



11th

**E
S
G**

Conference

together with
86th DGG Annual Meeting ICG
ICG Annual Meeting
Glass Trend Seminar
“Glass Technology”
Plansee Session
Session “Laser Applications”

Maastricht, The Netherlands
3 – 6 June 2012

Programme



National Committee
Netherlands'
Glass Industry



German Society
of Glass
Technology

We thank our partners for their kind support:

ArdaghGroup



CelSian
Glass & Solar

GERRESHEIMER

i n v e n s i s

Eurotherm



NL Agency

*Ministry of Economic Affairs, Agriculture and
Innovation*



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Conference Venue

MECC (Forum) Maastricht
Forum 100
6229 GV Maastricht NL
The Netherlands
T: +31 43 3838-383
F: +31 43 3838-300
E-Mail: info@mecc.nl
www.mecc.nl

Preface

The 11th ESG Conference in conjunction with the 86th Annual Meeting of the German Glass Society (DGG), the Glass Trend Glass Technology sessions, Plansee session, Laser Zentrum Hannover session and ICG Annual Meeting takes place from 3 – 6 June 2012 in one of the oldest North European cities: Maastricht.

The organization of the conference by these institutions will guarantee a broad scope of subjects being covered in the oral papers and posters: from glass properties & structure, to glass production, glass applications and new developments of sustainable energy using glass as core material.

The city of Maastricht was founded in 50 B.C. when Romans set up a site along the river Maas. Maastricht developed itself as an important centre in the Middle Ages. It was a time that attracted many sculptors, wood carvers, painters and craftsmen working in gold, silver and ivory to the city. Maastricht was one of the first towns that brought industrialization (in the 1830s) to the Netherlands, based on the start of large industrial scale ceramics and later glass production. Maastricht gained fame as host of the European Summit of 1991 where the 'Treaty of Maastricht' was adopted as the formal foundation of the new European Union. Today, Maastricht is one of the cultural highlights in the Netherlands with a population of 125 000 and a strong growing university.

At the Opening Ceremony of this congress, Larry Hench, Florida (USA) will present the invited keynote lecture on "Bioactive glasses: from concept to clinic, a 45th year celebration" and during this ceremony, the DGG Adolf Dietzel Industry Award, the SGT Alastair Pilkington Award, the ICG Professor Vittorio Gottardi and W.E.S. Turner Awards and the Otto Schott Award will be presented.

The conference counts 24 sessions with about 186 oral papers and exhibitions including almost 25 posters. The conference is a meeting place for academia, technologists, glass industries and glass industry suppliers and all friends of glass. Poster sessions and special oral sessions are organized for students and will attract new generation glass scientists. The organizers want to express thanks to the manifold contributors to this event.

Dr. Jaap van der Woude
President of the
Nationaal Comité van de Nederlandse Glasindustrie (NCNG)

Prof. Dr. Ir. Ruud Beerkens
Chairman of Glass Trend (NCNG)

Prof. Dr. Hansjürgen Barklage-Hilgefort
President of the
Deutsche Glastechnische Gesellschaft (DGG)

Dr. Ulrich Roger
Managing Director of the
Deutsche Glastechnische Gesellschaft (DGG)

**ICG Technical Committees
MECC (Forum)**

ICG: TC 18 Room 0.7 Lisbon "Glass Melting"	13.00 – 16.00
ICG: TC 26 Room 0.2 Berlin „Structure and Vibrations“	13.00 – 16.00
ICG: TC 03 Room 0.1 London "Glass Structure"	13.00 – 16.00
ICG: TC 08 Room 0.6 Madrid "Glass Transition"	13.00 – 16.00
ICG: TC 19 Room 0.3 Copenhagen "Surface Diagnostics"	13.00 – 19.00
ICG: TC 11 Room 0.8 Rome "Materials for Furnaces"	13.00 – 16.00
ICG: TC 14 Room 0.9 Athens "Gases in Glass"	14.00 – 16.00
ICG: TC 11 + TC 14 Room 0.9 Athens	16.00 – 19.00
ICG: TC 21 Room 0.7 Lisbon "Modelling Melting"	16.15 – 19.00
ICG: TC 06 Room 0.2 Berlin "Mechanical Properties"	16.15 – 19.00
ICG: TC 23 Room 0.1 London "Education"	16.15 – 19.00
ICG: TC 25 Room 0.6 Madrid "Modelling Forming"	16.15 – 19.00

Officers of the European Society of Glass Science and Technology

President: Dr. Jaap H.A. van der Woude (NCNG)
Secretary: Prof. Dr. Ruud G.C. Beerkens (Glass Trend,
CelSian Glass & Solar b.v., NCNG)

Council Members:

Česká sklářská společnost	Prof. J. Matousek Prof. A. Helebrant P. Beranek
Deutsche Glastechnische Gesellschaft	Prof. H. Barklage-Hilgefort Dr. U. Roger Prof. J. Deubener
Nordiska Glastechniska Foreningen	Dr. P. Sundberg Mr. S. Wadin Mr. B. Jonson
Hellenikos Hyalourgikos Syndesmos	Prof. E. I. Kamitsos Dr. N. Papadopoulos
Union Scientifique et Technologique du Verre	Dr. P. Barlier Mrs. A. Duran Mr. R. Vacher Mr. S. Manoli
Polish Glass and Ceramic Society	Prof. L. Stoch Dr. E. Greiner-Wronova Dr. D. Dorosz
Romanian Association of Glass	Dr. eng. Ovidiu Dumitrescu Prof. D. Radu Prof. P. Balta
Slovenská sklárská společnost	Prof. P. Simurka Prof. M. Liska Prof. P. Vrabel
Society of Glass Technology	Dr. J. Parker Prof. A. C. Wright Mr. Brian McMillan

Szilikatipari Tudományos Egyesület

Mrs. K. Toth
Prof. K. Kovacs

Türkiye Sise ve Cam Fabrikaları A.S.

Mrs. G. Albayrak
Ms. J. Bayram

Association of Italian
Glass Technologists

Mr. A. Bandini
Mr. P. Ercole

National Committee Netherlands' Glass Industry

Dr. Jaap van der Woude, PPG Fibre Glass

Mathi Rongen, CelSian Glass & Solar

Sven-Roger Kahl, Ardagh Group

Jan Schep, O-I Europe

Managing Board of the German Society of Glass Technology

Prof. Dr. Hansjürgen Barklage-Hilgefort, Ardagh Group

Prof. Dr. Reinhard Conradt, GHI, RWTH Aachen

Dipl.-Ing. Hans-Bernhard Führ, P-D refractories GmbH
DYKO GLASS

Dipl.-Ing. Günter Lubitz, Vetropack Holding AG

Prof. Dr. Christian Rüssel, Otto-Schott-Institut für Glaschemie,
FSU Jena

RA Reinhard C. Runte, Saint-Gobain Glass Deutschland GmbH

Mitgliederversammlungen

08.00 80. Mitgliederversammlung der Deutschen Glastechnischen Gesellschaft (DGG) e. V.

MECC (Forum) Maastricht, Raum 0.1 London

Tagesordnung:

1. Tätigkeitsbericht 2011*)
2. Berichte über die Fachausschüsse der DGG*)
3. Bericht über das DGG-Glasforum*)
4. Wahlen zum DGG-Vorstand
5. Genehmigung des Jahresabschlusses 2011 und Entlastung
6. Ehrungen
7. Neufestsetzung der Mitgliedsbeiträge*)
8. Vorstellung des DGG-HVG-Weißbuches
9. Bekanntgabe von Veranstaltungen
10. Verschiedenes

*) Diese Unterlagen sind im Heft 2 / 2012 des dgg journals zur Kenntnisnahme für alle DGG-Mitglieder veröffentlicht.

18.15 82. Ordentliche Mitgliederversammlung der Hüttentechnischen Vereinigung der Deutschen Glasindustrie (HVG) e.V.

