Lectures and Special Events

Sunday, May 15, 2011

Welcome Reception
5:00 – 7:00 PM
Room: Harborview (15th floor)

Monday, May 16, 2011

Stookey Lecture of Discovery
Sponsored by Corning Incorporated and Coe College
8:00 – 9:00 AM
Room: Cumberland

Student Program and Lunch
12 – 1 PM
Room: Harborview (15th Floor)

GOMD Business Meeting
5:45 – 6:30 PM
Room: Cumberland

Tuesday, May 17, 2011

George W. Morey Award Lecture
8:00 – 9:00 AM
Room: Cumberland

Norbert J. Kreidl Award Lecture
Box Lunches Sponsored by SCHOTT North America
12:00 – 1:00 PM
Room: Madison

Conference Dinner
7:00 – 10:00 PM
Room: Madison
SYMPOSIUM I: Glass Science
Lead Contact: John Mauro, Corning Incorporated

Session A: Atomistic Modeling of Glass Structures and Interfaces
Wednesday, May 18, 2011

1:00 PM-5:40 PM
Room: Sapelo
Session Chair(s): Jincheng Du

1:00 PM
Stephen Garofalini*, Rutgers University, USA

1:40 PM
(GOMD-SI-002-2011) Group IV Nanoclusters embedded in Silica Glass
Peter Kroll*, UT Arlington, USA; Jincheng Du, UNT Denton, USA; Kaori Seino, Friedhelm Bechstedt, U Jena, Germany

2:00 PM
(GOMD-SI-003-2011) Investigation of Ion-Exchange 'Stuffed' Silicate Glass Structures by Molecular Dynamics Simulation
Patrick K Kreski*, Alastair N Cormack, Arun K Varshneya, Alfred University, USA

2:20 PM
(GOMD-SI-004-2011) Structural Irregularities and Interfacial Features in Network Glasses
(Invited)
John Kieffer*, Yian Yue, Katherine Becker, University of Michigan, USA

3:00 PM
Break

3:20 PM
(GOMD-SI-005-2011) Atomistic Modelling of the Mechanical Properties of Silicate Glasses (Invited)
Alastair Cormack*, Laura Adkins, Alfred University, USA

4:00 PM
(GOMD-SI-006-2011) Deformation Mechanisms of Densified Silica Glass
Liping Huang*, Fenglin Yuan, Rensselaer Polytechnic Institute, USA

4:20 PM
(GOMD-SI-007-2011) A study of silica glass fiber structure using molecular dynamic simulations
Laura Adkins*, Alastair N Cormack, Alfred University, USA

4:40 PM
(GOMD-SI-008-2011) Cation field strength effect on aluminum coordination in rare earth aluminosilicate glasses: a molecular dynamics study
Jincheng Du*, Leopold Kokou, University of North Texas, USA

5:00 PM
(GOMD-SI-009-2011) First-principles molecular dynamics simulations of
chalcogenides liquids and glasses (Invited)
Carlo Massobrio*, IPCMS, France

Session B: Glass Structure and Properties I
Tuesday, May 17, 2011

9:20 AM-12:00 PM
Room: Cumberland
Session Chair(s): Randall Youngman

9:20 AM
(GOMD-SI-010-2011) Perfect glasses with novel mechanical properties (Invited)
Neville Greaves*, Lindsay L Greer, University of Cambridge, United Kingdom; Gopinathan Sankar, University College London, United Kingdom

10:00 AM
(GOMD-SI-011-2011) Structural characteristics of low- and high- density amorphous phases in yttrium aluminate glasses: results from multinuclear NMR spectroscopy
Nektarios Nasikas, ICEHT/FORTH, Greece; Sabyasachi Sen*, University of California at Davis, USA; George Papatheodorou, ICEHT/FORTH, Greece

10:20 AM
(GOMD-SI-012-2011) Composition dependence of the viscosity and other physical properties in the arsenic selenide glass system
J. David Musgraves*, Peter Wachtel, Spencer Novak, Jacklyn Wilkinson, Kathleen Richardson, Clemson University, USA

10:40 AM
Bradley R. Johnson*, John S McCloy, Brian J Riley, Jarrod V Crum, Joe V Ryan, S. K Sundaram, Pacific Northwest National Laboratory, USA; Damon N Hebert, Angus A Rocket, University of Illinois, Urbana-Champaign, USA

11:00 AM
(GOMD-SI-014-2011) Raman and X-ray Absorption Studies of the Structure of Alkali Tungstate Glasses.
Carl W Ponader*, Kaveh Adib, Bruce Aitken, Corning Incorporated, USA

11:20 AM
(GOMD-SI-015-2011) The Structure and Properties of Polyphosphate glasses from the ZnO-MgO-P2O5 and ZnO-Al2O3-P2O5 Systems
Charmayne Smith*, Richard Brow, Missouri University of Science and Technology, USA

Session B: Glass Structure and Properties II
Tuesday, May 17, 2011

1:20 PM-5:20 PM
Room: Cumberland
Session Chair(s): Randall Youngman

1:20 PM
(GOMD-SI-017-2011) Yb3+ doped SiO2-Al2O3-
P2O5 fiber performs: the role of Al and P on clusters dissolution
Thierry Deschamps*, Nagège Ollier, Thibault Charpentier, CEA, France; Hervé Vezin, CNRS, France; Cédric Gonnet, Draka, France

1:40 PM
Jingshi Wu*, Namjun Kim, Jonathan F Stebbins, Stanford University, USA

2:00 PM
Xinwei Wu*, Cornell University, USA; Qiuju Zheng, John Mauro, Marcel Potuzak, Adam J Ellison, Corning Incorporated, USA; Rüdiger Dieckmann, Cornell University, USA

2:20 PM
(GOMD-SI-020-2011) Sodium Environments in Binary and Ternary Oxide Glasses
Randall Youngman*, Carrie Hogue, James Dickinson, Adam Ellison, Bruce Aitken, Corning Incorporated, USA

2:40 PM
Qing Zhao, Liping Huang*, Rensselaer Polytechnic Institute, USA

3:00 PM
Break

3:20 PM
(GOMD-SI-022-2011) Structure and bonding in oxide liquids and glasses using in-situ x-ray and neutron diffraction
Richard Weber*, MDI, USA; Chris J Benmore, Argonne National Laboratory, USA; Joerg Neuefeind, Louis Santodonato, Oak Ridge National Laboratory, USA; Lawrie Skinner, Stony Brook University, USA; Martin Wilding, Aberystwyth University, United Kingdom; Sonia Tumber, MDI, USA; Lena Lazareva, John B Parise, Stony Brook University, USA

3:40 PM
(GOMD-SI-023-2011) First experiments at Nanoscale Ordered Materials Diffractometer (NOMAD) at the Spallation Neutron Source (SNS)
Joerg Neuefeind*, ORNL, USA

4:00 PM
(GOMD-SI-024-2011) X-ray absorption spectroscopy analysis of formation and structure of Au nanoparticles in sodium trisilicate glass
Chatree Saiyasombat*, Matthew Wojciechowski, Himanshu Jain, Lehigh University, USA

4:20 PM
(GOMD-SI-025-2011) Hydrogen formation observed during high pressure treatment of silica glass
Chia-Ying Li*, Jonathan Price, Minoru Tomozawa, E. Bruce Watson, Rensselaer Polytechnic Institute, USA

4:40 PM
(GOMD-SI-026-2011) Generalized thermodynamic approach for determining the fictive temperature of glasses with arbitrary thermal history
Xiaoju Guo*, Marcel Potuzak, John Mauro, Douglas Allan, Timothy Kiczenski, Corning Inc., USA; Yuanzheng Yue, Aalborg University, Denmark; Ronald Stewart, Corning Inc., USA
Session C: Glass Corrosion I
Tuesday, May 17, 2011

9:20 AM-12:00 PM
Room: Sapelo
Session Chair(s): Stephane Gin

9:20 AM
(GOMD-SI-028-2011) Development of first-principles-based models for glass dissolution
Peter Zapol*, Haiying He, James Cunnane, Argonne National Laboratory, USA

9:40 AM
(GOMD-SI-029-2011) Filling the Gaps from Atomistic to Continuum Modeling to Better Predict Nuclear Waste Glass Dissolution
Louise J Criscenti*, Sandia National Laboratories, USA

10:00 AM
(GOMD-SI-030-2011) Modeling of Glass Dissolution with Transition-State Theory
Denis Strachan*, Pacific Northwest National Laboratory, USA

10:20 AM
(GOMD-SI-031-2011) Why glasses with high dissolution rates may undergo low corrosion? (Invited)
Céline Cailleteau*, CEA/DEN, France; Francois Devreux, Ecole Polytechnique-CNRS, France; Olivier Spalla, CEA/DSM, France; Frédéric Angéli, Stéphane Gin, CEA/DEN, France

10:40 AM
(GOMD-SI-032-2011) Evidence for a New Glass Corrosion Mechanism from Isotope Tracer Experiments (Invited)
Thorsten Geisler*, University of Muenster, Germany; Arne Janssen, Institute for Transuranium Elements, Germany; Rene Denkler, University of Muenster, Germany; Matt Kilburn, University of Western Australia, Australia; Andrew Putnis, University of Muenster, Germany

