

REGISTER NOW!

SIGN UP BY APRIL 16

2010

GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

May 16-20, 2010

Corning, NY • Radisson Hotel Corning

www.ceramics.org/gomd2010



2010 GLASS & OPTICAL MATERIALS DIVISION



Program Chair:
John C. Mauro
Science and Technology Division
Corning Incorporated
Corning, NY, USA
mauroj@corning.com

GOMD Schedule at-a-Glance

Sunday, May 16, 2010

Registration	3:00 - 7:00 pm
Welcome Reception	5:00 - 7:00 pm

Monday, May 17, 2010

Registration	7:00 am - 7:00 pm
Stookey Lecture of Discovery	8:00 - 9:00 am
Concurrent Technical Sessions	9:30 am - Noon
Lunch on Own	Noon - 1:15 pm
Concurrent Technical Sessions	1:15 pm - 5:00 pm
Poster Session	6:00 - 8:00 pm

Tuesday, May 18, 2010

Registration	7:30 am - 7:00 pm
George W. Morey Award	8:00 - 9:00 am
Concurrent Technical Sessions	9:30 am - Noon
Norbert J. Kreidl Award for Young Scholars	Noon - 1:00 pm
Lunch On Own	Noon - 1:15 pm
Concurrent Technical Sessions	1:15 - 4:45 pm
Otto Schott Research Award	5:00 - 6:00 pm
Otto Schott Reception	6:00 - 7:00 pm
Conference Dinner	7:00 - 10:00 pm

Wednesday, May 19, 2010

Registration	7:30 am - 5:30 pm
Concurrent Technical Sessions	8:00 am - Noon
Lunch On Own	Noon - 1:15 pm
Concurrent Technical Sessions	1:15 - 5:30 pm

GMIC Schedule at-a-Glance

Wednesday, May 19, 2010

World Kitchen "Corelle" Plant tour	1:00 - 5:00 pm
Workshop Dinner	7:00 - 10:00 pm

Thursday, 5/20/10

Workshop	8:00 am - 4:00 pm
Lunch with Keynote Speaker	Noon - 1:00 pm

Short Course Schedule at-a-Glance

Thursday, 5/20/10

Fundamentals of Glass Science and Technology Short Course	1:30 - 5:30 pm
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Friday, 5/21/10

Fundamentals of Glass Science and Technology Short Course	8:00 am - 5:00 pm
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SYMPOSIUM I: Robert H. Doremus Memorial Symposium

Lead Contact: **Mark Davis** Co-organizer: **Minoru Tomozawa**

Description: The glass community recently lost one of its giants, Professor Robert H. Doremus. This session seeks to capture the essence of his nearly 50-year involvement with glass-related research. His work involved an incredibly wide array of topics, including phase transformation rates, bioceramics, diffusion, redox kinetics, viscosity, optical absorption and water in glass. In addition to this important research, Prof. Doremus influenced many of the next generation(s) of glass scientists through his teaching and advisement. Talks for this session will include topics that Prof. Doremus studied during his illustrious career.

Robert H. Doremus Memorial Session I	17-May-10	9:30 am - Noon
Robert H. Doremus Memorial Session II	17-May-10	1:30 - 5:00 pm

SYMPOSIUM II: Glass Science

Lead Contact: **Prabhat K. Gupta**

Topology and Rigidity

Co-organizers: **Matthieu Micoulaut** and **Normand Mousseau**

Description: In the three decades since its introduction, the topological description of the glassy state has enabled many breakthroughs in our understanding of the composition dependence of glass properties. This session will focus on recent advances in topological modeling and rigidity theory, including the self-organized intermediate phase and the relationship between network rigidity and aging behavior.

Topology and Rigidity I	18-May-10	9:30 am - Noon
Topology and Rigidity II	19-May-10	8:00 - 10:30 am

Glass Transition and Relaxation

Co-organizers: **Prabhat K. Gupta** and **Roger J. Loucks**

Description: A fundamental understanding of glass transition and relaxation is essential for enabling future breakthroughs in glass science and technology. This session will cover the thermodynamics and dynamics of glass transition and relaxation phenomena from both theoretical and experimental perspectives, with particular emphasis on recent developments.

Glass Transition and Relaxation I	19-May-10	10:30 am - Noon
Glass Transition and Relaxation II	19-May-10	1:15 - 3:15 pm
Glass Transition and Relaxation III	19-May-10	3:15 - 5:15 pm

Rheology

Organizer: **Lothar Wondraczek**

Description: This session will address transport properties and rheology in both glasses and glass-forming melts. Specific topics include recent developments in diffusion, viscosity, fragility, ionic conductivity, stress-related effects and high confinement. Contributions are also invited that address the role of viscosity in glass-forming processes.

