun	9:30AM	Continental	39
Gogia, B.	6-Jun	9:10AM	Tudor	67	Hwang, S.	4-Jun	9:20AM	Pacifica/Tide	42
Goto, T.	4-Jun	8:30AM	Crown	44	Hy, S.	4-Jun	9:00AM	Surf	43
Goto, T.	5-Jun	10:20AM	Hanover	60	Hyodo, J.	3-Jun	5:40PM	Bayside/Strand	34
Gouma, P.	4-Jun	8:50AM	Pointe	43	I				
Grady, J.	5-Jun	8:30AM	Windsor Complex	60	Ikeda, N.	4-Jun	4:40PM	Crystal	48
Graeve, O.A.	5-Jun	8:30AM	Hanover	60	Ikuhara, Y.	3-Jun	1:20PM	Crown	37
Grandjean, A.	6-Jun	11:00AM	Pacifica/Tide	69	Ikuhara, Y.	4-Jun	8:30AM	Continental	39
Grasso, S.	3-Jun	2:10PM	Hanover	32	Ikuhara, Y.	4-Jun	9:20AM	Garden	39
Greenbaum, S.	4-Jun	1:50PM	Surf	50	Imanaka, N.	6-Jun	1:20PM	Pacifica/Tide	76
Guagliardo, P.	3-Jun	2:50PM	Tudor	33	Imanaka, Y.	3-Jun	2:20PM	Crown	37
Gulati, S.	7-Jun	11:40AM	Sunset	84	Imanaka, Y.	4-Jun	1:50PM	Stuart	48
Gulbiten, O.	4-Jun	10:30AM	Seabreeze	44	Inaba, S.	6-Jun	9:40AM	Seabreeze	70
Gunasekera, K.	7-Jun	11:20AM	Palm	84	Inagaki, Y.	3-Jun	5:00PM	Crystal	36
Günthner, M.	4-Jun	4:10PM	Garden	46	Inoue, H.	6-Jun	2:00PM	Seabreeze	77
Guo, X.	3-Jun	4:10PM	Seabreeze	38	Inukai, K.	3-Jun	4:20PM	Bayside/Strand	34
Gupta, P.	3-Jun	4:20PM	Palm	38	Ionescu, E.	3-Jun	4:10PM	Garden	32
Guyot, P.	3-Jun	5:20PM	Hanover	32	Ionescu, E.	6-Jun	2:10PM	Windsor Complex	74
H					Ishihara, S.	6-Jun	11:30AM	Stuart	66
Habasaki, J.	7-Jun	8:30AM	Seabreeze	83	Ishihara, T.	3-Jun	2:20PM	Bayside/Strand	34
Habelitz, S.	6-Jun	9:00AM	Bayside/Strand	70	Ismailoglu, A.S.	4-Jun	4:10PM	Pointe	51
Hah, H.	7-Jun	11:00AM	Coastal	82	Isu, N.	7-Jun	9:30AM	Stuart	80
Halbig, M.C.	6-Jun	9:00AM	Windsor Complex	67	Iwamoto, Y.	4-Jun	11:20AM	Crown	44
					Iwamoto, Y.	5-Jun	10:50AM	Garden	59
					Iwamoto, Y.	5-Jun	11:10AM	Garden	59

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Iwazaki, Y.	5-Jun	10:20AM	Crown	63	King, S.	3-Jun	3:00PM	Palm	38
J					Kinski, I.	7-Jun	8:50AM	Crown	80
Jacobson, N.	6-Jun	8:30AM	Tudor	67	Kisailus, D.	6-Jun	2:10PM	Bayside/Strand	77
Jeon, C.	4-Jun	2:40PM	Stuart	48	Kishimoto, H.	5-Jun	10:50AM	Pacifica/Tide	62
Jeong, M.	7-Jun	10:20AM	Stuart	80	Kita, K.	6-Jun	10:30AM	Hanover	65
Jha, P.	4-Jun	5:00PM	Surf	51	Kita, K.	7-Jun	8:50AM	Stuart	80
Jia, D.	3-Jun	4:00PM	Tudor	33	Kitani, R.	5-Jun	11:40AM	Windsor Complex	60
Jia, D.	4-Jun	4:00PM	Windsor Complex	47	Kitaoka, S.	6-Jun	2:10PM	Tudor	74
Jiang, D.	6-Jun	8:30AM	Windsor Complex	67	Kitiwan, M.	5-Jun	11:30AM	Hanover	60
Jiang, G.	3-Jun	5:40PM	Coastal	35	Kizaki, T.	7-Jun	8:30AM	Crystal	81
Jin, H.	4-Jun	4:10PM	Pacifica/Tide	50	Kjeldsen, J.	4-Jun	8:30AM	Crystal	41
Johnson, J.	3-Jun	3:40PM	Pointe	37	Kleebe, H.	3-Jun	5:20PM	Garden	32
Johnson, S.	4-Jun	2:10PM	Hanover	46	Klemm, H.	5-Jun	10:30AM	Windsor Complex	60
Jongprateep, O.	5-Jun	10:40AM	Crystal	61	Klie, R.F.	4-Jun	3:50PM	Continental	45
Ju, S.	5-Jun	11:20AM	Sunset	64	Ko, C.	4-Jun	10:40AM	Pointe	43
Jung, J.A.	5-Jun	8:30AM	Palm	64	Kob, W.	3-Jun	1:00PM	Seabreeze	37
Jung, S.	4-Jun	4:10PM	Coastal	50	Kobayashi, K.	6-Jun	1:50PM	Crystal	75
Jung, S.	5-Jun	10:50AM	Bayside/Strand	63	Koch, D.	5-Jun	9:20AM	Windsor Complex	60
K					Kodera, Y.	4-Jun	10:30AM	Hanover	40
Kaiser, A.	6-Jun	2:20PM	Hanover	72	Kohler, C.	4-Jun	9:30AM	Stuart	41
Kaiser, A.F.	7-Jun	9:30AM	Hanover	79	Kohoutek, T.	4-Jun	2:20PM	Seabreeze	52
Kakimoto, K.	3-Jun	4:50PM	Crown	37	Kohyama, A.	5-Jun	10:20AM	Pacifica/Tide	62
Kakisawa, H.	6-Jun	10:20AM	Tudor	67	Kohyama, M.	7-Jun	8:30AM	Continental	79
Kamiya, H.	7-Jun	9:10AM	Crown	80	Kojima, Y.	7-Jun	9:40AM	Crystal	81
Kan, Y.	7-Jun	11:10AM	Crown	82	Kolodiazhnyi, T.	4-Jun	9:50AM	Stuart	41
Kanamura, K.	4-Jun	10:10AM	Garden	39	Komatsu, T.	4-Jun	3:50PM	Crown	51
Kanamura, K.	4-Jun	5:20PM	Surf	51	Kondo, A.	5-Jun	11:10AM	Stuart	59
Kang, C.	3-Jun	4:40PM	Windsor Complex	33	Kondo, N.	6-Jun	4:00PM	Hanover	72
Kang, H.	4-Jun	8:30AM	Coastal	42	Kondo, S.	4-Jun	10:40AM	Continental	39
Kang, S.L.	3-Jun	1:20PM	Continental	31	Kozuka, A.	4-Jun	3:00PM	Garden	46
Kanie, K.	6-Jun	4:40PM	Stuart	73	Kozuka, H.	7-Jun	10:50AM	Tudor	81
Karabulut, M.	6-Jun	9:00AM	Surf	69	Krenkel, W.	4-Jun	2:20PM	Windsor Complex	47
Kaseman, D.	4-Jun	5:40PM	Seabreeze	52	Kreski, P.K.	6-Jun	3:00PM	Seabreeze	78
Katagiri, K.	3-Jun	4:20PM	Pointe	37	Kriven, W.M.	4-Jun	9:00AM	Tudor	40
Katayama, Y.	4-Jun	2:20PM	Sunset	52	Krol, D.M.	4-Jun	8:00AM	Seabreeze	44
Kathirvel, S.	6-Jun	5:20PM	Coastal	76	Krol, D.M.	6-Jun	2:10PM	Sunset	78
Kato, K.	4-Jun	11:40AM	Continental	39	Kroll, P.	4-Jun	11:00AM	Garden	39
Katoh, Y.	6-Jun	9:40AM	Pacifica/Tide	69	Kroll, P.	7-Jun	9:40AM	Seabreeze	83
Katsumata, K.	3-Jun	3:50PM	Pacifica/Tide	35	Kroll, S.	4-Jun	9:10AM	Pointe	43
Kauzlarich, S.	4-Jun	9:00AM	Coastal	42	Kubota, A.	7-Jun	10:00AM	Crystal	81
Kawakami, R.	6-Jun	4:30PM	Coastal	76	Kun, L.	5-Jun	11:00AM	Crystal	61
Kazemzadeh Dehdashti, M.	6-Jun	4:20PM	Seabreeze	78	L				
Kerner, R.	3-Jun	5:20PM	Palm	39	Lafond, C.	4-Jun	2:00PM	Seabreeze	52
Khalifa, H.	6-Jun	9:00AM	Pacifica/Tide	69	Lai, Y.	3-Jun	3:40PM	Bayside/Strand	34
Kikkawa, S.	4-Jun	4:10PM	Crown	52	Lavernia, E.J.	3-Jun	2:50PM	Hanover	32
Kim, B.	3-Jun	2:30PM	Hanover	32	Le Coq, D.	4-Jun	4:10PM	Seabreeze	52
Kim, C.	4-Jun	2:20PM	Crystal	47	Lee, C.A.	4-Jun	10:50AM	Hanover	40
Kim, C.	4-Jun	4:40PM	Bayside/Strand	49	Lee, C.A.	5-Jun	9:20AM	Hanover	60
Kim, C.	6-Jun	5:40PM	Coastal	76	Lee, D.	4-Jun	3:40PM	Bayside/Strand	49
Kim, D.	4-Jun	1:50PM	Pacifica/Tide	50	Lee, H.	4-Jun	9:30AM	Crystal	41
Kim, D.	7-Jun	10:10AM	Hanover	79	Lee, H.	5-Jun	11:40AM	Coastal	62
Kim, D.	7-Jun	8:30AM	Hanover	79	Lee, H.	7-Jun	9:30AM	Tudor	81
Kim, E.	4-Jun	3:40PM	Stuart	48	Lee, J.	4-Jun	2:20PM	Continental	45
Kim, G.	4-Jun	9:30AM	Bayside/Strand	42	Lee, J.	6-Jun	10:30AM	Crown	67
Kim, H.	4-Jun	1:20PM	Windsor Complex	47	Lee, K.	6-Jun	4:10PM	Continental	71
Kim, I.J.	3-Jun	4:20PM	Windsor Complex	33	Lee, K.	6-Jun	9:00AM	Coastal	68
Kim, J.	4-Jun	2:40PM	Sunset	52	Lee, S.	6-Jun	5:30PM	Tudor	75
Kim, J.	6-Jun	9:30AM	Coastal	68	Lee, S.W.	6-Jun	4:50PM	Coastal	76
Kim, M.	6-Jun	4:00PM	Surf	77	Lee, W.	4-Jun	1:20PM	Coastal	49
Kim, N.	6-Jun	2:40PM	Seabreeze	78	Lences, Z.	6-Jun	1:50PM	Garden	72
Kim, S.	6-Jun	8:40AM	Crystal	68	Lences, Z.	6-Jun	3:00PM	Hanover	72
Kim, S.	7-Jun	11:20AM	Coastal	82	Letourneau, S.	4-Jun	4:50PM	Stuart	48
Kim, S.	7-Jun	9:00AM	Crystal	81	Letz, M.	4-Jun	9:10AM	Crystal	41
Kim, W.	6-Jun	4:00PM	Stuart	73	Lewinsohn, C.	6-Jun	3:20PM	Garden	72
Kim, Y.	4-Jun	4:30PM	Garden	46	Lewinsohn, C.	6-Jun	9:40AM	Tudor	67
Kim, Y.	4-Jun	5:00PM	Windsor Complex	47	Li, G.	6-Jun	9:10AM	Crystal	68
Kim, Y.	5-Jun	9:40AM	Crystal	61	Li, H.	4-Jun	2:20PM	Surf	50
Kim, Y.	6-Jun	2:10PM	Garden	72	Li, H.	6-Jun	9:00AM	Sunset	70
King, D.	6-Jun	3:30PM	Windsor Complex	74	Li, J.	3-Jun	1:50PM	Coastal	34
King, E.A.	6-Jun	11:00AM	Seabreeze	70	Li, J.	7-Jun	8:30AM	Stuart	80
					Li, L.	3-Jun	2:00PM	Sunset	38

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
P					Salem, J.	6-Jun	9:20AM	Seabreeze	70
Pan, X.	4-Jun	1:20PM	Continental	45	Salmon, P.S.	6-Jun	2:30PM	Palm	79
Panday, D.	4-Jun	11:40AM	Pointe	44	Salvador, J.R.	5-Jun	9:00AM	Coastal	61
Pandey, A.K.	4-Jun	4:30PM	Pointe	51	Sameshima, S.	3-Jun	5:20PM	Bayside/Strand	34
Pandey, G.	4-Jun	5:10PM	Pointe	51	Samiee, M.	3-Jun	2:20PM	Surf	35
Pandey, P.C.	4-Jun	11:00AM	Pointe	43	Sammes, N.	4-Jun	2:20PM	Bayside/Strand	49
Parcianello, G.	6-Jun	2:40PM	Garden	72	Schitco, C.	4-Jun	1:20PM	Garden	46
Park, D.	6-Jun	8:30AM	Coastal	68	Schoen, C.	4-Jun	8:30AM	Garden	39
Park, H.	3-Jun	11:30AM	Crown	31	Schuller, S.	4-Jun	9:00AM	Seabreeze	44
Park, H.	6-Jun	9:40AM	Surf	69	Schuster, K.	5-Jun	9:40AM	Sunset	64
Park, H.	7-Jun	9:50AM	Tudor	81	Sekino, T.	7-Jun	11:40AM	Coastal	82
Park, S.	6-Jun	5:20PM	Stuart	73	Sen, S.	6-Jun	3:20PM	Palm	79
Paul David, S.	6-Jun	1:50PM	Sunset	78	Seo, D.	3-Jun	2:20PM	Tudor	33
Pavlacka, R.	6-Jun	3:40PM	Stuart	73	Seto, J.	6-Jun	11:10AM	Bayside/Strand	70
Pavuna, D.	5-Jun	9:00AM	Palm	64	Seto, N.	6-Jun	11:00AM	Crystal	68
Pegg, I.L.	6-Jun	11:20AM	Surf	69	Sglavo, V.M.	3-Jun	3:00PM	Seabreeze	38
Penilla, E.	4-Jun	4:00PM	Hanover	46	Sglavo, V.M.	7-Jun	11:20AM	Sunset	84
Penilla, E.	5-Jun	10:50AM	Hanover	60	Sharma, N.	5-Jun	10:20AM	Surf	62
Petracovschi, E.	4-Jun	5:00PM	Seabreeze	52	Sharp, J.	4-Jun	3:00PM	Coastal	49
Pfaff, E.M.	6-Jun	5:20PM	Pacifica/Tide	76	Shay, C.G.	6-Jun	8:00AM	Seabreeze	70
Pham, D.	7-Jun	9:10AM	Windsor Complex	81	Shen, S.	4-Jun	11:00AM	Pacifica/Tide	43
Phillips, J.C.	4-Jun	2:00PM	Palm	53	Shi, X.	3-Jun	4:40PM	Coastal	35
Pierce, E.	6-Jun	3:00PM	Surf	77	Shibata, N.	4-Jun	4:50PM	Continental	46
Pinc, W.	7-Jun	11:00AM	Stuart	80	Shibata, N.	6-Jun	3:40PM	Continental	71
Poon, J.	5-Jun	10:50AM	Coastal	62	Shih, C.	6-Jun	9:20AM	Pacifica/Tide	69
Porter, M.	6-Jun	1:50PM	Bayside/Strand	77	Shim, J.	3-Jun	2:50PM	Bayside/Strand	34
Post, E.	7-Jun	8:30AM	Coastal	82	Shimamoto, D.	5-Jun	9:00AM	Stuart	59
Potter, B.	6-Jun	2:50PM	Coastal	75	Shimamura, K.	3-Jun	2:50PM	Crown	37
Potter, B.	7-Jun	10:40AM	Coastal	82	Shimokawa, Y.	4-Jun	2:40PM	Crown	51
Potuzak, M.	4-Jun	3:00PM	Palm	53	Shinozaki, K.	6-Jun	4:40PM	Sunset	78
Prakash, A.	4-Jun	4:50PM	Pointe	51	Shirai, T.	6-Jun	1:50PM	Stuart	73
Prakash, A.	6-Jun	11:20AM	Crown	67	Shitara, K.	6-Jun	3:00PM	Continental	71
Prokhorenko, O.A.	6-Jun	10:40AM	Sunset	71	Shiu, J.	4-Jun	9:40AM	Surf	43
Prokhorenko, O.A.	6-Jun	2:20PM	Seabreeze	78	Shushakova, V.	5-Jun	11:20AM	Windsor Complex	60
Pruethiarenun, K.	4-Jun	9:00AM	Pacifica/Tide	42	Sidebottom, D.	4-Jun	9:30AM	Palm	45
Q					Singh, G.	4-Jun	10:40AM	Garden	39
Qian, D.	4-Jun	11:00AM	Surf	43	Singh, I.B.	3-Jun	1:50PM	Windsor Complex	32
Qiu, R.	7-Jun	9:40AM	Pacifica/Tide	83	Singh, I.B.	6-Jun	5:10PM	Tudor	75
R					Singh, I.B.	7-Jun	10:20AM	Crown	80
Rabe, K.M.	5-Jun	11:20AM	Palm	65	Singh, M.	5-Jun	9:30AM	Crown	63
Rahaman, M.N.	4-Jun	10:20AM	Pointe	43	Singh, P.	4-Jun	1:20PM	Bayside/Strand	49
Rajan, K.	6-Jun	9:00AM	Continental	65	Singh, V.	3-Jun	2:40PM	Sunset	38
Ralbovsky, P.J.	4-Jun	9:20AM	Surf	43	Singh, V.	3-Jun	3:00PM	Sunset	38
Rani, N.	6-Jun	5:20PM	Sunset	78	Singla, G.	7-Jun	10:40AM	Stuart	80
Raty, J.	4-Jun	9:00AM	Palm	45	Sivasankaran, V.	3-Jun	5:00PM	Bayside/Strand	34
Ravindren, S.	7-Jun	11:00AM	Palm	84	Skinner, L.	7-Jun	8:40AM	Pacifica/Tide	83
Reimanis, I.	6-Jun	3:50PM	Pacifica/Tide	76	Skinner, L.B.	6-Jun	1:20PM	Seabreeze	77
Ren, W.	6-Jun	3:00PM	Crystal	75	Smedskjaer, M.M.	3-Jun	2:30PM	Palm	38
Rickard, W.D.	3-Jun	4:30PM	Tudor	33	Smith, C.	6-Jun	3:40PM	Seabreeze	78
Riedel, R.	6-Jun	8:30AM	Continental	65	Smith, H.	3-Jun	2:40PM	Surf	35
Rodriguez, D.E.	6-Jun	10:40AM	Bayside/Strand	70	Smith, N.J.	6-Jun	4:00PM	Sunset	78
Rosei, F.	5-Jun	8:00AM	Bayside/Strand	63	Snyder, G.	3-Jun	3:40PM	Coastal	35
Rosei, F.	6-Jun	2:20PM	Coastal	75	Soga, K.	4-Jun	1:50PM	Pointe	51
Rosinski, M.	4-Jun	4:20PM	Hanover	47	Song, I.	6-Jun	2:20PM	Pacifica/Tide	76
Rufflé, B.	6-Jun	11:20AM	Seabreeze	70	Stebbins, J.F.	5-Jun	10:40AM	Seabreeze	64
Russell, S.M.	5-Jun	8:30AM	Surf	62	Steere, D.	6-Jun	2:40PM	Sunset	78
Ryan, J.V.	3-Jun	3:00PM	Crystal	36	Stefanovsky, S.	6-Jun	10:20AM	Surf	69
Ryo, I.	4-Jun	10:40AM	Windsor Complex	40	Strachan, D.	3-Jun	4:00PM	Crystal	36
S					Strong, K.T.	4-Jun	9:00AM	Garden	39
Sahu, D.	4-Jun	3:40PM	Crystal	48	Stuart, A.R.	5-Jun	8:30AM	Stuart	59
Sahu, D.	6-Jun	4:20PM	Tudor	74	Su, X.	4-Jun	11:40AM	Coastal	42
Saito, N.	6-Jun	3:50PM	Windsor Complex	74	Su, X.	7-Jun	9:00AM	Sunset	83
Sajgalik, P.	6-Jun	1:20PM	Garden	72	Sudre, O.	6-Jun	9:30AM	Garden	66
Sajgalik, P.	6-Jun	8:30AM	Hanover	65	Sugahara, Y.	3-Jun	1:20PM	Garden	31
Sakamoto, W.	4-Jun	11:40AM	Crown	44	Sun, G.	5-Jun	9:00AM	Crystal	61
Sakidja, R.	6-Jun	11:10AM	Continental	65	Sun, R.	4-Jun	11:20AM	Continental	39
Sakka, Y.	4-Jun	9:00AM	Crown	44	Sundaram, S.K.	6-Jun	8:30AM	Pacifica/Tide	69
Sakka, Y.	5-Jun	10:20AM	Stuart	59	Suratwala, T.I.	4-Jun	4:40PM	Sunset	53
					Suratwala, T.I.	4-Jun	5:00PM	Sunset	53
					Sutton, C.	7-Jun	8:30AM	Crown	80
					Suvorov, D.	3-Jun	1:20PM	Stuart	33
					Suvorov, D.	4-Jun	1:20PM	Crystal	47

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Suzuki, H.	3-Jun	4:40PM	Stuart	34	Vayssieres, L.	6-Jun	9:20AM	Crown	67
Suzuki, H.	4-Jun	11:20AM	Crystal	41	Velez, M.	6-Jun	10:10AM	Sunset	71
Suzuki, H.	4-Jun	4:50PM	Crown	52	Verde, M.	4-Jun	10:40AM	Surf	43
Suzuki, M.	6-Jun	10:40AM	Crystal	68	Vignarooban, K.	7-Jun	10:40AM	Palm	84
Suzuki, T.S.	6-Jun	9:20AM	Stuart	66	Virkar, A.	3-Jun	1:20PM	Bayside/Strand	34
Suzuki, Y.	3-Jun	5:10PM	Crown	37	Volosin, A.M.	6-Jun	3:50PM	Crown	73
Suzuki, Y.	4-Jun	2:40PM	Bayside/Strand	49					
Suzuki, Y.	6-Jun	3:40PM	Coastal	76					
		T							
Tachibana, Y.	4-Jun	3:20PM	Pacifica/Tide	50	Wada, S.	3-Jun	4:10PM	Crown	37
Tachibana, Y.	6-Jun	1:50PM	Crown	73	Wada, S.	6-Jun	2:40PM	Crystal	75
Tagantsev, A.K.	3-Jun	1:50PM	Stuart	33	Wadsworth, J.	3-Jun	9:10AM	Crown	31
Takada, A.	7-Jun	10:20AM	Seabreeze	83	Walker, L.S.	6-Jun	1:50PM	Windsor Complex	74
Takahashi, K.	4-Jun	3:30PM	Coastal	49	Walker, L.S.	6-Jun	5:40PM	Stuart	73
Takai, C.	6-Jun	5:00PM	Stuart	73	Wan, C.	4-Jun	3:50PM	Coastal	50
Takeda, H.	6-Jun	11:20AM	Crystal	68	Wang, C.	3-Jun	2:00PM	Pointe	36
Tamerler, C.	6-Jun	8:30AM	Bayside/Strand	70	Wang, C.	4-Jun	2:30PM	Pointe	51
Tamura, T.	7-Jun	9:00AM	Continental	79	Wang, C.	4-Jun	8:30AM	Pointe	43
Tanabe, S.	4-Jun	10:00AM	Sunset	45	Wang, C.	5-Jun	10:30AM	Bayside/Strand	63
Tanaka, I.	4-Jun	1:20PM	Crown	51	Wang, D.	3-Jun	1:20PM	Pacifica/Tide	35
Tanaka, I.	7-Jun	10:20AM	Continental	79	Wang, F.	6-Jun	4:50PM	Palm	79
Tanaka, S.	6-Jun	2:30PM	Stuart	73	Wang, J.	5-Jun	9:00AM	Continental	58
Tanaka, S.	6-Jun	9:40AM	Stuart	66	Wang, J.	6-Jun	1:20PM	Continental	71
Tandon, R.	5-Jun	10:50AM	Windsor Complex	60	Wang, K.	4-Jun	11:20AM	Garden	39
Tang, T.	7-Jun	11:20AM	Bayside/Strand	82	Wang, K.	4-Jun	3:50PM	Garden	46
Tang, Z.	7-Jun	11:00AM	Sunset	83	Wang, K.	4-Jun	5:00PM	Bayside/Strand	49
Tao, G.	6-Jun	9:30AM	Sunset	70	Wang, L.	4-Jun	4:20PM	Palm	53
Tao, G.G.	4-Jun	11:40AM	Bayside/Strand	42	Wang, L.	4-Jun	8:30AM	Hanover	39
Tao, J.	6-Jun	9:30AM	Bayside/Strand	70	Wang, L.	6-Jun	8:30AM	Crown	66
Tas, A.	6-Jun	11:40AM	Bayside/Strand	70	Wang, Q.	7-Jun	10:20AM	Tudor	81
Tatami, J.	4-Jun	10:20AM	Crown	44	Wang, R.	3-Jun	2:40PM	Pointe	36
Tatami, J.	7-Jun	11:20AM	Stuart	80	Wang, R.	6-Jun	2:20PM	Crystal	75
Tateno, H.	6-Jun	9:20AM	Surf	69	Wang, R.	7-Jun	11:40AM	Bayside/Strand	82
Tavakoli, A.	3-Jun	3:40PM	Garden	31	Wang, X.	5-Jun	11:50AM	Garden	59
Teprovich, J.A.	4-Jun	5:40PM	Surf	51	Wang, Y.	6-Jun	11:20AM	Tudor	67
Terasaki, I.	3-Jun	1:20PM	Coastal	34	Wang, Y.	6-Jun	2:30PM	Windsor Complex	74
Terrani, K.	5-Jun	9:20AM	Pacifica/Tide	62	Wang, Z.	6-Jun	10:20AM	Windsor Complex	67
Thakur, S.	3-Jun	4:40PM	Bayside/Strand	34	Watanabe, K.	5-Jun	11:20AM	Crown	63
Thian, E.	4-Jun	2:50PM	Pointe	51	Watanabe, M.	3-Jun	4:00PM	Continental	31
Thompson, D.R.	4-Jun	11:20AM	Coastal	42	Weaver, J.C.	7-Jun	10:50AM	Bayside/Strand	82
Thompson, L.M.	5-Jun	11:00AM	Seabreeze	64	Weber, S.	6-Jun	1:40PM	Hanover	72
Tian, Y.	6-Jun	11:20AM	Palm	71	Weber, W.J.	6-Jun	1:20PM	Surf	76
Tian, Z.	4-Jun	11:00AM	Windsor Complex	40	Wei, X.	3-Jun	4:20PM	Hanover	32
Tolman, K.	4-Jun	3:00PM	Stuart	48	Weisenburger Lipetz, R.	6-Jun	11:50AM	Sunset	71
Toyoda, T.	6-Jun	1:20PM	Crown	73	Weiss, M.	6-Jun	4:40PM	Hanover	72
Trachenko, K.	3-Jun	3:50PM	Palm	38	Westin, G.	3-Jun	3:20PM	Pacifica/Tide	35
Trachenko, K.	3-Jun	5:00PM	Seabreeze	38	Wieg, A.T.	5-Jun	9:40AM	Hanover	60
Travitzky, N.	6-Jun	9:30AM	Hanover	65	Withford, M.	3-Jun	3:40PM	Sunset	38
Tritt, T.M.	5-Jun	11:20AM	Coastal	62	Wolfe, D.E.	6-Jun	10:50AM	Tudor	67
Trolier-McKinstry, S.	4-Jun	10:20AM	Crystal	41	Wolfe, D.E.	7-Jun	8:30AM	Tudor	81
Tsai, S.	6-Jun	2:40PM	Pacifica/Tide	76	Woo, L.Y.	7-Jun	9:20AM	Crystal	81
Tsai, S.	6-Jun	4:10PM	Crystal	75	Wu, S.	7-Jun	9:00AM	Tudor	81
Tsai, T.	5-Jun	10:20AM	Tudor	61	Wu, Y.	3-Jun	1:20PM	Windsor Complex	32
Tseng, T.	4-Jun	3:40PM	Tudor	48	Wu, Y.	6-Jun	2:00PM	Hanover	72
Tsuchiya, T.	4-Jun	1:50PM	Crystal	47	Wuttig, M.	6-Jun	9:30AM	Palm	71
Tsurumi, T.	6-Jun	3:40PM	Crystal	75					
Tu, D.	6-Jun	4:50PM	Crystal	75					
Tu, J.	6-Jun	11:10AM	Hanover	65					
		U							
Ubic, R.	4-Jun	1:20PM	Stuart	48					
Uchikoshi, T.	5-Jun	11:30AM	Stuart	59					
Ueshima, N.	3-Jun	4:20PM	Continental	31					
Umezawa, N.	3-Jun	3:40PM	Crown	37					
		V							
van Benthem, K.	4-Jun	10:10AM	Continental	39					
van Riessen, A.	4-Jun	9:30AM	Tudor	40					
van Roode, M.	5-Jun	9:50AM	Windsor Complex	60					
Van Vechten, J.	6-Jun	9:00AM	Palm	71					
Varila, L.	3-Jun	5:20PM	Pointe	37					
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Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Yang, W.	7-Jun	9:00AM	Bayside/Strand	82	Zhang, J.	7-Jun	10:50AM	Hanover	80
Yano, T.	6-Jun	10:40AM	Surf	69	Zhang, L.	4-Jun	3:40PM	Windsor Complex	47
Yasumori, A.	4-Jun	2:00PM	Sunset	52	Zhang, P.	7-Jun	9:40AM	Crown	80
Yen, S.	4-Jun	11:20AM	Pointe	43	Zhang, S.	3-Jun	5:00PM	Pacifica/Tide	35
Yin, S.	7-Jun	10:20AM	Coastal	82	Zhang, W.	5-Jun	8:30AM	Coastal	61
Yin, X.	6-Jun	8:50AM	Hanover	65	Zhang, X.	6-Jun	10:50AM	Hanover	65
Yokoi, T.	5-Jun	11:10AM	Continental	58	Zhang, Y.	3-Jun	2:20PM	Continental	31
Yokoi, T.	7-Jun	9:40AM	Continental	79	Zhen, Q.	3-Jun	4:00PM	Windsor Complex	33
Yokota, T.	3-Jun	2:40PM	Coastal	34	Zhou, F.	4-Jun	9:20AM	Windsor Complex	40
Yoo, S.	7-Jun	9:30AM	Coastal	82	Zhou, H.	3-Jun	5:00PM	Pointe	37
Yoshimura, M.	3-Jun	1:40PM	Pointe	36	Zhou, H.	4-Jun	3:10PM	Pointe	51
Yoshimura, M.	6-Jun	11:30AM	Hanover	66	Zhou, H.	4-Jun	9:40AM	Windsor Complex	40
Yoshiya, M.	5-Jun	9:30AM	Continental	58	Zhou, H.	5-Jun	8:30AM	Bayside/Strand	63
Youngman, R.	5-Jun	9:20AM	Seabreeze	64	Zhou, H.	5-Jun	9:10AM	Bayside/Strand	63
Youssefi, A.	6-Jun	5:10PM	Bayside/Strand	77	Zhou, N.	3-Jun	3:40PM	Continental	31
Yue, Y.	4-Jun	11:20AM	Palm	45	Zhou, Y.	4-Jun	2:20PM	Pacifica/Tide	50
Yue, Z.	4-Jun	11:50AM	Stuart	41	Zhou, Y.	4-Jun	2:50PM	Windsor Complex	47
Yumura, A.	6-Jun	2:40PM	Continental	71	Zhou, Y.	6-Jun	3:40PM	Hanover	72
		Z			Zhou, Y.	7-Jun	9:30AM	Windsor Complex	81
Zanotto, E.D.	4-Jun	10:10AM	Seabreeze	44	Zhu, L.	6-Jun	11:00AM	Crown	67
Zapol, P.	7-Jun	11:40AM	Seabreeze	83	Zhu, X.	4-Jun	4:30PM	Stuart	48
Zeng, Y.	7-Jun	9:10AM	Hanover	79	Zhu, Y.	4-Jun	3:30PM	Continental	45
Zha, Y.	4-Jun	4:40PM	Seabreeze	52	Zhuang, Y.	6-Jun	5:10PM	Crystal	75
Zha, Y.	4-Jun	5:40PM	Sunset	53	Zimmermann, J.	6-Jun	3:30PM	Bayside/Strand	77
Zhai, J.	6-Jun	1:20PM	Crystal	75	Zou, Y.	6-Jun	9:50AM	Sunset	71
Zhang, D.	6-Jun	1:20PM	Stuart	73	Zwanziger, J.	6-Jun	11:40AM	Seabreeze	70
Zhang, G.	6-Jun	1:20PM	Windsor Complex	74					

Presenting Author List

Poster Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
Acchar, W.	4-Jun	5:30PM	Ballroom	54	Li, C.	4-Jun	5:30PM	Ballroom	55, 56
Akamatsu, T.	4-Jun	5:30PM	Ballroom	57	Li, M.	4-Jun	5:30PM	Ballroom	56
Akedo, J.	4-Jun	5:30PM	Ballroom	55	Li, Y.	4-Jun	5:30PM	Ballroom	54
Al-Hasni, B.M.	4-Jun	5:30PM	Ballroom	57	Lim, S.	4-Jun	5:30PM	Ballroom	54
An, C.	4-Jun	5:30PM	Ballroom	55	Liu, X.	4-Jun	5:30PM	Ballroom	54
Anderson, E.	4-Jun	5:30PM	Ballroom	54	Lopez, M.I.	4-Jun	5:30PM	Ballroom	57
Aoyagi, R.	4-Jun	5:30PM	Ballroom	55	McClane, D.	4-Jun	5:30PM	Ballroom	54
Arai, Y.	4-Jun	5:30PM	Ballroom	54	Metz, P.C.	4-Jun	5:30PM	Ballroom	56
Asakura, Y.	4-Jun	5:30PM	Ballroom	56	Misture, S.T.	4-Jun	5:30PM	Ballroom	56
Baba, S.	4-Jun	5:30PM	Ballroom	56	Mitic, V.	4-Jun	5:30PM	Ballroom	55
Chen, X.	4-Jun	5:30PM	Ballroom	55	Mitsui, S.	4-Jun	5:30PM	Ballroom	57
Chen, Z.	4-Jun	5:30PM	Ballroom	53	Moon, K.	4-Jun	5:30PM	Ballroom	55
Chiu, I.	4-Jun	5:30PM	Ballroom	56	Morgan, S.	4-Jun	5:30PM	Ballroom	58
Chockalingam, R.	4-Jun	5:30PM	Ballroom	56	Morin, E.	4-Jun	5:30PM	Ballroom	57
Choi, B.	4-Jun	5:30PM	Ballroom	55	Moshtaghioun, B.	4-Jun	5:30PM	Ballroom	53
Choi, S.	4-Jun	5:30PM	Ballroom	56	Nakamura, H.	4-Jun	5:30PM	Ballroom	58
Colombo, P.	4-Jun	5:30PM	Ballroom	54	Nemec, P.	4-Jun	5:30PM	Ballroom	58
Crawford, C.L.	4-Jun	5:30PM	Ballroom	57	Nishimura, K.	4-Jun	5:30PM	Ballroom	54
Dandeneau, C.	4-Jun	5:30PM	Ballroom	56	Noguchi, Y.	4-Jun	5:30PM	Ballroom	55
Dietel, J.	4-Jun	5:30PM	Ballroom	55	Obata, S.	4-Jun	5:30PM	Ballroom	54
Ellis, A.C.	4-Jun	5:30PM	Ballroom	54	Ohsato, H.	4-Jun	5:30PM	Ballroom	55
Estournès, C.	4-Jun	5:30PM	Ballroom	54	Paniagua, A.M.	4-Jun	5:30PM	Ballroom	54
Fox, B.P.	4-Jun	5:30PM	Ballroom	58	Park, K.	4-Jun	5:30PM	Ballroom	56
Fu, P.	4-Jun	5:30PM	Ballroom	55	Prokhorenko, O.A.	4-Jun	5:30PM	Ballroom	56
Fu, Y.	4-Jun	5:30PM	Ballroom	55	Reis, R.M.C.V.	4-Jun	5:30PM	Ballroom	57
Funamoto, Y.	4-Jun	5:30PM	Ballroom	58	Riley, B.J.	4-Jun	5:30PM	Ballroom	57
Fung, K.	4-Jun	5:30PM	Ballroom	56, 57	Ronchetto, E.	4-Jun	5:30PM	Ballroom	57
Gao, Q.	4-Jun	5:30PM	Ballroom	57	Saiki, A.	4-Jun	5:30PM	Ballroom	54, 55
Ghazi Daryani, A.	4-Jun	5:30PM	Ballroom	54	Sakamoto, W.	4-Jun	5:30PM	Ballroom	55
Glass, K.	4-Jun	5:30PM	Ballroom	56	Scherer, C.	4-Jun	5:30PM	Ballroom	57
Hara, T.	4-Jun	5:30PM	Ballroom	54	Schitco, C.	4-Jun	5:30PM	Ballroom	56
Hashizume, T.	4-Jun	5:30PM	Ballroom	54, 55	Serbena, F.C.	4-Jun	5:30PM	Ballroom	58
Henderson, J.	4-Jun	5:30PM	Ballroom	56	Shin, W.	4-Jun	5:30PM	Ballroom	56
Hirotsu, S.	4-Jun	5:30PM	Ballroom	56	Simurka, P.	4-Jun	5:30PM	Ballroom	57
Huang, C.	4-Jun	5:30PM	Ballroom	57	Song, J.	4-Jun	5:30PM	Ballroom	54
Huang, Y.	4-Jun	5:30PM	Ballroom	55	Song, X.	4-Jun	5:30PM	Ballroom	56
Hwu, H.	4-Jun	5:30PM	Ballroom	57	Soraru, G.	4-Jun	5:30PM	Ballroom	53
Idesaki, A.	4-Jun	5:30PM	Ballroom	53	Stefanovsky, S.	4-Jun	5:30PM	Ballroom	57
Imamura, S.	4-Jun	5:30PM	Ballroom	56	Takashima, H.	4-Jun	5:30PM	Ballroom	55
Ismailoglu, A.S.	4-Jun	5:30PM	Ballroom	57	Tao, G.	4-Jun	5:30PM	Ballroom	57, 58
Jafari, M.	4-Jun	5:30PM	Ballroom	54	Tavakoli, A.	4-Jun	5:30PM	Ballroom	53
Jeon, C.	4-Jun	5:30PM	Ballroom	55	Teocoli, F.	4-Jun	5:30PM	Ballroom	56
Jiang, G.	4-Jun	5:30PM	Ballroom	53	Tomita, S.	4-Jun	5:30PM	Ballroom	58
Jin, X.	4-Jun	5:30PM	Ballroom	54	Tsai, S.	4-Jun	5:30PM	Ballroom	56, 57
Kachmar, A.	4-Jun	5:30PM	Ballroom	58	Tu, D.	4-Jun	5:30PM	Ballroom	55
Kamimura, S.	4-Jun	5:30PM	Ballroom	55	Wang, C.	4-Jun	5:30PM	Ballroom	54
Kamiya, H.	4-Jun	5:30PM	Ballroom	54	Wang, M.	4-Jun	5:30PM	Ballroom	57
Kanda, C.	4-Jun	5:30PM	Ballroom	56	Wang, R.	4-Jun	5:30PM	Ballroom	58
Kawano, M.	4-Jun	5:30PM	Ballroom	54	Wang, T.	4-Jun	5:30PM	Ballroom	57
Kim, C.	4-Jun	5:30PM	Ballroom	57	Wang, X.	4-Jun	5:30PM	Ballroom	54, 55
Kim, H.	4-Jun	5:30PM	Ballroom	55	Watson, D.E.	4-Jun	5:30PM	Ballroom	57
Kim, I.J.	4-Jun	5:30PM	Ballroom	54	Wong, L.L.	4-Jun	5:30PM	Ballroom	58
Kim, J.	4-Jun	5:30PM	Ballroom	57	Wu, F.	4-Jun	5:30PM	Ballroom	58
Kitahara, S.	4-Jun	5:30PM	Ballroom	56	Wu, Y.	4-Jun	5:30PM	Ballroom	56
Kitajima, S.	4-Jun	5:30PM	Ballroom	53	Xiang, Y.	4-Jun	5:30PM	Ballroom	57
Kitamura, N.	4-Jun	5:30PM	Ballroom	54	Yamaguchi, Y.	4-Jun	5:30PM	Ballroom	56
Koji, I.	4-Jun	5:30PM	Ballroom	54	Yang, P.	4-Jun	5:30PM	Ballroom	56
Kroll, P.	4-Jun	5:30PM	Ballroom	53, 57	Yang, Z.	4-Jun	5:30PM	Ballroom	58
Kung, S.	4-Jun	5:30PM	Ballroom	57	Ye, W.	4-Jun	5:30PM	Ballroom	57
Kuo, Y.	4-Jun	5:30PM	Ballroom	54	Yonashiro, K.	4-Jun	5:30PM	Ballroom	53
Kurokawa, S.	4-Jun	5:30PM	Ballroom	56	Yoon, Y.	4-Jun	5:30PM	Ballroom	55
Kwang-Young, L.	4-Jun	5:30PM	Ballroom	53	Zhai, J.	4-Jun	5:30PM	Ballroom	55
Lee, D.	4-Jun	5:30PM	Ballroom	57	Zhao, G.	4-Jun	5:30PM	Ballroom	56
Lee, P.	4-Jun	5:30PM	Ballroom	53, 57	Zhou, M.	4-Jun	5:30PM	Ballroom	54
Lezzi, P.J.	4-Jun	5:30PM	Ballroom	57	Zuo, K.	4-Jun	5:30PM	Ballroom	57

Monday, June 3, 2013

Plenary Session

Room: Crown

Session Chair: Hua-Tay Lin, Oak Ridge National Laboratory

8:45 AM

Opening Remarks and Introduction

H.T. Lin, Program Chair

9:10 AM

(PACRIM10-PL-001-2013) The Evolving R&D Model: Driving Energy Transformation through Advances in Materials Science (Invited)

J. Wadsworth*, Battelle Memorial Institute, USA

9:50 AM

(PACRIM10-PL-002-2013) Research Activities for Future challenges in Global Energy and Environment in TOYOTA Central R&D Labs., Inc.(TCRDL) (Invited)

T. Motohiro*, TOYOTA Central R&D Labs.,Inc., Japan

10:30 AM

Break

10:50 AM

(PACRIM10-PL-003-2013) Glass and Ceramics for Energy Applications (Invited)

M. K. Badrinarayan*, Corning Incorporated, USA

11:30 AM

(PACRIM10-PL-004-2013) Technology Trend in Lithium ion battery for Electric Vehicle and Energy Storage System Application (Invited)

H. Park*, LG Chem, Republic of Korea

Symposium 01: Advanced Characterization and Modeling of Ceramic Interfaces

Modeling and Control of Ceramic Interfaces

Room: Continental

Session Chairs: Masato Yoshiya, Osaka University; Naoya Shibata, The University of Tokyo

1:20 PM

(PACRIM10-S01-001-2013) Prediction and Observation of Interface Structure Dependent Grain Growth Behavior in Ceramics (Invited)

S. L. Kang*, KAIST, Republic of Korea

1:50 PM

(PACRIM10-S01-002-2013) Design of fracture resistant ceramics by interfacial engineering (Invited)

M. J. Hoffmann*, S. Fuenfschilling, S. Wagner, T. Fett, Karlsruhe Institute of Technology, Germany

2:20 PM

(PACRIM10-S01-004-2013) Evaluation of Segregation and Grain Growth in Ni-W and Ni-Bi Alloys

Y. Zhang*, J. Luo, University of California, San Diego, USA

2:40 PM

(PACRIM10-S01-005-2013) High-Temperature Creep of Fully-Dense Boron Carbide (B₄C) Polycrystals prepared by Spark-Plasma Sintering (SPS)

B. Moshtaghioun*, D. Gomez-Garcia, M. Castillo Rodriguez, A. Dominguez-Rodriguez, University of Seville, Spain

3:00 PM

(PACRIM10-S01-006-2013) The effect of interface and micro-crack on physical property and performance of ceramic materials

J. Gao*, Corning Incorporated, USA

3:20 PM

Break

3:40 PM

(PACRIM10-S01-008-2013) Develop Ternary Grain Boundary Diagrams for Ternary Alloys