MECC (Forum) Maastricht, Raum 0.6 Madrid

– Hierzu ergehen besondere Einladungen –

10.00

Opening Ceremony

MECC (Forum) Maastricht, Auditorium 2

Opening Address

Dr. Jaap van der Woude
President of the Nationaal Comité van de
Nederlandse Glasindustrie (NCNG)

Prof. Dr. Hansjürgen Barklage-Hilgefert
President of the Deutsche Glastechnische Gesellschaft e. V. (DGG)

Welcoming Speech

John Aarts
Deputy mayor of the city of Maastricht

Keynote Lecture

Prof. Dr. Larry L. Hench
Adjunct Graduate Research Professor,
Department of Materials Science and Engineering,
University of Florida;
Professor and Director of Special Projects,
University of Central Florida;
Visiting Professor Kings College/Guy's Hospital,
University of London;
Emeritus Professor University of Florida;
Emeritus Professor Imperial College London

*"Bioactive Glasses: From Concept to Clinic,
a 45th Year Celebration"*

Honours

Presentation Adolf-Dietzel-Industriepreis of DGG
Presentation SGT Sir Alastair Pilkington Award by
Rosalind Christian, daughter of Sir Alastair Pilkington

Presentation ICG Awards, by Dr. Fabio Nicoletti,
President of ICG

Presentation ICG Vittorio Gottardi Award

Laudation

Dr. Peter Simurka, Lednické Rovne

Presentation ICG William E.S. Turner Award

Laudation

René Vacher, Montpellier

Presentation Otto Schott Award by
Dr. Hans-Joachim Konz, Member of the
Management Board of SCHOTT AG

Laudation

Prof. Carlo Pantano, Penn State University, PA

Laudation

Prof. Reinhard Conradt, RWTH Aachen

Monday, 4 June 2012

17.15
to
19.30

ICG: Technical Meeting CTC
MECC (Forum) Room 0.2/0.3 Berlin/
Copenhagen

18.30
to
21.30

Poster Show
and
Reception (starting 19.30)

Foyer Trajectum at MECC (Forum)

The three top posters of students or postgraduates will be awarded with 250, 175 and 100 EUR, respectively, during the banquet on Tuesday evening.

Poster referee panel:

Prof. Dr. Alicia Duran, Instituto de Cerámica y Vidrio, Madrid (ES)

Dr. Anne Jans Faber, CelSian Glass & Solar b.v., Eindhoven (NL)

Priv.-Doz. Dr.rer.nat. Andreas Kasper, Saint-Gobain Sekurit Deutschland GmbH & Co. KG, Herzogenrath (DE)

Tuesday, 5 June 2012

14.30
to
16.30

Glass Trend: Council Meeting
MECC (Forum) Room 0.1 London

17.15
to
19.30

ICG: Steering Committee
MECC (Forum) Room 0.1 London

20.00
to
23.00

Banquet
MECC (Forum), Expo Foyer

For the banquet a special booking on the registration form is required.

During the banquet the three top posters will be awarded a prize each.

Performance of "Wildes Holz"

Interpretation of Pop and Jazz Standards with recorder, guitar and contrabass.

Wednesday, 6 June 2012

13.30 **Meeting: Editorial Board**
to **European Glass Journal**
14.30 **MECC (Forum) Room 0.6 Madrid**

14.45 **ESG: Steering Committee**
to **ESG: Council Meeting**
16.15 **MECC (Forum) Room 0.6 Madrid**

17.15 **ICG: Council Meeting**
to **MECC (Forum) Room 0.6 Madrid**
19.30

Thursday, 7 June 2012

09.00 **ICG: TC 13 "Environment"**
to **MECC (Euro Centre) Room W 2.3/2.4 Dollar/Yen**
16.00

Wichtiger Hinweis
für Ihren
Terminplaner:

**Die
87. Glastechnische
Tagung**

findet vom
27. – 29. Mai 2013
in **Bremen** statt.

Guided Tours

Gruppe A **RWE Power AG – Tagebau (Open Mine) Garzweiler (DE)**

www.rwe.com/web/cms/de/59998/rwe-power-ag/standorte/garzweiler/

12.30 Departure of the bus in front of the MECC – **Forum Entree**

Brown coal or lignite, as it is also known, is a grade of coal intermediate between coal and peat. It is yellowish brown in color with a woody texture. Brown coal contains more moisture and less energy per kilogram than more mature coals. It also tends to dry and crumble when exposed to air. Brown coal is a second tier fuel. Large deposits are found in the United States, Canada, Germany, and elsewhere, chiefly in Tertiary formations. German brown coal localities are found from Cologne in the west of Germany right across eastwards. The eastern material is not so profitable to mine, and many pits have been closed. Cumulative brown coal production has been 187 million tons up to 1996. Somewhere between 80-90% is used in electricity production, and power stations are a normal feature of the skyline in brown coal areas. A large mine may have a life of 50 years, but it "moves" with time. There are issues of relocating and resettling people, land reclamation, management of river courses and water tables and relocating streets and highway connections. The mining activity of Garzweiler, from Garzweiler I (first site, 66 km²) has been extended in West-direction since 2006 into the deposit Garzweiler II (44 km²). Here 1.3 billion tons of brown coal will be available until 2045. Sand, stones, and other soils have to be removed to obtain access to the brown coal deposit layers being, with a total thickness of about 40 m, located at a depth of 40 m to 210 m from ground level. Very large machines collect and transport the mined material. In NRW (Nordrhein-Westfalen) several power plants are fired with the mined brown coal. About 35 to 40 million tons are extracted per year. The mining activities employ 1725 people (2010) in this area.

Special machines have been built to extract the coal and the surrounding sediments. The machines can be 220 m long and 50 m high. The cutting wheel is about 20 m diameter. Transportation within the mine is by conveyor belts (88 km long). After mining operation finishes, re-cultivation of the area takes place and agriculture area, touristic sites, lakes and forest area are provided.

Programme: The open mine will be shown to the visitors and a tour will be arranged to overview the mining activities in Garzweiler.

Arrival at MECC: 18.00

Group B EMGO/Ducatt, Lommel (BE)

www.emgo.be

12.45 Departure of the bus in front of the MECC – **Forum Entree**

Emgo NV has been a leading manufacturer of glass tubing products and glass bulbs since 1966. As a joint venture of Philips and Osram, the company's established reputation for delivering high quality makes it the absolute reference in the lighting industry. Emgo is competitive and equipped for producing medium and large volumes and it delivers to clients all over the world.

Due to the European ban of the incandescent lamp, the traditional bulb production will be stopped in 2012. Over the past years Emgo NV entered new exciting markets like the solar, backlighting and pharmaceutical packaging industry with tubing and shaped tubing glass that meets the latest specifications.

Programme:

During the excursion the two recuperative furnaces with the Vello tube-drawing lines and the finishing department with the tube conversion (flaring, bulb blowing, cutting etc.) machines will be visited.

www.ducatt.com

Ducatt is a spin-off of Emgo, a market leader with more than 45 years of experience in the manufacturing of high quality drawn and blown glass. The company name of Ducatt stands for Dedicated Ultra-Clear Anti-reflective Thin and Toughened solar glass.

The production facility has been completely rebuilt with a brand new dedicated solar glass furnace and state-of-the-art production lines, optimized end-to-end to avoid contamination with iron. Silica is obtained from one of the best low-iron sand quarries in Europe. For cutting, edge grinding and tempering, Ducatt operates state-of-the-art integrated lines from its strategic partner LiSEC. In addition, best-in-class solutions for anti-reflective coating are developed, with the aim for high transparency across the entire photovoltaic spectrum.

Ducatt's entire production lines are dedicated 100% to producing solar glass, which ensures constant quality, short delivery lead times and high flexibility. A continuous in-line production monitoring system scans and tracks every single sheet of glass from its base material to its delivery at your door. Each sheet of glass is fully traceable.

Initially, Ducatt has been focused on the fast growing PV c-Si module market. Ducatt will continue to supply these customers, but in parallel, Ducatt is considering to develop tailor-made solutions for PV thin film modules, flat plate solar thermal collectors, CSP systems and even greenhouses.

Arrival at MECC: 18.00

**Group C Saint-Gobain Glass Deutschland GmbH
Werk Herzogenrath (DE)**

www.saint-gobain-glass.de

13.00 Departure of the bus in front of the MECC –
Forum Entree

The plant at Herzogenrath is one of the plants in Germany of the international group of Saint-Gobain producing flat glass and building materials. In the year 1970 the first floatline was built on the area of the factory which already produced glass in the 19th century. In the meanwhile, the plant produces float glass in the third campaign; that means the production started with the third technically renewed floatline in 2005. The plant of Herzogenrath manufactures white glass but is also specialist in colored glass for the automotive industry. It has produced green glass in several tints since 1988 and the product VENUS since 2001. VENUS is a special dark colored glass used in cars for side, rear or roof windows. The clients of the plant are either transformers for the automotive or building sector or the associated company Saint-Gobain SEKURIT that is also internationally active processing car glass or glass modules.

Programme:

- Reception and Presentation of Saint-Gobain Glass Deutschland, Herzogenrath
- Tour of the plant

Arrival at MECC: 18.00

Group D 3B Fibre Glass, Battice (BE)

www.3b-fibreglass.com

13.00 Departure of the bus in front of the MECC –
Forum Entree

3B Fibre Glass (3BF) is a leading fibre glass developer and supplier and operates state-of-the-art glass fibre manufacturing facilities in Birkeland, Norway and in Battice, Belgium. The production plant in Battice is together with a Science & Technology Centre gathering a unique expertise for future development and innovation. The company is headquartered in Battice and has a Customer Service Centre near Brussels. Formed as an independent entity as a consequence of the acquisition by Owens Corning of the Vetrotex reinforcements businesses, 3B has a rich heritage of expertise in fibre glass development and production. Advantex® glass and HiPer-tex™ high performance fibre are well established brands that combine class leading performance with low environmental emissions.