Session C: Glass Corrosion II
Tuesday, May 17, 2011

1:00 PM-5:20 PM
Room: Sapelo
Session Chair(s): Stephane Gin

1:00 PM
(GOMD-SI-035-2011) Characteristics of
alteration layers formed on simulated HLW glass under silica-saturated solutions
Toshikatsu Maeda*, Japan Atomic Energy Agency, Japan; Katsutoshi Hotta, Radiation Application Development Association, Japan

1:20 PM
(GOMD-SI-036-2011) Glass Corrosion in Solution Exchange Tests
William Ebert*, Argonne National Laboratory, USA

1:40 PM
(GOMD-SI-037-2011) Water dynamics in nuclear waste glass during corrosion: A quasi-elastic neutron scattering study
Kyle James Alvine*, Joseph V Ryan, Pacific Northwest National Lab, USA; Madhu Tyagi, NIST, USA

2:00 PM
(GOMD-SI-038-2011) Isotopic tracing to highlight glass dissolution mechanisms
Aurélie Verney-Carron*, LISA, France; Stéphane Gin, CEA, France; Guy Libourel, CRPG, France; Patrick Jollivet, CEA, France

2:20 PM
(GOMD-SI-039-2011) Comparison of Glass Leaching Behavior Using a Variety of Test Methods (Invited)
Isabelle S Muller*, Adonia Papathanassi, Aaron Barkatt, Ian L Pegg, The Catholic University of America, USA

3:00 PM
Break

3:20 PM
(GOMD-SI-040-2011) Reprise of Alteration of the Simulated HLW Glass at High Temperature in Beishan Underground Water (Invited)
Zhentao Zhang*, China Institute of Atomic Energy, China

3:40 PM
(GOMD-SI-041-2011) The dissolution behavior of simple borate glasses in aqueous environments
Kathryn Goetschius*, Richard K Brow, Missouri S&T, USA

4:00 PM
(GOMD-SI-042-2011) A long-term glass leaching experiment in a granitic environment: importance of reactive-transport processes
Stephane Gin*, Claire Guittonneau, Jean-Pierre Mestre, Nicole Godon, CEA Marcoule, France

4:20 PM
(GOMD-SI-043-2011) Glass corrosion in cement waters
Sara Depierre*, Frédéric Angeli, Fabien Frizon, Stéphane Gin, CEA Marcoule, France

4:40 PM
(GOMD-SI-044-2011) Nuclear waste glass alteration at high pH
Karine Ferrand, Karel Lemmens*, Marc Aertsens, Belgian Nuclear Research Centre, Belgium

5:00 PM
Xiaoming Cheng*, Richard K Brow, Genda Chen, Missouri University of Science and Technology, USA

Session D: Ancient Glasses
Wednesday, May 18, 2011

10:20 AM-12:00 PM
Room: Sapelo
Session Chair(s): Denis Strachan
10:20 AM
(GOMD-SI-046-2011) Pattern Formation during the Alteration of Ancient Glasses: Insights from Static Corrosion Experiments (Invited)
Thorsten Geisler*, Rene Denkler, University of Muenster, Germany; Arne Janssen, Institute for Transuranium Elements, Germany; Matt Kilburn, University of Western Australia, Australia; Andrew Putnis, University of Muenster, Germany

11:00 AM
(GOMD-SI-047-2011) Chemico-mineralogical studies on impact glass from Lonar Crater: its suitability as natural analogue for nuclear waste glass (Invited)
Nishi RANI*, Jaya Prakash Shrivastava, University of Delhi, India; Rakesh K BAJPAI, BARC, India

11:20 AM
(GOMD-SI-048-2011) Long term alteration of archaeological slags: An analogue for nuclear waste glasses
Anne Michelin*, CEA Marcoule, France; Delphine Neff, CEA Saclay, France; Stephane Gin, CEA Marcoule, France; Philippe Dillmann, CEA Saclay, France

Session E: Non-Silicate Glasses I
Monday, May 16, 2011

9:20 AM-12:00 PM
Room: Sapelo
Session Chair(s): Juejun Hu

9:20 AM
(GOMD-SI-049-2011) EXAFS analysis of local structure of Ge in amorphous and crystallized Ge(x)Te(1-x) thin films
Yong Gyu Choi*, Lehigh University, United States; Byung-ki Cheong, Korea Institute of Science and Technology, Korea, Republic of; Andriy Kovalskyy, Himanshu Jain, Lehigh University, United States

9:40 AM
(GOMD-SI-050-2011) Structural models of Ag incorporation into As2S3 thin films
Andriy Kovalskyy, Lehigh University, United States; Victor Lyubin, Mikhail Klebanov, Ben-Gurion University of the Negev, Israel; Miroslav Vlcek*, FCHT University of Pardubice, Czech Republic; Himanshu Jain, Lehigh University, United States

10:00 AM
(GOMD-SI-051-2011) Analysis of Constraint Theory in Germanium Arsenic Sulfide Glasses
Peter F Wachtel*, J. David Musgraves, Clemson University, United States; Nathan Carlie, Schott North America, United States; Jacklyn Wilkinson, Chris Ostrouchov, Kathleen Richardson, Clemson University, United States

10:20 AM
(GOMD-SI-052-2011) Structure of S-rich Ge-S glasses by X-ray photoelectron spectroscopy
Roman Golovchak, Andriy Kovalskyy*, Himanshu Jain, Lehigh University, United States

10:40 AM
(GOMD-SI-053-2011) Tellurium glasses for far infrared applications
Catherine Boussard-Plédel*, Bruno Bureau, Clément Conseil, Xiang-Hua Zhang, Jacques Lucas, Glasses and Ceramics group - UMR CNRS 6226, France

11:00 AM
(GOMD-SI-054-2011) Structural environments
Session E: Non-Silicate Glasses II
Monday, May 16, 2011

1:00 PM-3:20 PM
Room: Sapelo
Session Chair(s): Andriy Kovalskyy

1:00 PM
(GOMD-SI-056-2011) Infrared Quantum Dot Chalcogenide Films for Integrated Light Sources
Neil Patel*, Scott Geyer, Jennifer Scherer, Moungi Bawendi, Massachusetts Institute of Technology, United States; Nathan Carlie, J. D Musgraves, Kathleen Richardson, Clemson University, United States; Juejun Hu, Pao-tai Lin, Piotr Becla, Massachusetts Institute of Technology, United States; Clara Dimas, Masdar Institute of Science, United Arab Emirates; Lionel C Kimerling, Anu Agarwal, Massachusetts Institute of Technology, United States

1:20 PM
Daniel W Hewak*, Kevin Huang, Kenton J Knight, University of Southampton, United Kingdom

2:00 PM
(GOMD-SI-058-2011) Conductive chalcogenide glasses for sensing applications
Pierre Lucas*, Zhiyong Yang, Kelly Reynolds, Bruno Bureau, University of Arizona, United States; Marie Laure Anne, University of Rennes, France

2:20 PM
(GOMD-SI-059-2011) Solid Glass Electrolyte Enabled In-situ X-ray Absorption Spectroscopy of Electroactive Elements in Working Li-ion Batteries (Invited)
Faisal Alamgir*, Georgia Institute of Technology, United States

Session F: Glass-Ceramics
Monday, May 16, 2011

3:20 PM-5:20 PM
Room: Cumberland
Session Chair(s): Amanda Brennecka

3:20 PM
(GOMD-SI-060-2011) Crystallization behavior of chromium doped CaO-ZrO2-SiO2 glass-ceramics system
Mirhadi Bahman, Imam Khomeini International University, Iran, Islamic Republic of; Behzad Mehdikhani*, Institute of Standards & Industrial Research of Iran, Iran, Islamic Republic of
3:40 PM
(GOMD-SI-061-2011) Crystallisation of powellite phase in aluminoborosilicate glasses
Tatiana Taurines*, Bruno Boizot, UMR 7642 CEA-CNRS-Ecole Polytechnique, France

4:00 PM
Vladimir M Fokin, Aluisio A Cabral, Raphael M Reis, Edgar Dutra Zanotto*, Fed. University Sao Carlos, Brazil

4:20 PM
(GOMD-SI-063-2011) Fluorescence Properties of Rare-Earth Co-Doped Fluorochlorozirconate Glasses
Manh Vu*, University of Tennessee Space Institute, United States; Christian Passlick, Martin Luther University of Halle-Wittenberg, Germany; Jacqueline A Johnson, Charles E Johnson, University of Tennessee Space Institute, United States; Stefan Schweizer, Fraunhofer Center for Silicon Photovoltaics, Germany

4:40 PM
(GOMD-SI-064-2011) TeO2-Bi2O3-ZnO glass ceramic with high transparency in NIR region
Xiao Hu*, Dave Musgraves, Don Vanderveer, Joshua Boerstler, Nathan Carlie, Pete Wachte, Clemson University, United States; Simon Raffy, University of Bordeaux, France; Roger Stolen, Kathleen Richardson, Clemson University, United States

5:00 PM
(GOMD-SI-065-2011) Glass Ceramic Waste Form Development for Combined Fission Products Waste Streams from Used Nuclear Fuel
Jarrod Crum*, Pacific Northwest National Lab, United States; Anna Kossoy, Los Alamos National Lab, United States; Brian Riley, Pacific Northwest National Lab, United States; Ming Tang, Los Alamos National Lab, United States; Laura Turo, Pacific Northwest National Lab, United States

Session G: Surface and Interfacial Phenomena
Wednesday, May 18, 2011

8:00 AM-10:20 AM
Room: Sapelo
Session Chair(s): Carlo Pantano

8:00 AM
(GOMD-SI-066-2011) Understanding and controlling environmental effects on friction and wear behaviors of silica and glass surfaces (Invited)
Seong H Kim*, Carlo G Pantano, Laura C Bradley, Zachary R Dilworth, Pennsylvania State University, USA