N. Zhou*, J. Luo, X. Shi, clemson, USA

4:00 PM

(PACRIM10-S01-009-2013) Dynamics of Interfaces in Massive-Like Phase Transition of Carbon-Steel

M. Watanabe*, K. Nakajima, N. Ueshima, M. Yoshiya, T. Nagira, H. Yasuda, Osaka University, Japan

4:20 PM

(PACRIM10-S01-010-2013) Interplay among Interface, Magnetic and Elastic energies upon Variant Selection in L10-type Ferromagnetic Alloys

N. Ueshima*, M. Yoshiya, H. Yasuda, Osaka University, Japan

Symposium 04: Polymer Derived Ceramics and Composites

Chemistry of PDCs

Room: Garden

Session Chair: Ralf Riedel, TU Darmstadt

1:20 PM

(PACRIM10-S04-001-2013) Conversion of Polysilazanes into Hybrid and Ceramic Materials (Invited)

Y. Sugahara*, Waseda University, Japan

1:50 PM

(PACRIM10-S04-002-2013) PDC-Carbon Hybrids

Y. Blum*, SRI International, USA

2:10 PM

(PACRIM10-S04-003-2013) "Click" elaboration of multielement composites ZrC/SiC using the polymer-derived ceramics route

R. Lucas*, F. Bouzat, Y. Leconte, A. Maître, S. Foucaud, Laboratory SPCTS, France

2:30 PM

(PACRIM10-S04-005-2013) Chemical Design of Nanostructured Polymer-Derived Ceramics (Invited)

G. Mera*, R. Riedel, Technische Universität Darmstadt, Germany

3:00 PM

(PACRIM10-S04-004-2013) Synthesis of Non-oxide Ceramic Powder by Simple Spray Granulation

J. He*, Y. Wang, L. An, Science and technology on Thermostructure Composite Materials Laboratory, China

3:20 PM

Break

Chemistry and Thermodynamics of PDCs

Room: Garden

Session Chair: Yigal Blum, SRI International

3:40 PM

(PACRIM10-S04-006-2013) Thermodynamics of Polymer Derived Ceramics and Composites: New Experimental Insights (Invited)

A. Tavakoli*, A. Navrotsky, University of California, USA

4:10 PM**(PACRIM10-S04-007-2013) Phase Composition and Crystallization of Metal-Modified Silicon Oxycarbides: A Thermodynamic Assessment**

E. Ionescu*, TU Darmstadt, Germany; A. Navrotsky, University of California at Davis, USA; R. Riedel, TU Darmstadt, Germany

4:30 PM**(PACRIM10-S04-008-2013) Polymer-Derived Nitrides (Invited)**

M. Bechelany, W. Zhong, C. Salameh, G. Moussa, S. Bernard*, P. Miele, Institut Européen des Membranes, France

5:00 PM**(PACRIM10-S04-009-2013) Comparison of the microstructures of SiCN and SiBCN ceramics**

S. Hapis*, H. Kleebe, Technische Universität Darmstadt, Geomaterial Science Institute, Germany; Y. Gao, G. Mera, R. Riedel, Technische Universität Darmstadt, Materials Science Institute, Germany

5:20 PM**(PACRIM10-S04-010-2013) Carbon Mobility in SiCO and SiCN Polymer-Derived Ceramics**

H. Kleebe*, K. Nonnenmacher, Technische Universität Darmstadt, Geomaterial Science Institute, Germany; J. Rohrer, Technische Universität Darmstadt, Materials Modelling Division, Germany; E. Ionescu, R. Riedel, Technische Universität Darmstadt, Materials Science Institute, Germany

Symposium 06: Synthesis and Processing of Materials Using Electric Fields/Currents: A Symposium Honoring Prof. Zuhair Munir

Fundamentals Investigations in Current Assisted Densification I

Room: Hanover

Session Chairs: Javier Garay, University of California; Manshi Ohyanagi, Ryukoku University

1:20 PM**(PACRIM10-S06-001-2013) Processing of Materials under the Influence of Electric Fields (Invited)**

Z. A. Munir*, University of California, USA

1:50 PM**(PACRIM10-S06-002-2013) Flash Spark-Plasma Sintering of SiC powder**

E. Olevsky*, S. Roling, Y. Lin, San Diego State University, USA; A. Maximenko, Moscow Engineering Physics University, Russian Federation

2:10 PM**(PACRIM10-S06-003-2013) Electric current activated/assisted sintering (ECAS): 20 years impact on science and technology**

S. Grasso*, Queen Mary University of London, United Kingdom; Y. Sakka, NIMS, Japan; M. Reece, Nanoforce Technology Limited, United Kingdom

2:30 PM**(PACRIM10-S06-004-2013) Grain Growth during Spark Plasma Sintering of Alumina**

B. Kim*, K. Morita, H. Yoshida, Y. Sakka, National Institute for Materials Science, Japan; K. Hiraga, Kitami Institute of Technology, Japan

2:50 PM**(PACRIM10-S06-005-2013) Spark Plasma Sintering and Mechanical Behavior of Pure Tungsten with Improved Microstructures (Invited)**

L. Huang, T. D. Topping, T. Hu, UC Davis, USA; R. Carpenter, US Army, USA; D. Kapoor, US Army, USA; E. J. Lavernia*, J. M. Schoenung, UC Davis, USA

3:20 PM**Break****3:40 PM****(PACRIM10-S06-006-2013) Electrical breakdown behavior of cubic zirconia single crystals and polycrystals**

J. Downs*, V. M. Sglavo, University of Trento, Italy

4:00 PM**(PACRIM10-S06-007-2013) Localized Overheating of Tooling during Spark-Plasma Sintering**

D. Giuntini*, E. Olevsky, San Diego State University, USA; C. Haines, D. Martin, D. Kapoor, US Army ARDEC, USA; C. Garcia, San Diego State University, USA

4:20 PM**(PACRIM10-S06-008-2013) Spark Plasma Sintering of Annular Zirconium Carbide Powder Pellets: Processing and Simulation**

X. Wei*, W. Li, J. A. Alvarado-Contreras, E. A. Olevsky, San Diego State University, USA; M. A. Meyers, University of California, San Diego, USA

4:40 PM**(PACRIM10-S06-009-2013) Electro-thermal measurements and finite element method simulations of a spark plasma sintering device**

C. Estournès*, A. Pavia, C. Manière, CIRIMAT, France; L. Durand, F. Ajustron, CEMES, France; V. Bley, LAPLACE, France; G. Chevallier, A. Peigney, CIRIMAT, France

5:00 PM**(PACRIM10-S06-010-2013) Empirical modeling of the Density-Temperature relationship in Current Activated Pressure Assisted Densification**

A. D. Dupuy*, Y. Kodera, J. E. Garay, University of California, Riverside, USA

5:20 PM**(PACRIM10-S06-011-2013) First approach of the specific phenomena during Spark Plasma Sintering of metals**

P. Guyot*, N. Pradailles, V. Rat, J. Coudert, A. Maitre, SPCTS CNRS UMR7315, France

Symposium 08: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications

Properties and Characterization I

Room: Windsor Complex

Session Chairs: Guo-Jun Zhang, Shanghai Institute of Ceramics; Dileep Singh, Argonne National Laboratory

1:20 PM**(PACRIM10-S08-048-2013) Processing of transparent ceramics by designing a new spontaneous gelling system (Invited)**

Y. Wu*, Y. Yang, Alfred University, USA

1:50 PM**(PACRIM10-S08-001-2013) Synthesis of sol-gel based nano alumina particles and their mixing with clay for fluoride removal purposes (Invited)**

I. B. Singh*, CSIR-Advanced Materials and Processing Research Institute (AMPRI), Bhopal, India, CSIR-Advanced Materials and Processing Research Institute (AMPRI), Bhopal, India; CSIR-Advanced Materials and Process Research Institute (AMPRI), India

2:20 PM**(PACRIM10-S08-002-2013) Microstructure and Mechanical Properties of Si₃N₄ Nanoceramics by Carbothermal Reduction and Spark Plasma Sintering**

C. Chen*, C. Lee, National Cheng Kung University, Taiwan; H. Lu, National Chin Yi University of Technology, Taiwan; J. Huang, National Cheng Kung University, Taiwan

2:40 PM**(PACRIM10-S08-005-2013) Preparation of Zirconium Phosphate Bonded Silicon Nitride Porous Ceramics Reinforced by In-Situ Reacted Silicon Nitride Nanowires**

F. Chen*, F. Li, Q. Shen, L. Zhang, Wuhan University of Technology, China

3:00 PM**(PACRIM10-S08-006-2013) Microstructure development and mechanical property of Tungsten Carbide/Alumina composite**

W. Chen*, P. K. Nayak, National Cheng Kung University, Taiwan; H. Lin, Kun Shan University, Taiwan; Y. Chen, Academia Sinica, Taiwan; J. Huang, National Cheng Kung University, Taiwan

3:20 PM**Break****3:40 PM****(PACRIM10-S08-007-2013) Preparation and characterization of TiO₂ and Al₂O₃ thick films by laser CVD using CO₂ and Nd:YAG lasers**

M. Gao*, A. Ito, T. Goto, Institute for Materials Research, Tohoku University, Japan

4:00 PM**(PACRIM10-S08-008-2013) Synthesis and Characteristics of Heteroatom-doping Carbon Nanotube Array**

Q. Zhen*, S. Dong, Y. Kan, Y. Leng, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

4:20 PM**(PACRIM10-S08-010-2013) Mechanisms of wet foam stabilization to porous ceramics**

A. Pokhrel, S. D. Nam, J. G. Park, I. J. Kim*, Processing and Application of Inorganic Materials (PAIM), Hanseo University, Republic of Korea

4:40 PM**(PACRIM10-S08-012-2013) Laser lift-off processing for flexible piezoelectric energy harvester based on PZT thin films**

C. Kang*, Y. Do, M. Kang, W. Jung, Electronic Materials Research Center, Korea Institute of Science and Technology, Republic of Korea; S. Yoon, Research Planning & Coordination Division, Korea Institute of Science and Technology, Republic of Korea

5:00 PM**(PACRIM10-S08-009-2013) Roll-to-Roll silver nanowires as transparent electrode layer in P3HT-PCBM based solar cell**

B. Wang, Korea Institute of Science and Technology, Republic of Korea; D. Lim, Korea University, Republic of Korea; J. Kim, PNT Co. Ltd, Republic of Korea; Y. Oh*, Korea Institute of Science and Technology, Republic of Korea

Symposium 11: Geopolymers: Low Energy, Environmentally Friendly, Inorganic Polymeric Ceramics

Processing and Characterization

Room: Tudor

Session Chair: Waltraud Kriven, University of Illinois at Urbana-Champaign

1:20 PM**(PACRIM10-S11-001-2013) Geopolymer Porosity Control Using Surface Modification and Templating (Invited)**

B. E. Glad*, W. M. Kriven, University of Illinois at Urbana-Champaign, USA

1:50 PM**(PACRIM10-S11-002-2013) Synthesis and Characterization of Hierarchically Porous Geopolymers and Their Composites for Environmental Applications (Invited)**

D. MedPELLI*, J. Seo, D. Seo, Arizona State University, USA

2:20 PM**(PACRIM10-S11-003-2013) New Nanostructured Geopolymer Materials and Zeolites Through Formation of Emulsion Blends With Biorenewable Oil (Invited)**

D. Seo*, D. MedPELLI, J. Seo, D. M. Ladd, Arizona State University, USA

2:50 PM**(PACRIM10-S11-004-2013) The characterisation of nano-porosity in geopolymers by positron annihilation techniques (Invited)**

P. Guagliardo*, The University of Western Australia, Australia; W. Kriven, University of Illinois at Urbana-Champaign, USA

3:20 PM**Break****3:40 PM****(PACRIM10-S11-005-2013) Characterisation of cotton fibre-reinforced geopolymer composites**

T. Alomayri, I. Low*, Curtin University, Australia

4:00 PM**(PACRIM10-S11-006-2013) Effects of high-temperature heat treatment on the mechanical properties of unidirectional carbon fiber reinforced aluminasilicate geopolymer matrix composites (Invited)**

D. Jia*, P. He, Y. Zhou, Harbin Institute of Technology, China

4:30 PM**(PACRIM10-S11-007-2013) The Effect of Speciality Fibres and Fillers on the Thermal Properties of Fly Ash based Geopolymers (Invited)**

L. Vickers, A. van Riessen, W. D. Rickard*, Centre for Materials Research, Australia

Symposium 13: Microwave Materials and Their Applications

Effect of Structure and Microstructure on Microwave Characteristics

Room: Stuart

Session Chairs: Xiang Ming Chen, Zhejiang University; Danilo Suvorov, Jozef Stefan Institute

1:20 PM**(PACRIM10-S13-001-2013) Microstructural Features in High Frequency Ceramics (Invited)**

D. Suvorov*, B. Jančar, Jozef Stefan Institute, Slovenia

1:50 PM**(PACRIM10-S13-002-2013) Antiferroelectricity and Its Origin in the Prototypical Lead Zirconate (Invited)**

A. K. Tagantsev*, Swiss Federal Institute of Technology (EPFL), Switzerland

2:20 PM**(PACRIM10-S13-003-2013) Internal strain and dielectric losses on the pseudo-tungstenbronze Ba₆-3xR₈+2xTi₁₈O₅₄ (R = Sm, Nd, Pr, and La) solid solutions with different R ions (Invited)**

H. Ohsato*, Nagoya Industrial Science Research Institute, Japan; J. Kim, Hoseo University, Republic of Korea; M. Imaeda, Nagoya Institute of Technology, Japan

2:50 PM**Break****3:10 PM****(PACRIM10-S13-004-2013) Structure Stability and Microwave Dielectric Properties of Double Perovskite Ceramics -(1-x)BaMg_{1/2}W_{1/2}O₃+xBaY_{2/3}W_{1/3}O₃ (Invited)**

J. Bian*, J. Wu, Shanghai University, China

3:40 PM**(PACRIM10-S13-005-2013) Effect of the Microstructure on the Microwave Dielectric Properties of Bi₁₂TiO₂₀ Ceramics (Invited)**

S. Nahm*, M. Joung, B. Jeong, S. Kweon, J. Kim, Korea University, Republic of Korea; J. Choi, Korea Institute of Science and Technology, Republic of Korea; S. Hwang, Ewha Womans University, Republic of Korea

4:10 PM**(PACRIM10-S13-006-2013) Effects of cation substitution on the structure, microstructure and microwave dielectric properties in Ca-based complex perovskite systems (Invited)**

M. Fu*, Northwestern Polytechnical University, China; X. Liu, X. Chen, Zhejiang University, China

Tunable Dielectrics for Microwave Electronics I

Room: Stuart

Session Chair: Hitoshi Ohsato, Nagoya Industrial Science Research Institute

4:40 PM**(PACRIM10-S13-008-2013) Barium Zirconate Titanate Thin Films with High Permittivity from Molecular-designed Precursor Solution (Invited)**

H. Suzuki*, Shizuoka University, Japan

5:10 PM**(PACRIM10-S13-009-2013) Inkjet printing of tunable microwave devices**

A. Friederich*, C. Kohler, Karlsruhe Institute of Technology, Germany; M. Nikfalazar, M. Sazegar, R. Jakoby, Technische Universität Darmstadt, Germany; J. R. Binder, W. Bauer, Karlsruhe Institute of Technology, Germany

5:30 PM**(PACRIM10-S13-010-2013) Preparation of Silver Nanoparticle dispersed Pb(Zr,Ti)O₃ Thin Film with High Permittivity and Tunability under Low Voltage**

T. Hu, P. Du*, Zhejiang University, China

Symposium 15: Solid Oxide Fuel Cells and Hydrogen Technology**Electrolytes**

Room: Bayside/Strand

Session Chairs: Fatih Dogan, Missouri University of S & T; Masanobu Awano, National Institute of Advanced Industrial Science and Technology (AIST)

1:20 PM**(PACRIM10-S15-001-2013) Reversible Solid Oxide Fuel Cells for Power Generation and Electrolysis using Mixed Ionic-Electronic Conducting (MIEC) Electrolytes (Invited)**

A. Virkar*, University of Utah, USA; G. Tao, Materials and Systems Research, Inc., USA

1:50 PM**(PACRIM10-S15-002-2013) A Future Energy Technology: Direct and Reversible Solid Oxide Fuel Cells (Invited)**

N. Q. Minh*, University of California, San Diego, USA

2:20 PM**(PACRIM10-S15-003-2013) Fe and Mn doped CeO₂ for improved anodic performance of LaGaO₃ base electrolyte (Invited)**

T. Ishihara*, Y. Ju, T. Shin, S. Ida, Kyushu University, Japan

2:50 PM**(PACRIM10-S15-004-2013) Atomic Layer Deposition of Ceramic Electrolytes for High Performance SOFCs (Invited)**

K. Son, K. Bae, Korea University, Republic of Korea; T. Gur, F. Prinz, Stanford University, USA; J. Shim*, Korea University, Republic of Korea

3:20 PM

Break

3:40 PM**(PACRIM10-S15-005-2013) Phase compatibility and fuel cell performance of Bi-V-O and Bi-V-Ca-O ionic materials**

Y. Lai*, W. Wei, National Taiwan University, Taiwan

4:00 PM**(PACRIM10-S15-006-2013) (Bi,Sr)FeO₃ perovskites as cathode for intermediate-temperature solid oxide fuel cells**

W. Wei, T. Huang*, National Taiwan University, Taiwan

4:20 PM**(PACRIM10-S15-007-2013) High temperature thermal expansion of LaSrTiFeO_{3-δ} in air and reducing atmosphere**

W. Shin, K. Inukai*, Nagoya Institute of Technology, Japan; K. Inukai, H. Iwai, Y. Takahashi, Noritake Co., Ltd., Japan; W. Shin, Electroceramics Processing Research Group, Japan

4:40 PM**(PACRIM10-S15-008-2013) Structural, thermal and electrical study of Bi_{1-x}Sr_xFeO₃ (0.40 ≤ x ≤ 0.55) system for Solid oxide fuel cells applications**

S. Thakur*, K. Singh, O. P. Pandey, Thapar University, India

5:00 PM**(PACRIM10-S15-009-2013) Electrochemical Performance of single step fabricated Intermediate Temperature Solid Oxide Fuel Cells**

V. Sivasankaran*, L. Combemale, G. Caboche, Université de Bourgogne, France; M. Pera, FEMTO-ST Institute TECHN-HOM, France

5:20 PM**(PACRIM10-S15-010-2013) Cell Performance of SOFC using CH₄-CO₂ mixed gas**

S. Sameshima*, N. Furukawa, Y. Hirata, Kagoshima University, Japan

5:40 PM**(PACRIM10-S15-011-2013) Effects of Local Strain on Oxide Ionic Conductivity in Cu- and Ga-doped Pr₂NiO_{4+δ} film laminated on Sm-doped CeO₂**

J. Hyodo*, S. Ida, Kyushu University, Japan; J. A. Kilner, International Institute for Carbon Neutral Energy Research, Japan; T. Ishihara, Kyushu University, Japan

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications**Oxide Thermoelectric Materials**

Room: Coastal

Session Chair: Sidney Lin, Lamar University

1:20 PM**(PACRIM10-S16-001-2013) Photo-Seebeck effect in transition-metal oxides (Invited)**

I. Terasaki*, A. Horikawa, R. Okazaki, P. S. Mondal, Y. Yasui, Nagoya University, Japan

1:50 PM**(PACRIM10-S16-002-2013) BiCuSeO-based ceramics with promising thermoelectric performance (Invited)**

J. Li*, F. Li, Tsinghua University, China

2:20 PM**(PACRIM10-S16-003-2013) An investigation into reduced polycrystalline Sr_xBa_{1-x}Nb₂O₆ for use as a high-temperature thermoelectric**

C. Dandeneau*, F. S. Ohuchi, R. K. Bordia, University of Washington, USA

2:40 PM**(PACRIM10-S16-004-2013) Thermoelectric Properties and the doping effects of Bi-based magnetic oxide**

T. Yokota*, K. Ichikawa, M. Gomi, Nagoya Institute of Technology, Japan

3:00 PM**(PACRIM10-S16-005-2013) Tailoring the Microstructural and Structural Characteristics of the (ZnO)_xIn₂O₃ Ceramics Toward Enhanced Thermoelectric Characteristics**

S. Bernik*, Center of Excellence NAMASTE, Slovenia; M. Košir, Jozef Stefan Institute, Slovenia; N. Daneu, Center of Excellence NAMASTE, Slovenia; A. Rečnik, Jozef Stefan Institute, Slovenia

3:20 PM

Break

High Performance Bulk Thermoelectric Materials I

Room: Coastal

Session Chair: Tie-Jun Zhu, Zhejiang University

3:40 PM

(PACRIM10-S16-006-2013) Complex Zintl Compounds for Discovering new High Efficiency Thermoelectric Materials (Invited)

G. Snyder*, Caltech, USA

4:10 PM

(PACRIM10-S16-007-2013) Thermal stability and strategy for improving performance of Mg₂Si_{1-x}Sn_x thermoelectric materials (Invited)

X. Tang, W. Liu*, Wuhan University of Technology, China; C. Uher, University of Michigan, USA

4:40 PM

(PACRIM10-S16-008-2013) Copper-based Thermoelectric Materials (Invited)

X. Shi*, Shanghai Institute of Ceramics, China

5:10 PM

(PACRIM10-S16-009-2013) High ZT of nanostructured p-type Bi_{2-x}Sb_xTe₃ and n-type Bi₂Te_{3-y}Se_y synthesized using hydrothermal method and evacuated-and-encapsulated sintering (Invited)

C. Liu*, National Changhua University of Education, Taiwan

5:40 PM

(PACRIM10-S16-010-2013) Design and control of point defects in Mg₂(Si, Sn) solid solution

G. Jiang*, Zhejiang University, China

Symposium 19: Advances in Photocatalytic Materials for Energy and Environmental Applications

Photocatalytic Materials for Energy and Environment I

Room: Pacifica/Tide

Session Chairs: Lianzhou Wang, University of Queensland; Dunwei Wang, Boston College

1:20 PM

(PACRIM10-S19-001-2013) Improving Hematite-Based Photoelectrochemical Water Splitting by Forming Homo- and Hetero-junctions (Invited)

M. T. Mayer, C. Du, Y. Lin, D. Wang*, Boston College, USA

1:50 PM

(PACRIM10-S19-002-2013) Effect of Atmosphere and Doping on the Crystallization and Phase Stability in Electrosynthesized TiO₂ Nanofibers

H. Albetran, I. Low*, Curtin University, Australia

2:10 PM

(PACRIM10-S19-003-2013) Photocatalytic activity of TiO₂ and SrTiO₃ nanoparticles precisely controlled in size and shape

A. Muramatsu*, T. Kimijima, M. Nakaya, K. Kanie, Tohoku University, Japan

2:30 PM

(PACRIM10-S19-004-2013) Engineering the band structure of anatase TiO₂ microspheres with a gradient doping for photocatalytic solar energy conversion (Invited)

G. Liu*, Institute of Metal Research, Chinese Academy of Sciences, China

3:00 PM

Break

3:20 PM

(PACRIM10-S19-005-2013) Ultra-thin films and coatings for applications in sustainable energy conversion and storage (Invited)

G. Westin*, Uppsala University, Sweden

3:50 PM

(PACRIM10-S19-006-2013) Solar hydrogen using co-catalyst doped niobia nanosheets and nanotubes

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

4:10 PM

(PACRIM10-S19-007-2013) Synthesis of Nitrogen Doped Nanocrystalline TiO₂ Powders and Their Applications on Indoor Air Purification

W. Cao*, University of Science and Technology Beijing, China; Y. Lu, The 306th Hospital of PLA, China

4:30 PM

(PACRIM10-S19-008-2013) Control of Fluid Friction on the Surface Coated with TiO₂ Photocatalyst under UV Illumination (Invited)

A. Nakajima*, Tokyo Institute of Technology, Japan; M. Sakai, Kanagawa Academy of Science and Technology, Japan; T. Isobe, Y. Morii, D. Kobayashi, S. Matsushita, Tokyo Institute of Technology, Japan

5:00 PM

(PACRIM10-S19-009-2013) Nanostructured TiO₂ thin film electrode for determination of chemical oxygen demand of nitrogenous organic compounds in wastewater (Invited)

S. Zhang*, Griffith University, Australia

Symposium 21: Advanced Materials and Technologies for Electrochemical Energy Storage Systems

Electrochemical Energy Storage I

Room: Surf

Session Chairs: Ilias Belharouak, Argonne National Laboratory; Palani Balaya, NUS-Singapore

1:20 PM

(PACRIM10-S21-001-2013) Development of Conductive binder for Si and Sn Anodes (Invited)

M. Wu, S. Xun, S. Park, X. Song, V. Battaglia, W. Yan, L. Wang, G. Liu*, Lawrence Berkeley National Laboratory, USA

1:50 PM

(PACRIM10-S21-002-2013) Nanocomposite anodes for Li-ion batteries prepared by ball milling (Invited)

A. M. Glushenkov*, Deakin University, Australia

2:20 PM

(PACRIM10-S21-004-2013) Improved rate capability of TiO₂ as an anode material for Li ion batteries

M. Samiee*, J. Luo, University of California San Diego, USA

2:40 PM

(PACRIM10-S21-005-2013) Investigation of electrochemical and structural changes during discharge of iron trifluoride with lithium

H. Smith*, H. T. Tan, L. K. Kim, B. Fultz, California Institute of Technology, USA

3:00 PM

(PACRIM10-S21-006-2013) Characterization on Li_{1.2}Ni_{0.2}Mn_{0.6}O₂ for Lithium-ion batteries (Invited)

B. Hwang*, W. Su, S. Hy, National Taiwan University of Science and Technology, Taiwan; J. Chen, National Synchrotron Radiation Research Center, Taiwan

3:30 PM

Break

3:50 PM

(PACRIM10-S21-008-2013) A Combined Computational/Experimental Study on Li[Li₁/6Ni(3-x)/12Mn(7-x)/12Cox/6]O₂ (x=0,1) Cathode Materials for Lithium Ion Batteries

H. Liu*, Y. S. Meng, UC San Diego, USA

4:10 PM

(PACRIM10-S21-009-2013) LiNi_{0.5}Mn_{1.5}O₄-Li₄Ti₅O₁₂ Batteries and Materials (Invited)

S. Liao, G. Ko, C. Lu*, T. Yeh, C. Liu, J. Chen, Industrial Technology Research Institute, Taiwan

4:40 PM

(PACRIM10-S21-010-2013) In-situ investigation of Stress Development in Electrode Materials for Li-ion Batteries (Invited)

A. Mukhopadhyay*, R. Kali, S. Agarwal, IIT Bombay, India; A. Tokranov, B. Sheldon, F. Guo, R. Hurt, Brown University, USA; X. Xiao, General Motors Global R&D Center, USA

5:10 PM

(PACRIM10-S21-011-2013) Preparation of P(VDF-HFP)/SBA-15 composite polymer membranes for lithium polymer batteries based on LiNi₁/3Co₁/3Mn₁/3O₂ (Invited)

C. Yang*, Z. Lian, Ming Chi University of Technology, Taiwan

Symposium 22: Glasses and Ceramics for Nuclear and Hazardous Waste Treatment

Nuclear Waste Glass Corrosion

Room: Crystal

Session Chair: Joseph Ryan, Pacific Northwest National Laboratory

1:20 PM

(PACRIM10-S22-001-2013) Insight into glass dissolution in residual rate regime: importance of glass composition

S. Gin*, B. Parruzot, P. Jollivet, D. Rebiscoul, N. Godon, CEA, France; J. Ryan, Pacific Northwest National Laboratory, USA

1:40 PM

(PACRIM10-S22-002-2013) Testing and Modeling Coupled Glass Dissolution and Alteration Phase Precipitation

W. L. Ebert*, J. A. Fortner, Argonne National Laboratory, USA

2:00 PM

(PACRIM10-S22-004-2013) Glass Dissolution Rates Measured in the Presence of Alteration Phases

W. L. Ebert*, Argonne National Laboratory, USA; C. Crawford, Savannah River National Laboratory, USA; J. Fortner, Argonne National Laboratory, USA; J. Marra, Savannah River National Laboratory, USA

2:20 PM

(PACRIM10-S22-005-2013) Rapid glass dissolution reaction coupled to aluminosilicate precipitation

J. A. Fortner*, W. L. Ebert, Argonne National Lab, USA

2:40 PM

(PACRIM10-S22-006-2013) Characterization of Solids from Long-term Corrosion Testing

J. C. Marra*, C. Crawford, Savannah River National Laboratory, USA; W. Ebert, J. Fortner, Argonne National Laboratory, USA

3:00 PM

(PACRIM10-S22-007-2013) A time-dependent picture of hydration layer evolution via isotopic tracing mechanisms

J. V. Ryan*, D. K. Schreiber, Z. Zhu, J. J. Neeway, A. V. Mitroshkov, Pacific Northwest National Laboratory, USA

3:20 PM

Break

3:40 PM

(PACRIM10-S22-008-2013) Temporal Dynamics of Alteration Layer Formation on Nuclear Waste Glasses

K. A. Murphy*, The Pennsylvania State University, USA; N. M. Washton, J. V. Ryan, Pacific Northwest National Laboratory, USA; C. G. Pantano, The Pennsylvania State University, USA; K. T. Mueller, Pacific Northwest National Laboratory, USA

4:00 PM

(PACRIM10-S22-009-2013) Kinetic Modeling of Glass Alteration Phase Precipitation: Implications for the Role of the Gel Layer

D. Strachan*, J. Neeway, Pacific Northwest National Laboratory, USA

4:20 PM

(PACRIM10-S22-010-2013) Using Solid-State NMR to Understand the Formation and Role of Surface Alteration Layers on Nuclear Waste Glass

K. A. Murphy*, The Pennsylvania State University, USA; N. M. Washton, J. V. Ryan, Pacific Northwest National Laboratory, USA; C. G. Pantano, K. T. Mueller, The Pennsylvania State University, USA

4:40 PM

(PACRIM10-S22-011-2013) The Durability of Simulated UK High Level Waste Glass Compositions Based on Recent Vitrification Campaign

M. Harrison*, NNL, United Kingdom; C. J. Steele, Sellafield Ltd., United Kingdom

5:00 PM

(PACRIM10-S22-012-2013) Dissolution rate of P0798 simulated HLW glass in MgCl₂ solution measured by using micro-channel flow-through test method as a function of pH

Y. Inagaki*, Y. Yamamura, K. Idemitsu, T. Arima, Kyushu University, Japan; S. Mitsui, JAEA, Japan; K. Noshita, Hitachi Ltd, Japan

Symposium 24: Nanostructured Bioceramics and Ceramics for Biomedical Applications

Nanostructured Bioceramics I

Room: Pointe

Session Chairs: Rena Bizios, UTSA; Masahiro Yoshimura, Natnl Cheng Kung Univ.

1:20 PM

(PACRIM10-S24-001-2013) Nanostructured Bioactive Glasses: from Experiments to Ab Initio Calculations (Invited)

C. Bonhomme*, C. Gervais, Universite P et M Curie, France; D. Laurencin, ICG, France; E. Jallot, J. Lao, J. Nedelec, J. Lacroix, IN2P3, France; J. Hanna, M. Smith, University of North Texas, USA; J. Du, Y. Xiang, University of Warwick, United Kingdom

1:40 PM

(PACRIM10-S24-002-2013) Growing Integration Layer [GIL] Strategy: Preparation of Bioactive Ceramic Layers on Metallic Materials in Solution without Firing Processes (Invited)

M. Yoshimura*, National Cheng Kung Univ., Taiwan; N. Matsushita, Tokyo Institute of Technology, Japan

2:00 PM

(PACRIM10-S24-003-2013) Multicomponent and Multifunctional Nanoparticles for Cancer Detection and Treatment

S. Li, M. Wang, C. Wang*, The University of Hong Kong, Hong Kong

2:20 PM

(PACRIM10-S24-004-2013) The Tissue/Ceramic Implant Interface: A Cell Perspective (Invited)

R. Bizios*, UTSA, USA

2:40 PM

(PACRIM10-S24-005-2013) Nanostructured bioceramics for the prevention of orthopaedic implant associated infections (Invited)

R. Wang*, University of British Columbia, Canada

3:00 PM

(PACRIM10-S24-006-2013) Silica Nano- fibers and nano-tubes from electrospun polymer templating (Invited)

Y. Shirosaki, H. Yoshinara, Y. Nakamura, S. Hayakawa, S. Chen, Kyushu Institute of Technology, Japan; A. Stamboulis, University of Birmingham, United Kingdom; N. Hanagata, National Institute of Materials Science, Japan; A. Osaka*, Kyushu Institute of Technology, Japan

3:20 PM

Break

3:40 PM

(PACRIM10-S24-007-2013) Nanostructured glass-ceramic x-ray imaging plate (Invited)

J. Johnson*, L. Leonard, H. Hah, UTSI, USA; C. Alvarez, Northwestern University, USA; R. Lubinsky, SUNY, USA; C. Johnson, UTSI, USA; A. Petford-Long, Argonne National Laboratory, USA

4:00 PM

(PACRIM10-S24-008-2013) Strengths of Solid State NMR to investigate silicon-containing bioceramics (Invited)

F. Babonneau*, C. Coelho, UPMC/CNRS/Collège de France, France; D. Marchat, Ecole Nationale Supérieure des Mines, France

4:20 PM

(PACRIM10-S24-009-2013) Nanoparticle-based colloidal hybrids for biomedical applications (Invited)

K. Katagiri*, Hiroshima University, Japan

4:40 PM

(PACRIM10-S24-010-2013) Two photon polymerization of ceramic-polymer hybrid materials

R. Narayan*, UNC/NCSU Joint Dept of Biomedical Engineering, USA

5:00 PM

(PACRIM10-S24-011-2013) A Rapid Microwave Assisted Synthesis of Alkaline Earth Phosphates Nanospheres

H. Zhou*, S. B. Bhaduri, University of Toledo, USA

5:20 PM

(PACRIM10-S24-012-2013) Polylactic acid/bioactive glass fiber meshes for craniofacial applications

L. Varila*, U. Vanamo, Åbo Akademi University, Finland; M. Puska, Turku Clinical Biomaterials Centre, Finland; P. K. Vallittu, University of Turku, Finland; J. Bobacka, L. Hupa, Åbo Akademi University, Finland

2nd International Richard M. Fulrath Symposium on "Frontiers of Ceramics for Sustainable Development"

Ceramics for Sustainable Development I

Room: Crown

Session Chairs: Mrityunjay Singh, Ohio Aerospace Institute; Yoshihiko Imanaka, Fujitsu Laboratories Ltd.

1:20 PM

(PACRIM10-FUL-001-2013) Direct Observation of Light and Heavy Elements in Energy Ceramics and Their Properties (Invited)

Y. Ikuhara*, The University of Tokyo/ Japan Fine Ceramics Center/ Tohoku University, Japan

1:50 PM

(PACRIM10-FUL-002-2013) NatureTech for ceramic processing (Invited)

H. Haneda*, National Institute for Materials Science, Japan

2:20 PM

(PACRIM10-FUL-003-2013) Novel multilayered LTCC process using aerosol-type nanoparticle deposition developed for next-generation HPC CPU packages (Invited)

Y. Imanaka*, H. Amada, F. Kumasaka, Fujitsu Laboratories Ltd., Japan

2:50 PM

(PACRIM10-FUL-004-2013) Growth and characteristics of novel single crystals for optical applications (Invited)

K. Shimamura*, National Institute for Materials Science, Japan; E. Villora, National Institute for Materials Science, Japan; N. Ichinose, Waseda University, Japan

3:20 PM

Break

3:40 PM

(PACRIM10-FUL-005-2013) Theoretical Design of Highly Active SrTiO₃-based Photocatalyst from Doping Scheme toward Solar Energy Utilization for Hydrogen Production (Invited)

N. Umezawa*, National Institute for Materials Science, Japan; P. Reunchan, Kasetsart University, Thailand; X. Hua, S. Ouyang, Y. Zhang, J. Ye, National Institute for Materials Science, Japan

4:10 PM

(PACRIM10-FUL-006-2013) Dielectric and Piezoelectric Enhancement of New Nano-structured Ceramics with High-density Heteroepitaxial Interfaces

S. Wada*, S. Kawashima, S. Ueno, I. Fujii, K. Nakashima, N. Kumada, University of Yamanashi, Japan; Y. Kuroiwa, Hiroshima University, Japan

4:30 PM

(PACRIM10-FUL-007-2013) Potential Application of Porous Electrochemical Cell for Formation of Hydrogen and Decomposition of Carbon Dioxide

Y. Hirata*, S. Sameshima, Kagoshima University, Japan

4:50 PM

(PACRIM10-FUL-008-2013) Challenges for Lead-free Piezoelectric Ceramics in Alkali Niobate System

K. Kakimoto*, Nagoya Institute of Technology, Japan

5:10 PM

(PACRIM10-FUL-009-2013) Uniformly Porous MgTi₂O₅ with Narrow Pore-Size Distribution: In-Situ Synthesis, In-Situ Evaluation and New In-Situ Surface Coating

Y. Suzuki*, University of Tsukuba, Japan

Symposium A: Glass Science

Darshana and Arun Varshneya Frontiers of Glass Science Lecture

Room: Seabreeze

Session Chair: Kelly Simmons-Potter, University of Arizona

1:00 PM

(PACRIM10-SA-167-2013) The properties of glass-forming systems at the Kauzmann temperature (Invited)

W. Kob*, Université Montpellier 2, France

Glass Transition and Relaxation I

Room: Seabreeze

Session Chairs: Kostya Trachenko, Queen Mary University of London; John McCloy, Pacific Northwest National Laboratory

2:00 PM

(PACRIM10-SA-001-2013) Bubbles in space-time: the dynamic facilitation theory of the glass transition (Invited)

J. P. Garrahan*, University of Nottingham, United Kingdom

2:30 PM

(PACRIM10-SA-002-2013) Non-linear responses of glass formers under oscillating temperature (Invited)

T. Odagaki*, Tokyo Denki University, Japan

3:00 PM**(PACRIM10-SA-003-2013) Electrical Field Assisted Viscous Flow Accompanied by Electrical Conductivity and Photoemission in a Sodium Aluminosilicate Glass**

U. Scipioni, V. M. Sglavo*, University of Trento, Italy; R. Raj, University of Colorado, USA; S. Ito, Tokyo Institute of Technology, Japan

3:20 PM**Break****3:40 PM****(PACRIM10-SA-005-2013) Diverging non-locality of the viscosity kernel for liquids approaching their glassy state (Invited)**

P. DAVIS*, RMIT University, Australia; T. Morishita, National Institute of Advanced Industrial Science and Technology, Japan

4:10 PM**(PACRIM10-SA-008-2013) Glass transition and relaxation from temperature-modulated differential scanning calorimetry simulations**

X. Guo*, J. C. Mauro, D. C. Allan, Corning Inc, USA

4:30 PM**(PACRIM10-SA-007-2013) Atomic Dynamics in Liquids (Invited)**

T. Egami*, University of Tennessee, USA

5:00 PM**(PACRIM10-SA-006-2013) The phonon theory of liquid thermodynamics and liquid-glass transition (Invited)**

K. Trachenko*, Queen Mary University of London, United Kingdom

Symposium C: Glasses for Optoelectronic and Optical Applications**Glasses for Sensing**

Room: Sunset

Session Chair: John Ballato, Clemson University

2:00 PM**(PACRIM10-SC-001-2013) 3-D Flexible Glass Photonics**

L. Li*, H. Lin, Y. Zou, University of Delaware, USA; S. Danto, J. Musgraves, K. Richardson, University of Central Florida, USA; J. Hu, University of Delaware, USA

2:20 PM**(PACRIM10-SC-002-2013) High-index-contrast Mid-IR Chalcogenide Glass Resonators on Silicon**

H. Lin*, L. Li, Y. Zou, University of Delaware, USA; S. Danto, J. Musgraves, K. Richardson, University of Central Florida, USA; J. Hu, University of Delaware, USA

2:40 PM**(PACRIM10-SC-003-2013) Monolithically Integrated Evanescently-Coupled Photodetector for Infrared Glass-on-Silicon Sensing Platform**

V. Singh*, T. Zens, Massachusetts Institute of Technology, USA; J. Hu, University of Delaware, USA; P. Lin, J. Wang, Massachusetts Institute of Technology, USA; J. Musgraves, K. Richardson, Clemson University, USA; J. Hensley, Physical Sciences Inc., USA; L. C. Kimerling, A. Agarwal, Massachusetts Institute of Technology, USA

3:00 PM**(PACRIM10-SC-004-2013) Polymer-coated Microdisk Resonators for Infrared Chemical Sensing**

V. Singh*, Massachusetts Institute of Technology, USA; J. Giammarco, A. P. Soliani, Clemson University, USA; P. Lin, Massachusetts Institute of Technology, USA; J. Hu, University of Delaware, USA; J. Musgraves, I. Luzinov, K. Richardson, Clemson University, USA; J. Hensley, Physical Sciences Inc., USA; L. C. Kimerling, A. Agarwal, Massachusetts Institute of Technology, USA

3:20 PM**Break****Photo-induced Glass Modifications**

Room: Sunset

Session Chairs: Setsuhisa Tanabe, Kyoto University; Kenji Nomura, Qualcomm

3:40 PM**(PACRIM10-SC-005-2013) Ultrafast laser written glass photonics: the challenges and opportunities (Invited)**

M. Withford*, S. Gross, D. Little, Q. Lui, Y. Duan, T. Meany, G. Smith, I. Spaleniak, N. Jovanovic, P. Dekker, M. Ireland, A. Fuerbach, M. Steel, Macquarie University, Australia

4:10 PM**(PACRIM10-SC-006-2013) Silver containing oxide glasses for multi-scale structured optical materials (Invited)**

T. Cardinal*, Y. Petit, G. Yang, ICMCB-CNRS, France; A. Royon, G. Papon, L. Canioni, LOMA, France; V. Rodriguez, M. Dussauze, ISM, France; K. Deepak, D. Grojo, O. Uteza, P. Delaporte, LP3, France

4:40 PM**(PACRIM10-SC-007-2013) Direct Mapping of Silver Photodissolution Dynamics and Reversibility in Arsenic Trisulphide Thin Films by AFM**

V. Palumbo, University of Connecticut, USA; A. Kovalskiy, Austin Peay State University, USA; H. Jain, Lehigh University, USA; B. D. Huey*, University of Connecticut, USA

5:00 PM**(PACRIM10-SC-009-2013) Mechanisms of photosensitivity in photo-thermo-refractive glass and volume Bragg gratings**

J. Lumeau*, University of Central Florida, USA; L. Glebova, V. Smirnov, OptiGrate Corp, USA; M. Klimov, L. Glebov, University of Central Florida, USA

Symposium D: James C. Phillips Honorary Symposium**Topological Constraint Theory of Glass I**

Room: Palm

Session Chairs: Matthieu Micoulaut, UPMC; John Mauro, Corning Incorporated

2:00 PM**(PACRIM10-SD-001-2013) Some thoughts on James Charles Phillips (Invited)**

P. Boolchand*, University of Cincinnati, USA

2:30 PM**(PACRIM10-SD-002-2013) Understanding and Predicting the Properties of Complex Materials (Invited)**

M. M. Smedskjaer*, Aalborg University, Denmark; J. C. Mauro, Corning Incorporated, USA; Y. Yue, Aalborg University, Denmark

3:00 PM**(PACRIM10-SD-003-2013) Structure Property Relationships and Bond Percolation Effects in low-k Dielectric Materials (Invited)**

S. King*, Intel Corporation, USA

3:30 PM**Break****3:50 PM****(PACRIM10-SD-004-2013) Why the Phillips constraint theory of glasses works (Invited)**

K. Trachenko*, Queen Mary University of London, United Kingdom

4:20 PM**(PACRIM10-SD-005-2013) Constraint theory for ionic network forming systems (Invited)**

P. Gupta*, Ohio State University, USA

4:50 PM**(PACRIM10-SD-006-2013) Anomalies in glassy B2O3 unveiled by topological considerations of crystalline polymorphs (Invited)**

G. Ferlat*, A. Seitsonen, M. Lazzeri, F. Mauri, Univ. P. & M. Curie (UPMC), France

5:20 PM

(PACRIM10-SD-007-2013) Topology and Rigidity in Alkali Borate Glasses: The Volterra Approach (Invited)
R. Kerner*, University of Paris-VI, France

Tuesday, June 4, 2013

Symposium 01: Advanced Characterization and Modeling of Ceramic Interfaces

Advanced Characterization of Ceramic Interfaces

Room: Continental

Session Chairs: Albina Borisevich, Oak Ridge National Laboratory;
Si-Young Choi, Korea Institute of Materials Science

8:30 AM

(PACRIM10-S01-012-2013) Grain Boundary Character, Segregation and Atomic Structures in Oxide Ceramics (Invited)
Y. Ikuhara*, The University of Tokyo/ Japan Fine Ceramics Center/ Tohoku University, Japan

9:00 AM

(PACRIM10-S01-013-2013) Interface structure and configuration of mismatch dislocations in the Perovskite thin films (Invited)
X. Ma*, Institute of Metal Research, Chinese Academy of Sciences, China

