

80th Conference on Glass Problems

Robert Weisenburger Lipetz previews this year's Conference on Glass Problems for *Glass Worldwide*, exclusive official journal. The event will combine an extensive technical programme with short courses, a symposium and an exhibition.

The 80th Conference on Glass Problems (GPC) takes place on 28-31 October in Columbus, Ohio, USA. For more than eighty years, the Conference on Glass Problems has been the leading forum for the exchange of ideas to address shared challenges for glass manufacturing professionals. It is at the GPC that the world's leading technical experts address current problems in manufacturing, with solutions citing real world examples. It also provides an exhibiting platform for solutions providers to share their innovations that delivers high participation by manufacturers.

Bruno A Purnode, Global Leader Melting Controls and Modeling Technology, Sr Research Associate at Owens Corning provides this assessment: "I find the Glass Problems Conference to be the best conference for the glass industry in North America. I learn from high quality lectures from leading industry scientists and technologists. Workshops result in beneficial discussions among industry representatives. At the same time, the conference allows me to meet with my suppliers and their latest innovations. This conference has it all in one place. This is perfect for the limited time I have as a technical manager."

The Conference on Glass Problems is organised by the Glass Manufacturing Industry Council (GMIC), the trade association bridging all segments of glass manufacture and Alfred University, the USA's leading glass research institution. The American Ceramic Society endorses it, with *Glass Worldwide* as the official journal.

The GPC programme content is directed by an industry advisory board and is composed of invited papers and submitted abstracts, with the proceedings distributed to attendees and also published by John Wiley & Sons. Speakers providing practical, take-home information are given preference. In addition to the extensive two day technical programme, the conference provides hard to obtain technical education.

Two excellent technical short courses are offered, one on 'Fundamentals of batch and furnace operations' taught by C Philip Ross and the other 'Refractories' taught by Michel Gaubil, Director of Refractory Solutions Engineering, SEFPRO. Of particular note is the full day symposium entitled 'Sustainability in glass manufacturing'.



Conference on Glass Problems is the leading forum for the exchange of ideas to address shared challenges for glass manufacturing professionals.

This abundance of value for time invested in a few days is what sets the Conference on Glass Problems apart from other trade shows and conferences.

To be presented at the Greater Columbus Convention Center and the Hilton Columbus Downtown in Columbus, Ohio, the conference programme at the time of going to press includes:

Fundamentals of batch and furnace operations

In one of two short courses, C Philip Ross, President, Glass Industry Consulting International (GICI) provides an introduction to the principles of commercial glass production employed in batch and furnace operations by USA glass producers. Raw materials, glass technology and properties, melting furnaces and environmental issues will all be touched upon. Suggested attendees could be

suppliers or newer individuals to glass manufacturing, seeking an introduction to the issues faced in glass production.

Refractories

The second training session, delivered by Michel Gaubil, Director of Refractory Solutions Engineering, SEFPRO, will focus on process and product (both fused cast and sintered) for soda lime glass furnaces (containers ▶

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81st Conference on Glass Problems will take place on 26-29 October 2020 at the Greater Columbus Convention Center and the Hilton Columbus Downtown in Columbus, Ohio, USA.



HFT is a longstanding supporter of GPC.



Hospitality will be provided by various supplier organisations at the conclusion of the conference sessions.



The SmartMelter solution for furnace life optimisation will be among the innovations on show.

and flat glass). After presenting the main process characteristics, he will describe product family, properties and their application inside the glass furnace, before discussing the challenges for regenerators refractory material in term of thermal performances and corrosion.

The training session will be divided in three parts: Fused cast process and product for soda lime application; sintered process and product for soda lime application; and refractory solution for glass furnace regenerators.