3B is fundamentally committed to operating with minimal impact on the environment. By using the proprietary Advantex® technology, the recognized benchmark in the industry for clean technology, 3B is continuously working to set new standards within the global fibre glass industry. That is, because Advantex® glass fibre composition and manufacturing technology is a perfect example of integrated pollution prevention and the highest energy efficiency coming together in an optimized process.

3B offers unrivalled levels of technical competence as well as a total commitment to supporting customers locally and internationally. Europe is the main centre for innovation in the global reinforced plastics industry and 3B is at its heart; forming strong bonds with customers, reacting quickly through close proximity to changing needs and challenges, and working together to mould a more profitable and sustainable future.

Arrival at MECC: 18.00

Group E Johnson Matthey, Maastricht (NL)

www.glassmatthey.com

13.00 Departure of the bus in front of the MECC –
Forum Entree

The former privately owned company was established in 1895 by Emile Regout. In 1957 it was acquired by Johnson Matthey. Until 1992 this company was better known under the name Blythe Colours. Today, Johnson Matthey Colour Technolo-

gies is a business unit within the Precious Metal Products division of Johnson Matthey plc.

Johnson Matthey Colour Technologies is now a worldwide operating company with the headquarters in Maastricht and production sites in Cresswell, Royston (both in the UK), Downingtown (PA/USA) and Eumsung (South Korea).

The company produces glass frits, glass enamels for automotive, architectural, appliance and hollow glass; glazes, frits and colors for tableware and roof tiles; decorative precious metals for glass and ceramics; conductive pastes; components for ink-jet inks; inorganic pigments and fire retardants as well as organic media.

In the Maastricht plant gas-fired discontinuous smelters for glass frit production (up to 500 kg/ca. 1400 °C) are used. The production process includes: continuous and batch-type calcination in rotary and box kilns; ball, bead and jet milling; paste preparation by three-roll milling.

The production of glass enamels and their components by smelting/quenching, drying, calcination, blending and pasting will be shown. Quality assurance and material testing laboratories will also be visited.

Arrival at MECC: 16.45

Group F Sibelco, Maasmechelen (BE)

www.sibelco.be

13.15 Departure of the bus in front of the MECC – **Forum Entree**

With 228 production sites in 41 countries, Sibelco is one of the world's leading providers of industrial minerals to a broad range of markets and a key mineral provider to the global glass industry. From its foundation in 1872 supplying silica sand to Belgium's glass producers, over the years Sibelco has developed a multi-mineral portfolio for glassmaking that today includes melting sands, alumina bearing minerals, dolomites, colourants, and glass cullet.

All Sibelco products are backed by the very highest standards of technical support courtesy of a global network of specialist teams.

Maasmechelen plant (MHZ)

Sibelco's new MHZ sand processing plant is situated near the beautiful National Park Hoge Kempen. The company has been mining sand in this region for over 50 years and moved production from its previous plant at Berg to MHZ in 2011 following extensive

consultation and dialogue with stakeholders. This dialogue resulted in a win-win situation for all parties, strengthening the National Park and gave Sibelco long-term continuity in the region.

Sustainability and innovation lie at the heart of this project and its success clearly demonstrates Sibelco's commitment to extracting essential minerals with respect for nature. The plant embraces a number of environmental technologies and measures including:

- a 1,5 ha solar park producing over 8% of the plant's energy
- geothermal heat pump for heating and cooling offices
- low energy building and process plant
- green roof on office building
- reed field for waste water cleaning
- plant and quarry activity with low noise level

The MHZ plant produces some of the best glass sands within the group. The sand is dredged and transported to the plant. In the plant a combination of hydrocyclones, hydrosizers, attrition mills, screens and flotation is used to classify and purify the silica sand products.

Arrival at MECC: 17.45

Group G O-I Europe, Maastricht plant (NL)

www.o-i.com

13.45 Departure of the bus in front of the MECC – **Forum Entree**

The container glass production plant in Maastricht was founded in 1969. At this location high quality crystal glass was produced until this market declined in the 1960s. At that time already some container glass was produced.

During the period that the coal mines in the south-east of the Netherlands were closed, the Dutch government encouraged companies to invest in this region and create jobs. So in 1969 the total production capacity was moved from crystal to container glass. Between 1969 and now the plant has had different owners and it is now part of O-I.

O-I is the #1 glass packaging supplier in Europe, with a net sales of \$ 2.7 billion, with 36 plants in 10 countries and its headquarters in Bussigny, Switzerland. The plant in Maastricht is one of these 36 European O-I container glass plants and produces yearly around 235.000 metric tons of glass.

Currently O-I Maastricht runs 3 end-port furnaces with 9 production lines. All the production lines are equipped with IS machines, producing high quality packaging for food, wine, beer and NAB in flint and amber. With over 150 different shapes (70% of it being jars) the plant excels in flexibility.

The plant in Maastricht is one of the few plants within O-I that has its own decoration facility. Products can be decorated with a full color sleeve to provide the customer with a "total packaging solution".

O-I Maastricht also maintains a good relationship with its neighbors. All furnaces are equipped with bag filters to eliminate the emission of dust and many actions were taken to reduce noise emissions.

During the excursion, there will be a tour around the plant, visiting the production facilities, one of the dust filters and the decoration facility.

Arrival at MECC: 17.30

Notice

For all plant visits the number of participants is limited. Please mark in the registration form optional visits in case your first choice is booked out already.

The lists of the registered participants will be sent to the companies in advance of the meeting. Participation may be rejected on grounds of business competition.

Time schedule of oral presentations

MECC (Forum)

Tuesday, 5 June 2012

- **Session 1** 08.30 – 12.20
Room 0.4 Brussels
Batch, Melting & Sintering Processes
- **Session 2** 08.30 – 12.20
Room 0.5 Paris
Plansee Seminar
Refractory Metals for the Glass Industry
- **Session 3** 08.30 – 12.20
Room 0.8 Rome
TC 10
Optical Properties of Glass
- **Session 4** 08.30 – 12.20
Room 0.2/0.3 Berlin/Copenhagen
Glass Fibre & Glass Colour
- **Session 5** 08.30 – 12.20
Room 0.9 Athens
Laser Applications
- **Session 6** 08.30 – 12.20
Room 0.11 Press Centre
MSE Career Workshop MatWerk
Presentations of SGT and ICG Award Winners
- **Presentations of the Schott Award Winners** 13.30 – 14.10
Auditorium 2
- **Session 7** 14.15 – 18.05
Room 0.4 Brussels
Glass Trend Seminar
Heat Transfer & Heat Energy
- **Session 8** 14.15 – 18.05
Room 0.5 Paris
Refractories & Raw Materials
- **Session 9** 14.15 – 18.05
Room 0.8 Rome
Chemical Durability & Glass Properties
- **Session 10** 14.15 – 18.05
Room 0.2/0.3 Berlin/Copenhagen
Surface Treatment
- **Session 11** 14.15 – 18.05
Room 0.9 Athens
TC 26
Vibrations and Structure of Glass
- **Session 12** 14.15 – 18.45
Room 0.11 Press Centre
Student Workshop
Senior Talks

Time schedule of oral presentations

Wednesday, 6 June 2012

- **Session 13** 08.30 – 12.20
Room 0.4 Brussels
TC 21
Furnace Design & Furnace Operations
- **Session 14** 08.30 – 12.20
Room 0.5 Paris
Glass Forming
- **Session 15** 08.30 – 12.20
Room 0.8 Rome
Glass Ceramics
- **Session 16** 08.30 – 12.20
Room 0.2/0.3 Berlin/Copenhagen
TC 16
Glass Strength
- **Session 17** 08.30 – 12.20
Room 0.9 Athens
Glass Trend Seminar
Sensors & Measurements
- **Session 18** 08.30 – 12.20
Room 0.11 Press Centre
Glass Structure
- **Session 19** 13.30 – 17.20
Room 0.4 Brussels
TC 14
Gases in Glass & Fining
- **Session 20** 13.30 – 17.20
Room 0.5 Paris
TC 13
Environment & Combustion
- **Session 21** 13.30 – 17.20
Room 0.8 Rome
Special Glasses
- **Session 22** 13.30 – 17.20
Room 0.2/0.3 Berlin/Copenhagen
Crystallization
- **Session 23** 13.30 – 17.20
Room 0.9 Athens
Mechanical & Diverse Properties of Glass
- **Session 24** 13.30 – 17.20
Room 0.11 Press Centre
Biomedical Applications