8:40 AM
(GOMD-SI-067-2011) Adsorption Reactions on Multicomponent Silicate Glass Fiber Surfaces
Joshua Stapleton*, Carlo Pantano, Karl Mueller, The Pennsylvania State University, USA

9:00 AM
(GOMD-SI-068-2011) Effect of glass composition on chemisorption mechanisms of probe molecules on sodium aluminosilicate glasses
Kaveh Adib*, James E Dickinson, Corning Incorporated, USA

9:20 AM
(GOMD-SI-069-2011) The Effect of the Water-Silica Interface on Enhanced Hydronium Ion Formation and Transport
Stephen Garofalini*, Glenn Lockwood, Rutgers University, USA

9:40 AM
(GOMD-S1-070-2011) The influence of coupling agents at a glass/polymer interface
Joy Banerjee*, Josh Stapleton, Carlo Pantano, Pennsylvania State University, USA

10:00 AM
Break
SYMPOSIUM II: The Amorphous State
Lead Contact: Joe Ryan, PNNL

Session A: Glass Transition and Relaxation in Glasses and Glassforming Liquids I
Monday, May 16, 2011

9:20 AM-12:00 PM
Room: Ossabaw
Session Chair(s): Prabhat Gupta

9:20 AM
(GOMD-SII-001-2011) The Emergence of Solid Behaviour in Amorphous Materials (Invited)
Stephen Williams*, Denis Evans, Australian National University, Australia

10:00 AM
(GOMD-SII-002-2011) The energy landscape of glass formers and beyond (Invited)
Andreas Heuer*, Christian Rehwald, Oliver Rubner, Carsten Schroer, Institute of Physical Chemistry, Germany

10:40 AM
(GOMD-SII-003-2011) The Interplay between Structure and Dynamics in Glass-forming Alloys (Invited)
Asaph Widmer-Cooper*, University of Sydney, Australia

11:20 AM
(GOMD-SII-004-2011) Spatial Correlation of the Dynamic Propensity in a Glass-Forming Binary Alloy (Invited)
M. Shajahan G Razul, Gurpreet S Matharoo, Peter H Poole*, St. Francis Xavier University, Canada

Session A: Glass Transition and Relaxation in Glasses and Glassforming Liquids II
Monday, May 16, 2011

1:00 PM-5:40 PM
Room: Ossabaw
Session Chair(s): Sabyasachi Sen, Ulrich Fotheringham

1:00 PM
(GOMD-SII-005-2011) Particle dynamics in dense colloidal suspensions with short-ranged attractive potential
Piotr Habdas*, Andrzej Latka, Saint Joseph's University, USA; Peter Yunker, Matthew Lohr, Arjun G Yodh, University of Pennsylvania, USA

1:20 PM
Ulrich G Fotheringham*, Frank-Thomas Lentes, SCHOTT AG, Germany; Donald B Dingwell, LMU-University of Munic, Germany
Session A: Glass Transition and Relaxation in Glasses and Glassforming Liquids III
Tuesday, May 17, 2011

9:20 AM-12:00 PM
Room: Ossabaw
Session Chair(s): Prabhat Gupta

9:20 AM
(GOMD-SII-015-2011) What have we learned from experiments about relaxation in silica glass? (Invited)
Minoru Tomozawa*, Rensselaer Polytechnic Institute, USA

10:00 AM
(GOMD-SII-016-2011) What have we learned about relaxation in glass forming liquids from light scattering experiments? (Invited)
David Sidebottom*, Creighton University, USA

10:40 AM
(GOMD-SII-017-2011) Silicate glasses under pressure (Invited)
Bernard Champagnon*, Thierry Deschamps, Christine Martinet, Camille Sonneville, Dominique de Ligny, Université Lyon1, France

1:40 PM
(GOMD-SII-007-2011) A discussion of isostructural viscosity based on trap-dynamics
Prabhat Gupta*, Andreas Heuer, The Ohio State University, USA

2:00 PM
(GOMD-SII-008-2011) Universal characteristics of the liquid-liquid critical point (Invited)
Neville Greaves*, University of Cambridge, United Kingdom

2:40 PM
(GOMD-SII-009-2011) Structural Relaxation Mechanism Associated with Glass Transition in Ge-Se Liquids
Trenton Edwards*, Sabyasachi Sen, University of California at Davis, USA

3:00 PM
Break

3:20 PM
(GOMD-SII-010-2011) Ideal glassformers and glass transition paradigms (Invited)
C. Austen Angell*, Vitaliy Kapko, Dmitriy Matyushov, Arizona State University, USA

4:00 PM
(GOMD-SII-011-2011) Revisit of entropy issues in non-equilibrium states
Akira Takada*, Asahi Glass Company, Japan

4:20 PM
(GOMD-SII-012-2011) On the Dependence of the Properties of Glasses on Cooling and Heating Rates (Invited)
Juern Schmelzer*, Germany

5:00 PM
Xiaojun Mei, Walid Mohamed, Jacob Eapen*, NC State University, USA

5:20 PM
(GOMD-SII-014-2011) Experimental and Computer Investigation of Thermal Relaxation in AsxSe1-x Glasses
Ellyn Anne King*, Robert G Erdmann, Pierre Lucas, University of Arizona, USA
11:20 AM
(GOMD-SII-018-2011) Characterization of Shear Stress Relaxation of Glass Using a Parallel Plate Viscometer
Vincent Yves-Marie Blouin*, Guy-Marie Vallet, Hemanth Kadali, Jonathan Musgraves, Kathleen Richardson, Paul Joseph, Clemson University, USA

11:40 AM
(GOMD-SII-019-2011) Kinetic and Thermodynamic Effects of Nanoconfinement on Glass Transition in Glycerol
Sabyasachi Sen*, University of California at Davis, USA

Session B:
Model/Experiment: Links and Limits
Tuesday, May 17, 2011

1:00 PM-5:40 PM
Room: Ossabaw
Session Chair(s): David Drabold

1:00 PM
Josef Zwanziger*, Dalhousie University, Canada

1:40 PM
(GOMD-SII-021-2011) XAFS Study of Electrodeposited Ge-Sb-Te Phase-change Memory Materials
Binay Prasai, David A Drabold, Gang Chen*, Ohio University, USA

2:00 PM
(GOMD-SII-022-2011) Resolving the vibrational and configurational contributions to thermal expansion in isobaric glass-forming systems
Marcel Potuzak*, John C Mauro, Timothy J Kiczenski, Adam J Ellison, Douglas C Allan, Corning Incorporated, USA

2:20 PM
(GOMD-SII-023-2011) Thermal conductivity of amorphous ceramics from first principle calculations
Babak Kouchmeshky, Peter Kroll*, UT Arlington, USA

3:00 PM
Break

3:20 PM
Mingliang Zhang*, David A Drabold, Ohio University, USA

4:00 PM
(GOMD-SII-026-2011) Bond Percolation in C- and N-Doped Silica Glass
Peter Kroll*, UT Arlington, USA

4:20 PM
(GOMD-SII-027-2011) Ab-initio simulation of solid electrolyte glasses
Binay K Prasai*, David A Drabold, Gang Chen, Ohio University, USA

4:40 PM
(GOMD-SII-028-2011) Heat capacity at the glass transition
Kostya Trachenko*, Queen Mary University of
London, United Kingdom

5:00 PM
(GOMD-SII-029-2011) Statistical mechanics of glass-forming systems
Roger J. Loucks*, Alfred University, USA; John C Mauro, Corning Incorporated, USA; Sabyasachi Sen, University of California-Davis, USA

5:20 PM
(GOMD-SII-030-2011) Universality of the High Temperature Viscosity Limit of Glass-Forming Liquids
Qiuju Zheng*, Aalborg University, Denmark; John C Mauro, Adam J Ellison, Marcel Potuzak, Corning Incorporated, USA; Yuanzheng Yue, Aalborg University, Denmark

Session C: Topology and Rigidity
Wednesday, May 18, 2011

8:00 AM-12:00 PM
Room: Ossabaw
Session Chair(s): Pierre Lucas, John Mauro

8:00 AM
(GOMD-SII-031-2011) Understanding Glass Hardness from Constraint Theory (Invited)
Morten Mattrup Smedskjaer*, Aalborg University, Denmark; John C Mauro, Corning Incorporated, USA; Yuanzheng Yue, Aalborg University, Denmark

8:40 AM
(GOMD-SII-032-2011) Topological constraints in glass from Molecular Dynamics Simulations
Matthieu Micoulaut*, Mathieu Bauchy, UPMC, France

9:00 AM
(GOMD-SII-033-2011) Distribution of temperature dependent topological constraints
Bauchy Mathieu*, Matthieu Micoulaut, UPMC, France

9:20 AM
(GOMD-SII-034-2011) 2D NMR in germanium-selenium chalcogenide glasses (Invited)
Michael Deschamps*, Université d'Orléans, France; Claire Rolaind, Frederic Charpentier, Guang Yang, Bruno Bureau, Université de Rennes, France

10:00 AM
Break

10:20 AM
(GOMD-SII-036-2011) Correlation between topology and physical properties in As-Se glasses
Pierre Lucas*, University of Arizona, USA; Guang Yang, Bruno Bureau, Tanguy Rouxel, University of Rennes, France; Ozgur Gulbiten, University of Arizona, USA; Jean-Christophe Sangleboeuf, University of Rennes, France