9:30 AM

(PACRIM10-S01-014-2013) Quantifying octahedral tilts in perovskite films at the nanoscale (Invited)
J. Hwang*, J. Son, S. Stemmer, University of California, Santa Barbara, USA

10:00 AM

Break

10:10 AM

(PACRIM10-S01-015-2013) In-situ TEM Investigations of Grain Boundary Formation through Electric Field Assisted Sintering (Invited)
K. van Benthem*, University of California-Davis, USA

10:40 AM

(PACRIM10-S01-016-2013) Dynamic observations of dislocation-grain boundary interaction in SrTiO₃ by *in situ* TEM nanoindentation

S. Kondo*, T. Mitsuma, E. Tochigi, N. Shibata, Y. Ikuhara, The University of Tokyo, Japan

11:00 AM

(PACRIM10-S01-017-2013) Atomic structure and band gap of CuInSe₂ grain boundary

H. Yamaguchi*, University of Tokyo, Japan; H. Hiramatsu, H. Hosono, Tokyo Institute of Technology, Japan; T. Mizoguchi, University of Tokyo, Japan

11:20 AM

(PACRIM10-S01-018-2013) Atomic-scale Structure of a (112)[1-10] Tilt Grain Boundary in TiO₂

R. Sun*, University of Tokyo, Japan; M. Saito, Tohoku University, Japan; R. Ishikawa, University of Tokyo, Japan; Z. Wang, S. Tsukimoto, Tohoku University, Japan; N. Shibata, Y. Ikuhara, University of Tokyo, Japan

11:40 AM

(PACRIM10-S01-019-2013) Structure, composition, and electrical property of an iron-doped alumina single grain boundary

K. Kato*, Y. Sato, K. Obara, N. Takahashi, N. Shibata, Y. Ikuhara, The University of Tokyo, Japan

Symposium 04: Polymer Derived Ceramics and Composites

Modeling and Nano-Structure of PDCs

Room: Garden

Session Chair: Peter Kroll, UT Arlington

8:30 AM

(PACRIM10-S04-012-2013) Modeling structure and properties of amorphous silicon boron nitride ceramics (Invited)
C. Schoen*, Max Planck Institute for Solid State Research, Germany

9:00 AM

(PACRIM10-S04-013-2013) Controlled Volume Fraction Si₃N₄/SiC Nanocomposites from Polysilazane-Derived Ceramics
K. T. Strong*, R. K. Bordia, University of Washington, USA

9:20 AM

(PACRIM10-S04-014-2013) Solute Atoms and Grain Boundary Segregated Atoms in Covalent Bonded Crystals (Invited)

Y. Ikuhara*, The University of Tokyo/ Japan Fine Ceramics Center/ Tohoku University, Japan

9:50 AM

Break

Energy and Functional Applications I

Room: Garden

Session Chair: Isabel Kinski, Fraunhofer IKTS

10:10 AM

(PACRIM10-S04-015-2013) Research and development of Si-O-C anode for rechargeable lithium ion batteries (Invited)

K. Kanamura*, Tokyo Metropolitan University, Japan; H. Fukui, Dow Corning Toray Company Ltd., Japan; Y. Jin, M. Nagasaki, E. Nagahisa, Tokyo Metropolitan University, Japan

10:40 AM

(PACRIM10-S04-017-2013) Polymer-derived SiOC/Carbon nanotube Shell/Core Composite as a Stable Li-ion Battery Anode
R. Bhandavat, G. Singh*, Kansas State University, USA

11:00 AM

(PACRIM10-S04-018-2013) Understanding Li Insertion in Polymer-Derived SiCO Ceramics

P. Kroll*, UT Arlington, USA

11:20 AM

(PACRIM10-S04-019-2013) A novel process for *in situ* growth of carbon nanotubes in cellular polymer derived ceramics and their electrical properties

Y. Peng, K. Wang*, R. K. Bordia, University of Washington, USA

Symposium 06: Synthesis and Processing of Materials Using Electric Fields/Currents: A Symposium Honoring Prof. Zuhair Munir

Fundamentals Investigations in Current Assisted Densification II

Room: Hanover

Session Chairs: Eugene Olevsky, San Diego State University; Takashi Goto, IMR Tohoku University

8:30 AM

(PACRIM10-S06-012-2013) SPS Fabrication of Novel Glass materials Based on Order-disorder Transition (ODT) (Invited)

L. Wang*, W. Jiang, Donghua University, China; L. Chen, Shanghai Institute of Ceramics, China

9:00 AM

(PACRIM10-S06-014-2013) The role of the pressure parameter in the Current Activated Pressure Assisted Densification (CAPAD) of nanocrystalline materials

A. Dupuy, J. Alaniz, C. Hardin, Y. Kodera, J. E. Garay*, University of California, USA

9:20 AM

(PACRIM10-S06-015-2013) Surface and Interface Effects during Densification of Ceramic Nanoparticles by Spark Plasma Sintering (Invited)

R. Chaim*, Technion-Israel Institute of Technology, Israel

9:50 AM**Break**

Consolidation of Nanocrystalline Materials I

Room: Hanover

Session Chairs: Eugene Olevsky, San Diego State University; Takashi Goto, IMR Tohoku University

10:10 AM

(PACRIM10-S06-016-2013) YAG transparent ceramics produced by SPS from nanopowders prepared by co-precipitation method

F. Bernard*, Universite de Bourgogne, France; C. Marlot, E. Barraud, French-German ISL, France; S. Le Gallet, F. Naimi, Universite de Bourgogne, France; M. Eichorn, French-German ISL, France

10:30 AM

(PACRIM10-S06-017-2013) Processing of light producing/controlling transparent ceramics using current activated pressure assisted densification

Y. Kodera*, A. T. Wieg, E. H. Penilla, J. R. Morales, J. E. Garay, UC Riverside, USA

10:50 AM

(PACRIM10-S06-018-2013) Probing localized electricity in insulating/conductive ceramic nanocomposites by scanning impedance microscopy (SIM)

C. A. Lee*, H. Liu, P. Su, J. Huang, National Cheng Kung University, Taiwan

11:10 AM

(PACRIM10-S06-019-2013) Fabrication of Transparent MgAl₂O₄ Spinel by Optimizing Loading Schedule during Spark-Plasma-Sintering

K. Morita*, B. Kim, H. Yoshida, National Institute for Materials Science, Japan; K. Hiraga, Kitami Institute of Technology, Japan; Y. Sakka, National Institute for Materials Science, Japan

Symposium 08: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications

Properties and Characterization II

Room: Windsor Complex

Session Chair: Walter Krenkel, University of Bayreuth

8:30 AM

(PACRIM10-S08-013-2013) Cf/SiC Ceramic Matrix Composites Fabricated by in situ Reaction Method (Invited)

S. Dong*, B. Wu, X. Zhang, Y. Ding, Z. Wang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9:00 AM

(PACRIM10-S08-014-2013) Properties of Cf/SiC Composites with Different Reinforcement Arrangement

Y. Ding*, J. Yang, S. Dong, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9:20 AM

(PACRIM10-S08-015-2013) Preparation of C/SiC Ceramic Matrix Composite Containing Boron-bearing Species

F. Zhou*, S. Dong, Z. Wang, B. Wu, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9:40 AM

(PACRIM10-S08-016-2013) Properties of C/C-SiC Composites Prepared by a Novel Silicon Infiltration Method

H. Zhou*, S. Dong, Y. Ding, Z. Wang, L. Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

10:00 AM**Break****10:20 AM**

(PACRIM10-S08-017-2013) Ceramic Matrix Composites Manufactured by Multistep Densification of Si-O-C Fibre Preform

L. Maille*, M. Dourges, S. Le Ber, P. Weisbecker, R. Pailler, Laboratory for Thermostructural Composites, France

10:40 AM

(PACRIM10-S08-019-2013) Fracture Criterion of Short Carbon Fiber-Dispersed SiC Matrix Composite under Mixed Mode Condition

I. Ryo*, K. Hideki, K. Yutaka, The University of Tokyo, Japan

11:00 AM

(PACRIM10-S08-021-2013) Processing, mechanical and thermal properties of Lu-Si-O-N ceramics

Z. Tian*, L. Sun, J. Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

11:20 AM

(PACRIM10-S08-018-2013) Phase Transformation Mechanisms for Transformation Plasticity of Rare-Earth Orthophosphate Fiber-Matrix Interphases during Fiber Push-Out in Ceramic Matrix Composites

R. Hay*, Air Force Research Lab, USA; P. Mogilevsky, E. Boakye, UES, Inc., USA

Symposium 11: Geopolymers: Low Energy, Environmentally Friendly, Inorganic Polymeric Ceramics

Microstructure and Mechanical Properties

Room: Tudor

Session Chair: Arie van Riessen, Curtin University

8:30 AM

(PACRIM10-S11-008-2013) Mechanical Properties of Carbon Fiber Reinforced Potassium Geopolymer (Invited)

S. Cho*, W. Kriven, University of Illinois at Urbana-Champaign, USA

9:00 AM

(PACRIM10-S11-009-2013) Mechanical properties measurements of geopolymers (Invited)

X. Fan, E. D. Case, Michigan State University, USA; S. Cho, W. M. Kriven*, University of Illinois at Urbana-Champaign, USA

9:30 AM

(PACRIM10-S11-010-2013) The Influence of Fibre Type and their Aspect Ratio on the Toughness of Geopolymer Composites (Invited)

A. van Riessen*, L. Vickers, W. D. Rickard, Curtin University, Australia

10:00 AM**Break**

10:20 AM

(PACRIM10-S11-011-2013) Development of Thai fly ash blended with Thai rice husk ash geopolymers (Invited)

C. Tippayasam, J. Paramee, Kasetsart University, Thailand; T. Panyathanmaporn, National Metal and Materials Technology Center, Thailand; C. Leonelli, University of Modena and Reggio Emilia, Italy; D. Chaysuwan*, Kasetsart University, Thailand

10:50 AM

(PACRIM10-S11-013-2013) Effects of alkali activated materials on the corrosion behaviour of embedded steel reinforcements (Invited)

M. C. Bignozzi*, C. Chiavari, S. Manzi, University of Bologna, Italy; A. van Riessen, Curtin University, Australia

Symposium 12: Advances in Electroceramics**Fundamental and Processing of Electronic Ceramics and Oxide Thin Films**

Room: Crystal

Session Chair: Dragan Damjanovic, Swiss Federal Institute of Technology in Lausanne

8:30 AM

(PACRIM10-S12-002-2013) Enhancing the Electronic Conductivity of Vanadium-Tellurite Glasses by Tuning the Redox State

J. Kjeldsen*, Y. Yue, Aalborg university, Denmark

8:50 AM

(PACRIM10-S12-003-2013) BaTiO₃-ceramics micro structures new fractal frontiers

V. Mitic*, V. Paunovic, University of Nis, Serbia; B. Jordovic, University of Kragujevac, Serbia; P. Petkovic, S. Djordjevic, University of Nis, Serbia

9:10 AM

(PACRIM10-S12-004-2013) Glasses and glass ceramics as dielectrics for high power capacitors

M. Letz*, Schott AG, Germany

9:30 AM

(PACRIM10-S12-001-2013) ZnO-based materials for the active layer of thin film transistors (Invited)

H. Lee*, Sungkyunkwan University, Republic of Korea

10:00 AM

Break

Ferroelectric Thin Films and MEMS Devices

Room: Crystal

Session Chair: Bryan Huey, University of Connecticut

10:20 AM

(PACRIM10-S12-005-2013) Processing of Piezoelectric MEMS Across Length Scales (Invited)

S. Trolier-McKinstry*, R. Johnson-Wilke, D. Wilke, R. Keech, S. Shetty, C. Yeager, Penn State, USA; D. Schwartz, V. Cotroneo, P. Reid, Smithsonian Astrophysical Observatory, USA; M. Copel, G. Martyna, D. Newns, T. Shaw, T. Theis, IBM, USA

10:50 AM

(PACRIM10-S12-006-2013) Breaking of macroscopic centric symmetry in unpoled ferroelectric ceramics and in paraelectric phase of ferroelectric ceramics (Invited)

A. Biancoli, D. Damjanovic*, Swiss Federal Institute of Technology in Lausanne, Switzerland

11:20 AM

(PACRIM10-S12-007-2013) Effect of bottom electrode on the electrical properties of Ca-doped Barium Zirconate Titanate thin films by RF magnetron sputtering

H. Suzuki*, Y. Kamai, N. Sakamoto, D. Fu, N. Wakiya, Shizuoka University, Japan

Symposium 13: Microwave Materials and Their Applications**Tunable Dielectrics for Microwave Electronics II**

Room: Stuart

Session Chair: Jian Jiang Bian, Shanghai University

8:30 AM

(PACRIM10-S13-011-2013) Mechanism and Control of High Tunability of (100) Oriented (Pb,Sr)TiO₃ Thin Films (Invited)

P. Du*, N. Ma, Z. Zheng, Zhejiang University, China

9:00 AM

(PACRIM10-S13-012-2013) Interface Engineered Ferroelectric Heterostructures (Invited)

C. Chen*, University of Texas at San Antonio, USA

9:30 AM

(PACRIM10-S13-013-2013) Microstructure and microwave properties of low temperature sintered BST thick-films and their applicability to co-firing processes

C. Kohler*, A. Friederich, Karlsruhe Institute of Technology (KIT), Germany; D. Wang, Karlsruhe Institute of Technology, Germany; M. Nikfalazar, M. Sazegar, R. Jakoby, Technische Universität Darmstadt, Germany; J. R. Binder, Karlsruhe Institute of Technology (KIT), Germany

Ceramic Materials and Technology for Microwave and Millimeter Wave Devices

Room: Stuart

Session Chair: Chonglin Chen, University of Texas at San Antonio

9:50 AM

(PACRIM10-S13-015-2013) There is no secret ingredient in super-Q BaMg_{1/3}Ta_{2/3}O₃ microwave ceramic (Invited)

T. Kolodiaznyh*, National Institute for Materials Science, Japan

10:20 AM

(PACRIM10-S13-017-2013) Phase evolution and controllable shrinkage induced by dispersant in BaAl₂Si₂O₈ low-permittivity microwave dielectric ceramics

W. Lei, X. Wang, R. Ang, W. Lu*, Huazhong University of Science and Technology, China

10:40 AM

(PACRIM10-S13-018-2013) Titanate glass-ceramics for mobile applications in the GHz range

H. Braun*, M. Letz, Schott AG, Germany; M. Hovhannisyann, TU Darmstadt, Germany; H. Elmers, University of Mainz, Germany; O. Leisten, Sarantel Ltd., United Kingdom

11:00 AM

(PACRIM10-S13-019-2013) Mg-Modified Ba((Co_{0.6}Zn_{0.4})_{1/3}Nb_{2/3})O₃ Microwave Dielectric Ceramics

P. Ma*, L. Yi, L. Li, X. Chen, Zhejiang University, China

11:20 AM

(PACRIM10-S13-014-2013) A new class of Microwave Garnets with high Dielectric Constants (Invited)

D. B. Cruickshank*, M. D. Hill, Skyworks TransTech, USA

11:50 AM

(PACRIM10-S13-016-2013) Low Loss Ceramic-polymer Composites for Microwave Antenna and Wireless Sensor Applications

L. Zhang, Z. Yue*, L. Li, Tsinghua University, China

Symposium 15: Solid Oxide Fuel Cells and Hydrogen Technology

Electrodes

Room: Bayside/Strand

Session Chairs: Nguyen Minh, UCSD; Yoshikazu Suzuki, University of Tsukuba

8:30 AM

(PACRIM10-S15-012-2013) Development of the Advanced Ceramic Reactor (Invited)

K. Hamamoto, Y. Fujishiro, T. Suzuki, T. Yamaguchi, H. Sumi, M. Awano*, National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:00 AM

(PACRIM10-S15-013-2013) Different Cathode Interactions and Performance Behaviors in Solid Oxide Fuel Cells (Invited)

K. Lu*, W. Li, Z. Xia, Virginia Tech, USA

9:30 AM

(PACRIM10-S15-014-2013) Advanced and durable cathodes enable an SOFC to operate at lower temperature (Invited)

S. Choi, S. Yoo, Ulsan National Institute of Science and Technology (UNIST), Republic of Korea; J. Shin, Dong-Eui University, Republic of Korea; G. Kim*, Ulsan National Institute of Science and Technology (UNIST), Republic of Korea

10:00 AM

Break

10:20 AM

(PACRIM10-S15-015-2013) Solid Oxide Metal-air Battery – A New Energy Storage Mechanism (Invited)

K. Huang*, X. Zhao, Y. Gong, X. Li, University of South Carolina, USA

10:50 AM

(PACRIM10-S15-016-2013) Highly Stable Nanostructured Composite Electrodes for Solid Oxide Fuel Cells (Invited)

F. Dogan*, A. Buyukaksoy, A. Sarikaya, V. Petrovsky, Missouri University of Science and Technology, USA

11:20 AM

(PACRIM10-S15-017-2013) Fabrication of Anode Supported SOFC with Apatite type Lanthanum Silicate Paste Films

R. Mori*, Fuji Pigment Co.Ltd, Japan; H. Yoshioka, Hyogo Prefectural Institute of Technology, Japan

11:40 AM

(PACRIM10-S15-018-2013) Solid Oxide Fuel Cell Cathode Enhancement

G. G. Tao*, Materials & Systems Research Inc., USA

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications

High Performance Bulk Thermoelectric Materials II

Room: Coastal

Session Chair: Chan Park, Seoul National University

8:30 AM

(PACRIM10-S16-033-2013) Neutron scattering on microstructure network and phonon density of states in thermoelectric materials (Invited)

H. Kang*, Clemson University, USA; W. Xie, Wuhan University of Technology, China; M. Riemer, D. Hitchcock, I. Bredeson, J. He, Clemson University, USA; X. Tang, Wuhan University of Technology, China; M. Laver, Paul Scherrer Institut, Switzerland; B. Hammouda, National Institute of Standards and Technology, USA; C. Stock, Rutherford Appleton Laboratory, United Kingdom

9:00 AM

(PACRIM10-S16-012-2013) Synthesis and Properties of Zintl Phase Thermoelectric Materials (Invited)

S. Kauzianich*, University of California, Davis, USA

9:30 AM

(PACRIM10-S16-013-2013) Development of novel borides, silicides, and oxides, as effective high temperature thermoelectric materials (Invited)

T. Mori*, National Institute for Materials Science (NIMS) (&Univ. of Tsukuba), Japan

10:00 AM

Break

Thermoelectric Materials: Skutterudites

Room: Coastal

Session Chair: James Salvador, General Motors Research

10:20 AM

(PACRIM10-S16-014-2013) Synthesis and optimization of the thermoelectric properties of p-type skutterudites (Invited)

G. S. Nolas*, Y. Dong, K. Wei, University of South Florida, USA; P. Puneet, T. Tritt, Clemson University, USA; J. Martin, National Institute of Standards and Technology, USA

10:50 AM

(PACRIM10-S16-015-2013) Are light bands or heavy bands favored for p-type Skutterudites? (Invited)

J. Yang*, S. Wang, J. Yang, Univ. of Washington, USA; W. Zhang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

11:20 AM

(PACRIM10-S16-016-2013) Melt Spun Skutterudites: Thermoelectric and Mechanical Properties

D. R. Thompson*, Optimal Inc., USA; J. R. Salvador, General Motors R&D, USA; A. A. Wereszczak, H. Wang, Oak Ridge National Laboratory, USA; D. J. Miller, D. N. Brown, Molycorp International, Singapore

11:40 AM

(PACRIM10-S16-017-2013) The role of Ga in Ba_{0.30}GaxCo₄Sb_{12+x} filled skutterudites

X. Su*, X. Tang, Wuhan University of Technology, China; C. Uher, University of Michigan, USA

Symposium 19: Advances in Photocatalytic Materials for Energy and Environmental Applications

Photocatalytic Materials for Energy and Environment II

Room: Pacifica/Tide

Session Chairs: Seong-Ju Hwang, Ewha Womans University; Gang Liu, Institute of Metal Research, Chinese Academy of Sciences

8:30 AM

(PACRIM10-S19-011-2013) Electronic and Optical Properties of Nitrogen-doped Layered Manganese Oxides (Invited)

G. Giorgi, K. Yamashita*, The University of Tokyo, Japan

9:00 AM

(PACRIM10-S19-013-2013) Comparative study on photocatalytic decomposition activity and photoinduced hydrophilicity of brookite-heteropolyacid hybrid films

K. Pruthiarenun*, T. Isobe, S. Matsushita, A. Nakajima, Tokyo Institute of Technology, Japan

9:20 AM

(PACRIM10-S19-014-2013) 2D nanosheet-based photocatalysts for visible light-induced generation of H₂ and O₂ (Invited)

S. Hwang*, Ewha Womans University, Republic of Korea

9:50 AM

Break

10:10 AM

(PACRIM10-S19-015-2013) Nanocapacitors of Self-Assembled Oxide Nanocubes for Energy Efficient Memory Devices (Invited)

S. Li*, The University of New South Wales, Australia

10:40 AM

(PACRIM10-S19-016-2013) Photocatalytic Activity Of Self Assembled Oxide Nanosheets $H_2(Ca,Na)NbO_{3n+1}$ ($n=2,3,4,5$)

J. Liu*, S. Miller, V. Blair, S. Misture, Alfred University, USA

11:00 AM

(PACRIM10-S19-012-2013) Creating active sites in mesostructure of MCM-41 for efficient photocatalytic hydrogen generation under visible light

S. Shen*, J. Chen, Z. Liu, L. Guo, Xi'an Jiaotong University, China

Symposium 21: Advanced Materials and Technologies for Electrochemical Energy Storage Systems

Electrochemical Energy Storage II

Room: Surf

Session Chairs: She-huang Wu, Tatung University Taiwan; Daniel Abraham, Argonne National Laboratory

8:30 AM

(PACRIM10-S21-012-2013) Understanding Performance and Performance Degradation of High-Energy Lithium-ion Cells (Invited)

D. Abraham*, Y. Zhu, Y. Li, M. Bettge, Argonne National Laboratory, USA

9:00 AM

(PACRIM10-S21-013-2013) Towards Understanding The Oxygen Reaction Mechanisms in Li-Excess Cathode Materials for Li-ion Battery

S. Hy*, National Taiwan University of Science and Technology, Taiwan; J. Chen, National Synchrotron Radiation Research Center, Taiwan; B. Hwang, National Taiwan University of Science and Technology, Taiwan

9:20 AM

(PACRIM10-S21-014-2013) Li-ion cell and material study by Isothermal and Differential Scanning Calorimetry

P. J. Ralbovsky*, Netzsch Instruments, USA

9:40 AM

(PACRIM10-S21-015-2013) Improving cycling performance of $LiNi_{0.5}Mn_{1.5}O_4$ cathode material by surface modification

J. Shiu*, W. Pang, S. Wu, Tatung University, Taiwan

10:00 AM

Break

10:20 AM

(PACRIM10-S21-016-2013) High Energy X-ray Diffraction for Advanced Material Development

Z. Chen*, Y. Ren, Argonne National Laboratory, USA

10:40 AM

(PACRIM10-S21-017-2013) The Effect of Particle Size and Morphology on the Electrochemical and Physical Properties of Li-excess $Li[Li_2/12Ni_3/12Mn_7/12]O_2$ Cathode Material

M. Verde*, H. Liu, K. Carroll, S. Meng, University of California, San Diego, USA

11:00 AM

(PACRIM10-S21-018-2013) Computational investigation on the layer-spinel interface properties for cathode materials in lithium ion batteries

D. Qian*, Y. S. Meng, UC San Diego, USA

11:20 AM

(PACRIM10-S21-019-2013) Metal-oxide network for lithium-ion battery anodes and cathodes

Y. Xu, L. Fei, H. Luo*, New Mexico State University, USA

11:40 AM

(PACRIM10-S21-020-2013) The Role of Li_3PO_4 -Based Surface Amorphous Films on Modifying $LiCoO_2$ Cathodes

J. Huang*, J. Luo, University of California San Diego, USA

Symposium 24: Nanostructured Bioceramics and Ceramics for Biomedical Applications

Nanostructured Bioceramics II

Room: Pointe

Session Chairs: Pelagia Gouma, SUNY Stony Brook; Mohamed Rahaman, Missouri University of Science & Technology

8:30 AM

(PACRIM10-S24-014-2013) Formation and Characteristics of Osteoconductive Nanocomposite Scaffolds Produced by Negative Voltage Electrospinning

H. Tong, M. Wang, C. Wang*, The University of Hong Kong, Hong Kong

8:50 AM

(PACRIM10-S24-015-2013) Invited: Nanostructured Ceramic Sensors for Breath Diagnostics (Invited)

P. Gouma*, SUNY Stony Brook, USA

9:10 AM

(PACRIM10-S24-016-2013) Nanostructured ceramics with tailored functionalization for biotechnology and biomedical applications (Invited)

S. Kroll*, T. Klein, U. Hess, L. Treccani, K. Rezwan, University of Bremen, Germany

9:30 AM

(PACRIM10-S24-017-2013) Bioactive glasses exhibiting controlled therapeutic ion release for bone regeneration (Invited)

A. Boccaccini*, Univ. of Erlangen-Nuremberg, Germany

10:00 AM

Break

10:20 AM

(PACRIM10-S24-018-2013) Development of Bioactive Glass Scaffolds for Segmental Bone Repair (Invited)

M. N. Rahaman*, Missouri University of Science & Technology, USA

10:40 AM

(PACRIM10-S24-019-2013) Design, synthesis and evaluation of gelatinous hydroxyapatite nanocomposites for orthopedic applications (Invited)

C. Ko*, University of North Carolina-Chapel Hill, USA

11:00 AM

(PACRIM10-S24-020-2013) Organically Functionalized alkoxysilane mediated synthesis of functional nanomaterials and their applications (Invited)

P. C. Pandey*, Indian Institute of Technology, Banaras Hindu University, India

11:20 AM

(PACRIM10-S24-021-2013) Preparing Bioceramics and Drug Contained Biocomposite Coatings for Biointegration by Electrolysis (Invited)

S. Yen*, National Chung Hsing University, Taiwan

11:40 AM

(PACRIM10-S24-022-2013) Development of Immobilized urease reactor based on organically modified sol-gel glass for urea sensing

P. C. Pandey, D. Panday*, Indian Institute of Technology, Banaras Hindu University, India

2nd International Richard M. Fulrath Symposium on "Frontiers of Ceramics for Sustainable Development"

Ceramics for Sustainable Development II

Room: Crown

Session Chair: Satoshi Wada, University of Yamanashi

8:30 AM

(PACRIM10-FUL-010-2013) High-speed preparation of superconducting YBCO film by laser CVD (Invited)

T. Goto*, P. Zhao, A. Ito, IMR Tohoku University, Japan

9:00 AM

(PACRIM10-FUL-011-2013) Fabrication of Highly Structure-Controlled Ceramics by Advanced Powder Processing (Invited)

Y. Sakka*, NIMS, Japan

9:30 AM

(PACRIM10-FUL-012-2013) Design of Permanent Expansion into Refractories (Invited)

R. Bradt*, The University of Alabama, USA

10:00 AM

Break

10:20 AM

(PACRIM10-FUL-013-2013) Grain boundary fracture toughness of Si_3N_4 ceramics measured using very small specimens

J. Tatami*, M. Katayama, Yokohama National University, Japan; T. Yahagi, Kanagawa Academy of Science and Technology, Japan; T. Horiuchi, M. Yokouchi, Kanagawa Industrial Technology Center, Japan; K. Yasuda, Tokyo Institute of Technology, Japan; D. Kim, Korea Advanced Institute of Science and Technology, Republic of Korea

10:40 AM

(PACRIM10-FUL-014-2013) Ceramics and Polymer Hybrid Materials Processing with Nano Second Pulse Field

T. Nakayama*, H. Cho, T. Fujihara, M. Tan, N. Son, W. Jiang, T. Suzuki, H. Suematsu, K. Nihara, Nagaoka University of Technology, Japan

11:00 AM

(PACRIM10-FUL-015-2013) 2D Nanosheets from Layered Ceramics: To Graphene and Beyond

M. Osada*, National Institute for Materials Science, Japan

11:20 AM

(PACRIM10-FUL-016-2013) Synthesis and characterization of lithium aluminate red phosphors

M. Aoyama, S. Sakaida, Y. Amano, Graduate School of Engineering, Nagoya Institute of Technology, Japan; K. Inoue, Mie Industrial Research Institute, Japan; S. Honda, Graduate School of Engineering, Nagoya Institute of Technology, Japan; S. Hashimoto, Nagoya Institute of Technology, Japan; Y. Iwamoto*, Graduate School of Engineering, Nagoya Institute of Technology, Japan

11:40 AM

(PACRIM10-FUL-017-2013) Synthesis and Photo-Induced Electrical Properties of Bismuth Ferrite-Based Thin Films

W. Sakamoto*, N. Makino, K. Yoshida, M. Morita, T. Yogo, Nagoya University, Japan

Symposium A: Glass Science

George W. Morey Award Lecture

Room: Seabreeze

Session Chair: Kelly Simmons-Potter, University of Arizona

8:00 AM

(PACRIM10-SA-168-2013) Focus> and Flash! *Changing the structure of glass with light* (Invited)

D. M. Krol*, University of California, Davis, USA

Glass Transition and Relaxation II

Room: Seabreeze

Session Chair: Kostya Trachenko, Queen Mary University of London

9:00 AM

(PACRIM10-SA-009-2013) Phase separation and crystallization processes in borosilicate glass (Invited)

S. Schuller*, CEA, France

9:30 AM

(PACRIM10-SA-010-2013) Viscosity, Crystallization and Glass Forming Tendency of $\text{Na}_2\text{O-CaO-B}_2\text{O}_3$ Melts

K. Goetschius*, L. Ghussn, R. K. Brow, Missouri University of Science and Technology, USA

9:50 AM

Break

10:10 AM

(PACRIM10-SA-011-2013) On the GRP Method for Critical Cooling Rate Calculations

B. P. Rodrigues, E. D. Zanotto*, Fed. University Sao Carlos, Brazil

10:30 AM

(PACRIM10-SA-012-2013) Evolution of Dynamical Heterogeneities during Sub-Tg Annealing of Amorphous Selenium

O. Gulbilen*, University of Arizona, USA; J. C. Mauro, Corning Incorporated, USA; P. Lucas, University of Arizona, USA

Non-Oxide Glasses I

Room: Seabreeze

Session Chairs: Pierre Lucas, Univ of Arizona; Elynn King, Corning

10:50 AM

(PACRIM10-SA-013-2013) Comprehensive Structural Characterization and Modeling of amorphous Ga-Sb phase change alloys

T. Edwards*, University of California, Davis, USA; B. Kalkan, Lawrence Berkeley Laboratory, USA; S. Raoux, IBM T. J. Watson Research Center, USA; S. Sen, University of California, Davis, USA

11:10 AM

(PACRIM10-SA-014-2013) A multi-technique investigation into the structure of ternary chalcogenide glasses in the system $\text{BaSe-Ga}_2\text{Se}_3\text{-GeSe}_2$

A. Mao*, University of California at Davis, USA; B. Aitken, Corning Incorporated, USA; S. Sen, University of California at Davis, USA

11:30 AM

(PACRIM10-SA-015-2013) Structural Investigation of Mixed Glass Former Glasses in the $\text{Na}_2\text{S}+\text{GeS}_2+\text{P}_2\text{S}_5$ and $\text{Na}_2\text{S}+\text{SiS}_2+\text{P}_2\text{S}_5$ Systems

C. Bischoff*, N. Dunlap, S. W. Martin, Iowa State University, USA

Symposium C: Glasses for Optoelectronic and Optical Applications

Glasses with Nanoparticles

Room: Sunset

Session Chair: Heike Ebendorff-Heidepriem, University of Adelaide

9:00 AM

(PACRIM10-SC-010-2013) PbS Quantum Dot Formation on Rare-Earth Ion Clusters in Glasses

J. Heo*, W. J. Park, Pohang University of Science and Technology, Republic of Korea; W. J. Chung, Kongju National University, Republic of Korea

9:20 AM

(PACRIM10-SC-011-2013) Spectral engineering of optical fiber preforms through active nanoparticle doping

J. Ballato*, T. Lindstrom, T. Hawkins, Clemson University, USA; M. Bass, University of Central Florida, USA

9:40 AM

Break

Photoluminescent Materials I

Room: Sunset

Session Chair: Thierry Cardinal, ICMCB-CNRS

10:00 AM

(PACRIM10-SC-012-2013) Transparent glass ceramics showing long persistent luminescence (Invited)

S. Tanabe*, Kyoto University, Japan; T. Nakanishi, Hokkaido University, Japan

10:30 AM

(PACRIM10-SC-014-2013) Structure of doped tin fluorophosphates glasses: a joint computational-experimental effort aimed at improving solar cell efficiency

J. Oelgoetz*, T. Tanner, J. York-Winegar, A. Kovalskiy, T. A. Harper, H. Ulery, B. Carrie, Austin Peay State University, USA

Symposium D: James C. Phillips Honorary Symposium

Topological Constraint Theory of Glass II

Room: Palm

Session Chairs: Matthieu Micoulaut, UPMC; John Mauro, Corning Incorporated

9:00 AM

(PACRIM10-SD-009-2013) Structure, dynamical properties and topology of GST phase change materials (Invited)

J. Raty*, University of Liege, Belgium; C. Bichara, CNRS Univ. Aix-Marseille, France

9:30 AM

(PACRIM10-SD-011-2013) Predicting the Fragility of Network-Forming Melts near the Rigidity Transition: A Coarse-graining Approach

D. Sidebottom*, S. Schnell, T. Tran, Creighton University, USA

10:00 AM

Break

10:20 AM

(PACRIM10-SD-012-2013) Dynamic and Mechanical Properties of Calcium Borophosphate Glasses in Relation to Structure and Topology

C. Hermansen*, Y. Yue, Aalborg University, Denmark

10:50 AM

(PACRIM10-SD-008-2013) Jim Phillips - a scientific entrepreneur supreme — (i) the pseudo-potential, (ii) a spectroscopic ionicity scale, (iii) bond-constraint theory, and (iii) proteins and biological materials, too large and complex to treat as a simple extension of all the above (Invited)

G. Lucovsky*, North Carolina State University, USA

11:20 AM

(PACRIM10-SD-010-2013) Detection of structural heterogeneity in glass-forming liquids via sub-Tg enthalpy relaxation in hyperquenched glasses (Invited)

Y. Yue*, Aalborg University, China; Y. Zhang, Shandong Polytechnic University, China

Symposium 01: Advanced Characterization and Modeling of Ceramic Interfaces

Interface Structures and Properties in Ferroic Materials

Room: Continental

Session Chairs: Klaus van Benthem, University of California-Davis; Xiuliang Ma, Institute of Metal Research, Chinese Academy of Sciences

1:20 PM

(PACRIM10-S01-020-2013) Effects of Interfaces and Surfaces on Domain Dynamics and Stabilities during Ferroelectric Switching (Invited)

X. Pan*, University of Michigan, USA

1:50 PM

(PACRIM10-S01-021-2013) Tracking Interacting Order Parameters at Ceramic Interfaces With Quantitative STEM (Invited)

A. Borisevich*, Y. Kim, Oak Ridge National Laboratory, USA; A. N. Morozovska, E. Eliseev, National Academy of Sciences of Ukraine, Ukraine; J. He, S. T. Pantelides, Vanderbilt University, USA; S. J. Pennycook, S. V. Kalinin, Oak Ridge National Laboratory, USA

2:20 PM

(PACRIM10-S01-022-2013) Transition metal oxide superlattices (Invited)

J. Lee*, E. Choi, J. Seo, M. Choi, Y. Li, T. Choi, H. Shin, Sungkyunkwan University, Republic of Korea; M. Gu, University of California, USA; C. Song, Computing Georgia Institute of Technology, USA; Y. Takamura, University of California, USA; N. Browning, Lawrence Berkeley National Laboratory, USA; Y. Lee, Y. Seo, Soongsil University, Republic of Korea; W. Pickett, University of California, USA; C. Panagopoulos, Nanyang Technological University, Singapore

2:50 PM

(PACRIM10-S01-023-2013) A study on ferroelectric domain-walls using bicrystal fabrication technique

A. Nakamura*, Nagoya University, Japan; E. Tochigi, Y. Sato, T. Mizoguchi, N. Shibata, Y. Ikuhara, University of Tokyo, Japan; K. Matsunaga, Nagoya University, Japan

3:10 PM

Break

3:30 PM

(PACRIM10-S01-024-2013) Interface structure and property of multiferroic Fe/BaTiO₃ thin films

Y. Zhu*, Y. Tang, X. Wang, X. Ma, Institute of Metal Research, Chinese Academy of Sciences, China

3:50 PM

(PACRIM10-S01-025-2013) Atomic-Resolution Study of Ceramic Oxide Interfaces using Annular Bright-Field Imaging and Electron Energy-Loss Spectroscopy in an Aberration-Corrected Scanning Transmission Electron Microscope (Invited)

R. F. Klie*, Q. Qiao, P. Phillips, University of Illinois at Chicago, USA; H. Chen, S. Ismail-Beigi, C. Ahn, F. Walker, Yale University, USA; R. Droopad, Texas State University, USA

4:20 PM**(PACRIM10-S01-026-2013) Gigantic Strain Induced by Electric Fields in Core/Shell Structured Alkaline Niobates Polycrystals (Invited)**

S. Choi*, Korea Institute of Materials Science, Republic of Korea

4:50 PM**(PACRIM10-S01-027-2013) Novel atomic-resolution STEM for ceramic interface characterization**

N. Shibata*, The University of Tokyo, Japan; S. D. Findlay, Monash University, Australia; Y. Ikuhara, The University of Tokyo, Japan

Symposium 04: Polymer Derived Ceramics and Composites**Energy and Functional Applications II**

Room: Garden

Session Chair: Emanuel Ionescu, TU Darmstadt

1:20 PM**(PACRIM10-S04-020-2013) Polymer Derived Ceramic Nanocomposites with Tailored Functionalities for Energetic and Environmental Applications (Invited)**

M. Bazarjani, A. Gurlo, R. Riedel, C. Schitco*, Technische Universitaet Darmstadt, Germany

1:50 PM**(PACRIM10-S04-023-2013) Photoluminescent properties of polymer derived ceramics at near stoichiometric SiO₂-x(SiC)-y(H) compositions**

M. Narisawa*, T. Kawai, Osaka Prefecture University, Japan; S. Watase, K. Matsukawa, Osaka Municipal Technical Research Institute, Japan; A. Iwase, Osaka Prefecture University, Japan

2:10 PM**(PACRIM10-S04-024-2013) Silicate and Silicon Oxynitride Phosphors from Preceramic Polymers and Nano-sized Fillers**

E. Bernardo, E. Storti, P. Colombo*, University of Padova, Italy

Processing of PDCs: Coatings

Room: Garden

Session Chair: Paolo Colombo, University of Padova

2:30 PM**(PACRIM10-S04-025-2013) Polymer-Derived Advanced Ceramic Coatings (Invited)**

G. Motz*, University of Bayreuth, Germany

3:00 PM**(PACRIM10-S04-026-2013) In-Plane Stress in Sol-Gel-Derived Oxide Thin Films (Invited)**

H. Kozuka*, K. Ohno, R. Kojima, S. Nakanishi, H. Uchiyama, Y. Ishikawa, T. Kurisu, T. Akase, T. Iwase, Kansai University, Japan

3:30 PM

Break

3:50 PM**(PACRIM10-S04-027-2013) Control of surface energy of silicon oxynitride films derived from perhydropolysilazane**

K. Wang*, X. Zheng, University of Washington, USA; M. Günthner, University of Bayreuth, Germany; F. Ohuchi, B. D. Flinn, University of Washington, USA; G. Motz, University of Bayreuth, Germany; R. K. Bordia, University of Washington, USA

4:10 PM**(PACRIM10-S04-028-2013) High emissivity coatings based on polysilazanes for flexible thin-film solar cells**

M. Günthner*, M. Pscherer, University of Bayreuth, Germany; C. Kaufmann, Helmholtz Centre Berlin for Materials und Energy (HZB), Germany; G. Motz, University of Bayreuth, Germany

4:30 PM**(PACRIM10-S04-029-2013) Advanced Coatings based on Polyphenylcarbosilanes (Invited)**

Y. Kim*, Y. Lee, W. Kwon, S. Kim, J. Kim, Korea Institute of Ceramic Engineering and Technology, Republic of Korea

5:00 PM**(PACRIM10-S04-030-2013) Polymer-Assisted Deposition Epitaxial Molybdenum Nitride Films**

H. Luo*, New Mexico State University, USA; G. Zou, Soochow University, China

Symposium 06: Synthesis and Processing of Materials Using Electric Fields/Currents: A Symposium Honoring Prof. Zuhair Munir**Consolidation of Nanocrystalline Materials II**

Room: Hanover

Session Chairs: O. Graeve, University of California; Frederic Bernard, Universite de Bourgogne

1:20 PM**(PACRIM10-S06-020-2013) Advanced usage of SPS technology for producing innovative materials (Invited)**

F. Bernard*, S. Le Gallet, Universite de Bourgogne, France

1:50 PM**(PACRIM10-S06-021-2013) Kinetics of the Structural Ordering of Stacking Disordered SiC during Spark Plasma Sintering**

M. Ohyanagi*, T. Tanaka, N. Yamasaki, Ryukoku University, Japan; Z. Munir, University of California, Davis, USA

2:10 PM**(PACRIM10-S06-022-2013) Field-assisted sintering of YSZ films on conductive substrates**

S. Johnson*, G. Venugopal, A. Hunt, nGimat LLC, USA

2:30 PM**(PACRIM10-S06-023-2013) CAPAD processing of Rare earth doped Zirconia for high temperature light emission applications**

C. Hardin*, E. Penilla, Y. Kodera, J. Garay, UC Riverside, USA

2:50 PM**(PACRIM10-S06-024-2013) Spark Plasma Sintering: from the identification of the sintering mechanisms to the industrial fabrication of thermoelectrical materials (Invited)**

G. Bernard-Granger*, CEA, France; C. Guizard, Saint-Gobain CREE, France

3:20 PM

Break

Property Evaluation of Materials Processing using Electric Currents I

Room: Hanover

Session Chairs: O. Graeve, University of California; Frederic Bernard, Universite de Bourgogne

3:40 PM**(PACRIM10-S06-025-2013) Optimization of Field Assisted Sintering Technique in Fabrication of Nanostructured BaTiO₃**

T. Monson*, Sandia National Labs, USA; J. Yee, M. Fraga, University of California, Davis, USA; N. Yang, Sandia National Labs, USA; E. Lavernia, University of California, Davis, USA

4:00 PM**(PACRIM10-S06-026-2013) Non-Equilibrium Processing of Transparent Luminescent Ceramics via Current Activated Pressure Assisted Densification (CAPAD)**

E. Penilla*, Y. Kodera, J. Garay, University of California Riverside, USA

4:20 PM**(PACRIM10-S06-027-2013) Properties of WCCo/Diamond Composites Produced by PPS Method Intended for Drill Bits for Machining of Building Stones**

M. Rosinski*, Warsaw University of Technology, Poland

4:40 PM**(PACRIM10-S06-028-2013) AFM based studies of current path during spark plasma sintering with local impedance measurement on Si₃N₄ and Al₂O₃ nanocomposites microstructure**

W. Ho*, B. Liu, C. Lee, J. Huang, National Cheng Kung University, Taiwan

5:00 PM**(PACRIM10-S06-029-2013) Spark Plasma Sintering: an effective tool for rapid development of thermal barriers**

C. Estournès*, M. Boidot, S. Selezneff, D. Oquab, CIRIMAT, France; J. Guedou, SNECMA, France; D. Monceau, CIRIMAT, France

5:20 PM**(PACRIM10-S06-030-2013) Microstructure design by Spark Plasma Sintering for tailored properties in ferroelectric multi-materials**

C. Elissalde*, U. Chung, CNRS-Univ. Bordeaux-ICMCB, France; C. Estournès, CIRIMAT-PNF2-Univ.Paul Sabatier, France; D. Bernard, J. Lesueur, D. Michau, M. Maglione, CNRS-Univ. Bordeaux-ICMCB, France

Symposium 08: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications**Ultra High Temperature Ceramics and Composites**

Room: Windsor Complex

Session Chairs: Yanchun Zhou, Aerospace Research Institute of Materials & Processing Technology; Shaoming Dong, Shanghai Institute of Ceramics

1:20 PM**(PACRIM10-S08-022-2013) High Performance SRBSN (Sintered Reaction Bonded Silicon Nitride) (Invited)**

H. Kim*, Korea Institute of Materials Science, Republic of Korea

1:50 PM**(PACRIM10-S08-024-2013) Ultra-High Temperature Ceramic (UHTC) Composites with Sol-gel Processing: Materials for Extreme Environments (Invited)**

Y. Cheng*, C. Ang, T. Williams, D. Vowles, Monash University, Australia; A. Seeber, CSIRO, Australia; C. Wood, S. Slater, DSTO, Australia; H. Wang, K. Wang, Monash University, Australia

2:20 PM**(PACRIM10-S08-025-2013) MAX Phase Containing CMCs fabricated by Reactive Melt Infiltration (Invited)**

