

CALL FOR ABSTRACTS

DUE NOVEMBER 20, 2019

2020 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

www.ceramics.org/gomd2020



May 17–21, 2020
Hotel Monteleone
New Orleans, Louisiana

Join ACerS Glass & Optical Materials Division for GOMD 2020, May 17–21, 2020, in New Orleans, Louisiana, for a program featuring four symposia: Fundamentals of the Glassy State, Optical and Electronic Materials and Devices, Glass Technology and Cross-Cutting Topics, and a brand-new symposium on glass and water, Aging and Degradation of Amorphous Materials. Technical sessions consisting of both oral and poster presentations led by technical leaders from industry, national laboratories, and academia will provide an open forum for glass scientists and engineers from around the world to present and exchange findings on recent advances in various aspects related to glass science and technology.

Students are encouraged to enter their presentations in the annual student poster competition for professional recognition and cash awards! Students attending GOMD 2020 are also invited to attend a career roundtable discussion with scientists from industry, national laboratories, and academia about career opportunities and other topics in a casual environment. GOMD 2020 will provide a unique opportunity for students to learn, interact, and win!

Hotel Monteleone is located right in the French Quarter of New Orleans, among a variety of specialty shops selling art and antiques from around the world, and restaurants serving authentic New Orleans Cajun cuisine. Tourist attractions are located just steps from the hotel, including Jackson Square, Bourbon Street, the French Market, and the Riverwalk. New Orleans itself is steeped in European traditions and Caribbean influences. The Big Easy offers visitors sweet sounds and savory aromas fueled by three hundred years of history.

The GOMD Executive Committee, program chairs, and volunteer organizers sincerely hope you will join us in New Orleans for GOMD 2020 to find new collaborative opportunities and to exchange ideas in the international glass community.

We look forward to seeing you in New Orleans!

PROGRAM CHAIRS:



Jessica Rimsza
Sandia National Laboratories
Albuquerque, N.M.
jrimsza@sandia.gov



Delia Brauer
Otto Schott Institute of Materials Research
Friedrich Schiller University
Jena, Germany
delia.brauer@uni-jena.de

2019-2020 GOMD OFFICERS

Chair
Jincheng Du
University of North Texas
du@unt.edu

Vice chair
Sabyasachi Sen
University of California, Davis
sbsen@ucdavis.edu

Chair-elect
John Mauro
The Pennsylvania State University
jcm426@psu.edu

Secretary
Gang Chen
Ohio University
cheng3@ohio.edu

ABSTRACT SUBMISSION INSTRUCTIONS

Visit ceramics.org/GOMD2020 to review the session topics and select the "Submit Abstract" hyperlink to be directed to the abstract submission website. Abstract title and text character limit (including spaces) is 1,500 characters. If you have questions, please contact Marilyn Stoltz at mstoltz@ceramics.org or +1 614-794-5868.

Preliminary Schedule

Sunday, May 17, 2020

Registration	4 - 7 p.m.
Welcome reception	6 - 8 p.m.

Monday, May 18, 2020

Registration	7 a.m. - 5:30 p.m.
Stookey Lecture of Discovery	8 - 9 a.m.
Concurrent sessions	9:20 a.m. - 5:40 p.m.
Lunch on own	Noon - 1:20 p.m.
GOMD general business meeting	5:45 - 6:30 p.m.
Poster session and student poster competition	6:30 - 8:30 p.m.

Tuesday, May 19, 2020

Registration	7:30 a.m. - 5:30 p.m.
George W. Morey Award lecture	8 - 9 a.m.
Concurrent sessions	9:20 a.m. - 6 p.m.
The Norbert J. Kreidl Award for Young Scholars	Noon - 1 p.m.
Lunch on own	Noon - 1:30 p.m.
Conference banquet	7 - 10 p.m.

Wednesday, May 20, 2020

Registration	7:30 a.m. - 5 p.m.
Darshana and Arun Varshneya Frontiers of Glass Science lecture	8 - 9 a.m.
Concurrent sessions	9:20 a.m. - 5:40 p.m.
Lunch on own	Noon - 1:30 p.m.

Thursday, May 21, 2020

Registration	7:30 a.m. - Noon
Darshana and Arun Varshneya Frontiers of Glass Technology lecture	8 - 9 a.m.
Concurrent sessions	9:20 a.m. - Noon

HOTEL MONTELEONE

214 Royal St, New Orleans, LA 70130 | (504) 523-3341

Based on availability (Prevailing government rate):
Single/double: \$199 plus tax | Triple: \$224 plus tax | Quad: \$249 plus tax

Reserve your room by April 20, 2020 to secure the negotiated conference rate.