GPC sessions

Held on 29 and 30 October, the main GPC programme begins with the following series of five plenary sessions:

- Jane Cook, Director, Earth and Mineral Sciences Museum & Art Gallery, Penn State University – *From STEMware to STEAMware: Examples of manufactured glass bridging the art/science divide.*
- Ludovic Valette, Vice President, Global R&D, Owens-Illinois – *The importance of R&D for the glass industry.*
- Hisashi Kobayashi, Corporate Fellow R&D Industrial Applications, Praxair Inc – *Future of oxy-fuel glass melting: Oxygen production, energy efficiency, emissions and CO₂ neutral glass supply.*
- Ashtosh Ganjoo, Research Associate, Vitro Architectural Glass – *Glass and coated glass for solar energy.*
- Nisha Sheth, Research Engineer, Vitro Architectural Glass – *The peculiar wear behaviour of glass surfaces.*

Melting and combustion

- Jim Uhlik, Director of Technical Services, Toledo Engineering Co

Inc – *A glass problem solved.*

- Mehdi Zmirli, Research & Development, Bernard Bonnefond – *Latest development in Varivolt technology for faster regulation of power supply to glass melters.*
- Michael Gallagher, Principal Research Engineer, Air Products & Chemicals – *Synchronised oxy-fuel boost burners for zero-port performance optimisation in float glass melting furnaces.*
- Andrew Reynolds, Business Development Director, Fives Stein Ltd by Fives in Glass – *Electric boosting in hybrid furnaces (practical application and limitations of higher levels of electric heat input).*
- Erik Muijsenberg, Vice President, Glass Service Inc – *Carbon reduction with super boosting and advanced energy management.*

Batch, environmental and modeling

- Roger Barnum, Director, Jenike & Johanson Inc – *Designing furnace feed systems that work.*
- Jonathan Blevins, CFD Engineer, TECO – *Furnace optimisation through utilisation of EBM and GTM-X.*
- Ruediger Margraf, Managing Director, LUEHR Filter GmbH – *Fabric filter and catalyst (SCR) - Does this fit together?*

Refractories

- Pierrick Vespa, R&D Project Engineer SEFPRO, Saint-Gobain SEFPRO – *Innovative tuckstone solution for long life glass furnace superstructure.*
- Rolf Weigand, Executive Director, Ancorro GmbH – *Optimisations*



HWI will be offering refractory solutions to visitors in the hospitality suites.



CelSian will be present in the exhibition area, as well as presenting a paper on the application of advanced sensors in the glass industry.

and energy savings, especially in container glass production by using a refractory coating.

Sensors and control

- Lieke de Cock, Team Lead Furnace Support, CelSian Glass & Solar BV – *Application of advanced sensors in the glass industry.*
- Paul Schreuders, Chief Executive Officer, XPAR Vision BV – *A New World of glass making!*
- Ritesh Rawal, Technical Manager – Precious Metals, Johnson Matthey – *Application and stability assessment of HTX: A new high strength, high temperature thermocouple.*
- Mark Bennett, Glass Sector Lead, AMETEK Land – *Not just a pretty picture – In-furnace thermal imaging.*

GMIC symposium

'Sustainability in glass manufacturing' is the title of a symposium organised by the Glass Manufacturing Industry Council on 31 October. Sustainability has many definitions, typically with at least three main aspects, namely environmental, economic and social/cultural.

This symposium will concentrate on sustainable glass manufacturing, defining 'sustainable' as: Available batch ▶



In addition to its hospitality suite, Air Products will present a paper on Synchronised oxy-fuel boost burners for zero-port performance optimisation in float glass melting furnaces.

GPC booth exhibitors/hospitality suites

Regular intervals to the Conference on Glass Problems will allow delegates to visit a sold-out exhibition of leading suppliers of glassmaking plant, equipment and services. In addition, hospitality will be provided by various supplier organisations at the conclusion of the conference sessions. At the time of going to press, exhibitors and hospitality suite hosts include:

Advanced Control Solutions Inc

Integrator of advanced control system solutions.
www.acsitoledo.com

Air Pro Fan & Blower Co

Manufacturing centrifugal fans for process air requirements.
www.airprofan.com

Air Products

Improve with O₂ enrichment and oxy-fuel technologies.
www.airproducts.com/glass

Allstates Refractory Contractors LLC

A full service industrial process general contractor.
www.allstatesrefractory.com

American Ceramic Society, The

Professional society for ceramic/glass scientists, engineers, manufacturers, 10,000+ members worldwide.
www.ceramics.org