F. Lenz, N. Langhof, W. Krenkel*, University of Bayreuth, Germany

2:50 PM**(PACRIM10-S08-026-2013) Microstructural development and mechanical properties of TiB₂-TiC composite prepared by two-step pressureless sintering (Invited)**

Y. Zhou*, Y. Wang, Harbin Institute of Technology, China

3:20 PM**Break****3:40 PM****(PACRIM10-S08-027-2013) Properties of Carbon Fiber Reinforced ZrC-SiC Ceramic Matrix Composites Prepared by Polymer Infiltration and Pyrolysis Method**

L. Zhang*, S. Dong, H. Zhou, P. He, L. Gao, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

4:00 PM**(PACRIM10-S08-028-2013) Sintering Mechanism and Microstructural Evolution of the MAS/BN Composites by Hot Press Sintering**

D. Jia*, D. Cai, Z. Yang, X. Duan, Y. Zhou, Harbin Institute of Technology, China

4:20 PM**(PACRIM10-S08-029-2013) Oxidation Behavior of Cf/SiC Composites Protected by SiC-ZrC-LaB₆ Multi-component Coatings**

L. Gao*, X. Zhng, S. Dong, Y. Ding, Y. Kan, P. He, Z. Wang, H. Zhou, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

4:40 PM**(PACRIM10-S08-030-2013) Impact Resistance of Uncoated and EBC Coated SiC/SiC Composites**

R. T. Bhatt*, Ohio Aerospace Institute, USA; D. Fox, NASA Glenn Research Center, USA

5:00 PM**(PACRIM10-S08-031-2013) Processing of Electrically Conductive Liquid-Phase Sintered Silicon Carbide Ceramics**

Y. Kim*, K. Lim, University of Seoul, Republic of Korea

Symposium 12: Advances in Electroceramics**Advanced Processing**

Room: Crystal

Session Chair: Minoru Osada, National Institute for Materials Science

1:20 PM**(PACRIM10-S12-009-2013) Dielectric and Ferroelectric Behaviour of Sol-Gel-Derived SrTiO₃/Na_{0.5}Bi_{0.5}TiO₃/SrTiO₃-Layered Thin Films (Invited)**

D. Suvorov*, T. Šetinc, ŠPELA. Kunej, M. Spreitzer, Jozef Stefan Institute, Slovenia

1:50 PM**(PACRIM10-S12-010-2013) Low Temperature Growth of Oxide Thin Film by Photo-Induced Chemical Solution Deposition for New Devices (Invited)**

T. Tsuchiya*, T. Nakajima, K. Shinoda, National Institute of Advanced Industrial Science and Technology (AIST), Japan

2:20 PM**(PACRIM10-S12-011-2013) Electrical and Optical Properties of Fluorine-doped Tin Oxide Thin Films with Different Preferred Crystal Orientations**

C. Kim*, Korea Institute of Ceramic Eng. & Tech, Republic of Korea; D. Riu, Seoul National Univ. of Tech., Republic of Korea

2:40 PM**(PACRIM10-S12-012-2013) Piezoresponse Force Microscopy Studies of NKN-Based Lead-Free Piezoelectric Thin Films**

S. Glinsek*, S. Kim, K. Lindsay, A. Leung, A. Kingon, Brown University, USA

3:00 PM**(PACRIM10-S12-013-2013) Drawing of Ag Fine Pattern on Ceramic Substrate for ON-demand Repair by Laser Assisted Ink-jet Printing**

J. Akedo*, H. Tsuda, National Institute of Advanced Industrial Science & Technology, Japan

3:20 PM**Break**

Fundamental and Multi-ferroic Materials and Their Applications

Room: Crystal

Session Chair: Susan Trolier-McKinstry, Penn State

3:40 PM

(PACRIM10-S12-014-2013) Structural phase transition and multiferroicity in slow step sintering processed doped BiFeO₃ ceramics (Invited)

D. Sahu*, University of the Witwatersrand, South Africa

4:10 PM

(PACRIM10-S12-015-2013) Switching Steps in Polydomain Ferroelectrics (Invited)

L. Ye, University of Connecticut, USA; J. Bosse, University of Connecticut, USA; A. Liuberes, University of Connecticut, USA; M. Trassin, University of California, Berkeley, USA; R. Ramesh, University of Connecticut, USA; B. D. Huey*, University of Connecticut, USA

4:40 PM

(PACRIM10-S12-016-2013) Electronic property of RFe₂O₄ (green ferrite) (Invited)

N. Ikeda*, T. Nagata, T. Kambe, J. Kano, F. Mamoru, Okayama University, Japan

5:10 PM

(PACRIM10-S12-018-2013) Effect of Semi-conductive Behavior of NZFO on the Dielectric Properties of Percolative BTO/NZFO Composite Ceramics

B. Xiao*, N. Ma, P. Du, Zhejiang University, China

Symposium 13: Microwave Materials and Their Applications

Characterization, LTCC and Other Issues

Room: Stuart

Session Chairs: Eung Soo Kim, Kyonggi University; Rick Ubic, Boise State University

1:20 PM

(PACRIM10-S13-020-2013) HakCol and ErCalc: Free software to calculate permittivity from resonant frequency (Invited)

R. Ubic*, Boise State University, USA

1:50 PM

(PACRIM10-S13-021-2013) Embedded Capacitor for Flexible Electronics using Post-LTCC Technology (Invited)

Y. Imanaka*, H. Amada, F. Kumasaka, Fujitsu Laboratories Ltd., Japan

2:20 PM

(PACRIM10-S13-022-2013) Effects of Nucleation Agents on Microwave Dielectric Properties of CaMgSi₂O₆ Glass-Ceramics

B. Choi*, G. Sun, E. Kim, Kyonggi University, Republic of Korea

2:40 PM

(PACRIM10-S13-023-2013) Effects of Crystallization Behaviors on Microwave Dielectric Properties of (Ca_{1-x}Mg_x)SiO₃ Glass-Ceramics

C. Jeon*, E. Kim, Kyonggi University, Republic of Korea

3:00 PM

(PACRIM10-S13-024-2013) Crystal chemistry of point defects in perovskites

K. Tolman*, R. Ubic, Boise State University, USA; S. Letourneau, W. Kriven, University of Illinois at Urbana-Champaign, USA

3:20 PM

Break

3:40 PM

(PACRIM10-S13-025-2013) Affecting Factors on the Microwave Dielectric Properties of Ceramics / Polymer Composites (Invited)

E. Kim*, Kyonggi University, Republic of Korea

4:10 PM

(PACRIM10-S13-026-2013) Thin glass characterization in the radio frequency range

A. Ebberg, West Coast University of Applied Sciences, Germany; U. Fotheringham*, Schott AG, Germany; I. Ndip, G. Fotheringham, C. Tschoban, Fraunhofer Institute for Reliability and Microintegration, Germany; I. Pieper, Fraunhofer Institute for Silicon Technology, Germany

4:30 PM

(PACRIM10-S13-028-2013) Dielectric properties and ferroelectric phase transition in Ba_{1-x}CaxTiO₃ ceramics

X. Zhu*, X. Chen, W. Zhang, Zhejiang University, China

4:50 PM

(PACRIM10-S13-029-2013) Effect of A and B site vacancies on structure in Sr_{0.9x}Nd_{0.9-0.6x}Mg_{1.3y}Ti_{0.825-0.65y}O₃ and NdMg_{0.5-2y}Ti_{0.5+y}O₃

S. Letourneau*, W. M. Kriven, University of Illinois at Urbana-Champaign, USA; R. Ubic, Boise State University, USA

Symposium 14: Oxide Materials for Nonvolatile Memory Technology and Applications

Oxide Materials for Nonvolatile Memory I

Room: Tudor

Session Chair: Dinghua Bao, Sun Yat-Sen University

1:20 PM

(PACRIM10-S14-001-2013) Growth/Dissolution of Conductive Filaments in Oxide-Solid-Electrolyte-Based RRAM (Invited)

Q. Liu, M. Liu*, S. Long, H. Lv, Institute of Microelectronics, Chinese Academy of Sciences, China

1:50 PM

(PACRIM10-S14-002-2013) Thin amorphous rare-earth scandate for nonvolatile resistive random access memory application (Invited)

W. Chang, J. P. Chu*, National Taiwan University of Science and Technology, Taiwan; S. Wang, National Taipei University of Technology, Taiwan

2:20 PM

(PACRIM10-S14-003-2013) Structural Influence on Resistive Switching in Hafnium based Resistive RAM Devices: a Molecular Dynamics Study

G. Broglia*, M. Montorsi, L. Larcher, A. Padovani, University of Modena and Reggio Emilia, Italy

2:40 PM

(PACRIM10-S14-004-2013) Characteristics of ZrO₂-based flexible resistive switching memory fabricated by RF-magnetron sputtering

C. Lin, H. Lin, C. Chang*, National Dong Hwa University, Taiwan

3:00 PM

(PACRIM10-S14-005-2013) Nanoscale Resolved Phase Change Dynamics

J. L. Bosse, University of Connecticut, USA; I. Grishin, J. Leveillee, Lancaster University, United Kingdom; O. V. Kolosov, University of Connecticut, USA; B. D. Huey*, University of Connecticut, USA

3:20 PM

Break

Oxide Materials for Nonvolatile Memory II

Room: Tudor

Session Chair: Ming Liu, Institute of Microelectronics, Chinese Academy of Sciences

3:40 PM

(PACRIM10-S14-006-2013) HfO₂ Thin Films for Resistive Switching Memory Technology (Invited)

T. Tseng*, National Chiao Tung University, Taiwan

4:10 PM**(PACRIM10-S14-009-2013) Stable Resistive Switching Characteristics of Al₂O₃ Layer Inserted in HfO₂ Based RRAM Devices**

C. Huang*, J. Jieng, T. Tseng, National Chaio Tung University, Taiwan

4:30 PM**(PACRIM10-S14-008-2013) Research of Sub-10nm Transition Metal Oxide Resistive Non-Volatile Memory (R-RAM) (Invited)**

F. Yang*, C. Ho, National Nano Device Laboratories, NARL, Taiwan

5:00 PM**(PACRIM10-S14-007-2013) Resistive switching properties of spinel structure oxide thin films (Invited)**

D. Bao*, W. Hu, N. Qin, Sun Yat-Sen University, China

Symposium 15: Solid Oxide Fuel Cells and Hydrogen Technology**Stacks, Interconnects, Sealants, Hydrogen Production**

Room: Bayside/Strand

Session Chairs: Prabhakar Singh, University of Connecticut; Kathy Lu, Virginia Tech

1:20 PM**(PACRIM10-S15-019-2013) Degradation of Solid Oxide Fuel Cell Air Electrode (Invited)**

P. Singh*, M. Mahapatra, B. Hu, N. Li, M. Keane, University of Connecticut, USA

1:50 PM**(PACRIM10-S15-020-2013) Progress of Residential Fuel Cell Systems and Technologies in Japan (Invited)**

Y. Mizutani*, Toho Gas Co., Ltd., Japan

2:20 PM**(PACRIM10-S15-021-2013) Research and Development Activities of Fuel Cells in the Pohang Region, Korea (Invited)**

N. Sammes*, J. Chung, POSTECH, Republic of Korea

2:40 PM**(PACRIM10-S15-022-2013) Synthesis and characterization of TiO₂ powders by electrospray pyrolysis method (Invited)**

Y. Suzuki*, University of Tsukuba, Japan; S. Tohno, Kyoto University, Japan

3:00 PM**(PACRIM10-S15-029-2013) Stable glass-ceramic sealants for solid oxide fuel cells**

A. Goel*, Sterlite Technologies Ltd., India; J. Ferreira, University of Aveiro, Portugal

3:20 PM**Break****3:40 PM****(PACRIM10-S15-024-2013) Unraveling the oscillation reaction of Ni catalyst during partial oxidation of methane**

D. Lee*, D. Kim, Yonsei University, Republic of Korea; J. Kim, Korea Institute of Science and Technology, Republic of Korea; J. Moon, Yonsei University, Republic of Korea

4:00 PM**(PACRIM10-S15-026-2013) Development of non-oxide ceramic membranes for high temperature hydrogen separation**

A. Cherifi*, L. Chareyre, S. Cerneau, V. Rouessac, D. Cornu, Ecole Nationale Supérieure de Chimie de Montpellier, France

4:20 PM**(PACRIM10-S15-027-2013) New glass-ceramics sealant for SOEC/SOFC**

K. Sharma, Bhabha Atomic Research Centre, India; F. O. Mear*, Lille 1 University, France; G. P. Kothiyal, Bhabha Atomic Research Centre, India; D. Coillot, Lille 1 University, France; H. Nonnet, CEA-DEN-Marcoule, France; L. Montagne, Lille 1 University, France

4:40 PM**(PACRIM10-S15-028-2013) High Temperature Viscous Sealing Glasses for Solid Oxide Fuel Cells: Development, Properties, and Performance**

C. Kim*, J. Szabo, R. Crouch, R. Baird, MO-SCI Corporation, USA; J. Hsu, C. Townsend, R. K. Brow, Missouri University of Science and Technology, USA

5:00 PM**(PACRIM10-S15-023-2013) Evaluation of interfacial shear strength of sol-gel derived spinel oxide coating applied on Fe-16Cr alloy for solid oxide fuel cells**

W. Zhang, K. Wang*, R. K. Bordia, University of Washington, USA

5:20 PM**(PACRIM10-S15-030-2013) Interfacial interactions between an alkali-free borosilicate viscous sealing glass and aluminized ferritic stainless steel**

J. Hsu*, MISSOURI S&T, USA; C. Kim, MO-SCI Corp., USA; R. K. Brow, MISSOURI S&T, USA; C. Townsend, MISSOURI S&T, USA; J. Szabo, R. Crouch, R. Baird, MO-SCI Corp., USA

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications**Nanoscale and Thin Film Thermoelectric Materials I**

Room: Coastal

Session Chair: Takao Mori, National Institute for Materials Science (NIMS)

1:20 PM**(PACRIM10-S16-018-2013) Enhanced Thermoelectric Performance in Structure-Engineered Nanowires (Invited)**

W. Lee*, Yonsei University, Republic of Korea

1:50 PM**(PACRIM10-S16-019-2013) Strategies for Improving the Performance of Thermoelectric Oxide Thin Films & Superlattices (Invited)**

H. Alshareef*, S. Kumar, A. Abutaha, King Abdullah University of Science & Technology (KAUST), Saudi Arabia; T. Tritt, Clemson University, USA

2:20 PM**(PACRIM10-S16-021-2013) Morphology Control of Nanostructures in High Performance Na-doped PbTe-PbS Thermoelectric Materials**

J. He*, Xi'an Jiaotong University, China; S. Girard, I. Blum, Northwestern University, USA; J. Zheng, Xiamen University, USA; L. Zhao, D. Seidman, M. Kanatzidis, V. Dravid, Northwestern University, USA

2:40 PM**Break****Thermoelectric Materials: Devices, Testing, and Materials**

Room: Coastal

Session Chair: Daniel Thompson, Optimal Inc.

3:00 PM**(PACRIM10-S16-022-2013) Skutterudite Materials and Devices (Invited)**

J. Sharp*, A. Thompson, R. McCarty, Marlow Industries, Inc, USA

3:30 PM**(PACRIM10-S16-024-2013) Alternative tubular thermoelectric heat exchanger achieving efficient heat exchange and high electric power generation**

K. Takahashi*, T. Kanno, A. Sakai, H. Tamaki, H. Kusada, Y. Yamada, Panasonic Corporation, Japan

3:50 PM**(PACRIM10-S16-025-2013) TiS₂-based organic/inorganic superlattice: a flexible thermoelectric material**

C. Wan*, T. Itou, H. Sasaki, F. Dang, K. Koumoto, Nagoya University, Japan

4:10 PM**(PACRIM10-S16-026-2013) Mechanical deformation effects on thermoelectric performance of p-type (Bi_{1-x}Sb_x)₂Te₃**

S. Jung*, Korea Institute of Science and Technology (KIST), Republic of Korea; D. Hyun, Korea Institute of Science and Technology (KIST), Republic of Korea; H. Park, Yonsei University, Republic of Korea; J. Kim, S. Baek, Korea Institute of Science and Technology (KIST), Republic of Korea

4:30 PM**(PACRIM10-S16-027-2013) Thermoelectric properties of Titanium-substituted half-Heusler FeVSb compound**

C. Fu*, T. Zhu, X. Zhao, Zhejiang University, China

Symposium 19: Advances in Photocatalytic Materials for Energy and Environmental Applications**Photocatalytic Materials for Energy and Environment III**

Room: Pacifica/Tide

Session Chairs: Gunnar Westin, Uppsala University; Shanqing Zhang, Griffith University

1:20 PM**(PACRIM10-S19-017-2013) Limited-layered MoS₂ as Co-catalyst on Graphene Sheets for High Efficient Photocatalytic Hydrogen Evolution (Invited)**

G. Lu*, Lanzhou Institute of Chemical Physics, China

1:50 PM**(PACRIM10-S19-018-2013) Self-Assembly Based Hybrid Carbon and Plasmonic Nanostructures for Energy and Environmental Applications (Invited)**

D. Kim*, Ewha Womans University, Republic of Korea

2:20 PM**(PACRIM10-S19-019-2013) Artificial Photosynthesis: Photocatalytic Conversion of CO₂ into Solar Fuels (Invited)**

Y. Zhou*, Nanjing University, China

2:40 PM**(PACRIM10-S19-020-2013) Investigation of Water Treatment by Photocatalytic Ozonation over WO₃ under Visible Light Irradiation**

T. Mano*, S. Nishimoto, Y. Kameshima, M. Miyake, Okayama University, Japan

3:00 PM**Break****3:20 PM****(PACRIM10-S19-021-2013) Semiconductor quantum dot for solar energy conversion devices (Invited)**

Y. Tachibana*, RMIT University, Australia

3:50 PM**(PACRIM10-S19-023-2013) Designed Photoelectrode and Charge Transport in Dye Sensitized Solar Cells based on submicrospheres**

L. Hu*, J. Sheng, S. Dai, Institute of Plasma Physics, Chinese Academy of Sciences, China

4:10 PM**(PACRIM10-S19-025-2013) Hydrothermal Synthesis and Photoluminescence of Tb³⁺ and La³⁺ Doped Sm₂Zr₂O₇ Nanocrystals**

H. Jin*, P. Chen, Beijing Institute of Technology, China

4:30 PM**(PACRIM10-S19-026-2013) Superhydrophobic-superhydrophilic pattern with high wettability contrast on porous TiO₂ film**

S. Nishimoto*, M. Bechaku, Y. Kameshima, M. Miyake, Okayama University, Japan

4:50 PM**(PACRIM10-S19-027-2013) Direct Detection of Nanoscale Variations in V_{oc}, I_{sc}, and Photoconductivity**

Y. Kutes, University of Connecticut, USA; J. Bosse, University of Connecticut, USA; A. Merkouriou, University of Connecticut, USA; J. Cruz-Campa, E. Spoecker, Sandia National Laboratories, USA; B. A. Aguirre, D. Zubia, University of Texas at El Paso, USA; B. D. Huey*, University of Connecticut, USA

Symposium 21: Advanced Materials and Technologies for Electrochemical Energy Storage Systems**Electrochemical Energy Storage III**

Room: Surf

Session Chairs: Marca Doeff, Lawrence Berkeley National Laboratory; Steve Greenbaum, Hunter College of CUNY

1:20 PM**(PACRIM10-S21-021-2013) New Perspectives of Energy Storage Materials (Invited)**

S. Meng*, University of California San Diego, USA

1:50 PM**(PACRIM10-S21-022-2013) Nuclear magnetic resonance studies of electrolytes for sodium-ion and sodium-air batteries (Invited)**

S. Greenbaum*, M. B. Berman, X. S. Bogle, Hunter College of CUNY, USA

2:20 PM**(PACRIM10-S21-023-2013) Structure, electrochemical and physical properties of layered sodium transition metal oxide: Na₂/3Co₂/3Mn₁/3O₂**

H. Li*, National Taiwan University of Science and Technology, Taiwan; J. Lee, H. Sheu, National Synchrotron Radiation Research Center, Taiwan; D. Carlier, B. Hwang, National Taiwan University of Science and Technology, Taiwan

2:40 PM**(PACRIM10-S21-024-2013) Electrochemical Performance of the Sodium-Ion Intercalating Anode Na₂Ti₆O₁₃**

A. Rudola, S. Kuppen, D. Sappani, P. Balaya*, National University of Singapore (NUS), Singapore

3:00 PM**(PACRIM10-S21-025-2013) New energy storage with high power and low cost: A combination of computational and experimental study of cathode materials for Na-ion batteries**

J. Xu*, D. Lee, Y. S. Meng, University of California, San Diego, USA

3:20 PM**Break****3:40 PM****(PACRIM10-S21-026-2013) Development of Sodium Ion Batteries for Grid Storage Applications (Invited)**

M. Doeff*, M. Shirpour, J. Cabana, Lawrence Berkeley National Laboratory, USA

4:10 PM**(PACRIM10-S21-027-2013) Carboxylate based anode materials for rechargeable sodium batteries (Invited)**

A. Abouimrane*, W. Weng, H. Eltayeb, Y. Cui, J. Niklas, O. Poluektov, K. Amine, Argonne National Laboratory, USA

4:35 PM**(PACRIM10-S21-028-2013) Material Challenges for All-Solid Lithium-Sulfur Batteries (Invited)**

C. Liang*, Z. Lin, Z. Liu, N. Dudney, A. Rondinone, Oak Ridge National Laboratory, USA

5:00 PM

(PACRIM10-S21-029-2013) Na₂S-P₂S₅ superionic glass-ceramic electrolytes for sodium batteries at room temperature
P. Jha*, O. P. Pandey, K. Singh, Thapar University, India

5:20 PM

(PACRIM10-S21-030-2013) Charge-discharge performance of all-solid-state battery using Li₇La₃Zr₂O₁₂ electrolyte with honeycomb structure

T. Nishioka, N. Saito, J. Wakasugi, H. Munakata, Tokyo Metropolitan University, Japan; S. Kirihara, Osaka University, Japan; K. Kanamura*, Tokyo Metropolitan University, Japan

5:40 PM

(PACRIM10-S21-040-2013) Metal hydride based materials for battery applications

J. A. Teprovich*, R. Zidan, H. Colon-Mercado, Savannah River National Laboratory, USA; S. Greenway, Greenway Energy, USA

Joint Session Symposium 23 and 24: Bioceramics

Joint Session I

Room: Pointe

Session Chairs: Federico Rosei, INRS; Rena Bizios, UTSA

1:20 PM

(PACRIM10-BIO-001-2013) In Vitro and in Vivo Properties of CaCO₃-Based Cements for Bone Reconstruction (Invited)

C. Combes*, S. Tadier, S. Jacquart, H. Noukrati, INPT, France; F. Anagnostou, Université Denis-Diderot Paris 7, France; S. Cazalbou, S. Girod-Fullana, UPS - CIRIMAT, France; R. Bareille, Université de Bordeaux, France; C. Rey, INPT, France

1:50 PM

(PACRIM10-BIO-002-2013) Ceramic-Polymer Conjugation for Near Infrared Bioimaging Probes

K. Soga*, H. Hyodo, E. Hemmer, N. Venkatachalam, H. Kishimoto, Tokyo University of Science, Japan

2:10 PM

(PACRIM10-BIO-003-2013) Upconverting and NIR-Emission Showing Er³⁺ and Yb³⁺ Doped Gd₂O₃ Nanostructures for Bioimaging

E. Hemmer*, T. Yamano, H. Kishimoto, Tokyo University of Science, Japan; V. Fetrone, F. Legare, Institut National de la Recherche Scientifique, Canada; K. Soga, Tokyo University of Science, Japan

2:30 PM

(PACRIM10-BIO-004-2013) Design, Manufacture and Assessment of Nanocomposite Tissue Engineering Scaffolds (Invited)

M. Wang, C. Wang*, The University of Hong Kong, Hong Kong

2:50 PM

(PACRIM10-BIO-005-2013) Cell-Loaded Ceramic-Based Microbeads for Direct Bone Implant Science

E. Thian*, Y. Feng, National University of Singapore, Singapore; S. Chong, Nanyang Technological University, Singapore; K. Chan, Z. Zhang, KK Women's and Children's Hospital, Singapore, KK Women's and Children's Hospital, Singapore; Shanghai Jiao Tong University, China; S. Teoh, Nanyang Technological University, Singapore

3:10 PM

(PACRIM10-BIO-006-2013) Fabrication of PLA/amorphous magnesium phosphate electrospun fibers for tissue engineering applications

H. Zhou*, M. Nabiyouni, S. B. Bhaduri, University of Toledo, USA

3:30 PM

break

3:50 PM

(PACRIM10-BIO-007-2013) Effect of RGD immobilization on light induced cell sheet detachment

K. Cheng*, Y. Hong, M. Yu, W. Weng, H. Wang, J. Lin, Zhejiang University, China

4:10 PM

(PACRIM10-BIO-008-2013) A Novel Fibrillar Collagen/TCP Scaffold as a Bone Substitute for Sheep Posterolateral Lumbar Fusion

A. S. Ismailoglu*, F. Vizesi, E. Erbe, NuVasive, USA; B. Cunningham, A. Murgatroyd, K. Mullinix, Orthopedic Spinal Research Lab, USA; J. de Bruijn, Queen Mary University of London, United Kingdom; S. Chen, Maxigen Biotech Inc., Taiwan

4:30 PM

(PACRIM10-BIO-010-2013) Alkoxysilane mediated Synthesis of Prussian blue Nanocomposites with palladium of variable nanogeometry: Applications in direct and HRP-catalyzed sensing of hydrogen

P. C. Pandey, A. K. Pandey*, Indian Institute of Technology, Banaras Hindu University, India

4:50 PM

(PACRIM10-BIO-012-2013) Synthesis and Characterization of Pd-TiO₂-SiO₂ Nanocomposite for Electroanalytical Applications

P. C. Pandey, A. Prakash*, Indian Institute of Technology, Banaras Hindu University, India

5:10 PM

(PACRIM10-BIO-013-2013) Synthesis of gold nanoparticles of variable nanogeometry and their electroanalytical applications

P. C. Pandey, G. Pandey*, Indian Institute of Technology, Banaras Hindu University, India

2nd International Richard M. Fulrath Symposium on "Frontiers of Ceramics for Sustainable Development"

Ceramics for Sustainable Development III

Room: Crown

Session Chairs: Noboru Ichinose, Waseda University; Takashi Goto, IMR Tohoku University

1:20 PM

(PACRIM10-FUL-018-2013) Application of first-principles phonon-calculations in materials science (Invited)

I. Tanaka*, A. Togo, Kyoto university, Japan

1:50 PM

(PACRIM10-FUL-019-2013) Design of Microwave Dielectrics Based on Crystallography (Invited)

H. Ohsato*, Nagoya Industrial Science Research Institute, Japan; K. Kakimoto, Nagoya Institute of Technology, Japan

2:20 PM

(PACRIM10-FUL-020-2013) Experimentally reproducing grain boundary processes in the Earth's interior

T. Hiraga*, University of Tokyo, Japan; N. Ohashi, H. Yoshida, National Institute for Materials Science, Japan

2:40 PM

(PACRIM10-FUL-021-2013) Synthesis and characterization of Eu³⁺ doped CaZrO₃ based perovskite type oxide phosphors

Y. Shimokawa*, S. Sakaïda, T. Asaka, Nagoya Institute of Technology, Japan; K. Inoue, Mie Prefecture Industrial Research Institute, Japan; S. Honda, Y. Iwamoto, Nagoya Institute of Technology, Japan

3:00 PM

(PACRIM10-FUL-022-2013) Multiple Deposition of Ga-Doped ZnO Highly Transparent Conductive Films on Polymer Substrates (Invited)

T. Yamamoto*, H. Makino, S. Kishimoto, H. Song, Kochi University of Technology, Japan

3:30 PM

Break

3:50 PM

(PACRIM10-FUL-023-2013) Recent progress of laser patterning of optical active crystals with high orientation in glass

T. Komatsu*, T. Honma, Nagaoka University of Technology, Japan

4:10 PM**(PACRIM10-FUL-024-2013) Structural Study and Dielectric Property of SrTaO₂N**

S. Kikkawa*, Y. Zhang, Hokkaido University, Japan

4:30 PM**(PACRIM10-FUL-025-2013) Defect-polarization control for enhancing piezoelectric properties in perovskite ferroelectrics: a case study on BaTiO₃-based single crystals**

Y. Noguchi*, S. Ishikawa, Y. Kitahara, M. Miyayama, RCAST, U-Tokyo, Japan; C. Moriyoshi, Y. Kuroiwa, Hiroshima University, Japan

4:50 PM**(PACRIM10-FUL-026-2013) Preparation of thermochromic vanadium dioxide nanoparticles for smart window by sol-gel method**

H. Suzuki*, K. Kurosawa, N. Sakamoto, N. Wakiya, Shizuoka University, Japan; H. Miyazaki, Shimane University, Japan; T. Ota, Nagoya Institute of Technology, Japan

Symposium A: Glass Science**Norbert J. Kreidl Award Lecture**

Room: Seabreeze

Session Chair: Kelly Simmons-Potter, University of Arizona

1:00 PM**(PACRIM10-SA-169-2013) Structural study of Na₂O-FeO-Fe₂O₃-P₂O₅ glasses by HPLC and Raman Spectroscopy**

L. Ma*, R. Brow, Missouri University of Science and Technology, USA

Non-Oxide Glasses II

Room: Seabreeze

Session Chairs: Pierre Lucas, Univ of Arizona; Elynn King, Corning

2:00 PM**(PACRIM10-SA-016-2013) Fabrication of low-loss mid-IR chalcogenide fibers**

C. Lafond*, J. Couillard, J. Delarosbil, F. Sylvain, Coractive High-Tech Inc., Canada

2:20 PM**(PACRIM10-SA-017-2013) Sub-micrometer patterning of chalcogenide bulk glasses by a soft lithography (Invited)**

T. Kohoutek*, University of Pardubice, Czech Republic; J. Orava, University of Cambridge, United Kingdom; H. Fudouzi, National Institute for Material Science (NIMS), Japan

2:50 PM**(PACRIM10-SA-018-2013) Physical properties of selenide glasses in correlation with their structure (Invited)**

K. Sykina, Université de Rennes 1, France; M. Deschamps, Université d'Orléans, France; Y. Gueguen, Université de Rennes 1, France; Université de Rennes 1, France; Y. Guang, E. Furet, C. Roiland, L. Le Pollès, C. Boussard, T. Rouxel, J. Sangleboeu, Université de Rennes 1, France; D. Massiot, Université d'Orléans, France; P. Lucas, University of Arizona, USA; B. Bureau*, Université de Rennes 1, France

3:20 PM**Break****3:40 PM****(PACRIM10-SA-019-2013) Identifying the best chalcogenide glasses for fabricating optical waveguides for signal processing and mid infrared science (Invited)**

B. Luther-Davies*, R. Wang, Z. Yang, S. Madden, D. Choi, X. Gai, T. Wang, X. Su, K. Yan, P. Ma, W. Wei, I. Yu, Australian National University, Australia

4:10 PM**(PACRIM10-SA-020-2013) Correlation between structure and refractive index modification by femtosecond laser filamentation (Invited)**

D. Le Coq*, University of Rennes 1, France; E. Bychkov, P. Masselin, University of Littoral-Côte d'Opale, France

4:40 PM**(PACRIM10-SA-024-2013) Pore Formation and Removal in Solution-processed Amorphous Arsenic Sulfide Films**

Y. Zha*, M. Waldmann, Princeton University, USA; S. Fingerma, University of Massachusetts Lowell, USA; S. Cantrell, North Carolina A&T State University, USA; C. Lu, C. B. Arnold, Princeton University, USA

5:00 PM**(PACRIM10-SA-022-2013) A novel approach to develop chalcogenide glasses and glass-ceramics transparent in the infrared range**

E. Petracovschi*, L. Calvez, M. Hubert, UMR CNRS 6226 Institut des Sciences Chimiques de Rennes, France; G. Delaizir, Ecole Nationale Supérieure de Céramique Industrielle, France; J. Adam, X. Zhang, UMR CNRS 6226 Institut des Sciences Chimiques de Rennes, France

5:20 PM**(PACRIM10-SA-023-2013) Telluride bulk glasses for thermoelectric applications**

P. Lucas*, Z. Yang, University of Arizona, USA; C. Conseil, B. Bureau, University of Rennes I, France; Q. Hao, University of Arizona, USA; C. Boussard-Pledel, University of Rennes I, France; C. Caillaud, University of Arizona, USA

5:40 PM**(PACRIM10-SA-021-2013) Observation of a Continuous Random Network Structure in Ge, Se_{100-x} glasses: Results from high-resolution ⁷⁷Se MATPASS-CPMG NMR Spectroscopy**

D. Kaseman*, S. Sen, University of California Davis, USA; Z. Gan, I. Hung, National High Magnetic Field Laboratory, USA

Symposium C: Glasses for Optoelectronic and Optical Applications**Photoluminescent Materials II**

Room: Sunset

Session Chair: Jong Heo, Pohang University of Science and Technology

2:00 PM**(PACRIM10-SC-015-2013) Valence states of Copper and Tin Ions in Photoluminescent Sodium Borosilicate Phase-Separated Glasses**

A. Yasumori*, Y. Funamoto, F. Tada, S. Yanagida, Tokyo University of Science, Japan; M. Uo, Tokyo Medical and Dental University, Japan

2:20 PM**(PACRIM10-SC-017-2013) Inter valence charge transfer and optoelectronic property in (Ca,Sr)TiO₃:Pr³⁺**

Y. Katayama*, S. Tanabe, Kyoto University, Japan

2:40 PM**(PACRIM10-SC-018-2013) Stabilization of the Ingredient Powders of Ca- α -SiAlON:Eu²⁺ Phosphor**

J. Kim*, Y. Park, J. Lee, J. Ha, Korea Institute of Materials Science, Republic of Korea

3:00 PM**Break****Glass Surface Modifications and Films**

Room: Sunset

Session Chairs: Julien Lumeau, Institut Fresnel; Ashutosh Goel, Sterlite Technologies Ltd.

3:40 PM**(PACRIM10-SC-019-2013) Atomic structure, electronic structure, and structural relaxation of transparent amorphous oxide semiconductor, In-Ga-Zn-O (Invited)**

K. Nomura*, Qualcomm Technology Inc., USA

4:10 PM**(PACRIM10-SC-020-2013) Anti-Reflective Surface Structures in Fused Silica Windows, Lenses and Fibers (Invited)**

C. M. Florea*, L. E. Busse, L. B. Shaw, I. D. Aggarwal, J. S. Sanghera, Sotera Defense Solutions, USA

4:40 PM**(PACRIM10-SC-021-2013) Microscopic interactions during optical pad polishing: relationship between slurry particle size distribution & workpiece surface roughness**

T. I. Suratwala*, M. Feit, R. Steele, L. Wong, N. Shen, R. Dylla-Spears, R. Desjardin, D. Mason, P. Geraghty, P. Miller, Lawrence Livermore National Laboratory, USA

5:00 PM**(PACRIM10-SC-022-2013) Convergent Pad Polishing of Glass Optics**

T. I. Suratwala*, M. Feit, R. Steele, R. Desjardin, D. Mason, Lawrence Livermore National Laboratory, USA

5:20 PM**(PACRIM10-SC-023-2013) Laser chemical vapor deposition of silica for in-filling of damaged optical surfaces**

S. Elhadji*, M. J. Matthews, G. Guss, D. L. Flores, I. V. Makasyuk, I. L. Bass, N. Nielsen, Lawrence Livermore National Laboratory, USA

5:40 PM**(PACRIM10-SC-024-2013) Solution-processing of Thick Chalcogenide-chalcogenide and Metal-chalcogenide Structures by Spin-coating and Multilayer Lamination**

Y. Zha*, C. B. Arnold, Princeton University, USA

Symposium D: James C. Phillips Honorary Symposium**Exponential Complexity in Materials Science and Biology**

Room: Palm

Session Chairs: John Mauro, Corning Incorporated; Matthieu Micoulaut, UPMC

2:00 PM**(PACRIM10-SD-013-2013) Curing cancer using engineered viruses (Invited)**

J. C. Phillips*, Rutgers, USA

3:00 PM**(PACRIM10-SD-014-2013) A bifurcation of the Stretching Exponent beta in Glass Confirmed Experimentally (beta = 3/5 for Stress Relaxation and beta = 3/7 for Structural Relaxation) (Invited)**

M. Potuzak*, R. C. Welch, J. C. Mauro, Corning Incorporated, USA

3:30 PM**Break****3:50 PM****(PACRIM10-SD-015-2013) From glasses to ranking, an unexpected path for the SER theory (Invited)**

G. Naumis*, Instituto de Fisica, UNAM, Mexico

4:20 PM**(PACRIM10-SD-016-2013) Debye Relaxation in Highly Viscous Hydrogen-bonded Liquids (Invited)**

L. Wang*, Y. Gao, D. Bi, X. Li, Yanshan University, China

4:50 PM**(PACRIM10-SD-017-2013) Abnormal Physical Behavior of Nanoporous Glasses (Invited)**

C. Ihalawela, M. Sundararajan, G. Chen*, Ohio University, USA

5:20 PM**(PACRIM10-SD-018-2013) Elastic Anomalies and Pressure Induced Phases in Crystalline Silica (Invited)**

J. Chelikowsky*, University of Texas at Austin, USA

Posters**Poster Session**

Room: Ballroom

5:30 PM**(PACRIM10-S1-P001-2013) Effect of SiC and graphite on room-temperature mechanical properties of boron carbide composites sintered by Spark Plasma Sintering**

B. Moshtaghion*, University of Seville, Spain; A. Ortiz-Secco, University of Extremadura, Spain; D. Gomez-Garcia, A. Dominguez-Rodriguez, University of Seville, Spain

(PACRIM10-S3-P005-2013) Effect of Powder Characteristics on Electrical Properties of Silicon Carbide Ceramics

L. Kwang-Young*, Y. Kim, University of Seoul, Republic of Korea; K. Kim, Konkuk University, Republic of Korea

(PACRIM10-S3-P006-2013) Enhancement on the Corrosion Properties of Ti-Based Bulk Metallic Glass Composites by CNT addition

P. Lee*, National Taiwan Ocean University, Taiwan

(PACRIM10-S4-P008-2013) Effect of Forming Method on Compressive Strength of Polysiloxane-derived Silicon Carbide Ceramics

L. Kwang-Young*, J. Eom, Y. Kim, University of Seoul, Republic of Korea

(PACRIM10-S4-P009-2013) Energetics of Polymer Derived Amorphous Si-(B)-O-C Glasses

A. Tavakoli*, University of California, Davis, USA; R. Camprostrini, University of Trento, Italy; J. Bill, University of Stuttgart, Germany; G. D. Soraru, University of Trento, Italy; A. Navrotsky, University of California, Davis, USA

(PACRIM10-S4-P011-2013) Fabrication of SiC-Al Co-continuous Phase Composites

G. Jiang*, Shanghai Institute of Technology, China; X. Yao, Shanghai Institute of Ceramics, Chinese Academy of Science, China; L. Ding, Tongji University, China; W. Peng, L. Duan, Shanghai Institute of Technology, China; Y. Liu, Shanghai Jiaotong University, China; W. Xiong, Y. Ni, J. Xu, Shanghai Institute of Technology, China; W. Li, Shanghai Jiaotong University, China

(PACRIM10-S4-P014-2013) Si-C-(N)-O Aerogels: a New Nanostructured Gas Sensor Ceramic Material

G. Soraru*, University of Trento, Italy; A. Karakuscu, CNR-IDASC, Italy; E. Zera, University of Trento, Italy; P. Aravind, German Aerospace Research Centre [DLR], Germany; A. Ponzoni, CNR-IDASC, Italy; G. Sberveglieri, University of Brescia, Italy

(PACRIM10-S4-P015-2013) Studying the Thermochemistry of Silicon Oxycarbide via Ternary Crystalline Models

P. Kroll*, N. Bodiford, UT Arlington, USA

(PACRIM10-S4-P017-2013) Synthesis of a porous SiC material from polycarbosilane by direct foaming and radiation curing

A. Idesaki*, M. Sugimoto, M. Yoshikawa, Japan Atomic Energy Agency, Japan

(PACRIM10-S4-P018-2013) Synthesis and Characterization of Novel Si-C-N Aerogels from Polysilazane

A. Perolo, R. Camprostrini, G. Soraru*, University of Trento, Italy; Y. Blum, SRI International, USA

(PACRIM10-S4-P019-2013) BaTiO3 single crystal fibers from abnormal grain growth

Z. Chen*, F. Peng, Clemson University, USA

(PACRIM10-S5-P020-2013) Development of new synthesis route of lanthanum germanate oxyapatite from homogeneous aqueous solution

S. Kitajima*, Tokyo University of Science, Japan; K. Kobayashi, National Institute for Materials Science, Japan; T. Higuchi, Tokyo University of Science, Japan; Y. Sakka, National Institute for Materials Science, Japan

(PACRIM10-S5-P022-2013) Fabrication of coarser AlN particles by sintering of micro granules

K. Yonashiro*, J. Tatami, T. Wakihara, Yokohama National University, Japan; Y. Fukunaga, Y. Kanechika, Tokuyama Corporation, Japan

(PACRIM10-S5-P023-2013) Fabrication of flake-like boehmite/ceria or zinc oxide composites for UV shield coating
S. Obata*, Gifu Pref. Ceram. Res. Inst., Japan; S. Kawai, Gifu University, Japan; K. Kido, Kawai Lime Industry Co., Ltd., Japan; M. Yoshida, O. Sakurada, Gifu University, Japan

(PACRIM10-S5-P024-2013) Magnetic orientation of bismuth nano-particle in transparent medium
N. Kitamura*, National Institute of Advanced Industrial Science and Technology, Japan; K. Takahashi, I. Mogi, Institute for Materials Research, Tohoku University, Japan; K. Fukumi, National Institute of Advanced Industrial Science and Technology, Japan; S. Awaji, K. Watanabe, Institute for Materials Research, Tohoku University, Japan

(PACRIM10-S5-P025-2013) Measuring the Permittivity of Nanoparticle Powder Slurries
E. Anderson*, D. Contreras, J. Eom, C. Gage, M. Loy, R. Haskell, A. Hightower, Harvey Mudd College, USA; T. Monson, Sandia National Laboratories, USA; M. Verma, F. Su, Harvey Mudd College, USA

(PACRIM10-S5-P026-2013) Sol-Gel Auto-Combustion Synthesis of ZnO Diluted Magnetic Semiconductor (DMS) Powders Doped with Co
C. Wang*, X. Zhou, F. Chen, Q. Shen, L. Zhang, Wuhan University of Technology, China

(PACRIM10-S5-P027-2013) Solid reaction mechanism of Li₂CO₃ and FePO₄/C powder
T. Hashizume*, University of Toyama, Japan; D. Akita, University of Toyama, Japan; A. Saiki, University of Toyama, Japan; K. Terayama, University of Toyama, Japan

(PACRIM10-S5-P028-2013) The Effect of Powder Phase Composition on Spark Plasma Sintered Silicon Nitride
W. Pinc, A. C. Ellis*, L. S. Walker, E. L. Corral, University of Arizona, USA

(PACRIM10-S6-P030-2013) Copper-Carbon Nanotubes Composites: Densification by Spark Plasma Sintering and Mechanical Properties
C. Guiderdoni, C. Estournès*, V. Turq, A. Peigney, A. Weibel, C. Laurent, CIRIMAT, France

(PACRIM10-S6-P031-2013) Fabrication of TiC-SiC nanocomposites from sol-gel and carbothermal reduction process by SPS
M. Zhou*, D. Rodrigo, Y. Cheng, Monash University, Australia

(PACRIM10-S6-P032-2013) Mechanical and tribological properties of CNT-ZrO₂ nanocomposites prepared by Spark Plasma Sintering
A. Kasperski, A. Weibel, D. Al Kattan, C. Laurent, C. Estournès*, A. Peigney, CIRIMAT, France

(PACRIM10-S6-P033-2013) Monoliths of Carbon Nanotubes prepared by Spark Plasma Sintering
C. Estournès*, A. Weibel, T. Dinh, G. Chevallier, A. Peigney, X. Zheng, C. Laurent, CIRIMAT, France

(PACRIM10-S6-P034-2013) Surface morphology of YSZ thin films deposited from a precursor solution under the electrical fields
A. Saiki*, University of Toyama, Japan; T. Hashizume, University of Toyama, Japan; K. Hamada, University of Toyama, Japan

(PACRIM10-S7-P035-2013) Hetero epitaxial growth of Cr₂O₃/LiNbO₃/Cr₂O₃/ multilayer
I. Koji*, Y. Takeshi, I. Rempei, G. Manabu, Nagoya Institute of Technology, Japan

(PACRIM10-S7-P036-2013) I₂- Diffusion in TiO₂ nanopore in dye-sensitized solar cells
M. Kawano*, H. Sato, Y. Ogomi, P. Shyam, S. Hayase, Graduate School of LSSE, Kyushu Institute Technology, Japan

