Venice International University
International PhD Academy
Glass: from magma to the windshield, passing through Murano

September 14-19, 2026

Faculty

- Bernardo Cesare, University of Padova, IT (Scientific Coordinator)
- Ethan Baxter, Boston College, USA
- Dorian Canelas, Duke University, USA
- Donald Dingwell, GEOLAB, Beihang & LMU Munich, Germany
- Kai-Uwe Hess, Ludwig-Maximilians-Universität, Germany
- Roberto Ragazzoni, University of Padova and INAF, IT
- Claudia Romano, University of Roma Tre, IT
- Guido Giordano, University of Roma Tre, IT
- Simone Tiozzo, Stazione Sperimentale del Vetro, Venice, IT
- Maria Antonia Barucco, Iuav University of Venice / cluster GLASS, IT
- Elti Cattaruzza, Ca' Foscari University of Venice, IT
- Francesca Veronese, Musei Civici di Padova, IT
- Ilda Mannino, Venice International University

Day 1, Monday, September 14

Morning:

9:00 – 9:15 am
Registration

9:15 – 9:30 am
Welcome & Introduction to the Program (*VIU & Scientific Coordinator*)

9:30 – 10:45 -Participants and Faculty self-presentation

10:45 – 11:00 Coffee break

11:00 – 12:30
Glass: introduction, definitions
Don Dingwell, *LMU*

12:30 – 14:00 Lunch break

Afternoon:

14:00 – 15:30
Glass in Nature
Bernardo Cesare, *University of Padova*

15:30 – 16:15 Poster break

16:15 – 17:45
Mantle and crustal melting
Bernardo Cesare, *University of Padova*

Day 2, Tuesday, September 15

Morning:

9:15 – 10:45
Chemistry of silicate melts
Claudia Romano, *University of Roma Tre*

10:45 – 11:00 Coffee break

11:00 – 12:30
Physical properties of silicate melts
Don Dingwell, *LMU*

12:30 – 14:00 Lunch break

Afternoon:

14:00 – 15:30
Volcanism and eruptions
Guido Giordano, *University of Roma Tre*

15:30 – 16:15 Poster break

16:15 – 17:45
Glass in the Laboratory
Kai-Uwe Hess, *LMU*

Day 3, Wednesday, September 16

Morning:

9:15 – 10:45
Glass manufacturing industry
Simone Tiozzo, *Stazione Sperimentale del Vetro, Murano*

10:45 – 11:00 Coffee break

Venice International University

11:00 – 12:30
Chemical Origins of Color in Glass
Dorian Canelas, *Duke University*

12:30 – 14:00 Lunch break

Afternoon:

14:00 – 15:30
Glass and astronomy
Roberto Ragazzoni, *University of Padova*

15:30 – 16:15 Poster break

16:15 – 17:45
Glass recycling
Dorian Canelas, *Duke University*

Social Dinner in Venice

Day 4, Thursday, September 17

Morning:

9:15 – 10:30
Glass and human history: the viewpoint of archaeology
Francesca Veronese, *Musei Civici di Padova*

10:30 – 10:45 Coffee break

10:45 – 12:30
The language of glass
Maria Antonia Barucco, *Iuav and* Elti Cattaruzza, *Ca' Foscari University of Venice*

12:30 – 13:45 Lunch break

Afternoon:

14:00 Departure from San Servolo pier with public waterbuses (n.20 +n.2) to San Giorgio island

14:30 – 17:30
Visit to Le Stanze del Vetro
Francesca Nisii, Pentagram Stiftung

Visit to Centro Studi del Vetro
Marzia Scalon, Centro Studi del Vetro, Istituto di Storia dell'Arte, Fondazione Giorgio Cini

Venice International University

Day 5, Friday, September 18

9:00 – 18:00 (Departure from S. Servolo with private boat; the return will be with public transport)

Hands-on activities in Murano
Visiting: The Murano Glass Museum
The Stazione Sperimentale del Vetro
Salvadore Glass Workshop
Lino Tagliapietra Showroom
Videomaking with Ethan Baxter, Boston College

Day 6, Saturday, September 19

Morning:

9:15 – 10:45
Educational public outreach - science communication
Ilda Mannino, *VIU*

10:45 – 11:00 Coffee break

11:00 – 12:30
Science and Fiction: the story of Every Rock has a Story
Ethan Baxter, *Boston College*

12:30 – 14:00 Lunch break

Afternoon:

14:00 – 15:30
Workshop of video making
Ethan Baxter, *Boston College*
All participants

15:30 – 15:45 Break

15:45 – 16:45
Building a career in science
Don Dingwell, *LMU and* Dorian Canelas, *Duke University*

16:45 – 17:30
Career development: panel discussion with Coordinators
All participants