American Glass Research

Independent testing, training and analytical services that solve glass problems.
www.americanglassresearch.com

AMETEK Land

Infrared non-contact temperature measurement.
www.ametek-land.com

Antonini srl

Designer, manufacturer, supplier and installer of annealing and decorating lehrs.
www.antoninisrl.com

BASF Corp

A leading provider of temperature sensing products to the glass industry.
www.catalysts.basf.com/tempsensing

Batch House LLC

Batch plant and cullet handling design/build supply.
www.batchhouse.com

Borton-Lawson

Provides design and construction support services in the glass industry.
www.borton-lawson.com

Bucher Emhart Glass

Supplier of advanced technologies for manufacturing and inspecting glass containers.
www.bucheremhartglass.com

CANTY

High temperature cameras for glass applications.
www.jmcanty.com

CB Mechanical LLC and Part for Lehrs LLC

Companies dedicated to installing, starting up and servicing lehrs.
www.partforlehrs.com

CelSian Glass & Solar BV

Glass technology and knowledge provider.
www.celsian.nl

Chiz Bros: Refractory and insulation specialist

Refractory and high temperature insulation supplier.
www.chizbros.com

Clarage/Twin City Fan

Design and build industrial fans.
www.clarage.com

Cosa Xentaur

30 years of measurement experience.
www.cosaxentaur.com

DSF Refractories

UK's largest shaped refractory manufacturer and specialist in glass industry applications.
www.dsf.co.uk

Dura Temp Corp

Hot ware handling and SEFPRO expendables distributor.
www.duratemp.com

Dürr Systems Inc

Global provider of air pollution control systems.
www.durr.com/en/industries/materials/glass-industry

Dynics Inc

IPC MFG ICS security and plant floor visualisation.
www.dynics.com

Edward Orton Jr Ceramic Foundation (The)

Validating thermal processing for over 100 years.
www.ortonceramic.com

Eurotherm by Schneider Electric

Worldwide supplier of advanced control and systems.
www.eurotherm.com/glassproblems

FIC (UK) Ltd

A world leader in innovative electrical heating technologies for melting/conditioning of all glass types.
www.fic-uk.com

Fives in Glass

Leading supplier in high quality glass melting and conditioning.
https://glass.fivesgroup.com

FlammaTec

Supplier of advanced burner technology for glass furnaces.
www.flammatec.com

Fosbel Inc

Wide range of repair and inspection services.
www.fosbel.com

Frazier-Simplex Inc

Engineering design and construction project management consulting.
www.frazier-simplex.com

Fuse Tech/Hot Tech Group

Glass furnace refractory maintenance, repairs and rebuilds.
www.fusetech.com

GEA Group

Offers filtration techniques for particulate removal and dust transport.
www.gea.com

Glass Manufacturing Industry Council (GMIC)

Glass industry trade association representing all four glass sectors.
www.gmic.org

Glass Service

Consultant for glass melting/conditioning, furnace control, operation and furnace modeling.
www.gsl.cz

Glassworks Hounsell

Worldwide supplier of all types of batch charging equipment and electrodes for electric melting.
www.glassworkshounsell.co.uk

HarbisonWalker International

Engineers, manufactures and supplies quality refractories for glassmaking.
www.thinkHWI.com

Henry F Teichmann Inc

Engineering, construction services and lehrs.
www.hft.com

Heraeus

Precious metals - fabricated products and services for glass manufacturing.
www.heraeus.com

Holland Manufacturing Corp

High quality refractory shapes for glass applications.
www.hollandmanufacturing.com

Honeywell Thermal Solutions

Complete solutions for glass thermal processing.
www.honeywellprocess.com/hts

HORN Glass Industries AG

Glass melting technology and turnkey operations.
www.hornglass.com/en

Hotwork-USA

The only continuous operating Hotwork heatup company since 1965.
www.hotwork.com

JADCO Manufacturing Inc

A leading provider and manufacturer of wear products.
www.jadcomfg.com

Jenike & Johanson

Solids handling expert.
www.jenike.com

Johnson Matthey

Precious metal solutions and technical expertise.
www.noble.matthey.com/markets/glass