(PACRIM10-S7-P038-2013) Preparation of SnO₂/layered SnOx compound composites and their electrical properties
K. Suzuoka, Tokyo University of Agriculture and Technology, Japan; K. Katoh, Y. Tabira, I. Yashima, Mitsui Mining & Smelting Corporation, Japan; M. Iijima, H. Kamiya*, Tokyo University of Agriculture and Technology, Japan

(PACRIM10-S7-P039-2013) Synthesis and characterization of metal nanoparticles decorated zinc oxide nanorods
S. Lim*, S. Hwang, S. Hong, S. Bang, S. Kim, DGIST, Republic of Korea

(PACRIM10-S8-P040-2013) Advanced Metallization Technology on Alumina Ceramics Surface Based on Photocatalysis
X. Liu*, University of Science and Technology Beijing, China; Y. Luan, University of Science and Technology Beijing, China; H. Chen, University of Science and Technology Beijing, China; Z. Peng, University of Science and Technology Beijing, China; J. Xie, University of Science and Technology Beijing, China

(PACRIM10-S8-P041-2013) Effects of particle size and crystalline phase developed after Thermal Shock cycles in Cordierite-Mullite Concretes Mixes
A. M. Paniagua*, K. J. Lozano, I. Guzman, A. Mendez, L. Perez, Instituto Politecnico Nacional, Mexico

(PACRIM10-S8-P042-2013) Evaluation of ceramic/ceramic (SiC/SiC & Al₂O₃/Al₂O₃) joint interface prepared via brazing
A. Ghazi Daryani*, F. Khani, Sharif University, Islamic Republic of Iran

(PACRIM10-S8-P043-2013) Investigation hydrophilic effect of silicon rubber insulators by modified TiO₂-SiO₂ nano particles
M. Jafari*, M. Eatezadi, Islamic Azad University Najafabad Branch, Islamic Republic of Iran

(PACRIM10-S8-P044-2013) Multi-Layered NKLNT Ceramic Piezoelectric Actuators
J. Song*, M. Kim, I. Kim, S. Jeong, Korea Electrotechnology Research Institute, Republic of Korea

(PACRIM10-S8-P045-2013) Processing of Self-Setting Wet Foams to Porous Ceramics
J. G. Park, A. Pokhrel, S. D. Nam, I. J. Kim*, Processing and Application of Inorganic Materials (PAIM), Hanseo University, Republic of Korea

(PACRIM10-S8-P046-2013) Rapid fabrication and high temperature mechanical properties of C/SiC Composites by melt infiltration
T. Hara*, Y. Kogo, M. Ishikawa, Tokyo University of Science, Japan; T. Aoki, T. Ogasawara, Japan Aerospace Exploration Agency (JAXA), Japan

(PACRIM10-S8-P047-2013) Reduction Kinetics of NiFe₂O₄ Oxygen Carriers with Various Inert Support Materials for Chemical Looping Combustion
Y. Kuo*, W. Hsu, Y. Tseng, Y. Ku, National Taiwan University of Science and Technology, Taiwan

(PACRIM10-S8-P048-2013) Sol-gel synthesis of carbon nanotube reinforced titanium carbide nanocomposites
X. Wang*, C. Ang, Monash University, Australia; J. Zhong, Central South University, China; Y. Cheng, Monash University, Australia

(PACRIM10-S8-P049-2013) Synthesis of Magnesia Nano Particles and its effect on Sintering of Nano Alumina
M. Jafari*, Islamic Azad University Najafabad Branch, Islamic Republic of Iran

(PACRIM10-S8-P051-2013) Transparent AlON Pressurelessly Sintered from Powder Synthesized by a Novel Solid-state Reaction Method
X. Jin*, L. Gao, J. Sun, Y. Liu, L. Gui, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

(PACRIM10-S8-P052-2013) Pressureless sintering of in situ SiC-BN nanocomposite ceramics with high resistivity and excellent thermal conductivity
Y. Li*, Shanghai Institute of Ceramics, China

(PACRIM10-S9-P053-2013) Max Phases foams from direct foaming methods
G. Lepretre, Ecole Nationale Supérieure d'Ingénieur, France; M. Potoczek, Università degli Studi di Padova, Italy, Università degli Studi di Padova, Italy; Rzeszow University of Technology, Poland; E. Guzi de Moraes, P. Colombo*, Università degli Studi di Padova, Italy

(PACRIM10-S9-P054-2013) Oxidation Resistance of ZrB₂-SiC-ZrC ceramics above 2000 K
Y. Arai*, Y. Kogo, M. Ishikawa, Tokyo University of Science, Japan; S. Guo, National Institute for Material Science (NIMS), Japan; K. Goto, Japan Aerospace Exploration Agency (JAXA), Japan; T. Yasuno, Iwaki Meisei University, Japan

(PACRIM10-S9-P055-2013) Thermal Properties of Zirconium Diboride With Transition Metal Diboride Additions
D. McClane*, W. G. Fahrenholtz, G. E. Hilmas, Missouri University of Science and Technology, USA

(PACRIM10-S9-007-2013) Joining of Zr-based UHTC Composite with Reactive Metals
K. Nishimura*, N. Saito, Kyushu University, Japan; A. M. Glaeser, University of California, Berkeley, USA; K. Nakashima, Kyushu University, Japan

(PACRIM10-S10-P056-2013) Characterization of filters impregnated with silver nanoparticles
G. V. Cabala, W. Acchar*, Federal Institute of Education, Science and Technology - Bahia, Brazil

(PACRIM10-S10-P058-2013) Development of a hybrid process combined with a dry and a wet process for the applications in a boundary lubrication area

H. Park, K. Moon*, KITECH, Republic of Korea

(PACRIM10-S10-P059-2013) Effect of Annealing on Optical and Photocatalytic Properties of Zn2TiO4 Thin Films Prepared by Reactive Magnetron Co-sputtering

Y. Huang*, National Chung Hsing University, Taiwan; Y. Lee, National PingTung University of Science & Technology, Taiwan; D. Tsai, R. Huang, F. Shieu, National Chung Hsing University, Taiwan

(PACRIM10-S10-P060-2013) Fabrication of K2Ta2O6 by hydrothermal method and their optical property

A. Saiki*, University of Toyama, Japan; T. Hashizume, University of Toyama, Japan

(PACRIM10-S10-P061-2013) Improved dielectric properties of BaTiO₃-coated (Ca,Ba)Cu₃Ti₄O₁₂ ceramics by the sol-gel process

H. Kim*, S. Choi, S. Lee, Seoul National University, Republic of Korea; Y. Hong, Bio-IT convergence Center, Korea Institute of Ceramic Eng. & Tech., Republic of Korea; S. Yoo, Seoul National University, Republic of Korea

(PACRIM10-S10-P062-2013) Structural stability and thermal properties of lanthanum zirconate films for thermal barrier coating

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

(PACRIM10-S10-P063-2013) Ta-O-N thin films deposited by low vacuum reactive sputtering

T. Hashizume*, University of Toyama, Japan; H. Nakagawa, University of Toyama, Japan; A. Saiki, University of Toyama, Japan

(PACRIM10-S10-P065-2013) The effect of third elements on the microstructure and wear properties of MoN- Cu-X nanocomposite coatings deposited by reactive magnetron sputtering with single alloying target

K. Moon*, H. Lee, D. Jung, S. Shin, KITECH, Republic of Korea

(PACRIM10-S10-P066-2013) The hard ferrite coating on Boron nitride by Sol-gel method

Y. Yoon*, J. Jung, Chemical engineering, Kyonggi University, Republic of Korea

(PACRIM10-S11-P194-2013) Dehydroxylation and Structural Breakdown of Illite/Smectite: Application for Metaclay-based Geopolymer Cements

J. Dietel*, L. N. Warr, EMA University Greifswald, Germany; M. Bertmer, University Leipzig, Germany; K. Emmerich, Karlsruhe Institute of Technology, Germany; G. Grathoff, EMA University Greifswald, Germany

(PACRIM10-S12-P067-2013) Alumina Thick Layer Prepared by Aerosol Deposition Method for Insulator of High Thermal Emission Circuit Board

J. Akedo*, M. Suzuki, H. Tsuda, National Institute of Advanced Industrial Science & Technology, Japan

(PACRIM10-S12-P068-2013) Characterization and X-ray crystal structure analysis of high-quality Bi0.5K0.5TiO3-Bi0.5Na0.5TiO3 ferroelectric single crystals

Y. Noguchi*, K. Yanai, Y. Kitanaka, M. Miyayama, RCAST, U-Tokyo, Japan; C. Moriyoshi, Y. Kuroiwa, Hiroshima University, Japan; S. Torii, T. Kamiyama, KEK, Japan

(PACRIM10-S12-P069-2013) Effects of engineered 90° domain structures upon piezoelectric properties of Bi₄Ti₃O₁₂ single crystals

Y. Kitanaka, Y. Noguchi*, M. Miyayama, The University of Tokyo, Japan; C. Moriyoshi, Y. Kuroiwa, Hiroshima University, Japan

(PACRIM10-S12-P070-2013) Electrical Properties of Chemically Synthesized Lead-Free Ferroelectric K0.5Na0.5NbO3-AzrO3 [A: alkaline earth] Thin Films

W. Sakamoto*, T. Matsuda, Nagoya University, Japan; B. Lee, T. Iijima, AIST, Japan; M. Moriya, T. Yogo, Nagoya University, Japan

(PACRIM10-S12-P071-2013) Enhanced magneto-transport properties of Ga2O3-doped Mn-Zn ferrites

H. Kim*, J. Yoo, S. Yoo, Seoul National University, Republic of Korea

(PACRIM10-S12-P072-2013) First-principles Investigation Negative Thermal Expansion Mechanism in A-site-Ordered Perovskite SrCu3Fe4O12

H. Li, C. Li*, School of Materials Science and Engineering, Jiangsu University, China

(PACRIM10-S12-P073-2013) Growth and characterization of (K,Na)(Nb,Ta)O3 ferroelectric single crystals

Y. Noguchi*, T. Hattori, Y. Kitanaka, M. Miyayama, RCAST, U-Tokyo, Japan; C. Moriyoshi, Y. Kuroiwa, Hiroshima University, Japan

(PACRIM10-S12-P074-2013) Growth and characterization of high-quality Bi0.5Na0.5TiO3-BaTiO3 ferroelectric single crystals

Y. Noguchi*, H. Onozuka, Y. Kitanaka, M. Miyayama, RCAST, U-Tokyo, Japan; C. Moriyoshi, Y. Kuroiwa, Hiroshima University, Japan

(PACRIM10-S12-P075-2013) High Speed and Wide scanning angle optical micro scanner with lead free piezoelectric AD layer

J. Park, National Institute of Advanced Industrial Science & Technology, Japan; Y. Kawakami, NEC Tohkin Co. Ltd., Japan; M. Suzuki, J. Akedo*, National Institute of Advanced Industrial Science & Technology, Japan

(PACRIM10-S12-P077-2013) Ho2O3 and La2O3 Doped BaTiO3-Ceramics Characterization

V. Mitic*, V. Paunovic, M. Miljkovic, L. Zivkovic, University of Nis, Serbia

(PACRIM10-S12-P078-2013) Low-Temperature Sintering of NaNbO₃-BaTiO₃ Lead-Free Piezoelectric Ceramics

R. Aoyagi*, S. Fujita, M. Maeda, Nagoya Institute of Technology, Japan

(PACRIM10-S12-P080-2013) Mechanoluminescence mechanism of Sm3+ doped Srn+1SnnO3n+1 (n=1, 2, ∞) with perovskite oxides

S. Kamimura*, Kyushu University, Japan; H. Yamada, C. Xu, National Institute of Advanced Industrial Science and Technology, Japan

(PACRIM10-S12-P081-2013) Preparation of Nickel Borides and Carbides Supported on Carbon and their Electro-catalytic Activity for PEFC

C. An*, M. Nakaya, K. Kanie, A. Muramatsu, Tohoku University, Japan

(PACRIM10-S12-P083-2013) Strontium titanate films with quantum paraelectric behavior

H. Takashima*, M. Itoh, AIST, Japan

(PACRIM10-S12-P085-2013) The mechanism of the multifunctional material Mn doped CaZnOS in the Electro-Mechano-Optical conversions

D. Tu*, Kyushu University, Japan; C. Xu, Y. Fujio, National Institute of Advanced Industrial Science and Technology (AIST), Japan

(PACRIM10-S13-P086-2013) Dielectric Properties of ZnTa₂O₆ / Polypropylene Composites at Microwave Frequency

C. Jeon*, E. Kim, Kyonggi University, Republic of Korea

(PACRIM10-S13-P087-2013) Effect of MgO and Zn-B glass doping on structural, dielectric and electrical properties of Mg2TiO4 ceramics

X. Wang*, Z. Li, W. Lu, Huazhong University of Science and Technology, China

(PACRIM10-S13-P089-2013) Microwave Dielectric Properties and Low-Temperature Sintering of Ba0.5Sr0.5TiO3-CaMoO4 Ceramics

J. Zhai*, L. Tang, H. Wang, Y. Bian, Tongji University, China

(PACRIM10-S13-P090-2013) Microwave Dielectric Properties of 0.9CaMgSi₂O₆-0.1MgSiO₃ with TiO₂ Glass-Ceramics

B. Choi*, G. Sun, E. Kim, Kyonggi University, Republic of Korea

(PACRIM10-S13-P091-2013) Microwave dielectric ceramics with compositions in the vicinity of CaNdAlO4 in CaO-Nd2O3-Al2O3 system

X. Chen*, L. Yi, M. Mao, L. Li, Zhejiang University, China

(PACRIM10-S13-P092-2013) Microwave quality factor of the Ba6-3xR8+2xTi18O54 (R = rare earth) solid solutions depended on the ionic size difference between Ba and R

H. Ohsato*, Nagoya Industrial Science Research Institute, Japan; M. Imaeda, H. Sakashita, Nagoya Institute of Technology, Japan

(PACRIM10-S13-P093-2013) Optical and microwave dielectric properties of (Mg1-xZnx)Al2O4 transparent ceramics fabricated by Spark Plasma Sintering

P. Fu*, Z. W. Lu, Huazhong University of Science & Technology, China

(PACRIM10-S15-P096-2013) Characterization of Sm0.5Sr0.5CoO3-δ cathode for solid oxide fuel cells

Y. Fu*, J. Ouyang, C. Li, National Dong Hwa University, Taiwan

(PACRIM10-S15-P097-2013) Effect of Co/Fe ratio and Microstructural Design on the Structural and Electrical Properties of BaSrCo_{1-x}Fe_xO_{3-x} Mixed Conducting Oxides

K. Fung*, T. Chen, Y. Su, S. Tsai, C. Liu, National Cheng Kung University, Taiwan

(PACRIM10-S15-P098-2013) Effect of Co/Fe ratio on Structural Stability and Conductivity of Mixed Conducting La_{0.8}Ca_{0.2}Fe_{1-x}Co_xO₃ (x=0~0.4) Perovskite in Reducing Atmosphere

K. Fung*, S. Tsai, Y. Su, C. Liu, National Cheng Kung University, Taiwan

(PACRIM10-S15-P100-2013) Effect of Processing Route on the Crystallization and Conductivity of Mn_{3-x}Co_xO₄ Spinel for Solid Oxide Fuel Cell Applications

K. Fung*, S. Tsai, H. Ho, C. Liu, National Cheng Kung University, Taiwan

(PACRIM10-S15-P102-2013) Electrical and optical properties of Pt/WO₃ thin film prepared using sol-gel process

S. Imamura*, Y. Yamaguchi, A. Yasumori, K. Nishio, Tokyo University of Science, Japan

(PACRIM10-S15-P103-2013) Fabrication of CeO₂/Al multilayer thin films and the thermal behavior

S. Kurokawa*, University of Toyama, Japan; T. Hashizume, University of Toyama, Japan; A. Saiki, University of Toyama, Japan

(PACRIM10-S15-P104-2013) High Temperature Reaction on Composite Cathode Consisting of Yttrium Doped Bismuth Oxide (Y_{0.75}Bi_{0.25}O_{2.5}) and La_{1-x}Sr_xMeO_{3-δ} Perovskite (Me=Mn, Cu)

K. Fung, S. Tsai*, H. Wang, C. Ni, National Cheng Kung University, Taiwan

(PACRIM10-S15-P105-2013) Hydrogen and oxygen gas partial pressure dependence on gasochromism of Pt/WO₃ thin film prepared using sol-gel process

Y. Yamaguchi*, T. Hanawa, S. Imamura, S. Ito, K. Fujimoto, A. Yasumori, K. Nishio, Tokyo University of Science, Japan

(PACRIM10-S15-P106-2013) Microstructures and catalytic activity of SOFC anodes with spinel-supported metal catalysts

K. Glass*, B. Hill, Alfred University, USA; J. Howe, Oak Ridge National Laboratory, USA; S. T. Mixture, Alfred University, USA

(PACRIM10-S15-P108-2013) Tuning the composition and porosity in polymer derived ceramics for gas separation applications

C. Schitco*, M. Seifollahi Bazarjani, Technische Universität Darmstadt, Germany; C. Turdean-Ionescu, M. Eden, Stockholm University, Sweden; A. Gurlo, Technische Universität Darmstadt, Germany; R. Riedel, Technische Universität Darmstadt, Germany, Technische Universität Darmstadt, Germany/Stockholm University, Sweden

(PACRIM10-S15-P109-2013) New Sealing Glasses to Bond Together Ceramics, and Metals

O. A. Prokhorenko*, Laboratory of Glass Properties, USA

(PACRIM10-S15-P194-2013) Structural and Electrical Characterization of Pr_xCe_{0.95-x}Gd_{0.05}O_{2-δ} (0.15 ≤ x ≤ 0.40) as cathode materials for low temperature SOFC applications

R. Chockalingam*, S. Basu, Indian Institute of Technology, Delhi, India

(PACRIM10-S15-P195-2013) Shape distortion and thermo-mechanical properties of dense SOFC components from green tape to sintered body

F. Teocoli*, V. Esposito, D. Ni, K. Brodersen, S. Ramousse, Technical University of Denmark, Denmark

(PACRIM10-S16-P110-2013) A Module Study of Thermoelectric Power Generation in Non-Telluride Systems

S. Choi*, W. Seo, Korea Institute of Ceramic Eng. and Tech., Republic of Korea

(PACRIM10-S16-P111-2013) Compositional optimization of reduced polycrystalline Sr_xBa_{1-x}Nb₂O₆ for high-temperature thermoelectric applications

C. Dandeneau*, K. Thommasson, K. Staples, A. Dang, R. K. Bordia, F. S. Ohuchi, University of Washington, USA

(PACRIM10-S16-P112-2013) Effect of Al content on the microstructure and thermoelectric properties of Ca_{1-x}Al_xMnO₃

K. Park*, C. M. Kim, J. W. Seo, Sejong University, Republic of Korea

(PACRIM10-S16-P113-2013) Electrical conductivity of La₄BaCu₅O_x thin film at high temperature

W. Shin*, N. Izu, T. Itoh, T. Akamatsu, AIST, Japan; D. Mori, R. Okazaki, I. Terasaki, Nagoya University, Japan

(PACRIM10-S16-P116-2013) Process development and material characterization of Bi_{0.3}Sb_{1.7}Te₃ thick films on polyethylene terephthalate substrates by aerosol deposition

S. Baba*, H. Sato, L. Huang, A. Uritani, R. Funahashi, J. Akedo, National Institute of Advanced Industrial Science and Technology, Japan

(PACRIM10-S16-P117-2013) Promising Thermoelectric Performance in Transition Metal Niobates with Edge-Shared MO₆ Arrangements

P. C. Metz*, S. A. Miller, S. T. Mixture, Alfred University, USA

(PACRIM10-S17-P119-2013) Densification and Properties of Fluorine Doped Tin Oxide (FTO) Ceramics by Spark Plasma Sintering

M. Li*, Q. Shen, F. Chen, L. Zhang, Wuhan University of Technology, China

(PACRIM10-S18-P120-2013) Engineering of Amorphous Granite for Deep Borehole Disposal

P. Yang*, Y. Wang, M. A. Rodriguez, P. V. Brady, P. N. Swift, C. Newton, Sandia National Laboratories, USA

(PACRIM10-S18-P121-2013) Microstructural evolution of 3D carbon/carbon composite under high temperature irradiation

S. Tsai*, National Tsing-Hua University, Taiwan; C. Chen, University of Tennessee, USA; C. Ho, I. Chiu, J. Kai, National Tsing-Hua University, Taiwan

(PACRIM10-S18-P122-2013) Microstructure of damage in helium-implanted 3C-SiC and C/C composite

I. Chiu*, Y. Lin, C. Ho, S. Tsai, National Tsing-Hua University, Taiwan; C. Chen, University of Tennessee, USA; J. Kai, National Tsing-Hua University, Taiwan

(PACRIM10-S18-P123-2013) Off-stoichiometric Sintering of Actinide and Rare-earth Oxides

J. Henderson*, Netzsch Instruments North America LLC, USA

(PACRIM10-S18-P124-2013) SiC/SiC Fuel Cladding by NITE process for Innovative LWR - Resistance under high temperature water and steam

C. Kanda*, OASIS, Muroran institute of technology, Japan; Y. Kanda, Muroran Institute of Technology, Japan; H. Kishimoto, A. Kohyama, OASIS, Muroran institute of technology, Japan

(PACRIM10-S18-P125-2013) SiC/SiC Fuel Cladding by NITE process for Innovative LWR -Pre-composite Ribbon Design and Fabrication

Y. Asakura*, J. Park, H. Kishimoto, A. Kohyama, OASIS, Muroran Institute of Technology, Japan

(PACRIM10-S18-P126-2013) Study of zirconium based composite as a potential inert matrix fuel

Y. Liu, Y. Wu*, Alfred University, USA

(PACRIM10-S19-P127-2013) Controllable Synthesis of Nitrogen-Doped Graphene/InSe Nanocomposites with Enhanced Photocatalytic Performance

X. Song*, P. Zhang, L. Gao, Shanghai Jiao Tong University, China

(PACRIM10-S19-P128-2013) Engineering Approaches to Improved Hydrogen Production from Photocatalysts

V. L. Blair, S. T. Mixture*, Alfred University, USA

(PACRIM10-S19-P129-2013) Low-temperature preparation of crystalline mesoporous TiO₂ using sol-gel process

S. Hirotsu*, S. Yanagida, A. Yasumori, K. Nishio, Tokyo University of Science, Japan

(PACRIM10-S19-P130-2013) Preparation of the brookite-type titanium oxide nanocrystal by hydrothermal synthesis

S. Kitahara*, University of Toyama, Japan; T. Hashizume, University of Toyama, Japan; A. Saiki, University of Toyama, Japan

(PACRIM10-S20-P133-2013) Fabrication of superhydrophilic-superoleophobic nanocomposite coatings for Oil/Water Separation

J. Yang, Institute for Advanced Materials, Jiangsu University, China; C. Li*, School of Materials Science and Engineering, Jiangsu University, China

(PACRIM10-S20-P135-2013) Characterisation of porous aluminum titanate produced with starch and CNTs

G. Zhao*, Y. Bai, L. Qiao, University of Science and Technology, Beijing, China

(PACRIM10-S21-P136-2013) Effect of Aliovalent Dopant and Atmosphere on Synthesis and Electrical Conduction of Li4Ti5O12 Anode for Li Battery Application

K. Fung*, M. Chen, C. Ni, S. Tsai, National Cheng Kung University, Taiwan; A. Orliukas, Vilnius University, Lithuania; G. Bajars, University of Latvia, Latvia

(PACRIM10-S21-P138-2013) Preparation and Properties of Ionic-Liquids Based Electrolyte for Lithium-ion Batteries

C. Huang*, B. Lin, C. Kuo, S. Wu, Tatung University, Taiwan

(PACRIM10-S21-P139-2013) Preparation and characterization of Li3V2(PO4)3/C composites as cathode materials for Li ion batteries

C. Yang, S. Kung*, Ming Chi University of Technology, Taiwan

(PACRIM10-S21-P140-2013) Preparation and characterization of Li4Ti5O12/C composite as an anode material

C. Yang, H. Hwu*, Ming Chi University of Technology, Taiwan

(PACRIM10-S21-P141-2013) Thin Film Deposition of LiCoO₂ Cathode on Flexible Substrate for Li Battery Applications

S. Tsai*, C. Ni, K. Fung, National Cheng Kung University, Taiwan; A. Orliukas, Vilnius University, Lithuania; G. Bajars, University of Latvia, Latvia

(PACRIM10-S21-P142-2013) V2O5 cathode for High-Performance All-Solid-State Thin Film Battery

J. Kim*, KIST, Republic of Korea; J. Moon, Yonsei University, Republic of Korea; H. Shin, Sungkyunkwan University, Republic of Korea; K. Nam, KIST, Republic of Korea

(PACRIM10-S22-P143-2013) An archaeological analog for long-term interaction between iron and glass

S. Mitsui*, H. Yoshikawa, Japan Atomic Energy Agency, Japan; T. Matsui, University of Tsukuba, Japan; M. Kaneko, Y. Nakamatsu, S. Utsunomiya, Kyushu University, Japan

(PACRIM10-S22-P144-2013) Development and Use of the International Simple Glass for Glass Corrosion Testing

C. L. Crawford*, J. Marra, D. Peeler, Savannah River National Laboratory, USA

(PACRIM10-S22-P145-2013) Hafnium and Samarium Speciation in Vitrified Radioactive Incinerator Slag

G. Malinina, S. Stefanovsky*, SIA Radon, Russian Federation; A. Shiryayev, Institute of Physical Chemistry and Electrochemistry RAS, Russian Federation; Y. Zubavichus, NRC Kurchatov Institute, Russian Federation

(PACRIM10-S23-P146-2013) Characterization of electrolytic CaP/ZrO₂ double-layer coatings on AZ91D magnesium alloy

M. Wang*, S. Yen, National Chung Hsing University, Taiwan

(PACRIM10-S23-P147-2013) Drug Contained Biopolymer- HA/Al₂O₃-ZrO₂ Composite Coating on AZ91 for Medical Device by Electrolysis

T. Wang*, M. Wang, C. Yang, S. Yen, National Chung Hsing University, Taiwan

(PACRIM10-S23-P148-2013) The mechanical properties of the β -Si₃N₄ whiskers reinforced dental resin composites

K. Zuo*, Y. Zeng, the Shanghai Institute of Ceramics, China; L. Lu, the University of Waterloo, Canada

(PACRIM10-S23-P149-2013) Toughening Components in Abalone Nacre

M. I. Lopez*, P. E. Meza-Martinez, J. McKittrick, UCSD, USA; P. Chen, NTHU, Taiwan; M. A. Meyers, UCSD, USA

(PACRIM10-S24-P150-2013) A functionalized nanoporous alumina membrane electrochemical sensor for DNA detection with gold nanoparticle amplification

W. Ye*, M. Yang, the Hong Kong Polytechnic University, Hong Kong

(PACRIM10-S24-P151-2013) Application of scratch hardness tests for evaluation of pre-sintered zirconia CAD/CAM blocks for all-ceramic prosthesis

D. Lee*, S. Seo, H. Yoon, Sejong University, Republic of Korea; H. Kim, J. Han, Seoul National University, Republic of Korea; D. Kim, Sejong University, Republic of Korea

(PACRIM10-S24-P152-2013) Osteoinductive Collagen/TCP Scaffold: Is this a reality?

A. S. Ismailoglu*, F. Vizesi, E. Erbe, NuVasive, USA; H. Yuan, Xpand Biotechnology BV, Netherlands; S. Chen, Maxigen Biotech Inc., Taiwan; J. de Bruijn, Queen Mary University of London, United Kingdom

(PACRIM10-S24-P153-2013) Magnetite Nanoparticles in Hybrid Aerogel and Its Hyperthermia Application

C. Kim*, E. Lee, Korea Institute of Ceramic Eng. & Tech, Republic of Korea; Y. Choa, Hanyang Univ., Republic of Korea

(PACRIM10-SA-P154-2013) Fictive Temperature, Heat Capacity and Structure in Yttrium, Lanthanum, Calcium and Barium Boroaluminosilicate Glasses: High Resolution 11B & 27Al MAS NMR

E. Morin*, J. F. Stebbins, J. Wu, Stanford University, USA

(PACRIM10-SA-P155-2013) High temperature conductivities of glass sealants containing silver particles

T. Akamatsu*, T. Itoh, N. Izu, W. Shin, National Institute of Advanced Industrial Science and Technology, Japan

(PACRIM10-SA-P156-2013) Impact of tungsten on structure and thermodynamics of borosilicate melts

P. Kroll*, J. P. Nimmo, UT Arlington, USA; M. K. Dehdashti, W. G. Fahrenholtz, Missouri University of Science and Technology, USA

(PACRIM10-SA-P157-2013) Molecular dynamics simulations of the structural changes in sodium aluminosilicate glasses from perosoda to peralumina compositions

Y. Xiang*, J. Du, University of North Texas, USA

(PACRIM10-SA-P161-2013) Structure and chemistry in halide-lead-tellurite glasses

B. J. Riley*, J. McCloy, A. Lipton, C. Windisch, Jr., N. Washton, M. Olszta, C. Rodriguez, Pacific Northwest National Lab, USA

(PACRIM10-SA-P162-2013) The Effects of the Mixed Glass Former Effect on Ion Conductivity in MGF Solid State Electrolytes

D. E. Watson*, S. Martin, Iowa State University, USA; R. Christensen, University of Manitoba, Canada; C. Bischoff, G. Olson, N. Dunlap, Iowa State University, USA

(PACRIM10-SA-P163-2013) The atomic structure of sodium iron phosphate glasses

B. M. Al-Hasni*, Sohar University, Oman; G. Mountjoy, University of Kent, United Kingdom; E. Barney, Rutherford Appleton Laboratory, United Kingdom; A. Gismelseed, Sultan Qaboos University, Oman

(PACRIM10-SA-P164-2013) Towards reliable structural information of multicomponent glass systems

S. Scherer*, Schott AG, Germany; F. Schmid, Johannes-Gutenberg University, Germany; M. Letz, Schott AG, Germany

(PACRIM10-SA-P166-2013) Effect of total flow rate and post-heat treatment on the structure and mechanical properties of SnO₂:F thin film

Q. Gao*, Zhejiang University, China

(PACRIM10-SB-P167-2013) Fatigue and aging studies of soda lime silicate glass fibers using the two-point bending method

E. Ronchetto*, F. Serbena, R. Brow, Missouri University of Science and Technology, USA

(PACRIM10-SB-P169-2013) Model for the calculation of the crystallization kinetics of glass powders

R. M. C. V. Reis*, E. D. Zanotto, LaMaV - UFSCar, Brazil

(PACRIM10-SB-P170-2013) Scalable fabrication of digitally designed spherical multimaterial particles enabled by in-fiber emulsification

G. Tao*, J. J. Kaufman, S. Shabahang, A. F. Abouraddy, University of Central Florida, CREOL, USA

(PACRIM10-SB-P171-2013) Strength Increase of Silica Glass Fiber through the Formation of a Residual Surface Compressive Stress Layer by Surface Stress Relaxation

P. J. Lezzi*, Q. Xiao, M. Tomozawa, T. Blanchet, Rensselaer Polytechnic Institute, USA; C. Kurkjian, University of Southern Maine, USA

(PACRIM10-SB-P172-2013) Study of Al₂O₃-ZrO₂-SiO₂ (AZS) refractory material corrosion in industrially tableware glass melt

P. Simurka*, J. Sedlacek, J. Kraxner, Institute of Inorganic Chemistry Slovak Academy of Sciences, Slovakia

(PACRIM10-SB-P173-2013) The corrosion behaviour of Ti50Cu28Ni15Sn7 bulk metallic glasses and Mg49Y15Cu36 bulk nanocrystalline alloys formed by vacuum hot pressing technique

P. Lee*, S. Chung, National Taiwan Ocean University, Taiwan

(PACRIM10-SB-P174-2013) Three Classes of Extrusion Methodologies for Robust Multimaterial Fibers

G. Tao*, S. Shabahang, A. F. Abouraddy, U. of Central Florida, USA

(PACRIM10-SB-P175-2013) Double-Piston Extrusion of Hybrid Infrared Fiber Preforms

G. Tao*, University of Central Florida, CREOL, USA; Y. Xu, Ningbo University, China; S. Shabahang, University of Central Florida, CREOL, USA; S. Dai, Ningbo University, China; A. F. Abouraddy, University of Central Florida, CREOL, USA

(PACRIM10-SB-P176-2013) Robust Tellurium-based Chalcogenide Glass Fibers For Far-infrared Transmission Produced by Multimaterial Co-extrusion

G. Tao*, University of Central Florida, CREOL, USA; X. Wang, Ningbo University, China; A. F. Abouraddy, University of Central Florida, CREOL, USA

(PACRIM10-SB-P178-2013) Fatigue and Ageing of Ion Exchanged Soda-Lime Silicate Glass Fibers

F. C. Serbena*, State University of Ponta Grossa, Brazil; R. K. Brow, Missouri University of Science and Technology, USA

(PACRIM10-SB-P179-2013) Impact of Color Centers on Radiation Hardening of Rare-Earth-Doped Optical Fibers

K. Simmons-Potter, B. P. Fox*, University of Arizona, USA

(PACRIM10-SC-P180-2013) Agglomeration Reduction in Optical Glass Polishing Slurries Using EDL Bound Surfactants

L. L. Wong*, R. Dylla-Spears, T. Suratwala, P. Miller, M. Feit, R. Steele, Lawrence Livermore National Laboratory, USA

(PACRIM10-SC-P181-2013) Amorphous Selenium/Alumino-Silicate nanomultilayered composite films and their photo induced effects

S. Charnovych, University of Debrecen, Hungary; P. Nemeč*, University of Pardubice, Czech Republic; V. Nazabal, Université de Rennes 1, France; M. Veres, Institute of Solid State Physics and Optics, Hungary; A. Csik, ATOMKI, Hungary; M. Allix, Site Haute Température, France; S. Kokenyesi, University of Debrecen, Hungary

(PACRIM10-SC-P183-2013) Fabrication and Characterization of Phosphor Embedded Glass Ceramics

F. Wu*, C. Chang, Y. Chung, National United University, Taiwan

(PACRIM10-SC-P186-2013) Low-loss chalcogenide planar waveguides for mid-infrared applications

Z. Yang*, D. Choi, P. Ma, S. Madden, B. Luther-Davies, Australian National University, Australia

(PACRIM10-SC-P187-2013) Luminous Silicate Glass Coating Containing Phosphor Fine Particles by Screen Printing Method

H. Nakamura*, A. Numai, S. Yanagida, A. Yasumori, Tokyo University of Science, Japan

(PACRIM10-SC-P188-2013) Photoluminescence Properties of Copper Ion Doped Alkaline-Earth Borosilicate Glasses

Y. Funamoto*, K. Tohyama, S. Yanagida, A. Yasumori, Tokyo University of Science, Japan

(PACRIM10-SC-P189-2013) Preparation of Gold Nanoparticles Loading Porous Titania-Glass Composite Film for LSPR Sensor by Screen Printing and Photocatalytic Deposition Methods

S. Tomita*, M. Akagi, S. Yanagida, A. Yasumori, Tokyo University of Science, Japan

(PACRIM10-SC-P190-2013) Pulsed laser deposited Ge-As-Se amorphous thin films and their photostability

P. Nemeč*, University of Pardubice, Czech Republic; A. Moreac, V. Nazabal, Université de Rennes 1, France

(PACRIM10-SC-P191-2013) The dependence of photosensitivity on composition for thin films of GexAsySe1-x-y chalcogenide glasses

R. Wang*, Australian National University, Australia; X. Su, Beijing University of Technology, China; Z. Yang, B. Luther-Davies, Australian National University, Australia; L. Wang, Beijing University of Technology, China

(PACRIM10-SC-P192-2013) Upconversion and downconversion luminescence in Tb3+, Tm3+ and Yb3+ co-doped oxyfluoride glass and glass-ceramics

Z. Pan, R. Akrobetu, R. Mu, S. Morgan*, Fisk University, USA

(PACRIM10-SD-P193-2013) Vibrational Properties of Chalcogenide Glasses: An ab initio Molecular Dynamics Study

A. Kachmar*, Université Pierre et Marie Curie, France; M. Bauchy, Massachusetts Institute of Technology, USA; M. Micoulaut, Université Pierre et Marie Curie, France

Wednesday, June 5, 2013**Symposium 01: Advanced Characterization and Modeling of Ceramic Interfaces****Advanced Theoretical Modeling of Ceramic Interfaces**

Room: Continental

Session Chairs: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences; Katsuyuki Matsunaga, Nagoya University

8:30 AM

(PACRIM10-S01-028-2013) Multi-axial tensile "experiment" and failure behavior in complex metallic and ceramic crystals (Invited)

W. Ching*, University of Missouri, Kansas City, USA

9:00 AM

(PACRIM10-S01-029-2013) Theoretical and experimental investigations of mechanical and thermal properties of Y-Lu-Si-O-N compounds (Invited)

J. Wang*, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

9:30 AM

(PACRIM10-S01-030-2013) Heat Transport in Nano-Layered Oxides with Homo- or Hetero-Interfaces (Invited)

M. Yoshiya*, Y. Miyauchi, M. Tada, S. Fujii, H. Yasuda, Osaka University, Japan

10:00 AM

Break

10:20 AM

(PACRIM10-S01-031-2013) Theoretical Investigation on Interface Structure and Bonding of Metal Atoms Supported on Oxide Surfaces (Invited)

K. Matsunaga*, Nagoya University, Japan

10:50 AM

(PACRIM10-S01-032-2013) Ab Initio Modeling of Interfaces in Inorganic and Hybrid Materials

C. Bonhomme*, T. Azais, C. Gervais, F. Babonneau, UPMC, France

11:10 AM

(PACRIM10-S01-033-2013) Atomistic Analyses of Grain Boundary Segregation and its Contribution to Ionic Conductivity in M2O3-doped Zirconia

T. Yokoi*, Y. Yoshizawa, T. Nagira, M. Yoshiya, H. Yasuda, Osaka University, Japan

11:30 AM

(PACRIM10-S01-034-2013) Lithium ion diffusion in LiLaTiO4 ceramics: a computational study

J. Du*, C. Chen, University of North Texas, USA

11:50 AM

(PACRIM10-S01-035-2013) Ionic Liquids Confined in Porous Chalcogenides: a Molecular Simulation Study

G. Ori*, Institut Charles Gerhardt - ENSCM - Université Montpellier 2 - CNRS, France; M. Celino, ENEA, Italy; C. Massobrio, Institut de Physique et de Chimie des Matériaux de Strasbourg, France; B. Coasne, Massachusetts Institute of Technology, USA

Symposium 04: Polymer Derived Ceramics and Composites

Processing of PDCs: Porous Ceramics and Membranes I

Room: Garden

Session Chair: Yuji Iwamoto, Graduate School of Engineering, Nagoya Institute of Technology

8:30 AM

(PACRIM10-S04-031-2013) Carbon Materials by Chlorine Treatment of PDCs (Invited)

V. Presser, J. Atchison*, INM Leibniz Institute for New Materials, Germany

9:00 AM

(PACRIM10-S04-032-2013) Fabrication of porous ceramics via 3D indirect printing

A. Zocca, C. Gomes, J. Guenster, BAM Federal Institute for Materials Research and Testing, Germany; P. Colombo*, University of Padova, Italy

9:20 AM

(PACRIM10-S04-033-2013) Controlled Pore Morphology of Foamed Silicon Carbide from Allylhydridopolycarbosilane

S. Arreguin*, R. K. Bordia, University of Washington- Seattle, USA

9:40 AM

(PACRIM10-S04-034-2013) Siliconboronoxycarbide (SiBOC) foams from methyl borosiloxane

T. Fey*, S. Krishnan, P. Greil, University Erlangen-Nuremberg, Germany

10:00 AM

Break

Processing of PDCs: Porous Ceramics and Membranes II

Room: Garden

Session Chair: Samuel Bernard, Institut Européen des Membranes

10:20 AM

(PACRIM10-S04-035-2013) Characterisation and simulation of graded cellular polymer derived ceramics (Invited)

T. Fey*, B. Nicolat, F. Wolff, A. Dakkouri-Baldauf, H. Münsted, P. Greil, University Erlangen-Nuremberg, Germany

10:50 AM

(PACRIM10-S04-036-2013) Organic-inorganic layered membrane for selective hydrogen permeation together with dehydration

K. Miyajima, T. Eda, B. N. Nair, Noritake Co., Limited, Japan; Y. Iwamoto*, Graduate School of Engineering, Nagoya Institute of Technology, Japan

11:10 AM

(PACRIM10-S04-037-2013) Synthesis and characterization of organoamino group-functionalized amorphous silica

Y. Iwamoto*, T. Hiramatsu, T. Onishi, A. Kawai, S. Honda, Graduate School of Engineering, Nagoya Institute of Technology, Japan

11:30 AM

(PACRIM10-S04-038-2013) Synthesis of hierarchical porous SiCO monoliths from preceramic polymer impregnated with porous templates

X. Yan*, Institute for Advanced Materials, China; J. Pan, School of Materials Science and Engineering, China; X. Cheng, Institute for Advanced Materials, China; C. Zhang, G. Xu, School of Materials Science and Engineering, China

11:50 AM

(PACRIM10-S04-039-2013) Non-oxide Porous Si-C-N Ceramics Fabricated Using Random Copolymers as Precursors

X. Wang*, Northwestern Polytechnical University, China; J. Kong, Y. Wang, L. An, University of Central Florida, USA

Symposium 05: Advanced Powder Processing and Manufacturing Technologies

Composite Structure Control by Powder Processing

Room: Stuart

Session Chairs: Sujanto Widjaja, Corning Incorporated; Tetsuo Uchikoshi, National Institute for Materials Science

8:30 AM

(PACRIM10-S05-001-2013) Powder Processing Approaches for Advanced Structural Composites (Invited)

A. R. Studart*, ETH Zurich, Switzerland

9:00 AM

(PACRIM10-S05-002-2013) Thermal degradation control study of carbon fiber/polyamide 6 composite using hexagonal boron nitride powder

D. Shimamoto*, Y. Imai, Y. Hotta, AIST, Japan

9:20 AM

(PACRIM10-S05-004-2013) Control of Dispersion and Agglomeration of CNTs for Their Networking: Mechanical and Electrical Properties of CNT/Alumina Composites

M. Matsuoka*, J. Tatami, T. Wakihara, Yokohama National University, Japan

9:40 AM

Break

Advanced Powder Processing for Functional Ceramics

Room: Stuart

Session Chairs: Sujanto Widjaja, Corning Incorporated; Tetsuo Uchikoshi, National Institute for Materials Science

10:20 AM

(PACRIM-S05-009-2013) Texture developing and some properties of feeble magnetic ceramics by colloidal processing in a strong magnetic field (Invited)

Y. Sakka*, T. S. Suzuki, T. Uchikoshi, NIMS, Japan

10:50 AM

(PACRIM10-S05-006-2013) Synthesis, Development and Characterization of Novel Nanoparticle Ferrite Materials

C. DiAntonio*, T. Chavez, B. Hernandez-Sanchez, Sandia National Laboratories, USA

11:10 AM

(PACRIM10-S05-007-2013) Rapid Synthesis of Granules of LiCoO₂ Nanoparticles by One-Step Mechanical Method

A. Kondo*, H. Abe, M. Naito, Osaka University, Japan; J. Yoshida, S. Nakanishi, H. Iba, TOYOTA MOTOR CORPORATION, Japan

11:30 AM

(PACRIM10-S05-008-2013) Electrophoretic Deposition of Orientation-Controlled Zeolite L Layer on Porous Ceramic Substrate

T. Uchikoshi*, National Institute for Materials Science, Japan; C. Matsunaga, Kumamoto University, Japan; T. S. Suzuki, National Institute for Materials Science, Japan; Y. Sakka, National Institute for Materials Science, Japan; M. Matsuda, Kumamoto University, Japan

Symposium 06: Synthesis and Processing of Materials Using Electric Fields/Currents: A Symposium Honoring Prof. Zuhair Munir

Property Evaluation of Materials Processing using Electric Currents II

Room: Hanover

Session Chairs: Yasuhiro Kodera, UC Riverside; Rachman Chaim, Technion

8:30 AM

(PACRIM10-S06-032-2013) Phase stability and boundary structure of unique iron-based amorphous metal composites: processing and modeling (Invited)

O. A. Graeve*, University of California, USA; M. S. Saterlie, P. J. Colmenares, H. Fathi, L. E. Jones, Alfred University, USA

9:00 AM

(PACRIM10-S06-033-2013) The role of processing parameters on the microstructure and properties of Mg-based thermoelectric materials

A. Fong*, Y. Kodera, J. Garay, University of California, Riverside, USA

9:20 AM

(PACRIM10-S06-034-2013) Probing conductance heterogeneity of insulating/conductive ceramic nanocomposites at the nanoscale by scanning impedance microscopy

C. A. Lee*, H. B. Liu, P. Su, National Cheng Kung University, Taiwan; H. Lin, Oak Ridge National Laboratory, USA; J. Huang, National Cheng Kung University, Taiwan

