

CONFERENCE GUIDE

2024

GLASS & OPTICAL
MATERIALS DIVISION
ANNUAL MEETING

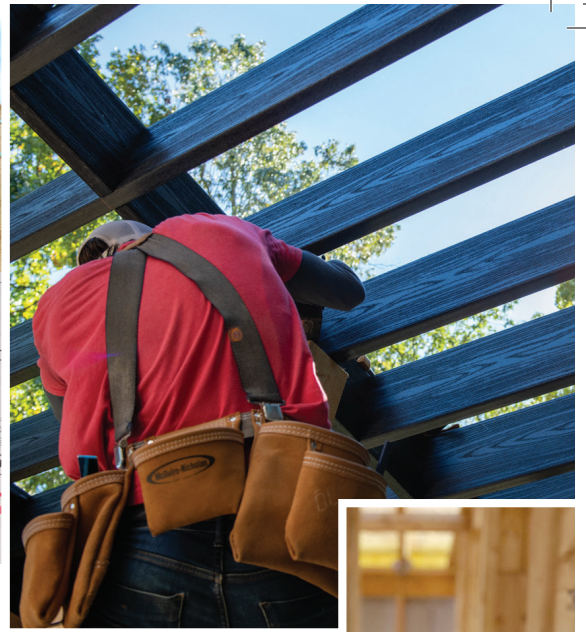
May 19–23, 2024



The
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2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

The American Ceramic Society
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ceramics.org/gomd24 | MAY 19 – 23, 2024

Welcome

Dear Colleagues and Friends,

Welcome to Las Vegas! On behalf of The American Ceramic Society, welcome to the Glass & Optical Materials Division Meeting 2024 (GOMD 2024). We have over 325 oral and poster presentations that explore the fundamental nature of the glassy state, glass applications in healthcare, energy and environment, glass manufacturing challenges, nuclear waste immobilization, optical and optoelectronic materials, and more. The program also features honorary symposia for Delbert Day and Mark Davis. GOMD 2024 will provide a unique opportunity for glass scientists and technologists to interact.

GOMD 2024 covers the latest advances in glass science and technology. Technical leaders from industry, national laboratories, and academia will lead six symposia and over 20 technical sessions that 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. The poster session will highlight late-breaking research and feature the annual student poster contest.

Several special activities are planned in addition to the technical program:

- Renew acquaintances and get to know new faces within the GOMD community during the Welcome Reception on Sunday from 5 p.m. – 7 p.m.
- Special Award Lectures: The Stookey Lecture of Discovery Award (Monday morning), the George W. Morey Award (Tuesday morning), the Norbert J. Kreidl Award for Young Scholars (Tuesday at 12:15 p.m.), the Darshana and Arun Varshneya Frontiers of Glass Science lecture (Wednesday morning) and the Darshana and Arun Varshneya Frontiers of Glass Technology lecture (Thursday morning).
- Continue your learning experience by attending the Poster Session and Student Poster Competition on Monday from 6:30 p.m. – 8:30 p.m.
- GOMD attendees are invited to enjoy dinner, drinks, live entertainment, and continued networking with their colleagues during the Conference Celebration on Tuesday from 7 p.m. – 10 p.m.

Special thanks to our sponsors: **AGC, Owens Corning, American Elements, Elsevier, Ceramic Tech Today, The International Journal of Applied Glass Science (IJAGS), The Journal of the American Ceramic Society (JACerS), and Wiley.**

The American Ceramic Society thanks you for participating in and being part of this year's meeting.

GOMD 2024 Program Chairs



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2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

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WELCOME FROM THE AMERICAN CERAMIC SOCIETY (ACerS)

The ACerS community is open to all, and we're happy to have you with us. ACerS values diverse and inclusive participation within the field of ceramic science and engineering. We strive to promote involvement and access to leadership opportunity regardless of race, ethnicity, gender, religion, age, sexual orientation, nationality, disability, appearance, geographic location, career path or academic level.

If you are a new member or joining us for the first time, please visit the ACerS registration desk to learn more.

For all guests, if you need access to a nursing mother's room or have other special needs, please ask us at the ACerS registration desk. For childcare services, please check with the hotel concierge for a listing of licensed and bonded caregivers.

We hope you enjoy the conference and want you to know that all individuals are welcome at ACerS conferences and events.



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Schedule-at-a-Glance

SUNDAY, MAY 19, 2024

Conference registration
Welcome reception

4 p.m. – 6 p.m.
5 p.m. – 6:30 p.m.

Conference Center Reg Desk
Grand 1 & 4

MONDAY, MAY 20, 2024

Conference registration
Stookey Lecture of Discovery
Concurrent technical sessions
IJAGS Award Luncheon
Lunch on own
Poster setup - students hang posters
Poster session and reception; student poster competition

7 a.m. – 5:30 p.m.
7:45 a.m. – 9 a.m.
9:20 a.m. – 5:40 p.m.
Noon – 1:15 p.m.
Noon – 1:30 p.m.
2:30 p.m. – 5:30 p.m.
6 - 7:30 p.m.

Conference Center Reg Desk
Pebble Beach
Conference Rooms
Merion
Grand 1 & 4
Grand 1 & 4

TUESDAY, MAY 21, 2024

Conference registration
George W. Morey Award lecture
Concurrent technical sessions
Norbert J. Kreidl Award for Young Scholars
Lunch on own
GOMD General Business Meeting
Conference banquet

7:30 a.m. – 5:30 p.m.
8 a.m. – 9 a.m.
9:20 a.m. – 5:40 p.m.
12:15– 1:15 p.m.
Noon – 1:30 p.m.
5:45 p.m. – 6:45 p.m.
7 p.m. – 10 p.m.

Conference Center Reg Desk
Pebble Beach
Conference Rooms
Pebble Beach
Pebble Beach
Grand 2 & 3

WEDNESDAY, MAY 22, 2024

Conference registration
Varshneya Frontiers of Glass Science lecture
Concurrent technical sessions
Lunch on own
Journal Author Workshop

7:30 a.m. – 5:30 p.m.
8 a.m. – 9 a.m.
9:20 a.m. – 5:40 p.m.
Noon – 1:30 p.m.
12:15 p.m. – 1:15 p.m.

Conference Center Reg Desk
Pebble Beach
Conference Rooms
Turnberry

THURSDAY, MAY 23, 2024

Conference registration
Varshneya Frontiers of Glass Technology lecture
Concurrent technical sessions

8 a.m. – Noon
8 a.m. – 9 a.m.
9:20 a.m. – Noon

Conference Center Reg Desk
Pebble Beach
Conference Rooms



2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

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Meeting Regulations



Cell phones
silent

During oral sessions conducted during Society meetings, unauthorized photography, videotaping, and audio recording is strictly prohibited for two reasons:

(1) conference presentations are the intellectual property of the presenting authors and as such are protected, and

(2) engaging in photography, videotaping, or audio recording is disruptive to the presenter and the audience. Failure to comply may result in the removal of the offender from the session or from the remainder of the meeting.



No photography/
recording

Note: The Society may engage photographers to photograph sessions for marketing and promotional purposes.

MEETING REGULATIONS

The American Ceramic Society is a nonprofit scientific organization that facilitates the exchange of knowledge meetings and publication of papers for future reference. The Society owns and retains full right to control its publications and its meetings. The Society has an obligation to protect its members and meetings from intrusion by others who may wish to use the meetings for their own private promotion purpose. Literature found not to be in agreement with the Society's goals, in competition with Society services or of an offensive nature will not be displayed anywhere in the vicinity of the meeting. Promotional literature of any kind may not be displayed without the Society's permission and unless the Society provides tables for this purpose. Literature not conforming to this policy or displayed in other than designated areas will be disposed. The Society will not permit unauthorized scheduling of activities during its meeting by any person or group when those activities are conducted at its meeting place in interference with its programs and scheduled activities. The Society does not object to appropriate activities by others during its meetings if it is consulted with regard to time, place, and suitability. Any person or group wishing to conduct any activity at the time and location of the Society meeting must obtain permission from the Executive Director or Director of Meetings, giving full details regarding desired time, place and nature of activity.

Diversity Statement: The American Ceramic Society values diverse and inclusive participation within the field of ceramic science and engineering. ACerS strives to promote involvement and access to leadership opportunity regardless of race, ethnicity, gender, religion, age, sexual orientation, nationality, disability, appearance, geographic location, career path or academic level. Visit the registration desk if you need access to a nursing mother's room or need further assistance. For childcare services, please check with the concierge at individual hotels for a listing of licensed and bonded child care options. The American Ceramic Society plans to take photographs and video at the conference and reproduce them in educational, news

or promotional materials, whether in print, electronic or other media, including The American Ceramic Society's website. By participating in the conference, you grant The American Ceramic Society the right to use your name and photograph for such purposes. All postings become the property of The American Ceramic Society. During oral sessions conducted during Society meetings, unauthorized photography, videotaping and audio recording is prohibited. Failure to comply may result in the removal of the offender from the session or from the remainder of the meeting.

Registration Requirements: Attendance at any meeting of the Society shall be limited to duly registered persons.

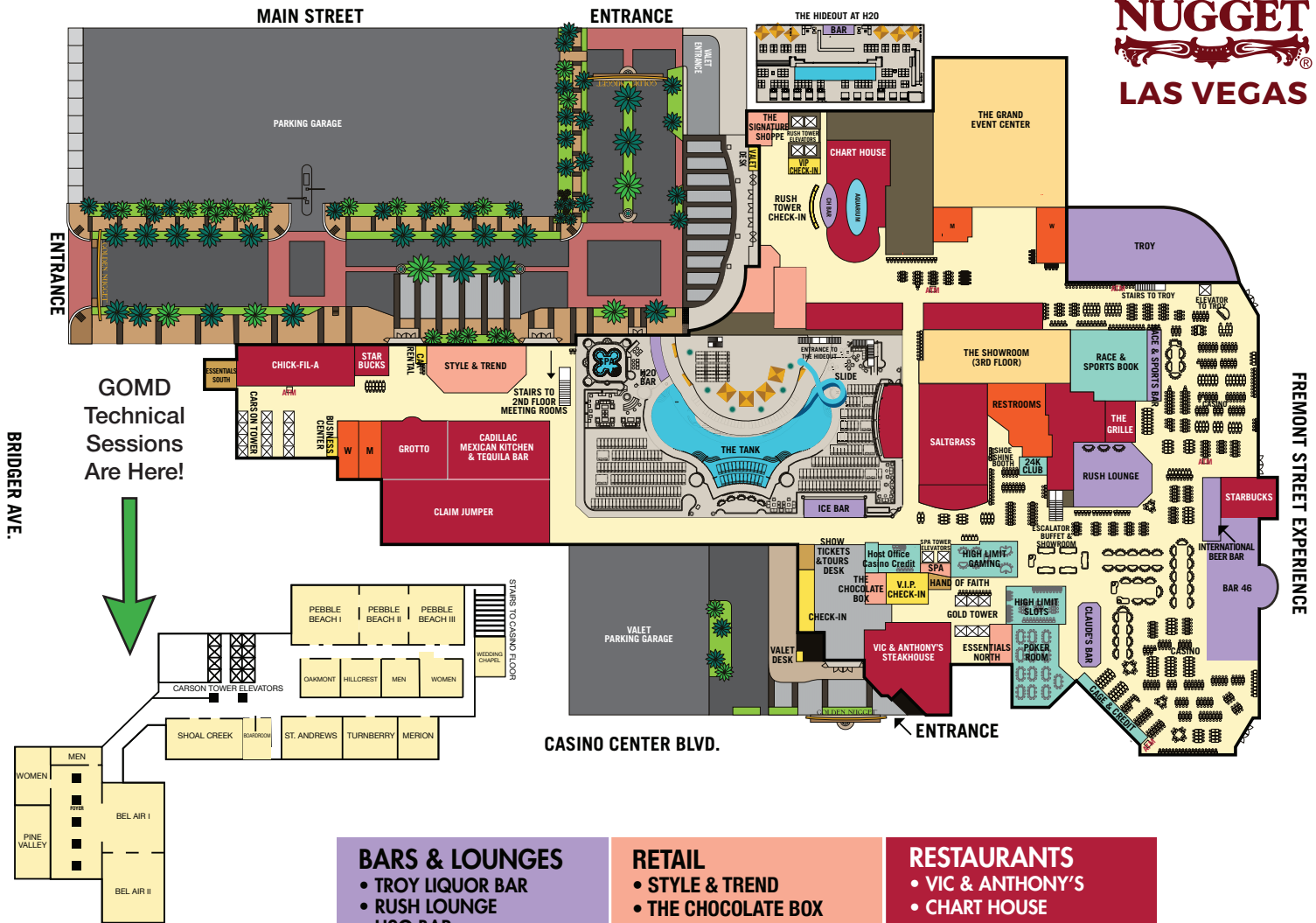
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Floor plan



GOMD Technical Sessions Are Here!



- | BARS & LOUNGES | RETAIL | RESTAURANTS |
|--|---|---|
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Located on third floor | <ul style="list-style-type: none"> • VIC & ANTHONY'S • CHART HOUSE • GROTTO • CLAIM JUMPER • CADILLAC MEXICAN KITCHEN & TEQUILA BAR • SALTGRASS • CHICK-FIL-A • THE GRILLE • STARBUCKS |



2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

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Award Speakers

Stookey Lecture of Discovery

Monday, May 20, 2024 | 7:45 a.m. PST | Pebble Beach



Jasbinder (Jas) S. Sanghera, Acting Superintendent of the Optical Sciences Division at the U. S. Naval Research Laboratory (NRL), Washington, DC, USA.

Title: *Infrared Materials and Fiber Optics*

ABSTRACT: At the Naval Research Laboratory (NRL), we are developing infrared glasses, ceramics and optical fibers for many active and passive applications. The chalcogenide glasses transmit from approximately 1 μm to 12 μm in the important infrared wavelength region. Fibers have been developed for passive applications, including light-pipes for remote chemical sensor systems for environmental pollution monitoring, exo-planet discovery, scanning near field optical microscopy and other applications. Active applications have also been developed to exploit the high optical nonlinearity of the fibers to generate broadband IR supercontinuum sources and Raman wavelength shifters. In addition, rare earth doping has been used to create bright sources in the IR. More recent developments have focused on fabricating hollow core negative curvature fiber with waveguide loss $>100\times$ lower than the material loss in the infrared. Additionally, fiber devices and components have been designed and fabricated. Examples include IR fiber combiners utilized to couple the output from several QCLs in the MWIR and LWIR into a single output fiber, thereby enabling efficient power and wavelength scaling. By tailoring the composition of the chalcogenide glasses it is possible to control refractive index and dispersion, as well as diffusion to enable graded optics, thereby enabling many new multiband optical lens materials.

BIOGRAPHY: Dr. Jasbinder (Jas) S. Sanghera is currently the Acting Superintendent of the Optical Sciences Division at the U. S. Naval Research Laboratory (NRL) located in Washington, DC.

He received a B.S. in Chemistry from the University of Leicester (UK), a Ph.D. in Materials Science from Imperial College of Science and Technology, University of London, UK, as well as a Diploma of Imperial College. After finishing a post-doctoral position at UCLA, he joined NRL as a support contractor but

was converted to a govt position, followed by rapid promotion to Section Head, Branch Head and currently Acting Superintendent. In that capacity, he manages and technically guides scientists in all aspects of optical sciences and phenomena, including optical materials being developed for a wide range of applications.

Dr. Sanghera has received numerous awards including being the first recipient of the Young Investigator Award from ISNOG, the Federal Laboratories Consortium National and Mid-Atlantic Awards for Excellence in Technology Transfer, the Sigma Xi Award for Applied Science. He was co-recipient of OSA's prestigious David Richardson Medal, as well as the Navy's Arthur E. Bisson Prize. He was elected to the position of Fellow of OSA, SPIE and IAAM. He was awarded the navy's prestigious E. O. Hulburt Award, in honor of NRL's first director. In 2024, he won the Advanced Materials Award from IAAM. He has transitioned many technologies to the DoD and industry, published over 500 papers, edited a book on "IR Fiber Optics", presented more than 250 technical talks, and has >140 patents awarded and 70 licensed to industry. In addition, he is an active participant on the committee for several conferences, workshops and NATO groups.

George W. Morey Award Lecture

Tuesday, May 21, 2024 | 8 a.m. PST | Pebble Beach



Stephen H. Garofalini, Distinguished Professor of Materials Science and Engineering at Rutgers University, Piscataway, NJ.

Title: *Evolution of Molecular Dynamics Simulations of Glass Surfaces and Interfaces*

ABSTRACT: Although Rahman's molecular dynamics simulations of a simple Lennard-Jones liquid in 1964 altered the understanding of diffusion in a liquid, more general acceptance of simulations required development of more realistic interatomic potentials to describe functional materials. In 1976, Woodcock, Angell, and Cheeseman published a potential for amorphous silica that included an exponential repulsion and a screened coulomb term that started an increase in simulations of silica



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and silicates. More complex potentials were added in future simulations to address more complex systems, especially where chemical reactions were involved. Simulations began to provide insight into molecular mechanisms that could only be inferred from experimental data or provided predictions that were subsequently verified via experiment. Often the simulations instigated further experimental studies or the development and application of better microscopies and spectroscopies. Conversely, simulation methods evolved to provide ever more realistic results via design and incorporation of better interatomic potentials or enhanced ab-initio methods. Today's presentation will discuss our evolving studies of glass surfaces, glass/crystal and glass/water interfaces, nanoconfined phases and the effect each phase has on the other.

BIOGRAPHY: Professor Stephen H. Garofalini is Distinguished Professor of Materials Science and Engineering at Rutgers University, Piscataway, NJ. He obtained a BS and a BA from Rutgers in Ceramic Science and Engineering and Liberal Arts, respectively, an MS in MSE from the University of Washington, and his Ph.D. in MSE from Stanford University. After his MS degree, he worked at Lockheed on the development of the Space Shuttle Insulation Tiles and coatings for the tiles as a Scientist (1973-1977) and later, while at Stanford full time, part-time as Research Engineer (1977-1980). He held summer visiting faculty ASEE awards at Stanford and NASA Ames Research Center in 1981, 1982. Starting at Rutgers in 1980, he has performed both experimental surface spectroscopies on glasses and computational molecular dynamics simulations, with emphasis on the latter. His group has developed innovative and reactive force fields for studies of atomistic behavior involving glass surfaces, water/glass interactions, proton transport, nanoconfined phases, intergranular thin films, and conversion cathodes in Li-ion batteries using a dynamically variable charge potential. He is currently evaluating auto-dissociation of water molecules that are consistent with ab-initio calculations employing nuclear quantum effects. He has over 130 publications and over 120 invited talks at national and international conferences. He is ranked in the top 2% of the world's most-cited scientists in his field as determined by the Stanford Top 2% listing. He received both NASA and Lockheed awards and is a Fellow of the American Ceramic Society.

Norbert J. Kreidl Award for Young Scholars

Tuesday, May 21, 2024 | 12:15 p.m. PST | Pebble Beach



Brian Topper, Clemson University, USA

Title: *Evolving the lever rule for borate glass structure*

ABSTRACT: A new approach to quantifying the short-range structural units of glass forming melts has been developed by evolving the classical lever rule. The nodes of the traditional lever rule are reimagined as 'Short-Range Order Configurations' (SROCs) that allow for proper accounting of disproportionation and isomerization of chemical species. The simplicity is that only the short-range structure of just a few glasses needs to be determined, then any composition can be considered as a linear combination of the bounding SROCs. The model is first constructed and then applied to the binary zinc borate system over the entire glass forming region. Experimentally, the $x\text{ZnO}-(1-x)\text{B}_2\text{O}_3$ system is investigated with NMR, Raman, and IR spectroscopies along with density and DSC measurements. By finding the meta-, pyro-, and orthoborate SROCs, the short-range structure of binary zinc borate glasses is modeled. Correspondence with experimental data is excellent, with predicted density within 0.1% and N_4 within 1% of experimental values.

BIOGRAPHY: Brian Topper is a post-doctoral fellow at Clemson University in Clemson, South Carolina, USA. He received a BS in Physics from the University of Richmond and an MSc in Materials Science and Engineering from Alfred University. His doctoral work in Optical Science and Engineering was carried out under the supervision of Arash Mafi at the University of New Mexico working on high power laser cooling of ytterbium doped silica. He has authored/co-authored 19 peer-reviewed publications, 1 book chapter, and 18 conference contributions in optics, spectroscopy, and glass science. Brian received the Oldfield Award from the Society of Glass Technology in 2021 for his MSc thesis on highly modified borate glasses. Brian, an ACerS member since 2018, shared the Varshneya-Mauro-Jain Guru-Chela award from GOMD with MSc thesis supervisor, Doris Möncke (Alfred University). He is currently working on fabrication of optical fiber for high energy laser systems at Clemson University's Center for Optical Materials Science and Engineering Technology (COMSET).



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Award Speakers

Varshneya Glass Science Award

Wednesday, May 22, 2024 | 8 a.m. PST | Pebble Beach



Edgar Dutra Zanotto, Department of Materials Engineering Center for Research, Technology and Education in Vitreous Materials, Federal University of Sao Carlos, Brazil

Title: *Unlocking crystal nucleation in supercooled liquids and glasses*

ABSTRACT: Modern glass science defines the glassy state through three key features: structure, relaxation, and crystallization. Understanding how materials vitrify or avoid crystallization requires examining dynamic processes like relaxation and crystallization. Crystallization is the nemesis of vitrification, however, controlled nano or micro-crystallization allows the creation of valuable polycrystalline glass-ceramics. This centrality in hindering and harnessing crystallization makes it the most cited keyword in glass science history. This lecture focuses on the early stages of crystallization, with a nod to relaxation processes. We will delve into the significant progress made in understanding crystal nucleation in supercooled liquids and glasses, where relaxation plays a critical role. The Classical Nucleation Theory (CNT), the workhorse for analyzing crystallization dynamics for over 70 years, has limitations. Experimental data reveals significant discrepancies between CNT predictions and observed nucleation rates and their temperature dependence in various glass formers, including metallic, organic, and oxide materials. However, recent MD simulations using simpler models (such as Lennard-Jones, BaS, ZnSe, Ge, Ni, and H₂O) have successfully validated CNT and uncovered intriguing connections between crystal nucleation and dynamic heterogeneities within the material. Short videos will be used to enhance the presentation.

BIOGRAPHY: Edgar Dutra Zanotto is a passionate researcher in glass science and engineering, dedicating over 47 years to education, discovery and invention. He serves as a professor at the Federal University of São Carlos, Brazil, and the Director of the Center for Research, Technology and Education in Vitreous Materials – www.certev.ufscar.br.

Zanotto's research delves into the fundamental behaviors of glass-forming materials, encompassing diffusion, viscous flow, relaxation, and crystallization. He further explores the development, properties, and applications of technological glasses and glass-ceramics. His prolific career has yielded approximately 450 scientific articles in journals and conference proceedings, plus several book chapters and patents. He has fostered research through approximately 100 contracts with government agencies and 40 with industries. He has supervised over 100 "diploma" students and 100 post-graduate students and post-docs. His expertise has been shared through over 400 congress presentations, including 160 invited lectures and 40 plenary talks at national and international conferences.

Zanotto's contributions have been acknowledged with 59 science and technology awards. He holds memberships in esteemed academies worldwide, including the São Paulo Academy of Sciences, Brazilian Academy of Sciences, National Academy of Engineering, World Academy of Ceramics (WAC), and The World Academy of Sciences (TWAS). He is a distinguished Fellow of the Fulbright Foundation, the American Ceramic Society, the Society of Glass Technology, and the Brazilian Ceramic Society. His leadership extends beyond research. He serves as an editor for the *Journal of Non-Crystalline Solids* and sits on the advisory boards of ten other scientific journals, actively shaping the discourse in glass physics and materials science.



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Varshneya Glass Technology Award

Thursday, May 23, 2024 | 8 a.m. PST | Pebble Beach



Shibin Jiang, Founder and Chair of AdValue Photonics Inc.