Session 1

Room 0.4 Brussels

Batch, melting & sintering processes

Chair: Prof. Dr. Rolf Clasen, Saarbrücken, Germany
 Prof. Dr. Reinhardt Conradt, Aachen, Germany

08.30 R. Conradt
 Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany

How to overcome the chemical constraints of glass melting

08.55 R. Conradt, W. Jatmiko
 Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany

Experimental assessment of batch melting behavior

09.20 M. Lindig
 Nikolaus Sorg GmbH & Co. KG, Lohr am Main, Germany
Sorg Batch Handling Concept – updated report and future development

09.45 R. Conradt
 Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany

Assessment of batch melting behavior – trying to close the gap between lab and industrial scale

10.10 Coffee break

10.40 C. Pust¹, M. Rohmann¹, S.-R. Kahl²
¹Rheinkalk GmbH, Wülfrath, Germany
²Ardagh Glass Dongen B.V., Dongen, The Netherlands

Decrepiation of Dolomite from batch blankets in glass furnaces

11.05 R. Clasen
 Chair of Powder Technology of Glass and Ceramics, Saarland University, Saarbrücken, Germany

The preparation of glasses via a sintering route – state of the art and perspectives

11.30 S. Reinsch, R. Müller, D. Erfurt, C. Goedecke
 BAM Federal Institute for Materials Research and Testing, Berlin, Germany

Processing and sinter-crystallization of alkaline earth silicate glass powders

11.55 J.O. Torres¹, B. Halbedel²
¹Institute of Materials Technology, Ilmenau University of Engineering, Ilmenau, Germany
²Department of Inorganic-Nonmetallic Materials, Ilmenau University of Engineering, Ilmenau, Germany

Numerical study of the effectiveness of an electromagnetic mixer in the glass melt homogenization process

12.20 End of session

Session 2

Plansee Seminar

Refractory metals for the glass industry

- Chair: Dr. Michael Dunkl, Meerbusch, Germany
Dipl.-Ing. Bernhard Fleischmann, Offenbach, Germany
- 08.30 B. Kleinpass
Plansee SE, Reutte, Austria
Molybdenum and Tungsten: material properties and application in the glass making
- 08.55 M. Dunkl
Dunkl Consulting, Meerbusch, Germany
Vision of a "green" glass melting furnace
- 09.20 H. Traxler, J. Januschewsky, R. Jörg, M. Sulik, M. Kathrein, R. Holzknecht
Plansee SE, Reutte, Austria
Phase Identification of oxidation protective layers for Molybdenum
- 09.45 M.C. Bölit¹, R. Völk¹, H. Traxler², R. Holzknecht², U. Glatzel¹
¹Chair of Metals and Alloys, University of Bayreuth, Bayreuth, Germany
²Plansee SE, Reutte, Austria
Corrosion of Molybdenum electrodes in silicate melts
- 10.10 Coffee break
- 10.40 H. Larcher, R. Holzknecht
Plansee SE, Reutte, Austria
MoZrO₂ – A new material for GME
- 11.05 L. Biennek¹, R. Holzknecht²
¹JSJ Jodeit GmbH, Jena, Germany
²Plansee SE, Reutte, Austria
GTR experiences and insights
- 11.30 R. Meuleman
Invensys Operations Management, Alphen aan den Rijn, The Netherlands
Smart Thyristor control of power supply on electric boosting systems provides potential energy savings
- 11.55 E. Muijsenberg, T. Krobot, M. Muijsenberg
Glass Service Inc., Vsetin, Czech Republic
Optimal positions of Molybdenum electrodes
- 12.20 End of session

Session 3**Room 0.8 Rome****TC 10****Optical properties of glass**

Chair: Dr. Charles Anderson, Aubervilliers, France
 Dr. Peter Simurka, Bratislava, Slovakia

08.30 C. Anderson
 Saint-Gobain Recherche, Aubervilliers, France
**Optical properties and characterization of glass
 and glass coated products**

08.55 C. Anderson
 Saint-Gobain Recherche, Aubervilliers, France
**Low emissivity and solar control products for build-
 ing applications: A review of their functionality and
 thermal performance**

09.20 H.R. Wilson¹, A. Nilsson¹, J. Bretschneider²,
 T. Hofmann³, M. Hutchins⁴, J. Jonsson¹, C. Kermel¹,
 I. Marenne¹, A. Roos⁵, P. van Nijnatten⁶
¹Fraunhofer Institute for Solar Energy Systems, Freiburg,
 Germany

²Pilkington Deutschland AG, Weiherhammer, Germany

³Centrosolar Glas GmbH & Co. KG, Fürth, Germany

⁴Sonnergy Ltd, Abington, Oxon, United Kingdom

⁵Uppsala University, Uppsala, Sweden

⁶OMT Solutions BV, Eindhoven, The Netherlands

**Transmittance of patterned "solar glass" panes –
 results of a measurement round robin by ICG-TC10**

09.45 M. Hutchins¹, N. Kilbey¹, P.A. van Nijnatten²,
 C. Anderson³, A. Roos⁴

¹Sonnergy Ltd, Abington, Oxon, United Kingdom

²OMT Solutions BV, Eindhoven, The Netherlands

³St.-Gobain Recherche, Aubervilliers, France

⁴Uppsala University, Uppsala, Sweden

**Measurement of angle-dependent optical proper-
 ties of coated glass products – results of an Inter-
 national laboratory inter-comparison by ICG-TC10**

10.10 Coffee break

10.40 P.A. van Nijnatten, J. de Wolf, I. Schoofs,
 S. Timmermans, M. Dominicus-van den Acker
 OMT Solutions BV, Eindhoven, The Netherlands
**State-of-the-Art in optical characterization
 of coated glass products**

11.05 K. Seneschal-Merz, B. Unger, I. Feldmann, M. Bucker
 BAM Federal Institute for Materials Research and
 Testing, Berlin, Germany
**Development of durable transparent enamel colors
 for the manufacture of decorated glass panels for
 applications outdoor**

11.30 A. Masuno, H. Inoue, Y. Watanabe
 Institute of Industrial Science, The University of Tokyo,
 Tokyo, Japan
**Structural-relaxation-induced high refractive indi-
 ces of Ba_{1-x}Ca_xTi₂O₅ glasses prepared by contain-
 erless processing**

- 11.55 A.M. Efimov¹, P.A. van Nijnatten²
¹National Research University ITMO, St.-Petersburg, Russia
²OMT Solutions BV, Eindhoven, The Netherlands
Predicting the optical absorption of window glass at annealing and melting temperatures: problems and prospects
- 12.20 End of session

Session 4

Room 0.2/0.3 Berlin/Copenhagen

Glass fibre & glass colour

- Chair: Dr. Jaap van der Woude, Hoogezeand, The Netherlands
 Dr. Andreas Kasper, Herzogenrath, Germany
- 08.30 A. Jorns¹, I. Hooftman²
¹GlassFibreEurope, Brussels, Belgium
²Lanxess NV, Kallo, Belgium
Life cycle assessment of CFGF – continuous filament glass fibre products
- 08.55 P. Gu, J. Watson, J. Meng, H. Li
 Fiber Glass Science and Technology, Pittsburgh, PA, USA
Corrosion resistance of E-glass fibers – boron factor
- 09.20 O. Prokhorenko
 Laboratory of Glass Properties, LLC, St.-Petersburg, Russia
Modular model of fiber drawing process
- 09.45 H. Li, D. Eng, C. Tang, P. Westbrook
 Fiber Glass Science and Technology, Pittsburgh, PA, USA
Low dielectric glass fibers development – new PCB base materials
- 10.10 Coffee break
- 10.40 E. Aydin
 Sisecam, Glass Research Centre, Istanbul, Turkey
Using volcanic glass (perlite) heals the everlasting durability problem in amber glass production
- 11.05 H. Sesigür, F. Akmaz
 Sisecam, Glass Research Centre, Istanbul, Turkey
Parameters affecting the color formation of olive green glass
- 11.30 S. Karlsson¹, B. Jonson¹, L. Wondraczek²
¹School of Engineering – Glass Group, Linnæus University, Växjö, Sweden
²Institute of Glass and Ceramics, Department of Materials Science, University of Erlangen-Nürnberg, Erlangen, Germany
Copper colouration of the surface of float glass by ion exchange
- 11.55 A. Simo, K. Rademann
 Institute of Chemistry, Humboldt University of Berlin, Berlin, Germany
Copper and silver in glasses
- 12.20 End of session