9:40 AM

(PACRIM10-S06-035-2013) Rare earth doped polycrystalline nitrides for photoluminescent applications

A. T. Wieg*, Y. Kodera, J. E. Garay, University of California Riverside, USA

10:00 AM

Break

10:20 AM

(PACRIM10-S06-036-2013) Synthesis of transparent Lu-based oxides by SPS and their optical properties (Invited)

T. Goto*, L. An, A. Ito, IMR Tohoku University, Japan

10:50 AM

(PACRIM10-S06-037-2013) Enhanced Non-Linear Optical Properties of Transparent Oxide Ceramics Produced by Current Activated Pressure Assisted Densification (CAPAD)

E. Penilla*, P. Martinez-Torres, University of California Riverside, USA; G. R. Castillo-Vega, S. Camacho-Lopez, CICESE, Mexico; G. Aguilar, J. Garay, University of California Riverside, USA

11:10 AM

(PACRIM10-S06-038-2013) Enhanced in-situ functionally graded Si3N4-based materials

M. Belmonte*, P. Miranzo, I. Osendi, Institute of Ceramics and Glass (ICV-CSIC), Spain

11:30 AM

(PACRIM10-S06-039-2013) Densification and mechanical property of TiN-TiB₂-cBN composite prepared by spark plasma sintering using SiO₂-coated cBN powder

M. Kitiwan*, A. Ito, T. Goto, Tohoku University, Japan

Symposium 08: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications

Applications in Aeronautics, Space, Automotive, Microelectronics, Energy and Environmental Systems

Room: Windsor Complex

Session Chairs: Hagen Klemm, FhG IKTS Dresden; Dietmar Koch, German Aerospace Center

8:30 AM

(PACRIM10-S08-032-2013) CMC Technology Advancements for Gas Turbine Engine Applications (Invited)

J. Grady*, NASA Glenn Research Center, USA

9:00 AM

(PACRIM10-S08-033-2013) Design and testing of a C/C-SiC nozzle extension manufactured via filament winding technique and liquid silicon infiltration

F. Breede*, German Aerospace Center (DLR), Germany

9:20 AM

(PACRIM10-S08-034-2013) Process development for manufacturing and design of nonoxide CMC (Invited)

D. Koch*, E. Klatt, F. Breede, M. Friess, German Aerospace Center, Germany

9:50 AM

(PACRIM10-S08-035-2013) Long-Term Properties and Degradation of Ceramics for Gas Turbines

M. van Roode*, Mark van Roode & Associates, USA; A. K. Bhattacharya, Solar Turbines Incorporated, USA; M. K. Ferber, Oak Ridge National Laboratory, USA

10:10 AM

Break

10:30 AM

(PACRIM10-S08-036-2013) Low-cost fabrication of CMC by injection molding

H. Klemm*, M. Axel, M. Tassilo, FhG IKTS Dresden, Germany

10:50 AM

(PACRIM10-S08-037-2013) Development and Practical Applications of Indentation Based Techniques to Measure Stresses in Multi-Material Systems (Invited)

R. Tandon*, Sandia National Lab, USA

11:20 AM

(PACRIM10-S08-038-2013) Residual strains in structural stone: a degradation mechanism

V. Shushakova*, Universität Göttingen, Germany; E. R. Fuller, NC State University, USA; S. Siegesmund, Universität Göttingen, Germany; F. Heidelbach, Universität Bayreuth, Germany

11:40 AM

(PACRIM10-S08-039-2013) Temperature Dependence of Resistivity of MoSi₂-Si Composite Thin Films

R. Kanai, R. Kitani*, Y. Sato, S. Yoshikado, Doshisha University, Japan

Symposium 12: Advances in Electroceramics

Nanomaterials and Composites

Room: Crystal

Session Chair: Jun Akedo, National Institute of Advanced Industrial Science & Technology

8:30 AM

(PACRIM10-S12-019-2013) 2D Oxide Nanoheets from Layered Materials: New Solution to Nanodielectrics (Invited)

M. Osada*, T. Sasaki, National Institute for Materials Science, Japan

9:00 AM**(PACRIM10-S12-020-2013) Control of sensing properties of oxide nanowires by manipulating the energy band structure between nanoparticles and nanowires**

G. Sun*, S. Choi, S. Kim, Inha University, Republic of Korea

9:20 AM**(PACRIM10-S12-021-2013) Preparation and characterization of (K, Na)NbO₃ lead-free piezoelectric nanorods**

L. Cheng*, K. Wang, J. Li, Tsinghua University, China

9:40 AM**(PACRIM10-S12-022-2013) Percolative High- κ and Low-loss BaTiO₃ Composite Films Fabricated by Aerosol Deposition**

Y. Kim*, M. Osada, Waseda University, Japan; H. Kim, S. Nam, Kwangwoon University, Republic of Korea

10:00 AM**Break****Dielectric Materials and Applications I**

Room: Crystal

Session Chairs: Danilo Suvorov, Joozef Stefan Institute; Guorong Li, Shanghai Institute of Ceramics

10:20 AM**(PACRIM10-S12-023-2013) Development of Ferroelectric Films on Nickel Foils for Power Electronics in Electric Drive Vehicles**

U. Balachandran*, M. Narayanan, S. Liu, B. Ma, C. Park, T. Lee, S. E. Dorris, Argonne National Laboratory, USA

10:40 AM**(PACRIM10-S12-025-2013) Effects of secondary phases on dielectric properties of Ba_{1-x}AxTiO₃ (A = Mg, Ca and x = 0.2-0.4at%) synthesized by solution combustion technique**

O. Jongprateep*, T. Khongnakhon, Kasetsart University, Thailand

11:00 AM**(PACRIM10-S12-026-2013) Effects of Ca-substitution on dielectric properties of Ba₅SmTi₃Nb₇O₃₀ filled tungsten bronze ceramics**

L. Kun*, Zhejiang University, China

11:20 AM**(PACRIM10-S12-027-2013) Giant dielectric response and small polaronic hopping in Sm_{1.5}Sr_{0.5}NiO₄-based ceramics**

X. Liu*, B. Jia, X. Chen, Zhejiang University, China

Symposium 14: Oxide Materials for Nonvolatile Memory Technology and Applications**Oxide Materials for Nonvolatile Memory III**

Room: Tudor

Session Chair: Jinn Chu, National Taiwan University of Science and Technology

8:30 AM**(PACRIM10-S14-010-2013) Nonvolatile Memories using Single Electron Tunneling Effects in Si Quantum Dots inside Tunnel Silicon Oxide (Invited)**

R. Ohba*, Center for Semiconductor Research & Development, Toshiba Co., Japan; M. Yuichiro, Research & Development Center, Toshiba Co., Japan

9:00 AM**(PACRIM10-S14-011-2013) One-by-one electron charging/discharging in nanocrystal flash memories (Invited)**

J. S. de Sousa*, Universidade Federal do Ceará, Brazil; R. Peibst, Institute for Solar Energy Research Hamelin (ISFH), Germany; G. A. Farias, Universidade Federal do Ceará, Brazil; J. Leburton, University of Illinois at Urbana-Champaign, USA; K. R. Hofmann, Leibniz Universität Hannover, Germany

9:30 AM**(PACRIM10-S14-012-2013) Ferroelectric tunnel junctions (Invited)**

V. Garcia*, A. Chanthbouala, A. Crassous, R. Cherifi, S. Boyn, S. Fusil, Unite Mixte CNRS/Thales, France; X. Moya, University of Cambridge, United Kingdom; H. Yamada, Unite Mixte CNRS/Thales, France; S. Xavier, Thales Research and Technology, France; C. Deranlot, K. Bouzehouane, E. Jacquet, Unite Mixte CNRS/Thales, France; N. D. Mathur, University of Cambridge, United Kingdom; J. Grollier, M. Bibes, A. Barthelemy, Unite Mixte CNRS/Thales, France

10:00 AM**Break****Oxide Materials for Nonvolatile Memory IV**

Room: Tudor

Session Chair: Ryuji Ohba, Center for Semiconductor Research & Development, Toshiba Co.

10:20 AM**(PACRIM10-S14-014-2013) Resistive Switching and Rectification Characteristics with CoO/ZrO₂ Double Layers**

T. Tsai*, J. Wu, T. Tseng, National Chiao Tung University, Taiwan, Taiwan

10:40 AM**(PACRIM10-S14-015-2013) Improvement of resistive switching properties of Ti/ZrO₂/Pt with embedded Germanium**

C. Lin*, D. Panda, T. Tseng, National Chiao Tung University, Taiwan

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications**Thermoelectric Materials: Theory, Testing and New Materials**

Room: Coastal

Session Chair: Jihui Yang, Univ. of Washington

8:30 AM**(PACRIM10-S16-028-2013) Theoretical Reviews on the Transport Properties of P-Type Skutterudites (Invited)**

J. Yang, J. Yang, University of Washington, USA; W. Zhang*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9:00 AM**(PACRIM10-S16-029-2013) Skutterudite based thermoelectric modules: Fabrication and Conversion Efficiency (Invited)**

J. R. Salvador*, General Motors R&D, USA; J. Moczysgemba, A. J. Thompson, J. Sharp, R. Mc Carty, Marlow Inc., USA; D. Brown, D. Miller, Molycorp Inc., Singapore; J. D. König, Fraunhofer Institute, Germany; J. Y. Cho, Z. Ye, Optimal Inc., USA

9:30 AM**(PACRIM10-S16-030-2013) High Performance Thermoelectrics Based On Natural Mineral Tetrahedrite (Invited)**

D. Morelli*, Michigan State University, USA

10:00 AM**Break****Various Aspects of Thermoelectric Materials Research**

Room: Coastal

Session Chair: Arash Dehkordi, Clemson University

10:20 AM**(PACRIM10-S16-031-2013) Commercializing Thermoelectrics – From a User's Perspective (Invited)**

L. E. Bell*, BSST LLC, USA

10:50 AM

(PACRIM10-S16-032-2013) Thermoelectric Nanocomposites Based on Thermally Stable Alloys With ZT~1 (Invited)

J. Poon*, University of Virginia, USA; T. Tritt, Clemson University, USA; D. Wu, University of Virginia, USA; A. Lahwal, Clemson University, USA; L. Williams, Nanosonic, Inc., USA

11:20 AM

(PACRIM10-S16-034-2013) Experimental Investigation of the Viability of the van der Pauw Method for Measuring the Electrical Resistivity of Thermoelectric Materials

T. M. Tritt*, S. Waldrop, J. Williams, D. Hitchcock, J. Graff, D. Thompson, H. N. Alshareef, Clemson University, USA

11:40 AM

(PACRIM10-S16-011-2013) Thermoelectric Generation Technology Progress in Korea (Invited)

H. Lee*, M. Oh, S. Park, B. Kim, B. Min, Korea Electrotechnology Research Institute, Republic of Korea

Symposium 18: Ceramics for Next Generation Nuclear Energy**Silicon Carbide Technology for Nuclear Energy**

Room: Pacifica/Tide

Session Chairs: Akira Kohyama, Muroran Institute of Technology; Christian Deck, General Atomics

8:30 AM

(PACRIM10-S18-001-2013) Thermochemical Compatibility of Refractory metals with SiC/SiC composite for the use of a "sandwich" pin cladding in GFR (Invited)

J. Braun*, C. Sauder, C. Guéneau, F. Balbaud, S. Poissonnet, D. Hamon, CEA Saclay, France

9:00 AM

(PACRIM10-S18-002-2013) Advances in Fabrication of SiC-SiC Composites for Nuclear Applications

C. Deck*, H. E. Khalifa, C. Hill, G. Jacobsen, C. A. Back, General Atomics, USA

9:20 AM

(PACRIM10-S18-003-2013) Behavior of Silicon Carbide Materials in High-Temperature Steam Environments Pertinent to Severe Accident Scenarios in Light water Reactors

K. Terrani*, B. Pint, J. Keiser, L. Snead, Oak Ridge National Lab, USA

9:40 AM

(PACRIM10-S18-004-2013) Characterization of Defect in Si₃+ Ion-irradiated Single Crystal 3C-SiC and SA-Tyrannohex SiC Fibre-bonded Composite at High Temperatures

C. Ho*, S. Tsai, National Tsing Hua University, Taiwan; H. Lin, Oak Ridge National Laboratory, USA; F. Chen, J. Kai, National Tsing Hua University, Taiwan

10:00 AM

Break

Silicon Carbide Composites for Fuel Cladding

Room: Pacifica/Tide

Session Chairs: James Braun, CEA Saclay; Yutai Katoh, Oak Ridge National Laboratory

10:20 AM

(PACRIM10-S18-005-2013) "SCARLET" Project for R & D of SiC/SiC Fuel Cladding by NITE method (Invited)

A. Kohyama*, H. Kishimoto, Y. Kohno, Muroran Institute of Technology, Japan

10:50 AM

(PACRIM10-S18-006-2013) SiC/SiC Fuel Cladding by NITE process for Innovative LWR -Concept and Process Development of Fuel Pin Assembly Technologies

H. Kishimoto*, Muroran Institute of Technology, Japan; T. Shibayama, Hokkaido University, Japan; D. Hayasaka, A. Kohyama, Muroran Institute of Technology, Japan

11:10 AM

(PACRIM10-S18-007-2013) SiC/SiC Fuel Cladding by NITE process for Innovative LWR -Cladding forming process development

N. Nakazato*, H. Kishimoto, Y. Kohno, A. Kohyama, Muroran Institute of Technology, Japan

11:30 AM

(PACRIM10-S18-008-2013) Characterization of NITE-SiC/SiC composites by acoustic emission

T. Nozawa*, Japan Atomic Energy Agency, Japan; H. Serizawa, Osaka University, Japan; A. Kohyama, Muroran Institute of Technology, Japan; H. Tanigawa, Japan Atomic Energy Agency, Japan

Symposium 21: Advanced Materials and Technologies for Electrochemical Energy Storage Systems**Electrochemical Energy Storage IV**

Room: Surf

Session Chairs: Gao Liu, Lawrence Berkeley National Laboratory; Shirley Meng, University of California San Diego

8:30 AM

(PACRIM10-S21-032-2013) Interphases in Li ion Batteries (Invited)

K. Xu, S. M. Russell*, US Army Research Lab, USA

9:00 AM

(PACRIM10-S21-033-2013) Are All-Solid-State Batteries a Reliable Solution to Safety Issues? (Invited)

L. Castro, Center for Materials Elaboration and Structural Studies, France; G. Jouan, Laboratoire de Réactivité et Chimie des Solides, France; A. Kubanska, L. Tortet, Matériaux Divisés, Interfaces, Réactivité, Electrochimie, France; V. Seznec, V. Viallet, Laboratoire de Réactivité et Chimie des Solides, France; R. Bouchet, Laboratoire d'Electrochimie et de Physicochimie des Matériaux, France; M. Dollé*, Center for Materials Elaboration and Structural Studies, France

9:30 AM

(PACRIM10-S21-036-2013) Organic Ionic Plastic Crystal Electrolytes for Lithium Batteries (Invited)

J. Huang*, I. Burgar, Y. Shekibi, CSIRO, Australia; D. MacFarlane, Monash University, Australia; M. Forsyth, Deakin University, Australia; A. Hollenkamp, CSIRO, Australia

10:00 AM

Break

10:20 AM

(PACRIM10-S21-037-2013) Using time-resolved structural analysis to direct improvements in lithium-ion battery technology (Invited)

N. Sharma*, University of New South Wales, Australia

10:50 AM

(PACRIM10-S21-038-2013) Borane and borates compounds as electrolyte additives for LiFePO₄ cathode (Invited)

C. Chang*, K. Lee, Y. Jung, T. Tsao, Y. Su, T. Chen, National University of Tainan, Taiwan

11:20 AM

(PACRIM10-S21-039-2013) Unique Charge Transport Features in Lithium Battery Electrodes (Invited)

M. Gaberscek*, R. Dominko, J. Moskon, National Institute of Chemistry, Slovenia

Joint Session Symposium 23 and 24: Bioceramics

Joint Session II

Room: Bayside/Strand

Session Chair: Christèle Combes, INPT

8:00 AM

(PACRIM10-BIO-014-2013) Nanoscale structure and modification of Biomaterials (Invited)

F. Rosei*, INRS, Canada

8:30 AM

(PACRIM10-BIO-015-2013) Evaluation of Multi-Walled Carbon Nanotubes Reinforced Monetite Bionanocomposite Cements for Bone Defect Repair

N. Mansouri, H. Zhou*, T. J. Luchini, S. B. Bhaduri, University of Toledo, USA

8:50 AM

(PACRIM10-BIO-016-2013) Carbonate Apatite Cement Consisting of Vaterite and Dicalcium Phosphate Anhydrous Transforms to Carbonate Apatite

A. Cahyanto*, Faculty of Dental Science, Kyushu University, Japan; M. Maruta, Fukuoka Dental College, Japan; K. Tsuru, Faculty of Dental Science, Kyushu University, Japan; S. Matsuya, Fukuoka Dental College, Japan; K. Ishikawa, Faculty of Dental Science, Kyushu University, Japan

9:10 AM

(PACRIM10-BIO-017-2013) An evaluation of effect addition of phosphorylated chitosan to monetite based bone cement

N. Mansouri, H. Zhou*, T. J. Luchini, S. B. Bhaduri, University of Toledo, USA

9:30 AM

(PACRIM10-BIO-018-2013) Synthesis and In Vitro Characterisation of Multi-Substituted Hydroxyapatite

B. McCarthy*, X. Zhang, Ceram, United Kingdom

9:50 AM

(PACRIM10-BIO-019-2013) A Multi-Component High-Strength Lithium Disilicate Glass-Ceramic

S. Huang*, P. Cao, The University of Auckland, New Zealand; Z. Huang, China University of Geosciences (Beijing), China; W. Gao, The University of Auckland, New Zealand

10:10 AM

Break

10:30 AM

(PACRIM10-BIO-020-2013) Bone Tissue Engineering Scaffolds Incorporated with rhVEGF for Promoting Vascularization

C. Wang*, M. Wang, The University of Hong Kong, Hong Kong

10:50 AM

(PACRIM10-BIO-021-2013) Unidirectional Bioactive Glass Fiber Scaffolds for Repair of Segmental Defects

S. Jung*, Mo-Sci Corporation, USA; D. E. Day, Missouri University of Science and Technology, USA

11:10 AM

(PACRIM10-BIO-022-2013) Bioactive, porous ceramic hybrid material with enhanced mechanical properties

T. Moritz*, M. Ahlhelm, K. Haderk, Fraunhofer IKTS, Germany; E. Gorjup, H. v. Briesen, Fraunhofer IBMT, Germany

11:30 AM

(PACRIM10-BIO-023-2013) Synthesis and coloration of zirconia dental ceramic for use in CAD/CAM system

W. Li*, Harbin Institute of Technology, China; D. Yu, F. Wang, Harbin Institute of Technology, China

2nd International Richard M. Fulrath Symposium on "Frontiers of Ceramics for Sustainable Development"

Ceramics for Sustainable Development IV

Room: Crown

Session Chairs: Naoki Ohashi, National Institute for Materials Science; Junichi Tatami, Yokohama National University

8:30 AM

(PACRIM10-FUL-027-2013) Smart Powder Processing for Energy and Environment (Invited)

M. Naito*, Osaka University, Japan

9:00 AM

(PACRIM10-FUL-028-2013) Charge compensation in oxide electroceramics in relation with hydrogen impurity (Invited)

N. Ohashi*, K. Watanabe, I. Sakaguchi, Y. Adachi, S. Hishita, T. Ohgaki, H. Haneda, National Institute for Materials Science, Japan

9:30 AM

(PACRIM10-FUL-033-2013) Integration Science and Technology of Silicon-Based Ceramic Materials (Invited)

M. Singh*, M. C. Halbig, Ohio Aerospace Institute, USA; R. Asthana, University of Wisconsin-Stout, USA; J. Martínez Fernández, Universidad de Sevilla, Spain

10:00 AM

Break

10:20 AM

(PACRIM10-FUL-030-2013) Relation between Electron and Ferroelectricity in BaTiO₃ Studied with First-principles Calculation (Invited)

Y. Iwazaki*, T. Suzuki, Y. Mizuno, H. Kishi, Taiyo Yuden Co., Ltd., Japan; S. Tsuneyuki, The University of Tokyo, Japan

10:50 AM

(PACRIM10-FUL-031-2013) Resistance Switching Properties in the Partially Oxidized Platinum and Niobium-doped Strontium Titanate Schottky Junctions (Invited)

S. Hirose*, A. Ando, Murata Manufacturing Co., Ltd., Japan; H. Yoshikawa, N. Ohashi, National Institute for Materials Science, Japan

11:20 AM

(PACRIM10-FUL-032-2013) Oxygen diffusion in Ba-Fe-based perovskite oxides

K. Watanabe*, I. Sakaguchi, K. Takada, H. Haneda, N. Ohashi, National Institute for Materials Science, Japan

Symposium A: Glass Science

Glass Structure & Properties - Novel Glass Formers

Room: Seabreeze

Session Chairs: John McCloy, Pacific Northwest National Laboratory; Brian Riley, Pacific Northwest National Lab

8:40 AM

(PACRIM10-SA-025-2013) A Review of Vanadate Glasses

S. Feller*, J. Maldonis, Coe College, USA; S. Kroeker, V. Michaelis, University of Manitoba, Canada; U. Hoppe, Rostock University, Germany; B. Baker, J. McKnight, William Jewell College, USA; M. Affatigato, Coe College, USA

9:00 AM

(PACRIM10-SA-026-2013) Cr, a little known glass forming cation: the case of alkali chromomolybdate and chromotungstate glasses

B. Aitken*, R. E. Youngman, Corning Incorporated, USA

9:20 AM

(PACRIM10-SA-027-2013) Network Structure in Alkali Molybdate Glasses

R. Youngman*, B. Aitken, Corning Incorporated, USA

9:40 AM

(PACRIM10-SA-028-2013) Structure of high refractive index La₂O₃-Nb₂O₅ glasses prepared by containerless processing

A. Masuno*, The University of Tokyo, Japan; S. Kohara, Japan Synchrotron Radiation Research Institute, Japan; H. Inoue, The University of Tokyo, Japan

10:00 AM

Break

Glass Structure & Properties - NMR studies

Room: Seabreeze

Session Chairs: John McCloy, Pacific Northwest National Laboratory; Brian Riley, Pacific Northwest National Lab

10:20 AM

(PACRIM10-SA-029-2013) Structural investigation of lanthanum enriched borosilicate glasses and their alteration layers from 11B, 29Si and 17O NMR

F. Angeli*, T. Charpentier, E. Molieres, P. Jollivet, S. Gin, CEA, France

10:40 AM

(PACRIM10-SA-030-2013) Limits on "Free" Oxide Ions in Potassium Silicate Glasses: O-17 NMR

J. F. Stebbins*, Stanford University, USA; S. Sen, University of California, Davis, USA

11:00 AM

(PACRIM10-SA-032-2013) Impact of boron addition on non-bridging oxygen and five-coordinated aluminum in calcium aluminosilicate glasses: A multi-nuclear NMR study

L. M. Thompson*, J. F. Stebbins, Stanford University, USA

11:20 AM

(PACRIM10-SA-031-2013) The Combination of Ab Initio Calculations and NMR spectroscopy for the study of bioactive glasses

C. Bonhomme*, C. Gervais, UPMC, France; D. Laurencin, ICG, France; J. Hanna, M. Smith, University of Warwick, United Kingdom; J. Du, Y. Xiang, University of North Texas, USA

Symposium C: Glasses for Optoelectronic and Optical Applications**Novel Optical Fibers I**

Room: Sunset

Session Chair: Michael Withford, Macquarie University

8:30 AM

(PACRIM10-SC-025-2013) Molten Core Fabrication of Novel Optical Fibers (Invited)

J. Ballato*, Clemson University, USA

9:00 AM

(PACRIM10-SC-026-2013) Cladding Glass Development for Semiconductor Core Optical Fibers

S. Morris, T. Hawkins, Clemson University and The Center for Optical Materials Science and Engineering Technologies (COMSET), USA; P. Foy, Clemson University and The Center for Optical Materials Science and Engineering Technologies (COMSET), USA, Clemson University and The Center for Optical Materials Science and Engineering Technologies (COMSET), USA; The Center for Optical Materials Science and Engineering Technologies (COMSET), USA; J. Ballato*, Clemson University and The Center for Optical Materials Science and Engineering Technologies (COMSET), USA; S. Martin, Iowa State University of Science and Technology, USA; R. Rice, Dreamcatchers Consulting, USA

9:20 AM

(PACRIM10-SC-027-2013) Alkali/Alkaline-earth doping in silica glass: From the perspective of optical fiber technology

A. Goel*, Sterlite Technologies Ltd., India

9:40 AM

(PACRIM10-SC-028-2013) Novel lanthanum aluminum silicate glass optical fibers for laser and nonlinear applications

D. Litzkendorf, K. Schuster*, S. Grimm, J. Kobelke, A. Ludwig, A. Schwuchow, M. Leich, S. Jetschke, H. Bartelt, Institute of Photonic Technology, Fiber Optics, Germany; H. Ebendorff-Heidepriem, T. M. Monro, Institute for Photonics & Advanced Sensing, The University of Adelaide, Australia

10:00 AM

Break

Novel Optical Fibers II

Room: Sunset

Session Chair: Catalin Florea, Sotera Defense Solutions

10:20 AM

(PACRIM10-SC-029-2013) PTR-like glasses for photosensitive optical fiber

L. Glebova*, OptiGrate Corp., USA; P. Hoffman, R. Correa, M. Klimov, D. Ott, I. Divliansky, A. Schulzgen, L. Glebov, University of Central Florida, USA

10:40 AM

(PACRIM10-SC-030-2013) New germanate glasses and fibers for infrared and high nonlinearity applications

H. Ebendorff-Heidepriem*, H. Munasinghe, D. G. Lancaster, D. Ottaway, T. M. Monro, University of Adelaide, Australia; A. Winterstein, C. Schiele, University of Erlangen-Nuremberg, Germany; L. Wondraczek, University of Jena, Germany

11:00 AM

(PACRIM10-SC-031-2013) Tellurium glasses for infrared optical sensing and thermoelectrical applications

C. Boussard-Plédel*, S. Cui, C. Conseil, B. Bureau, J. Lucas, University of Rennes 1, France

11:20 AM

(PACRIM10-SC-032-2013) UV Sensing Capability of Optical Fiber Incorporated with Gd₂O₃ Nano-particles

S. Ju*, S. Jeong, Y. Kim, L. Htein, W. Han, Gwangju Institute of Science and Technology, Republic of Korea

11:40 AM

(PACRIM10-SC-033-2013) Square-registered IR imaging fibers and fiber bundles

D. Gibson*, J. Sanghera, B. Shaw, V. Nguyen, R. Gattass, NRL, USA; I. Aggarwal, Sotera Defense Solutions, USA

Symposium D: James C. Phillips Honorary Symposium**Superconductivity**

Room: Palm

Session Chairs: Davor Pavuna, EPFL; Punit Boolchand, University of Cincinnati

8:30 AM

(PACRIM10-SD-019-2013) Evolution of the vortex structure and its stability in HTSC in the presence of intrinsic disorder (Invited)

J. A. Jung*, University of Alberta, Canada

9:00 AM

(PACRIM10-SD-021-2013) From (Metallic) Glasses to Glassy Superconductors and Beyond (Invited)

D. Pavuna*, EPFL, Switzerland

9:30 AM

(PACRIM10-SD-020-2013) Fractal Superconducting Oxide Networks for High T_c superconductivity (Invited)

A. Bianconi*, Superstripes onlus, Italy

10:00 AM

Break

Semiconductors, Pseudopotentials, and Dielectric Theory I

Room: Palm

Session Chairs: Douglas Allan, Corning Incorporated; John Mauro, Corning Incorporated

10:20 AM

(PACRIM10-SD-022-2013) James C. Phillips, Pseudopotentials, and Optical Properties of Semiconductors (Invited)

M. L. Cohen*, University of California and Lawrence Berkeley National Lab, USA

10:50 AM

(PACRIM10-SD-023-2013) Electronic and optical excitations in solids and nanostructures (Invited)

S. G. Louie*, University of California and LBNL, USA

11:20 AM

(PACRIM10-SD-024-2013) Crystallographic Databases and the Discovery of New Materials: Then and Now (Invited)

K. M. Rabe*, Rutgers University, USA

Thursday, June 6, 2013

Symposium 02: Ceramics by Genome

Functional Ceramics

Room: Continental

Session Chair: Wai-Yim Ching, University of Missouri, Kansas City

8:30 AM

(PACRIM10-S02-001-2013) Tailored Functionality in Ceramic Materials (Invited)

R. Riedel*, TU Darmstadt, Germany

9:00 AM

(PACRIM10-S02-002-2013) Informatics for Ceramic Crystal Chemistry (Invited)

K. Rajan*, Iowa State University, USA

9:30 AM

(PACRIM10-S02-003-2013) Materials map for band gap versus dielectric constants; searching for dream dielectrics (Invited)

K. Yim, Y. Youn, S. Han*, Seoul National University, Republic of Korea

10:00 AM

Break

Structural Ceramics

Room: Continental

Session Chair: Anil Misra, University of Kansas

10:20 AM

(PACRIM10-S02-004-2013) A high throughput genome approach for screening mechanical properties of MAX phase compounds (Invited)

W. Ching*, S. Aryal, University of Missouri, Kansas City, USA

10:50 AM

(PACRIM10-S02-005-2013) Puzzling WB3 and WB4

X. Cheng*, P. Liu, H. Niu, X. Chen, D. Li, Y. Li, Institute of Metal Research, Chinese Academy of Sciences, China

11:10 AM

(PACRIM10-S02-006-2013) Accelerating materials property discoveries for high-temperature structural applications through ab-initio molecular dynamics simulations (Invited)

R. Sakidja*, University of Wisconsin-Madison, USA

11:40 AM

(PACRIM10-S02-007-2013) Temperature dependent mechanical properties of Mo-Si-B compounds via ab-initio molecular dynamics

C. C. Dharmawardhana*, S. Aryal, University of Missouri - Kansas City, USA; R. Sakidja, University of Wisconsin-Madison, USA; W. Ching, University of Missouri - Kansas City, USA

Symposium 03: Novel, Green, and Strategic Processing and Manufacturing Technologies

Advanced Composite and Hybrid Processes

Room: Hanover

Session Chairs: Eugene Medvedovski, Endurance Technologies Inc.; Nahum Trivitzky, University of Erlangen-Nuremberg

8:30 AM

(PACRIM10-S03-001-2013) Easy machinable SiC ceramics (Invited)

P. Sajgalik*, M. Hnatko, Z. Lences, F. Frajkorova, E. Bolanos, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia

8:50 AM

(PACRIM10-S03-002-2013) Electromagnetic properties of structural ceramics and composites (Invited)

X. Yin*, L. Zhang, L. Cheng, Northwestern Polytechnical University, China; N. Trivitzky, P. Greil, University of Erlangen-Nuernberg, Germany

9:10 AM

(PACRIM10-S03-003-2013) In situ fabrication of graphene/SiC nanocomposites by spark plasma sintering

P. Miranzo, C. Ramirez, B. Román-Manso, Institute of Ceramics and Glass, CSIC, Spain; H. R. Gutiérrez, University of Louisville, USA; M. Terrones, The Pennsylvania State University, USA; C. Ocal, Institut de Ciència de Materials de Barcelona (CSIC), Spain; M. Osendi, M. Belmonte*, Institute of Ceramics and Glass, CSIC, Spain

9:30 AM

(PACRIM10-S03-006-2013) Processing of Ceramic-Metal Composites (Invited)

N. Trivitzky*, P. Greil, University of Erlangen-Nuremberg, Germany

9:50 AM

Break

10:10 AM

(PACRIM10-S03-008-2013) Thermal Diffusion Coatings for Wear-Resistant Components for Oil and Gas Industry

E. Medvedovski*, F. A. Chinski, J. Stewart, Endurance Technologies Inc., Canada

10:30 AM

(PACRIM10-S03-009-2013) Silicon carbide coating by using polycarbosilane

K. Kita*, T. Ohji, N. Kondo, National Institute of Advanced Industrial Science and Technology (AIST), Japan

10:50 AM

(PACRIM10-S03-010-2013) Ultra-High Temperature Coatings for Oxidation Protection of C/SiC Composites

X. Zhang*, S. Dong, L. Gao, Z. Wang, Y. Ding, P. He, H. Zhou, Y. Kan, C. Liao, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

11:10 AM

(PACRIM10-S03-004-2013) WO₃ nanowire/graphene composite film with highly improved electrochromic performance in visible-near infrared spectroscopy

G. Cai, G. Fan, J. Zhang, D. Zhou, C. Gu, X. Wang, J. Tu*, State Key Laboratory of Silicon Materials, Key Laboratory of Advanced Materials and Applications for Batteries of Zhejiang Province and Department of Materials Science and Engineering, China

11:30 AM

(PACRIM10-S03-028-2013) Soft Processing of Advanced Ceramic Films and Coatings Beyond the Synthesis of Nano-Particles (Invited)

M. Yoshimura*, National Cheng Kung University, Taiwan

Symposium 04: Polymer Derived Ceramics and Composites

Processing of PDCs: Fibers

Room: Garden

Session Chair: Guenter Motz, University of Bayreuth

8:30 AM

(PACRIM10-S04-041-2013) SiC and SiC/Al₂O₃ nanofibers from electrospinning

F. Liu*, F. Peng, Clemson University, USA

8:50 AM

(PACRIM10-S04-042-2013) Electrospinning of ceramic nanofibers from preceramic polymers

A. Guo, M. Roso, M. Michele, P. Colombo*, University of Padova, Italy

9:10 AM

(PACRIM10-S04-043-2013) Influence of polymer architecture of different polysilazanes on the processing of ceramic SiCN fibers

O. Flores*, W. Krenkel, G. Motz, University of Bayreuth, Germany

Processing of PDCs: Composites and Nanocomposites I

Room: Garden

Session Chair: Pavol Sajgalik, Institute of Inorganic Chemistry, Slovak Academy of Sciences

9:30 AM

(PACRIM10-S04-045-2013) Polymer precursors to ceramics for composite structures in extreme environments (Invited)

O. Sudre*, Teledyne Scientific Company, USA

10:00 AM

(PACRIM10-S04-046-2013) Processing of Ultra-High Temperature Ceramic Matrix Composites via Polymer-Derived Ceramics (Invited)

M. Cinibulk, AFRL, USA; C. Carney*, UES, Inc., USA; C. Leslie, AFRL, USA; H. Kim, UES, Inc., USA; K. Walker, AFRL, USA

Symposium 05: Advanced Powder Processing and Manufacturing Technologies

Nano/Microstructure Control by Powder Processing I

Room: Stuart

Session Chairs: Ching Huang, Hosokawa Micron Powder Systems; Satoshi Tanaka, Nagaoka University of Technology

8:30 AM

(PACRIM10-S05-005-2013) Novel Powder Processing for Lithium-ion Battery Applications (Invited)

C. Huang*, Hosokawa Micron Powder Systems, USA

9:00 AM

(PACRIM10-S05-010-2013) ZrO₂ Nanoparticle-based Material Sintering and 3D Microstructure Characterization

K. Lu*, Z. Xia, W. Li, Virginia Tech, USA

9:20 AM

(PACRIM10-S05-011-2013) Two-dimensional orientation in piezoelectric ceramics prepared using platelet particles and a strong magnetic field

T. S. Suzuki*, National Institute for Materials Science, Japan; Y. Miwa, S. Kawada, M. Kimura, Murata Manufacturing Co., Ltd, Japan; T. Uchikoshi, Y. Sakka, National Institute for Materials Science, Japan

9:40 AM

(PACRIM10-S05-012-2013) Fabrication of translucent c-axis oriented strontium barium niobate by rotating magnetic field and subsequent hot isostatic pressing

T. Takahashi, K. Uematsu, S. Tanaka*, Nagaoka University of Technology, Japan

10:00 AM**Break**

Advanced Powder Processing for Porous Ceramics

Room: Stuart

Session Chairs: Ching Huang, Hosokawa Micron Powder Systems; Satoshi Tanaka, Nagaoka University of Technology

10:20 AM

(PACRIM10-S05-013-2013) Gas adsorbents for clean energy (Invited)

F. Akhtar*, Stockholm University, Sweden

10:50 AM

(PACRIM10-S05-014-2013) Electrostatic Dry Coating of Porous Composites for Li Ion Battery

H. Abe*, A. Kondo, M. Naito, Osaka University, Japan; T. Wakimoto, M. Yamaguchi, Honda Engineering Co.,Ltd, Japan

Grinding and Dispersion Control

Room: Stuart

Session Chairs: Ching Huang, Hosokawa Micron Powder Systems; Satoshi Tanaka, Nagaoka University of Technology

11:10 AM

(PACRIM10-S05-015-2013) Boundary factors between ceramic suspension and paste with water-soluble polymer

Y. Hotta*, K. Sato, National Institute of Advanced Industrial Science and Technology, Japan

11:30 AM

(PACRIM10-S05-016-2013) Improvement of DEM simulation for analysis of grinding process

S. Ishihara*, Tohoku University, Japan; R. Soda, JSPS, Japan; J. Kano, Tohoku University, Japan

Symposium 07: Multifunctional Metal Oxide Nanostructures and Heteroarchitectures for Energy and Device Applications

Nanomaterials for Photocatalysis, Solar Hydrogen and Thermoelectrics

Room: Crown

Session Chairs: Hidehiro Kamiya, Tokyo University of Agriculture and Technology; Sanjay Mathur, University of Cologne

8:30 AM

(PACRIM10-S07-001-2013) Designing of Semiconducting Metal Oxides for efficient photochemical energy conversion (Invited)

L. Wang*, University of Queensland, Australia

9:00 AM**(PACRIM10-S07-002-2013) The Effects of Niobium Dopant and PO₂ on the Thermoelectric Properties of Beta-gallia Rutile Intergrowths**

M. Alberga*, D. D. Edwards, Alfred University, USA

9:20 AM**(PACRIM10-S07-003-2013) On quantum confinement effects and interfacial electronic structure engineering for efficient solar hydrogen generation (Invited)**

L. Vayssieres*, Xian Jiaotong University, China

9:50 AM**(PACRIM10-S07-004-2013) Ternary CdS_{1-x}Sex Quantum Dots Sensitized Solar Cells with Tunable Bandgaps**

Z. Chen, National Institute for Materials Science, Japan; W. Peng, National Institute for Materials Science, Japan; K. Zhang, National Institute for Materials Science, Japan; J. Zhang, National Institute for Materials Science, Japan; L. Han*, National Institute for Materials Science, Japan

10:10 AM

Break

Integration of Functional Metal Oxide Nanostructures in Sensors and Devices

Room: Crown

Session Chairs: Liyuan Han, National Institute for Materials Science; Shuzi Hayase, Kyushu Institute of Technology

10:30 AM**(PACRIM10-S07-005-2013) Functional oxide nanoarchitectures for high performance gas sensors (Invited)**

J. Lee*, Korea University, Republic of Korea

11:00 AM**(PACRIM10-S07-006-2013) Double-channel Light Sensing Device Based on ZnO:Cu Nanocrystalline Films**

L. Zhu*, L. Hu, Zhejiang University, China

11:20 AM**(PACRIM10-S07-008-2013) Electron transfer mediator's encapsulated TiO₂-Pd-ormosil modified electrode applied in electro-analysis of ascorbic acid**

A. Prakash*, P. C. Pandey, IIT(BHU), India

Symposium 08: Engineering Ceramics and Ceramic Matrix Composites: Design, Development, and Applications**Joining and Environmental Effects**

Room: Windsor Complex

Session Chairs: Michael Halbig, NASA Glenn Research Center; Yi-Bing Cheng, Monash University

8:30 AM**(PACRIM10-S08-040-2013) Joining of SiC ceramics through reaction bonding method (Invited)**

D. Jiang*, J. Zhang, Shanghai Institute of Ceramics, China

9:00 AM**(PACRIM10-S08-041-2013) Integration of SiC-Based Ceramic Composites using REABOND Technology**

M. C. Halbig*, NASA Glenn Research Center, USA; M. Singh, C. E. Smith, Ohio Aerospace Institute, USA

9:20 AM**(PACRIM10-S08-042-2013) Design and lifetime optimization of ceramic-metal braze joints for high temperature applications**

A. Bezold*, G. Chen, A. Kaletsch, J. Hummes, C. Broeckmann, RWTH Aachen University, Germany

9:40 AM**(PACRIM10-S08-044-2013) Improving the strength of ZrB₂-SiC joint with in situ TiB whiskers array**

T. Lin*, W. Yang, P. He, Harbin Institute of Technology, China

10:00 AM

Break

10:20 AM**(PACRIM10-S08-047-2013) Microstructure observation and oxidation behavior of SiBCN-based composites**

Z. Wang*, S. Dong, B. Wu, J. Hu, State Key Laboratory of High Performance Ceramics and Superfine Microstructure, China

10:40 AM**(PACRIM10-S08-043-2013) Microstructure and Properties of C/SiC/GH783 Joint Brazed with Cu-Ti + Mo**

S. Fan*, X. Wang, L. Cheng, L. Zhang, Northwestern Polytechnical University, China

Symposium 10: Advanced Ceramic Coatings: Processing, Properties, and Applications**Advanced Thermal and Environmental Barrier Coatings I**

Room: Tudor

Session Chairs: Yutaka Kagawa, University of Tokyo; Daniel Mumm, University of California, Irvine

8:30 AM**(PACRIM10-S10-001-2013) Thermodynamics of Rare Earth Silicate EBC Compositions (Invited)**

N. Jacobson*, NASA Glenn Research Center, USA

9:10 AM**(PACRIM10-S10-002-2013) Thermal and Environmental Barrier Coatings (T/EBCs) for High Temperature Applications by Directed Vapor Deposition (Invited)**

B. Gogia*, D. Hass, Directed Vapor Technology Intl, USA

9:40 AM**(PACRIM10-S10-003-2013) Progress in the development of environmental barrier coatings to prevent hydrothermal corrosion**

C. Lewinsohn*, H. Anderson, J. Johnston, Ceramtec, Inc., USA; D. Zhu, NASA, USA

10:00 AM

Break

10:20 AM**(PACRIM10-S10-004-2013) Thermal Stability and Mechanical Behavior of Flake-reinforced Oxide Coatings for CMC Surface Protection (Invited)**

H. Kakisawa*, T. Matsumoto, Y. Kagawa, University of Tokyo, Japan

10:50 AM**(PACRIM10-S10-005-2013) Thermal Barrier Coatings (TBCs) With Reduced Erosion Rates via Unique Phase Architectures (Invited)**

D. E. Wolfe*, M. P. Schmitt, The Pennsylvania State University, USA; D. Zhu, B. J. Harder, NASA Glenn Research Center, USA; A. K. Rai, R. Bhattacharya, UES, Inc., USA

11:20 AM**(PACRIM10-S10-007-2013) Structure design for the impact resistance of environmental barrier coatings**

Y. Wang*, Northwestern Polytechnical University, China

Symposium 12: Advances in Electroceramics

Piezoelectric Materials and Devices

Room: Crystal

Session Chair: Takaaki Tsurumi, Tokyo Institute of Technology

8:40 AM

(PACRIM10-S12-028-2013) Biocompatible Energy Scavenging Devices Using Multifunctional Piezoelectric Thin Films Coupled with Conducting Flexible Substrates (Invited)

S. Kim*, A. Leung, Brown University, USA; S. Kim, D. Kim, Auburn University, USA; A. I. Kingon, Brown University, USA

9:10 AM

(PACRIM10-S12-029-2013) Ferroelectric and elastic properties of PMN based ceramics in low temperature range (Invited)

G. Li*, L. Huang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; A. Kassiba, Institute of Le Mans Molecules and Materials, Université du Maine, France; J. Zhu, Nanjing University, China; D. Fu, Shizuoka University, Japan; J. Zeng, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9:40 AM

(PACRIM10-S12-030-2013) Temperature Dependence of Ultraonic Velocity in a Lead Zirconate Titanate Ceramic

P. Yang*, T. Liu, Sandia National Laboratories, USA

10:00 AM

Break

Dielectric Materials and Applications II

Room: Crystal

Session Chair: Wei Ren, Xi'an Jiaotong University

10:20 AM

(PACRIM10-S12-031-2013) Enhanced Capacitive Energy Density Via Reduced Field Tuning

G. L. Brennecka, H. J. Brown-Shaklee*, Sandia National Laboratories, USA; N. Raengthon, D. P. Cann, Oregon State University, USA

10:40 AM

(PACRIM10-S12-032-2013) Leakage current properties of bismuth layer-structured ferroelectric films prepared by aerosol deposition method

M. Suzuki*, J. Akedo, National Institute of Advanced Industrial Science and Technology, Japan

11:00 AM

(PACRIM10-S12-033-2013) Formation of Tough Foundation Layer for Electrical Plating on Insulator using Aerosol Deposition Method of Cu-Al₂O₃ mixed powder