Visit the hotel and travel page at ceramics.org/GOMD2020 to reserve your room today.



CALL FOR ABSTRACTS

DUE NOVEMBER 20, 2019

2020 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

www.ceramics.org/gomd2020



SYMPOSIUM 1: FUNDAMENTALS OF THE GLASSY STATE

This symposium will provide a discussion forum on fundamental principles of glass science. Contributions covering experimental and theoretical developments in the field of glass science are welcome. Topics of interest include novel developments in the following sessions.

■ Glass Formation and Structural Relaxation

Organizers

Ozgur Gulbiten, Corning Inc., USA

Sabyasachi Sen, University of California Davis, USA

This session will address all fundamental aspects of glass formation, including experimental, modeling, and theoretical developments in our understanding of the glass transition and relaxation. All glass-forming systems including oxide, non-oxide, metallic, and organic glasses will be covered. Topics of interest include, but are not limited to, various relaxation phenomena and dynamical processes in the glass transition range, viscous flow, and fragility.

■ Glass Crystallization and Glass Ceramics

Organizers

Edgar Zanotto, Federal University of Sao Carlos, Brazil

Shailendra Parihar, Sandia National Laboratories, USA

This symposium is devoted to advancing fundamental understanding of crystallization in glasses and its application in glass-ceramics and related materials. The symposium will cover experimental and analytical/characterization as well as numerical/modeling aspects of nucleation and growth in glass forming materials. Topics to be covered include, but are not limited to the following:

- Theoretical, simulation, and experimental studies of nucleation and crystal growth in glasses and liquids
- The role of glass composition, structure, and nucleating agents on crystallization
- Amorphous phase separation and its role in influencing crystallization
- Novel methods and characterization techniques (ex-situ, in-situ) to understand crystallization
- Modeling and simulation techniques to elucidate crystallization
- Novel processing techniques for glass-ceramics
- Microstructure/property relationships in glass-ceramics
- Applications of glass-ceramics
- Crystallization phenomena relevant to earth and planetary sciences
- Glass stability against crystallization
- Glass forming ability of compositions
- Crystallization phenomena in organic and metallic materials

■ Structural Characterizations of Glasses

Organizers

Gregory Tricot, Université de Lille, France

Randy Youngman, Corning Inc., USA

This session will present recent advances on glass structure, including short- and medium-range orders determination and heterogeneity characterization. Presentations will cover various experimental techniques such as X-ray, neutron, light scattering; X-ray absorption and emission spectroscopy; vibrational spectroscopy; magnetic resonance spectroscopy; and scanning probe microscopy.

■ Topology and Rigidity

Organizers

N.M. Anoop Krishan, Indian Institute of Technology, India

Mathieu Bauchy, University of California, USA

Morten Smedskjaer, Aalborg University, Denmark

Topology and rigidity concepts have enabled many breakthroughs, both from a fundamental perspective and practical standpoint, in the area of glass science. The aim of this session is to focus on recent advances in the field of topological modeling and engineering of disordered materials through experimental, computational, and theoretical studies. The broad topics of interest include, but are not restricted to, atomic topology of glasses, self-organization, intermediate phase; effect of temperature, pressure, or irradiation of atomic topology; topological modeling applied to the prediction of glasses' properties; advances in computational approaches applied to rigidity and topology; topology-based machine learning; and topological constraint theory beyond glasses (granular materials, gels, disordered solids, phase-change materials, proteins).

■ Atomistic Simulation and Predictive Modeling of Glasses

Organizers

Sushmit Goyal, Corning Inc., USA

Walter Kob, University of Montpellier II, France

Modeling and simulation play an important role in materials research and in particular for glasses, amorphous, and nanostructured materials due to their complex nature. This session will focus on computer simulations and modeling approaches to gain insight into the structures and properties of glasses and glass-forming liquids. Of particular interest are recent developments of classical and first principles methods including empirical potentials, efficient first principles algorithms, and applications. Also welcome are numerical studies that help the interpretation of experimental data and structural validation using methods such as X-ray and neutron diffraction, solid-state NMR, and other spectroscopic techniques. Finally, integrated computational material design of glass compositions using physics-based modeling and simulation methods will also be covered.