Session 5**Room 0.9 Athens****Laser applications**

- Chair: Dr. Lars Richter, Hannover, Germany
Dr. Uwe Stute, Hannover, Germany
- 08.30 P.-E. Martin
Lasea, Angleur, Belgium
Examples of glass laser micromachining applications
- 08.55 H.-P. Wunde
Time Bandwidth Products AG, Zürich, Switzerland
Precision glass processing with picosecond lasers
- 09.20 M. Lentjes
4JET Technologies GmbH, Alsdorf, Germany
Laser drilling of heat-strengthened glass
- 09.45 H. Gebauer, L. Richter, U. Stute
Laser Zentrum Hannover, Hannover, Germany
Improvement of energy efficiency for glass tube fusing
- 10.10 Coffee break
- 10.40 K. Du, P. Shi, X. He
EdgeWave GmbH, Würselen, Germany
Precision glass processing with short pulse lasers and ultra short pulse lasers
- 11.05 J. Bliedtner, H. Müller, T. Schmidt
Günter-Köhler-Institut für Fügetechnik und Werkstoffprüfung GmbH, Jena, Germany
Hot processing of glass through laser beam joining and cutting
- 11.30 A. Wienkamp
Cerion GmbH, Minden, Germany
Laser processing of flat glass – innovative technology replaces sand blasting
- 11.55 K. Pötting
Athena Engineering & Construction, Erkrath, Germany
L A S E R polishing of grinded glasses
- 12.20 End of session

Session 6

Room 0.11 Press Centre

MSE Career Workshop MatWerk

Presentations of SGT and ICG Award Winners

**Target group: Undergraduate and graduate students –
How to be prepared for the start of your professional career – in a
SME, in a large company, in a research institute**

Chair: Prof. Dr. Pedro Dolabella Portella, Berlin, Germany

- 08.30 P.D. Portella
BV MatWerk, BAM, Berlin, Germany
Introduction
- 08.40 D.-O. Petersen
Nikolaus Sorg GmbH & Co. KG, Lohr am Main, Germany
**Glass melting and conditioning systems
and equipment**
- 09.00 E. Muijsenberg
Glass Service Inc., Vsetin, Czech Republic
**How a small dynamic company can be
internationally active introducing new
technologies into glass industry**
- 09.20 P. van Rhede
AGC Glass Europe, Brussels, Belgium
Development, production and process of flat glass
- 09.40 K.-J. Ollfisch
Saint-Gobain Sekurit Deutschland, R&D Centre,
Herzogenrath, Germany
**Glass, an advanced material – the challenges of
research and development**
- 10.00 P.D. Portella
BV MatWerk, BAM, Berlin, Germany
**A short overview of the funding tools for
research activities**
- 10.10 Coffee break
- 10.30 **Panel with all the speakers: Open questions
and discussion**
- 11.30 End of workshop
Break
- 11.40 **SGT Sir Alastair Pilkington Award 2012:
Paper presented by the winner**
- 12.00 **ICG Vittorio Gottardi Award 2012:
Paper presented by the winner**
- 12.20 End of session

SCHOTT

glass made of ideas

Presentations of the Schott Award Winners

Auditorium 2

Chair: Dr. Roland Langfeld, Mainz, Germany

13.30 **Otto Schott Award: 1st Presentation**

13.50 **Otto Schott Award: 2nd Presentation**

14.10 End of session



Session 7

Room 0.4 Brussels

Glass Trend Seminar

Heat transfer & heat energy

- Chair: Prof. Dr. Hansjürgen Barklage, Nienburg, Germany
Dipl.-Ing. Günter Lubitz, Bülach, Switzerland
- 14.15 H. van Limpt, A. Habraken, M. van Kersbergen,
R. Beerkens, P. van Santen
CelSian Glass & Solar B.V., Eindhoven, The Netherlands
**Energy efficient glass production: furnace design,
energy monitoring and energy balances**
- 14.40 P.G. Martin
Invensys Operations Management, Alphen aan den Rijn,
The Netherlands
**Improving the profitability of glass production
through operational decision support**
- 15.05 A.F.J.A. Habraken, M. Rongen
CelSian Glass & Solar B.V., Eindhoven, The Netherlands
**Performance optimization of electrical boosting
in a U-flame container glass furnace**
- 15.30 Coffee break
- 16.00 N. Rozendaal
Optimum, Arnhem, The Netherlands
Heat recovery from flue gases in glass industry
- 16.25 A. Mola¹, J. Schep², M. Rollini³
¹Stara Glass, Genova, Italy
²O-I Manufacturing Netherlands B.V., Schiedam,
The Netherlands
³O-I Manufacturing Italy SpA, Origgio, Italy
**Experiences of hybrid regenerative – recuperative
heat exchanger systems for glass furnaces**
- 16.50 D. Dacko
International Quality Service, Support and Solution,
Gdansk, Poland
**Energy recycling from glass melting processes
using new available techniques – heat recovery,
batch chemical activation, granulating, batch and
cullet preheating – A comparison study**
- 17.15 A. Monteforte, D. Dacko, P. Piccolo, F. Zatti
Area Impianti SpA., Padova, Italy
**Energy savings and energy production from
glass furnace**
- 17.40 L. Önsel, Z.Eltutar, S.Özel Ucar
Sisecam, Glass Research Centre, Istanbul, Turkey
**A modeling analysis of gas velocities with respect
to furnace performance**
- 18.05 End of session



Session 8

Room 0.5 Paris

Refractories & raw materials

- Chair: Dr. Matthias Lindig, Lohr am Main, Germany
Dipl.-Ing. Sven-Roger Kahl, Dongen, The Netherlands
- 14.15 P. Simurka, R. Klement, J. Sedlaced, J. Kraxner
Institute of Inorganic Chemistry of Slovak Academy
of Sciences, Bratislava, Slovakia
**Corrosion of refractories used in a melting process
of industrially produced tableware glass**
- 14.40 R. Bei¹, K. Santowski², C. Majcenovic²
¹RHI Glas GmbH, Wiesbaden, Germany
²RHI AG, Technology Center, Leoben, Austria
**Refractories for extreme condition in the top
layers of regenerator checker works**
- 15.05 M. Dunkl
Dunkl Consulting, Meerbusch, Germany
Quality of refractory materials and glass quality
- 15.30 Coffee break
- 16.00 R. Weigand, A.-K. Rössel
Institute of Ceramic, Glass and Construction Materials,
TU Bergakademie Freiberg, Freiberg, Germany
**Minimization of the interaction between refractory
and glass melt – possible savings in the glass industry**
- 16.25 D. Lechevalier¹, O. Citti¹, M. Gaubil²
¹Saint-Gobain SEFPRO, Northboro R&D Center,
Northborough, MA, USA
²Saint-Gobain CREE, Cavallon, France
Design of high efficiency regenerator packing
- 16.50 R. O'Conner, S. Cook
Rio Tinto, Kingston upon Thames, United Kingdom
**The changing demands for refined borates in
solar and display glass applications**
- 17.15 N. McDonald¹, M. Pinon²
¹Verallia SA, Courbevoie, France
²Saint-Gobain Recherche, Aubervilliers, France
**Melting and life cycle impact of alternative
raw materials**
- 17.40 R. Falcone¹, S. Hreglich¹, P. Bertuzzi²,
P. Ercole², L. Ramon²
¹Stazione Sperimentale del Vetro, Venice-Murano, Italy
²Sasil SpA, Brusnengo, Italy
**Reuse of slags and flying ashes from MWI as
industrial reagent and secondary raw materials**
- 18.05 End of session

Session 9

Room 0.8 Rome

Chemical durability & glass properties

- Chair: Dr. Klaus Sebastian, Sant Vicenc dels Horts, Spain
Prof. Dr. Lothar Wondraczek, Erlangen, Germany
- 14.15 J. Matsuoka, T. Kimura, T. Sugawara, S. Yoshida
The University of Shiga Prefecture, Hikone, Shiga, Japan
Thermal diffusivity of sodium borate glasses around the glass transition temperature
- 14.40 H. Takebe, T. Kobatake, A. Saitoh
Graduate School of Science and Engineering, Ehime University, Matsuyama, Ehime, Japan
Dissolution behavior of SnO-P₂O₅-B₂O₃ glasses in water
- 15.05 P. Djambazov, A. Prange, R. Conradt
Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany
Initial stages in the aqueous corrosion process of sodalime, borosilicate and aluminosilicate glasses
- 15.30 Coffee break
- 16.00 L. Hupa, S. Fagerlund
Process Chemistry Centre, Abo Akademi University, Turku, Finland
Durability of silicate glasses in aqueous solutions
- 16.25 M. Dathe, H. Roggendorf
Institute of Physics, Martin-Luther University Halle-Wittenberg, Halle, Germany
Dissolution behavior of sodium silicate glasses for the manufacture of soluble glass
- 16.50 A. Roula, N. Boubata
Fac. Sci. & Technol., PNR-ANDRU-LIME, Jijel University, Jijel, Algeria
Predicting the oxides melts glass forming ability
- 17.15 N. Mascaraque, A. Durán, F. Muñoz
Ceramic and Glass Institute (CSIC), Madrid, Spain
Synthesis and electrical conductivity of lithium phosphorus oxynitride glasses
- 17.40 H. Inoue, K. Makihara, Y. Watanabe, A. Masuno
Institute of Industrial Science, The University of Tokyo, Tokyo, Japan
The structure and physical properties of R₂O₃-Al₂O₃-SiO₂ (R = Y or La) glasses
- 18.05 End of session