Title: *Rare-Earth Doped Glasses, Fibers, Lasers and Applications*

ABSTRACT: Rare-earth doped phosphate, silicate, germanate, and tellurite glasses and their fibers have been studied and developed for fiber amplifiers and lasers. Many unique lasers and optical components have been developed and successfully commercialized by utilizing these innovative glass fibers. Single frequency CW and pulsed fiber lasers at 1 micron, 1.55 micron and 2 micron wavelengths are widely used for coherent lidar and fiber sensing applications. All-fiber isolator could be a critical component of high-power laser system for defense applications. Both nanosecond and picosecond lasers were demonstrated at IR, green and UV wavelengths, which have been used laser materials processing for glass and ceramic industry.

BIOGRAPHY: Dr. Shibin Jiang is founder and Chair of Board of AdValue Photonics Inc. and Hangzhou Silverlake Laser Technology, and Adjunct Research Professor at College of Optical

Sciences, University of Arizona. He received Ph.D. degree from Universite de Rennes 1, France. He was Co-founder and CTO of NP Photonics Inc.

Dr. Jiang holds 88 issued patents, edited 36 proceeding books, authored 150 publications, has H index of 52, and has served as chairs of 43 international technical conferences including OPTO at Photonics West for SPIE and Advanced Solid-State Laser Congress for Optica. He served as many award committees for Optica, SPIE and The America Ceramic Society (ACerS), and associate editors for 4 scientific journals. He was the chair for Glass and Optical Materials Division of ACerS in 2014. Currently is the chair of technical committee of optical fibers and photonics glasses of International Commission on Glass (ICG), and a member of board of directors of ACerS.

Dr. Jiang was awarded with the Gottardi Prize in 2005 from ICG, 2012 and 2014 R&D 100 Awards, and 2018 R&D 100 Award Finalist. He received the 2018 Corporate Technical Achievement Award and the Medal for Leadership in the Advancement of Ceramic Technology in 2021 and was named as The Global Ambassador in 2019 by the ACerS. Dr. Jiang is a Fellow of SPIE, ACerS, and Optica. He is elected as an academician of the World Academy of Ceramics in 2020.





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2024 David Pye Lifetime Achievement

The L. David Pye Lifetime Achievement Award is presented annually by the Glass & Optical Materials Division to deserving individual(s) in recognition of lifetime dedication, vision, and accomplishments in advancing the fields of glass science, glass engineering, and glass art.

L. David Pye, Dean and Professor of Glass Science, Emeritus, The New York State College of Ceramics at Alfred University, and past President of The American Ceramic Society and The International Commission on Glass, has been a visionary leader whose passion to link the global activities of academia, industry, and government in glass science and engineering have been an inspiration to many. These activities have led to an elevation of glass within the field of material science and engineering, and have resulted in long-standing initiatives that continue to this day to influence professional societies, students, research, and industry-university networks.



CAROL JANTZEN

University of South Carolina
Aiken



MANOJ CHOUDHARY

The Ohio State University



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Sessions by Symposium

SESSION TITLE	DATE	TIME	LOCATION
AWARD PRESENTATIONS			
Welcome and Opening Remarks and Stookey Lecture of Discovery	May 20, 2024	7:45 - 9 a.m.	Peeble Beach
George W. Morey Award Lecture	May 21, 2024	8 - 9 a.m.	Peeble Beach
Norbert J.Kreidl Award Lecture	May 21, 2024	12:15 - 1:15 p.m.	Peeble Beach
Darshana and Arun Varshneya Frontiers of Glass Science Lecture	May 22, 2024	8 - 9 a.m.	Peeble Beach
Darshana and Arun Varshneya Frontiers of Glass Technology Lecture	May 23, 2024	8 - 9 a.m.	Peeble Beach
POSTERS			
Poster session and reception; student poster competition	May 20, 2024	6 - 7:30 p.m.	Grand 1 & 4
SYMPOSIUM 1: FUNDAMENTALS OF THE GLASSY STATE			
Session 1: Glass Formation and Structural Relaxation Glass Formation and Structural Relaxation	May 21, 2024	1:20 - 3:40 p.m.	Bel Air II
Session 1: Glass Formation and Structural Relaxation Glass Formation and Structural Relaxation	May 21, 2024	3:40 - 4:20 p.m.	Bel Air II
Session 1: Glass Formation and Structural Relaxation Glass Formation and Structural Relaxation	May 22, 2024	9:20 - 11:40 a.m.	Bel Air II
Session 2: Glass Crystallization and Glass-Ceramics I	May 20, 2024	9:20 - 11 a.m.	Bel Air II
Session 2: Glass Crystallization and Glass-Ceramics II	May 20, 2024	1:20 - 3:40 p.m.	Bel Air II
Session 2: Glass Crystallization and Glass-Ceramics III	May 20, 2024	3:40 - 5:40 p.m.	Bel Air II
Session 3: Structural Characterizations of Glasses and Melts	May 21, 2024	9:20 - 12 p.m.	Turnberry
Session 3: Structural Characterizations of Glasses and Melts	May 21, 2024	1:20 - 4:50 p.m.	Turnberry
Session 4: Atomistic simulations and predictive modelling of Glasses	May 22, 2024	1:20 - 3:50 p.m.	Bel Air II
Session 4: Atomistic simulations and predictive modelling of Glasses	May 22, 2024	3:50 - 5:20 p.m.	Bel Air II
Session 4: Atomistic simulations and predictive modelling of Glasses	May 23, 2024	9:20 - 10 a.m.	Bel Air II
Session 5: Data-based Modeling and Machine Learning for Glass Science	May 20, 2024	9:20 - 11:50 a.m.	St. Andrews
Session 5: Data-based Modeling and Machine Learning for Glass Science	May 20, 2024	1:20 - 3:40 p.m.	St. Andrews
Session 5: Data-based Modeling and Machine Learning for Glass Science	May 20, 2024	3:40 - 4:40 p.m.	St. Andrews

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Sessions by Symposium

SESSION TITLE	DATE	TIME	LOCATION
SYMPOSIUM 1: FUNDAMENTALS OF THE GLASSY STATE (cont.)			
Session 6: Mechanical Properties of Glasses I: Rate dependence of mechanical responses	May 22, 2024	9:20 - 11:30 a.m.	Bel Air I
Session 6: Mechanical Properties of Glasses II: Current challenges in experiments and modelling of fracture	May 22, 2024	1:20 - 3:40 p.m.	Bel Air I
Session 6: Mechanical Properties of Glasses III: Strengthening	May 22, 2024	3:40 - 5:30 p.m.	Bel Air I
Session 6: Mechanical Properties of Glasses IV: Outstanding mechanical properties	May 23, 2024	9:20 - 11:10 a.m.	Bel Air I
Session 7: Glass Under Extreme Conditions	May 23, 2024	9:20 a.m. - 12 p.m.	Turnberry
Session 8: Chalcogenide and phase change materials: Theories, electronic, and thermal properties	May 20, 2024	3:40 - 5:40 p.m.	Bel Air I
Session 8: Chalcogenide and phase change materials: Phase transitions and dynamics	May 21, 2024	9:20 - 11:50 a.m.	Bel Air I
Session 8: Chalcogenide and phase change materials: Glass structure and properties I	May 21, 2024	1:20 - 3:10 p.m.	Bel Air I
Session 8: Chalcogenide and phase change materials: Glass structure and properties II	May 21, 2024	3:40 - 5:40 p.m.	Bel Air I
Session 9: Metallic Glasses	May 22, 2024	1:20 - 3:40 p.m.	Shoal Creek
Session 10: Sol-Gel and MOF Glasses	May 22, 2024	1:20 - 3:40 p.m.	St. Andrews
SYMPOSIUM 2: GLASS AND INTERACTIONS WITH ITS ENVIRONMENT FUNDAMENTALS AND APPLICATIONS			
Session 1: Glasses, Glass-Ceramics, and Glass-Based Biomaterials	May 20, 2024	9:20 - 11:30 a.m.	Bel Air I
Session 1: Glasses, Glass-Ceramics, and Glass-Based Biomaterials	May 20, 2024	1:20 - 3 p.m.	Bel Air I
Session 2: Dissolution and Interfacial Reactions	May 20, 2024	9:20 - 11:10 a.m.	Turnberry
Session 2: Dissolution and Interfacial Reactions	May 20, 2024	1:20 - 3:40 p.m.	Turnberry
Session 2: Dissolution and Interfacial Reactions	May 20, 2024	3:40 - 5:20 p.m.	Turnberry
Session 3: Glass Surfaces, Interfaces, and Coatings	May 21, 2024	9:20 a.m. - 12:10 p.m.	St. Andrews
Session 3: Unconventional glass surfaces	May 21, 2024	1:20 - 2:10 p.m.	St. Andrews
Session 3: Special Tutorial Session on Glass Surface Analysis	May 21, 2024	2:10 - 3:20 p.m.	St. Andrews
Session 4: Materials for Waste Immobilization	May 21, 2024	9:20 - 11:40 a.m.	Shoal Creek
Session 4: Materials for Waste Immobilization	May 21, 2024	1:20 - 3:30 p.m.	Shoal Creek
Session 4: Materials for Waste Immobilization	May 21, 2024	3:40 - 5 p.m.	Shoal Creek
Session 4: Materials for Waste Immobilization	May 22, 2024	9:20 - 11:40 a.m.	Shoal Creek



2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

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Sessions by Symposium

SESSION TITLE	DATE	TIME	LOCATION
SYMPOSIUM 3: OPTICAL AND ELECTRONIC MATERIALS AND DEVICES FUNDAMENTALS AND APPLICATIONS			
Session 1: Laser Interactions with Glasses	May 23, 2024	9:20 - 11:10 a.m.	Shoal Creek
Session 2: Charge and Energy Transport in Disordered Materials	May 22, 2024	3:40 - 5 p.m.	Peeble Beach
Session 2: Charge and Energy Transport in Disordered Materials	May 23, 2024	9:20 - 11:20 a.m.	Peeble Beach
Session 4: Glass Devices I	May 22, 2024	3:40 - 5:40 p.m.	St. Andrews
Session 4: Glass Devices II	May 23, 2024	9:20 - 11:20 a.m.	St. Andrews
Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications I	May 20, 2024	9:20 - 10:40 a.m.	Shoal Creek
Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications II	May 20, 2024	1:20 - 3:40 p.m.	Shoal Creek
Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications III	May 20, 2024	3:40 - 5 p.m.	Shoal Creek
SYMPOSIUM 4: OUTREACH GLASS TECHNOLOGY MANUFACTURE RECYCLING & CROSS-CUTTING TOPICS			
Session 1: STEM Outreach	May 21, 2024	9:20 a.m. - 12:10 p.m.	Bel Air II
Session 2: Challenges in Manufacturing I	May 21, 2024	1:20 - 3:40 p.m.	Peeble Beach
Session 2: Challenges in Manufacturing II	May 21, 2024	3:40 - 5:40 p.m.	Peeble Beach
Session 2: Challenges in Manufacturing III	May 22, 2024	9:20 a.m. - 12 p.m.	Peeble Beach
Session 2: Challenges in Manufacturing IV	May 22, 2024	1:20 - 3:10 p.m.	Peeble Beach
Session 3: Additive Manufacturing of Glass	May 21, 2024	3:40 - 5:40 p.m.	St. Andrews
Session 3: Additive Manufacturing of Glass	May 22, 2024	9:20 - 11:40 a.m.	St. Andrews
SYMPOSIUM 5: DELBERT DAY HONORARY SYMPOSIUM			
	May 20, 2024	9:20 - 11:50 a.m.	Peeble Beach
	May 20, 2024	1:20 - 3:10 p.m.	Peeble Beach
SYMPOSIUM 6: MARK DAVIS HONORARY SYMPOSIUM			
	May 22, 2024	9:20 a.m. - 12 p.m.	Turnberry
	May 22, 2024	1:20 - 3:50 p.m.	Turnberry
	May 22, 2024	3:50 - 5:20 p.m.	Turnberry

MAY 19 – 23, 2024

Special Events

GOMD 2024 offers several special events to encourage invaluable networking opportunities with colleagues!

Your registration fee includes three evening receptions with food and drink provided and two coffee breaks per day (mid-morning and afternoon).

Students also have the opportunity to opt-in to an award luncheon and an off-site evening career panel and reception for students and young professionals.

SUNDAY, MAY 19	WELCOME RECEPTION	5 – 6:30 p.m.
GRAND 1 & 4	Have a drink and some light appetizers on us while you reconnect with old friends and meet new colleagues at this kick-off event. Drink tickets will be provided for your first drink and a cash bar will also be available with an assortment of beer, wines, and soft drinks.	
MONDAY, MAY 20	POSTER SESSION AND RECEPTION	6 – 7:30 p.m.
GRAND 1 & 4	Network with colleagues and check out the many scientific posters to include the annual student poster competition. The first drink is on us, along with light appetizers. A cash bar will also be available with an assortment of beers, wines, and soft drinks.	
TUESDAY, MAY 21	NORBERT J. KREIDL AWARD LUNCHEON	12:15 – 1:15 p.m.
Pebble Beach Sponsored by AGC	Network with colleagues and check out the many scientific posters to include the annual student poster competition. The first drink is on us, along with light appetizers. A cash bar will also be available with an assortment of beers, wines, and soft drinks.	
TUESDAY, MAY 21	CONFERENCE CELEBRATION	7 – 10 p.m.
Grand 2 & 3	Enjoy food, drink, and Las Vegas-style entertainment with colleagues at the Conference Celebration. Gone is the banquet of years' past with a sit-down dinner and long remarks, replaced with food stations, networking opportunities, live entertainment, and FUN! We will provide two drink tickets and a cash bar will also available with an assortment of beer, wines, and soft drinks. Have a Guest Joining You at GOMD? If you have a guest with you at GOMD, we do offer a Guest Pass for \$150 that will give your guest access to the networking sessions and the Conference Celebration. Our Customer Service team can assist you in adding this product prior to the start of the conference, or stop by registration on site and one of our staff members can assist you. All attendees at GOMD events do require a conference badge.	
WEDNESDAY, MAY 22	CAREER PANEL AND DINNER	7 – 9 p.m.
Nacho Daddy Restaurant Sponsored by the Glass and Optical Materials Division	NOTE: This no-cost event requires pre-registration through the GOMD registration site and is capped at the first 50 students and/or young professionals to sign up. Venture into Downtown Las Vegas to the Nacho Daddy restaurant for a career panel and networking in our own private room. Attendance is limited due to the size of the private room.	



2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

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Symposium Organizers

Program Chairs: **Mathieu Bauchy**, University of California, Los Angeles
Morten M. Smedskjaer, Aalborg University

SYMPOSIUM 1- FUNDAMENTALS OF THE GLASSY STATE

Session 1 Glass Formation and Structural Relaxation

ORGANIZERS:

Sabyasachi Sen, University of California, Davis, United States
Collin Wilkinson, Alfred University, United States

Session 2 Glass Crystallization and Glass-Ceramics

ORGANIZERS:

Hrshikesh Kamat, Glidewell Laboratories, United States
Alfonso Pedone, University of Modena & Reggio Emilia, Italy
Ashutosh Goel, Rutgers University, United States

Session 3: Structural Characterizations of Glasses and Melts

ORGANIZERS:

Daniel Neuville, CNRS-IPGP-UP, France
Dominique de Ligny, Friedrich-Alexander-Universität, Germany

Session 4: Atomistic Simulation and Predictive Modeling of Glasses

ORGANIZERS:

Adama Tandia, Corning Inc., USA
Alfonso Pedone, University of Modena and Reggio Emilia, Italy
Hiroyuki Inoue, University of Tokyo, Japan

Session 5: Data-Driven Modeling and Machine Learning for Glass Science

ORGANIZERS:

Xiaonan Lu, Pacific Northwest National Laboratory, USA
N.M. Anoop Krishan, Indian Institute of Technology, India
Daniel Cassar, Brazilian Center for Research in Energy and Materials, Brazil

Session 6: Mechanical Properties of Glasses

ORGANIZERS:

Timothy Gross, Corning Inc., USA
Satoshi Yoshida, AGC Inc., Japan

Session 7: Glass Under Extreme Conditions

ORGANIZERS:

Madoka Ono, Tohoku University, Japan
Jingshi Wu, Corning Inc., USA
Anita Zeidler, University of Bath, U.K.

Session 8: Chalcogenide Glasses and Amorphous Materials

ORGANIZERS:

Pierre Lucas, The University of Arizona, USA
Shuai Wei, Aarhus University, Denmark

Session 9: Metallic Glasses

ORGANIZERS:

Binghui Deng, Tesla Inc., USA
Golden Kumar, University of Texas at Dallas, USA

Session 10: Sol-Gel and MOF Glasses

ORGANIZERS:

Lisa Klein, Rutgers University, USA
Yuanzheng Yue, Aalborg University, Denmark



MAY 19 – 23, 2024

Symposium Organizers

SYMPOSIUM 2: GLASS AND INTERACTIONS WITH ITS ENVIRONMENT—FUNDAMENTALS AND APPLICATIONS

Session 1: Glasses, Glass-Ceramics, and Glass-Based Biomaterials

ORGANIZERS:

Delia Brauer, University of Jena, Germany
Leena Hupa, Åbo Akademi, Finland

Session 2: Dissolution and Interfacial Reactions

ORGANIZERS:

Nicholas Stone-Weiss, Corning Inc., USA
Stephane Gin, CEA Marcoule, France
Jincheng Du, University of North Texas, USA

Session 3: Glass Surfaces, Interfaces, and Coatings

ORGANIZERS:

Nick Smith, Corning Inc., USA
Seong H. Kim, The Pennsylvania State University, USA

Session 4: Materials for Waste Immobilization

ORGANIZERS:

Jaime George, Pacific Northwest National Laboratory, USA
Joe Ryan, Pacific Northwest National Laboratory, USA

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

Session 1: Laser Interactions with Glasses

ORGANIZERS:

Casey Schwarz, Ursinus College, USA
Keith J. Veenhuizen, Lebanon Valley College, USA

Session 2: Charge and Energy Transport in Disordered Materials

ORGANIZERS:

Caio Bragatto, Coe College, USA
Gabriel Agnello, Corning Inc., USA

Session 3: Optical Fibers and Waveguides

ORGANIZERS:

Xianghua Zhang, Université de Rennes 1, France
Jiawei Luo, OFS Laboratories, New Jersey, USA
Sylvain Danto, ICMCB, University of Bordeaux, France

Session 4: Optical and Optoelectronic Glass-Based Devices

ORGANIZERS:

Juejun Hu, Massachusetts Institute of Technology, USA
Laetitia Petit, Tampere University, Finland

Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications

ORGANIZERS:

Doris Moencke, Alfred University, USA
Volkmar Dierolf, Lehigh University, USA



2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING

ceramics.org/gomd24

Symposium Organizers

SYMPOSIUM 4: OUTREACH, GLASS TECHNOLOGY, MANUFACTURE, RECYCLING, AND CROSS-CUTTING TOPICS

Session 1: STEAM Outreach

ORGANIZERS:

Charmayne Lonergan, Missouri S & T, USA
Kathryn Goetschius, Corning Inc., USA
Casey Schwarz, Ursinus College, USA

Session 2: Challenges in Glass Manufacturing

ORGANIZERS:

Irene Peterson, Corning Inc., USA
Scott Cooper, Celsian, USA
Alexandra Mitchell, Corning Inc., USA

Session 3: Additive Manufacturing of Glass

ORGANIZERS:

Jonathan Massera, Tampere University, Finland
Giorgia Franchin, University of Padova, Italy
Rebecca J. Dylla-Spears, Lawrence Livermore National Laboratory, USA

Session 4: Recycling and Sustainability

ORGANIZERS:

Enrico Bernardini, University of Padova, Italy
Carol Click, Corning Inc., USA

SYMPOSIUM 5: DELBERT DAY HONORARY SYMPOSIUM

ORGANIZERS:

Kisa S. Ranasinghe, Kennesaw State University, USA
Qiang Fu, Corning Inc., USA

SYMPOSIUM 6: MARK DAVIS HONORARY SYMPOSIUM

ORGANIZERS:

Ina Mitra, Schott, Germany
Bill James, Schott, USA



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THROUGH CERAMIC AND GLASS MATERIALS