Lahti Glass Technology Oy

Batch plants and cullet return systems for the glass industry.
www.lahti-glass.fi

LDX Solutions fna Dustex

Global supplier of clean air technologies.
www.ldxsolutions.com

LGP International LLC

Specialising in precise measurements of glass and melt properties for more than 50 years.
www.glass-properties-lab.com

Lilja Corp

A leader in industrial and glass furnace construction.
www.liljacorp.com

Luoyang Dayang High-Performance Material Co Ltd

Leading Chinese fused cast AZS, alumina, high zirconia manufacturer.
www.refractory-dy.com

Magneco/Metrel Inc

Colloidal silica bonded monolithic refractory.
www.magneco-metrel.com

McGill AirClean LLC

Providing air pollution control systems worldwide for over 50 years.
www.mcgillairclean.com

Mixer Systems Inc

USA manufacturer of four types of mechanical glass batch mixers.
www.mixer-systems.com

Monofrax LLC

Fused cast refractory innovation, quality and service.
www.monofrax.com

Motim Fused Cast Refractories Ltd

A world leader producing fused cast AZS and alumina refractories.
www.motim.hu

Nalco Water, an Ecolab company

Leader in water treatment and batch optimisation.
www.ecolab.com/nalco-water

Optris Infrared Sensing LLC

Optris is a world leader in IR temperature measurement.
www.optris.com

PaneraTech-SmartMelter Inc

SmartMelter solution for furnace life optimisation.
www.smartermelter.com

Parkinson-Spencer Refractories Ltd

Manufactures and supplies refractories and engineered products for the glass industry.
www.parkinson-spencer.co.uk

Plansee USA

A leading global manufacturer of GME's stirrers.
www.plansee.com

Praxair Inc

A global leader in oxy-fuel and combustion technologies.
www.praxair.com/glass

Pyrotek

Solutions from the furnace to the lehr.
www.pyrotek.com/glass

RHI Magnesita

A global leader in refractories.
www.rhimagnesita.com

RoviSys

Engineering process and information solutions for the glass industry worldwide.
www.rovisys.com

Safety Controls Technology (SCT)

The glass industry's premier safety partner.
www.sct.us.com

Salas O'Brien

Employee-owned multi-discipline engineering firm.
www.salasobrien.com

SEFPRO

Refractory products and services.
www.sefpro.com

Selas Heat Technology Co

Reliable combustion technology for the glass market.
www.selas.com

SGT (Society of Glass Technology)

Serves people interested in the production, properties or uses of glass.
www.sgt.org

Shanghai Precision Dosing and Weighing System Co Ltd

Complete solution for batch plant.
www.shpws.com

S.I.G.M.A. srl

Supplier of refractories for glass furnaces.
www.sigmaref.it

SORG USA

Turnkey installations and equipment from raw materials delivery through the glass gob worldwide.
www.sorg.de

Southwire Co LLC

Wire and cable producer.
www.southwire.com

Special Shapes Refractory Co Inc

Manufacturer of special, engineered, high quality refractory products.
www.specialshapessrc.com

SSOE Group

Full service engineering company and resource for glass plant engineering.
www.ssoe.com

Taiyo Nippon Sanso Corp (TNSC)

Advanced oxygen combustion burner.
www.tn-sanso.co.jp/en/index.html

Tanaka Kikinzoku Kogyo KK

Japan-based precious metal manufacturer.
www.tanaka.co.jp/english

Tempens

Leading temperature sensors manufacturer.
www.tempens.com

Toledo Engineering Co Inc

Glass plant engineer, designer, constructor and technical service provider.
www.teco.com

Tri-Mer Corp

Offering the UltraCat catalyst filter system for glass furnace emissions.
www.tri-mer.com

Umicore AG & Co KG (Platinum Engineered Materials)

PGM-based single source engineered system solutions for glass industries.
www.pem.umicore.com

Vesuvius

Manufactures and designs a wide range of fused silica products for the glass industry.
www.vesuvius.com/en/inden/html

Wear-Concepts Inc

Wear-resistant and material flow solutions.
www.wearcon.com

materials, energy, affordable business economics, compatible with process and safe for the environment, for manufacturing and for the use of the products.