N. Seto*, S. Hirose, H. Tsuda, J. Akedo, National Institute of Advanced Industrial Science and Technology, Japan

11:20 AM

(PACRIM10-S12-034-2013) Effect of AE²⁺-doping (AE= Ca, Sr) on Resistivity of BaTiO₃-(Bi_{1/2}Na_{1/2})TiO₃ Ceramics

H. Takeda*, H. Sugiyama, H. Akutsu, M. A. Zubair, T. Hoshina, T. Tsurumi, Tokyo Institute of Technology, Japan

Symposium 16: Direct Thermal to Electrical Energy Conversion Materials and Applications

Nanoscale and Thin Film Thermoelectric Materials II

Room: Coastal

Session Chair: Hye Kang, Clemson University

8:30 AM

(PACRIM10-S16-035-2013) Thermoelectric Films Deposited by Aerosol Deposition (Invited)

D. Park*, W. Yoon, J. Ryu, J. Choi, B. Hahn, J. Kim, C. Ahn, Korea Institute of Materials Science, Republic of Korea

9:00 AM

(PACRIM10-S16-036-2013) Nanostructure formation in Bi-Te based thermoelectric materials: Approaches to minimize lattice thermal conductivity (Invited)

K. Lee*, S. Kim, S. Hwang, J. Roh, D. Yang, J. Cho, W. Shin, S. Lee, Samsung Advanced Institute of Technology, Republic of Korea

9:30 AM

(PACRIM10-S16-037-2013) Thermoelectric Properties of n-type Bi₂Te_{2.7}Se_{0.3} - In₄Se₃ Composites (Invited)

J. Kim*, S. Baek, D. Hyun, Korea Institute of Science and Technology, Republic of Korea

10:00 AM

Break

Oxide Thermoelectric Materials and Theory

Room: Coastal

Session Chair: Terry Tritt, Clemson University

10:20 AM

(PACRIM10-S16-038-2013) Self-propagating High-temperature Synthesis of Doped Calcium Cobaltate Thermoelectric Powders (Invited)

S. Lin*, S. K. Nalli, P. D. Dinh, Lamar University, USA

10:50 AM

(PACRIM10-S16-039-2013) Oxide Materials in Thermoelectrics: Beyond a Simple Picture of Ionic Compounds (Invited)

M. Ohtaki*, Kyushu University, Japan

11:20 AM

(PACRIM10-S16-040-2013) Origins of Large Thermoelectric Power Factor in Pr-doped SrTiO₃ Ceramics: An Insight into Superior Electronic Transport

A. Dehkordi*, S. Bhattacharya, Clemson University, USA; H. N. Alshareef, King Abdullah University of Science and Technology (KAUST), Saudi Arabia; T. M. Tritt, Clemson University, USA

11:40 AM

(PACRIM10-S16-041-2013) Reduced Strontium Titanate Thermoelectric Materials

L. A. Moore*, C. M. Smith, Corning, Inc., USA

Symposium 18: Ceramics for Next Generation Nuclear Energy

Material Design and Characterization

Room: Pacifica/Tide

Session Chairs: Takashi Nozawa, Japan Atomic Energy Agency; Christina Back, General Atomics; Hirotsu Kishimoto, Muroran Institute of Technology

8:30 AM

(PACRIM10-S18-009-2013) Millimeter Wave Diagnostics of Gen IV Reactor Materials (Invited)

S. K. Sundaram*, Alfred University, USA; P. P. Woskov, Massachusetts Institute of Technology, USA

9:00 AM

(PACRIM10-S18-010-2013) Evaluation of Joined Tubular Components for Accident Tolerant Fuel Cladding

H. Khalifa*, C. P. Deck, C. Hill, C. A. Back, General Atomics, USA

9:20 AM

(PACRIM10-S18-011-2013) Investigation of Interfacial Mechanical Properties of Ceramic Composites with Micro-pillar Samples

C. Shih*, Y. Katoh, K. J. Leonard, H. Bei, E. Lara-Curzio, Oak Ridge National Laboratory, USA

9:40 AM

(PACRIM10-S18-012-2013) Development and evaluation of joining methods for silicon carbide for nuclear applications

Y. Katoh*, L. Snead, T. Cheng, J. Kiggans, Oak Ridge National Laboratory, USA; M. Ferraris, Politecnico di Torino, Italy; T. Koyanagi, T. Hinoki, Kyoto University, Japan; C. Henager, Pacific Northwest National Laboratory, USA; R. Shinavski, Hyper-therm High-Temperature Composites, USA

10:00 AM

Break

Materials and Fuels Synthesis

Room: Pacifica/Tide

Session Chairs: Kurt Terrani, ORNL; Erik Luther, Los Alamos Natl Lab

10:20 AM

(PACRIM10-S18-013-2013) Spark Plasma Sintering of Vanadium Carbide

W. Li*, San Diego State University, USA; O. Izhvanov, C. A. Back, General Atomics, USA; E. A. Olevisky, San Diego State University, USA

10:40 AM

(PACRIM10-S18-014-2013) Fabrication of Uranium Oxide with Controlled Features

E. Luther*, K. McClellan, R. Leckie, J. Kennison, P. Papin, D. Guidry, T. Wynn, Los Alamos National Lab, USA

11:00 AM

(PACRIM10-S18-015-2013) Innovative synthesis of mesostructured materials containing actinides using a colloidal sol-gel route

A. Gossard, G. Toquer, J. Causse, J. Maynadié, ICSM, France; S. Grandjean, CEA/DEN/MAR, France; A. Grandjean*, ICSM, France

11:20 AM

(PACRIM10-S18-016-2013) Fabrication of High Purity Uranium Carbide & Nitride Microspheres

J. Opperman*, O. Izhvanov, C. Back, General Atomics, USA

Symposium 22: Glasses and Ceramics for Nuclear and Hazardous Waste Treatment

Nuclear Waste Glass Chemistry and Vitrification

Room: Surf

Session Chair: Aldo Boccaccini, Univ. of Erlangen-Nuremberg

8:40 AM

(PACRIM10-S22-014-2013) Technetium solubility in borosilicate nuclear waste glasses: Progress report

J. McCloy*, M. J. Schweiger, C. Soderquist, D. Kim, Pacific Northwest National Laboratory, USA; W. W. Lukens, Lawrence Berkeley National Laboratory, USA

9:00 AM

(PACRIM10-S22-015-2013) Structure and Properties of Hf Doped Iron Borophosphate Glasses

M. Karabulut*, C. Aydin, H. Ertap, M. Yuksek, Kafkas University, Turkey

9:20 AM

(PACRIM10-S22-016-2013) Surface Structure Analysis of Iron Phosphate Glasses at High Temperature

H. Tateno*, T. Yano, T. Kishi, S. Shibata, Tokyo Institute of Technology, Japan; K. Matsuyama, T. Okita, S. Miyamoto, Toshiba Corporation, Japan; H. Kofuji, Japan Atomic Energy Agency, Japan; M. Myochin, Toshiba Corporation, Japan

9:40 AM

(PACRIM10-S22-017-2013) Stabilization/Solidification of Primary Waste Generated from a Pyrochemical Process for the Recovery of U and TRUs

H. Park*, I. Cho, S. Ahn, I. Kim, G. Park, Korea Atomic Energy Research Institute, Republic of Korea

10:00 AM

Break

10:20 AM

(PACRIM10-S22-018-2013) Cold Crucible Vitrification of Hanford HLW Surrogates in Aluminum-Iron-Phosphate Glass

S. Stefanovsky*, S. Shvetsov, V. Gorbunov, A. Lekontsev, A. Efimov, I. Knyazev, O. Stefanovsky, M. Zen'kovskaya, SIA Radon, Russian Federation; J. Roach, Nexergy Technical, PLLC, USA

10:40 AM

(PACRIM10-S22-019-2013) In-Situ Analysis of Pseudo-Cold Cap in Laboratory-scale Liquid Fed Ceramic Melter by X-Ray Computed Tomography

T. Yano*, K. Watanabe, N. Ikezi, T. Amagasa, K. Takeshita, Tokyo Institute of Technology, Japan; K. Minami, E. Ochi, Japan Nuclear Fuel Limited (JNFL), Japan

11:00 AM

(PACRIM10-S22-020-2013) Scaled Melter Testing of Noble Metals Behavior with Japanese HLW Streams

K. S. Matlack*, H. Gan, I. L. Pegg, The Catholic University of America, USA; I. Joseph, B. W. Bowan, EnergySolutions, USA; Y. Miura, N. Kanehira, E. Ochi, T. Ebisawa, A. Yamazaki, JNFL, Japan; T. Oniki, Y. Endo, IHI Corporation, Japan

11:20 AM

(PACRIM10-S22-021-2013) Suppression of Yellow Phase Formation during Japanese HLW Vitrification

I. L. Pegg*, H. Gan, K. S. Matlack, The Catholic University of America, USA; I. Joseph, B. W. Bowan, EnergySolutions, USA; Y. Miura, N. Kanehira, E. Ochi, JNFL, Japan; T. Oniki, Y. Endo, IHI Corporation, Japan

Symposium 23: Advances in Biomineralized Ceramics, Bioceramics, and Bioinspired Designs

Mineralization Processes, Self-assembly and Organic/Inorganic Structures

Room: Bayside/Strand

Session Chairs: Laurie Gower, University of Florida; Wen Yang, University of California, San Diego

8:30 AM

(PACRIM10-S23-001-2013) Biology Enabled Materials Assembly and Synthesis (Invited)

C. Tamerler*, University of Washington, USA

9:00 AM

(PACRIM10-S23-002-2013) Using Polymers to Repair Carious Lesions in Dentin (Invited)

S. Habelitz*, K. Saeki, University of California, USA; Y. Chien, Lawrence Berkeley National Laboratory, USA; L. Gower, University of Florida, USA; J. J. DeYoreo, Lawrence Berkeley National Laboratory, USA; G. W. Marshall, University of California, USA

9:30 AM

(PACRIM10-S23-003-2013) Physical Controls on Matrix Mineralization (Invited)

J. Tao*, M. Nielsen, J. De Yoreo, Lawrence Berkeley National Lab, USA

10:00 AM

Break

10:20 AM

(PACRIM10-S23-004-2013) NMR investigation of biomimetic collagen-apatite models

Y. Wang, T. Azais, G. Laurent, UPMC/CNRS/Collège de France, France; F. Fayon, CEMHTI CNRS, France; N. Nassif, F. Babonneau*, UPMC/CNRS/Collège de France, France

10:40 AM

(PACRIM10-S23-005-2013) Multifunctional role of NCPs and their mimics in HA/collagen nanocomposites (Invited)

D. E. Rodriguez*, University of Florida, USA

11:10 AM

(PACRIM10-S23-006-2013) The formation of hierarchical structures from amorphous calcium carbonate and inorganic additives (Invited)

J. Seto*, H. Coeffen, Universitaet Konstanz, Germany

11:40 AM

(PACRIM10-S23-007-2013) Use of biomineralization media in biomimetic synthesis of bone substitutes (Invited)

A. Tas*, University of Illinois, USA

Symposium A: Glass Science

Stokey Lecture of Discovery Award

Room: Seabreeze

Session Chair: Kelly Simmons-Potter, University of Arizona

8:00 AM

(PACRIM10-SA-170-2013) The Torturous Path of the Fusion Sheet Process Development (Invited)

C. G. Shay*, Corning Incorporated (Retired), USA

Glass Structure & Properties - Mechanical Properties

Room: Seabreeze

Session Chair: Jonathan Salem, NASA GRC

9:00 AM

(PACRIM10-SA-033-2013) High Modulus Glass Fibers: A Way to Develop New Compositions

K. Hellmann*, R. Conradt, RWTH Aachen Institute of Mineral Engineering, Germany

9:20 AM

(PACRIM10-SA-034-2013) Slow Crack Growth Properties of Sealing Glasses

J. Salem*, NASA GRC, USA

9:40 AM

(PACRIM10-SA-035-2013) Huge thermal shrinkage and viscoelastic property of anisotropic alkali metaphosphate glass

S. Inaba*, S. Ito, Tokyo Institute of Technology, Japan

10:00 AM

Break

10:20 AM

(PACRIM10-SA-036-2013) Anisotropy and mechanical property of metaphosphate glass

J. Endo*, Asahi Glass Co., Ltd., Japan; S. Inaba, S. Ito, Tokyo Institute of Technology, Japan

10:40 AM

(PACRIM10-SA-037-2013) A Novel Approach to the Mechanical Properties of Inorganic Glasses

R. Conradt*, R. Dronskowsky, RWTH Aachen University, Germany

11:00 AM

(PACRIM10-SA-038-2013) Lattice dilation in an alkali aluminosilicate glass via direct strain measurements

E. A. King*, D. Zhao, D. C. Allan, Science & Technology Division, Corning Incorporated, USA

11:20 AM

(PACRIM10-SA-039-2013) Evidence for very high noble gas solubilities in vitreous silica at high pressure

C. Weigel, Montpellier University, France; A. Polian, University of P&M Curie, France; M. Kint, M. Foret, R. Vacher, B. Rufflé*, Montpellier University, France

11:40 AM

(PACRIM10-SA-040-2013) Dispersion of the stress optic response of oxide glass

J. Galbraith, G. Tang, J. Zwanziger*, Dalhousie University, Canada

Symposium B: Glass Technology and Cross-Cutting Topics

Glass Melting and Thermal Processing

Room: Sunset

Session Chairs: Ashutosh Goel, Sterlite Technologies Ltd.; Yi Zou, U of Delaware

9:00 AM

(PACRIM10-SB-001-2013) Recent Fiber Glass Technology Development and Challenges (Invited)

H. Li*, PPG Industries Inc, USA

9:30 AM

(PACRIM10-SB-002-2013) Efficient Disc-to-fiber Multimaterial Co-extrusion for Robust Infrared Optical Fibers

G. Tao*, S. Shabahang, A. F. Abouraddy, University of Central Florida, CREOL, USA

9:50 AM

(PACRIM10-SB-003-2013) Fabrication and characterization of As₂Se₃ chalcogenide glass waveguides and gratings by thermal nanoimprint lithography

Y. Zou*, H. Lin, O. Obguu, L. Li, University of Delaware, USA; S. Danto, J. Musgraves, K. Richardson, University of Central Florida, USA; J. Hu, University of Delaware, USA

10:10 AM

(PACRIM10-SB-004-2013) Biocompatible and Bioactive Glasses for Medical Applications (Invited)

M. Velez*, S. Jung, Y. He, V. C. Modglin, Mo-Sci Corp., USA; M. C. Leu, K. C. Kolan, Missouri University of Science & Technology, USA; T. G. Chu, Indiana University, USA

10:40 AM

(PACRIM10-SB-005-2013) Designing New Glass and Efficient Glass Forming Process Together

O. A. Prokhorenko*, Laboratory of Glass Properties, USA

11:00 AM

(PACRIM10-SB-006-2013) Glass Powder Injection Molding: A Ceramic HighThroughput Production Technology applied to Electrical Conductive Glass Components with Sharp Edges and Complex Geometries

T. Moritz*, J. Schilm, A. Mannschatz, Fraunhofer IKTS, Germany

Glass and Ceramics for Novel Applications I

Room: Sunset

Session Chairs: Robert Weisenburger Lipetz, Glass Manufacturing Industry Council; S. Sundaram, Alfred University

11:20 AM

(PACRIM10-SB-007-2013) Alkali-free bioactive glasses for bone tissue engineering (Invited)

A. Goel*, Sterlite Technologies Ltd., India; J. Ferreira, University of Aveiro, CICECO, Portugal

11:50 AM

(PACRIM10-SB-008-2013) Glass Manufacturing Industry Council - 15 Years of Glass Industry Coordination and Support

R. Weisenburger Lipetz*, Glass Manufacturing Industry Council, USA

Symposium D: James C. Phillips Honorary Symposium**Semiconductors, Pseudopotentials and Dielectric Theory II**

Room: Palm

Session Chairs: Douglas Allan, Corning Incorporated; John Mauro, Corning Incorporated

9:00 AM

(PACRIM10-SD-025-2013) A Simple Man's View of Jim Phillips, Linus Pauling, and Electronegativity (Invited)

J. Van Vechten*, Pureenergy (UK) Ltd., United Kingdom

9:30 AM

(PACRIM10-SD-026-2013) Phase Change Materials: Employing concepts of solid state physics to tailor novel electronic memories (Invited)

M. Wuttig*, RWTH Aachen, Germany

10:00 AM

Break

10:20 AM

(PACRIM10-SD-027-2013) Scales of order of in non-crystalline SiO₂, and nano-crystalline oxides, e.g., TiO₂ and TiO₂-based alloys: application to pre-existing, process-induced vacated O-atom sites (Invited)

G. Lucovsky*, D. Zeller, J. Kim, K. Wu, C. Cheng, X. Zhang, North Carolina State University, USA

10:50 AM

(PACRIM10-SD-028-2013) Electronic Structure and Electron Transport in Nanoscale Systems (Invited)

J. Bernholc*, NC State University, USA

11:20 AM

(PACRIM10-SD-029-2013) Strategies for design and synthesis of novel superhard materials (Invited)

Y. Tian*, State Key Laboratory of Metastable Materials Science and Technology, China

Symposium 02: Ceramics by Genome**Methods in Genome Related Research**

Room: Continental

Session Chair: Masanori Kohyama, AIST

1:20 PM

(PACRIM10-S02-008-2013) Genome approach for advanced nano-layered transition-metal carbides and nitrides (Invited)

J. Wang*, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences, China

1:50 PM

(PACRIM10-S02-009-2013) Micromechanics based second gradient continuum mechanics theory for damage modeling of cohesive granular materials (Invited)

A. Misra*, University of Kansas, USA

2:20 PM

(PACRIM10-S02-010-2013) Depth of complexity necessary to describe ceramics: Case study of SrTiO₂N and BaTiO₂N

Y. Hinuma*, I. Tanaka, Kyoto University, Japan

2:40 PM

(PACRIM10-S02-011-2013) Stability of a Class of 2.5-Dimensional Oxides and Their Properties

A. Yumura*, M. Yoshiya, Y. Hideyuki, Osaka University, Japan

3:00 PM

(PACRIM10-S02-012-2013) Rational control of order-disorder transition in cubic-Bi₂O₃ alloys

K. Shitara*, A. Seko, Y. Koyama, I. Tanaka, Kyoto University, Japan

3:20 PM

Break

Surfaces, Interfaces and Glasses

Room: Continental

Session Chair: Jingyang Wang, Shenyang National Laboratory for Materials Science, Institute of Metal Research, Chinese Academy of Sciences

3:40 PM

(PACRIM10-S02-013-2013) Atomic-scale characterization of ceramic interfaces by advanced transmission electron microscopy (Invited)

N. Shibata*, The University of Tokyo / JST-PRESTO, Japan

4:10 PM

(PACRIM10-S02-014-2013) Multiscale Simulation of Si/SiOx interface (Invited)

K. Lee*, Korea Institute of Science and Technology, Republic of Korea

4:40 PM

(PACRIM10-S02-015-2013) Designing Damage Resistant Glasses Guided by Computer Simulations (Invited)

L. Huang*, Rensselaer Polytechnic Institute, USA

5:10 PM

(PACRIM10-S02-016-2013) Ab initio study on the deformation and densification of a near-perfect continuous random network model of amorphous SiO₂

W. Ching*, N. Li, University of Missouri, Kansas City, USA

Symposium 03: Novel, Green, and Strategic Processing and Manufacturing Technologies

Design-oriented Manufacturing and Processing

Room: Hanover

Session Chairs: Zoltan Lences, Institute of Inorganic Chemistry, Slovak Academy of Sciences; Tadachika Nakayama, Nagaoka Univ of Tech

1:20 PM

(PACRIM10-S03-011-2013) Synthesis of Morphologically Special Nanostructures through 3D Oriented Aggregation Controlled Growth (Invited)

L. Gao*, Shanghai Jiao Tong University, China

1:40 PM

(PACRIM10-S03-012-2013) Activated carbon based feedstock systems for near net-shape production of green bodies for SiSiC ceramics via liquid silicon infiltration (LSI) process

S. Weber*, German Aerospace Center, Germany; F. Sommer, F. Kern, University of Stuttgart, Germany; D. Koch, H. Voggenreiter, German Aerospace Center, Germany; R. Gadow, University of Stuttgart, Germany

2:00 PM

(PACRIM10-S03-016-2013) Synthesis and sintering of ZnS powders for infrared optical applications

Y. Li, Y. Wu*, Alfred University, USA

2:20 PM

(PACRIM10-S03-015-2013) Optimized Shaping Process for Transparent Spinel Ceramic

A. Kaiser*, LAEIS GmbH, Luxembourg; T. Hutzler, A. Krell, Fraunhofer Institute for Ceramic Technologies and Systems, Germany; R. Kremer, ALPHA CERAMICS GmbH, Germany

2:40 PM

(PACRIM10-S03-013-2013) Field-Induced Orientation of Ceramics Particles in Hybrid Materials Using Microscopic Mold

T. Nakayama*, T. Fujihara, H. Cho, W. Jiang, T. Suzuki, H. Suematsu, K. Niihara, Nagaoka University of Technology, Japan

3:00 PM

(PACRIM10-S03-017-2013) Europium and Cerium-Doped Ternary Silicon Nitride-Based Phosphors - Electronic Structure and Luminescent Properties

Z. Lences*, M. Hrabalova, I. Ibrahim, L. Benco, P. Sajgalik, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia

3:20 PM

Break

3:40 PM

(PACRIM10-S03-018-2013) Preparation of Silicon Nitride Ceramics with High Thermal Conductivity and High Fracture Toughness via a Reaction Sintering Route

Y. Zhou*, T. Ohji, H. Hyuga, Y. Yoshizawa, N. Murayama, K. Hirao, National Institute of Advanced Industrial Science and Technology (AIST), Japan

4:00 PM

(PACRIM10-S03-019-2013) Low cost silicon nitride fabricated from beta powder

N. Kondo*, M. Hotta, T. Ohji, National Institute of Advanced Industrial Science and Technology (AIST), Japan

4:20 PM

(PACRIM10-S03-020-2013) Fabrication of highly dense pure SiC ceramics via the HTPVT method

J. Yang*, B. Liu, P. Dai, Xi'an Jiaotong University, China

4:40 PM

(PACRIM10-S03-021-2013) Automated & Hand Held Systems for the Elemental Analysis & Sorting of Glass

M. Weiss*, BT Wolfgang Binder GmbH, Austria; K. Smith, Olympus NDT, USA

5:00 PM

(PACRIM10-S03-023-2013) Use of the HDPE Catalyst Production By-product as a Filler in Papermaking

W. Buggakupta*, K. Suvarnakich, S. Chairrekit, A. Niravittanon, T. Apisampinpong, Chulalongkorn University, Thailand

Symposium 04: Polymer Derived Ceramics and Composites

Processing of PDCs: Composites and Nanocomposites II

Room: Garden

Session Chair: Raj Bordia, University of Washington

1:20 PM

(PACRIM10-S04-048-2013) Functionalization of nitride engineering ceramics by polymer derived sintering aids (Invited)

P. Sajgalik*, Z. Lences, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia; R. Riedel, H. Kleebe, Technische Universität Darmstadt, Germany

1:50 PM

(PACRIM10-S04-049-2013) Pre-ceramic Polymer-Derived Sialon as Sintering Aid for Silicon Nitride

Z. Lences*, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia; E. Bernardo, G. Parciannello, P. Colombo, Università di Padova, Italy; P. Sajgalik, Institute of Inorganic Chemistry, Slovak Academy of Sciences, Slovakia

2:10 PM

(PACRIM10-S04-050-2013) Alkaline Earth-Modified Polysiloxane-Derived SiOC-Bonded SiC Ceramics (Invited)

Y. Kim*, J. Eom, B. Jung, University of Seoul, Republic of Korea

2:40 PM

(PACRIM10-S04-051-2013) Pre-ceramic polymers filled with highly-aligned platelets

G. Parciannello*, U. Vogt, A. Züttel, EMPA - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

3:00 PM

(PACRIM10-S04-052-2013) Si-based ceramic nanocomposites (NCs) prepared from pre-ceramic polymers

M. Bechelany*, Centre Européen de la Céramique, SPCTS, France; B. Samuel, M. Philippe, Institut Européen des Membranes, France

3:20 PM

(PACRIM10-S04-2013) Polymer-derived ceramic seals for solid oxide fuel cells (Invited)

C. Lewinsohn*, Ceramatec, Inc., USA

Symposium 05: Advanced Powder Processing and Manufacturing Technologies

Nano/Microstructure Control by Powder Processing II

Room: Stuart

Session Chairs: Yuji Hotta, National Institute of Advanced Industrial Science and Technology; Di Zhang, Shanghai Jiao Tong University

1:20 PM

(PACRIM10-S05-017-2013) Research on advanced bioinspired materials derived from natural materials (Invited)

D. Zhang*, W. Zhang, J. Gu, Q. Liu, H. Su, S. Zhu, Shanghai Jiao Tong University, China

1:50 PM

(PACRIM10-S05-018-2013) Improvement on the Microwave Absorption Property of Alumina Powder by Mechanically Surface Treatment and Its Hydration Behavior

T. Shirai*, C. Takai, M. Fuji, Nagoya Institute of Technology, Japan

2:10 PM

(PACRIM10-S05-019-2013) The Effects of Na₂O, SiO₂ and Co-Additions on the Sintering Kinetics and Microstructural Evolution of 99.8% Pure Specialty Alumina Powders

I. O. Ozer, E. R. Kupp, Penn State University, USA; C. Compson*, E. Koep, Almatris, Inc., USA; M. Spreij, Almatris, Inc., Germany; G. L. Messing, Penn State University, USA

2:30 PM

(PACRIM10-S05-020-2013) Evaluation of Internal Coarse Defects in Powder Compact and Ceramics by Micro X-ray Computed Tomography

S. Tanaka*, K. Uematsu, Nagaoka University of Technology, Japan

2:50 PM

(PACRIM10-S05-021-2013) Fabrication of highly porous monolith prepared by gelation freezing route (Invited)

M. Fukushima*, Y. Yoshizawa, National Institute of Advanced Industrial Science and Technology (AIST), Japan

3:20 PM

Break

Nanoparticle and Powder Design and Synthesis

Room: Stuart

Session Chairs: Di Zhang, Shanghai Jiao Tong University; Yuji Hotta, National Institute of Advanced Industrial Science and Technology

3:40 PM

(PACRIM10-S05-022-2013) Synthesis and Characterization of Rare Earth Doped Sapphire and Transparent Alumina

R. Pavlacka*, T. Sanamyan, G. Gilde, M. Dubinskiy, US Army Research Laboratory, USA; G. Maxwell, Shasta Crystals, USA

4:00 PM

(PACRIM10-S05-023-2013) High Purity Rare-Earth Doped Oxides Nano-Powders for High-Power Solid State Lasers

W. Kim*, C. Baker, G. Villalobos, J. Frantz, B. Shaw, Naval Research Laboratory, USA; B. Sadowski, A. Ishwar, Sotera Defense Solution, USA; J. Sanghera, Naval Research Laboratory, USA

4:20 PM

(PACRIM10-S05-024-2013) Synthesis and Microstructure Development in Ytria-Magnesia Ceramics for Infrared Transparency

J. A. Miller*, I. E. Reimanis, Colorado School of Mines, USA

4:40 PM

(PACRIM10-S05-025-2013) Quaternary Ammonium Hydroxides-Assisted Solvothermal Synthesis of Monodispersed ITO Nanoparticles with Cubic Shape

K. Kanie*, T. Sasaki, M. Nakaya, A. Muramatsu, Tohoku University, Japan

5:00 PM

(PACRIM10-S05-026-2013) Improved transparent thermal insulation using hollow silica nanoparticles

C. Takai*, M. Fuji, T. Shirai, Nagoya Institute of Technology, Japan

5:20 PM

(PACRIM10-S05-027-2013) Synthesis of B-SiC powders by a modified carbothermal reduction process using SiO₂-C hybrid precursors with various C/Si mole ratios

S. Park*, S. Yoon, M. Yum, KIST, Republic of Korea

5:40 PM

(PACRIM10-S05-028-2013) Self Catalyzed HfB₂ and ZrB₂ Sol-Gel Precursors by Rapid Ultrasonication of Hf and Zr Oxychloride Hydrates with Controlled Chemistry and Particle Morphology

L. S. Walker*, E. L. Corral, The University of Arizona, USA

Symposium 07: Multifunctional Metal Oxide Nanostructures and Heteroarchitectures for Energy and Device Applications

Nanostructured Metal Oxides in Excitonic Solar Cells

Room: Crown

Session Chairs: Jong-Heun Lee, Korea University; Taro Toyoda, The University of Electro-Communications

1:20 PM

(PACRIM10-S07-009-2013) Photovoltaic Characteristics and Photoexcited Carrier Dynamics of Multilayered Quantum Dot-Sensitized Solar Cells (Invited)

T. Toyoda*, Q. Shen, The University of Electro-Communications, Japan

1:50 PM

(PACRIM10-S07-010-2013) Organic conjugated polymer/metal oxide nanohybrid materials for solar cell applications

S. Makuta, H. Patil, RMIT University, Australia; Y. Tachibana*, Osaka University, Japan

2:10 PM

(PACRIM10-S07-011-2013) Synthesis and Characterization of Nanoporous ZrxTi1-xO2 Monoliths and Transparent Thin Films for Solar Cell Fabrication

D. G. Mieritz*, D. Seo, Arizona State University, USA

2:30 PM

(PACRIM10-S07-012-2013) Highly Efficiency Dye-sensitized Solar Cells (Invited)

L. Han*, National Institute for Materials Science, Japan

3:00 PM

(PACRIM10-S07-014-2013) Transparent conductive oxide less back contact dye-sensitized solar cells (TCO-less DSC) (Invited)

S. Hayase*, Kyushu Institute of Technology, Japan

3:30 PM

Break

3:50 PM

(PACRIM10-S07-015-2013) Preparation of Nanoporous Transparent Antimony-Doped Tin Oxide and Its Inorganic-Bio Hybrids for Potential Energy Applications

A. M. Volosin*, Arizona State University, USA; D. Schmitt, Johannes Gutenberg University of Mainz, Germany; S. Sharma, Indian Institute of Technology - Gandhigram, India; D. Seo, Arizona State University, USA

Symposium 09: Materials for Extreme Environments: Ultrahigh Temperature Ceramics (UHTCs) and Nanolaminated Ternary Carbides and Nitrides (MAX Phases)

Design of New Materials with Fascinating Properties

Room: Windsor Complex

Session Chairs: Yanchun Zhou, Aerospace Research Institute of Materials & Processing Technology; Luke Walker, The University of Arizona

1:20 PM

(PACRIM10-S09-001-2013) High Performance HfB₂-SiC Ceramics Doped with WC: Densification Mechanism, Microstructure Evolution and Mechanical Properties (Invited)

G. Zhang*, Shanghai Institute of Ceramics, China

1:50 PM

(PACRIM10-S09-002-2013) High temperature oxidation resistant ultra high temperature ceramic matrix composites by reverse infiltrated and coated carbon-carbon composites

L. S. Walker*, E. L. Corral, The University of Arizona, USA

2:10 PM

(PACRIM10-S09-003-2013) Synthesis of Novel Hafnium-Containing Ultrahigh-Temperature Ceramic Nanocomposites

E. Ionescu*, J. Yuan, B. Mainzer, R. Riedel, TU Darmstadt, Germany

2:30 PM

(PACRIM10-S09-005-2013) Microstructure and mechanical properties of ZrC-Nb composites

Y. Wang*, Y. Meng, P. Jia, Y. Zhou, Harbin Institute of Technology, China; X. Zhang, Changchun University of Science and Technology, China

2:50 PM

Break

New Methods for Joining and Testing

Room: Windsor Complex

Session Chairs: Eric Neuman, Missouri University of S & T; Guo-Jun Zhang, Shanghai Institute of Ceramics

3:30 PM

(PACRIM10-S09-006-2013) Plasma Arc Welding of Diboride Ceramics

D. King*, G. Hilmas, W. Fahrenholtz, Missouri University of Science and Technology, USA

3:50 PM

(PACRIM10-S09-008-2013) Transient Liquid Phase Bonding and Wettability of HfB₂-MoSi₂ Composites with Nb based Alloy

N. Saito*, H. Ikeda, A. M. Glaeser, K. Nakashima, Kyushu University, Japan

4:10 PM

(PACRIM10-S09-009-2013) Ultra High Temperature Mechanical Testing of ZrB₂-ZrC Based Ceramics

E. W. Neuman*, G. E. Hilmas, W. G. Fahrenholtz, Missouri University of S & T, USA

4:30 PM

(PACRIM10-S09-012-2013) Ultra-High Temperature Ceramic Oxidation Behavior Using Multiple High Temperature and Oxygen Rich Testing Facilities

M. Miller-Oana*, P. Neff, A. Powell, University of Arizona, USA; V. Murray, T. Minton, Montana State University, USA; L. Walker, E. Corral, University of Arizona, USA

4:50 PM

(PACRIM10-S09-010-2013) Ablative property of laminated ZrB₂-SiC ceramics under oxyacetylene torch

F. Zuo, L. Cheng*, L. Xiang, L. Zhang, Northwest Polytechnical University, China

Symposium 10: Advanced Ceramic Coatings: Processing, Properties, and Applications

Advanced Thermal and Environmental Barrier Coatings II

Room: Tudor

Session Chairs: Douglas Wolfe, The Pennsylvania State University; Hideki Kakisawa, University of Tokyo

1:20 PM

(PACRIM10-S10-027-2013) Emerging Issues in Hot-Section Materials Development for Gas Turbine Systems and Use of Alternative Fuels (Invited)

D. Mumm*, University of California, Irvine, USA

1:50 PM

(PACRIM10-S10-009-2013) Advanced Thermal Barrier Coating Performance Under Simultaneous CMAS and Thermal Gradient Cycling Load

D. E. Mack*, M. O. Jarlago, D. Sebold, F. Tarasi, Forschungszentrum Jülich GmbH, Germany; T. Wobst, Forschungszentrum Jülich GmbH, Germany, Forschungszentrum Jülich GmbH, Germany/Rolls Royce Deutschland Ltd & Co KG, Germany; R. Vassen, Forschungszentrum Jülich GmbH, Germany

2:10 PM

(PACRIM10-S10-010-2013) Control of Mass-transfer through Grain Boundaries in Alumina Protective Layer by Dopant Configurations in further EBCs (Invited)

S. Kitaoka*, T. Matsudaira, M. Wada, M. Tanaka, T. Ogawa, Japan Fine Ceramics Center, Japan; Y. Kagawa, The University of Tokyo, Japan

2:40 PM

(PACRIM10-S10-011-2013) Surface modification of hard coatings on silicon carbide substrate for glass molding process

Y. Yan*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; Y. Li, Graduate University of the Chinese Academy of Sciences, China; Z. Huang, X. Liu, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

3:00 PM

Break

Multifunctional Coatings, Processing and Advanced Surface Characterization

Room: Tudor

Session Chairs: Douglas Wolfe, The Pennsylvania State University; Hideki Kakisawa, University of Tokyo

3:20 PM

(PACRIM10-S10-012-2013) Development of new observation system used for deformation measurement of ceramics matrix composites at high temperature

Y. Dong*, H. Kakisawa, Y. Kagawa, the University of Tokyo, Japan

3:40 PM

(PACRIM10-S10-013-2013) High Performance Radiation Energy Reflection EBCs: Effect of Surface/Interface Morphology of Oxide Multilayers

M. Yamazoe*, H. Kakisawa, Y. Kagawa, University of Tokyo, Japan; S. Kitaoka, Japan Fine Ceramics Center, Japan

4:00 PM

(PACRIM10-S10-014-2013) Anti-Reflective Surface Structures In Spinel Ceramic Windows

C. M. Florea*, Sotera Defense Solutions, USA; L. E. Busse, S. S. Bayya, L. B. Shaw, US Naval Research Lab, USA; I. D. Aggarwal, Sotera Defense Solutions, USA; J. S. Sanghera, US Naval Research Lab, USA

4:20 PM

(PACRIM10-S10-016-2013) Growth of La_{0.7}Sr_{0.3}MnO₃ film by dc sputtering for spintronics application (Invited)

D. Sahu*, University of the Witwatersrand, South Africa

4:50 PM

(PACRIM10-S10-017-2013) Fabrication of $\text{Li}_3\text{Fe}_2(\text{PO}_4)_3$ and $\text{Li}_4\text{Ti}_5\text{O}_{12}$ thin film for transparent Li ion battery
H. Nagai*, H. Hara, M. Enomoto, C. Mochizuki, I. Takano, M. Sato, Kogakuin Univ., Japan

5:10 PM

(PACRIM10-S10-018-2013) Development of sol-gel nano-structured zirconia coating on ferritic steel and their hot corrosion studies in alkali salt deposits system at high temperature

I. B. Singh*, G. Ruhi, O. P. Modi, CSIR-Advanced Materials and Process Research Institute (AMPRI), India, CSIR-Advanced Materials and Process Research Institute (AMPRI), IndiaCSIR-Advanced Materials and Process Research Institute (AMPRI), India; S. Das, CSIR-Advanced Materials and Process Research Institute (AMPRI), India, CSIR-Advanced Materials and Process Research Institute (AMPRI), IndiaCSIR-Advanced Materials and Process Research Institute (AMPRI), India, CSIR-Advanced Materials and Process Research Institute (AMPRI), India, CSIR-Advanced Materials and Process Research Institute (AMPRI), IndiaCSIR-Advanced Materials and Process Research Institute (AMPRI), India

5:30 PM

(PACRIM10-S10-015-2013) Nano-structured Coatings Made of Y_2O_3 for a New Plasma-facing Material

S. Lee*, Y. Oh, H. Kim, Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

Symposium 12: Advances in Electroceramics

Piezoelectric Materials (Lead-free I)

Room: Crystal

Session Chair: Hajime Nagata, Tokyo University of Science

1:20 PM

(PACRIM10-S12-036-2013) The high strain lead-free piezoelectric thick films (Invited)

J. Zhai*, F. Fu, Tongji University, China; Z. Xu, City University of Hong Kong, China; X. Yao, Tongji University, China

1:50 PM

(PACRIM10-S12-037-2013) New opportunities in alkali niobate ceramics processed in low oxygen partial pressure (Invited)

K. Kobayashi*, H. Shimizu, Y. Doshida, Y. Mizuno, Taiyo Yuden Co., Ltd., Japan; C. A. Randall, The Pennsylvania State University, USA

2:20 PM

(PACRIM10-S12-039-2013) Crystal structure and dielectric properties of $(\text{Na}_{0.5}\text{K}_{0.5})\text{NbO}_3$ - $(\text{Bi}_{0.5}\text{Na}_{0.5})\text{ZrO}_3$ solid solution

R. Wang*, H. Bando, National Institute of Advanced Industrial Science and Technology, Japan; M. Itoh, Tokyo Institute of Technology, Japan

2:40 PM

(PACRIM10-S12-040-2013) Piezoelectric Enhancement of Relaxor-based Lead-free Piezoelectric Ceramics by Nano/macro-complex Domain Configuration

S. Wada*, R. Mitsui, I. Fujii, K. Nakashima, S. Ueno, N. Kumada, University of Yamanashi, Japan

3:00 PM

(PACRIM10-S12-038-2013) Lead-free Piezoelectric Films for Transducer Applications

W. Ren*, Xi'an Jiaotong University, China

3:20 PM

Break

Optical Properties and Their Applications

Room: Crystal

Session Chair: Sang Sub Kim, Inha University

3:40 PM

(PACRIM10-S12-041-2013) Electro-Optical Effect in Ferroelectrics: Interpretation of Origins and Film Application (Invited)

T. Tsurumi*, J. Oh, K. Takeda, T. Hoshina, H. Takeda, Tokyo Institute of Technology, Japan

4:10 PM

(PACRIM10-S12-042-2013) Synthesis and Thin Film Deposition of Ni-Co Oxide Spinel with Optoelectronic Properties

S. Tsai*, K. Fung, Y. Hsu, National Cheng Kung University, Taiwan; H. Bor, C. Wei, Chung-Shan Institute of Science and Technology(CSIST), Taiwan

4:30 PM

(PACRIM10-S12-043-2013) Improved pyroelectric performances of PMNT single crystals used for infrared detectors

H. Luo*, Shanghai Institute of Ceramics, China

4:50 PM

(PACRIM10-S12-044-2013) Multiple functions of the Mn doped CaZnOS in the Electro-Mechano-Optical conversions

D. Tu*, Kyushu University, Japan; C. Xu, Y. Fujio, National Institute of Advanced Industrial Science and Technology (AIST), Japan

5:10 PM

(PACRIM10-S12-045-2013) Effect of Zn/Ga ratio on persistent luminescence in Bi^{3+} or/and Cr^{3+} doped ZnGa_2O_4 phosphors

Y. Zhuang*, S. Tanabe, Kyoto University, Japan

Symposium 17: Photovoltaic Materials and Technologies

Sensitized Solar Cell Materials and Systems I

Room: Coastal

Session Chairs: Tohru Sekino, Tohoku University; Sang-Im Yoo, Seoul National University

1:20 PM

(PACRIM10-S17-001-2013) Materials and interface considerations for stable high efficiency dye sensitized solar cells (Invited)

R. P. Chang*, Northwestern University, USA

1:50 PM

(PACRIM10-S17-002-2013) Nano Titanium Carbide Based Composites as Alternative Counter Electrode Materials for Dye-Sensitized Solar Cells (Invited)

Y. Cheng*, J. He, Y. Peng, J. Pringle, Monash University, Australia; N. Duffy, CSIRO, Australia

2:20 PM

(PACRIM10-S17-003-2013) New composite materials for solar energy conversion (Invited)

F. Rosei*, INRS, Canada

2:50 PM

(PACRIM10-S17-004-2013) Integration of CdTe-ZnO nanocomposite sensitizers into thin film photovoltaics (Invited)

S. Devalle, W. J. Huang, R. J. Beal, J. B. Kana-Kana, K. Simmons-Potter, B. Potter*, University of Arizona, USA

3:20 PM

Break

Sensitized Solar Cell Materials and Systems II

Room: Coastal

Session Chairs: Yi-Bing Cheng, Monash University; Robert Chang, Northwestern University

3:40 PM**(PACRIM10-S17-005-2013) Nanostructured TiO₂ and Related Materials for Sustainable Energy Applications: Processing, Microstructure and Photovoltaic Applications (Invited)**

Y. Suzuki*, University of Tsukuba, Japan

4:10 PM**(PACRIM10-S17-006-2013) The effect of various ammonium salts on the morphological control of the TiO₂ nanoparticles used in Dye Sensitized Solar Cell**

S. Ho*, S. Tsai, S. Kathirvel, C. Su, National Taipei University of Technology, Taiwan; W. Li, National Central University, Taiwan

4:30 PM**(PACRIM10-S17-008-2013) Fabrication and Evaluation of Titanium Dioxide Films Prepared by Electrophoresis Using Nanosized Particles**

R. Kawakami*, Y. Sato, S. Yoshikado, Doshisha University, Japan

4:50 PM**(PACRIM10-S17-009-2013) Synthesis and characterization of TiO₂ nanotubes added with ZnO for dye sensitized solar cells (Invited)**

S. Cho, G. Gyawali, T. Kim, Sun Moon University, Republic of Korea; T. Sekino, Tohoku University, Japan; S. W. Lee*, Sun Moon University, Republic of Korea

5:20 PM**(PACRIM10-S17-010-2013) Fabrication of dye sensitized solar cells employing open and close ended TiO₂ nanotubes photoanode**

S. Kathirvel*, H. Shih-Yu, H. Chingwen, S. Chaochin, National Taipei University of Technology, Taiwan; L. Wen-Ren, National Central University, Taiwan

5:40 PM**(PACRIM10-S17-007-2013) Nanostructure Developments of TiO₂ Nanocrystals and Aerogels and Their Dye-Sensitized Solar Cell Application**

C. Kim*, Y. Park, Korea Institute of Ceramic Eng. & Tech, Republic of Korea

Symposium 20: Ceramics Enabling Environmental Protection: Clean Air and Water**Ceramics Enabling Environmental Protection: Clean Air and Water**

Room: Pacifica/Tide

Session Chairs: Aleksander Pyzik, Dow; Ivar Reimanis, Colorado School of Mines

1:20 PM**(PACRIM10-S20-001-2013) Direct Decomposition of Toxic Nitrogen Monoxide on C-type Cubic Rare Earth Oxides Ceramics (Invited)**

N. Imanaka*, Osaka University, Japan

1:50 PM**(PACRIM10-S20-002-2013) Membrane water recovery from IC engine exhaust for enabling consumer transparent technologies which enhance engine efficiency (Invited)**

M. M. DeBusk*, B. Bischoff, J. Klett, S. Daw, J. Hunter, E. Nafziger, Oak Ridge National Laboratory, USA

2:20 PM**(PACRIM10-S20-003-2013) Investigation of ceramic membrane for water treatment using natural materials (Invited)**

I. Song*, J. Ha, J. Ko, Y. Park, H. Kim, Korea Institute of Materials Science, Republic of Korea; Y. Kim, The University of Seoul, Republic of Korea