10:40 AM
(GOMD-SII-037-2011) Effects of Rigidity Percolation on Structural Relaxation in Supercooled Germanium Selenide Liquids
Sabyasachi Sen*, Erica Gjersing, University of California at Davis, USA

11:00 AM
Qiuju Zheng*, Aalborg University, Denmark; Randall E Youngman, Carrie L Hogue, John C Mauro, Marcel Potuzak, Adam J Ellison, Corning Incorporated, USA; Morten M Smedskjaer, Yuanzheng Yue, Aalborg University, Denmark
11:20 AM
Richard P. Wool*, University of Delaware, USA

Session D: Medium Range Order
Wednesday, May 18, 2011

1:00 PM-3:20 PM
Room: Ossabaw
Session Chair(s): Paul Voyles

1:00 PM
John Robert Abelson*, U. Illinois at Urbana-Champaign, USA

1:40 PM
(GOMD-SII-041-2011) Nucleation Mechanisms and Ring Size Distributions in Alkali and Alkaline Earth Disilicate Glasses
Mark O Naylor*, Alastair N Cormack, Alfred University, USA

2:00 PM
(GOMD-SII-042-2011) Boson Peak of Lithium and Cesium Borate Glass Studied by Low Temperature Heat Capacity and Raman Scattering
Seiji Kojima*, Yu Matsuda, Masao Kodama, University of Tsukuba, Japan; Nikolay Surovtsev, Russian Academy of Sciences, Russian Federation; Hitoshi Kawaji, Tooru Atake, Tokyo Institute of Technology, Japan

2:20 PM
(GOMD-SII-043-2011) Experimental and Computational Studies of Short- and Medium-Range Order on the Surfaces of Oxides

2:40 PM
(GOMD-SII-044-2011) Modeling of Glass Durability through Advances in the Understanding of Medium Range Order (MRO)
Carol Jantzen*, John M Pareizs, Savannah River National Laboratory, USA

3:00 PM
Break

3:20 PM-5:40 PM
Room: Ossabaw
Session Chair(s): Paul Voyles

3:20 PM
Michael M. J. Treacy*, Arizona State University, USA

3:40 PM
Joseph Ryan*, Pacific Northwest National Laboratory, USA; Peter Kroll, University of Texas at Arlington, USA; Carlo G Pantano, The Pennsylvania State University, USA; Kyle Alvine, Pacific Northwest National Laboratory, USA

4:20 PM
(GOMD-SII-047-2011) On the stability of...
carbon nanostructures in silicon oxycarbide materials: Part II
Peter Kroll*, University of Texas at Arlington, USA; Joseph Ryan, Pacific Northwest National Laboratory, USA

4:40 PM
(GOMD-SII-048-2011) Reverse Monte Carlo Modeling of Fluctuation Electron Microscopy Data
Jinwoo Hwang, University of Wisconsin, Madison, USA; Y. E Kalay, METU, Turkey; M. J Kramer, Ames Laboratory, USA; Paul Voyles*, University of Wisconsin, Madison, USA

5:00 PM
(GOMD-SII-049-2011) Abnormal dynamics of metallic glass-forming liquids (Invited)
Yuanzheng Yue*, Aalborg University, Denmark; Chunzhi Zhang, Lina Hu, Shandong University, China; John C Mauro, Corning Incorporated, USA

Session F: Spin Glasses
Thursday, May 19, 2011

8:00 AM-12:00 PM
Room: Cumberland
Session Chair(s): John McCloy, Kostya Trachenko

8:00 AM
(GOMD-SII-053-2011) Understanding spin glass transition as a dynamic phenomenon (Invited)
Kostya Trachenko*, Queen Mary University of London, United Kingdom

8:40 AM
(GOMD-SII-054-2011) Ferroelectric Relaxors: Building Bridges between Theory and Applications (Invited)
Eugene Furman*, Qiming Zhang, Clive Randall, Michael Lanagan, Carlo Pantano, Penn State University, USA

9:20 AM
(GOMD-SII-055-2011) Ion Irradiation Induced Property Changes in Granular Magnetite Films (Invited)
Weilin Jiang*, John S McCloy, Alan S Lea, Pacific Northwest National Laboratory, USA; Jannifer A Sundararajan, Qi Yao, You Qiang, University of Idaho, USA

10:00 AM
Break

10:20 AM
(GOMD-SII-056-2011) First Order Reversal Curve Study of Artificially Structured Nanomagnets (Invited)
Kai Liu*, University of California, USA

11:00 AM
(GOMD-SII-057-2011) Cluster spin glass behavior in the Li-spinels (Invited)
Tom W Heitmann*, University of Missouri, USA

11:40 AM
(GOMD-SII-058-2011) Glassy magnetic behavior in disordered Ni,Co:CuMn2O4 spinels (Invited)
John S. McCloy*, Pacific Northwest National Laboratory, USA; Clifford Leslie, University of Washington, USA; Weilin Jiang, Pacific Northwest National Laboratory, USA

Session G: Water and Glass
Monday, May 16, 2011

3:20 PM-5:40 PM
Room: Sapelo
Session Chair(s): Minoru Tomozawa

3:20 PM
(GOMD-SII-059-2011) Diffusion and redox reactions of water-related species in silicate melts (Invited)
Harald Behrens*, Leipniz University of Hannover, Germany

4:00 PM
(GOMD-SII-060-2011) Effect of Water Penetration on the Strength and Toughness of Silica Glass. (Invited)
Sheldon Wiederhorn*, NIST, USA; Theo Fett, Karlsruhe Institute of Technology, Germany; Jean-Pierre Guin, University of Rennes, I, France

4:40 PM
(GOMD-SII-061-2011) Effect of Water on Internal Friction for a SiO2-Al2O3-Na2O-MgO Glass
Tomoyuki Tsujimura*, Manabu Nishizawa, Akio Koike, Yuichi Kuroki, Asahi Glass Co., Ltd., Japan

5:00 PM
(GOMD-SII-062-2011) Nanostructure of water-containing glass by MD simulation
Setsuro Ito*, Tokyo Institute of Technology, Japan; Taketoshi Taniguchi, Asahi Glass Co., Ltd., Japan

5:20 PM
(GOMD-SII-063-2011) Water diffusion in silica glass and wet oxidation of Si: A new interpretation for the high speed of wet oxidation
Minoru Tomozawa*, Rensselaer Polytechnic Institute, USA
SYMPOSIUM III: Optical Materials and Devices
Lead Contact: Adam Stevenson, ENSCP

Session A: Optical Absorption
Tuesday, May 17, 2011

1:00 PM-4:40 PM
Room: Pulaski
Session Chair(s): Mark Davis

1:00 PM
(GOMD-SIII-001-2011) Suppression of stimulated Brillouin scattering through multi-tone phase modulation
John Mauro*, Srikanth Raghavan, A. Boh Ruffin, Corning Incorporated, USA

1:20 PM
(GOMD-SIII-002-2011) Absorption loss management in telluride glass fibers
Pierre Lucas*, Zhiyong Yang, University of Arizona, USA; Shibin Jiang, Tao Luo, Advalue Photonics, USA

1:40 PM
(GOMD-SIII-003-2011) Glass-Clad Semiconductor Core Optical Fibers
Stephanie Morris*, John Ballato, Thomas Hawkins, Paul Foy, Colin McMillen, Roger Stolen, Clemson University, USA; Robert Rice, Northrop Grumman Space Technology, USA

2:00 PM
(GOMD-SIII-004-2011) Polarized absorption characterization of spheroid-shaped nanoparticles embedded in a mesostructured silica film
Dominique Vouagner, Université Lyon1, France; Laurence Bois, UCB LYON I, France; Eric Nardou, Sergey Sirotkin, Bernard Champignon*, Université Lyon1, France; Fernand Chassagneux, UCB LYON I, France

2:20 PM
(GOMD-SIII-005-2011) Studying Loss Mechanisms in Chalcogenide Glass Planar Structures
Vivek Singh*, Massachusetts Institute of Technology, USA; Juejun Hu, University of Delaware, USA; J. David Musgraves, Nathan Carlie, Clemson University, USA; Anuradha Agarwal, Massachusetts Institute of Technology, USA; Kathleen Richardson, Clemson University, USA; Lionel C Kimerling, Massachusetts Institute of Technology, USA

2:40 PM
Break

3:00 PM
(GOMD-SIII-006-2011) Temperature dependent absorption and Urbach tail scaling in LuAG single crystals
Martin Letz*, Schott AG, Germany; A. Gottwald, M. Richter, Physikalisch-Technische Bundesanstalt (PTB), Germany; V. Liberman, Massachusetts Institute of Technology, USA; L. Parthier, Schott Lithotec AG, Germany
3:20 PM
(GOMD-SIII-007-2011) Absorption in photo-thermo-refractive glass: metrology, contributions and mitigation
Julien Lumeau*, Karima Chamma, Larissa Glebova, Leonid Glebov, University of Central Florida, USA

3:40 PM
(GOMD-SIII-008-2011) Optical Properties of Vanadyl doped [VO2+(VS)and VO2+(VS)] Lead Phosphate Glass System
Churya Dayanand*, Tirumala Engineering College, India

4:00 PM
Behzad Mehdikhani*, Institute of Standard and Industrial Research of Iran (ISIRI), Islamic Republic of Iran; Bahman Mirhadi, Imam Khomeini International University, Islamic Republic of Iran