CALL FOR ABSTRACTS

DUE NOVEMBER 20, 2019

www.ceramics.org/gomd2020

Hotel Monteleone
New Orleans, LA
May 17–21, 2020

■ Data-based Modeling and Machine Learning for Glass Science

Organizers

Adama Tandia, Corning Inc., USA

Mathieu Bauchy, University of California Los Angeles, USA,

N.M. Anoop Krishan, Indian Institute of Technology, India

Data-driven modeling and machine learning have been attracting a lot of attention in recent years to solve complex problems in the field of glass science. Specifically, machine learning methods have been demonstrated as promising tools to tackle open problems such as predicting composition–property relationships in glasses. The aim of this session is to focus on recent advances in the field of glass science achieved using data-driven modeling and machine learning. Topics of interest include, but are not restricted to, the use of data-based modeling to develop composition–property relationships, design optimized glass compositions, develop interatomic potentials, understand the fundamentals of glassy state for image processing, predict the structure of glasses, and develop empirical relationships.

■ Mechanical Properties of Glasses

Organizers

Kevin Strong Jr., Sandia National Laboratories, USA

Lothar Wondraczek, Universität Jena, Germany

Scott Glaesemann, Corning Inc., USA

Timothy Gross, Corning Inc., USA

Morten Smedskjaer, University of Aalborg, Denmark

Satoshi Yoshida, University of Shiga, Japan

This session will discuss the mechanical properties of disordered materials across multiple scales, while bridging the fields of metallic and nonmetallic glasses. We will consider the structural origin of elasticity, plasticity, and fracture with the objective of designing glasses with superior toughness, defect tolerance, and stiffness. Attention shall be given to the identification of general, material-independent constitutive laws which may be used as guidelines to improve the mechanical properties; the combination of experimental approaches and computational modeling of the stress response of glasses and early stages of damage infliction; and the interplay between size and time effects, stress-corrosion, and the chemical aspect of fracture.

Contributions are especially invited on:

- Dynamic fracture and brittleness, or crack initiation, including the application of in-situ techniques
- Slow crack growth and stress corrosion cracking, the underlying chemistry, and transport phenomena in high stress fields
- Multiscale investigation of elasticity, plasticity, and hardness in relation to bulk topology through combining mechanical analyses with structural analyses
- Strategies for toughening inorganic oxide glasses as well as metallic glasses

This symposium is endorsed by Technical Committee 06 of the International Commission on Glass (ICG).

■ Non-Oxide Glasses

Organizer

Laurent Calvez, Université de Rennes, France

Yannik Ledemeyn, Laval University, Canada

This session welcomes presentations covering new developments in chalcogenide, halide, metallic, organic glasses, and all other types of non-

oxide glasses. Topics of interest include structural characterization, structure–property relationship, novel processing methods, compositional trends, and advances in physical properties such as optical, thermal, electrical, and mechanical behaviors. Technological applications of these glasses will be covered, including the field of energy, sensing, optics, biomedical, phase change materials, and microelectronics.

■ Glass Under Extreme Conditions

Organizers

Dominique de Ligny, FAU Erlangen-Nürnberg, Germany

Liping Huang, Rensselaer Polytechnic Institute, USA

This session will cover recent progress in understanding structure and properties of glass under extreme conditions, such as high pressure, high stress, high temperature, high radiation, highly reactive conditions, etc. Many manufacturing processes such as fiber drawing, laser writing or cutting, and spark plasma sintering are concerned with these unique conditions. New knowledge of glass structure and properties under extreme conditions can help design glass for manufacturing, as well as in utilizing such conditions to synthesize glass with superior properties. Both experimental and computational studies will be included.

SYMPOSIUM 2: GLASS AND WATER: DEGRADATION OF AMORPHOUS MATERIALS

Whether applied as protective surface coatings, in biological environments, or in the immobilization of nuclear waste, understanding the mechanisms and kinetics of glass degradation and dissolution remains a technical challenge in glass science. The stages of glass dissolution are now well established, however significant challenges remain in evaluating the role of composition, processing, additives, and the environment on the structural rearrangement and durability of the glass. These challenges are best resolved by sharing knowledge and expertise from the diverse variety of glass-related applications. This symposium will focus on how water and glass interact, including an appraisal of fundamental approaches towards identification of mechanisms of glass dissolution, how variation in material properties and process, and the degradation environment impacts on the dissolution behavior, or how characterization can be used to investigate the complex dissolution process.