MONTREAL, CANADA

JULY 14–18, 2024
HOTEL BONAVENTURE



ceramics.org/ICC2024

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
A									
Aaldenberg, E.M.	22-May	3:40PM	Bel Air I	20	Fu, Q.	20-May	2:20PM	Peeble Beach	7
Abbas, M.	20-May	2:40PM	Bel Air I	6	Fujita, T.	21-May	10:20AM	Bel Air I	11
Abdelmaseh, S.	20-May	4:00PM	Bel Air II	8	G				
Agnello, G.	21-May	9:50AM	St. Andrews	11	Gallino, I.	22-May	4:05PM	Shoal Creek	21
Akola, J.	21-May	3:40PM	Bel Air I	15	Gammond, L.V.	23-May	9:50AM	Turnberry	23
Alderman, O.L.	21-May	1:20PM	Turnberry	13	Garofalini, S.H.	22-May	3:40PM	Peeble Beach	21
Allec, S.	20-May	2:50PM	St. Andrews	6	Gaustad, G.	21-May	11:40AM	Bel Air II	12
Amoroso, J.	22-May	1:40PM	Peeble Beach	20	Gholipour, B.	23-May	9:50AM	St. Andrews	24
An, Q.	20-May	9:20AM	St. Andrews	4	Gin, S.	20-May	2:10PM	Turnberry	7
Annamareddy, A.	22-May	2:10PM	Bel Air II	19	Goel, A.	20-May	1:20PM	Bel Air I	6
Ardic, E.	21-May	4:20PM	Shoal Creek	15	Gray, S.	20-May	3:40PM	Shoal Creek	9
Ashjari, A.	23-May	10:10AM	Shoal Creek	23	Gross, T.M.	20-May	10:30AM	Bel Air II	4
Asmussen, M.	21-May	10:50AM	Shoal Creek	12	Gross, T.M.	22-May	4:10PM	Bel Air I	20
Ayling, J.	21-May	11:30AM	Shoal Creek	12	Grutzik, S.	22-May	1:50PM	Bel Air I	19
B					Guillen, D.P.	22-May	11:20AM	Shoal Creek	17
Barker, C.	20-May	9:20AM	Shoal Creek	5	Güldiren, D.	22-May	2:00PM	Peeble Beach	20
Barros de Moraes, E.	22-May	2:20PM	Bel Air I	19	H				
Barthel, E.	22-May	9:50AM	Bel Air I	17	Hackett, B.	22-May	9:20AM	Bel Air I	17
Bauchy, M.	20-May	10:50AM	St. Andrews	4	Harrison, M.T.	21-May	1:20PM	Shoal Creek	14
Bayko, D.P.	21-May	2:10PM	Bel Air I	14	Henry, L.J.	20-May	10:00AM	Shoal Creek	5
Bernardin, J.	22-May	9:50AM	St. Andrews	18	Henry, L.J.	20-May	10:20AM	Shoal Creek	5
Bernasconi, M.	20-May	3:40PM	Bel Air I	8	Higby, P.L.	22-May	3:00PM	Turnberry	20
Bertani, M.	20-May	2:10PM	St. Andrews	6	Hill, R.	20-May	1:50PM	Peeble Beach	7
Bertani, M.	22-May	1:50PM	Bel Air II	18	Holzer, M.S.	22-May	2:40PM	Bel Air I	19
Bhattoo, R.	20-May	10:30AM	St. Andrews	4	Hong, Z.	22-May	11:00AM	St. Andrews	18
Bihani, V.	20-May	11:10AM	St. Andrews	4	Honma, T.	22-May	10:40AM	Turnberry	18
Bourguignon, M.	23-May	10:30AM	Bel Air I	22	Hoover, C.G.	22-May	10:50AM	Bel Air I	17
Bradley, L.	22-May	4:50PM	Turnberry	22	Houghton, L.	21-May	9:50AM	Bel Air II	12
Bragatto, C.B.	23-May	11:00AM	Peeble Beach	24	Howe, A.	21-May	2:30PM	Bel Air I	14
Brounce, M.	21-May	4:00PM	Peeble Beach	15	Hrma, P.	21-May	5:20PM	Peeble Beach	16
Brow, R.	20-May	9:30AM	Peeble Beach	5	Hu, J.	21-May	4:10PM	Bel Air I	15
Brow, R.	20-May	4:10PM	Turnberry	8	Huang, L.	22-May	3:50PM	Bel Air II	21
Burov, E.	21-May	10:50AM	St. Andrews	11	Hupa, L.	20-May	11:00AM	Peeble Beach	6
Busch, R.	22-May	1:20PM	Shoal Creek	19	I				
Bussey, J.	21-May	3:40PM	Turnberry	13	Ikeda, H.	22-May	4:20PM	Bel Air II	21
C					Inoue, H.	22-May	2:50PM	Bel Air II	19
Chen, Z.	22-May	3:00PM	Bel Air I	19	J				
Christensen, J.	23-May	9:50AM	Bel Air I	22	Jacobsohn, L.G.	20-May	4:40PM	Shoal Creek	9
Christensen, R.	20-May	9:50AM	St. Andrews	4	Jain, H.	22-May	9:50AM	Turnberry	18
Chung, W.	20-May	9:40AM	Shoal Creek	5	Jiménez, J.A.	20-May	4:20PM	Shoal Creek	9
Cooper, S.	21-May	11:00AM	Bel Air II	12	K				
Cormier, L.	21-May	11:00AM	Turnberry	11	Kalahe, J.	21-May	4:40PM	Shoal Creek	15
Cormier, L.	22-May	1:20PM	Turnberry	20	Kaman, J.W.	23-May	10:40AM	St. Andrews	24
Crum, J.V.	20-May	2:40PM	Turnberry	7	Kamat, H.	20-May	1:50PM	Bel Air I	6
D					Kang, M.	23-May	11:40AM	Turnberry	23
de Camargo, A.	21-May	9:50AM	Turnberry	11	Kankova, H.	20-May	10:40AM	Bel Air I	5
de Ligny, D.	20-May	1:20PM	Shoal Creek	7	Kawano, N.	20-May	2:20PM	Shoal Creek	7
Delaye, J.	20-May	1:20PM	Turnberry	7	Kaya, H.	21-May	11:30AM	St. Andrews	12
Deslandes, A.	20-May	10:10AM	Bel Air II	4	Kerisit, S.	21-May	9:20AM	Shoal Creek	12
Destino, J.F.	21-May	4:40PM	St. Andrews	16	Kerisit, S.	21-May	10:10AM	Shoal Creek	12
Dixon, D.	22-May	10:40AM	Shoal Creek	17	Keshri, S.R.	22-May	4:40PM	Peeble Beach	21
Du, J.	20-May	4:00PM	St. Andrews	8	Kieffer, J.	22-May	9:50AM	Bel Air II	16
Durán, A.	22-May	2:20PM	Peeble Beach	20	Kim, S.	21-May	2:30PM	Shoal Creek	14
Dussauze, M.	22-May	3:40PM	St. Andrews	21	Kim, S.	22-May	4:50PM	Bel Air I	21
Dussauze, M.	23-May	11:00AM	St. Andrews	24	Kim, W.	23-May	9:20AM	St. Andrews	24
Dutra Zanotto, E.	20-May	10:00AM	Peeble Beach	5	Kirchner, K.A.	23-May	11:00AM	Turnberry	23
Dutra Zanotto, E.	22-May	9:20AM	Turnberry	18	Klein, L.C.	22-May	2:00PM	St. Andrews	20
E					Klein, L.C.	22-May	2:20PM	St. Andrews	20
Elliott, S.	20-May	4:10PM	Bel Air I	8	Klouzek, J.	22-May	1:20PM	Peeble Beach	20
Elumalai, T.R.	21-May	11:10AM	Shoal Creek	12	Kob, W.	21-May	1:20PM	Bel Air II	13
Engen, A.	21-May	11:20AM	Bel Air II	12	Kohara, S.	23-May	9:20AM	Bel Air II	22
F					Kotz-Helmer, F.	20-May	10:10AM	Bel Air I	5
Fahey, A.	21-May	2:50PM	St. Andrews	14	Kotz-Helmer, F.	21-May	4:10PM	St. Andrews	16
Fakhraai, Z.	21-May	1:20PM	St. Andrews	14	Kroeker, S.	21-May	4:30PM	Turnberry	13
Ferkl, P.	21-May	4:50PM	Peeble Beach	16	Kubicki, J.D.	21-May	9:20AM	St. Andrews	11
Fettkether, W.	23-May	10:40AM	Peeble Beach	24	Kumar, G.	22-May	4:55PM	Shoal Creek	21

Presenting Author List

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
L									
Lai, Y.	23-May	10:20AM	St. Andrews	24	Poitras, L.	22-May	2:30PM	Bel Air II	19
Lancelotti, R.F.	21-May	2:20PM	Bel Air II	13	Pokorny, R.	21-May	1:50PM	Shoal Creek	14
Lee, C.	20-May	5:20PM	Bel Air I	8	Pokorny, R.	21-May	3:40PM	Peeble Beach	15
Lee, J.	21-May	1:50PM	Peeble Beach	14	R				
Lee, J.	22-May	9:50AM	Peeble Beach	18	Rahaman, M.N.	20-May	1:20PM	Peeble Beach	7
Lee, J.	22-May	4:30PM	Bel Air I	21	Ranasinghe, K.S.	20-May	11:30AM	Peeble Beach	6
Lee, S.	23-May	9:20AM	Turnberry	23	Reinsch, S.	22-May	10:20AM	Turnberry	18
Leland, S.J.	21-May	5:00PM	Bel Air I	15	Reiser, J.T.	20-May	9:50AM	Turnberry	5
Lere-Adams, A.J.	21-May	2:10PM	Shoal Creek	14	Renklioglu, B.	22-May	11:10AM	Peeble Beach	18
Letz, M.	22-May	2:20PM	Turnberry	20	Rimsza, J.M.	20-May	5:00PM	Turnberry	9
Li, Y.	22-May	5:15PM	Shoal Creek	21	Rodrigues, A.	23-May	9:20AM	Peeble Beach	23
Liang, R.	21-May	5:10PM	St. Andrews	16	Rosales-Sosa, G.A.	23-May	10:10AM	Bel Air I	22
Lindenberg, A.	21-May	9:20AM	Bel Air I	11	Rountree, C.L.	22-May	1:20PM	Bel Air I	19
Lodesani, F.	20-May	1:20PM	Bel Air II	6	Roy, B.	21-May	10:10AM	St. Andrews	11
Loneragan, C.	20-May	10:50AM	Turnberry	5	Ryan, J.V.	20-May	2:40PM	Peeble Beach	7
Loneragan, C.	22-May	9:40AM	Shoal Creek	17	S				
López-Grande, A.	20-May	9:50AM	Bel Air I	4	Saadatpour, D.	22-May	2:50PM	Peeble Beach	20
Lu, X.	20-May	3:40PM	St. Andrews	8	Sahoo, S.	21-May	11:10AM	St. Andrews	12
Lucas, P.	20-May	4:40PM	Bel Air II	8	Sahoo, S.	21-May	1:50PM	St. Andrews	14
Lynch, P.	21-May	3:40PM	Bel Air II	15	Saini, P.	22-May	4:30PM	Shoal Creek	21
M									
Ma, Q.	21-May	2:40PM	Turnberry	13	Saini, R.	21-May	3:40PM	Shoal Creek	15
Maaß, R.	22-May	2:10PM	Shoal Creek	19	Santala, M.K.	20-May	4:40PM	Bel Air I	8
Maeda, E.	22-May	9:20AM	Peeble Beach	17	Sarafian, E.	21-May	2:20PM	Peeble Beach	14
Makareviciute, A.	20-May	5:00PM	Bel Air I	8	Sargin, I.	21-May	4:00PM	Shoal Creek	15
Maniewski, P.	21-May	3:40PM	St. Andrews	16	Sasaki, S.	23-May	10:50AM	Bel Air I	23
Mannan, S.	20-May	1:50PM	St. Andrews	6	Sato, F.	23-May	9:50AM	Shoal Creek	23
Marcial, J.	20-May	10:30AM	Turnberry	5	Sato, S.	23-May	10:20AM	Turnberry	23
Marcial, J.	22-May	10:20AM	Shoal Creek	17	Schaut, R.	20-May	3:40PM	Turnberry	8
Martin, S.W.	23-May	9:50AM	Peeble Beach	23	Schroers, J.	22-May	10:40AM	Peeble Beach	18
Masai, H.	22-May	10:40AM	Bel Air II	16	Schroers, J.	22-May	3:40PM	Shoal Creek	21
Masuno, A.	21-May	11:20AM	Turnberry	11	Sen, S.	21-May	10:40AM	Turnberry	11
Matlack, K.	22-May	11:00AM	Shoal Creek	17	Shahid, s.	22-May	11:00AM	Turnberry	18
McCloy, J.	21-May	4:00PM	Turnberry	13	Shallenberger, J.	21-May	2:10PM	St. Andrews	14
Mecholsky, N.A.	20-May	4:20PM	St. Andrews	8	Shiga, M.	21-May	3:00PM	Turnberry	13
Mills, B.	22-May	5:20PM	St. Andrews	22	Shih, Y.	20-May	10:10AM	St. Andrews	4
Mitra, I.	20-May	9:20AM	Bel Air II	4	Shih, Y.	20-May	5:00PM	Bel Air II	8
Mitra, I.	22-May	11:20AM	Turnberry	18	Shinozaki, K.	23-May	9:20AM	Bel Air I	22
Moesgaard, J.	21-May	1:50PM	Bel Air I	14	Shiozawa, Y.	21-May	4:30PM	Peeble Beach	16
Möncke, D.	21-May	9:20AM	Bel Air II	12	Shrestha, P.	22-May	11:10AM	Bel Air I	17
Moon, H.	22-May	1:20PM	St. Andrews	19	Sidebottom, D.	21-May	2:40PM	Bel Air II	13
Mori, T.	22-May	11:00AM	Bel Air II	16	Simon, S.	22-May	9:20AM	Bel Air II	16
Moulton, B.	21-May	2:10PM	Turnberry	13	Smedskjaer, M.M.	22-May	1:40PM	St. Andrews	20
Munoz, F.	20-May	2:40PM	Shoal Creek	7	Smith, H.	21-May	10:40AM	Bel Air II	12
Munoz, F.	21-May	9:20AM	Turnberry	10	Smith, H.	21-May	4:00PM	Bel Air II	15
Musterman, E.J.	20-May	3:40PM	Bel Air II	7	Smith, N.J.	21-May	10:30AM	St. Andrews	11
Musterman, E.J.	23-May	9:20AM	Shoal Creek	23	Soulié, J.	20-May	9:20AM	Bel Air I	4
N									
Nagano, M.	22-May	10:10AM	Bel Air I	17	Stagg, O.	22-May	9:20AM	Shoal Creek	17
Nakane, S.	22-May	1:50PM	Turnberry	20	Stone-Weiss, N.	20-May	4:40PM	Turnberry	9
Neeway, J.	21-May	10:30AM	Shoal Creek	12	Sun, D.	20-May	2:10PM	Bel Air II	6
Neščáková, Z.	20-May	11:00AM	Bel Air I	5	Sun, P.	21-May	11:20AM	Bel Air I	11
Neuville, D.R.	21-May	11:40AM	Turnberry	11	Sun, Y.	21-May	9:50AM	Bel Air I	11
Neuville, D.R.	22-May	11:20AM	Bel Air II	17	T				
Nguyen, D.	22-May	9:20AM	St. Andrews	18	Takeda, W.	21-May	3:00PM	Bel Air II	13
O									
Ohkubo, T.	22-May	3:10PM	Bel Air II	19	Thapa, R.	20-May	11:30AM	St. Andrews	4
Ono, M.	23-May	10:40AM	Turnberry	23	Thapa, R.	20-May	1:50PM	Bel Air II	6
P									
Pallini, A.	22-May	5:00PM	Bel Air II	21	Thelen, D.	22-May	4:10PM	Peeble Beach	21
Park, K.	22-May	5:10PM	Bel Air I	21	Thorpe, C.L.	22-May	10:00AM	Shoal Creek	17
Parruzot, B.	20-May	10:10AM	Turnberry	5	Thorpe, R.	21-May	11:50AM	St. Andrews	12
Pascual, M.	22-May	3:50PM	Turnberry	22	Thorpe, R.	21-May	2:30PM	St. Andrews	14
Pedone, A.	22-May	4:40PM	Bel Air II	21	Tiskaya, M.	20-May	2:10PM	Bel Air I	6
Peitl, O.	20-May	5:20PM	Bel Air II	8	Topper, B.	20-May	2:00PM	Shoal Creek	7
Pereira, L.	21-May	2:50PM	Peeble Beach	15	Topper, B.	21-May	1:50PM	Turnberry	13
Podor, R.	21-May	1:20PM	Peeble Beach	14	Torres, V.M.	23-May	10:20AM	Peeble Beach	23
U									
					Ueno, A.	22-May	4:10PM	St. Andrews	22
					Umemoto, K.	22-May	2:40PM	Turnberry	20
					Urata, S.	20-May	1:20PM	St. Andrews	6

Oral Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
V									
Veenhuizen, K.J.	23-May	10:50AM	Shoal Creek	23	Wu, J.	23-May	11:20AM	Turnberry	23
Velazquez Garcia, J.J.	20-May	9:50AM	Bel Air II	4	Wuttig, M.	21-May	1:20PM	Bel Air I	13
Vienna, J.	20-May	9:20AM	Turnberry	5	X				
Vienna, J.	21-May	9:50AM	Shoal Creek	12	Xie, W.	23-May	9:40AM	Bel Air II	22
Voyles, P.	22-May	1:45PM	Shoal Creek	19	Y				
Voyles, P.	22-May	2:35PM	Shoal Creek	19	Ye, P.	22-May	11:20AM	St. Andrews	18
W					Yee, T.	22-May	10:20AM	St. Andrews	18
Walton, R.	22-May	10:10AM	Peeble Beach	18	Yeo, T.	22-May	10:20AM	Bel Air II	16
Wang, B.	21-May	1:50PM	Bel Air II	13	Yoshida, S.	22-May	10:30AM	Bel Air I	17
Weber, R.	20-May	10:30AM	Peeble Beach	6	Yue, Y.	22-May	2:40PM	St. Andrews	20
Weber, R.	22-May	10:40AM	St. Andrews	18	Z				
Wei, S.	21-May	4:40PM	Bel Air I	15	Zaki, M.	20-May	2:30PM	St. Andrews	6
Wheaton, J.	21-May	5:20PM	Bel Air I	15	Zalden, P.	21-May	10:50AM	Bel Air I	11
Wiedeman, D.	22-May	5:00PM	St. Andrews	22	Zhang, X.	22-May	4:40PM	St. Andrews	22
Wilke, S.K.	21-May	10:20AM	Turnberry	11	Zheng, Z.	22-May	11:40AM	Peeble Beach	18
Wilkerson, K.	21-May	10:20AM	Bel Air II	12	Zwanziger, J.	22-May	4:20PM	Turnberry	22
Wilkinson, C.	22-May	1:20PM	Bel Air II	18					

Poster Presenters

Name	Date	Time	Room	Page Number	Name	Date	Time	Room	Page Number
A									
Ashjari, A.	20-May	6:30PM	Grand 2 and 3	10	Kim, H.	20-May	6:30PM	Grand 2 and 3	10
B					Kim, T.	20-May	6:30PM	Grand 2 and 3	9
Baek, C.	20-May	6:30PM	Grand 2 and 3	9	Klouzkova, A.	20-May	6:30PM	Grand 2 and 3	10
Barnat-Hunek, D.	20-May	6:30PM	Grand 2 and 3	10	L				
C					Lee, J.	20-May	6:30PM	Grand 2 and 3	9
Carr, A.R.	20-May	6:30PM	Grand 2 and 3	10	M				
Chen, Z.	20-May	6:30PM	Grand 2 and 3	10	Mandal, I.	20-May	6:30PM	Grand 2 and 3	9
Christensen, J.	20-May	6:30PM	Grand 2 and 3	9	Manqueros, E.	20-May	6:30PM	Grand 2 and 3	10
Christensen, R.	20-May	6:30PM	Grand 2 and 3	9	Martin, C.S.	20-May	6:30PM	Grand 2 and 3	10
Chukova, O.	20-May	6:30PM	Grand 2 and 3	10	Matsutani, K.	20-May	6:30PM	Grand 2 and 3	9
Cochran, H.	20-May	6:30PM	Grand 2 and 3	10	P				
D					Park, Y.	20-May	6:30PM	Grand 2 and 3	9
Dutra Zanolto, E.	20-May	6:30PM	Grand 2 and 3	9	Pascual, M.	20-May	6:30PM	Grand 2 and 3	10
Dzierzak, R.	20-May	6:30PM	Grand 2 and 3	9	Postras, L.	20-May	6:30PM	Grand 2 and 3	9
F					S				
Fernandes, A.G.	20-May	6:30PM	Grand 2 and 3	10	Sidebottom, D.	20-May	6:30PM	Grand 2 and 3	10
G					Sun, D.	20-May	6:30PM	Grand 2 and 3	9
Gilbo, K.	20-May	6:30PM	Grand 2 and 3	10	T				
Graff, M.	20-May	6:30PM	Grand 2 and 3	10	Tobin, N.	20-May	6:30PM	Grand 2 and 3	10
H					V				
Honma, T.	20-May	6:30PM	Grand 2 and 3	10	Vires, R.M.	20-May	6:30PM	Grand 2 and 3	10
Hwang, M.	20-May	6:30PM	Grand 2 and 3	10	W				
K					Wayne, R.M.	20-May	6:30PM	Grand 2 and 3	9
Kayano, R.	20-May	6:30PM	Grand 2 and 3	9	Westman, J.M.	20-May	6:30PM	Grand 2 and 3	10
Kim, D.	20-May	6:30PM	Grand 2 and 3	9					

Monday, May 20, 2024

Award Lectures

Welcome and Opening Remarks and Stookey Lecture of Discovery

Room: Peeble Beach

7:45 AM

Stookey Lecture of Discovery Winner: Infrared Materials and Fiber Optics

J. Sanghera¹

1. Naval Research Laboratory, USA

S1 Fundamentals of the Glassy State

Session 2: Glass Crystallization and Glass-Ceramics I

Room: Bel Air II

Session Chairs: Ashutosh Goel, Rutgers University;
Hrshikesh Kamat, James R. Glidewell Dental Ceramics

9:20 AM

(GOMD-S1-001-2024) ZERODUR®: A LAS-glass-ceramic material enabling optical technologies (Invited)

I. Mitra*¹

1. Schott AG, Germany, Germany

9:50 AM

(GOMD-S1-002-2024) Nd³⁺ ion doped oxyfluoride silicate glasses and glass-ceramics for NIR laser application

R. Dagupati¹; J. J. Velazquez Garcia*¹; G. Galleani¹; R. Klement¹; D. Galusek²; A. Durán¹; M. Pascual¹

1. FunGlass-Alexander Dubcek University, Slovakia
2. Joint Glass Centre of the IIC SAS, TnUAD, and FChPT STU, Trenčín, Slovakia, Slovakia

10:10 AM

(GOMD-S1-003-2024) SrF₂ generation in novel transparent germanate glass-ceramics: a structural and optical study

A. Deslandes*¹; T. Guérineau¹; T. Cardinal²; Y. Messaddeq¹

1. Laval University, Center for Optics, Photonics and Lasers, Canada
2. ICMCB-CNRS, France

10:30 AM

(GOMD-S1-004-2024) Copper-containing glass-ceramic with high antimicrobial efficacy (Invited)

T. M. Gross*¹

1. Corning Incorporated, New Materials & Processes, USA

Session 5: Data-based Modeling and Machine Learning for Glass Science

Room: St. Andrews

Session Chairs: Daniel Cassar, Vitreous Materials Laboratory;
N M Anoop Krishnan, Indian Institute of Technology Delhi;
Xiaonan Lu, Pacific Northwest National Lab

9:20 AM

(GOMD-S1-005-2024) Impacts of Oxygen Doping on Sodium-Ion Diffusion in Solid-State Batteries with Glassy Electrolyte: A Molecular Dynamics Perspective (Invited)

K. Luo¹; R. Zhou¹; S. W. Martin¹; Q. An*¹

1. Iowa State University, Materials Science and Engineering, USA

9:50 AM

(GOMD-S1-006-2024) Predicting dynamics in glasses using graph neural networks

R. Christensen*¹; L. Fajstrup²; M. M. Smedskjaer¹

1. Aalborg University, Department of Chemistry and Bioscience, Denmark
2. Aalborg University, Department of Mathematical Sciences, Denmark

10:10 AM

(GOMD-S1-007-2024) Predicting Temperature and Frequency-Dependent Dielectric Properties of Oxide Glasses by Physics- and Chemistry-Informed Machine Learning Model

Y. Shih*¹; B. Lin¹

1. National Taipei University of Technology, Department of Materials and Mineral Resources Engineering, Taiwan

10:30 AM

(GOMD-S1-008-2024) Property Optimization and Sampling of Atomistic Systems via Latent Space Representation Learning with Variational Autoencoder (VAE)

R. Bhattoo*¹; B. Wang¹

1. University of Wisconsin-Madison, Civil Engineering, USA

10:50 AM

(GOMD-S1-009-2024) Predicting the Dynamics of Atoms in Glass-Forming Liquids by a Surrogate Machine-Learned Simulator

H. Liu¹; M. Bauchy*¹

1. University of California, Los Angeles, Civil and Environmental Engineering Department, USA

11:10 AM

(GOMD-S1-010-2024) Visualizing the energy landscape of glassy systems

V. Bihani*¹; S. Sastry²; S. Ranu³; N. Krishnan⁴

1. Indian Institute of Technology Delhi, Yardi School of Artificial Intelligence, India
2. Jawaharlal Nehru Centre for Advance Scientific Research, Theoretical Sciences Unit and School of Advanced Materials, India
3. Indian Institute of Technology Delhi, Department of Computer science and engineering, India
4. Indian Institute of Technology Delhi, Department of Civil Engineering, India

11:30 AM

(GOMD-S1-011-2024) Atomistic simulations of seeded growth of lithium niobate crystal in erbium-doped xLNbO₃ - (1-x)SiO₂ glasses

R. Thapa*¹; M. E. McKenzie²; C. Barker¹; V. Dierolf³; H. Jain¹

1. Lehigh University, Material Science and Engineering, USA
2. Corning Incorporated, USA
3. Lehigh University, Physics, USA

S2 Glass and Interactions with Its Environment Fundamentals and Applications

Session 1: Glasses, Glass-Ceramics, and Glass-Based Biomaterials

Room: Bel Air I

Session Chair: Delia Brauer, Friedrich-Schiller-Universität

9:20 AM

(GOMD-S2-001-2024) Spray-dried bioactive glass microparticles as building blocks for porous scaffolds: structural properties and functionalization (Invited)

G. Vecchio¹; P. Lagarrigue¹; S. Le Grill¹; F. Brouillet²; C. Combes¹; D. Poquillon¹; A. Bethy²; M. Castanié³; V. Darcos²; J. Soulié*¹

1. Institut National Polytechnique de Toulouse, France
2. Institut des Biomolécules Max Mousseron, France
3. Université Paul Sabatier, France

9:50 AM

(GOMD-S2-002-2024) Exploring sintering behavior and cohesion quality of phosphate bioactive glass coatings for enhancing Bioglass 4555 mechanical properties

A. López-Grande*¹; A. Arafat²; D. S. Brauer¹

1. Friedrich-Schiller-University Jena, Germany
2. University of Wolverhampton, United Kingdom

10:10 AM**(GOMD-S2-003-2024) High resolution 3D printing of bioactive glass (Invited)**L. Hambitzer¹; F. Kotz-Helmer^{*}