4:20 PM
(GOMD-SIII-060-2011) PbS Quantum Dots Formation in Glasses Controlled by Ag Nanoclusters
Kai Xu, Jong Heo*, Pohang University of Science and Technology, Republic of Korea

chalcogenide films using their photosensitivity (Invited)
Virginie Nazabal*, Chemistry Sciences Center of Rennes, UMR 6226, University of Rennes, France; Petr Nemec, Faculty of Chemical Technology, University of Pardubice, Czech Republic; Michel Cathelinaud, UPS CNRS 2274, France; Georges Boudebs, Université d’Angers, France; Mathieu Chauvet, UMR CNRS 6174, Département d’optique, France; Frédéric Charpentier, Chemistry Sciences Center of Rennes, UMR 6226, University of Rennes, France; Michel Lequime, UMR6133, CNRS-ECM-UPCAM-UP, France; Xiang-Hua Zhang, Chemistry Sciences Center of Rennes, UMR 6226, University of Rennes, France

4:00 PM
(GOMD-SIII-011-2011) Atomistic nature and dynamics of optically and thermally induced changes in chalcogenide glass thin films
Donghui Zhao*, Himanshu Jain, Lehigh University, USA

4:20 PM
(GOMD-SIII-012-2011) Direct Femtosecond Laser Writing in silver-containing glass
Thierry Cardinal*, Kevin Bourhis, ICMCB-CNRS, France; Arnaud Royon, CPMOH-CNRS, France; Mona Treguer, Yannick Petit, Jean-Jacques Videau, ICMCB-CNRS, France; Ji Yeon Choi, Martin Richardson, UCF, USA; Lionel Canioni, CPMOH-CNRS, France

4:40 PM
Pavel Mardilovich*, Luke Fletcher, Neil Troy, Subhash Risbud, Denise Krol, University of California, USA

5:00 PM
(GOMD-SIII-014-2011) Mechanisms of NaF growth in photo-thermo-refractive glass

Session B: Photosensitivity and Photomodification
Monday, May 16, 2011

3:20 PM-5:40 PM
Room: Pulaski
Session Chair(s): Pierre Lucas

3:20 PM
(GOMD-SIII-010-2011) Optical agility of
5:20 PM  
(GOMD-SIII-015-2011) 3D temperature distribution and crystallization mechanisms of ferroelectric LaBGeO₅ during femtosecond laser irradiation inside bulk glass  
Adam Stone*, Masaaki Sakakura, Yasuhiko Shimotsuma, Lehigh University, USA; Kiyotaka Miura, Kazuyuki Hirao, Kyoto University, Japan; Volkmar Dierolf, Himanshu Jain, Lehigh University, USA

Session C: Transparent Ceramics I  
Monday, May 16, 2011

9:20 AM-12:00 PM  
Room: Pulaski  
Session Chair(s): Adam Stevenson

9:20 AM  
(GOMD-SIII-016-2011) The Impact of transparent ceramic materials on future lasers (Invited)  
Martin Richardson*, University of Central Florida, USA

10:00 AM  
(GOMD-SIII-017-2011) Submicrometer-Grained Transparent Sesquioxide Ceramics  
John Ballato*, Karn Serivalsatit, Clemson University, USA

10:20 AM  
Matt Nowell*, EDAX-TSL, USA

10:40 AM  
(GOMD-SIII-019-2011) Scattering in Transparent Materials  
Charles Brecher, ALEM Associates, USA; Stuart R Miller, Rajan Gurjar*, RMD Incorporated, USA; Alexander Lempicki, ALEM Associates, USA

11:00 AM  
(GOMD-SIII-020-2011) Crystallization and second harmonic generation surface and bulk responses of lithium niobium silicate glass ceramics  
Helene Vigouroux*, Evelyne Fargin, Alexandre Fargues, ICMCB-CNRS, France; Bruno Le Garrec, CEA, France; Marc Dussauze, Vincent Rodriguez, Frédéric Adamietz, ISM, France; Grigoris Mountrichas, Efstratios Kamitos, NHRF, Greece; Sergey Lotarev, Vladimir Sigaev, D. Mendeleev University of Chemical Technology of Russia, Russian Federation

Session C: Transparent Ceramics II  
Monday, May 16, 2011

1:00 PM-3:20 PM  
Room: Pulaski  
Session Chair(s): Adam Stevenson

1:00 PM  
(GOMD-SIII-022-2011) Ceramic Scintillators for Computed Tomography (Invited)  
Haochuan Jiang*, James Gent, Michael Prescott, GE Healthcare, USA; Steven Duclos, James Vartuli, Robert Lyons, Carl Vess, Randy Hagerdon, Kevin Mcevoy, Anant Setlur, GE
Session D: Active Optics
Tuesday, May 17, 2011

9:20 AM-12:00 PM
Room: Pulaski
Session Chair(s): David Scrymgeour

9:20 AM
(GOMD-SIII-027-2011) Nonlinear photonic crystals utilizing ferroelectric oxide thin films and their application in tunable photonic circuits (Invited)
Pao T Lin*, MIT, USA; Bruce W Wessels, Northwestern University, USA

10:00 AM
(GOMD-SIII-028-2011) Fs-Laser Micro Machining of Waveguide Amplifiers Inside Er-Yb Doped Zinc Polyphosphate Glass
Luke Bennett Fletcher*, Jon J Witcher, Neil Troy, University of California Davis, USA; Richard K Brow, Missouri University of Science and Technology, USA; Denise M Krol, University of California Davis, USA

10:20 AM
(GOMD-SIII-029-2011) Influence of Silver ions injection and SHG by thermal poling on sodium and niobium borophosphate glasses
Evelyne Fargin*, Aurélien Delestre, Alexandre Fargues, Michel Lahaye, ICMCB, France; Vincent Rodriguez, Marc Dusseauze, Frédéric Adamietz, ISM, France; Lionel Canioni, Arnaud Royon, Matthieu Bellec, CPMOH, France

10:40 AM
(GOMD-SIII-030-2011) Thermally poled oxide glasses: correlation between polarization mechanisms and non linear optical properties
Dusseauze Marc*, Vincent Rodriguez, Univ. Bordeaux 1 - CNRS, France; Evelyne Fargin,
11:00 AM
Petr Nemec*, University of Pardubice, Czech Republic; Virginie Nazabal, Alain Moreac, Université de Rennes 1, France; Jan Gutwirth, Miloslav Frumar, University of Pardubice, Czech Republic

11:20 AM
(GOMD-SIII-032-2011) Crystal coherence length effects on the infrared optical response of MgO thin films (Invited)
Jon Ihlefeld*, James C Ginn, Sandia National Laboratories, USA; David J Shetlon, University of Central Florida, USA; Vladimir Matias, Los Alamos National Laboratory, USA; Paul G Kotula, Mark A Rodriguez, Sandia National Laboratories, USA; Glenn D Boreman, University of Central Florida, USA; Paul G Clem, Michael B Sinclair, Sandia National Laboratories, USA

Session E: Optical Coatings
Wednesday, May 18, 2011

1:00 PM-5:20 PM
Room: Pulaski
Session Chair(s): S. Sundaram, Norman Anheier

1:00 PM
(GOMD-SIII-033-2011) Self-assembled multifunctional nanostructured coatings

1:40 PM
(GOMD-SIII-034-2011) Solution Processed Chalcogenide Glass for Integrated Mid-Infrared Optical Elements (Invited)
Craig B. Arnold*, Princeton University, USA

2:20 PM
(GOMD-SIII-035-2011) Exploiting intrinsic material properties for improved integrated chalcogenide waveguide resonators for mid-IR sensing (Invited)
Kathleen Richardson*, Jackie Wilkinson, Spencer Novak, Clemson University, USA; Nathan Carlie, Schott North America, USA; J. David Musgraves, Bogdan Zdyrko, Igor Luzinov, Clemson University, USA; Vivek Singh, Anu Agarwal, Lionel C Kimerling, Massachusetts Institute of Technology, USA; Juejun Hu, University of Delaware, USA; Antonio Canciamilla, Francesco Morichetti, Andrea Melloni, Politecnico di Milano, Italy

3:00 PM
Break

3:20 PM
(GOMD-SIII-036-2011) Nano-Macro Scale Chalcogenide Coatings by Evaporation-Condensation
S. K Sundaram*, Brian J Riley, Bradley R Johnson, Pacific Northwest National Laboratory, USA

3:40 PM
(GOMD-SIII-037-2011) Multilayer Deposition for X-Ray Applications (Invited)
Ray Conley*, Nathalie Bouet, Brookhaven National Laboratory, USA

4:20 PM
(GOMD-SIII-038-2011) Spectroscopic
Ellipsometry for Optical Coatings (Invited)
John A Woollam*, Greg K Pribil, Ron A Synowicki, Thomas E Tiwald, J. A. Woollam Co., Inc., USA

5:00 PM
(GOMD-SIII-039-2011) Mid-Infrared Dispersion and dn/dT Analysis using Prism Coupling
Norman C Anheier*, Amy H Qiao, Pacific Northwest National Laboratory, USA