■ Glass-water Interfacial Reactions and Dynamics During Initial Dissolution

Organizers

Jincheng Du, University of North Texas, USA

Thiruvilla S. Mahadevan, University of North Texas, USA

Jessica Rimsza, Sandia National Laboratories, USA

Degradation of glasses begins with structural and compositional changes at the glass-water interfaces and includes hydrolysis reactions and cation inter-diffusion. This is commonly known as stage 1 dissolution and the rate is a forward or initial dissolution rate. This session will focus on the immediate effect of water on glass surfaces, which includes but is not limited to mechanisms of hydroxylation, hydrolysis reactions, interdiffusion of ions and hydronium ions in and out of the glass surface, and incorporation of water into the glass matrix. Studies which focus on glass surface and water reaction mechanisms, interfacial structures and transport behaviors using either computational or experimental methodologies are particularly encouraged.

■ Soluble Glasses and Glasses as Ion Release Devices

Organizers

Delia Brauer, University of Jena, Germany

Dick Brow, Missouri University of Science and Technology, USA

Leena Hupa, Åbo Akademi University, Finland

Depending on their composition, inorganic glasses, including silicate, borate, and phosphate compositions, show fast ion release possibly leading to complete dissolution when in contact with aqueous environments. This behavior is highly desirable for ion release applications, e.g. in agriculture or biomedicine, but also for degradable implant materials. This session addresses studies on dissolution mechanisms, ion release studies, but also studies focusing on interactions between glasses and cells in vitro or in vivo. Materials include melt-derived, so-gel and mesoporous glasses as well as glasses for wound healing, dental remineralization or targeted delivery of therapeutic ions.

■ Glass-Water Interactions for Long-Term Durability

Organizers

Stephane Gin, CEA, France

Claire Corkhill, University of Sheffield, UK

This session will focus on the unique application of glasses and glass-ceramics resistant to dissolution and degradation in aqueous environments. This includes borosilicate glass, phosphate glass, and glass-ceramic materials developed for nuclear waste confinement. Studies using natural and man-made glasses to challenge long-term issues of aqueous degradation, such as natural glasses, archeological glasses and other simple model glasses are also of interest. Elucidation of the mechanisms and kinetics of glass degradation in studies conducted under various conditions are welcomed, for example those which investigate the influence of solution composition, temperature, glass composition, reactive surface area, gel layers, secondary phases, environmental materials, radiation, water vapor/liquid water, etc., on dissolution. We also encourage discussion of studies that develop models capable of describing one or more of the advanced stages of glass corrosion (rate drop, residual rate, resumption of alteration), and those which investigate the influence of degradation on material performance.

SYMPOSIUM 3: OPTICAL AND ELECTRONIC MATERIALS AND DEVICES — FUNDAMENTALS AND APPLICATIONS

Optical and electronic materials and devices are of critical importance for applications, including sustainable energy, information technology, nonvolatile memory, sensing, medical diagnostics and treatment, and national defense. This symposium will address processing and properties of optical and electronic materials as well as design, fabrication, and performance of functional devices.

■ Laser Interactions with Glasses

Organizers

Casey Schwarz, Ursinus College, USA

Kathleen Richardson, University of Central Florida, USA

The field of light interaction with matter has attracted increased attention with advances in ultrashort pulse lasers and high-power fiber lasers, and the need to design and fabricate structures for use in low loss applications. New phenomena have been observed and new applications have been developed whereby lasers are employed in diverse areas such as cutting, welding and engraving of glass, fabrication of waveguides, gratings and micro-channels, etc. inside the bulk of glass, and most recently, 3D printing through additive or subtractive laser-assisted processing. Lasers have been shown to be versatile in other applications of phase change, whereby glass or amorphous media are 'converted' in a controlled way to crystalline or composites (glass ceramics). These advances have been realized in optical phase change materials, laser induced crystallization such as seen in the fabrication of active single crystal architecture, strengthening of glass and other applications where a knowledge of not only the material, but the light/matter interaction mechanism is required. This session will focus on the most recent and advanced issues pertaining to the science and applications of laser-glass interactions, such as laser irradiation effects, compositional and structural changes, dynamics and mechanisms of laser-induced modifications.