1. University of Freiburg, IMTEK, Germany

10:40 AM**(GOMD-S2-004-2024) Effect of different dynamic test conditions on the early stage dissolution behaviour of bioactive glasses**H. Kankova^{*}; L. Bunova¹; A. Svancarkova¹; D. Galuskova¹; D. Galusek¹

1. FunGlass, Centre for Functional and Surface Functionalized Glass, Alexander Dubček University of Trenčín, Slovakia

11:00 AM**(GOMD-S2-005-2024) Zinc-doped bioactive glass nanoparticles for tissue regeneration (Invited)**Z. Neščáková^{*}; J. J. Velazquez Garcia¹; H. Kankova¹; M. Michálek¹; D. Galusek²

1. Centre for Functional and Surface Functionalized Glass – FunGlass, Alexander Dubček University of Trenčín, Slovakia
2. Joint Glass Centre of the IIC SAS, TnUAD and FCHFT STU, Slovakia

Session 2: Dissolution and Interfacial Reactions

Room: Turnberry

Session Chair: Nicholas Stone-Weiss, Corning Incorporated

9:20 AM**(GOMD-S2-006-2024) Materials Characterization Center Test 1 Response of Silicate Glass-Based Waste Forms as Functions of Time and Composition (Invited)**J. Vienna^{*}; B. Parruzot¹; J. T. Reiser¹; X. Lu¹; K. Finucane²

1. Pacific Northwest National Lab, USA
2. Veolia Nuclear Services, Federal Services, USA

9:50 AM**(GOMD-S2-007-2024) Durability Testing and Test Method Development on Multiphase Waste Forms**J. T. Reiser^{*}; B. Parruzot¹; P. D. Sutton²; D. Gregg²; M. Asmussen¹; J. M. Westman¹; G. L. Smith¹

1. Pacific Northwest National Laboratory, USA
2. Australian Nuclear Science and Technology Organisation, Australia

10:10 AM**(GOMD-S2-008-2024) Using the Stirred-Reactor Coupon-Analysis (SRCA) Technique to Evaluate Forward Dissolution Rate Parameters Impact on Nuclear Waste Glass Disposal**B. Parruzot^{*}; J. T. Reiser¹; S. Kerisit²; J. Neeway¹; G. L. Smith¹; M. Asmussen¹

1. Pacific Northwest National Lab, Energy and Environment Directorate, USA
2. Pacific Northwest National Lab, Physical and Computational Sciences Directorate, USA

10:30 AM**(GOMD-S2-009-2024) Elemental releases from enhanced low-activity waste glasses tested by 48-hour room temperature methods**J. Marcial^{*}; J. Neeway¹; C. Pearce¹; S. Choi¹; J. Vienna¹; J. T. Reiser¹; J. Hager¹; D. Kosson²; R. Delapp²; L. Brown²; A. A. Kruger³

1. Pacific Northwest National Laboratory, USA
2. Vanderbilt University, USA
3. US DOE Office of River Protection, USA

10:50 AM**(GOMD-S2-010-2024) Waste Glass Corrosion Testing Using EPA 1313, Vapor Hydration, and Stirred Reactor Coupon Analysis**C. Lonergan^{*}; J. Neeway¹; J. M. Westman¹; M. Miller¹; S. Choi¹

1. Pacific Northwest National Lab, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA

S3 Optical and Electronic Materials and Devices Fundamentals and Applications**Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications I**

Room: Shoal Creek

Session Chairs: Volkmar Dierolf, Lehigh University; Stuart Gray, Corning Research and Development Corporation

9:20 AM**(GOMD-S3-001-2024) Femtosecond Laser Writing of Er: LiNbO₃ Single Crystals for Integrated Quantum Memory**C. Barker^{*}; S. Gray²; D. Nolan²; H. Jain³; V. Dierolf¹

1. Lehigh University, Physics, USA
2. Corning Incorporated, USA
3. Lehigh University, Institute for Functional Materials and Devices, USA

9:40 AM**(GOMD-S3-002-2024) Compositional Study of CsPb(Br/I)₃ Perovskite Nanocrystal Embedded Germanate Glasses for Red Color Converter**J. Lee²; W. Chung^{*}

1. Kongju National University, Division of Advanced Materials Engineering, Republic of Korea
2. Mico Co. Ltd., Republic of Korea

10:00 AM**(GOMD-S3-003-2024) Effect of Na/Al atomic ratio in a germanate matrix on the optical properties of a bismuth dopant**L. J. Henry^{*}; M. Klopfer²; K. Richardson³

1. Air Force Research Laboratory, Directed Energy Directorate, USA
2. Innovative Employee Solutions, USA
3. University of Central Florida, USA

10:20 AM**(GOMD-S3-004-2024) Evaluation of bismuth source on resulting valence equilibrium in soda aluminogermanate glass**L. J. Henry^{*}; M. Klopfer²; K. Richardson³

1. Air Force Research Laboratory, Directed Energy Directorate, USA
2. Innovative Employee Solutions, USA
3. University of Central Florida, USA

S5 Delbert Day Honorary Symposium**Session 5: Delbert Day Honorary Symposium**

Room: Peeble Beach

Session Chairs: Qiang Fu, Corning Incorporated; Kisa Ranasinghe, Kennesaw State University

9:20 AM**Dr. Delbert Day, My Mentor; A Guiding Light in My Journey by Dr. Kisa Ranasinghe****9:30 AM****(GOMD-S5-001-2024) Delbert Day and the Development of Glasses for Biomedical Applications (Invited)**R. Brow^{*}; S. Jung²

1. Missouri S&T, Materials Sci & Engrg, USA
2. MO-SCI LLC, USA

10:00 AM**(GOMD-S5-002-2024) Understanding glass crystallization via DSC. A tribute to Delbert Day (Invited)**E. Dutra Zanotto^{*}

1. Federal University of Sao Carlos, Materials Engineering, Brazil

10:30 AM

(GOMD-S5-003-2024) Making Glass in Space (Invited)R. Weber*¹

1. MDI, USA

11:00 AM

(GOMD-S5-004-2024) What to consider when developing future bioactive glasses? (Invited)L. Hupa*¹

1. Åbo Akademi University, Johan Gadolin Process Chemistry Centre, Finland

11:30 AM

(GOMD-S5-005-2024) Investigating the Crystallization Kinetics of Na₂O·B₂O₃ Glass Embedded with Cerium Oxide NanoparticlesK. S. Ranasinghe*¹; E. Manqueros¹

1. Kennesaw State University, Physics, USA

S1 Fundamentals of the Glassy State**Session 2: Glass Crystallization and Glass-Ceramics II**

Room: Bel Air II

Session Chairs: Ashutosh Goel, Rutgers University;
Alfonso Pedone, University of Modena and Reggio Emilia

1:20 PM

(GOMD-S1-012-2024) Exploring homogeneous and surface nucleation in silicate glasses: insights from atomistic modeling and the Metadynamics approach (Invited)F. Lodesani*¹; A. Pedone²; S. Urata¹1. AGC, Innovative Technology Laboratories, Japan
2. University of Modena and Reggio Emilia, Italy

1:50 PM

(GOMD-S1-013-2024) Machine-learned tracking of Seeded Crystal Growth in glassR. Thapa*¹; M. E. McKenzie²; E. J. Musterman³; J. Kaman¹; H. Jain¹; V. Dierolf¹1. Lehigh University, Material Science and Engineering, USA
2. Corning Incorporated, USA
3. Brookhaven National Laboratory, USA
4. Lehigh University, Physics, USA

2:10 PM

(GOMD-S1-014-2024) Computational study of fracture in lithium aluminosilicate glass-ceramicsD. Sun*¹; M. M. Smedskjaer¹

1. Aalborg Universitet, Denmark

2:30 PM

(GOMD-S1-015-2024) ZrO₂-SiO₂ nanocrystalline glass-ceramics (Invited) *WITHDRAWN*W. Xia*¹

1. Uppsala University, Materials Science and Engineering, Sweden

3:00 PM

Break

Session 5: Data-based Modeling and Machine Learning for Glass Science

Room: St. Andrews

Session Chairs: Daniel Cassar, Vitreous Materials Laboratory;
N M Anoop Krishnan, Indian Institute of Technology Delhi;
Xiaonan Lu, Pacific Northwest National Lab

1:20 PM

(GOMD-S1-016-2024) Applications of Machine-Learning Potentials for modeling borate glasses (Invited)S. Urata*¹

1. AGC Inc., Innovative Technology Research Center, Japan

1:50 PM

(GOMD-S1-017-2024) Insights Into Glass Element Dissolution Rate: A Machine Learning Approach for Predicting and Interpreting Dissolution Rate of GlassS. Mannan*¹; N. Gosvami³; M. Bauchy²; N. Krishnan¹1. Indian Institute of Technology Delhi, Department of Civil Engineering, India
2. University of California, Los Angeles, Civil and Environmental Engineering Department, USA
3. Indian Institute of Technology Delhi, Department of Materials Science and Engineering, India

2:10 PM

(GOMD-S1-018-2024) ECOSISTER: Machine Learning simulation of 29Si NMR spectra for large modelsM. Bertani*¹; A. Pedone¹; F. Faglioni¹; T. Charpentier²1. University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences, Italy
2. CEA, DRF/IRAMIS/NIMBE/LSDRM, France

2:30 PM

(GOMD-S1-019-2024) Extracting materials tetrahedron of inorganic glasses using natural language processingM. Zaki*¹; K. Hira²; M. Mausam²; N. Krishnan¹1. Indian Institute of Technology Delhi, Civil Engineering, India
2. Indian Institute of Technology Delhi, Yardi School of Artificial Intelligence, India

2:50 PM

(GOMD-S1-020-2024) Novel approaches to informatics-driven nuclear waste form design: Dataset curation, surrogate modeling, and sequential learning (Invited)S. Allec*¹; V. Hegde¹; M. Peterson²; X. Lu²; B. J. Riley²; T. S. Mahadevan³; J. Kalahe³; J. Du³; J. Vienna²; J. E. Saal¹1. Citrine Informatics, External Research Department, USA
2. Pacific Northwest National Laboratory, Energy and Environment Directorate, USA
3. University of North Texas, Materials Science and Engineering, USA

3:20 PM

Break

S2 Glass and Interactions with Its Environment Fundamentals and Applications**Session 1: Glasses, Glass-Ceramics, and Glass-Based Biomaterials**

Room: Bel Air I

Session Chair: Leena Hupa, Åbo Akademi University

1:20 PM

(GOMD-S2-011-2024) Design of bioactive glasses for soft tissue engineering – Challenges and future research directions from the perspective of a materials scientist (Invited)A. Goel*¹

1. Rutgers University, USA

1:50 PM

(GOMD-S2-012-2024) Glasses and Glass-Ceramics in DentistryH. Kamat*¹

1. Glidewell Laboratories, Research & Development, USA

2:10 PM

(GOMD-S2-013-2024) The Remineralising Ability of a Fluoride-Containing Bioactive Glass Composite for Preventing Recurrent Decay (Invited)M. Tiskaya*¹; s. Shahid¹; R. Hill¹

1. Queen Mary, University of London, Institute of Dentistry, United Kingdom

2:40 PM

(GOMD-S2-014-2024) Aging Behavior of Copper Oxide-Doped Alumina Toughened Zirconia Ceramic CompositesM. Abbas*¹

1. Qatar University, Center for Advanced Materials, Qatar

Session 2: Dissolution and Interfacial Reactions

Room: Turnberry

Session Chair: Jincheng Du, University of North Texas

1:20 PM**(GOMD-S2-015-2024) Role of Al on the chemical durability of $\text{SiO}_2\text{-B}_2\text{O}_3\text{-Al}_2\text{O}_3\text{-CaO-Na}_2\text{O}$ glasses (Invited)**J. Delaye^{*1}; K. Damodaran¹; S. Tiwari¹; M. Taron¹; S. Gin¹

1. CEA Marcoule, DPME, France

1:50 PM**(GOMD-S2-016-2024) Impact of the aluminum coordination on the dissolution kinetics of magnesium aluminoborosilicate glasses *WITHDRAWN***A. Jose^{*1}; Q. Qin¹; R. Youngman²; G. Tricot³; A. Goel¹

1. Rutgers University, USA
2. Corning Incorporated, USA
3. LASIR - Laboratoire de Spectrochimie Infrarouge, France

2:10 PM**(GOMD-S2-017-2024) Role of B on borosilicate glass dissolution (Invited)**S. Gin^{*1}; S. Narayanasamy¹; M. Taron¹; J. Delaye¹

1. CEA - University of Montpellier, ISEC/DPME, France

2:40 PM**(GOMD-S2-018-2024) The Current Understanding of Stage III Behavior on Long-Term Glass Corrosion**J. V. Crum^{*1}; B. Parruzot¹; S. Kerisit¹; J. T. Reiser¹; R. Daniel¹; J. Neeway¹; G. L. Smith¹; M. Asmussen¹

1. PNNL, USA

3:00 PM**Break****S3 Optical and Electronic Materials and Devices Fundamentals and Applications****Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications II**

Room: Shoal Creek

Session Chairs: Doris Möncke, Alfred University; Volkmar Dierolf, Lehigh University

1:20 PM**(GOMD-S3-005-2024) Using the luminescence of Nd^{3+} and Eu^{3+} to understand local stress and density in glass (Invited)**D. de Ligny^{*1}; M. Bergler¹; F. Werr¹; A. Veber¹; K. Cvecek¹; M. Schmidt¹

1. University Erlangen-Nürnberg, Materials Sciences and Engineering, Germany
2. Friedrich-Alexander-Universität Erlangen-Nürnberg, Lehrstuhl für Photonische Technologien, Germany
3. Helmholtz-Zentrum Berlin für Materialien und Energie, Germany

2:00 PM**(GOMD-S3-006-2024) Spectroscopic studies of rare-earth titanate glasses**B. Topper^{*1}; A. Neumann³; S. K. Wilke⁴; A. Al-Rubkh²; M. Pettes⁴; D. Möncke⁶; A. Mafi⁵; R. Weber²

1. Clemson University, USA
2. Materials Development, Inc., USA
3. Center for High Technology Materials, USA
4. Center for Integrated Nanotechnologies, Materials Physics and Applications Division, USA
5. University of Kansas, USA
6. Alfred University, USA

2:20 PM**(GOMD-S3-007-2024) Radiation response properties of strontium fluoride translucent ceramics with a luminescence center**N. Kawano^{*1}; T. Kato²; R. Conner²; L. G. Jacobsohn³; K. Ichiba²; K. Okazaki²; Y. Takebuchi²; D. Nakauchi²; T. Yanagida²

1. Akita University, Japan
2. Nara Institute of Science and Technology, Japan
3. Clemson University, USA

2:40 PM**(GOMD-S3-008-2024) Processing and properties of neodymium doped alumino-phosphate laser glasses**C. Guillet¹; M. Muñoz-Quintero¹; J. Azkargorta²; I. Iparraquirre²; R. Jiménez-Riobóo³; J. Fernández⁴; R. Balda⁴; F. Muñoz^{*1}

1. Institute of Ceramics and Glass, CSIC, Spain
2. University of Basque Country, Applied Physics, Spain
3. Institute of Materials Science of Madrid (CSIC), Spain
4. Donostia International Physics Center, Spain

3:00 PM**Break****S5 Delbert Day Honorary Symposium****Session 5. Delbert Day Honorary Symposium**

Room: Peeble Beach

Session Chairs: Kisa Ranasinghe, Kennesaw State University; Qiang Fu, Corning Incorporated

1:20 PM**(GOMD-S5-006-2024) Development of Bioactive Borate Glasses for Biomedical Applications (Invited)**M. N. Rahaman^{*1}

1. Missouri University of Science & Technology, Materials Science & Engineering, USA

1:50 PM**(GOMD-S5-007-2024) A New Network Connectivity Model for Predicting the Properties of Acid Degradable Silicate Glasses Containing Intermediate Oxides (Invited)**R. Hill^{*1}

1. Queen Mary University of London, DPS, United Kingdom

2:20 PM**(GOMD-S5-008-2024) Bioactive Glasses for Regeneration of Large Segmental Bone Defects and Volumetric Muscle Loss (VML)**Q. Fu^{*1}

1. Corning Incorporated, USA

2:40 PM**(GOMD-S5-009-2024) Day Quixhote – Reintroducing a versatile material to a skeptical industry (Invited)**J. V. Ryan^{*1}

1. Pacific Northwest National Lab, USA

S1 Fundamentals of the Glassy State**Session 2: Glass Crystallization and Glass-Ceramics III**

Room: Bel Air II

Session Chairs: Ashutosh Goel, Rutgers University; Alfonso Pedone, University of Modena and Reggio Emilia

3:40 PM**(GOMD-S1-021-2024) Complementary scanning x-ray diffraction and fluorescence mapping for glass-ceramic characterization**E. J. Musterman^{*2}; C. Barker³; K. J. Veenhuizen³; V. Dierolf³; H. Jain¹; A. M. Kiss²

1. Lehigh University, Materials Science and Engineering, USA
2. Brookhaven National Laboratory, National Synchrotron Light Source II, USA
3. Lehigh University, Physics, USA
4. Lebanon Valley College, Physics, USA

4:00 PM**(GOMD-S1-022-2024) Effect of nucleation crystal growth and incorporation of P₂O₅ and ZrO₂ in lithium disilicate dental glass ceramics**S. Abdelmaseh^{*1}; M. Cicconi¹; D. de Ligny¹

1. Friedrich-Alexander-Universität Erlangen-Neurnberg, Institute of Glass and Ceramics, Germany

4:20 PM**(GOMD-S1-023-2024) Ultrafast crystallisation of lithium disilicate glass systems for dental application *WITHDRAWN***J. V. Campos^{*1}; I. R. Lavagnini¹; A. Rodrigues¹

1. Federal University of Sao Carlos, Materials Engineering, Brazil

4:40 PM**(GOMD-S1-024-2024) Fast Crystallization below the Glass Transition**P. Lucas^{*1}; W. Takeda¹; J. Pries²; M. Wuttig²

1. Univ of Arizona, USA
2. RWTH Aachen University, Germany

5:00 PM**(GOMD-S1-025-2024) Effects of Ion-Exchange on Soda-Lime Silicate Glass-Ceramics**Y. Shih^{*1}; T. Huang¹

1. National Taipei University of Technology, Department of Materials and Mineral Resources Engineering, Taiwan

5:20 PM**(GOMD-S1-026-2024) Pores plague glass-ceramic**O. Peitl^{*1}

1. Federal University of Sao Carlos, Materials Science Engineering, Brazil

Session 5: Data-based Modeling and Machine Learning for Glass Science

Room: St. Andrews

Session Chairs: Daniel Cassar, Vitreous Materials Laboratory; N M Anoop Krishnan, Indian Institute of Technology Delhi; Xiaonan Lu, Pacific Northwest National Lab

3:40 PM**(GOMD-S1-027-2024) Waste Glass Formulation with Machine Learning: Optimization and Experimental Validation**X. Lu^{*1}; J. Vienna¹; V. Gervasio¹; P. Ferkl¹; M. Peterson¹; L. Gunnell²; J. Hedengren²

1. Pacific Northwest National Lab, Energy and Environment Directorate, USA
2. Brigham Young University, Department of Chemical Engineering, USA

4:00 PM**(GOMD-S1-029-2024) Structures and properties of sodium phosphate and iron phosphate glasses from molecular dynamics simulations**J. Du^{*1}; J. Kalaha¹; N. Marchin¹; X. Lu²; J. Vienna²; B. J. Riley²

1. University of North Texas, Materials Science and Engineering, USA
2. Pacific Northwest National Lab, USA

4:20 PM**(GOMD-S1-030-2024) Method of Dimensionality Reduction of Labelled Data and an Application to Nuclear Waste Glass Nepheline Crystallization**N. A. Mecholsky^{*1}; K. Gilbo²; I. Pegg¹

1. The Catholic University of America, Vitreous State Laboratory and Department of Physics, USA
2. The Catholic University of America, Vitreous State Laboratory, USA

Session 8: Chalcogenide and phase change materials: Theories, electronic, and thermal properties

Room: Bel Air I

Session Chair: Shuai Wei, Aarhus University

3:40 PM**(GOMD-S1-031-2024) A machine-learning interatomic potential for the Ge₂Sb₂Te₃ phase change compound (Invited)**O. Abou El Kheir¹; L. Bonati²; M. Parrinello²; M. Bernasconi^{*1}

1. University of Milano-Bicocca, Materials Science, Italy
2. Italian Institute of Technology, Atomistic Simulations, Italy

4:10 PM**(GOMD-S1-032-2024) Electronic defects and charge trapping in phase-change telluride materials (Invited)**S. Elliott^{*1}

1. University of Oxford, Physical and Theoretical Chemistry Laboratory, United Kingdom

4:40 PM**(GOMD-S1-033-2024) Thermodynamics and kinetics of the crystallization of phase change materials from simultaneous nanocalorimetry and in situ microscopy**I. McGieson²; T. D. Koledin¹; J. Ciston⁴; F. Yi³; D. A. LaVan³; M. K. Santala^{*1}

1. Oregon State University, Materials Science, USA
2. Oregon State University, Department of Physics, USA
3. National Institute of Standards and Technology, Materials Measurement Science Division, Material Measurement Laboratory, USA
4. Lawrence Berkeley National Laboratory, National Center for Electron Microscopy, Molecular Foundry, USA

5:00 PM**(GOMD-S1-034-2024) Crystallization kinetics and beta-relaxations in GeTe**A. Makareviciute^{*1}; S. Wei¹

1. Aarhus University, Department of Chemistry, Denmark

5:20 PM**(GOMD-S1-035-2024) Novel wide-bandgap chalcogenide optical phase change materials enabled by high-throughput combinatorial studies**C. Lee^{*1}; Y. Huang¹; H. Sun¹; C. Lian¹; J. Frantz²; I. Takeuchi¹; C. A. Ocampo¹

1. University of Maryland, Materials Science and Engineering, USA
2. Office of Naval Research, USA

S2 Glass and Interactions with Its Environment Fundamentals and Applications**Session 2: Dissolution and Interfacial Reactions**

Room: Turnberry

Session Chair: Stephane Gin, CEA

3:40 PM**(GOMD-S2-019-2024) Glass Corrosion Kinetics at Liquid and Frozen Conditions (Invited)**R. Schaut^{*1}; S. A. Tietje¹; E. Bakowska¹; D. Ragland¹

1. Corning Incorporated, S&T, Glass Research, USA
2. Corning Incorporated, Characterization Science, USA

4:10 PM**(GOMD-S2-020-2024) Dissolution and Precipitation Reactions of Na-Ca-Borophosphate Glasses in Simulated Body Fluid (Invited)**R. Brow^{*1}; R. L. Blatt¹; R. Youngman²

1. Missouri S&T, Materials Sci & Engrg, USA
2. Corning Incorporated, USA

4:40 PM**(GOMD-S2-021-2024) Relating the structure to the aqueous dissolution behavior of P_2O_5 -substituted sodium aluminosilicate glasses**

N. Stone-Weiss^{*}; H. McMahon¹; N. J. Smith¹; J. B. Yehl¹; J. L. Tubbs¹; B. J. Rice¹; E. Bakowska¹
 1. Corning Incorporated, Science and Technology, USA

5:00 PM**(GOMD-S2-022-2024) Aqueous CO_2 Adsorption on Amorphous Calcium Silicate Hydrate and Tobermorite**

J. Harvey¹; J. M. Rimsza^{*1}
 1. Sandia National Laboratories, Geochemistry Department, USA

S3 Optical and Electronic Materials and Devices Fundamentals and Applications**Session 5: Rare-earth and Transition Metal-doped Glasses and Ceramics for Photonic Applications III**

Room: Shoal Creek

Session Chairs: Dominique de Ligny, University Erlangen-Nürnberg;
 Brian Topper, University of New Mexico