Session F: Sensors and Scintillators
Wednesday, May 18, 2011

10:20 AM-12:00 PM
Room: Cumberland
Session Chair(s): Mary Bliss

10:20 AM
(GOMD-SIII-040-2011) Laser formation of micro to nano-scale 2D and 3D SbSI single crystal ferroelectric features in chalcogenide glass for device integration
Pradyumna Gupta*, Adam Stone, Nathaniel Woodward, Lehigh University, USA; LiHua Ding, East China University of Science and Technology, China; Masaaki Sakakura, Yasuhiro Shimotsuma, Kiyotaka Miura, Kazuyuki Hirao, Kyoto University, Japan; Volkmar Dierolf, Himanshu Jain, Lehigh University, USA

11:00 AM
(GOMD-SIII-042-2011) Fabrication and Scintillation Response of Rare Earth Doped Transparent Ceramics
Luiz G. Jacobsohn*, Karn Serivalsatit, Steven A Roberts, Clemson University, USA; Eduardo G Yukihara, Oklahoma State University, USA; Timothy A DeVol, John Ballato, Clemson University, USA

11:20 AM
(GOMD-SIII-043-2011) Synthesis and Properties of Transparent (Gd,Lu)x(Ga,Al)yO12:Ce Ceramic Scintillator
Yimin Wang*, Gary Baldoni, RMD, USA; Charlie Brecher, William Rhodes, ALEM Associates, USA; Kanai Shah, RMD, USA; Nerine Cherepy, Josh Kuntz, Steve Payne, Lawrence Livermore National Laboratory, USA

11:40 AM
(GOMD-SIII-044-2011) Scintillating glasses for slow and fast neutron detection
Mary Bliss*, Derek A Haas, Sonya M Bowyer, L. Eric Smith, Debra S Barnett, Jean A Stave, Pacific Northwest National Laboratory, USA

Session G: Solar Energy and Photocatalysis
Wednesday, May 18, 2011

8:00 AM-11:40 AM
Room: Pulaski
Session Chair(s): Matthew Lloyd

8:00 AM
(GOMD-SIII-045-2011) Organic photovoltaic cells: material processing, device structure
and light management (Invited)
Jiangeng Xue*, University of Florida, USA

8:40 AM
(GOMD-SIII-046-2011) Interfaces in organic photovoltaic devices (Invited)
Bernard Kippelen*, Georgia Tech, USA

9:20 AM
(GOMD-SIII-047-2011) Overcoming Degradation in Organic Photovoltaic Devices with Air Stable Electrodes
Matthew Lloyd*, NREL, USA

9:40 AM
(GOMD-SIII-048-2011) Electrical and optical properties of CdTe-ZnO nanocomposite thin films as tunable optoelectronic materials for photovoltaic energy conversion
Barrett G Potter, Russell Beal*, Grace Shih, Carolyn Swanborg, Cary G Allen, University of Arizona, USA

10:00 AM
Break

10:20 AM
(GOMD-SIII-049-2011) PbS and PbSe quantum dot Schottky junction and heterojunction solar cells (Invited)
Joseph Luther*, National Renewable Energy Lab, USA

11:00 AM
(GOMD-SIII-050-2011) Oxyfluoride and sulfide based glass ceramics for LED lighting and for improving solar cells’ efficiency (Invited)
Xianghua Zhang*, University of Rennes I/CNRS, France; Xianping Fan, Zhejiang University, China; Bo Fan, Céline Point, Laurent Calvez, Jean-Luc Adam, University of Rennes I/CNRS, France

Session H: Ion Conductors and Energy Storage Materials I
Monday, May 16, 2011

9:20 AM-12:00 PM
Room: Cumberland
Session Chair(s): Steve Martin

9:20 AM
(GOMD-SIII-051-2011) Superionic glass-ceramic electrolytes for all-solid-state batteries (Invited)
Masahiro Tatsumisago*, Akitoshi Hayashi, Osaka Prefecture University, Japan

10:00 AM
(GOMD-SIII-052-2011) Predicting Glass Former Units and Transport in Ion-Conducting Network Glasses (Invited)
Philipp Maass*, University of Osnabrueck, Germany

10:40 AM
(GOMD-SIII-053-2011) Structures and properties of ion conducting glasses (Invited)
Neville Greaves*, University of Cambridge, United Kingdom; Edwin Flikkema, CNRS-CEMHTI, France; Zhongfu Zhou, University of Cambridge, United Kingdom; Yann Vaills, CNRS-CEMHTI, France

11:20 AM
(GOMD-SIII-054-2011) Structure of amorphous Na2S+P2S5 prepared by melt quenching and mechanical milling
Seth S Berbano*, Inseok Seo, Christian M Bischoff, Katherine E Schuller, Steve W Martin, Iowa State University, USA
Session H: Ion Conductors and Energy Storage Materials II
Monday, May 16, 2011

1:00 PM-3:20 PM
Room: Cumberland
Session Chair(s): Steve Martin

1:00 PM
(GOMD-SIII-056-2011) Understanding the alkali dynamics in silicate systems for small and large electric fields (Invited)
Andreas Heuer*, Heiko Lammert, Lars Lühning, Institute of Physical Chemistry, Germany

1:40 PM
(GOMD-SIII-057-2011) First and second universalities in ion-conducting glasses (Invited)
Klaus Funke*, University of Muenster, Germany

2:20 PM
(GOMD-SIII-058-2011) Structure/Property Correlations in the Ionic Conductivity of Mixed Glass Former Glasses in the Na$_2$S+GeS$_2$+P$_2$S$_5$ Glass System
Christian Bischoff*, Katherine Schuller, Steve W Martin, Iowa State University, USA
Session A: Glasses for Energy and Environmental Applications
Thursday, May 19, 2011

8:00 AM-11:20 AM
Room: Pulaski
Session Chair(s): Amanda Billings

8:00 AM
(GOMD-SIV-001-2011) Porous Hollow Glass Microspheres as Additives to Improve Lead-Acid Battery Performance
David Newell*, Savannah River National Laboratory, USA; David Atherton, Exide Technologies, USA; Dean Edwards, University of Idaho, USA

8:20 AM
(GOMD-SIV-002-2011) Interactions of Viscous Glass Sealants with SOFC Stack Components
Mark O Naylor*, James E Shelby, Scott T Misture, Alfred University, USA

8:40 AM
(GOMD-SIV-003-2011) Near infrared down-conversion in chloro-sulfide glasses for the application on solar cell
Bo Fan*, Céline Point, Jean-luc Adam, Xianghua Zhang, UMR CNRS-Université de Rennes I “Sciences Chimiques de Rennes”, Laboratory of glasses and ceramics, France

9:00 AM
(GOMD-SIV-004-2011) Sintered Glass Core/Shell Waste Forms for 129I
Terry Garino*, Tina Nenoff, James Krumhansl, David Rademacher, Sandia National Laboratories, USA

9:20 AM
(GOMD-SIV-005-2011) Immobilization of High and Low Aluminate Waste with Borosilicate Glass
Fabienne C Johnson*, Savannah River National Laboratory, USA

9:40 AM
Break

10:00 AM
(GOMD-SIV-006-2011) Incorporation of High TiO2 Concentrations in High Level Waste Glass
Kevin M. Fox*, Fabienne C Johnson, Thomas B Edwards, Savannah River National Laboratory, USA

10:20 AM
(GOMD-SIV-007-2011) Crystal Precipitation in Nuclear Waste Glasses and the Effects on Waste Form Durability
Amanda L Billings*, Jake W Amoroso, Savannah River National Laboratory, USA

10:40 AM
(GOMD-SIV-008-2011) Effect of Composition on Vapor Hydration Test Response of Phosphate Glasses for Low Activity Waste Vitrification
Will Lepry*, Dong-Sang Kim, John D Vienna, Pacific Northwest National Laboratory, USA
11:00 AM
Signo T. Reis*, Richard K Brow, Chandra S Ray, C. W Kim, Delbert E Day, Missouri University of Science and Technology, USA

Session B: Glass Strength
Wednesday, May 18, 2011

8:00 AM-10:20 AM
Room: Cumberland
Session Chair(s): Elam Leed

8:00 AM
(GOMD-SIV-010-2011) Factors Affecting the Reliability of Glass (Invited)
Stephen Freiman*, Freiman Consulting, USA

8:40 AM
(GOMD-SIV-011-2011) Using the Hertzian Ring Crack Initiation Approach to Measure Surface Flaw Size
Rajan Tandon*, Sandia National Laboratories, USA

9:00 AM
(GOMD-SIV-012-2011) A Fracture Mechanics View of the Practical Strength of Glass (Invited)
Richard Bradt*, The University of Alabama, USA

9:40 AM
(GOMD-SIV-013-2011) Two Point Bend Studies of Fatigue Effects in Silicate Glasses
Zhongzhi Tang*, Richard K Brow, Missouri S&T, USA; Charles R Kurkjian, University of Southern Maine, USA

10:00 AM
Break

10:20 AM-12:00 PM
Room: Ossabaw
Session Chair(s): Brad Tischendorf

10:20 AM
(GOMD-SIV-014-2011) Controlling the Formation of Calcium Compounds when Bioactive Glasses React In-vivo
Steven Jung, Mo-Sci Corporation, USA; Delbert E Day*, Missouri University of Science and Technology, USA

10:40 AM
(GOMD-SIV-015-2011) Effect of Microstructure on the Strength of Glass-infiltrated Ceramic Composite for Artificial Teeth
HyungBong Lim*, CheolYoung Kim, Inha University, Republic of Korea

11:00 AM
(GOMD-SIV-016-2011) Kinetic analysis of dissolution behavior of bio-active borate and silicate glasses in aqueous solutions
Jaime George*, Richard Brow, Missouri University of Science and Technology, USA