Faculty's short bio

Professor **Bernardo Cesare** is a professor of Petrology at the University of Padua with a PhD in Earth Sciences and international research experience at ETH-Zurich, Princeton, and Clermont-Ferrand. He is a leading expert in metamorphic petrology, focusing on anatexis, nanogranites, and fluid-rock interactions, with over 90 scientific publications. Cesare has held leadership roles, including President of the Italian Society of Mineralogy and Petrology (SIMP) and project coordinator for research initiatives like MAKEARTH and STEAM. Recognized as a fellow of the GSA, MSA, and RPS, and a member of the Accademia dei Lincei and Academia Europaea, he has received numerous scientific honors. Additionally, he serves as an Editor for the Journal of Metamorphic Geology and is an award-winning artistic microphotographer.

Professor **Ethan Baxter**, Boston College, is an isotope geochemist interested in the broad processes occurring within and between the Earth's crust, mantle, and surface especially as recorded in metamorphic rocks and minerals. His research brings together isotope geochemistry, geochronology, field studies, petrology, and thermodynamic modeling. After a BS at Yale University, a PhD at UC Berkeley, and a postdoc at Caltech, he returned to his native Boston where he is now professor at Boston College. He was the 2007 Clarke Medalist of the Geochemical Society, a 2011 MSA Distinguished Lecturer, and is a Fellow of the Mineralogical Society of America. A passionate science communicator, he has given over 100 invited lectures at institutions around the world and has given live classroom presentations to over 10,000 elementary school children. He is the host and creator of Every Rock Has A Story, an educational YouTube Channel for children with the goal of inspiring the next generation of geoscientists. At Boston College, he was Chair of the Earth and Environmental Sciences Department from 2016-2022 and he currently serves as Associate Dean for the STEM Disciplines.

Professor **Dorian Canelas** has been active in implementation of student-centered pedagogies and developing programs to increase undergraduate retention in science tracks. Her research interests include chemical education research and the scholarship of teaching and learning as well as macromolecules for industrial and biological applications, such as microelectronics, coatings, membranes, gene therapy delivery, and blood compatibility. Professor Canelas earned her undergraduate degree in chemistry and then worked in research for four years before pursuing her Ph.D. After completing a postdoc, she returned to the private sector before launching her teaching career at Duke University in 2009.

Prof. Dr. (h c mult) **Donald B. Dingwell** (MAE), OC ONL FRS FRSC, received his PhD in Geology at the University of Alberta, Canada (1984). Next followed two years as a Carnegie Research Fellow at the Geophysical Laboratory of the Carnegie Institution of Washington and one on the Faculty of the University of Toronto. In 1987 he was recruited to Germany as assistant to the director of a newly-founded research institute in Bayreuth. There he obtained his Venia Legendi in Geochemistry in 1992. In 2000 he was called to the Chair in Mineralogy and Petrology at the Ludwig Maximilian University of Munich. There he founded the Department of Earth and Environmental Sciences of which he is currently Director. Dingwell's principal research interest is the physico-chemical description of molten rocks and their impact on volcanic systems and ore deposit formation. He has published ca. 550 papers on geomaterials, magmas and volcanism. He

has received numerous scientific awards, medals and fellowships - including the Bunsen (EGU), Day (GSA), Hess (AGU), Holmes (EGU), Peacock (MAC), Werner (DMG), Steinmann (DGGV), VIP (GAC) and Miller (RSC) Medals and the Goldschmidt (DMG), Bowen (AGU), Schott, and MSA (MSA) awards. He is currently Vice-President of the Academia Europaea.

Dr. **Kai-Uwe Hess** is a Research Scientist at LMU München's Department of Earth and Environmental Sciences. His research interests and teaching include high-temperature, high-pressure research on geomaterials, thermal analysis of silicate glasses and melts, and X-ray and neutron computed tomography. Serving as Deputy Head of the Coordination Office, his work focuses on the physical properties of silicate melts and experimental simulations. He earned his PhD in 1996 from the University of Bayreuth. He is currently the representative of “Akademischer Mittelbau (de)“ in the Faculty of Geosciences at LMU, “Stellvertretender Geschäftsstellenleiter” of the Department of Earth Science at LMU, and representative of LMU at German Scientific Earth Probing Consortium (GESEP).

Professor **Roberto Ragazzoni** is full professor at the Department of Physics and Astronomy of the University of Padua and President of the National Institute for Astrophysics (INAF). He is a world-renowned name in astrophysics, particularly in the construction of telescopes (both ground-based and in space), mirrors, and adaptive optics corrective instruments. He developed the concept of the pyramid wavefront sensor, a system for correcting atmospheric turbulence from incoming light into the telescope, giving images a quality otherwise impossible to achieve from Earth. He also came up with the idea of exploiting spherical aberration—an intrinsic defect of spherical mirrors, which astronomers have always attempted to correct—to enhance the field of view of a telescope called FlyEye. He has worked behind the scenes of the largest ground-based telescopes—such as the Galileo National Telescope, for which he designed the adaptive optics system—and in space—such as the European Space Agency's Cheops and Plato satellites.