Session 10

Room 0.2/0.3 Berlin/Copenhagen

Surface treatment

- Chair: Prof. Dr. Edda Rädlein, Ilmenau, Germany
Dr. Anne Jans Faber, Eindhoven, The Netherlands
- 14.15 P. Maillat¹, A. Gilet²
¹Verallia SA, Courbevoie, France
²Saint-Gobain Recherche, Aubervilliers, France
Combining slipping / anti-slipping compounds to increase glass scratch resistance
- 14.40 L. Zhang, A. Kasper, A. Prange, R. Conradt
Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany
Flame sprayed window glass coatings on the concrete substrate: the effect of water glass as an intermediate bonding layer
- 15.05 M. Eberstein¹, J. Schilm¹, U. Partsch¹, A. Waltinger², C. Kretzschmar¹
¹Fraunhofer Institut für Keramische Technologien und Systeme IKTS, Dresden Germany
²Roth & Rau, Hohenstein-Ernstthal, Germany
Kinetic phenomena during the solar cell contact formation of glass containing silver pastes
- 15.30 Coffee break
- 16.00 A. Flejszar¹, G. Hensch¹, K. Werbter², P. Hinz², J. Deubener¹
¹Institute of Non-Metallic Materials, Clausthal University of Technology, Clausthal-Zellerfeld, Germany
²Glas Plus Beschichtungs GmbH & Co. KG, Mainz, Germany
Effect of single layer thickness on structural, electrical and optical properties of Sb:SnO₂ films
- 16.25 R. Meszaros¹, L. Wondraczek¹, B. Merle¹, M. Wild²
¹Institute of Glass and Ceramic, Department of Materials Science, University of Erlangen-Nürnberg, Erlangen, Germany
²Interpane Glasgesellschaft mbH, Plattling, Germany
Highly resistant multi-layer coatings for heat / solar management in architecture
- 16.50 K.H. Nielsen¹, S. Koynow², S. Carney³, E. Hultstein³, L. Wondraczek¹
¹Institute of Glass and Ceramic, Department of Materials Science, University of Erlangen-Nürnberg, Erlangen, Germany
²Walter Schottky Institute, Technical University of Munich, Garching, Germany
³Linde AG, Unterschleissheim, Germany
Alternative approach towards cost-effective low-reflectivity coatings on glass

- 17.15 D. Petri, R. Clasen
Chair of Powder Technology of Glass and Ceramics,
Saarland University, Saarbrücken, Germany
**Fabrication of solar selective TiO_xN_y films
with silica based binder**
- 17.40 G. Hensch¹, J. Deubener^{1,2}
¹Institute of Non-Metallic Materials, Clausthal University
of Technology, Clausthal-Zellerfeld, Germany
²Energie-Forschungszentrum Niedersachsen (EFZN),
Goslar, Germany
**Bifunctional solar coatings: antireflective
and self cleaning**
- 18.05 End of session

Session 11

Room 0.9 Athens

TC 26

Vibrations and structure of glass

- Chair: Prof. Dr. Rene Vacher, Montpellier, France
Prof. Dr. Bernhard Hehlen, Montpellier, France
- 14.15 H.-J. Hoffmann
Institute of Materials Science and Technology Vitreous Materials, University of Technology, Berlin, Germany
Melting and glass transformation as a mixing process
- 14.40 L. Pedesseau, S. Ispas, W. Kob
Laboratoire Charles Coulomb, University Montpellier 2, Montpellier, France
Static and dynamic properties of sodium-borosilicate liquids and glasses: insight from ab initio simulations
- 15.05 G.S. Henderson¹, D.R. Neuville²
¹Department of Geology, University of Toronto, Toronto, ON, Canada
²Geochimie & Cosmochimie, IPGP-CNRS, Paris, France
An In-situ high temperature Raman Spectroscopy study of alkali-germanate glasses
- 15.30 Coffee break
- 16.00 A. Pasquarello, L. Giacomazzi, M. Kibalchenko, C. Massobrio, J.R. Yates
Chaire de Simulation à l'Echelle Atomique (CSEA), Lausanne, Switzerland
Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland
First-principles instigation of chemical disorder in Vitreous GeSe₂
- 16.25 G. Simon¹, B. Hehlen²
¹Laboratoire de Dynamique, Interactions et Réactivité (LADIR), UMR 7075 Univ. Pierre et Marie Curie, Paris, France
²Laboratoire Charles Coulomb (LCC), UMR 5587, Univ. Montpellier 2, Montpellier, France
Vibrations of vitreous silica seen by Hyper-Raman Scattering
- 16.50 W. Schirmacher, S. Koehler
Institute of Physics, University of Mainz, Mainz, Germany
Theory of vibrational spectra of disordered solids
- 17.15 N.M. Vedishcheva¹, A.C. Wright²
¹Institute of Silicate Chemistry of the Russian Academy of Sciences, St.-Petersburg, Russia
²J.J. Thomson Physical Laboratory, University of Reading, Whiteknights, Reading, United Kingdom
Intermediate-range order and the nature of chemical bonds in M₂O-B₂O₃ (M = Li, Na, K, Rb & Cs) glasses

- 17.40 A.C. Wright¹, R.N. Sinclair¹, C.E. Stone¹, J.L. Shaw¹,
S.A. Feller², N.M. Vedishcheva³, H.E. Fischer⁴
¹J.J. Thomson Physical Laboratory,
University of Reading, Reading, United Kingdom
²Physics Department, Coe College,
Cedar Rapids, IA, USA
³Institute of Silicate Chemistry of the Russian Academy
of Sciences, St.-Petersburg, Russia
⁴Institut Laue-Langevin, Grenoble, France
**A neutron diffraction study of rubidium and
caesium borate glasses**
- 18.05 End of session

Session 12

Room 0.11 Press Centre

ESG/DGG Student Workshop "Clear as Glass 2012"

Senior talks

- Chair: Prof. Dr. Reinhardt Conrardt, Aachen, Germany
- 14.15 M. Cable
Sheffield, United Kingdom
Sixty years of glass technology
- 14.55 F. Gebhardt
Würselen, Germany
**Production of soda lime silicate glass –
with a special focus on refractory materials**
- 15.35 Coffee break
- 16.00 H.A. Schaeffer
Berlin, Germany
**Rise and fall of the Kaiser Wilhelm Institute
of Silicate Research in Berlin-Dahlem –
cradle of german glass research**
- 16.40 H. de Waal
Delft, The Netherlands
**Can international societies play a role in your
career? A case study**
- 17.20 G.H. Frischat
Clausthal-Zellerfeld, Germany
**Atomic force microscopy – a tool bridging the
gap between microstructure and atomic structure
of glasses**
- 18.00 **Panel discussion: Young members –
what they expect and wish of the DGG**
- 18.45 End of session

Session 13

Room 0.4 Brussels

TC 21

Furnace design & furnace operation

Chair: Prof. Dr. Ruud Beerkens, Eindhoven, The Netherlands
Ir. Erik Muijsenberg, Vsetin, Czech Republic

- 08.30 R. Conradt
Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany
Reaction kinetics of particulate matter – a description frame for the batch-to-melt conversation
- 08.55 M. Lindig
Nikolaus Sorg GmbH & Co. KG, Lohr am Main, Germany
Modeling study for all electric glass melting furnaces
- 09.20 E. H.P.H. Muijsenberg
Glass Service Inc., Vsetin, Czech Republic
How reliable and validated simulation tools can help to improve glass melting efficiency and productivity
- 09.45 M. Polak, L. Nemeč
Institute of Chemical Technology Prague, Faculty of Chemical Technology, Laboratory of Inorganic Materials, Prague, Czech Republic
The influence of the glass melting parameters on the space utilization of a glass melting tank
- 10.10 Coffee break
- 10.40 G. Kang
PPG Industries Inc., Glass Business and Discovery Center, Cheswick, PA, USA
E-boost for an E-glass furnace throughput expansion
- 11.05 P. van Santen¹, L. Huisman²
¹CelSian Glass & Solar B.V., Eindhoven, The Netherlands
²IPCOS b.v., Boxtel, The Netherlands
Model predictive control for container glass furnace operation
- 11.30 A.M. Lankhorst, L. Thielen, D. Hegen
CelSian Glass & Solar B.V., Eindhoven, The Netherlands
Proper radiative heat transfer modeling for combustion space and glass melt including batch blanket
- 11.55 U. Lüdtke¹, S. Soubeih¹, B. Halbedel²
¹Faculty of Electrical Engineering and Information Technology, Department of Electrothermal Energy Conversion, Ilmenau University of Technology, Ilmenau, Germany
²Faculty of Mechanical Engineering, Department of Inorganic-Nonmetallic Materials, Ilmenau University of Technology, Ilmenau, Germany
Numerical simulation of induced alterations of flow patterns within glass melts using external Lorentz forces
- 12.20 End of session