11:20 AM
(GOMD-SIV-017-2011) Crystallisation of Strontium Bioactive Glasses
Matthew D O'Donnell*, RepRegen Ltd, United Kingdom; Lindsay Chapman, National Physics Laboratory, United Kingdom; Hok Tang, Imperial College, United Kingdom; Paul

Session C: Glasses for Medicine and Biotechnology
Thursday, May 19, 2011

10:20 AM-12:00 PM
Room: Ossabaw
Session Chair(s): Brad Tischendorf

10:20 AM
(GOMD-SIV-014-2011) Controlling the Formation of Calcium Compounds when Bioactive Glasses React In-vivo
Steven Jung, Mo-Sci Corporation, USA; Delbert E Day*, Missouri University of Science and Technology, USA

10:40 AM
(GOMD-SIV-015-2011) Effect of Microstructure on the Strength of Glass-infiltrated Ceramic Composite for Artificial Teeth
HyungBong Lim*, CheolYoung Kim, Inha University, Republic of Korea

11:00 AM
(GOMD-SIV-016-2011) Kinetic analysis of dissolution behavior of bio-active borate and silicate glasses in aqueous solutions
Jaime George*, Richard Brow, Missouri University of Science and Technology, USA

11:20 AM
(GOMD-SIV-017-2011) Crystallisation of Strontium Bioactive Glasses
Matthew D O'Donnell*, RepRegen Ltd, United Kingdom; Lindsay Chapman, National Physics Laboratory, United Kingdom; Hok Tang, Imperial College, United Kingdom; Paul
Tomlins, National Physics Laboratory, United Kingdom; Julian Jones, Imperial College, United Kingdom

11:40 AM
(GOMD-SIV-018-2011) Characterizing Synthetic and Natural Spider Silk Fibers Using X-ray Diffraction
Chris J Benmore*, Argonne National Laboratory, USA; Thomas Izdebski, Jeffery L Yarger, Arizona State University, USA

Session D: Glass Melting and Processing
Wednesday, May 18, 2011

1:00 PM-3:20 PM
Room: Cumberland
Session Chair(s): Rajiv Tiwary

1:00 PM
(GOMD-SIV-019-2011) Mathematical model of cold cap
Richard Pokorny*, Pavel Hrma, Dong-Sang Kim, Pacific Northwest National Laboratory, USA

1:20 PM
(GOMD-SIV-020-2011) Kinetics of Quartz Particle Dissolution During Glass Melting
Jose Marcial*, Pavel Hrma, Samuel H Henager, Pacific Northwest National Laboratory, USA

1:40 PM
(GOMD-SIV-021-2011) Bench-Scale Melt Rate Testing and Modeling
Alex Choi*, Donald Miller, David Immel, Savannah River National Lab, USA

2:00 PM
(GOMD-SIV-022-2011) The Benefits of Polyalkylene Carbonate Binders (QPAC®) for Low Temperature Glass Frit or Powdered Glass in Glass Sealing Applications
Peter Anthony Ferraro*, Sugianto Hanggodo, Empower Materials, USA

2:20 PM
(GOMD-SIV-023-2011) The effect of batch makeup and heating rate on the melting behavior of high level waste glass
David Pierce*, Pavel Hrma, Richard Pokorny, Pacific National Northwest Laboratories, USA

2:40 PM
(GOMD-SIV-024-2011) Microwave synthesis of chalcogenide glasses in Sb-S-I system
Pradyumna Gupta*, Adam Stone, Himanshu Jain, Volkmar Dierolf, Lehigh University, USA

3:00 PM
Break

3:20 PM-5:40 PM
Room: Cumberland
Session Chair(s): Gang Chen

3:20 PM
(GOMD-SIV-025-2011) Sol-gel derived multi-porous glass scaffolds for bone regeneration (Invited)
Rui M Almeida*, Instituto Superior Tecnico, Portugal

3:20 PM
(GOMD-SIV-026-2011) Organically Modified Siloxane Melting Gels (Invited)
Lisa C. Klein*, Rutgers University, USA; Andrei Jitianu, Lehman College, City University of New York, USA; Mihaela Jitianu, William Paterson University, USA

Session E: Liquid Synthesis and Sol-gel Derived Materials
Wednesday, May 18, 2011

3:20 PM-5:40 PM
Room: Cumberland
Session Chair(s): Gang Chen

3:20 PM
(GOMD-SIV-025-2011) Sol-gel derived multi-porous glass scaffolds for bone regeneration (Invited)
Rui M Almeida*, Instituto Superior Tecnico, Portugal

4:00 PM
(GOMD-SIV-026-2011) Organically Modified Siloxane Melting Gels (Invited)
Lisa C. Klein*, Rutgers University, USA; Andrei Jitianu, Lehman College, City University of New York, USA; Mihaela Jitianu, William Paterson University, USA
4:40 PM
(GOMD-SIV-027-2011) Water Adsorption-induced Deformation of Micro- and Mesoporous Silica
Sai Dong, Gang Chen*, Ohio University, USA

5:00 PM
(GOMD-SIV-028-2011) Effect of silver incorporation on crystallization and microstructural properties of sol-gel derived TiO2 films
Betul Akkopru Akgun*, Caner Durucan, Middle East Technical University, Turkey; Nathan P Mellott, Alfred University, USA

5:20 PM
(GOMD-SIV-029-2011) Limits of sol-gel optical coating stacking
Xavier Dieudonné*, Hervé Piombini, Karine Vallé, Philippe Belleville, CEA, France
**Poster Session and Student Poster Competition**  
Chair: Robert Schaut, Corning Incorporated

**Monday, May 16, 2011**

6:30 PM-9:00 PM  
Room: Madison

**(GOMD-SI-P001-2011) Influence of Structural changes on the ESR Spectra of Mn2+ doped Lead Phosphate Glasses**  
Churya Dayanand*, Tirumala Engineering College, India

**(GOMD-SI-P002-2011) Laser Aerolevitation Manufacturing of Alkaline Earth Silicates**  
Craig Nie*, Wyatt Trull, Prabesh Dulal, Steve Feller, Mario Affatigato, Coe College, USA

**(GOMD-SI-P003-2011) The Production of Cesium Borate Glass for Use in Atomic Clocks**  
Ella Wiese Moore*, Coe College, USA; Jonathan Bernstein, Massachusetts Institute of Technology, USA; Alex Ramm, Joseph North, Jason Maldonis, Jared Alberts, Steve Feller, Mario Affatigato, Coe College, USA; Mark Mescher, W. Robbins, Richard Stoner, Brian Timmons, Massachusetts Institute of Technology, USA

**(GOMD-SI-P004-2011) Alumina Effect on Enthalpy of Mixing of Mixed Alkali Silicate Glasses**  
Peter J Lezzi*, Minoru Tomozawa, RPI, USA

**(GOMD-SI-P005-2011) Glass-Forming Ability of Soda Lime Borate Liquids**  
Qiuju Zheng*, Aalborg University, Denmark; John C Mauro, Corning Incorporated, USA; Morten M Smedskjaer, Aalborg University, Denmark; Marcel Potuzak, Corning Incorporated, USA; Ralf Keding, Max Planck Institute for the Science of Light, Germany; Yuanzheng Yue, Aalborg University, Denmark

**(GOMD-SI-P006-2011) Spherical bioactive glass particles and their interaction with human mesenchymal stem cells in vitro**  
Sheyda Labbaf*, Olga Tsigkou, Molly M Stevens, Alexandra E Porter, Julian R Jones, Imperial College London, United Kingdom

**(GOMD-SI-P007-2011) Aqueous Corrosion of Polyphosphate Glasses**  
Charmayne Smith*, Richard Brow, Missouri University of Science and Technology, USA

Daniel C Skorski*, Joseph Ryan, Pacific Northwest National Laboratory, USA

**(GOMD-SI-P009-2011) Dissolution Behavior of Na/Ca-Phosphate Glasses In aqueous Solutions**  
Lina Ma*, Richard K Brow, Mark E Schlesinger, Missouri University of Science and Technology, USA

**(GOMD-SI-P010-2011) Analytical modeling of thermodynamic iron redox equilibria and aqueous dissolution behavior of iron phosphate glasses**  
Melodie L Schmitt*, Richard K Brow, Missouri S&T, USA
Liyang Zhang*, Richard Brow, Missouri University of Science and Technology, USA

(GOMD-SI-P012-2011) Microstructure and physical properties of the GexAsySe1-x-y glasses with the same mean coordination number of 2.5
Rongping Wang*, Anita Smith, Duk Yong Choi, Steve Madden, Barry Luther-Davies, Australian National University, Australia

Taylor Shoulders*, Kathleen Richardson, Clemson University, USA; Marc Dussauze, University Bordeaux 1, France; David Musgraves, Clemson University, USA

(GOMD-SI-P014-2011) Influence of imprinting conditions on the surface morphology of chalcogenide glasses
Byeong Kyu Jin, Yong Gyu Choi*, Korea Aerospace University, Republic of Korea; Woon Jin Chung, Kongju National University, Republic of Korea; Dong Wook Shin, Hanyang University, Republic of Korea; Himanshu Jain, Lehigh University, USA

(GOMD-SI-P015-2011) Thermal expansion investigation of iron sodium silicate glass
Bahman Mirhadi, Behzad Mehdikhani*, Imam Khomeini International University, Islamic Republic of Iran