3:40 PM**(GOMD-S3-009-2024) Erbium doped transparent ceramics for quantum information storage (Invited)**

S. Gray^{*1}
 1. Corning Research and Development Corporation, USA

4:20 PM**(GOMD-S3-010-2024) Structural, thermal, and luminescent properties of gadolinium(III) containing phosphate glasses**

J. A. Jiménez^{*1}; M. Thomas¹
 1. Georgia Southern University, Biochemistry, Chemistry, and Physics, USA

4:40 PM**(GOMD-S3-011-2024) Controlled UV emission from $MgAl_2O_4:Gd$**

R. Conner¹; D. Van der Heggen²; D. Poelman²; P. Smet²; L. G. Jacobsohn^{*1}
 1. Clemson University, Materials Science and Engineering, USA
 2. Ghent University, LumiLab, Belgium

Poster Session

Room: Grand 1 and 4

6:00 PM**(GOMD-P001-2024) Relaxation and crystal nucleation interplay in supercooled germanium and water**

A. Tipeev¹; E. Dutra Zanotto^{*1}
 1. Federal University of São Carlos, Department of Materials Engineering, Brazil

(GOMD-P002-2024) Physics-informed Machine Learning for Sodium-Ion Conductive Glasses

I. Mandal^{*1}; S. Mannan²; N. Gosvami²; N. Krishnan²
 1. Indian Institute of Technology Delhi, School of Interdisciplinary Research, India
 2. Indian Institute of Technology Delhi, India

(GOMD-P003-2024) Fracture behavior of barium titanosilicate glass-ceramics: Role of bond switching and stress fields

D. Sun^{*1}; T. Du¹; M. M. Smedskjaer¹
 1. Aalborg Universitet, Denmark

(GOMD-P010-2024) Physical properties of low dielectric glass fibers at gigahertz frequency range for high speed PCB applications

J. Lee^{*1}; J. Kim¹
 1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

(GOMD-P011-2024) Assessment of the durability of cement with waste glass aggregates using machine learning and texture analysis methods

R. Dzierzak^{*1}; D. Barnat-Hunek²
 1. Lublin University of Technology, Department of Electronics and Information Technology, Poland
 2. Lublin University of Technology, Department of General Construction, Poland

(GOMD-GP-P001-2024) Investigation of the first sharp diffraction peak in GeO_2 glass based on persistent homology analysis and machine learning techniques

K. Matsutani^{*1}; S. Kasamatsu¹; T. Usuki¹
 1. Yamagata University, Faculty of Science, Japan

(GOMD-GP-P002-2024) DFT study on chemical bonding network in amorphous BNTe chalcogenides

D. Kim^{*1}; T. Lee¹
 1. Kyungpook National University, Electronics Materials Science and Engineering, Republic of Korea

(GOMD-GP-P003-2024) A machine-learning potential to model multi-component oxide glasses

R. Kayano^{*1}; T. Ohkubo¹; R. Mastubara²; K. Ishida²
 1. Chiba University, Graduate School of Engineering, Japan
 2. Nuclear Waste Management Organization of Japan (NUMO), Japan

(GOMD-GP-P004-2024) Deciphering the structural origin of disorder-induced ion conduction in $NaFePO_4$ glasses

R. Christensen^{*1}; L. Fajstrup²; M. M. Smedskjaer¹
 1. Aalborg University, Department of Chemistry and Bioscience, Denmark
 2. Aalborg University, Department of Mathematical Sciences, Denmark

(GOMD-GP-P006-2024) $SiO_2-Al_2O_3-CaO-MgO$ Glass Ceramics as a High Temperature Sealing Material for Solid Oxide Fuel Cells Sealing

T. Kim^{*1}; W. Chung¹
 1. Kongju National University, Republic of Korea

(GOMD-GP-P007-2024) Low temperature Sealing Materials Based on $CaO-ZnO-B_2O_3-SiO_2$ Glass Ceramics for Solid Oxide Electrolyzer Cells

T. Kim^{*1}; W. Chung¹
 1. Kongju National University, Republic of Korea

(GOMD-GP-P008-2024) Impact of pressure on the chemical bonding and material properties of amorphous chalcogenides

Y. Park^{*1}; T. Lee¹
 1. Kyungpook National University, Electronics Materials Science and Engineering, Republic of Korea

(GOMD-GP-P009-2024) Machine learned Gaussian approximation potentials for amorphous tellurium and its applications for large model simulations

C. Baek^{*1}; T. Lee¹
 1. Kyungpook National University, Electronic Materials Science & Engineering, Republic of Korea

(GOMD-GP-P010-2024) Network depolymerization in Na_2S-GeS_2 superionic glasses and its relationship with ion conduction

L. Poitras^{*1}; M. Micoulaut¹; O. Masson²; A. Piarristeguy³; R. Escalier³; A. Pradel³; A. Kachmar⁴
 1. Sorbonne Université, France
 2. Université de Limoges, France
 3. Université de Montpellier, France
 4. Sultan Qaboos University, Oman

(GOMD-GP-P014-2024) Toughening of soda-lime-silica glass by nanoscale phase separation

J. Christensen^{*1}; S. S. Sørensen¹; T. To¹; M. Bauchy²; M. M. Smedskjaer¹
 1. Aalborg University, Department of Chemistry and Bioscience, Denmark
 2. University of California, Department of Civil and Environmental Engineering, USA

(GOMD-UP-P001-2024) Layered Hybrid Germania-Silica Nanoparticle Sol-Gel Synthesis for use in 3D-printing Glass Optics

R. M. Wayne^{*1}; S. Luna¹; S. J. Garapati¹; L. O'Keefe¹; Z. B. Alhejaj¹; J. F. Destino¹
 1. Creighton University, Chemistry & Biochemistry, USA

(GOMD-UP-P002-2024) Effects of Thermal Processing on Network Evolution and Microstructure of Glasses Derived from Hybrid Sol-gel Particles

R. M. Vires*¹; R. M. Wayne¹; S. Luna¹; L. O'Keefe¹; S. J. Garapati¹; J. F. Destino¹
1. Creighton University, Chemistry & Biochemistry, USA

(GOMD-UP-P003-2024) Investigating Polyols for Germania Nanoparticle Growth Control for Use in 3D-Printed Glass

A. G. Fernandes*¹; J. F. Destino¹
1. Creighton University, Chemistry & Biochemistry, USA

(GOMD-UP-P004-2024) Revisiting The Time-Dependent Nucleation Rate in Lithium-disilicate Glass

E. Manqueros*¹; K. S. Ranasinghe¹
1. Kennesaw State University, Physics, USA

(GOMD-UP-P005-2024) Synthesis and refinement of Li₂S + SiS₂ + Li_{3.48}SiO_{3.74} based glassy solid-state electrolytes

H. Cochran*¹; S. J. Leland¹; J. Wheaton¹; S. W. Martin¹
1. Iowa State University, Materials Science and Engineering, USA

(GOMD-UP-P006-2024) Non-exponential Relaxation in Metaphosphate Glass Melts measured by Photon Correlation Spectroscopy

J. McCown¹; J. Austin¹; D. Sidebottom*¹
1. Creighton University, Physics, USA

(GOMD-P006-2024) Multilinear Regression Models to Estimate Time to Resumption and Resumption Corrosion Rate of Low Activity Waste Glasses

I. Muller¹; K. Gilbo*¹; I. Pegg¹
1. The Catholic University of America, Vitreous State Laboratory, USA

(GOMD-P007-2024) Developing a Method to Determine Sulfur Saturation of Hanford Low Activity Waste Glasses – Past, Present, and Future

J. M. Westman*¹; J. T. Reiser¹; T. Jin¹; V. Gervasio¹; J. V. Crum¹; A. A. Kruger²; J. Vienna¹
1. Pacific Northwest National Lab, USA
2. US Department of Energy, Office of River Protection, USA

(GOMD-P008-2024) Laser-induced modification of transition metal ions doped sodium phosphates

T. Honma*¹; T. Akuzawa¹; F. Sekikawa¹
1. Nagaoka University of Technology, Department of Materials Science and Bioengineering, Japan

(GOMD-P004-2024) Analyzing lithium-ion conduction in thiophosphate glassy electrolytes via machine learning

Z. Chen*¹; T. Du¹; M. Bauchy²; M. M. Smedskjaer¹
1. Aalborg University, Denmark
2. University of California, Los Angeles, USA

(GOMD-P012-2024) Fabrication technology and luminescence properties of the lithium-vanadate-borate glass

O. Chukova*¹; A. Kotlov¹; V. Baran¹; L. Khomenkova²; I. Vorona²
1. Deutsches Elektronen Synchrotron DESY, Photon Science, Germany
2. V. Lashkaryov Institute of Semiconductor Physics, National Academy of Sciences of Ukraine, Ukraine

(GOMD-GP-P005-2024) Compositional study on Lead-Free Perovskite Nanocrystal-Embedded Germanate Glass system for LED Applications

H. Kim*¹; W. Chung¹
1. Kongju National University, Republic of Korea

(GOMD-GP-P011-2024) The optical and thermal properties of GeO₂-based mid-infrared transmission glasses

M. Hwang*¹; J. Kim¹; J. Hwang¹; J. Chung¹
1. Korea Institute of Ceramic Engineering and Technology (KICET), Republic of Korea

(GOMD-GP-P012-2024) Spectroscopy Study of Mn⁵⁺ in High Basicity Glasses: A Raman Resonance Effect

A. Ashjari*¹; E. I. Kamitsos²; D. Möncke¹
1. Alfred University, Inamori school of engineering, USA
2. National Hellenic Research Foundation, Theoretical and Physical Chemistry Institute, Greece

(GOMD-GP-P013-2024) Investigation of Bonding Glass Surfaces Using Ultrafast Laser Pulses *WITHDRAWN*

K. Matthies*¹; S. K. Sundaram¹; Y. Gong²; J. Kantola²
1. Alfred University, USA
2. JELD-WEN Inc., USA

(GOMD-UP-P007-2024) Electrical Characterization of Sodium-containing Germanium Selenide Amorphous Thin Films

M. Graff*¹; J. Martinez¹; B. Mahlovanyi²; A. Kovalskiy¹; R. Golovchak¹
1. Austin Peay State University, USA
2. University of Rzeszow, Poland

(GOMD-UP-P008-2024) Structure-property relationships of LiPON doped glassy solid electrolytes (GSEs): 58 Li₂S + 42[(1-x) SiS₂ + (x) {(1-y) LiPO₃ + (y) LiPON}]

A. R. Carr*¹; S. W. Martin¹; V. M. Torres¹
1. Iowa State University, Materials Science and Engineering, USA

(GOMD-UP-P009-2024) Instrumentation and application of a measurement system for high-frequency investigations of glassy-solid-state-electrolytes

C. S. Martin*¹; A. G. Wakefield¹; S. W. Martin¹
1. Iowa State University, Materials Science and Engineering, USA

(GOMD-P009-2024) Surface free energy and frost resistance of concrete with of waste glass aggregate

D. Barnat-Hunek*¹
1. Lublin University of Technology, Department of General Construction, Poland

(GOMD-P013-2024) Recycling of colored waste cullet from glass bead production

A. Klouzkova*¹; P. Dvoráková¹; M. Kolárová¹
1. University of Chemistry and Technology, Department of Glass and Ceramics, Czechia

(GOMD-P014-2024) Everglass: The new role of glass in a sustainable society. Technology for the integral recycling of glass

A. Durán¹; M. Pascual*¹
1. Instituto de Ceramica y Vidrio (CSIC), Glasses, Spain

(GOMD-UP-P0010-2024) Chemical and Physical Effects of Particle Size and Surface Chemistry on Direct Ink Write Glass Printing

N. Tobin*¹; J. F. Destino¹
1. Creighton University, Chemistry & Biochemistry, USA

Tuesday, May 21, 2024**Award Lectures**

Room: Peeble Beach

8:00 AM**George W. Morey Award Winner: Evolution of molecular dynamics simulations of glass surfaces and interfaces**

S. Garofalini¹
1. Rutgers University, USA

S1 Fundamentals of the Glassy State**Session 3: Structural Characterizations of Glasses and Melts**

Room: Turnberry
Session Chairs: John McCloy, Washington State University;
Dominique de Ligny, University Erlangen-Nürnberg

9:20 AM**(GOMD-S1-036-2024) A review on the structure of oxynitride phosphate glasses and a thermodynamic approach to their study (Invited)**

A. López-Grande²; F. Muñoz*¹
1. Institute of Ceramics and Glass, CSIC, Spain
2. Otto-Schott Institute for Materials Research, Germany

9:50 AM**(GOMD-S1-037-2024) Structure-property correlations in RE-doped fluoride-phosphate glasses sought by magnetic resonance and electronic spectroscopies (Invited)**A. de Camargo*¹

1. BAM Federal Institute for Materials Research and Testing, 5.6 - Glass, Germany

10:20 AM**(GOMD-S1-038-2024) Plutonium oxide melt structure and bonding**S. K. Wilke*¹; C. J. Benmore²; O. L. Alderman³; G. Sivaraman⁴; M. Ruehl⁵; K. Hawthorne⁵; A. Tamalonis⁶; D. A. Andersson⁷; M. A. Williamson⁸; R. Weber⁹

1. Materials Development, Inc., USA
2. Argonne National Lab, X-ray Science Division, Advanced Photon Source, USA
3. Rutherford Appleton Laboratory, ISIS Neutron and Muon Source, United Kingdom
4. University of Illinois at Urbana-Champaign, Chemical & Biomolecular Engineering, USA
5. Argonne National Lab, Chemical and Fuel Cycle Technologies Division, USA
6. Tamalonis Technologies, USA
7. Los Alamos National Lab, Materials Science and Technology Division, USA

10:40 AM**(GOMD-S1-039-2024) Pb Coordination Environment and its connectivity in Lead Silicate Glasses: Results from 2D 207Pb NMR**S. Sen*¹; R. Lancelotti²

1. University of California, Davis, Department of Material Science and Engineering, USA
2. Federal University of São Carlos, Graduate Program in Materials Science and Engineering, Brazil

11:00 AM**(GOMD-S1-040-2024) Comparative Structural Study of Al₂O₃-SiO₂ Glasses and Amorphous Thin Films**L. Cormier*¹; S. Ben Khemis²; E. Burov³; H. Montigaud⁴; P. Florian⁵

1. Sorbonne University - CNRS, IMPMC, France
2. CNRS/Saint-Gobain Research Paris, Surface du Verre et Interfaces, France
3. CNRS - U. Orleans, CEMHTI, France

11:20 AM**(GOMD-S1-041-2024) Physical and structural properties of R₂O₃-SiO₂ glasses prepared by a levitation technique**A. Masuno*¹; K. Yoshida²; S. Sasaki³; Y. Yanaba³; H. Inoue³

1. Kyoto University, Graduate School of Engineering, Japan
2. Hirotsuki University, Graduate School of Science and Technology, Japan
3. The University of Tokyo, Institute of Industrial Science, Japan

11:40 AM**(GOMD-S1-042-2024) Structure and properties of glasses and melts in the CaO-Al₂O₃-SiO₂ system**D. R. Neuville*¹

1. IGP-CNRS-UPC, Géomatériaux, France

Session 8: Chalcogenide and phase change materials: Phase transitions and dynamics

Room: Bel Air I

Session Chair: Shuai Wei, Aarhus University

9:20 AM**(GOMD-S1-043-2024) Non resonant phase switching in the chalcogenide SnSe (Invited)**A. Lindenberg*¹

1. Stanford University, USA

9:50 AM**(GOMD-S1-044-2024) Probing relaxation dynamics in fragile liquids with split-pulse x-ray photon correlation spectroscopy at the Linac Coherent Light Source (Invited)**Y. Sun*¹

1. SLAC National Accelerator Laboratory, USA

10:20 AM**(GOMD-S1-045-2024) Pressure-induced reversal of Peierls-like distortions elicits the polyamorphic transition in GeTe and GeSe (Invited)**T. Fujita*¹; Y. Chen²; Y. Kono³; S. Takahashi⁴; H. Kasai⁴; D. Campi⁵; M. Bernasconi⁵; K. Ohara⁶; H. Yumoto⁷; T. Koyama⁸; H. Yamazaki⁹; Y. Senba⁹; H. Ohashi⁹; I. Inoue⁹; Y. Hayashi⁹; M. Yabashi⁹; E. Nishibori⁹; R. Mazzarello⁹; S. Wei¹

1. Aarhus University, Chemistry, Denmark
2. Sapienza University of Rome, Department of Physics, Italy
3. Ehime University, Geodynamics Research Center, Japan
4. University of Tsukuba, Department of Physics, Faculty of Pure and Applied Sciences and Tsukuba Research Center for Energy Materials Science (TREMS), Japan
5. University of Milano-Bicocca, Department of Materials Science, Italy
6. Shimane University, Faculty of Materials for Energy, Japan
7. RIKEN SPring-8 Center, Japan

10:50 AM**(GOMD-S1-046-2024) Revealing phase transitions in fragile supercooled liquids by femtosecond X-ray diffraction (Invited)**P. Zalden*¹

1. European XFEL, Germany

11:20 AM**(GOMD-S1-047-2024) Supercooled liquid tellurium: Water's distant relative? (Invited)**P. Sun*¹

1. University of Padova, Department of Physics and Astronomy "Galileo Galilei", Italy

S2 Glass and Interactions with Its Environment Fundamentals and Applications**Session 3: Glass Surfaces, Interfaces, and Coatings**

Room: St. Andrews

Session Chair: Albert Fahey, Corning Incorporated

9:20 AM**(GOMD-S2-023-2024) Density Functional Theory Modeling of Silicate Glass Surface Structure and Dissolution Mechanisms (Invited)**J. D. Kubicki*¹

1. University of Texas at El Paso, Earth, Environmental & Resource Sciences, USA

9:50 AM**(GOMD-S2-024-2024) Particle-glass interactions: Impacts of pretreatment, aging condition, and glass composition**G. Agnello*¹; N. J. Smith¹; A. Antony¹; C. V. Cushman¹; H. Kaya¹; G. Stone¹; J. Banerjee¹; H. Park¹

1. Corning Incorporated, USA

10:10 AM**(GOMD-S2-025-2024) Causes and consequences of interaction of soda-lime-silica glass surface with superheated steam **WITHDRAWN****B. Roy*¹; A. Rosin¹; T. Gerdes¹

1. University of Bayreuth, Keylab Glass Technology, Germany

10:30 AM**(GOMD-S2-026-2024) Glass Composition Dependence of Incongruent Release and Surface Leached Layer Formation**N. J. Smith*¹; E. Barros de Moraes¹; D. C. Allan¹; T. Dimond¹; R. Schaut¹

1. Corning Incorporated, USA

10:50 AM**(GOMD-S2-027-2024) The chemical diffusion through the interface between float glass and an amorphous thin film**E. Burov*¹; S. Ben Khemis²; H. Montigaud¹; L. Cormier²

1. Saint-Gobain, Laboratoire Mixte Saint-Gobain/CNRS, France
2. IMPMC, Sorbonne University-CNRS, France

11:10 AM

(GOMD-S2-028-2024) Two-dimensional material-based coatings for next-generation damage-resistant glasses ~~WITHDRAWN~~S. Sahoo^{*}; O. P. Khatri²; Z. Khan³; S. Mannan⁴; D. Thakur⁵; Z. Ye⁶; V. Balakrishnan²; N. Krishnan⁴; N. N. Gosvami¹

1. Indian Institute of Technology Delhi, Department of Materials Science and Engineering, India
2. CSIR - Indian Institute of Petroleum, India
3. National Institute of Technology Srinagar, Department of Metallurgical and Materials Engineering, India
4. Indian Institute of Technology Delhi, Department of Civil Engineering, India
5. Indian Institute of Technology Mandi, School of Engineering, India
6. Miami University, Department of Mechanical and Manufacturing Engineering, USA

11:30 AM

(GOMD-S2-029-2024) Thickness determination of thick polymer coatings with spectroscopic ellipsometryH. Kaya^{*}; A. Li¹

1. Corning Incorporated, USA

11:50 AM

(GOMD-S2-030-2024) Probing the Outer Monolayer of Aluminosilicate Glass Surfaces with Low-Energy Ion Scattering (LEIS)R. Thorpe^{*}; N. J. Smith²; C. V. Cushman³; G. Agnello²; J. Banerjee²; A. Antony³

1. Lehigh University, Institute for Functional Materials and Devices, USA
2. Corning Incorporated, Science & Technology Division, USA
3. Corning Incorporated, Manufacturing, Technology, and Engineering Division, USA

Session 4: Materials for Waste Immobilization

Room: Shoal Creek

Session Chair: Joseph Ryan, Pacific Northwest National Lab

9:20 AM

(GOMD-S2-031-2024) Predicting Long-Term Aqueous Corrosion of Immobilized Low-Activity Waste Glass (Invited)S. Kerisit^{*}; J. Neeway¹; X. Song¹; Y. Fang¹; B. Parruzot¹; J. V. Crum¹; S. K. Cooley²; M. Asmussen¹; G. L. Smith¹

1. Pacific Northwest National Lab, USA

9:50 AM

(GOMD-S2-032-2024) Glass Formulations to Expand Hanford High-Level Waste Processing to Composition Regions Appropriate for Minimal PretreatmentJ. Vienna^{*}; X. Lu¹; V. Gervasio¹; J. T. Reiser¹; M. Peterson¹; N. L. Canfield¹; J. Lang¹; J. C. Rigby¹; J. George¹; N. Lumetta¹; J. M. Westman¹

1. Pacific Northwest National Lab, USA

10:10 AM

(GOMD-S2-033-2024) Accounting for Reaction Progress in Simulation of the Long-Term Aqueous Corrosion of Nuclear Waste GlassS. Kerisit^{*}; J. Neeway¹; B. Parruzot¹; J. V. Crum¹; M. Asmussen¹; G. L. Smith¹

1. Pacific Northwest National Lab, USA

10:30 AM

(GOMD-S2-034-2024) Modeling of Secondary Phases to Account for Incongruent Glass DissolutionJ. Neeway^{*}; J. V. Crum¹; J. T. Reiser¹; S. Kerisit¹; B. Parruzot¹; M. Asmussen¹; G. L. Smith¹; D. Swanberg²; R. Skeen²

1. Pacific Northwest National Lab, USA
2. Washington River Protection Solutions, USA

10:50 AM

(GOMD-S2-035-2024) Sensitivity of Long-term Modeling of Glass Corrosion to Model Parameters in Arid, Shallow Subsurface DisposalM. Asmussen^{*}; S. Kerisit¹; J. Neeway¹; X. Song¹; Y. Fang¹; B. Parruzot¹; J. V. Crum¹; J. T. Reiser¹; G. L. Smith¹; P. D. Meyer¹

1. Pacific Northwest National Lab, Energy and Environment Directorate, USA

11:10 AM

(GOMD-S2-036-2024) Borosilicate vitrification of zeolites and geopolymers for long-term immobilization of cesium and strontiumT. R. Elumalai^{*}; A. Farrant¹; A. Krishnamurthy¹; S. Kroeker¹

1. University of Manitoba, Chemistry, Canada

11:30 AM

(GOMD-S2-037-2024) The effect of alkali metal and alkaline earth cations on the dissolution behaviour of UK High Level Waste glassJ. Ayling^{*}; R. J. Hand¹; M. T. Harrison²; C. L. Corkhill³; C. L. Thorpe¹

1. The University of Sheffield, United Kingdom
2. National Nuclear Laboratory, United Kingdom
3. The University of Bristol, School of Earth Sciences, United Kingdom

S4 Outreach Glass Technology Manufactory Recycling & Cross-Cutting Topics**Session 1: STEM Outreach**

Room: Bel Air II

Session Chairs: Charmayne Lonergan, Missouri University of Science & Technology; Casey Schwarz, Ursinus College

9:20 AM

(GOMD-S4-001-2024) From magnetic, glowing and light bending Glasses, the Sound of Breaking Glass & The Long Night of Science - STEAM outreach in Alfred and beyond (Invited)D. Möncke^{*}