The Sustainability in glass manufacturing symposium will have four sessions: Environment, Energy, Technology and Process. The audience will be glass manufacturers, refractory and equipment suppliers, raw material and energy suppliers, design engineers, process engineers, academics and glass researchers, technology, process design, analysis and improvement.

Participants should come away from the symposium with knowledge of the current state of glass manufacturing technology and both the ongoing and anticipated developmental efforts to improve the sustainability of glass manufacturing.

The Symposium Director is Bob Lipetz, Executive Director, Glass Manufacturing Industry Council and the Programme Chair is Brian Naveken, Furnace Design Engineer - Technical Group - Toledo Engineering Co. The Programme Committee includes: Sutapa Bhaduri, Technology Strategist and Sustainability Global Leader, O-I; Scott Cooper, Glass and Materials Science Group Leader - R&D, O-I; Rod Gravely, Technology Director, CCS Systems - Tri-Mer; Aaron Huber, Senior Manager, Furnace Research Group, Process Technology - Johns Manville; Patrick Jackson, Director, Global Energy Management - Corning; Mikael Le Guern, Business Development Manager, Schneider-Electric; Erik Muijsenberg, Vice President - Glass Service; Glenn Neff, Vice President - Glass Service;

Nassreen Olang, R&D Leader, Corporate Product Stewardship Leader - Owens Corning; C Philip Ross, President - Glass Industry Consulting International; Adam Tomaino, Senior Engineer/Refractory Materials and Float Glass Production - Vitro Architectural Glass; Steve Weiser, former Total Systems Cost Community Leader - O-I; and Jeff Yigdall, Chief Technology Officer - Green City Glass.

The following programme of papers has been organised:

- *Emissions considerations and technologies overview* - C Phil Ross, President, Glass Industry Consulting.
- *Towards CO₂ neutral glass - production* - Andries Habraken, Project Manager, CelSian.
- *Science based targets* - Cynthia Cummis, Director of Private Sector Climate Mitigation, World Resources Institute.
- *Waste heat extraction, risks and rewards* - Kayla Olson, Tri-Mer Corp.
- *Extracted heat utilisation, rewards* - Gary Snedaker, Renewable and Conventional Power Generation Solutions, Powerthermix.
- *Energy reduction success stories from other industries* - Bruce Bremer, President, Bremer Energy Consulting Services.
- *All electric melting* - Rene Meuleman, Global Glass Industry Technical Lead, Schneider Electric.
- *Future of hybrid melting furnaces, including economics* - Edward Ferreira, Furnace Design Engineer, TECO.
- *Comparison of technologies for cullet processing - for sustainability*



GPC provides an exhibiting platform for solutions providers to share their innovations.

- *goals* - Stefan Ebner, Sales Director, Binder+Co.
- *All electric forehearth and channels* - Brian Baker, Director Furnace Engineering, Knauf Insulation and Mark Paeplow, President/General Manager, KTG Engineering.
- *Process discipline - Aligning production and sustainability goals* - Jeff Yigdall, Chief Technology Officer, Green City Glass.
- *Four major levers for contribution of glass industry carbonisation* - Luc Jarry, Global Market Director, Air Liquide and Chris McCrea, Vice President Materials and Power Market, Airgas, an Air Liquide company.
- *Low carbon fuels* - Shrikar Chakarvarti, Associate Director, Business Development & Industrial Applications, R&D - Praxair Inc. ●

Further information:

Conference Director: Bob Lipetz, Glass Manufacturing Industry Council, Westerville, Ohio, USA
 tel: +1 614 818 9423
 email: boblipetz@gmic.org
 web: www.glassproblemsconference.org

Programme Director: S K Sundaram, Alfred University, Alfred, NY, USA
 tel: +1-607 871 2789
 email: sundaram@alfred.edu

Exhibition management: Mona Thiel
 tel: +1 614 794 5826
 email: mthiel@ceramics.org



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