Session 14

Room 0.5 Paris

Glass forming

- Chair: Dr. Christoph Berndhäuser, Mainz, Germany
Dr. Adnan Karadag, Istanbul, Turkey
- 08.30 T. Rouxel
LARMAUR, ERL CNRS 6274, Université de Rennes,
Rennes, France
**Thermodynamics of viscous flow and elasticity of
glass forming liquids in the glass transition range**
- 08.55 M. Cousin
Verallia SA, Courbevoie, France
**Modeling of forming of glass containers: compa-
rison between simulations and measured profiles**
- 09.20 G. Bergmann, H. Müller-Simon, N.H. Löber, K. Kessler
Research Association of the German Glass Industry
(HVG), Offenbach, Germany
**Changes of the glass temperature between feeder
channel and blank; HVG/IGF/AiF-Nr. 16547 N;
HVG/IGF/AiF-Nr. 15223 N**
- 09.45 A. Omieczynski, W. Seidensticker
Heye International GmbH, Obernkirchen, Germany
HIPERFORM – Innovations in hot end technology
- 10.10 Coffee break
- 10.40 M. Hyre
Emhart Glass Research, Windsor, CT, USA
Viscoelastic modeling of forming defects
- 11.05 M. Kilo¹, J. Kallendrusch², V. Sinhoff²,
¹Fraunhofer-Institut für Silicatforschung ISC,
Würzburg, Germany
²Ingeneric GmbH, Aachen, Germany
Thermal drawing of optical glasses for microoptics
- 11.30 K Kyrgyzbaev, A. Rosin, T. Gerdes, M. Willert-Porada
Chair of Material Processing, University of Bayreuth, Bay-
reuth, Germany
**Influence of temperature on the thickness of
ultra-thin glass films**
- 11.55 P. Moreau^{1, 2}, D. Montoya^{1, 2}, D. Locheignies^{1, 2},
J. Lagneau³, C. Kermel³, J.M. Carpentier³, H. Vivier⁴
¹PRES Université Lille Nord de France, Lille, France
²UVHC, TEMPO, Valenciennes, France
³BCRC, Mons, Belgium
⁴Sogelub® Special Lubricants, Marquain, Belgium
**Analysis of the thermal capacities of lubricants
to improve the manufacture of flint glass perfume
bottles**
- 12.20 End of session

Session 15**Room 0.8 Rome****Glass ceramics**

- Chair: Prof. Dr. Wolfgang Pannhorst, Mainz, Germany
Prof. Dr. Alicia Duran, Madrid, Spain
- 08.30 B. Cela^{1, 2}, S.M. Gross¹, D. Federmann¹,
H.-R. Zeffass¹, R. Conradt²
¹Forschungszentrum Jülich GmbH, Central Technology
Division, Jülich, Germany
²Institute of Mineral Engineering, Department of Glass
and Ceramic Composites, RWTH Aachen University,
Aachen, Germany
**Multilayer glass-ceramic sealants for high
temperature applications**
- 08.55 J. Wiemert, C. Bocker, C. Rüssel
Otto-Schott-Institute, Jena University, Jena, Germany
**Nano crystallization of strontium fluoride in
oxyfluoride glass-ceramics**
- 09.20 M. Patschger, W. Wisniewski, C. Rüssel
Otto-Schott-Institute, Jena University, Jena, Germany
**Piezoelectric properties and microstructure
characterization of oriented Sr₂TiSi₂O₈ crystals
in glass-ceramics**
- 09.45 A. Gawronski, C. Rüssel
Otto-Schott-Institute, Jena University, Jena, Germany
High-strength glass ceramics containing spinel
- 10.10 Coffee break
- 10.40 A. R. Allu¹, A. Goel², J.M.F. Ferreira¹
¹Department of Ceramics and Glass Engineering,
University of Aveiro, Aveiro, Portugal
²Pacific Northwest National Laboratory, Richland,
WA, USA
**Rare-earth containing glass-ceramic sealants
for solid oxide fuel cells**
- 11.05 G. Gao, S. Reibstein, E. Spiecker, L. Wondraczek
Institute of Glass and Ceramics, Department of Materials
Science, University of Erlangen-Nürnberg, Erlangen, Ger-
many
**Broadband NIR photoluminescence from
Ni²⁺-doped nanocrystalline Ba-Al titanate
glass ceramics**
- 11.30 A. Schusser¹, N. Maier², A. Prange¹, R. Conradt¹
¹Institute of Mineral Engineering, Department of
Glass and Ceramic Composites, RWTH Aachen
University, Aachen, Germany
²Ceramic Fuel Cells GmbH, Heinsberg, Germany
**Developing a long-term stable glass-ceramic
solder as sealing material for SOFC stacks**
- 11.55 M. Wendel, R. Clasen
Chair of Powder Technology of Glass and Ceramics,
Saarland University, Saarbrücken, Germany
**Laser ablation and processing of nanoscaled
borosilicate glass powder**
- 12.20 End of session

Session 16

Room 0.2/0.3 Berlin/Copenhagen

TC 16**Glass strength**

- Chair: Dr. Russell Hand, Sheffield, United Kingdom
Prof. Dr. James Varner, Hornell, NY, USA
- 08.30 G.S. Glaesemann
Corning Incorporated, Corning, NY, USA
The Strength of thin fusion drawn glass sheets
- 08.55 K. Hayashi, J. Endo, S. Akiba, T. Nakashima
Asahi Glass Co., Ltd. Research Centre, Kanagawa, Japan
Novel damage-resistant glass for display cover
- 09.20 P. Warren
NSG Pilkington, Lathom, United Kingdom
Solar power – Implications for glass strength
- 09.45 L. Wondraczek
Institute of Glass and Ceramics, Department of Materials
Science, University of Erlangen-Nürnberg,
Erlangen, Germany
Towards ultrastrong glasses
- 10.10 Coffee break
- 10.40 M. Wannassi^{1, 2}, Y. Chen^{1, 2}, F. Monnoyer^{1, 2},
D. Locheignies^{1, 2}
¹PRES Université Lille Nord de France, Lille, France
²UVHC, TEMPO, Valenciennes, France
**Thermal glass tempering process assessment
by numerical and experimental investigations**
- 11.05 Y. Chen^{1, 2}, D. Locheignies^{1, 2}, J. Anton³,
H. Aben³, R. Langlais⁴
¹PRES Université Lille Nord de France, Lille, France
²UVHC, TEMPO, Valenciennes, France
³Tallinn University of Technology, Tallinn, Estonia
⁴PRELCO, Rivière du Loup, Québec, Canada,
**Influence of the process parameters on the
inhomogeneity of residual stresses in tempered
glass plates**
- 11.30 G. Lubitz
Vetroconsult, Bülach, Switzerland
Possibilities for increasing container glass strength
- 11.55 H. Katte
ilis GmbH, Erlangen, Germany
**Objective measurement of residual
stresses in real time**
- 12.20 End of session



Session 17

Room 0.9 Athens

Glass Trend Seminar

Sensors & measurements

Chair: Dr. Hayo Müller-Simon, Offenbach, Germany
Dipl.-Ing. Wilfried Linz, Mainz, Germany

- 08.30 T. Struppert, A. Heft, B. Grünler
Innovent e.V., Department of Surface Engineering,
Jena, Germany
Spectroscopic measurements of Si-doped propane-air flames in the pyrolytic deposition process of thin SiO₂ layers on glass at atmospheric pressure
- 08.55 H. Müller-Simon
Research Association of the German Glass Industry (HVG), Offenbach, Germany
Development of a sulfur-sensitive sensor for application in the tin bath and the protective atmosphere of float chambers; HVG/IGF/AiF-Nr. 15986 BG
- 09.20 P. Laimböck
Read-Ox & Consultancy B.V., Valkenswaard,
The Netherlands
In-line oxygen sensors for the glass melt and the tin bath
- 09.45 P.A. van Nijnatten, J. de Wolf
OMT Solutions BV, Eindhoven, The Netherlands
A new tool for measuring daylight and solar energy properties of patterned and diffuse glass
- 10.10 Coffee break
- 10.40 P. Boehm, B. Fleischmann
Research Association of the German Glass Industry (HVG), Offenbach, Germany
Application of LIBS on glass specific problems (Report on a HVG self-funded project)
- 11.05 M. Krauss¹, M. Kilo¹, M. Gremmelspacher²,
T. Rist², R. Kübler²
¹Fraunhofer-Institut für Silicatforschung ISC,
Würzburg, Germany
²Fraunhofer-Institut für Werkstoffmechanik IWM,
Freiburg, Germany
Pyrometric in-line temperature measurement for bending of glass
- 11.30 J. Müller¹, M. Oran², T. Okyar³, J. Chmelar¹
¹Glass Service Inc., Vsetin, Czech Republic
²Sisecam Glass Research Centre, Istanbul, Turkey
³Sisecam, Trakya Cam Mersin Plant, Mersin, Turkey
Automatic batch position control by Expert System ES IIITM