Rheology	18-May-10	1:15 - 4:45 pm
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Sign up by May 16, 2010

Atomistic Modeling of Glass

Organizers: **Ulrich Fotheringham** and **Jincheng Du**

Description: This session will focus on atomistic simulations of glass, including both classical and ab initio levels. Special focus will be given to new computational techniques designed to address length and time scale issues, as well as the development of improved force fields for industrial glass systems. This session will include a roadmapping discussion on recent advances in atomistic modeling and simulation and challenges facing the ultimate computational design of glass.

Atomistic Modeling of Glass I: Techniques	17-May-10	9:30 am - Noon
Atomistic Modeling of Glass II: Applications	17-May-10	1:15 - 5:00 pm

SYMPOSIUM III: Glass Technology

Lead Contact: **Arun K. Varshneya**

Glasses for Energy and Environmental Applications

Organizers: **Joachim Deubener** and **Dean M. Thelen**

Description: Glass has proven to be a critical material for emerging energy and environmental applications. Specific topics in this session include glasses for photovoltaics and other solar conversion systems, glasses in nuclear and wind power generation, sealing glasses for solid oxide fuel cells, glass electrolytes for super-capacitors, glass microspheres for hydrogen storage, and glasses for air and water purification.

Glasses for Energy and Environmental Applications	18-May-10	1:15 - 5:00 pm
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Optical Materials

Organizers: **Hong Li** and **Amanda Young**

Description: The design and realization of systems for optical signal processing and transmission, data storage, and sensing applications require the successful synthesis and application of optical materials. An understanding of the interrelationship among material processing, multi-scale structural characteristics, and optical properties is therefore needed. In this session we focus attention on optical materials that form the basis for both active and passive components critical to the successful execution of a variety of optical and photonic systems.

Optical Materials I	19-May-10	10:15 am - Noon
Optical Materials II	19-May-10	1:15 - 5:15 pm

Glasses for Medicine and Biotechnology

Organizer: **Matthew M. Hall**

Description: This session will provide a forum to present the results of basic and applied research on the use of glass and glass-ceramic materials in the areas of medicine and biotechnology. Appropriate topics include, but are not limited to: bioactive glasses and glass-ceramics, glass ionomer cements, dental materials, biosensors, glasses for pharmaceutical packaging, glass-based microfluidics, and the interactions of biological systems with glass surfaces.

Glasses for Medicine and Biotechnology	18-May-10	9:15 - 11:45 am
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Glass Strength Workshop

GMIC/DOE will sponsor the 2-day workshop, **Usable Glass Strength - Forming a Research Coalition**. The Workshop covers significant improvement of the usable strength of commercial glass products and will establish a research coalition to support a multi-year glass strength research agenda. The schedule also includes a tour of World Kitchen, maker of Correlle high strength glass tableware and keynote speakers from Corning Inc. and Owens Corning. Full GOMD 2010 registration includes this Workshop, but space is limited. Sign up to attend the Workshop when you register for GOMD 2010, and don't forget to purchase your ticket for Wednesday's dinner. If your plans include attendance to only the Workshop, dinner is included.



Glass-Ceramics

Organizer: **Robert A. Schaut**

Description: This session will cover recent progress in glass-ceramic research, including compositions, processing, properties, and applications. Come join us for an exciting session on glass-ceramics...the original nanomaterial!

Glass-Ceramics	17-May-10	9:30 am - Noon
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Super High-Strength Glasses

Organizer: **Arun K. Varshneya**

Description: Transparent military armor, solar energy collector substrates, hurricane-resistant glass windows, and display windows in personal mobile communication electronics are some of the potentially large scale markets for glass where a high strength to weight ratio is a key decision factor. Glass products are now being made to 1 GPa MOR, but there is much more to go. This session seeks original contributions, however small, in the field of technology and science of higher and higher strength of glass. Be the pioneer to set a blazing trail!

High-Strength Glasses	17-May-10	1:15 - 5:00 pm
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Melting and Process Modeling

Organizer: **Olus N. Boratav**

Description: This session will focus on state-of-the-art approaches related to problems in glass melting and forming process modeling. Some topics include the mathematical simulation of furnaces, thermal modeling of glass melting and forming, modeling of glass delivery systems, glass melting techniques, batch chemistry, float and fusion process modeling, gas exchange between glass and bubbles, defect formation in glass, viscoelastic behavior of glass, and residual stress formation.