Claudia Romano is Professor at the University of Roma Tre Department of Geological Science and is responsible for the "Experimental Volcanology and Petrology Laboratories" at the University of Roma Tre since 2007. Her major areas of interest include properties of melt and minerals at high pressures and high temperatures, silicate melt structure and dynamics, spectroscopic studies of inorganic materials and spectroscopic studies on volatiles species. She is a member of American Geophysical Union, Mineralogical Society of America, SIMP (Societa’ Italiana di Mineralogia e Petrografia), and SILS (Societa’ Italiana Luce di Sincrotrone). She was awarded SIMP for best PhD thesis in 1995.

Guido Giordano is Full Professor of Volcanology at Roma Tre University, where he leads the Geothermal Laboratory and teaches advanced courses in Volcanology and Geothermics. A prominent leader in the global scientific community, he serves as President of the Italian Association of Volcanology (AIV) and Co-Leader of the IAVCEI Commission on Explosive Calderas. With over 100 publications and several monographic volumes to his credit, Professor Giordano’s expertise spans volcanic hazard, geothermal energy, and geological mapping. He has played a pivotal role in public safety, serving on high-level committees for the Italian Department of Civil Protection to define alert levels and risk frameworks for Vesuvius, the Phlegraean Fields, and Ischia. His international experience includes research at Monash University and editorial roles for the Bulletin of Volcanology.

Simone Tiozzo is the Head of the Research and Development department of Stazione Sperimentale del Vetro (SSV), the Italian glass science and technology research institute (Murano - Venice), where he has been working for 15 years. The main focus of his applied research activity is glass sustainability, with projects dedicated to, for example: reduction of pollutant and GHG emissions of glass melting furnaces, implementation and testing of innovative solutions for Hydrogen combustion, steam methane reforming and CO2 capture and storage applied to glass furnaces, Design for Recycling of glass based packaging items, etc.

Venice International University

Maria Antonia Barucco is an Associate Professor of Architectural Technology at the Università Iuav di Venezia, specializing in building performance and environmental sustainability. She is an architect and researcher specializing in the Technology of Architecture, focusing on the intersection of innovation, historical context, and technical craftsmanship. She coordinates the GLASS cluster, an international group dedicated to the study and application of glass in architecture, design and crafts. Her work emphasizes the relational networks inherent in architectural projects, with a particular focus on performance evaluation and the integration of research with the "Third Mission" (knowledge exchange with society). Her work includes significant contributions to the university's internal evaluation and the development of sustainable construction systems. She obtained her PhD in Architectural Technology at the University of Ferrara.

Elti Cattaruzza is Full professor of Experimental Physics at the Department of Molecular Sciences and Nanosystems, Università Ca' Foscari Venezia, Italy, since 2019. He earned his PhD in Physics from the Università degli Studi di Padova, Italy. His research activity is mainly concerned with the (1) preparation of thin films by ion exchange and rf sputtering deposition, for physical and chemical applications (2) physics and chemistry of diffusion and aggregation processes of metals in glass (3) X-ray photoelectron spectroscopy characterization of surfaces. He has collaborated with foreign institutions and been the main proposer of (and/or participant to) 30 experiments at the European Synchrotron Radiation Facility (ESRF) in Grenoble. He is referee for 35 international journals in the fields of Materials Science, Physics, and Optics, and is a member of the Editorial Board of the scientific journal Heliyon (Elsevier). He has authored or co-authored about 180 publications since 1992, 150 of which in international refereed journals. He filed a patent as inventor for industrial invention in 2016.

Francesca Veronese is an archaeologist specializing in the Roman era, currently serving as the Director of the Musei Civici di Padova. She earned her PhD in Archaeology from the University of Padua. She has published monographs on Greek Sicily, exploring the connection between territory and the sacred, thermalism and water sanctuaries. With over two decades of experience, she manages the city's vast historical and artistic legacy, including the Eremitani Civic Museums and the UNESCO World Heritage site, the Scrovegni Chapel.

Ilda Mannino is the Scientific Coordinator of the Intensive Graduate Activities and of the TEN Program on Sustainability of the Venice International University. With a background in Environmental Science, her current research interests focuses on Sustainable Development and Science Communication. She has a long experience in research and education projects on these themes. Among these, she is currently involved in the COALESCE Project, to develop the EU Competence Centre on Science communication and its Academy. In 2018-2021 she was the scientific coordinator of the Horizon 2020 QUEST Project on Quality science communication.