■ Charge and Energy Transport in Disordered Materials

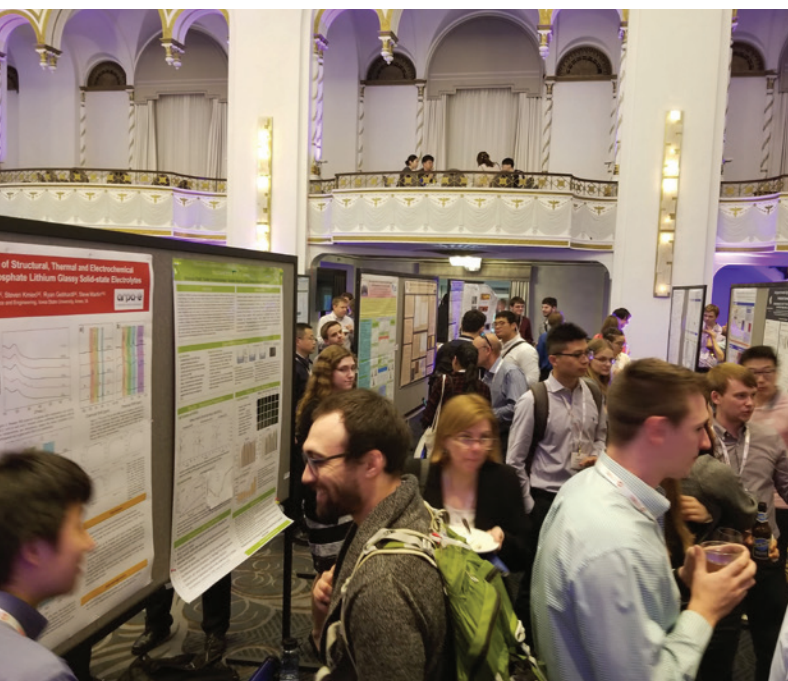
Organizer

Caio Bragatto, Coe College, USA

Gabriel Agnello, Corning Inc., USA

Understanding and prediction of the transport phenomena in disordered media is still an open problem for scientists in the field and are essential for the development of more efficient and cheap materials for a broad range of applications, including energy storage. Increased application of glassy and nanoheterogeneous (glass-ceramics, nanostructured composites) materials in areas such as energy generation and storage (photovoltaics, fuel cells, thermoelectrics, batteries), thermal isolation or conduction media, low-loss dielectrics, and electronic conduction (microelectronics, nanoelectronics), has encouraged research into the fundamental nature and control of transport processes. This session is intended to provide a general forum for the discussion of the mechanisms, properties, and application of charge and energy transport phenomena in such disordered systems. Contributions on the experimental, theoretical, and modeling aspects of these topics are encouraged. Topics of interest include, but are not limited to:

- New material synthesis and characterization
- Novel experimental methods and instrumentation
- Charge transport theory and modeling (ionic and carrier transport)
- Thermal transport (including photonic systems and processes)
- Computational modeling of energy and charge transport



CALL FOR ABSTRACTS

DUE NOVEMBER 20, 2019

www.ceramics.org/gomd2020

Hotel Monteleone
New Orleans, LA
May 17–21, 2020

Optical Fibers and Waveguides

Organizers

Xianghua Zhang, Université de Rennes 1, France

Shixun Dai, Ningbo University, China

Johann Troles, Université de Rennes 1, France

The control of charge and energy streams in materials is central to their application in a broad range of thermal, energy generation/storage, and electronic technologies. In disordered systems, challenges in understanding and manipulating transport phenomena become paramount in establishing structural design criteria, formulation, and processing methods to provide optimized properties. With increased consideration and application of glassy and nanoheterogeneous (e.g. glass-ceramics, nanostructured composites) materials addressing such areas as energy generation and storage (e.g. photovoltaics, fuel cells, thermoelectrics, batteries), thermal isolation or conduction media, and low-loss dielectrics and electronic conduction (microelectronics, nanoelectronics), new insights into the fundamental nature and control of, often coupled, transport processes are of key interest. This symposium is intended to provide a general forum for the discussion of the mechanisms, properties, and applications of charge and energy transport phenomena in such disordered systems. Contributions on the experimental, theoretical, and modeling aspects of these topics are encouraged. Topics of interest include, but are not limited to:

- Material synthesis and characterization (thin film, bulk, fiber)
- Novel experimental methods and instrumentation
- Charge transport theory and measurement (ionic and carrier transport)
- Thermal transport (including photonic systems and processes)
- Computational modeling of energy and charge transport