Melting & Process Modeling	19-May-10	8:15 - 10:15 am
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RADISSON HOTEL CORNING ~ CORNING, NY

SYMPOSIUM IV: Glass Corrosion

Lead Contact: **Joseph V. Ryan** Co-organizer: **Nathan Mellott**

Description: This symposium is devoted to both short- and long-term corrosion issues in glass. Short-term issues will include stress corrosion, weathering, modeling of surface-molecular interactions, and the effectiveness of interleaving. Long-term issues will include corrosion of nuclear waste glass, ancient glass, and glass art. The symposium will also feature a tutorial on glass corrosion by Prof. Carlo Pantano from Pennsylvania State University.

Short-term Corrosion Issues I	18-May-10	1:00 - 3:00 pm
Short-term Corrosion Issues II	18-May-10	3:15 - 4:15 pm
Ancient and Analogue Glasses	19-May-10	8:30 - 10:30 am
Modeling	19-May-10	10:30 am - Noon
Long-term Corrosion Testing	19-May-10	1:15 - 3:15 pm
Round Table Discussion:	19-May-10	3:30 - 5:00 pm
Cross-cultural and Multi-disciplinary Approaches to Glass Corrosion		

Ceramic Materials Short Course

Register for the 2-day short course, **Fundamentals of Glass Science & Technology**, taught by Arun K. Varshneya from Alfred University. Professional engineers, scientists, administrators and students who wish to rapidly acquire a general idea of glass as a material or append their education in materials engineering should attend. Course topics include commercial glass families, glassy state, nucleation & crystallization, phase separation, glass structure, glass technology, batch calculations, glass melting & forming, glass properties & engineering principles, and elementary fracture analysis. Sign up on the website or complete the registration form.

GOMD Leadership

Chair	Mark Davis
Vice Chair	John Ballato
Chair Elect	Steve Martin
Secretary	Kelly Simmons-Potter

SYMPOSIUM V: Glass Structure and Properties

Co-organizers: **Sabyasachi Sen** and **Randall E. Youngman**

Description: This session will focus on studies of glass structure and the structural origin of macroscopic properties, covering both oxide and nonoxide systems. Short- and intermediate-range structure as obtained from spectroscopy and diffraction will be featured, as well as studies of the Boson peak and the impact of thermal history on glass structure and properties.

Glass Structure and Properties I: Silicates	18-May-10	9:30 am - Noon
Glass Structure and Properties II: Simulations and Chalcogenides	18-May-10	1:15 - 3:15 pm
Glass Structure and Properties III: Phosphates	18-May-10	3:15 - 4:45 pm
Glass Structure and Properties IV: More Fun with the Vitreous State	19-May-10	1:15 - 3:45 pm

Photoinduced Structural Change in Glass

Organizer: **Pierre Lucas**

Description: Optically induced processes can provide the basis for significant modification in structure and associated material properties/processes, including physical, chemical, electrical, and optical behavior. This session will cover topics involving light-induced structural modifications in amorphous solids. Topics include femtosecond-laser-writing in silicates, photostructural effects in chalcogenides, photo-reactivity in polymeric glasses, photo-ablation, and others.

Photoinduced Structural Changes in Glass	19-May-10	8:00 - 11:45 am
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International Journal of Applied Glass Science

Edited by **David Pye**

Copies of our newest journal will be distributed at GOMD.

Launching March 2010, the **International Journal of Applied Glass Science** (IJAGS) endeavors to be an indispensable source of information dealing with the application of glass science and engineering across the entire materials spectrum. Order your print subscription today!



Hotel Information

Radisson Hotel Corning

125 Denison Pkwy E • Corning, NY 14830

Phone - (607) 962-5000

Phone - (800) 333-3333

www.radisson.com/corningny

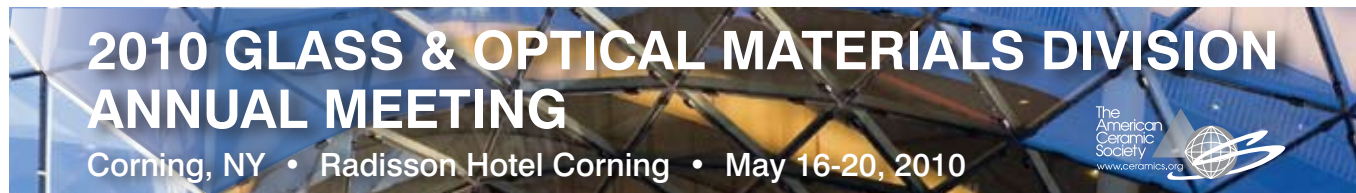
Rate - \$119 plus tax a night.

To make your reservations online, visit www.ceramics.org/gomd2010.

When making a reservation by phone, mention that you are with The American Ceramic Society to secure your reservation at the negotiated conference rate.