1. Alfred University, New York State College of Ceramics, USA

9:50 AM

(GOMD-S4-002-2024) Ceramic and Glass Industry Foundation Outreach Program: How You Can Help Impact the Next Generation of Professionals (Invited)L. Houghton^{*}

1. The American Ceramic Society, CGIF, USA

10:20 AM

(GOMD-S4-003-2024) Innovations in K-12 Ceramic and Glass Initiatives at Missouri S&TK. Wilkerson^{*}; C. Lonergan¹

1. Missouri S & T University, USA

10:40 AM

(GOMD-S4-004-2024) Connecting to Students Through the Science of Everyday MaterialsH. Smith^{*}

1. Swarthmore College, USA

11:00 AM

(GOMD-S4-005-2024) Clear Futures: Rethinking Education for Advanced Manufacturing of Glass in the USS. Cooper^{*}

1. Celsius Glass USA, USA

11:20 AM

(GOMD-S4-006-2024) Empowering Tomorrow's Workforce: ACerS' Workforce Development InitiativesA. Engen^{*}

1. The American Ceramic Society, USA

11:40 AM

(GOMD-S4-007-2024) Full STEAM ahead: Alfred University's efforts to recruit and train ceramic and glass professionals (Invited)G. Gaustad^{*}; L. Lake²; W. LaCourse¹; R. Welch¹

1. NYS College of Ceramics, Alfred University, Inamori School of Engineering, USA
2. Alfred University, School of Art and Design, USA

Award Lectures

12:15 PM

Norbert J. Kreidl Award: Evolving the lever rule for Borate glass structure

1. Clemson University, USA

Room: Peeble Beach

S1 Fundamentals of the Glassy State**Session 1: Glass Formation and Structural Relaxation**

Room: Bel Air II

Session Chair: Collin Wilkinson, Alfred University

1:20 PM

(GOMD-S1-048-2024) Structure of silicate glasses under pressure (Invited)W. Kob^{*1}; Z. Zhang²

1. University of Montpellier, France
2. Chengdu University of Technology, China

1:50 PM

(GOMD-S1-049-2024) Understanding the Fragile-to-Strong Transition in Silica from Microscopic Dynamics (Invited)B. Wang^{*1}; Z. Yu²

1. University of Wisconsin-Madison, USA
2. University of Illinois at Urbana-Champaign, Chemistry, USA

2:20 PM

(GOMD-S1-050-2024) Effect of physical aging on the structure of lithium disilicate and lead metasilicate glassesR. F. Lancelotti^{*2}; S. Sen¹; E. Dutra Zanotto²

1. University of California, Davis, Materials Science and Engineering, USA
2. Federal University of Sao Carlos, Brazil

2:40 PM

(GOMD-S1-051-2024) Study of the α -relaxation in mixed network forming glass melts by photon correlation spectroscopyD. Sidebottom^{*1}

1. Creighton University, Physics, USA

3:00 PM

(GOMD-S1-052-2024) The Origin of the Imaginary Heat Capacity in Temperature Modulated Differential Scanning Calorimetry: A Role of Dynamic HeterogeneityW. Takeda^{*1}; P. Lucas¹

1. University of Arizona, Materials science and engineering, USA

3:20 PM

Break**Session 3: Structural Characterizations of Glasses and Melts**

Room: Turnberry

Session Chairs: Daniel Neuville; Andrea de Camargo, Physics Institute of Sao Carlos, University of Sao Paulo

1:20 PM

(GOMD-S1-053-2024) Boroxol ring dissolution in molten and glassy B₂O₃ by neutron diffraction, x-ray diffraction and difference methods (Invited)O. L. Alderman^{*1}

1. STFC, ISIS Neutron and Muon Source, United Kingdom

1:50 PM

(GOMD-S1-054-2024) Evolving the lever rule: SROCs and their application in modeling Zn borate glassesB. Topper^{*1}; D. Möncke²; R. Youngman³; E. I. Kamitsos⁴; C. Varsamis⁵

1. Clemson University, USA
2. Alfred University, USA
3. Corning Incorporated, USA
4. National Hellenic Research Foundation, Greece
5. University of West Attica, Greece

2:10 PM

(GOMD-S1-055-2024) New Perspectives on the Structural Evolution of Borosilicate Glasses and Crystals (Invited)B. Moulton^{*1}

1. Alfred University, Glass Science and Engineering, USA

2:40 PM

(GOMD-S1-056-2024) Structural dynamics in soda-lime silicate glasses driven by synchrotron X-ray-induced charging fieldQ. Ma^{*1}; D. T. Keane¹

1. Northwestern University, Northwestern Synchrotron Res. Center, USA

3:00 PM

(GOMD-S1-057-2024) Structural order analysis based on ring shape for network-forming materialsM. Shiga^{*1}; A. Hirata²; Y. Onodera³; H. Masai⁴

1. Tohoku University, Japan
2. Waseda University, Japan
3. National Institute for Materials Science (NIMS), Japan
4. National Institute of Advanced Industrial Science and Technology (AIST), Japan

3:20 PM

Break

3:40 PM

(GOMD-S1-058-2024) Fluorine in complex aluminoboro-silicate glasses: insight into chemical environment and structureJ. Bussey^{*1}; J. McCloy¹; N. Smith-Gray¹; N. Stone-Weiss²; R. Youngman²; D. Neuville³; M. Dixon Wilkins¹

1. Washington State University, School of Mechanical and Materials Engineering, USA
2. Corning Incorporated, USA
3. Université Paris Cité, Institut de Physique du Globe de Paris, France

4:00 PM

(GOMD-S1-059-2024) Cl and F incorporation in aluminoborosilicate glass and effect on sulfate retention, salt formation, and other properties (Invited)J. McCloy^{*1}; J. Bussey¹; N. Smith-Gray¹; N. Stone-Weiss²; R. Youngman²; S. Karcher¹; D. Neuville³

1. Washington State University, School of Mechanical and Materials Engineering, USA
2. Corning Incorporated, USA
3. University of Paris, Institut de Physique du Globe, France

4:30 PM

(GOMD-S1-060-2024) Effect of Molybdenum Incorporation on the Network Structure of Sodium Aluminoborophosphate GlassesA. Krishnamurthy¹; J. Perillo¹; P. Florian²; S. Kroeker^{*1}

1. University of Manitoba, Chemistry, Canada
2. CEMHTI, France

Session 8: Chalcogenide and phase change materials: Glass structure and properties I

Room: Bel Air I

Session Chair: Pierre Lucas, University of Arizona

1:20 PM

(GOMD-S1-061-2024) Tailoring chemical bonds to design unconventional chalcogenide glasses (Invited)M. Wuttig^{*1}; C. Schön¹; C. Bichara²; C. Gatti³; J. Raty⁴

1. RWTH Aachen University, Germany
2. CNRS, France
3. Istituto Lombardo, Italy
4. University of Liege, Belgium

1:50 PM

(GOMD-S1-062-2024) Boson Peaks In Amorphous Phase Change MaterialsJ. Moesgaard*; S. Wei¹

1. Aarhus University, Chemistry, Denmark

2:10 PM

(GOMD-S1-063-2024) Characterization of the Glass Transition in As₃Se₂ GlassD. P. Bayko*; W. Takeda¹; P. Lucas¹

1. University of Arizona, USA

2:30 PM

(GOMD-S1-064-2024) Prism Coupling Refractometry as a Quality Control Measure for Chalcogenide Glass CompositionsA. Howe*; R. M. Gaume¹; K. Richardson **WITHDRAWN**

1. University of Central Florida, USA

2:50 PM

Break

S2 Glass and Interactions with Its Environment Fundamentals and Applications**Session 3: Unconventional glass surfaces**

Room: St. Andrews

Session Chair: Nicholas Smith, Corning Incorporated

1:20 PM

(GOMD-S2-038-2024) Manipulating Glass Time with Entropy (Invited)Z. Fakhraai*; H. Wang¹; Y. C. Chen¹

1. University of Pennsylvania, Chemistry, USA

1:50 PM

(GOMD-S2-039-2024) Revealing the superior scratch resistance of CVD-grown WS₂-coated silica glassesS. Sahoo*; D. Thakur²; Z. Ye³; V. Balakrishnan²; N. Krishnan⁴; N. N. Gosvami¹

1. Indian Institute of Technology Delhi, Department of Materials Science and Engineering, India
2. Indian Institute of Technology Mandi, School of Engineering, India
3. Miami University, Department of Mechanical and Manufacturing Engineering, USA
4. Indian Institute of Technology Delhi, Department of Civil Engineering, India

Session 3: Special Tutorial Session on Glass Surface Analysis

Room: St. Andrews

Session Chair: Nicholas Smith, Corning Incorporated

2:10 PM

(GOMD-S2-040-2024) X-ray photoelectron spectroscopy of glasses (Invited)

J. Shallenberger*

1. Pennsylvania State University, Materials Research Institute, USA

2:30 PM

(GOMD-S2-041-2024) Analyzing Glass Fracture Surfaces with Monolayer Precision Using HS-LEIS (Invited)

R. Thorpe*

1. Lehigh University, Institute for Functional Materials and Devices, USA

2:50 PM

(GOMD-S2-042-2024) The Use of Secondary Ion Mass Spectrometry for Glass Surface and Near-Surface Analysis (Invited)

A. Fahey*

1. Corning Incorporated, Microscopy and Surface Analysis, USA

Session 4: Materials for Waste Immobilization

Room: Shoal Creek

Session Chair: Joseph Ryan, Pacific Northwest National Lab

1:20 PM

(GOMD-S2-043-2024) Future challenges in the vitrification of nuclear waste in the UK (Invited)

M. T. Harrison*

1. National Nuclear Laboratory, WM&D, United Kingdom

1:50 PM

(GOMD-S2-044-2024) Effect of Al-source on the retention of rhenium during vitrification of nuclear wasteR. Pokorny*; J. Klouzek¹; P. Cincibusova¹; L. Lowy¹; M. Eret¹; J. George²; P. Hrma³; A. A. Kruger⁴

1. University of Chemistry and Technology Prague, Czechia
2. Pacific Northwest National Lab, USA
3. AttainX, USA
4. US Department of Energy, Office of River Protection, USA

2:10 PM

(GOMD-S2-045-2024) Investigation of the mixed-alkali effect on crystallization of SnO₂ in LAW glasses for WTPA. J. Lere-Adams*; J. McCloy¹

1. Washington State University, Materials Science and Engineering Program, USA

2:30 PM

(GOMD-S2-046-2024) Structural investigation of alkali aluminoborosilicate glass containing MoO₃ for vitrification of nuclear wasteS. Kim*; T. Yeo²; J. Cho¹

1. Pohang University of Science and Technology(POSTECH), Division of Advanced Nuclear Engineering, Republic of Korea
2. Pohang University of Science and Technology(POSTECH), Graduate Institute of Ferrous & Eco Materials Technology, Republic of Korea

2:50 PM

Break

S4 Outreach Glass Technology Manufactory Recycling & Cross-Cutting Topics**Session 2: Challenges in Manufacturing I**

Room: Peeble Beach

Session Chairs: Irene Peterson, Corning Incorporated;

Katelyn Kirchner, The Pennsylvania State University

1:20 PM

(GOMD-S4-008-2024) Observation of glass synthesis and reactivity by in-situ high temperature ESEM (Invited)R. Podor*; J. Lautru¹; Z. Naby²; R. Pokorny³; F. O. Mear⁴; S. Schuller²

1. ICSM, Microscopy, France
2. CEA, France
3. University of Chemistry and Technology Prague, Czechia
4. UCCS, France

1:50 PM

(GOMD-S4-009-2024) A Coupled Phase Diagram Study and Thermodynamic Database Development for the Li₂O-Na₂O-Al₂O₃-SiO₂-ZrO₂ system (Invited)J. Lee*; I. Jung¹

1. Seoul National University, Material Science and Engineering, Republic of Korea

2:20 PM

(GOMD-S4-010-2024) Understanding the impact of hydrogen burners on glass melting (Invited)E. Sarafian*; C. Fekety¹

1. Corning Incorporated, USA

2:50 PM**(GOMD-S4-011-2024) Dynamics of bubbles, crystals, and droplets in silicate melts: industrial and natural applications (Invited)**L. Pereira*¹; F. Wadsworth²; D. R. Neuville³; D. Dingwell¹

1. University of Munich (LMU), Germany
2. Durham University, United Kingdom
3. IPGP, France

3:20 PM**Break****S1 Fundamentals of the Glassy State****Session 1: Glass Formation and Structural Relaxation**

Room: Bel Air II

Session Chair: Collin Wilkinson, Alfred University

3:40 PM**(GOMD-S1-065-2024) Accelerated Structural Relaxation of Chalcogenide Glasses via Thermo-Ultrasonication**P. Lynch*¹; G. Sop Tagne¹; R. Welch²; R. Sharma³; K. Richardson³; S. Yaniger¹; W. LaCourse¹; C. Wilkinson¹; M. Kang¹

1. Alfred University, New York State College of Ceramics, USA
2. Pennsylvania State University, Department of Materials Science and Engineering, USA
3. University of Central Florida, CREOL, College of Optics and Photonics, USA

4:00 PM**(GOMD-S1-066-2024) Experimental Measurement of Configurational and Vibrational Entropy in Metallic Glasses**H. Smith*¹; W. Zhang¹

1. Swarthmore College, USA

Session 8: Chalcogenide and phase change materials: Glass structure and properties II

Room: Bel Air I

Session Chair: Pierre Lucas, University of Arizona

3:40 PM**(GOMD-S1-067-2024) Density functional simulations of Ag migration in a conductive bridging random access memory cell (Invited)**J. Akola*¹

1. Norwegian University of Science and Technology, Department of Physics, Norway

4:10 PM**(GOMD-S1-068-2024) Optical phase change materials: chalcogenides and beyond (Invited)**J. Hu*¹

1. Massachusetts Institute of Technology, USA

4:40 PM**(GOMD-S1-069-2024) Probing the ultrafast structural relaxation dynamics of amorphous GeTe and GeSe using MeV ultrafast electron diffractions**S. Wei*¹

1. Aarhus University, Chemistry Department, Denmark

5:00 PM**(GOMD-S1-070-2024) The development of a mixed-oxy-sulfide silicate glass as a thin film glassy electrolyte**S. J. Leland*¹; H. Cochran¹; J. Wheaton¹; S. W. Martin¹

1. Iowa State University, Materials Science and Engineering, USA

5:20 PM**(GOMD-S1-071-2024) Impact of polysulfide impurities on the thermal properties of mixed glass former mixed oxy-sulfide sodium and lithium glasses**J. Wheaton*¹; M. P. Olson¹; J. Ryner¹; N. Riley¹; S. W. Martin¹

1. Iowa State University, Materials Science and Engineering, USA

S2 Glass and Interactions with Its Environment Fundamentals and Applications**Session 4: Materials for Waste Immobilization**

Room: Shoal Creek

Session Chair: Joseph Ryan, Pacific Northwest National Lab

3:40 PM**(GOMD-S2-047-2024) Impact of transition metal ions on the structure and sulfur solubility in borosilicate-based model nuclear waste glasses**R. Saini*¹; X. Xu¹; A. Goel¹

1. Rutgers University, USA

4:00 PM**(GOMD-S2-048-2024) Understanding Composition-Driven Metastability in High-Level Nuclear Waste Glasses via Materials Informatics**I. Sargin*¹

1. Middle East Technical University, Department of Metallurgical and Materials Engineering, Turkey

4:20 PM**(GOMD-S2-049-2024) Predicting the nepheline amount in high-level nuclear waste glasses by machine learning**E. Ardic*¹; I. Sargin¹

1. Middle East Technical University, Metallurgical and Materials Engineering, Turkey

4:40 PM**(GOMD-S2-050-2024) MD simulations of QSPR analysis of iron phosphate glasses for nuclear waste disposal**J. Kalaha*¹; X. Lu²; J. Vienna²; B. J. Riley²; J. Du¹

1. University of North Texas, Materials Science and Engineering, USA
2. Pacific Northwest National Lab, USA

S4 Outreach Glass Technology Manufactory Recycling & Cross-Cutting Topics**Session 2: Challenges in Manufacturing II**

Room: Peeble Beach

Session Chairs: Irene Peterson, Corning Incorporated; Jong Han, Owens Corning

3:40 PM**(GOMD-S4-012-2024) Viscosity of transient glass-forming melt and its relation to foaming during glass batch melting**R. Pokorny*¹; J. Kunc¹; J. Klouzek¹; M. Vernerova¹; P. Cincibusova¹; P. Ferkl²; J. George²; P. Hirma²; A. A. Kruger³

1. University of Chemistry and Technology Prague, Czechia
2. Pacific Northwest National Lab, USA
3. AttainX, USA
4. US Department of Energy, Office of River Protection, USA

4:00 PM**(GOMD-S4-013-2024) The oxidation states of Fe and S in natural glasses (Invited)**M. Brounce*¹

1. University of California, Riverside, Earth and Planetary Sciences, USA

4:30 PM**(GOMD-S4-014-2024) Iron Redox and Sulfate Fining in Soda-lime Glass: A Study on Replicating Production Furnace Conditions in the Laboratory**Y. Shiozawa*¹; T. Maehara¹

1. AGC Inc., Innovative Technology Laboratories, Japan

4:50 PM**(GOMD-S4-015-2024) Modeling cold cap behavior in joule-heated waste vitrification melters (Invited)**P. Ferkl*¹; P. Hrma²; V. C. Leite³; D. P. Guillen³; J. Klouzek⁴; M. Hall¹; A. A. Kruger⁵; R. Pokorny⁴

1. Pacific Northwest National Lab, USA
2. AttainX, USA
3. Idaho National Laboratory, USA
4. University of Chemistry and Technology Prague, Czechia
5. US Department of Energy, Office of River Protection, USA

5:20 PM**(GOMD-S4-016-2024) Effect of shear stress induced by the melt flow on stability of primary foam under the cold cap**P. Hrma*¹; P. Ferkl²; R. Pokorny³; A. A. Kruger⁴

1. AttainX, USA
2. Pacific Northwest National Lab, USA
3. University of Chemical Technology Prague, Czechia
4. Office of River Protection, USA

Session 3: Additive Manufacturing of Glass

Room: St. Andrews

Session Chair: Rebecca Dylla-Spears, Lawrence Livermore National Laboratory

3:40 PM**(GOMD-S4-017-2024) Laser-based additive manufacturing of silica-based specialty fibers (Invited)**P. Maniewski*¹; T. Worman¹; R. Bannerman²; M. Brunzell¹; F. Laurell¹; C. Holmes²; V. Pasiskevicius¹

1. KTH Royal Institute of Technology, Applied Physics, Sweden
2. Optoelectronic Research Centre, United Kingdom

4:10 PM**(GOMD-S4-018-2024) 3D printing and injection molding of transparent fused silica glass (Invited)**F. Kotz-Helmer*¹

1. University of Freiburg, IMTEK, Germany

4:40 PM**(GOMD-S4-019-2024) Colloidal Sol-gel Feedstocks for Fabricating Additively Manufactured Glass Materials (Invited)**J. F. Destino*¹; N. Tobin¹; R. M. Vires¹; A. R. Carr¹; R. M. Wayne¹; S. Luna¹

1. Creighton University, Chemistry & Biochemistry, USA

5:10 PM**(GOMD-S4-020-2024) 3D Printing of Glass Optics: Shaping the Future of Precision Optical Systems (Invited)**R. Liang*¹; Z. Hong¹; P. Ye¹; D. A. Loy¹

1. University of Arizona, USA

Wednesday, May 22, 2024**Award Lectures****Darshana and Arun Varshneya Frontiers of Glass Science Lecture: Edgar Dutra Zanotto**

Room: Peeble Beach

8:00 AM**Unlocking crystal nucleation in supercooled liquids and glasses**E. Dutra Zanotto¹

1. Federal University of São Carlos, Brazil

S1 Fundamentals of the Glassy State**Session 1: Glass Formation and Structural Relaxation Glass Formation and Structural Relaxation**

Room: Bel Air II

Session Chair: Sabyasachi Sen, University of California, Davis

9:20 AM**(GOMD-S1-072-2024) The Glass Transition: Kinetics and Thermodynamics (Invited)**S. Simon*¹

1. North Carolina State University, Chemical and Biomolecular Engineering, USA

9:50 AM**(GOMD-S1-073-2024) A New Approach for Interpreting Glass Forming Behavior Consistent with Transition State Theory (Invited)**C. Beg¹; J. Kieffer*¹

1. University Of Michigan, USA

10:20 AM**(GOMD-S1-074-2024) Exploring the Mixed-Alkali Effect in Supercooled Oxide Liquids Through Dynamic and Thermodynamic Measurement Analysis**T. Yeo*¹; J. Cho¹; S. Sen²

1. Pohang University of Science and Technology (POSTECH), Republic of Korea
2. University of California, Davis, Materials Science and Engineering, USA

10:40 AM**(GOMD-S1-075-2024) Amorphous silica possessing topology of siliceous zeolite**H. Masai*¹; S. Kohara²; T. Wakihara³; Y. Shibazaki⁴; Y. Onodera²; Y. Sakai⁵; J. Haines⁶; D. Keen⁷; M. Azuma⁸

1. National Institute of Advanced Industrial Science and Technology (AIST), Department of Materials and Chemistry, Japan
2. National Institute for Materials Science, Center for Basic Research on Materials, Japan
3. The University of Tokyo, Institute of Engineering Innovation, Japan
4. High Energy Accelerator Research Organization (KEK), Photon Factory, Institute of Materials Structure Science, Japan
5. Kanagawa Institute of Industrial Science and Technology (KISTEC), Japan
6. Université de Montpellier, ENSCM, Institut Charles Gerhardt Montpellier, CNRS, France
7. Rutherford Appleton Laboratory, ISIS Facility, United Kingdom
8. Tokyo Institute of Technology, Laboratory for Materials and Structures, Japan

11:00 AM**(GOMD-S1-076-2024) Investigation of structural origin of boson peak in glass-forming materials using heterogeneous elasticity theory**T. Mori*⁵; S. Kitani¹; H. Hijiyama²; Y. Fujii⁴; S. Kohara³; S. Oh⁵; D. Kyotani⁵

1. Tokyo Institute of Technology, Japan
2. AGC Inc., Japan
3. National Institute for Materials Science (NIMS), Japan
4. Ritsumeikan University, Japan
5. University of Tsukuba, Japan

11:20 AM

(GOMD-S1-077-2024) From the Roman Empire to the present day, just one viscosity curve?D. R. Neville*¹; L. Cormier²; N. Schibille²

1. IPGP, géomatériaux, France
2. IRAMAT CNRS, France
3. IMPMC, France

Session 6: Mechanical Properties of Glasses I: Rate dependence of mechanical responses

Room: Bel Air I

Session Chair: Timothy Gross, Corning Incorporated

9:20 AM

(GOMD-S1-078-2024) Issues Involving the Nanoindentation Measurement of the Mechanical Properties of Inorganic Glasses at High Strain Rates (Invited)B. Hackett*¹; G. Pharr¹

1. Texas A&M University, USA

9:50 AM

(GOMD-S1-079-2024) Strong or fragile? Viscoplastic flow of silicate glasses at room temperature and its strain rate dependanceM. Bourguignon¹; G. A. Rosales-Sosa²; S. Sao-Joao³; G. Kermouche³; Y. Kato²; E. Barthel*¹

1. CNRS/ESPCI, SIMM, France
2. Nippon Electric Glass, Japan
3. Mines Saint-Etienne, Univ Lyon, CNRS, LGF, Centre SMS, France

10:10 AM

(GOMD-S1-080-2024) In-situ Observation of Deformation and Fracture Behavior of Glass subjected to High-Velocity Impact of a Small Blunt ObjectM. Nagano*¹; Y. Kobayashi²; T. Kajihara²; S. Sawamura¹; S. Yoshida¹

1. AGC Inc., Material Integration Laboratory, Japan
2. AGC TECHNO GLASS Co.,Ltd., Japan
3. Innovative Technology Laboratories, Japan