Glass-based Optical Devices

Organizers

Juejun Hu, Massachusetts Institute of Technology, USA

Lan Li, Westlake University, USA

Behrad Gholipour, University of Alberta, Canada

Glasses are important materials for optical components and devices given their excellent optical transparency and versatile processing. Novel oxide and non-oxide glass compositions and fabrication technology development have further enabled emerging applications such as light emission, infrared imaging, nonlinear optical signal processing, and sensing. This session will cover material synthesis and processing as well as device fabrication and applications of innovative device architectures including, but not limited to, molded optics, diffractive optics, thin film optical coatings, fiber optic devices, metamaterials, and integrated photonic components.

Optical Ceramics and Glass-Ceramics

Organizer

Yiquan Wu, Alfred University, USA

Glass-ceramic and optical ceramic materials are emerging as a highly promising alternative to single-crystal materials for potential use in a wide range of optical and photonic applications. This session will provide a forum for researchers, students, and entrepreneurs to present and discuss their recent scientific results on a wide variety of topics related to science and engineering issues associated with glass-ceramic and optical ceramic materials. A particular emphasis will be placed on the fundamental issues to advance our understanding and utilization of glass-ceramics and optical ceramics and related devices. Session topics include science of transparent glasses and ceramics, novel processing, scintillators and spectroscopy, laser materials, modeling, and theory computation.

Glasses and Glass-Ceramics in Detector Applications

Organizers

Myungkoo Kang, University of Central Florida, USA

Ivan Divliansky, University of Central Florida, USA

This session highlights fundamentals and applications of glasses and glass-ceramics in electromagnetic radiation, molecule, and sub-atomic particle detectors. These detectors are critical to fundamental discoveries in physics, industrial applications, defense, and theranostics in medicine. Selected topics include but are not limited to:

- Glasses for neutrino, alpha particle, proton, neutron detection
- Glasses for chemical and biological substance detection
- Glasses and glass ceramics for thermal detection
- Glasses and glass ceramics for x-ray detection and imaging, including medical imaging
- Glasses in detection of gravitational waves
- Color-glass condensates

Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications

Organizers

Laetitia Petit, Tampere University, Finland

Doris Moencke, Alfred University, USA

Over the past decades, research on the spectroscopic properties of rare earths and transition-metal doped materials has quickly grown in importance as rare-earth and transition-metal ions play a fundamental role in various optical applications, from telecommunication to sensing, from medical diagnosis to energy. Intense levels of research have been focused on the development of new materials and designs. This session will cover the topics on:

- Glass and transparent ceramic lasers
- Ceramic phosphors for solid-state lighting
- Wavelength converters for photovoltaic systems
- Nanoprobe phosphors for biophotonics
- Energy transfer or light storage mechanisms in solids
- d-d, f-f and f-d transitions in glass and ceramics
- Optical amplifiers for telecommunication



SYMPOSIUM 4: GLASS TECHNOLOGY AND CROSS-CUTTING TOPICS

Glass can be engineered with a wide range of properties and in many different forms for both active and passive applications for current and emerging energy and environmental technologies. This symposium will draw an arc from the fundamental approaches (interplay of theory, modeling and experiment) via material properties (compositional influences and signatures) and their characterization (in-situ, ex-situ) to manufacturing (novel processing techniques).

■ Glass Surfaces, Interfaces, and Coatings

Organizer

Nick Smith, Corning Inc., USA

Glass surfaces remain an enduring area of scientific and technological challenges for applications of glass, and approaches to understand and customize surface and interfacial behaviors with glass modifications and value-added coatings represent a critical direction for glass's future. This session will focus on surfaces and interfaces in glassy and film-related systems, with a scope that includes fundamental studies of intrinsic glass surfaces, structure-property relations at surfaces/interfaces, innovations in glass surface characterization, novel methods for modifying surfaces, emerging concepts around functional coatings on glass, and properties of glassy/amorphous thin films.