2:40 PM**(PACRIM10-S20-008-2013) Enhanced Catalytic Performance of V₂O₅-WO₃/TiO₂ Honeycomb Catalysts for NO_x Removal Applications**

S. Tsai*, K. Fung, C. Tsai, C. Liu, National Cheng Kung University, Taiwan; C. Chen, Far East University, Taiwan; J. M. Ye, C. Young, China Steel Corporation, Taiwan

3:00 PM**Break****3:20 PM****(PACRIM10-S20-006-2013) CO₂ sequestration by microbubbling using lotus ceramics (Invited)**

K. Okada*, C. Popa, K. Katsumata, T. Isobe, N. Matsushita, A. Nakajima, Tokyo Institute of Technology, Japan; T. Kurata, Kurata Refractories, Japan

3:50 PM**(PACRIM10-S20-007-2013) Thermomechanical Behavior in β -eucryptite and its Composites (Invited)**

I. Reimanis*, Colorado School of Mines, USA

4:20 PM**(PACRIM10-S20-005-2013) Influence of microstructure on Properties of Porous Alumina for Support Substrates of Ceramic Membranes**

S. Honda*, N. Nishihara, Nagoya Institute of Technology, Japan; T. Eda, H. Watanabe, K. Miyajima, Noritake Corporation Limited, Japan; S. Hashimoto, Nagoya Institute of Technology, Japan; B. Nait Ari, D. S. Smith, CENTRE EUROPEEN DE LA CERAMIQUE, France; Y. Iwamoto, Nagoya Institute of Technology, Japan

4:40 PM**(PACRIM10-S20-009-2013) Elaborating of bio-sourced nanocarbon membrane for water-filtration applications**

O. El Korhani, Université Montpellier II, France; A. Cherifi, Ecole Nationale Supérieure de Chimie de Montpellier, France; D. Zaouk, Lebanese University, Lebanon; S. Cerneaux, D. Cornu*, Ecole Nationale Supérieure de Chimie de Montpellier, France; R. Khoury, A. Khoury, Lebanese University, Lebanon

5:00 PM**(PACRIM10-S20-010-2013) Preparation and Evaluation of ZSM-5 Bulk Bodies by a One-pot Hydrothermal Method**

M. Miyake*, E. Igi, Y. Kameshima, S. Nishimoto, Okayama University, Japan

5:20 PM**(PACRIM10-S20-011-2013) Reliability of Ceramic Membranes of BSCF for Oxygen Separation in a Pilot Membrane Reactor**

E. M. Pfaff*, M. Özel, A. Bezold, RWTH University, Germany

5:40 PM**(PACRIM10-S20-004-2013) Fabrication of the Hardened Bodies from Japanese Volcanic Ash using an Alkali-activated Cement (Geopolymer) Technique**

S. Hashimoto*, H. Takeda, H. Kanie, S. Honda, Y. Iwamoto, Nagoya Institute of Technology, Japan

Symposium 22: Glasses and Ceramics for Nuclear and Hazardous Waste Treatment**Development and Characterization of Matrices for Waste Treatment and Immobilization**

Room: Surf

Session Chair: James Marra, Savannah River National Laboratory

1:20 PM**(PACRIM10-S22-022-2013) Role of Nuclear and Electronic Energy Loss on Damage Production and Recovery in Irradiated Amorphous Ceramics (Invited)**

W. J. Weber*, M. Backman, University of Tennessee, USA; Y. Zhang, Oak Ridge National Laboratory, USA; F. Djurabekova, K. Nordlund, University of Helsinki, Finland; M. Toulemonde, University of Caen, France; A. Debelle, University Paris-Sud, France

2:00 PM**(PACRIM10-S22-023-2013) Neodymium Titanate Ceramics as Advanced Waste Forms for Nuclear Energy**

B. M. Clark*, S. K. Sundaram, Alfred University, USA; K. M. Fox, K. S. Brinkman, Savannah River National Laboratory, USA

2:20 PM**(PACRIM10-S22-024-2013) Entrapment of molecular iodine produced in nuclear industry, with the Hofmann's clathrates of formula $M(L)Ni(CN)_4$ where $M = Fe, Ni$ and L an organic linear compound**

G. Massasso*, Y. Guari, J. Larionova, J. Long, Institut Charles Gerhardt - Université de Montpellier 2, France; A. Grandjean, CEA, France; B. Onida, Politecnico di Torino, Italy

2:40 PM**(PACRIM10-S22-025-2013) Immobilization of iodine -based nuclear waste in phosphate glasses**

T. Lemesle, F. O. Mear*, Lille 1 University, France; L. Campayo, O. Pinet, CEA, DEN, DTCD/SECM/LDMC, France; L. Montagne, Lille 1 University, France

3:00 PM**(PACRIM10-S22-026-2013) Structure and Reactivity of Anion Bearing Sodalite**

E. Pierce*, J. Hopf, Oak Ridge National Laboratory, USA; W. Lukens, Lawrence Berkeley National Laboratory, USA; J. Fitts, Brookhaven National Laboratory, USA; C. M. Jantzen, D. Missimer, Savannah River National Laboratory, USA

3:20 PM**Break****3:40 PM****(PACRIM10-S22-027-2013) Progress in the development of glass-ceramics from silicate waste focusing on functional materials**

A. Boccaccini*, C. Rama Krishna Satish, Univ. of Erlangen-Nuremberg, Germany; E. Bernardo, Univ. of Padova, Italy

4:00 PM**(PACRIM10-S22-028-2013) Immobilization of actinides (lanthanides) into crystalline phase in glass-ceramic waste forms**

M. Kim*, K. Xu, J. Heo, Pohang University of Science and Technology, Republic of Korea

4:20 PM**(PACRIM10-S22-030-2013) Water Remediation using Alkali Metal Titanates**

B. Higgins*, D. Edwards, Alfred University, USA

Symposium 23: Advances in Biomineralized Ceramics, Bioceramics, and Bioinspired Designs

Bioinspired and Biomimetic Ceramics and Composites and New Materials

Room: Bayside/Strand

Session Chairs: Po-Yu Chen, National Tsing Hua University; Ekaterina Novitskaya, University of California, San Diego

1:20 PM**(PACRIM10-S23-008-2013) Bio-Inspired Micro-Channeled Hydroxyapatite Components by Sequential Freeze Drying and Free Pressureless Spark-Plasma Sintering (Invited)**

E. Olevsky*, Y. Lin, San Diego State University, USA; M. Meyers, University of California, San Diego, USA

1:50 PM**(PACRIM10-S23-009-2013) Functional ceramic composites by magnetic field aligned freeze casting and subsequent polymer infiltration**

M. Porter*, M. A. Meyers, J. McKittrick, University of California San Diego, USA

2:10 PM**(PACRIM10-S23-010-2013) Biologically-Inspired Synthesis of Nanostructured Zinc Oxide (Invited)**

W. Hou, UC Riverside, USA; M. Nielsen, Lawrence Berkeley National Labs, USA; L. Lancaster, UC Riverside, USA; D. Li, J. DeYoreo, Lawrence Berkeley National Labs, USA; D. Kisailus*, UC Riverside, USA

2:40 PM**(PACRIM10-S23-011-2013) Multifunctional Glass Microspheres for Medical Applications (Invited)**

D. E. Day*, Missouri University of Science and Technology, USA

3:10 PM**Break****3:30 PM****(PACRIM10-S23-012-2013) Infiltrated mullite-cordierite / epoxy co-continuous composites**

J. Zimmermann*, M. Ocampo, P. Tapesch, Corning, USA

3:50 PM**(PACRIM10-S23-013-2013) Nature Inspired "Nacre-like" SiC-PMMA Composites (Invited)**

V. Naglieri*, B. Gludovatz, A. Wat, A. P. Tomsia, Lawrence Berkeley National Laboratory, USA; R. O. Ritchie, UC Berkeley, USA

4:20 PM**(PACRIM10-S23-014-2013) Vapor Deposition Polymerization as an Alternative Method to Enhance the Mechanical Performance of Bio-Inspired Scaffolds**

P. Chou*, National Tsing Hua University, Taiwan; M. M. Porter, J. McKittrick, University of California, San Diego, USA; P. Chen, National Tsing Hua University, Taiwan

4:40 PM**(PACRIM10-S23-015-2013) Bioinspired Materials Derived from Natural Species (Invited)**

T. Fan*, X. Guo, D. Zhang, Shanghai Jiaotong University, China

5:10 PM**(PACRIM10-S23-016-2013) Comparative evaluation of the crystallization behavior and biocompatibility of fluorapatite-mullite glass-ceramics**

S. Mollazadeh Beidokhti, Iran University of Science and Technology, Islamic Republic of Iran; A. Youssefi*, Par-e Tavous Research Center, Islamic Republic of Iran; B. Eftekhari Yekta, J. Javadpour, Iran University of Science and Technology, Islamic Republic of Iran; T. Jafarzade Kashi, Tehran University of Medical Science, Islamic Republic of Iran; M. Mehrju, M. Shokrgozar, National Cell Bank of Iran- Pasteur Institute of Iran, Islamic Republic of Iran

Symposium A: Glass Science

Glass Structure

Room: Seabreeze

Session Chairs: Liping Huang, Rensselaer Polytechnic Institute; Peter Lezzi, RPI

1:20 PM**(PACRIM10-SA-041-2013) The structure of high temperature single component oxide liquids**

L. B. Skinner*, Stony Brook (SUNY), USA; C. Benmore, Argonne National Laboratory, USA; J. B. Parise, Stony Brook (SUNY), USA; R. Weber, Argonne National Laboratory, USA

1:40 PM**(PACRIM10-SA-042-2013) Local structure around rare-earth ions in B₂O₃ glass melt quenched at high pressure**

H. Hosono, F. Funabiki*, S. Matsuishi, Tokyo Institute of Technology, Japan

2:00 PM**(PACRIM10-SA-043-2013) Structure of Al₂O₃-SiO₂ glasses by means of molecular dynamics simulation**

H. Inoue*, A. Masuno, The University of Tokyo, Japan; Y. Saito, Sumitomo Electric Industries, Ltd., Japan

2:20 PM**(PACRIM10-SA-045-2013) Structure-Properties Relationship Within Glass Transition Range**

O. A. Prokhorenko*, Laboratory of Glass Properties, USA

2:40 PM**(PACRIM10-SA-047-2013) Structure of Amorphous Tantalum Thin Films**

N. Kim*, J. F. Stebbins, Stanford University, USA

3:00 PM**(PACRIM10-SA-048-2013) Essential Structural Features of 'Stuffing' Alkali Accommodation in Ion-Exchanged Silicate Glasses from Molecular Dynamics Simulations**

P. K. Kreski*, Alfred University, USA; A. K. Varshneya, Saxon Glass Technologies, Inc., USA; A. N. Cormack, Alfred University, USA

3:20 PM**Break****3:40 PM****(PACRIM10-SA-049-2013) Structure and Properties of Zinc Aluminophosphate Glasses**

C. Smith*, R. Brow, Missouri University of Science and Technology, USA

4:00 PM**(PACRIM10-SA-050-2013) The tin-iron redox couple in silicate and phospho-silicate glasses**

L. Ghussn*, R. K. Brow, Missouri University of Science & Technology, USA; K. Schaffers, S. R. Qiu, P. Ehrmann, T. Suratwala, Lawrence Livermore National Laboratory, USA

4:20 PM**(PACRIM10-SA-051-2013) Structural Properties of Borate Glasses Containing Transition Metal Oxides**

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

4:40 PM**(PACRIM10-SA-052-2013) Structure-Electrical Relationship in Copper Lithium Phosphate Glasses**

G. Broglia*, C. Mugoni, M. Montorsi, C. Siligardi, University of Modena and Reggio Emilia, Italy; H. Jain, Lehigh University, USA

5:00 PM**(PACRIM10-SC-013-2013) Rare earth doped chalcogenide optical waveguide (Invited)**

V. Nazabal*, University of Rennes 1, France; J. Doualan, CIMAP, France; R. Chahal, F. Charpentier, University of Rennes 1, France; P. Camy, P. Nemeč, CIMAP, France; A. Jurdy, LPCML, France; J. Troles, B. Bureau, H. Lhermite, J. Charrier, University of Rennes 1, France; K. Michel, BRGM, France; L. Quétel, IDIL, France; J. Adam, University of Rennes 1, France

Symposium B: Glass Technology and Cross-Cutting Topics**Ultrafast Science of Glass, Ceramics, and Materials**

Room: Sunset

Session Chair: S. Sundaram, Alfred University

1:20 PM**(PACRIM10-SB-009-2013) Towards increased efficiency in solar energy harvesting via intermediate states (Invited)**

E. Mazur*, Harvard University, USA

1:50 PM**(PACRIM10-SB-010-2013) Femtosecond Dual-Arm Z-Scan On Ceramic And Single Crystals Of YAG**

S. Paul David*, H. Hu, T. Ensley, D. J. Hagan, E. W. Van Stryland, R. Gaume, University of Central Florida, USA

2:10 PM**(PACRIM10-SB-011-2013) Ultrafast laser processing of glass: dynamics on multiple time scales (Invited)**

D. M. Krol*, University of California, Davis, USA

2:40 PM**(PACRIM10-SB-012-2013) Femtosecond Pulse Laser Surface Modification of Yttrium Aluminum Garnet Ceramics**

D. Steere*, S. Sundaram, Alfred University, USA

3:00 PM**Break****Surface Reactions and Corrosion**

Room: Sunset

Session Chairs: Hong Li, PPG Industries Inc; James Neeway, Pacific Northwest National Laboratory

3:20 PM**(PACRIM10-SB-014-2013) Surface Structure and Reactivity for Glasses: New Methods and Applications Using Solid-State NMR**

K. T. Mueller*, N. M. Washton, J. Lai, J. V. Ryan, Pacific Northwest National Laboratory, USA; C. G. Pantano, K. A. Murphy, Penn State University, USA

3:40 PM**(PACRIM10-SB-015-2013) Dissolution of Phosphate-doped Borosilicate Glasses in Alkaline Solutions**

X. Cheng*, R. Brow, G. Chen, Missouri University of Science and Technology, USA

4:00 PM**(PACRIM10-SB-016-2013) Templated Texturing of Glass Surfaces by Thermal Poling**

N. J. Smith*, Corning Incorporated, USA

4:20 PM**(PACRIM10-SB-017-2013) Lithium diffusion during glass corrosion**

J. J. Neeway*, J. V. Ryan, A. V. Mitroshkov, Pacific Northwest National Laboratory, USA

4:40 PM**(PACRIM10-SB-018-2013) Fabrication and fluorescence of novel oxyfluoride glass and glass-ceramics with nonlinear BaAlBO3F2 nanocrystals and patterning of single crystal line**

K. Shinozaki*, T. Honma, T. Komatsu, Nagaoka University of Technology, Japan

5:00 PM**(PACRIM10-SB-019-2013) Na_{2-x}Fe_{1+x/2}P₂O₇/C glass-ceramics cathode for the sodium ion batteries**

T. Honma*, T. Togashi, A. Sato, N. Ito, T. Komatsu, Nagaoka University of Technology, Japan

5:20 PM**(PACRIM10-SB-177-2013) Study of alteration mechanism of obsidian and barium borosilicate glass for its long-term assessment in geological repository**

N. Rani*, J. P. Shrivastava, University of Delhi, India; R. K. Bajpai, BARC, India

Symposium D: James C. Phillips Honorary Symposium**Intermediate Phase I**

Room: Palm

Session Chairs: Punit Boolchand, University of Cincinnati; Matthieu Micoulaut, UPMC

1:00 PM**(PACRIM10-SD-030-2013) Observation of intermediate phases in network glasses-trials and tribulations (Invited)**

P. Boolchand*, University of Cincinnati, USA

1:30 PM**(PACRIM10-SD-031-2013) Recent advances in the first-principles modelling of glassy networks (Invited)**

C. Massobrio*, IPCMS, France

2:00 PM**(PACRIM10-SD-032-2013) New tools for the historical benchmark systems of rigidity theory (Invited)**

M. Micoulaut*, M. Bauchy, A. Kachmar, UPMC, France

2:30 PM**(PACRIM10-SD-034-2013) Structure of network-forming liquid and glasses: topological and chemical ordering (Invited)**

P. S. Salmon*, A. Zeidler, University of Bath, United Kingdom

3:00 PM**Break****3:20 PM****(PACRIM10-SD-035-2013) Rigidity, Fragility and their Dynamical Consequences in Binary Ge-Se Supercooled Liquids and Glasses (Invited)**

S. Sen*, University of California, Davis, USA

3:50 PM**(PACRIM10-SD-036-2013) Screening of charge and structural motifs in oxides (Invited)**

P. Littlewood*, Argonne National Lab, USA

4:20 PM**(PACRIM10-SD-037-2013) The intermediate phase of elastic networks studied with the pebble game algorithm (Invited)**

M. V. Chubynsky*, University of Ottawa, Canada

4:50 PM**(PACRIM10-SD-038-2013) Rigidity in Network Glasses (Invited)**

F. Wang*, California State University, Long Beach, USA; P. Boolchand, University of Cincinnati, USA

Friday, June 7, 2013

Symposium 02: Ceramics by Genome

Spectroscopy and Other Approaches in Genome Research

Room: Continental

Session Chair: Isao Tanaka, Kyoto university

8:30 AM**(PACRIM10-S02-017-2013) Local-Energy and Local-Stress Calculations and XANES/ELNES Calculations by the PAW Method (Invited)**

M. Kohyama*, S. Tanaka, AIST, Japan; T. Tamura, Nagoya Institute of Technology, Japan; Y. Shiihara, University of Tokyo, Japan; S. Ishibashi, AIST, Japan

9:00 AM**(PACRIM10-S02-018-2013) First-principles calculations of XANES/ELNES spectra of TiO-SiO glasses**

T. Tamura*, Nagoya Institute of Technology, Japan; S. Tanaka, M. Kohyama, National Institute of Advanced Industrial Science and Technology, Japan

9:20 AM**(PACRIM10-S02-019-2013) Elastic, Electronic and XANES Spectral Calculations of Doped Hydroxyapatite (HAP) Crystals**

S. Aryal*, University of Missouri, Kansas City, USA; K. Matsunaga, Nagoya University, Japan; P. Rulis, W. Ching, University of Missouri, Kansas City, USA

9:40 AM**(PACRIM10-S02-020-2013) Modification of Planar Defects by Impurity Segregation and Resultant Properties of TiO₂-x**

T. Yokoi*, Y. Miyauchi, M. Yoshiya, H. Yasuda, Osaka University, Japan

10:00 AM**Break**

Energy and Bio-ceramics

Room: Continental

Session Chair: Kwang-Ryeol Lee, Korea Institute of Science and Technology

10:20 AM**(PACRIM10-S02-021-2013) Data mining of lithium super-ionic conducting oxides from first principles (Invited)**

I. Tanaka*, K. Fujimura, A. Seko, Y. Koyama, Kyoto University, Japan; A. Kuwabara, JFCC, Japan

10:50 AM**(PACRIM10-S02-022-2013) Theoretical Defect Energetics of Carbonate Ions in Hydroxyapatite**

K. Matsunaga*, T. Kubota, K. Toyoura, A. Nakamura, Nagoya University, Japan

Symposium 03: Novel, Green, and Strategic Processing and Manufacturing Technologies

Novel Synthesis and Processing

Room: Hanover

Session Chairs: Vojislav Mitic, University of Nis; Do Kyung Kim, KAIST

8:30 AM**(PACRIM10-S03-024-2013) Ice-templated Porous LiFePO₄ Cathodes for High Performance Lithium Ion batteries**

W. Jung, S. Moon, D. Kim, D. Kim*, Korea Advanced Institute of Science and Engineering (KAIST), Republic of Korea

8:50 AM**(PACRIM10-S03-025-2013) Highly closed porous thermal insulators from gelation freezing route**

M. Fukushima*, Y. Yoshizawa, National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:10 AM**(PACRIM10-S03-032-2013) Porous Si₃N₄ ceramics prepared via nitridation of Si powder**

Y. Zeng*, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; D. Yao, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China; D. Jiang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

9:30 AM**(PACRIM10-S03-027-2013) Sintering and characterization of asymmetric CGO bi-layers for oxygen membranes**

A. F. Kaiser*, S. P. Foghmoes, J. Malzbender, G. Pecanac, V. Esposito, J. Glasscock, P. V. Hendriksen, Danish Technical University (DTU), Denmark

9:50 AM**Break****10:10 AM****(PACRIM10-S03-029-2013) Hydrothermal Synthesis of Ba_{1-x}M_xTiO₃ Nanopowder and its Characterization**

C. Baek, S. Moon, KAIST, Republic of Korea; C. Choi, SAMSUNG Electromechanics, Republic of Korea; D. Kim*, KAIST, Republic of Korea

10:30 AM**(PACRIM10-S03-030-2013) BaTiO₃- Ceramics Consolidation: New Approach to Structure Control**

V. Mitic*, V. Paunovic, University of Nis, Serbia; S. Jankovic, Mathematical Institute, SASA, Serbia; L. Kocic, M. Mijlkovic, University of Nis, Serbia; V. Pavlovic, Institute of Technical Sciences of SASA, Serbia

10:50 AM

(PACRIM10-S03-031-2013) Properties of SiC ceramics from gelcasting and pressureless sintering
J. Zhang*, D. Jiang, Q. Lin, Z. Chen, Z. Huang, Shanghai Institute of Ceramics, China

11:10 AM

(PACRIM10-S03-026-2013) Fabrication of Porous Reaction Bonded Silicon Carbide with Multi-Layered Pore Structures
G. Cho*, S. Yun, S. Park, KIST, Republic of Korea

Symposium 05: Advanced Powder Processing and Manufacturing Technologies

Low Cost and Energy-saving Processing of Advanced Ceramics

Room: Stuart

Session Chairs: Makio Naito, Osaka University; Junichi Tatami, Yokohama National University

8:30 AM

(PACRIM10-S05-030-2013) Fabrication of geopolymer bonded SiC based composites from rice husks

J. Li*, T. Shirai, M. Fuji, Nagoya Institute of Technology, Japan

8:50 AM

(PACRIM10-S05-031-2013) Effect of boron carbide in polycarbosilane

K. Kita*, N. Kondo, National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:10 AM

(PACRIM10-S05-032-2013) High-Pressure Self-propagating High-temperature Synthesis (SHS) of Silicon Nitride

S. Lin*, P. Duruewuru, P. Dinh, Lamar University, USA

9:30 AM

(PACRIM10-S05-029-2013) Anti-bacterial Ceramic Glaze using Silver for Sanitary Ware (Invited)

N. Isu*, LIXIL Corp., Japan

10:00 AM

Break

Advanced Powder Processing for Non-oxides Ceramics

Room: Stuart

Session Chairs: Junichi Tatami, Yokohama National University; Makio Naito, Osaka University

10:20 AM

(PACRIM10-S05-033-2013) Effect of SiC Polytype on Crystal Structures of Carbon Derived from SiC

M. Jeong*, D. Lim, S. Yoon, E. Lee, Korea University, Republic of Korea

10:40 AM

(PACRIM10-S05-035-2013) Synthesis of Tungsten Carbide (WC) nanoparticles

G. Singla*, K. Singh, O. P. Pandey, Thapar University, India

11:00 AM

(PACRIM10-S05-036-2013) Development of a Oxide Additive Free, Spark Plasma Sintered, High Strength Silicon Nitride System

W. Pinc*, L. S. Walker, A. C. Ellis, L. R. Herlihy, E. L. Corral, University of Arizona, USA

11:20 AM

(PACRIM10-S05-037-2013) Improvement of strength of Si₃N₄ ceramics using smaller granules

J. Tatami*, H. Kayama, S. Sueyasu, T. Wakihara, K. Komeya, Yokohama National University, Japan

Symposium 07: Multifunctional Metal Oxide Nanostructures and Heteroarchitectures for Energy and Device Applications

Synthesis, Functionalization and Assembly of Metal Oxide Nano-materials

Room: Crown

Session Chairs: Lionel Vayssieres, Xian Jiaotong University; Lianzhou Wang, University of Queensland

8:30 AM

(PACRIM10-S07-017-2013) Theoretical Modelling of the Adsorption of Citrate onto Zinc Oxide Surfaces: Implications for Shape Controlled Growth

C. Sutton*, G. V. Franks, G. da Silva, The University of Melbourne, Australia

8:50 AM

(PACRIM10-S07-018-2013) Precursor-derived Magnéli phases as a promising route to the nano-structured oxide thermoelectrics

I. Kinski*, S. Conze, Fraunhofer IKTS, Germany; I. Veremchuk, Max-Planck-Institut, Germany; A. Michaelis, Fraunhofer IKTS, Germany; Y. Grin, Max-Planck-Institut, Germany

9:10 AM

(PACRIM10-S07-019-2013) Transparent Silicone Polymer Composite Films with Silica and Functional Nanoparticles (Invited)

M. Iijima, S. Omori, M. Kimura, Tokyo University of Agriculture and Technology, Japan; K. Hirano, Nitto Denko Corporation, Japan; H. Kamiya*, Tokyo University of Agriculture and Technology, Japan

9:40 AM

(PACRIM10-S07-020-2013) Nanocasting Synthesis of Mesoporous Delafossite CuCrO₂ and Spinel CuCr₂O₄

P. Zhang*, L. Gao, Shanghai Jiao Tong University, China; E. McFarland, University of California, Santa Barbara, USA

10:00 AM

(PACRIM10-S07-021-2013) Phase control and ferroelectricity in Al-Fe-O thin films prepared by PLD technique

Y. Hamasaki*, T. Shimizu, H. Taniguchi, T. Taniyama, M. Itoh, Tokyo Institute of Technology, Japan

10:20 AM

(PACRIM10-S07-022-2013) Synthesis of γ -MnOOH and β -MnO₂ nanowires and their electrochemical capacitive behavior

I. B. Singh*, CSIR-Advanced Materials and Process Research Institute (AMPRI), India; S. M. Park, Ulsan National Institute of Science and Technology (UNIST), Republic of Korea

Symposium 09: Materials for Extreme Environments: Ultrahigh Temperature Ceramics (UHTCs) and Nanolaminated Ternary Carbides and Nitrides (MAX Phases)

Physical, Mechanical Properties and Oxidation Behavior

Room: Windsor Complex

Session Chairs: Sylvia Johnson, NASA-Ames Research Center; Kei Nishimura, Kyushu University

8:30 AM

(PACRIM10-S09-013-2013) Thermal Properties of ZrB₂ as a Function of Pore Volume Fraction

J. M. Lonergan*, W. G. Fahrenholtz, G. Hilmas, Missouri University of Science & Technology, USA

8:50 AM

(PACRIM10-S09-014-2013) The Thermal Conductivity of ZrB₂ as a function of Hf, Mg, and Al Diboride Additions

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

9:10 AM

(PACRIM10-S09-016-2013) Effects of Additives on the Mechanical Properties of ZrB₂ Densified Using Spark Plasma Sintering

D. Pham*, L. S. Walker, E. L. Corral, University of Arizona, USA

9:30 AM

(PACRIM10-S09-017-2013) In-depth investigation on the high temperature oxidation mechanism of Ti₃AlC₂ using TG, XRD and HRTEM (Invited)

Y. Zhou*, Aerospace Research Institute of Materials & Processing Technology, China; X. Wang, Institute of Metal Research, CAS, China

10:00 AM

(PACRIM10-S09-018-2013) Dynamic Non-Equilibrium Thermal Gravimetric Analysis of Ultra-High Temperature Ceramics

M. Miller-Oana*, L. Walker, E. Corral, University of Arizona, USA

Symposium 10: Advanced Ceramic Coatings: Processing, Properties, and Applications

Tribological, Wear- and Erosion-resistant Coatings

Room: Tudor

Session Chairs: Kyoung Il Moon, Korea Institute of Industrial Technology; Diptiranjan Sahu, University of the Witwatersrand

8:30 AM

(PACRIM10-S10-019-2013) Erosion Resistant Coatings for the Suppression of Leading Edge Curl Deformation

D. E. Wolfe*, G. M. Slota, G. S. Showers, The Pennsylvania State University, USA

9:00 AM

(PACRIM10-S10-020-2013) Structure and properties of some PVD coatings on ceramic cutting inserts for dry and high speed cutting processes (Invited)

Y. Long, Q. Wang, S. Wu*, Guangdong University of Technology, China

9:30 AM

(PACRIM10-S10-021-2013) Synthesis and characterization of WC-Co by planetary ball-milling and spark plasma sintering

H. Lee*, K. Moon, C. Byun, KITECH, Republic of Korea

9:50 AM

(PACRIM10-S10-022-2013) Effect of nitriding time for nitrided austenitic stainless steel at high temperature as 723K

H. Park*, K. Moon, KITECH, Republic of Korea; J. Park, Han Yang University, Republic of Korea

10:10 AM

Break

Advanced Hybrid Coatings and New Processing Methods

Room: Tudor

Session Chairs: Kyoung Il Moon, Korea Institute of Industrial Technology; Diptiranjan Sahu, University of the Witwatersrand

10:20 AM

(PACRIM10-S10-023-2013) Developing multi-component coatings for structural applications by a hybrid HIPIMS technique (Invited)

Q. Wang*, Guangdong University of Technology, China; K. Kim, Pusan National University, Republic of Korea

10:50 AM

(PACRIM10-S10-025-2013) Sol-Gel-Derived Ceramic Thin Films on Plastics: A Versatile Technique Utilizing Transfer Process

H. Kozuka*, F. Takafumi, M. Takahashi, H. Uchiyama, S. Tsuboi, Kansai University, Japan

Symposium 12: Advances in Electroceramics

Electrical or Magnetic Devices

Room: Crystal

Session Chair: Haosu Luo, shanghai institute of ceramics

8:30 AM

(PACRIM10-S12-046-2013) Growth of large-size TSLAG single crystal for high power laser optical isolators (Invited)

T. Kizaki*, A. Funaki, T. Hatanaka, K. Naoe, Fujikura Ltd, Japan; V. Garcia, K. Shimamura, National Institute for Materials Science, Japan

9:00 AM

(PACRIM10-S12-047-2013) Interface Control of Oxide fibers for Chemical Sensors

S. Kim*, Inha University, Republic of Korea

9:20 AM

(PACRIM10-S12-048-2013) Zirconia-electrolyte-based impedancemetric sensors using Sr-doped LaMnO₃ (LSM) electrodes for measuring NO_x in combustion exhaust streams

L. Y. Woo*, R. S. Glass, Lawrence Livermore Nat'l Lab, USA; R. F. Novak, J. H. Visser, Ford Motor Company, USA

9:40 AM

(PACRIM10-S12-049-2013) Effects of Simultaneous Addition of Antimony and Yttrium Oxides to Bi-based Zinc Oxide Varistors on the Electrical Characteristics

Y. Kojima*, T. Watanabe, Y. Sato, S. Yoshikado, Doshisha University, Japan

10:00 AM

(PACRIM10-S12-050-2013) Effects of Thermal Annealing for Barium or Strontium and Silicon-added Bismuth Based Zinc Oxide Varistors on the Electrical Properties and the Grain Boundary Structure

A. Kubota*, Y. Sato, S. Yoshikado, Doshisha University, Japan

10:20 AM

Break

Piezoelectric Materials (Lead-free II)

Room: Crown

Session Chair: Hiroaki Takeda, Tokyo Institute of Technology

10:40 AM**(PACRIM10-S12-051-2013) Historical Overview and Current Developments of Lead-free Piezoelectric Ceramics (Invited)**

H. Nagata*, T. Takenaka, Tokyo University of Science, Japan

11:10 AM**(PACRIM10-S12-052-2013) Bismuth Titanate Ceramics Modified by Rare Earth Elements**

Y. Kan*, S. Dong, P. Wang, Shanghai Institute of Ceramics, Chinese Academy of Sciences, China

Symposium 17: Photovoltaic Materials and Technologies**Thin Films for Solar Energy Applications**

Room: Coastal

Session Chair: B.G. Potter, University of Arizona

8:30 AM**(PACRIM10-S17-011-2013) Thermal Stability and Evolved Gas Analysis of Selected Semiconductor Materials by a Simultaneous Thermal Analysis Instrument with Mass Spectrometer Skimmer System (Invited)**

E. Post*, NETZSCH Geraetebau GmbH, Germany; L. MacPherson, NETZSCH Instruments N.A. LLC, USA

9:00 AM**(PACRIM10-S17-012-2013) VO₂ Thermochromic Smart Windows (Invited)**

Y. Gao*, H. Luo, Shanghai University, China; M. Kanehira, Shanghai Institute of Ceramics, CAS, China

9:30 AM**(PACRIM10-S17-013-2013) Electrical and optical properties of Al-doped ZnO thin films prepared by RF magnetron sputtering (Invited)**

J. Kim, M. Park, S. Yoo*, Seoul National University, Republic of Korea

10:00 AM

Break

Materials Design and Characterization for Photovoltaic Applications

Room: Coastal

Session Chair: Soo Lee, Sun Moon University

10:20 AM**(PACRIM10-S17-014-2013) Synthesis of homogenous tungsten bronze nanomaterials with excellent multi-functionality by a water controlled-release solvothermal process (Invited)**

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

10:40 AM**(PACRIM10-S17-015-2013) Interfacial character and electronic passivation in amorphous thin-film alumina for Si photovoltaics**

L. R. Hubbard, J. B. Kana-Kana, B. Potter*, University of Arizona, USA

11:00 AM**(PACRIM10-S17-016-2013) Rare-earth doped downshifting glass ceramics for photovoltaic applications**

H. Hah*, R. Leonard, S. Gray, C. Johnson, J. Johnson, UTSI, USA

11:20 AM**(PACRIM10-S17-017-2013) The Synthesis of TiO₂-based Nanotube Modified by Carbon Nanotube and its Electrical Properties**

S. Kim*, T. Sekino, S. Tsukuda, S. Tanaka, Tohoku University, Japan

11:40 AM**(PACRIM10-S17-018-2013) Modification of Titania Nanotubes and Their Photovoltaic Properties as Solar Cells**

T. Sekino*, S. Kim, D. Park, Tohoku University, Japan; S. Lee, Sunmoon University, Republic of Korea; S. Tanaka, Tohoku University, Japan

Symposium 23: Advances in Biomaterialized Ceramics, Bioceramics, and Bioinspired Designs**Natural Ceramics and Composites**

Room: Bayside/Strand

Session Chairs: Joanna McKittrick, University of California, San Diego; Eugene Olevsky, San Diego State University

8:30 AM**(PACRIM10-S23-017-2013) Structure and fracture resistance of armored fish scales (Invited)**

M. Meyers*, W. Yang, University of California, San Diego, USA; B. Gludovatz, E. Zimmermann, R. Ritchie, University of California, Berkeley, USA

9:00 AM**(PACRIM10-S23-018-2013) The Armored Carapace of the Boxfish: Structure and Mechanical Properties (Invited)**

W. Yang*, J. Kiang, M. Porter, M. Meyers, J. McKittrick, University of California, San Diego, USA

9:30 AM**(PACRIM10-S23-020-2013) Comparison of the prehensility of the tail of Alligator Pipefish and Bay Pipefish**

Z. Manilay*, V. Nguyen, A. Castro-Ceseña, M. M. Porter, E. Novitskaya, J. McKittrick, University of California, San Diego, USA

9:50 AM**(PACRIM10-S23-021-2013) Cuttlebone: A Multifunctional Buoyancy Control Device**

Y. Ku, National Tsing Hua University, Taiwan; W. Liu, National Tsing Hua University, Taiwan; Y. Chou, National Tsing Hua University, Taiwan; Y. Lee, C. Chiao, National Tsing Hua University, Taiwan; P. Chen*, National Tsing Hua University, Taiwan

10:10 AM

Break

10:30 AM**(PACRIM10-S23-022-2013) Reinforcing structures in avian wing bones**

E. Novitskaya*, J. Kiang, H. Walsh, M. A. Meyers, J. McKittrick, University of California, San Diego, USA

10:50 AM**(PACRIM10-S23-023-2013) Structure-Function Relationships in Damage Tolerant Structural Glasses: Analysis of the Architectural Complexities of Sponge Skeletal Systems (Invited)**

J. C. Weaver*, Harvard University, USA

11:20 AM**(PACRIM10-S23-025-2013) Shear Fracture of Human Cortical Bone**

T. Tang*, V. Ebacher, UBC, Canada; P. Guy, Center for Hip Health and Mobility, Canada; P. Crompton, UBC, Canada; H. McKay, Center for Hip Health and Mobility, Canada; R. Wang, UBC, Canada

11:40 AM**(PACRIM10-S23-024-2013) Role of structural components on the microcracking of human dentin**

F. Eltit, V. Ebacher, R. Wang*, UBC, Canada

Symposium A: Glass Science

Theoretical & Numerical Modeling

Room: Seabreeze

Session Chair: Jincheng Du, University of North Texas

8:30 AM

(PACRIM10-SA-053-2013) Molecular Dynamics Simulations of Silicate Glasses (Invited)

J. Habasaki*, Tokyo Institute of Technology, Japan

9:00 AM

(PACRIM10-SA-054-2013) Structure and properties of sodium aluminosilicate glasses from molecular dynamics simulations

Y. Xiang*, J. Du, University of North Texas, USA

9:20 AM

(PACRIM10-SA-055-2013) The role of pressure in determining the structural properties of disordered Ge-Se systems with changing composition

C. Massobrio*, A. Bouzid, IPCMS, France

9:40 AM

(PACRIM10-SA-056-2013) Thermochemistry of borosilicate glasses

P. Kroll*, A. Dasmahapatra, UT Arlington, USA

10:00 AM

Break

10:20 AM

(PACRIM10-SA-057-2013) Diversity and Multiplicity of Glass Structure: Approach from Computer Simulation (Invited)

A. Takada*, Asahi Glass Co. Ltd., Japan

10:50 AM

(PACRIM10-SA-058-2013) Molecular Dynamic Simulations of Vanado-Phosphate Glasses Containing Alkaline Ions (Invited)

M. Montorsi*, G. Broglia, C. Mugoni, University of Modena and Reggio Emilia, Italy; G. Ori, University Montpellier 2, France; C. Siligardi, University of Modena and Reggio Emilia, Italy

11:20 AM

(PACRIM10-SA-059-2013) Structural and Dynamical Insights into Ionic Liquids Confined in Porous Chalcogenides: a Molecular Simulation Study

G. Ori*, Institut Charles Gerhardt - ENSCM - Université Montpellier 2 - CNRS, France; M. Celino, ENEA, Italy; C. Massobrio, Institut de Physique et de Chimie des Matériaux de Strasbourg (UMR 7504-CNRS), France; B. Coasne, Massachusetts Institute of Technology, USA

11:40 AM

(PACRIM10-SA-060-2013) First-Principles Study Of Barriers For Hydrolysis Reactions In Borosilicate Glasses

P. Zapol*, H. He, X. Tan, Argonne National Laboratory, USA

Glass Structure & Properties - Characterization

Room: Pacifica/Tide

Session Chair: John McCloy, Pacific Northwest National Laboratory

8:40 AM

(PACRIM10-SA-061-2013) Advanced Instrumentation for in-situ Studies of Liquids and Glasses using X-ray and Neutron Beamlines

R. Weber, C. Benmore, MDI, USA; L. Skinner*, Stony Brook University, USA; J. Neuefeind, Oak Ridge National Laboratory, USA; S. Tumber, MDI, USA; L. Santodanato, Oak Ridge National Laboratory, USA; J. Parise, Stony Brook University, USA

9:00 AM

(PACRIM10-SB-P168-2013) In-situ characterization of borate glass dissolution by micro-Raman spectroscopy

J. George*, R. K. Brow, Missouri University of Science and Technology, USA

9:20 AM

(PACRIM10-SA-064-2013) Structure and Properties of Densified Glasses

L. Huang*, M. Guerette, F. Yuan, Rensselaer Polytechnic Institute, USA

9:40 AM

(PACRIM10-SA-065-2013) Impact of Ligand Field Strength on Spectral Property of Colorant Ions in both Aqueous Solution and Glass matrix

R. Qiu*, P. Ehrmann, K. Schaffers, T. Suratwala, P. Miller, B. Wood, V. Lordi, Lawrence Livermore National Laboratory, USA; L. Gushn, E. Buchheit, R. Brow, Missouri University of Science and Technology, USA

10:00 AM

Break

Symposium B: Glass Technology and Cross-Cutting Topics

Glass and Ceramics for Novel Applications II

Room: Sunset

Session Chairs: Mariano Velez, Mo-Sci Corp.; Francois Mear, Lille 1 University

8:30 AM

(PACRIM10-SB-020-2013) Self-healing process in glassy materials for high temperature applications (Invited)

S. Castanié, F. O. Mear*, D. Coillot, Lille 1 University, France; R. Podor, ICSM-CEA-CNRS-UM2-ENSCM, France; L. Montagne, Lille 1 University, France

9:00 AM

(PACRIM10-SB-022-2013) Improved Dielectric Breakdown Strength and Energy Storage Properties of Barium Titanate by Glass Additive

X. Su*, Rensselaer Polytechnic Institute, USA; B. Riggs, Tulane University, USA; M. Tomozawa, K. J. Nelson, Rensselaer Polytechnic Institute, USA; D. B. Chrisey, Tulane University, USA

9:20 AM

(PACRIM10-SB-023-2013) Crystallization mechanism of Lithium Aluminosilicate (LAS) glass ceramics: nucleation, viscosity and microstructure

Q. Fu*, J. Wang, B. Wheaton, K. Geisinger, Corning Incorporated, USA

9:40 AM

Break

Glass Strengthening (Chemical, Mechanical, and Thermal)

Room: Sunset

Session Chairs: Nicholas Smith, Corning Incorporated; S. Sundaram, Alfred University

10:20 AM

(PACRIM10-SB-024-2013) Damage Resistant Glass Compositions

M. Dejneka*, T. Gross, C. Chapman, Corning Incorporated, USA

10:40 AM

(PACRIM10-SB-025-2013) Fracture Strength and Strengthening of PMT Glasses for Neutrino Detection

K. Chambliss*, S. K. Sundaram, Alfred University, USA; M. Diwan, Brookhaven National Laboratory, USA

11:00 AM

(PACRIM10-SB-026-2013) High-Speed Camera Study of Stage III Crack Propagation in Strengthened Glass

Z. Tang*, J. Mauro, G. Hu, M. B. Abrams, N. Venkataraman, Corning Incorporated, USA

11:20 AM**(PACRIM10-SB-027-2013) Effect of salt bath composition on chemical tempering of sodium-containing silicate glass**

V. M. Sglavo*, University of Trento, Italy

11:40 AM**(PACRIM10-SB-028-2013) Anticlastic Curvature during Bending of Thin Glass Sheet**

S. Gulati*, K. Vepakomma, J. T. Westbrook, Corning Incorporated, USA

Symposium D: James C. Phillips Honorary Symposium

Intermediate Phase II

Room: Palm

Session Chairs: Punit Boolchand, University of Cincinnati; Matthieu Micoulaut, UPMC

8:30 AM**(PACRIM10-SD-039-2013) Two-Level Solutions to Exponentially Complex Problems in Glass Science (Invited)**

J. C. Mauro*, Corning Incorporated, USA; M. M. Smedskjaer, Aalborg University, Denmark

9:00 AM**(PACRIM10-SD-040-2013) Electrical conductivity and Boolchand phase in oxide glasses (Invited)**

M. Malki*, CNRS UPR 3079, France; M. Micoulaut, Université Pierre et Marie Curie, CNRS UMR 7600, France; D. I. Novita, University of Cincinnati, USA; S. Chakraborty, University of Cincinnati, USA; P. Boolchand, University of Cincinnati, USA

9:30 AM**(PACRIM10-SD-041-2013) Adaptive densified liquids and the definition of pressure-dependent topological constraints: evidence for a reversibility window analogue (Invited)**

M. Bauchy*, M. Micoulaut, UPMC, France

10:00 AM

Break

10:20 AM**(PACRIM10-SD-042-2013) Evidence of Intermediate Phase in homogeneous Heavy Metal Oxide glasses (Invited)**

S. Chakraborty*, P. Boolchand, University of Cincinnati, USA

10:40 AM**(PACRIM10-SD-043-2013) Evidence for Self-organization in Li- and Na-Borate Glasses (Invited)**

K. Vignarooban*, University of Cincinnati, USA; M. Malki, University of Orleans, France; M. Micoulaut, University of Paris 6, France; W. Bresser, Northern Kentucky University, USA; R. Kerner, University of Paris 6, France; R. Bhageria, Sycamore High School, USA; V. William, Mariemont High School, USA; P. Boolchand, University of Cincinnati, USA

11:00 AM**(PACRIM10-SD-044-2013) Slow homogenization and the Strong nature of Intermediate Phase melts in the As_xSe_{100-x} binary (Invited)**

S. Ravindren*, P. Boolchand, K. Gunasekera, Z. Tucker, A. Diebold, University of Cincinnati, USA

11:20 AM**(PACRIM10-SD-045-2013) Fragility, elastic phases, ^{119}Sn Mossbauer effect and Raman scattering in homogeneous $Si_xGe_xTe_{100-2x}$ glasses* (Invited)**

K. Gunasekera*, P. Boolchand, University of Cincinnati, USA; S. Mamedov, Horiba Jobin Yvon, USA