10:30 AM

(GOMD-S1-081-2024) Rate Dependence of Indentation-Induced Deformation and Cracking in GlassS. Yoshida*¹

1. AGC Inc., Japan

10:50 AM

(GOMD-S1-082-2024) Elucidating the link between strain rate, ductility, and indentation size effect through thermal annealingP. Shrestha¹; K. Jardine¹; M. Bauchy²; M. M. Smedskjaer²; C. G. Hoover*¹

1. Arizona State University, School of Sustainable Engineering and the Built Environment, USA
2. University of California Los Angeles, Civil and Environmental Engineering, USA
3. Aalborg University, Department of Chemistry and Bioscience, Denmark

11:10 AM

(GOMD-S1-083-2024) How to mitigate the Indentation Size Effect? Evidence of an intimate link between Size Effect, Strain Rate and Ductility in Soda-lime SilicateP. Shrestha*¹; M. M. Smedskjaer²; M. Bauchy²; C. G. Hoover¹

1. Arizona State University, School of Sustainable Engineering and the Built Environment, USA
2. University of California Los Angeles, CIVIL AND ENVIRONMENTAL ENGINEERING, USA
3. Aalborg University, Department of Chemistry and Bioscience, Denmark

S2 Glass and Interactions with Its Environment Fundamentals and Applications**Session 4: Materials for Waste Immobilization**

Room: Shoal Creek

Session Chair: Joseph Ryan, Pacific Northwest National Lab

9:20 AM

(GOMD-S2-051-2024) Overview of the UK HLW ProgrammeO. Stagg*¹

1. NWS, United Kingdom

9:40 AM

(GOMD-S2-052-2024) Characterization of Alkali-Iron Phosph Waste Glasses by Structural, Thermal, and Durability AnalysesC. Lonergan*²; H. Werth³; B. J. Riley¹; K. Carlson³

1. Pacific Northwest National Lab, USA
2. Missouri University of Science & Technology, Materials Science and Engineering, USA
3. University of Nevada Reno, USA

10:00 AM

(GOMD-S2-053-2024) Alteration of glasses in complex natural environmentsC. L. Thorpe*¹; G. Manifold¹; C. Lenting²; S. Creasey-Gray¹; C. L. Corkhill¹; R. J. Hand¹

1. University of Sheffield, Materials Science and Engineering, United Kingdom
2. University of Cologne, Institut fuer Geologie und Mineralogie, Germany
3. University of Bristol, School of Earth Sciences, United Kingdom

10:20 AM

(GOMD-S2-054-2024) Study of inorganic reductants on the conversion behavior of Hanford nuclear waste melter feedsJ. Marcial*¹; J. C. Rigby¹; M. Miller¹; S. Choi¹; S. Davidson¹; D. Dixon¹; A. A. Kruger²

1. Pacific Northwest National Laboratory, USA
2. US DOE Office of River Protection, USA

10:40 AM

(GOMD-S2-055-2024) Assessing Reductant Additions to Nuclear Waste by Scaled Melter ProcessingD. Dixon*¹; J. Lang¹; M. Hall¹; S. A. Luksic¹; C. Stewart¹; D. Cutforth¹; W. C. Eaton¹

1. Pacific Northwest National Lab, USA

11:00 AM

(GOMD-S2-056-2024) Redox Effects on Crystallization during Vitrification of High-Chromium HLWK. Matlack*¹; I. Pegg¹; H. Gan¹

1. Catholic University of America, Vitreous State Laboratory, USA

11:20 AM

(GOMD-S2-057-2024) Determination of Surface Tension Parameters for Nuclear Waste GlassesD. P. Guillen*¹; D. Yankura²; Z. Guo²; S. A. Luksic²; T. Jin³

1. Idaho National Laboratory, Materials Science and Engineering, USA
2. Idaho National Lab, USA
3. Pacific Northwest National Lab, USA

S4 Outreach Glass Technology Manufactory Recycling & Cross-Cutting Topics**Session 2: Challenges in Manufacturing III**

Room: Peeble Beach

Session Chairs: Scott Cooper, Celsian Glass USA; Irene Peterson, Corning Incorporated

9:20 AM

(GOMD-S4-021-2024) Influence of atomic surface structure on nepheline crystallization in glass (Invited)E. Maeda*¹; R. Welch²; F. Lodesani¹; J. C. Mauro²

1. AGC Inc., USA
2. Pennsylvania State University, Materials Science and Engineering, USA

9:50 AM**(GOMD-S4-022-2024) Determination of the SiO₂ liquidus in the alkali oxide (Li₂O, Na₂O, K₂O)-SiO₂ systems and applications to vitreous silica production**J. Lee*¹; P. Lauriano²; I. Jung¹

1. Seoul National University, Material Science and Engineering, Republic of Korea
2. École D'ingénieurs Ensil-Ensci, France

10:10 AM**(GOMD-S4-023-2024) Advancements in multimaterial glass Volumetric Additive Manufacturing (Invited)**R. Walton*¹; D. H. Porcincula¹; L. Myers²; M. de Beer¹; J. Schwartz¹; A. Troksa¹; D. Melchert¹; R. J. Dylla-Spears¹

1. Lawrence Livermore National Lab, USA
2. Penn State, USA

10:40 AM**(GOMD-S4-024-2024) Bulk Metallic Glasses can be formed like Oxide Glasses (Invited)**J. Schroers*¹

1. Yale, USA

11:10 AM**(GOMD-S4-025-2024) A numerical simulation study for optimizing tempering process in hollow glassware production (Invited)**B. Renkloglu*¹

1. SISECAM, R&D, Turkey

11:40 AM**(GOMD-S4-026-2024) Viscoelastic Calculation of Laminate Glass Stress**Z. Zheng*¹; J. Wu¹; T. M. Gross¹

1. Corning Incorporated, USA

Session 3: Additive Manufacturing of Glass

Room: St. Andrews

Session Chair: Joel Destino, Creighton University

9:20 AM**(GOMD-S4-027-2024) Advances in 3D printed glass for gradient compositional control (Invited)**D. Nguyen*¹; T. Yee¹; M. Ellis¹; T. Fears¹; R. Walton¹; J. Ha¹; O. Herrera¹; V. Vuppuluri¹; N. Dudukovic¹; K. Sasan¹; R. J. Dylla-Spears¹

1. Lawrence Livermore National Laboratory, USA

9:50 AM**(GOMD-S4-028-2024) Laser-Based Additive Manufacturing of Glass Structures (Invited)**J. Bernardin*¹

1. Los Alamos National Lab, Engineering Design and Technologies Div, USA

10:20 AM**(GOMD-S4-029-2024) Multi-material printing of glass via direct ink writing**T. Yee*¹; T. Fears¹; R. Walton²; J. Ha¹; O. Herrera¹; V. Vuppuluri²; N. Dudukovic²; K. Sasan¹; R. J. Dylla-Spears¹; D. Nguyen²

1. Lawrence Livermore National Laboratory, Materials Science Division, USA
2. Lawrence Livermore National Laboratory, Materials Engineering, USA

10:40 AM**(GOMD-S4-030-2024) Fragile Liquids – Structure, Properties and Potential Opportunities for Additive Manufacturing**R. Weber*¹; S. K. Wilke¹; C. J. Benmore²

1. MDI, USA
2. Argonne National Lab, Advanced Photon Source, USA

11:00 AM**(GOMD-S4-031-2024) Transparency on Demand: Additive Manufacturing of Precision Glass Elements**Z. Hong*¹; P. Ye¹; D. A. Loy²; R. Liang¹

1. University of Arizona, James C. Wyant College of Optical Sciences, USA
2. University of Arizona, Department of Chemistry & Biochemistry, USA

11:20 AM**(GOMD-S4-032-2024) 3D printing glass micro-optics from silsesquioxanes**P. Ye*¹; Z. Hong¹; D. A. Loy²; R. Liang¹

1. The University of Arizona, Wyant College of Optical Sciences, USA
2. The University of Arizona, Chemistry & Biochemistry; Material Science and Engineering, USA

S6 Mark Davis Honorary Symposium**Session 6: Mark Davis Honorary Symposium**

Room: Turnberry

Session Chairs: Bill James, Schott Germany; Ina Mitra, Schott, Germany

9:20 AM**(GOMD-S6-001-2024) A new method to infer the diffusivity controlling crystal nucleation in oxide glasses (Invited)**E. Dutra Zanotto*¹

1. Federal University of Sao Carlos, Materials Engineering, Brazil

9:50 AM**(GOMD-S6-002-2024) Is glass-ceramic simply a collection of a large number of tiny single crystals? (Invited)**H. Jain*¹; V. Dierolf¹; E. J. Musterman¹; R. Thapa¹

1. Institute for Functional Materials and Devices, Lehigh University, USA

10:20 AM**(GOMD-S6-003-2024) Oriented Surface Crystallization in Glasses**S. Reinsch*¹; R. Müller¹

1. Bundesanstalt für Materialforschung und -prüfung (BAM), Materials Engineering, Germany

10:40 AM**(GOMD-S6-004-2024) Surface crystallization of sodium aluminoborate glass**T. Honma*¹; S. Kido¹

1. Nagaoka University of Technology, Department of Materials Science and Bioengineering, Japan

11:00 AM**(GOMD-S6-005-2024) Nano Scale Amorphous Phase Separation and Its Role in Subsequent Crystal Nucleation**R. Hill¹; s. Shahid*¹; R. Mansouri¹

1. Queen Mary University of London, DPS, United Kingdom

11:20 AM**(GOMD-S6-006-2024) Investigating the crystallization of ZERODUR® using DTA methods –working together with Mark Davis**I. Mitra*¹

1. Schott AG, R&D, Material Development, Germany

S1 Fundamentals of the Glassy State**Session 4: Atomistic simulations and predictive modelling of Glasses**

Room: Bel Air II

Session Chair: Alfonso Pedone, University of Modena and Reggio Emilia

1:20 PM**(GOMD-S1-084-2024) Applying the Funnel Theory of Crystallization to Glass (Invited)**C. Wilkinson*¹

1. Alfred University, Glass Science, USA

1:50 PM**(GOMD-S1-085-2024) Prediction of Nepheline crystallization from MD simulations. A new QSPR-based predictive model**M. Bertani*¹; A. Pedone¹

1. University of Modena and Reggio Emilia, Department of Chemical and Geological Sciences, Italy

2:10 PM**(GOMD-S1-086-2024) Diffusion Derived from Energy Barriers: Unveiling the Role of Non-random Walk in Orchestrating Dynamic Slow-down in Glasses**A. Annamareddy*¹; D. Morgan¹

1. University of Wisconsin, Materials Science and Engineering, USA

2:30 PM**(GOMD-S1-087-2024) Establishment of an empirical force-field for crystalline and amorphous Li₂S-SiS₂ electrolytes**L. Poitras*¹; M. Micoulaut¹

1. Sorbonne Université, France

2:50 PM**(GOMD-S1-088-2024) Structural simulations of MgO-B₂O₃ and CaO-B₂O₃ glasses by the first principle molecular dynamics technique**H. Inoue*¹

1. The University of Tokyo, Institute of Industrial Science, Japan

3:10 PM**(GOMD-S1-089-2024) Theoretical Insights into 27Al NMR Parameters of Binary Aluminosilicate Glass and Their Relationship to Atomic and Electronic Structure**T. Ohkubo*¹; A. Masuno²; E. Tsuchida³; S. Ohki⁴

1. Chiba University, Faculty of Engineering, Japan
2. Graduate School of Engineering, Kyoto University, Japan
3. National Institute of Advanced Industrial Science and Technology (AIST), Japan
4. High Field NMR Group, National Institute for Materials Science (NIMS), Japan

3:30 PM**Break****Session 6: Mechanical Properties of Glasses II: Current challenges in experiments and modelling of fracture**

Room: Bel Air I

Session Chair: Emily Aaldenberg, Corning Incorporated

1:20 PM**(GOMD-S1-090-2024) Phase Separated SiO₂-B₂O₃-Na₂O Glasses: Linking Stress Corrosion Cracking to Mesoscale Structures (Invited)**W. Feng¹; D. Bonamy¹; F. Célarié²; L. Chomat¹; A. A. Deshkar³; P. C. Fossati²; S. Gossé²; P. Houizot²; C. L. Rountree*¹

1. Université Paris-Saclay, CEA, CNRS, SPEC, France
2. Université Rennes, CNRS, IPR (Institut de Physique de Rennes) - UMR 6251, France
3. Université Paris-Saclay, CEA, Service de la Corrosion et du Comportement des Matériaux dans leur Environnement, France

1:50 PM**(GOMD-S1-091-2024) Challenges of statistical modeling of mechanical lifetime of silicate glass in the near-threshold regime (Invited)**S. Grutzik*¹; T. Diebold²; K. T. Strong²

1. Sandia National Laboratories, Materials and Failure Modeling, USA
2. Sandia National Laboratories, Materials Mechanics and Tribology, USA

2:20 PM**(GOMD-S1-092-2024) From Thermodynamics to Fracture Mechanics: Integrated Modeling Framework for Studying Mechanical Properties of Phase Separated Glasses**E. Barros de Moraes*¹; X. Xu¹; N. Prakash¹; J. Harris¹; C. Smith¹

1. Corning Incorporated, USA

2:40 PM**(GOMD-S1-093-2024) Silicate glass fracture surface energy calculated from crystal structure and bond-energy data**M. S. Holzer*¹; T. Waurischk¹; J. George²; R. Maaß²; R. Müller¹; A. S. de Camargo¹

1. BAM Federal Institute for Materials Research and Testing, Glass, Germany
2. BAM Federal Institute for Materials Research and Testing, Germany

3:00 PM**(GOMD-S1-094-2024) Fracture behavior of LAMP glass-ceramic electrolytes: A molecular dynamics study**Z. Chen*¹; T. Du¹; N. Krishnan²; M. M. Smedskjaer¹

1. Aalborg University, Denmark
2. Indian Institute of Technology Delhi, India

3:20 PM**Break****Session 9: Metallic Glasses**

Room: Shoal Creek

Session Chairs: Jan Schroers, Yale; Isabella Gallino, Technical University Berlin

1:20 PM**(GOMD-S1-095-2024) The effect of composition on the thermodynamics, structure and atomic motion of (Pd-Pt)_{42.5}Cu₂Ni_{9.5}P₂₁ alloys (Invited)**N. Neuber¹; O. Gross¹; B. Ruta³; I. Gallino²; R. Busch*¹

1. Saarland University, Chair of Metallic Materials, Germany
2. Technical University Berlin, Chair of Metallic Materials, Germany
3. Institut Néel, CNRS UPR2940, France

1:50 PM**(GOMD-S1-111-2024) Size dependent vitrification in metallic glasses (Invited)**I. Gallino*¹; D. Cangialosi²

1. Technical University Berlin, Materials Science and Engineering, Germany
2. Donostia International Physics Center, Spain

2:20 PM**(GOMD-S1-113-2024) Size-effects in tensile fracture of rejuvenated and annealed metallic glass**G. Kumar*¹

1. University of Texas, Dallas, US

3:00 PM**Break****Session 10: Sol-Gel and MOF Glasses**

Room: St. Andrews

Session Chairs: Lisa Klein, Rutgers University; Yuanzheng Yue, Aalborg University

1:20 PM**(GOMD-S1-100-2024) Melt-quenched Carboxylate Metal-Organic Framework Glasses (Invited)**H. Moon*¹

1. Ewha Womans University, Republic of Korea

1:50 PM**(GOMD-S1-101-2024) Structural descriptors for zeolitic imidazolate framework glasses**M. M. Smedskjaer^{*}; T. Du¹; Y. Yue¹

1. Aalborg University, Department of Chemistry and Bioscience, Denmark

2:10 PM**(GOMD-S1-102-2024) High Temperature Insulation Based on Silica Aerogels and Fillers**M. Buttgerit²; A. Schoeffler³; P. Hidalgo¹; T. Siddharthan¹; L. C. Klein^{*1}

1. Rutgers University, MS&E, USA
2. Rutgers University, C&BE, USA
3. Rutgers University, I&SE, USA
4. Rutgers University, BME, USA

2:30 PM**(GOMD-S1-103-2024) Preparation of Paraffin/Aerogel Composites for PCM Applications**S. Kearney²; S. Guttikonda³; L. C. Klein^{*1}

1. Rutgers University, MS&E, USA
2. UMBC, Chemistry, USA
3. Rutgers University, C&BE, USA

2:50 PM**(GOMD-S1-104-2024) A brief review of the development of MOF glasses**Y. Yue^{*1}

1. Aalborg University, Denmark

3:10 PM**Break****S4 Outreach Glass Technology Manufactory Recycling & Cross-Cutting Topics****Session 2: Challenges in Manufacturing IV**

Room: Peeble Beach

Session Chairs: Katelyn Kirchner, The Pennsylvania State University; Irene Peterson, Corning Incorporated

1:20 PM**(GOMD-S4-033-2024) Dynamic and static corrosion of chromium-alumina refractory during waste glass melting**J. Klouzek^{*1}; R. Pezl¹; M. Vernerova¹; P. Cincibusova¹; T. Jin²; P. Hrma³; A. A. Kruger⁴;D. P. Guillen⁵; R. Pokorny¹

1. University of Chemistry and Technology Prague, Czechia
2. Pacific Northwest National Lab, USA
3. AttainX, USA
4. US Department of Energy, Office of River Protection, USA
5. Idaho National Lab, USA

1:40 PM**(GOMD-S4-034-2024) Accelerated Corrosion Testing of Refractory in Contact with Glass Melts**J. Amoroso^{*1}; W. Li¹; M. Page¹; N. Rod¹

1. Savannah River National Laboratory, USA

2:00 PM**(GOMD-S4-035-2024) Integrating Artificial Intelligence for Enhanced Color and Optical Properties of Glass Products**D. Güldiren^{*1}

1. Sisecam Science, Technology and Design Center, Turkey

2:20 PM**(GOMD-S4-036-2024) The infinite lives of glass (Invited)**A. Durán^{*1}

1. Instituto de Cerámica y Vidrio (CSIC), Glasses, Spain

2:50 PM**(GOMD-S4-037-2024) Modeling the Flow of Waste Glass in New York State**D. Saadatpour^{*1}; C. Wilkinson¹

1. Alfred University, Inamori school of engineering, USA

S6 Mark Davis Honorary Symposium**Session 6: Mark Davis Honorary Symposium**

Room: Turnberry

Session Chair: Ina Mitra, Schott, Germany

1:20 PM**(GOMD-S6-007-2024) Copper in the crystallization process of glasses : coloring and opacification properties (Invited)**L. Cormier^{*1}; L. Gardie¹; C. Noiro¹; N. Schibille²

1. Sorbonne University - CNRS, IMPMC, France
2. CNRS, Iramat, France

1:50 PM**(GOMD-S6-008-2024) Recent research on Li₂O-Al₂O₃-SiO₂ glass-ceramics for expansion of applications (Invited)**S. Nakane^{*1}

1. Nippon Electric Glass, Japan

2:20 PM**(GOMD-S6-009-2024) Sr-Fresnoite based piezoelectric glass-ceramic for high-temperature applications**M. Letz^{*1}; M. Letz¹

1. Schott AG, R&D, Germany

2:40 PM**(GOMD-S6-010-2024) First principles study on mechanism of anomalous thermal expansion behaviors of cordierite**K. Umemoto^{*1}; S. Nakane¹

1. Nippon Electric Glass, Fundamental Technology Division, Japan

3:00 PM**(GOMD-S6-011-2024) Glass Interaction and EMA behavior in Imaging Fiber Optics (Invited)**P. L. Higby^{*1}

1. SCHOTT North America, Inc., USA

3:30 PM**Break****S1 Fundamentals of the Glassy State****Session 6: Mechanical Properties of Glasses III: Strengthening**

Room: Bel Air I

Session Chair: Cindy Rountree, CEA

3:40 PM**(GOMD-S1-105-2024) Increase in glass laminate stress through heat-treatment below the glass transition temperature (Invited)**E. M. Aaldenberg^{*1}; T. M. Gross¹; S. D. Ianson¹

1. Corning Incorporated, Science & Technology, USA

4:10 PM**(GOMD-S1-106-2024) Glass with hydration-induced compressive stress profiles**T. M. Gross^{*1}; E. M. Aaldenberg¹; J. Wu¹; Z. Zheng²

1. Corning Incorporated, New Materials and Processes, USA
2. Corning Incorporated, MTE, USA

4:30 PM**(GOMD-S1-107-2024) Time Dependence of Macrodeformation of Ultra-Thin Glass Induced by Ion Exchange**J. Lee^{*}; S. Ko¹; J. Lee²; S. Park¹; Y. Choi¹

1. Korea Aerospace University, Republic of Korea

4:50 PM**(GOMD-S1-108-2024) Development of new composition and surface treatment to improve fracture resistance of UTG for foldable display**S. Kim^{*}; J. Nam¹

1. Samsung Display Co. Ltd., Republic of Korea

5:10 PM**(GOMD-S1-109-2024) Structural Analysis of Sodium Aluminosilicate Glasses for Ultra-Thin Glass via Molecular Dynamics and Solid-State NMR**K. Park^{*}; J. Nam²; S. Kim²; W. Chung¹

1. Kongju National University, Division of Advanced Materials Engineering, Republic of Korea
2. Samsung Display Co., Ltd, Republic of Korea

Session 4: Atomistic simulations and predictive modelling of Glasses

Room: Bel Air II

Session Chair: Hiroyuki Inoue, The University of Tokyo

3:50 PM**(GOMD-S1-115-2024) Deformation and Cracking Behavior of Glass under Sharp Contact Loading Studied in Classical Molecular Dynamics Simulation (Invited)**L. Huang^{*}; H. Liu¹; Y. Shi¹

1. Rensselaer Polytechnic Institute, Materials Science and Engineering, USA

4:20 PM**(GOMD-S1-116-2024) Densification and plastic flow in alkaline-earth aluminoborosilicate glasses: insights from atomic scale simulations**H. Ikeda^{*}; G. A. Rosales-Sosa¹; Y. Kato¹; S. Nakane¹; G. Molnár³; E. Barthel²; H. Yamazaki¹

1. Nippon Electric Glass Co., Ltd., Fundamental Technology, Japan
2. ESPCI Paris, Soft Matter Sciences and Engineering, France
3. Contacts and Structures Mechanics Laboratory (LaMCoS), France

4:40 PM**(GOMD-S1-117-2024) Impact of Atomic Defects on Ceria Surfaces on Chemical Mechanical Polishing of Silica Glass Surfaces**A. Pedone^{*}

1. University of Modena and Reggio Emilia, Italy

5:00 PM**(GOMD-S1-118-2024) Nano-Scale Indentation Studies on Aluminosilicate Glasses: Unraveling Structural Alterations and Mechanical Properties**A. Pallini^{*}; A. Pedone¹

1. University of Modena and Reggio Emilia, Chemical and Geological Sciences (DSCG), Italy

S3 Optical and Electronic Materials and Devices Fundamentals and Applications**Session 2: Charge and Energy Transport in Disordered Materials**

Room: Peeble Beach

Session Chairs: Gabriel Agnello, Corning Incorporated; Caio Bragatto, Coe College

3:40 PM**(GOMD-S3-013-2024) Behavior of Protons in Water and at the Water/Silica Interface (Invited)**S. H. Garofalini^{*}

1. Rutgers Univ, USA

4:10 PM**(GOMD-S3-014-2024) An Electrostatic Charging Mechanism of Contacted Glass Surfaces (Invited)**D. Thelen^{*}; J. M. Mis²; A. Antony²; R. G. Manley¹

1. Corning Research and Development Corporation, USA
2. Corning Incorporated, USA

4:40 PM**(GOMD-S3-015-2024) Ion-Dynamics of Sodium Aluminosilicate Glasses: Composition-Structure-Property correlation**S. R. Keshri^{*}; I. Mandal²; A. Gaddam⁵; A. R. Allu⁴; N. Krishnan³; N. Gosvami¹