■ Sol-gel Processing of Glasses and Ceramic Materials

Organizers

Lisa Klein, Rutgers University, USA

John Kieffer, University of Michigan, USA

Sol-gel processing uses low-temperature processing approaches to produce glass and ceramic materials with high purity, excellent homogeneity, and well-controlled morphology. This session will focus on all aspects of sol-gel derived and nanostructured materials prepared by liquid synthesis, including:

- Sol-gel routes to bulk, film, glass coating, colloidal, nanoparticle, porous, and hybrid organic-inorganic materials
- Structural characterization using spectroscopic, scattering, and imaging techniques
- Computer simulations through the molecular dynamics, Monte-Carlo, and reverse Monte-Carlo simulation methods
- New functionalities based on the optical, electrical, thermal, mechanical, chemical, and biomedical properties
- New sol-gel materials and products for energy and other applications

■ Challenges in Glass Manufacturing

Organizer

Irene Peterson, Corning Inc., USA

Industrially fabricated glass is one of the most important materials used in society. New applications and compositions, more stringent quality requirements, increasing costs, and compliance with environmental regulations drive constant innovation in glass chemistry, equipment, and processes. New laboratory research and modeling approaches have dramatically increased understanding of glass chemistry, glass melting and product forming processes, and improved energy efficiency and equipment design. This session will cover recent developments in:

- Physics and chemistry of glass melting and forming – experiments and modeling
- Energy efficiency – combustion, heat transfer, and new energy-saving technologies
- Furnace design and process control – sensors, flue gas chemistry, emissions
- New furnace materials

- Corrosion and wear – refractories and electrodes
- New glass melting and forming concepts
- Post-forming treatments – finishing, surface treatments, films, etc.

■ Optical Fabrication Science & Technology

Organizer

Tayyab Suratwala, Lawrence Livermore National Laboratory, USA

This session will be on the fabrication science and technology of optical quality components with focus on, but not limited to, lasers and telescope applications. The age-old field of optical fabrication, which transforms bulk glasses or ceramics via grinding, cutting, polishing, and etching into precision optics, continues its migration from more of an art to a science. Included in this scope will be a multidisciplinary (physics, chemistry, fracture mechanics, mechanics, tribology, etc.) approach to understanding the complex interactions between the workpiece, abrasive or polishing media, and the tool which influence the final workpiece properties (surface quality, surface roughness, and surface figure). In addition, this scope will include novel finishing technologies, techniques, and characterization (metrology) methods that have been recently developed.

■ Materials for Waste Immobilization

Organizers

Joseph Ryan, Pacific Northwest National Laboratory, USA

John Vienna, Pacific Northwest National Laboratory, USA

Charmayne Loneragan, Pacific Northwest National Laboratory, USA

Topics in this session will address new developments and innovative applications for materials and materials processing methods for the immobilization of nuclear and hazardous wastes. Progress in the processing and testing of materials for immobilization is critical to the efficient and successful treating and disposing of nuclear wastes around the world. This session will focus on characterization, testing, and modeling techniques that quantify and allow understanding of waste form behavior. Material forms of interest may include glass, ceramics, glass-ceramics, and other composite matrices.

GOMD 2020 STUDENT ACTIVITIES

POSTER SESSION & STUDENT POSTER COMPETITION

Organizers

Joy Banerjee, Corning Inc., USA

Mostafa Ahmadzadeh, Washington State University, USA

Poster abstracts will be accepted for all sessions and symposia. Students are encouraged to enter their presentations in the annual poster competition for professional recognition and cash awards!

CAREER ROUNDTABLE

Organizers

Xiaonan Lu, Pacific Northwest National Laboratory, USA

Nicole Wiles, Cornell University, USA

Students attending GOMD 2020 are invited to attend an information roundtable discussion with scientists from industry, national laboratories, and academia. This will be an opportunity for students to ask scientists questions in a casual environment on diverse topics (work-life balance, career opportunities, etc.). The scientists will rotate every 15 minutes so that students have a chance for candid discussions with several professional scientists during the session.

CALL FOR ABSTRACTS DUE NOVEMBER 20, 2019

**2020 GLASS & OPTICAL
MATERIALS DIVISION
ANNUAL MEETING**

May 17–21, 2020
Hotel Monteleone
New Orleans, Louisiana

www.ceramics.org/gomd2020



The American Ceramic Society
550 Polaris Parkway, Suite 510
Westerville, Ohio 43082 USA



www.ceramics.org/gomd2020

May 17–21, 2020 | Hotel Monteleone | New Orleans, Louisiana

**2020 GLASS & OPTICAL
MATERIALS DIVISION
ANNUAL MEETING**

CALL FOR ABSTRACTS DUE NOVEMBER 20, 2019