Sign up by May 16, 2010



4 ways to register

Early Registration Deadline:
April 16, 2010

MAIL
The American Ceramic Society
L-2625, PO Box 600001
Columbus, OH 43260-2625 USA

FAX
1-301-206-9789
(Credit Cards Only)

WWW
www.ceramics.org
(Credit Cards Only)

PHONE
1-866-721-3322 U.S.
1-240-646-7054 Int'l.
(Credit Cards Only)

Please print This is my work address home address school address

Member No. _____ First Name _____ M.I. _____ Last Name _____
 Job Title _____ Dept. _____
 Company/Affiliation/School _____
 Street Address _____
 City _____ State/Province _____ Postal Code _____ Country _____
 Phone _____ Fax _____
 E-mail _____

Billing Address

Same as Above Address _____
 City _____ State _____ Zip _____
 Country _____

Registration

GOMD 2010 Registration	ATTENDING GMIC WORKSHOP	EARLY REG. THROUGH APRIL 16	AFTER APRIL 16
Member*	<input type="checkbox"/> Yes	<input type="checkbox"/> \$525	<input type="checkbox"/> \$625
Member with Membership renewal*	<input type="checkbox"/> Yes	<input type="checkbox"/> \$645	<input type="checkbox"/> \$745
Nonmember*	<input type="checkbox"/> Yes	<input type="checkbox"/> \$645	<input type="checkbox"/> \$745
Emeritus/Senior*	<input type="checkbox"/> Yes	<input type="checkbox"/> \$395	<input type="checkbox"/> \$495
Material Advantage Student Member** (Workshop not included)		<input type="checkbox"/> \$145	<input type="checkbox"/> \$195
Student: Not in Material Advantage* (Workshop not included)		<input type="checkbox"/> \$180	<input type="checkbox"/> \$230
One Day: Member†		<input type="checkbox"/> \$395	<input type="checkbox"/> \$495
One Day: Nonmember†		<input type="checkbox"/> \$515	<input type="checkbox"/> \$615
Companion (includes coffee receptions and Tuesday's dinner)		<input type="checkbox"/> \$105	<input type="checkbox"/> \$105
GMIC Dinner Ticket (Wednesday)		<input type="checkbox"/> \$60	<input type="checkbox"/> \$60

‡ Select free Division Membership
 * Includes coffee breaks, receptions, Tuesday's conference dinner and Thursday's Workshop. (Wednesday's dinner not included)

GMIC Sponsored Glass Strength Workshop Only

Usable Glass Strength - Forming a Research Coalition**	<input type="checkbox"/> \$395	<input type="checkbox"/> \$495
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** Includes Wednesday's GMIC tour & dinner ticket, and Thursday's Workshop.

Additional Option

International Journal of Applied Glass Science (2010 Print Subscription)	<input type="checkbox"/> \$55	<input type="checkbox"/> \$55
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Short Course: Fundamentals of Glass Science and Technology – May 20-21

Member	<input type="checkbox"/> \$675	<input type="checkbox"/> \$775
Nonmember	<input type="checkbox"/> \$765	<input type="checkbox"/> \$865
Student	<input type="checkbox"/> \$225	<input type="checkbox"/> \$325
Course plus Membership	<input type="checkbox"/> \$795	<input type="checkbox"/> \$895

GRAND TOTAL \$ _____ \$ _____

ACerS Membership†

If you are not already a member of a division, choose one free affiliation below.

- Art
- Basic Science
- Cements
- Electronics
- Engin. Ceramics
- Glass & Optical Materials
- Nuclear & Environ. Tech.
- Refractory Ceramics
- Structural Clay Products
- Whitewares & Materials

Join or renew a Section or Class (CEC, Keramos, NICE) affiliation by listing it here:

Your credit card will be charged accordingly.

Membership includes online access to *Journal of the American Ceramic Society*, *International Journal of Applied Ceramic Technology*, and the new *International Journal of Applied Glass Science*. Also includes print subscription and online access to *American Ceramic Society Bulletin*. Review all benefits at www.ceramics.org/memberbenefits

Payment

Check for \$ _____ enclosed.

(PAYABLE TO: THE AMERICAN CERAMIC SOCIETY. MUST BE IN U.S. DOLLARS AND DRAWN ON A U.S. BANK.)

Charge \$ _____ to my credit card:

- VISA
- MC
- AMEX

ACCT. NUMBER

EXP. DATE

NAME ON CREDIT CARD

SIGNATURE

Cancellation Policy: Full refund less \$50 if cancelled on or before April 16, 2010; 50% refund if cancelled between April 17, 2010 and May 15, 2010; no refunds after the start of the conference.

For Hotel Accommodations call the Radisson Hotel Corning
 1-607-962-5000 or 1-800-395-7046



The American Ceramic Society
600 N. Cleveland Ave., Suite 210
Westerville, Ohio 43082 USA

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