1. Indian Institute of Technology Delhi, Materials Science & Engineering, India
2. Indian Institute of Technology Delhi, School of Interdisciplinary Research, India
3. Indian Institute of Technology Delhi, Civil Engineering, India
4. CSIR-Central Glass & Ceramic Research Institute, Energy Materials & Devices, India
5. CICECO – Aveiro Institute of Materials, University of Aveiro, Chemistry, Portugal

Session 4: Glass Devices I

Room: St. Andrews

Session Chair: Juejun Hu, Massachusetts Institute of Technology

3:40 PM**(GOMD-S3-016-2024) Advanced Patterning of Second-Order Optical Nonlinearity in Niobate Amorphous Thin Films through Imprinting Thermo-Electrical Poling Process (Invited)**L. D. Karam¹; F. Adamietz²; S. Boonsit²; G. S. Murugan²; N. Courjal³; M. Dussauze^{*}

1. CNRS / Université de Bordeaux, Institut des Sciences Moléculaire, France
2. Optoelectronic Research Centre, United Kingdom
3. FEMTO-ST Institute, France

4:10 PM**(GOMD-S3-017-2024) Deep etching technique and machine learning based design for high performance glass-based optical devices (Invited)**

A. Ueno*¹; Y. Ono¹; K. Sano¹; A. Kiyama¹; A. Suguro¹; Y. Hayashi¹
 1. AGC Inc., Innovative Technology Laboratories, Japan

4:40 PM**(GOMD-S3-018-2024) Fast ionic exchange in chalcogenide glasses for infrared optics with gradient refractive index**

X. Zhang*¹; C. Fourmentin¹; G. Druart²; F. De La Barrière²; L. Calvez¹
 1. University of Rennes/CNRS, Institute of Chemistry, France
 2. ONERA, DOTA, France

5:00 PM**(GOMD-S3-019-2024) Solution Processing of Ge₂Sb₂Se₄Te₁ Phase Change Material for Optical Applications**

D. Wiedeman*¹; R. Sharma¹; E. Bissell¹; P. Banerjee¹; B. Mills²; J. Hu²; M. Sykes³; J. Stackawitz³; J. Klucinec³; C. Schwarz²; K. Richardson¹
 1. University of Central Florida, USA
 2. Massachusetts Institute of Technology, USA
 3. Ursinus College, USA

5:20 PM**(GOMD-S3-020-2024) Solution Deposition of Optical Phase Change Materials**

B. Mills*¹; R. Sharma²; D. Wiedeman³; C. Schwarz²; E. Bissell²; C. Constantin Popescu¹; D. Callahan⁴; P. Banerjee⁵; K. Richardson²; J. Hu¹
 1. Massachusetts Institute of Technology, Materials Science and Engineering, USA
 2. University of Central Florida, CREOL, College of Optics and Photonics, USA
 3. Ursinus College, Physics and Astronomy, USA
 4. University of Central Florida, Chemistry, USA
 5. University of Central Florida, Materials Science and Engineering, USA
 6. Charles Stark Draper Laboratory, Inc, USA

5:40 PM**(GOMD-S3-031-2024) Advances in Optical Fibers (Invited)**

W. Kim*¹; C. Baker¹; S. Bayya¹; T. Zhou²; D. Rhonohouse¹; F. Kung²; G. Chin²; D. Boyd¹; R. Nicol³; V. Nguyen¹; K. Ewing¹; D. Gibson¹; J. Frantz¹; R. Gattass¹; J. Sanghera¹
 1. Naval Research Laboratory, Optical Science Division, USA
 2. URF, USA
 3. Jacobs, USA

S6 Mark Davis Honorary Symposium**Session 6: Mark Davis Honorary Symposium**

Room: Turnberry

Session Chair: Bill James, Schott Germany

3:50 PM**(GOMD-S6-012-2024) Processing of rare-earth-doped nanostructured glass-ceramics for enhanced photoluminescence (Invited)**

M. Sedano¹; A. Durán¹; J. Fernández²; R. Balda²; M. Pascual*¹

1. Institute of Ceramics and Glass, CSIC, Glass, Spain
2. University of Basque Country, Spain
3. Donostia International Physics Center DIPC, Spain

4:20 PM**(GOMD-S6-013-2024) Dispersion of elasto-optic tensor elements in glass using acousto-optic diffraction**

A. Jenkins²; C. Sutherland²; U. Werner-Zwanziger¹; J. Zwanziger*¹

1. Dalhousie University, Chemistry, Canada
2. Dalhousie University, Physics and Atmospheric Sciences, Canada

4:50 PM**(GOMD-S6-014-2024) Laser Glass Development at SCHOTT (Invited)**

L. Bradley*¹; E. Feverston¹; J. S. Hayden¹; J. Ivy¹; M. Kocher¹; B. Morgan¹; A. Rawlings¹; J. Whetstone¹

1. SCHOTT North America, Inc., USA

Thursday, May 23, 2024**Award Lectures**

Room: Peeble Beach

8:00 AM**Darshana and Arun Varshneya Frontiers of Glass Technology Lecture: Rare-earth doped glasses, fibers, lasers, and applications**

S. Jiang¹
 1. AdValue Phototonics, INC, USA

S1 Fundamentals of the Glassy State**Session 4: Atomistic simulations and predictive modelling of Glasses**

Room: Bel Air II

Session Chair: Hiroyuki Inoue, The University of Tokyo

9:20 AM**(GOMD-S1-119-2024) Understanding diffraction peaks of P₂O₅ glass**

Y. Onodera¹; H. Masi²; S. Kohara*¹

1. National Institute for Materials Science (NIMS), Japan
2. National Institute of Advanced Industrial Science and Technology (AIST), Japan

9:40 AM**(GOMD-S1-122-2024) Structure-property relationships of CaO-MgO-Al₂O₃-SiO₂ fiber glasses from molecular dynamics simulations and QSPR analysis**

W. Xie*¹; H. Li²; D. R. Neuville³; J. Du¹

1. University of North Texas, Materials Science and Engineering, USA
2. Nippon Electric Glass, USA
3. Université de Paris, France

Session 6: Mechanical Properties of Glasses IV: Outstanding mechanical properties

Room: Bel Air I

Session Chair: Satoshi Yoshida, AGC Inc.

9:20 AM**(GOMD-S1-123-2024) Toughening of glasses via metal nanoparticle incorporation at a small volume fraction (Invited)**

K. Shinozaki*¹

1. Osaka University, Graduate School of Engineering, Japan

9:50 AM**(GOMD-S1-124-2024) Indenting glasses with indenters of varying stiffness and sharpness**

J. Christensen*¹; N. Krishnan²; M. Bauchy³; M. M. Smedskjaer¹

1. Aalborg University, Department of Chemistry and Bioscience, Denmark
2. Indian Institute of Technology Delhi, Department of Civil Engineering, India
3. University of California, Department of Civil and Environmental Engineering, USA

10:10 AM**(GOMD-S1-125-2024) Raman spectroscopy investigation of plastically-deformed alkaline-earth aluminoborosilicate glasses**

G. A. Rosales-Sosa*¹; Y. Kato¹; S. Nakane¹; M. Bourguignon²; E. Barthel²; H. Yamazaki¹

1. Nippon Electric Glass, Fundamental Technology Division, Japan
2. ESPCI-Paris, SIMM, France

10:30 AM**(GOMD-S1-126-2024) Composition dependence on shear localization under indentation in alkaline earth aluminoborosilicate glasses**

M. Bourguignon*¹; G. A. Rosales-Sosa²; Y. Kato²; S. Nakane²; H. Yamazaki¹; E. Barthel¹

1. Soft Matter Sciences and Engineering, ESPCI Paris, PSL University, CNRS, Sorbonne University, France
2. Nippon Electric Glass Co., Ltd., Fundamental Technology Division, Japan

10:50 AM

(GOMD-S1-127-2024) Mechanical properties and local structure of rare-earth-rich borate glassesS. Sasaki^{*1}; A. Masuno²; H. Inoue³; Y. Yanaba³

1. Hirosaki University, Science and Technology, Japan
2. Kyoto University, Graduate School of Engineering, Japan
3. University of Tokyo, Institute of Industrial Science, Japan

Session 7: Glass Under Extreme Conditions

Room: Turnberry

Session Chairs: Madoka Ono, Hokkaido University;
Jingshi Wu, Corning Incorporated

9:20 AM

(GOMD-S1-128-2024) Glasses under Multi-Megabar Pressures (Invited)S. Lee^{*1}

1. Seoul National University, Republic of Korea

9:50 AM

(GOMD-S1-129-2024) In Situ High-Pressure Neutron Diffraction Study of Calcium Aluminosilicate Glass (Invited)L. V. Gammond^{*1}; A. Zeidler²; R. Youngman¹; H. Mohammadi²; H. E. Fischer³; P. S. Salmon²

1. Corning Incorporated, USA
2. University of Bath, Physics, United Kingdom
3. Institut Laue Langevin, France

10:20 AM

(GOMD-S1-130-2024) Structure of densified SiO₂ glass synthesized under extreme conditionS. Sato^{*1}; M. Miyakawa²; T. Taniguchi²; Y. Onodera²; K. Ohara³; k. Ikeda⁴; N. Kitamura¹; S. Kohara²

1. Tokyo University of Science, Japan
2. National Institute for Materials Science (NIMS), Japan
3. Shimane University, Japan
4. Neutron Industrial Application Promotion Center, Japan

10:40 AM

(GOMD-S1-131-2024) Comprehensive Insights into Hot-Compressed Silica Glass: Exploring its Characteristic PropertiesM. Ono^{*1}; H. Tokunaga²; S. Hiirono¹; K. Kizaki¹; M. Watanabe²; K. Hayashi²

1. Tohoku University, Engineering, Japan
2. AGC Inc., Japan

11:00 AM

(GOMD-S1-132-2024) Controlling the atomic structure and thermal conductivity of disordered SiO_x thin filmsK. A. Kirchner^{*1}; M. Ono²; J. C. Mauro¹

1. The Pennsylvania State University, Materials Science and Engineering, USA
2. Tohoku University, Japan

11:20 AM

(GOMD-S1-133-2024) Temperature and thermal stress analysis of ultrashort-pulsed laser processed glassJ. Wu^{*1}

1. Corning Incorporated, Science & Technology Devison, USA

11:40 AM

(GOMD-S1-134-2024) Mechanisms behind the Structural Evolution of Ge-Sb-S Chalcogenide Glasses upon Gamma IrradiationM. Kang^{*1}; B. Sohn²; Q. Du³; D. Ma³; R. Pujari³; L. Sisken⁴; C. Blanco⁴; C. Goncalves⁴; C. Arias⁴; A. Zachariou⁴; A. Yadav⁴; S. Novak⁴; C. Schwarz⁴; I. Luzinov⁴; J. Hu³; A. M. Agarwal³; D. T. Tan²; K. Richardson⁴

1. Alfred University, New York State College of Ceramics, USA
2. Singapore University of Technology and Design, Engineering Product Development, Singapore
3. Massachusetts Institute of Technology, Department of Materials Science and Engineering, USA
4. University of Central Florida, CREOL, College of Optics and Photonics, USA
5. Clemson University, Department of Materials Science and Engineering, USA
6. Ursinus College, Department of Physics and Astronomy, USA

S3 Optical and Electronic Materials and Devices Fundamentals and Applications**Session 1: Laser Interactions with Glasses**

Room: Shoal Creek

Session Chair: Keith Veenhuizen, Lebanon Valley College

9:20 AM

(GOMD-S3-021-2024) Lattice engineering of laser-fabricated crystals in glass: parent glass to macroperiodic structures (Invited)E. J. Musterman^{*1}; A. M. Kiss²; V. Dierolf²; H. Jain¹

1. Lehigh University, Materials Science and Engineering, USA
2. Brookhaven National Laboratory, National Synchrotron Light Source II, USA
3. Lehigh University, Physics, USA

9:50 AM

(GOMD-S3-022-2024) Formation of tin-iron-soda-silicate glass anode and solid electrolyte interface by laser irradiationF. Sato^{*1}; T. Honma¹

1. Nagaoka University of Technology, Japan

10:10 AM

(GOMD-S3-023-2024) Nonlinear Optical study of ITO nanocrystals embedded within aluminoborosilicate glass using Z-scanA. Ashjari^{*1}; B. Topper²; D. Möncke¹

1. Alfred University, Inamori school of engineering, USA
2. University of New Mexico, Center for High Technology Materials, USA

10:30 AM

(GOMD-S3-024-2024) Characterization of Ge Nanoparticles Formed in Glass by Femtosecond Laser Irradiation by Raman SpectroscopyA. Tsekrekas^{*1}; H. Jain¹; V. Dierolf¹

1. Lehigh University, Institute for Functional Materials and Devices, USA

10:50 AM

(GOMD-S3-025-2024) Crystal-phase selective crystallization of glass using a spatial light modulated laser beamK. J. Veenhuizen^{*1}; O. Magneson¹; V. Dierolf²; H. Jain³

1. Lebanon Valley College, Physics, USA
2. Lehigh University, Physics, USA
3. Lehigh University, Materials Science and Engineering, USA

Session 2: Charge and Energy Transport in Disordered Materials

Room: Peeble Beach

Session Chairs: Gabriel Agnello, Corning Incorporated;
Caio Bragatto, Coe College

9:20 AM

(GOMD-S3-026-2024) Effective charge carrier density in lithium disilicate glasses (Invited)V. M. Zallocco¹; J. Campos¹; A. Rodrigues^{*1}

1. Federal University of Sao Carlos, Materials Engineering, Brazil

9:50 AM

(GOMD-S3-027-2024) Progress Towards New Sodium Mixed Oxy-Sulfide Glassy Solid Electrolytes (Invited)S. W. Martin^{*1}; M. P. Olson¹; A. G. Wakefield¹; N. Riley¹

1. Iowa State University, Materials Science & Engineering, USA

10:20 AM

(GOMD-S3-028-2024) Characterization of Li-Si-P-S-O-N Glassy Solid ElectrolytesV. M. Torres^{*1}; P. Philipp¹; C. Lyle¹; A. R. Carr¹; S. W. Martin¹

1. Iowa State University, Materials Science and Engineering, USA

10:40 AM**(GOMD-S3-029-2024) Structure-property relations in the $60\text{Li}_2\text{S} + 30\text{SiS}_2 + x\text{LiSbO}_3 + (10-x)\text{LiPO}_3$ glass system**W. Fettkether^{*1}; C. Lyle¹; S. W. Martin¹

1. Iowa State University, Materials Science & Engineering, USA

11:00 AM**(GOMD-S3-030-2024) Using LAMMPS to Shed Light on Haven's Ratio: Calculation of Haven's Ratio in Alkali-Silicate Glasses using Molecular Dynamics**T. Salrin¹; L. Johnson¹; C. B. Bragatto^{*1}

1. Coe College, Physics Department, USA

Session 4: Glass Devices II

Room: St. Andrews

Session Chair: Xianghua Zhang, University of Rennes/CNRS

9:20 AM**(GOMD-S3-032-2024) Dispersion-engineered, lithography-free, chalcogenide and oxide metacoatings for telecommunication and computing (Invited)**B. Gholipour^{*1}

1. University of Alberta, Edmonton, Electrical and Computer Engineering, Canada

9:50 AM**(GOMD-S3-033-2024) Firing characteristics of glass systems in silver pastes at Ag/Si interface in Si solar cells**J. Tong¹; Y. Lai^{*1}

1. National United University, Materials Science and Engineering, Taiwan

10:10 AM**(GOMD-S3-034-2024) Local dielectric and electromechanical responses of antimony sulfide crystals embedded in glass by surface probe techniques**J. W. Kaman^{*1}; E. J. Musterman¹; K. P. Kelley²; N. Domingo-Marimon²; S. Neumayer²; V. Dierolf¹; H. Jain¹1. Lehigh University, Materials Science and Engineering, USA
2. Oak Ridge National Lab, F-AFM group, USA
3. Lehigh University, Physics, USA**10:30 AM****(GOMD-S3-035-2024) Real-time and label-free detection of streptavidin-biotin interaction by bio-functionalized chalcogenide glass fiber sensors for the mid-infrared**R. Zaiter¹; T. Buffeteau¹; L. Vellutini¹; C. Strutynski²; F. Desevedavy²; F. Smektala²; M. Dussauze^{*1}1. CNRS / Université de Bordeaux, France
2. ICB CNRS-Université Bourgogne Franche-Comté, France

16TH PACIFIC RIM CONFERENCE ON CERAMIC AND GLASS TECHNOLOGY

including

GLASS & OPTICAL MATERIALS DIVISION MEETING (GOMD 2025)



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2024 GLASS & OPTICAL MATERIALS DIVISION ANNUAL MEETING ANTI HARASSMENT POLICY

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This policy applies to all attendees of ACerS meetings, events, and activities, including members, non-members, partnering organizations, volunteers, students, guests, staff, contractors, exhibitors, and all other participants related to ACerS events and activities.

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1. ACerS Executive Director, **Mark Mecklenborg**, ph 614-794-5829 / email: ExecDirector@ceramics.org
2. ACerS President, **Rajendra Bordia** / email: ACerSPresident@ceramics.org

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All reports of harassment will be directed immediately to the ACerS leadership team who may consult with and engage other ACerS staff, leaders and legal counsel as appropriate. Conference security and/or local law enforcement may be involved, as appropriate based on the specific circumstances. In response to a report of harassment, the ACerS leadership team or ACerS staff will take appropriate action. Such actions range from a verbal warning to ejection from the event without a refund. Repeat offenders may be subject to further disciplinary action, such as being banned from participating in future ACerS conferences or events and/or permanently expelled from ACerS membership.

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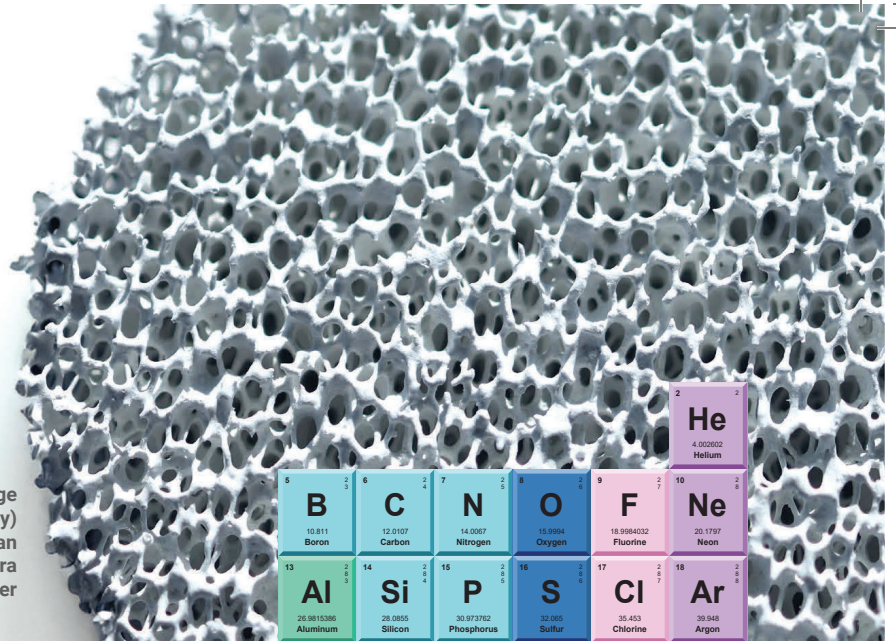


Photo: Ceramic sponge (nanoscale morphology) produced from American Elements proprietary ultra high surface area powder

1 H 1.00794 Hydrogen																	2 He 4.002602 Helium														
3 Li 6.941 Lithium	4 Be 9.012182 Beryllium																	5 B 10.811 Boron	6 C 12.0107 Carbon	7 N 14.0067 Nitrogen	8 O 15.9994 Oxygen	9 F 18.9984032 Fluorine	10 Ne 20.1797 Neon								
11 Na 22.98976928 Sodium	12 Mg 24.305 Magnesium																	13 Al 26.9815386 Aluminum	14 Si 28.0855 Silicon	15 P 30.973762 Phosphorus	16 S 32.065 Sulfur	17 Cl 35.453 Chlorine	18 Ar 39.948 Argon								
19 K 39.0983 Potassium	20 Ca 40.078 Calcium	21 Sc 44.955912 Scandium	22 Ti 47.867 Titanium	23 V 50.9415 Vanadium	24 Cr 51.9961 Chromium	25 Mn 54.938045 Manganese	26 Fe 55.845 Iron	27 Co 58.933195 Cobalt	28 Ni 58.6934 Nickel	29 Cu 63.546 Copper	30 Zn 65.38 Zinc	31 Ga 69.723 Gallium	32 Ge 72.64 Germanium	33 As 74.9216 Arsenic	34 Se 78.96 Selenium	35 Br 79.904 Bromine	36 Kr 83.798 Krypton														
37 Rb 85.4678 Rubidium	38 Sr 87.62 Strontium	39 Y 88.90585 Yttrium	40 Zr 91.224 Zirconium	41 Nb 92.90638 Niobium	42 Mo 95.96 Molybdenum	43 Tc (98.0) Technetium	44 Ru 101.07 Ruthenium	45 Rh 102.9055 Rhodium	46 Pd 106.42 Palladium	47 Ag 107.8682 Silver	48 Cd 112.411 Cadmium	49 In 114.818 Indium	50 Sn 118.71 Tin	51 Sb 121.76 Antimony	52 Te 127.6 Tellurium	53 I 126.90447 Iodine	54 Xe 131.293 Xenon														
55 Cs 132.9054 Cesium	56 Ba 137.327 Barium	57 La 138.90547 Lanthanum	58 Ce 140.90765 Cerium	59 Pr 140.90765 Praseodymium	60 Nd 144.242 Neodymium	61 Pm (145) Promethium	62 Sm 150.36 Samarium	63 Eu 151.964 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.92535 Terbium	66 Dy 162.5 Dysprosium	67 Ho 164.93032 Holmium	68 Er 167.259 Erbium	69 Tm 168.93421 Thulium	70 Yb 173.054 Ytterbium	71 Lu 174.9668 Lutetium	72 Hf 178.48 Hafnium	73 Ta 180.9488 Tantalum	74 W 183.84 Tungsten	75 Re 186.207 Rhenium	76 Os 190.23 Osmium	77 Ir 192.217 Iridium	78 Pt 195.084 Platinum	79 Au 196.966569 Gold	80 Hg 200.59 Mercury	81 Tl 204.3833 Thallium	82 Pb 207.2 Lead	83 Bi 208.9804 Bismuth	84 Po (209) Polonium	85 At (210) Astatine	86 Rn (222) Radon
87 Fr (223) Francium	88 Ra (226) Radium	89 Ac (227) Actinium	104 Rf (261) Rutherfordium	105 Db (262) Dubnium	106 Sg (263) Seaborgium	107 Bh (264) Bohrium	108 Hs (265) Hassium	109 Mt (266) Meitnerium	110 Ds (268) Darmstadtium	111 Rg (269) Roentgenium	112 Cn (285) Copernicium	113 Nh (284) Nihonium	114 Fl (289) Flerovium	115 Mc (288) Moscovium	116 Lv (293) Livermorium	117 Ts (294) Tennessine	118 Og (294) Oganesson														

88 Ce 140.116 Cerium	89 Pr 140.90765 Praseodymium	90 Nd 144.242 Neodymium	91 Pm (145) Promethium	92 Sm 150.36 Samarium	93 Eu 151.964 Europium	94 Gd 157.25 Gadolinium	95 Tb 158.92535 Terbium	96 Dy 162.5 Dysprosium	97 Ho 164.93032 Holmium	98 Er 167.259 Erbium	99 Tm 168.93421 Thulium	100 Yb 173.054 Ytterbium	101 Lu 174.9668 Lutetium
90 Th 232.0377 Thorium	91 Pa 231.036888 Protactinium	92 U 238.02891 Uranium	93 Np (237) Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (258) Mendelevium	102 No (259) Nobelium	103 Lr (262) Lawrencium

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