(GOMD-SI-P016-2011) Optical absorption and Crystallisation of sodium desilicate glasses containing chromium oxide
Behzad Mehdikhani*, Bahman Mirhadi, Imam Khomeini International University, Islamic Republic of Iran

(GOMD-SII-P017-2011) Relaxation dynamics of supercooled silicon using molecular dynamics simulations
Xiaojun Mei*, Walid Mohamed, Jacob Eapen, NC State University, USA

(GOMD-SII-P018-2011) A low-cost electrometer for measuring conductivity and glass transition in sugar glass
William R. Heffner*, Lehigh University, USA; Nicholas Ward, Oakwood University, USA

(GOMD-SII-P019-2011) Electronic Consequences of Electron-Phonon Interaction in Impurity States of Doped Semiconductors
Bin Cai*, Mingliang Zhang, David Drabold, Ohio University, USA

(GOMD-SII-P020-2011) Optical spectra of DIVALENT and TRIVALENT iron in sodium silicate glasses
Bahman Mirhadi, Imam Khomeini International University, Islamic Republic of Iran; Behzad Mehdikhani*, Institute of Standard and Industrial Research of Iran (ISIRI), Islamic Republic of Iran

(GOMD-SII-P021-2011) Role of manganese as a oxidizing agent in sodium silicate glasses containing iron oxide
Bahman Mirhadi, Behzad Mehdikhani*, Imam Khomeini International University, Islamic Republic of Iran

(GOMD-SII-P022-2011) UV-Vis spectroscopy of transition metals in sodium silicate glasses
Bahman Mirhadi, Imam Khomeini International University, Islamic Republic of Iran; Behzad Mehdikhani*, Institute of Standard and Industrial Research of Iran (ISIRI), Islamic Republic of Iran

(GOMD-SII-P023-2011) Infrared absorption of polyvalent oxides in glass
Bahman Mirhadi, Behzad Mehdikhani*, Imam
Khomeini International University, Islamic Republic of Iran

(GOMD-SIII-P024-2011) Optical properties of Mn2+ doped Lead phosphate Glasses
Churya Dayanand*, Tirumala Engineering College, India

(GOMD-SIII-P025-2011) Does photoinduced anisotropy in chalcogenide glasses have atomic structure signature?
Donghui Zhao*, Himanshu Jain, Lehigh university, USA

(GOMD-SIII-P026-2011) Laser-induced anomalous plasmonic evolution in silver nanocomposite glass: An in situ optical microspectroscopy study
Jose A Jimenez*, Mariana Sendova, New College of Florida, USA

(GOMD-SIII-P027-2011) Relation between structure and photochemistry of silver-containing phosphate glasses
Kevin Bourhis, Yannick Petit, Mona Treguer, Christine Labrugere, Jean-Jacques Videau, ICMCB-CNRS, France; Arnaud Royon, Gautier Papon, Lionel Canioni, LCMCP-CNRS-ENSCP, France; Laurent Binet, Daniel Caurant, CPMOH-CNRS, France; Bertrand Revel, Lionel Montagne, USTL-CNRS, France; Thierry Cardinal*, ICMCB-CNRS, France

(GOMD-SIII-P028-2011) Pulsed Laser Deposited Ga-Ge-Te Amorphous Thin Films
Petr Nemec*, University of Pardubice, Czech Republic; Virginie Nazabal, Alain Moreac, Université de Rennes 1, France

(GOMD-SIII-P029-2011) The effects of sintering aids on defects and densification in transparent Nd:YAG ceramics
Adam Stevenson*, Gary L Messing, The Pennsylvania State University, USA

(GOMD-SIII-P030-2011) Phase separation and crystallization mechanism in non linear optical LiNbO3-SiO2 glasses
G. Mountrichas, Efstratios Kamitsos, NHRF, Greece; Helene Vigouroux*, Alexandre Fargues, Evelyne Fargin, ICMCB-CNRS, France; Bruno Le Garrec, CEA, France; Marc Dussauze, Frédéric Adamietz, Vincent Rodriguez, ISM, France; Sergey Lotarev, Vladimir Sigaev, D. Mendeleev University of Chemical Technology of Russia, Russian Federation

(GOMD-SIII-P031-2011) The Effect of Silica on Emission Property of Various Cr4+-Doped Glass Property
Jimmy Wang*, Fong-Shi Shen, NSYSU, Taiwan

(GOMD-SIII-P032-2011) Processing and Mechanical Properties of Transparent Lu2O3 Laser Host Ceramics
Robert Pavlacka*, Steve Kilczewski, Ashley Lidie, Gary Gilde, US Army Research Laboratory, USA

(GOMD-SIII-P033-2011) Compositional and structural changes in thermally poled borosilicate glass and their link to non linear optical properties.
Tatiana Cremoux*, Dussauze Marc, Univ. Bordeaux 1 - CNRS, France; Evelyne Fargin, Thierry Cardinal, CNRS, France; Taylor Shoulders, Kathleen Richardson, Clemson university, USA; Vincent Rodriguez, Univ. Bordeaux 1 - CNRS, France

(GOMD-SIII-P034-2011) Development of Pr3+-doped ZBLA fluoride waveguide for compact laser source emitting in visible
Melinda Olivier, Parastesh Pirasteh, Jean-Louis Doualan, Chemistry Sciences Center of Rennes, France; Patrice Camy, UMR 6252, CEA, CNRS, ENSICAEN et Université de Caen, France; Herve Lhermite, Jean-Luc Adam, Virginie Nazabal*, Chemistry Sciences Center of Rennes, France
(GOMD-SIII-P035-2011) Size Effects on Properties of Novel High Z Scintillators
Janelle V Branson*, Pin Yang, Steve Thoma, Patrick Doty, Timothy J Boyle, LeighAnna Ottley, Bernadette A Hernandez-Sanchez, Sandia National Laboratories, USA

(GOMD-SIII-P036-2011) Monitoring of the geological storage of CO2 using chalcogenide waveguides
Marie-Laure Brandily*, University of Rennes1, France; Virginie Nazabal, Frédéric Charpentier, Université Rennes1, France; Hervé Lhermite, University of Rennes1, France; Joel Charrier, UMR 6082, France; Catherine Boussard-Plédel, Bruno Bureau, Université Rennes1, France; Jean-Louis Doualan, Patrice Camy, CIMAP, France

(GOMD-SIII-P037-2011) The Effect of Gold Doping on the Conductivity of Sodium Trisilicate Glass
Matthew Wojciechowski*, Chatree Saiyasombat, Himanshu Jain, Lehigh University, USA; Reiner Küchler, Technische Universität Dortmund, Germany

(GOMD-SIV-P038-2011) Chalcogen-based aerogels as a multifunctional platform for remediation of radioactive waste
Brian Riley*, Jaehun Chun, Joseph Ryan, S. K Sundaram, Denis Strachan, PNNL, USA

(GOMD-SIV-P039-2011) Evaluation of nepheline formation in nuclear waste glasses
Carmen P Rodriguez*, Michael J Schweiger, Abigail E Winschell, John S McCloy, Pacific Northwest National Laboratory, USA

(GOMD-SIV-P040-2011) Utilization of a Laboratory-Scale Melter to Determine Melting Rate of Waste Glass Feeds
Jaideep Das Gupta*, Dong-Sang Kim, Michael Schweiger, William Buchmiller, John Vienna, Pacific Northwest National Laboratory, USA

(GOMD-SIV-P048-2011) The DHS database for High Performance Materials
Gary Fischman*, Future Strategy Solutions, LLC, USA

(GOMD-SIV-P041-2011) Soda-lime silicate glass under hydrostatic pressure and indentation: a micro-Raman study
Thierry Deschamps*, CEA, France; Christine Martinet, LPCML, Université Lyon1, France; Jean-Luc Bruneel, Université Bordeaux1, France; Bernard Champagnon, LPCML, Université Lyon1, France

(GOMD-SIV-P042-2011) Borate Based Bioactive Glasses for Soft Tissue Regeneration
Steven Jung*, Mo-Sci Corporation, USA

(GOMD-SIV-P043-2011) Effect of temperature on UV-Vis spectroscopy of sodium silicate glasses contained nanoparticle iron oxide
Bahman Mirhadi, Behzad Mehdkhani*, Imam Khomeini International University, Islamic Republic of Iran

(GOMD-SIV-P044-2011) Preparation of CaO-MgO-SiO2 Glass-Ceramic Using Na2SiO3 Waste Solution
Chieko Yamagata, Olga Z Higa, Instituto de Pesquisas Energeticas e Nucleares, USA; Andrea D Rodas, Instituto de Pesquisas Energeticas e Nucleares, Brazil; Signo T Reis*, Missouri University of Science and Technology, USA

(GOMD-SIV-P045-2011) Synthesis and Characterization of Phase-change Nanowires Confined in Periodic Mesoporous Silica
Chandrasiri Ihalawela*, Binay Prasai, Gregory Rosen, Gang Chen, Ohio University, USA

(GOMD-SIV-P046-2011) Nanoparticle-incorporated indium tin oxide (ITO) thin films obtained through sol-gel process
Hakan Yavas*, Mehmet T Kesim, Caner
Durucan, Middle East Technical University, Turkey

(GOMD-SIV-P047-2011) Sol-gel derived silver-incorporated hybrid ITO thin films
Mehmet Tümerkan Kesim*, Hakan Yavas, Caner Durucan, Middle East Technical University, Turkey