- 11.55 A. Matthias¹, N. Raicevic², J. Deubener¹, D. Kip²
¹Institute of Non-Metallic Materials, Clausthal University of Technology, Clausthal-Zellerfeld, Germany,
²Department of Electrical Engineering, Helmut Schmidt University Hamburg, Hamburg, Germany
The use of Swanepoel method for the characterisation of sol-gel derived thin films on glasses
- 12.20 End of session

Session 18**Room 0.11 Press Centre****Glass structure**

Chair: Prof. Dr. Hans-Jürgen Hoffmann, Berlin, Germany
 Dr. Harald Behrens, Hannover, Germany

08.30 T. Seuthe¹, M. Grehn², A. Mermillod-Blondin³,
 A. Rosenfeld³, H.-J. Eichler², J. Bonse⁴, M. Eberstein¹
¹Fraunhofer Institut für Keramische Technologien und
 Systeme IKTS, Dresden, Germany
²Technische Universität, Berlin, Germany
³Max-Born-Institut, Berlin, Germany
⁴Bundesanstalt für Materialforschung und -prüfung
 (BAM), Berlin, Germany

**Effects of single-pulse femtosecond laser
 irradiation on the structure of silicate glasses**

08.55 N. Karpukhina¹, R.V. Law², R.G. Hill¹
¹Dental Physical Sciences, Institute of Dentistry, Queen
 Mary University of London, London, United Kingdom
²Department of Chemistry, Imperial College London,
 London, United Kingdom

**A multinuclear MAS NMR study of the short
 range structure of glasses in anorthite-fluorite-
 phosphorus pentoxide system**

09.20 S. Krüger, H. Bornhöft, J. Deubener
 Institute of Non-Metallic Materials, Clausthal University
 of Technology, Clausthal-Zellerfeld, Germany

**Viscosity and glass forming ability in the system
 SiO₂-Na₂O-SO₃**

09.45 L. Ortmann
 Schott Solar Wafer GmbH, Jena, Germany
**Characterisation and formation of crystalline and
 amorphous point defects in fused silica**

10.10 Coffee break

10.40 A. Takada¹, S. Feller², M. Affatigato²
¹Asahi Glass Co. Ltd., Yokohama, Japan
²Physics Department, Coe College, NE Cedar Rapids,
 IA, USA

**Structural modeling of sodium borate by
 computer simulation**

11.05 E. Zelazowska¹, E. Rysiakiewicz-Pasek²,
 M. Borczuch-Laczka³
¹Institute of Ceramics and Building Materials, Division of
 Glass and Building Materials, Krakow, Poland
²Institute of Physics, Wrocław University of Technology,
 Wrocław, Poland

**Organic – inorganic hybrid materials doped with
 (Sm³⁺, Tb³⁺, Lu³⁺) Rare Earth and Lithium ions**

- 11.30 Q. Zheng^{1, 2}, M. Potuzak², J.C. Mauro²,
M.M. Smedskjaer², A.J. Ellison²,
R.E. Youngman², Y. Yue¹
¹Section of Chemistry, Aalborg University,
Aalborg, Denmark
²Science and Technology Division,
Corning Incorporated, Corning, NY, USA
**Structure-property relationships and the mixed
network former effect in borosilicate glasses**
- 11.55 S. Reibstein , S. Krolkowski, L. Wondraczek
Institute of Glass and Ceramics, Department of
Materials Science, University of Erlangen-Nürnberg,
Erlangen, Germany
Pressure effects on glass heterogeneity
- 12.20 End of session

Session 19**Room 0.4 Brussels****TC 14****Gases in glass & fining**

Chair: Dr. Detlef Köpsel, Mainz, Germany
Jaroslav Klouzek, Prague, Czech Republic

- 13.30 D. Koepsel¹, J. Buckett², M.-H. Chopinet³,
M. Gaber⁴, J. Klouzek⁵, S. Maurina⁶, L. Nemeč⁵,
M. Oran⁷, N. Yoshida⁸
¹Schott AG, Research and Technology Development,
Mainz, Germany
²NSG Pilkington, Lathom, United Kingdom
³St.Gobain Recherche, Aubervilliers, France
⁴Bundesanstalt für Materialforschung und -prüfung
(BAM), Berlin, Germany
⁵Institute of Chemical Technology, Prague, Czech Republic
⁶Stazione Sperimentale del Vetro, Venice-Murano, Italy
⁷Sisecam, Glass Research Centre, Istanbul, Turkey
⁸Nippon Electric Glass Co. Ltd., Otsu, Shiga, Japan

Gases in glass (melts): Activities of ICG-TC14 in last years

- 14.20 K. Oda,
AGC Glass Company Sibu, Tokyo, Japan
Upspring conditions of fining glass melts in a glass tank furnace
- 14.45 D. Koepsel
Schott AG, Research and Technology Development,
Mainz, Germany
Modeling of fining and refining of glass melts with focus on methods influencing the pressure within the molten glass
- 15.10 Coffee break
- 15.40 O.R. Hofmann
Fachhochschule Jena, Fachbereich GW / Physik,
Jena, Germany
Fining a viscous fluid by electromagnetic force
- 16.05 N. Yoshida, A. Takagi, M. Kawaguchi, T. Futagami
Nippon Electric Glass Co., Ltd., Otsu, Shiga, Japan
The fining mechanism of chlorine in borosilicate glass
- 16.30 M.J. van Kersbergen, M. Rongen, T. Sanders, A.J. Faber
CelSian Glass & Solar B.V., Eindhoven, The Netherlands
Mass spectrometry for evolved gas analysis of glasses
- 16.55 M. Lepke¹, P. Fielitz¹, G. Borchardt¹, G.H. Frischat²
¹Technische Universität Clausthal, Institut für Metallurgie,
Clausthal-Zellerfeld, Germany
²Technische Universität Clausthal, Institut für Nicht-
metallische Werkstoffe, Clausthal-Zellerfeld, Germany
Oxygen, aluminum and silicon self-diffusion in aluminosilicate glasses
- 17.20 End of session

Session 20

Room 0.5 Paris

TC 13**Environment & combustion**

Chair: Guy van Marcke, Brussels, Belgium
Dr. Anne Giese, Essen, Germany

- 13.30 S. Slade
NSG Pilkington, Lathom, United Kingdom
An introduction to the work of TC13, with reference to practical studies and recent environmental legislation
- 13.55 C. Heymann,
glass global consulting GmbH, Düsseldorf, Germany
3 years of experience with NO_x minimisation by stoichiometric manipulation of end-port furnaces
- 14.20 A. Monteforte, D. Dacko, P. Piccolo, F. Zatti
Area Impianti SpA, Padova, Italy
Flexible NO_x reduction methods in flue gas from glass furnaces
- 14.45 H. Kobayashi¹, W. Sarmiento-Darkin¹, R. Beerkens²,
M. van Kersbergen²,
¹Praxair Inc., Danbury, CT, USA
²CelSian Glass & Solar B.V., Eindhoven, The Netherlands
Reduction of alkali vapor volatilization and particulates emissions from oxy-fuel fired glass melting furnaces by furnace design improvements
- 15.10 Coffee break
- 15.40 J. Leicher, A. Giese
Gaswärme-Institut e.V. Essen, Essen, Germany
Simulation of oxy-fuel combustion in glass melting furnaces
- 16.05 B. Fleischmann
Research Association of the German Glass Industry (HVG), Offenbach, Germany
Spectrometric measurements of flames in the combustion chamber of glass furnaces
- 16.30 Y. Joumani, R. Tsiava, B. Leroux, L. Jarry,
Air Liquide, Versailles, France
The flame shape mastered with ALGLASS FC VM technology
- 16.55 P. Vojtech
Glass Service Inc., Vsetin, Czech Republic
Practical application results of new gas burner in float and container glass
- 17.20 End of session

Session 21**Room 0.8 Rome****Special glasses**

- Chair: Dr. Volker Rupertus, Mainz, Germany
Dr. Roland Langfeld, Mainz, Germany
- 13.30 E. Molieres¹, F. Angeli¹, P. Jollivet¹, D. de Ligny²,
G. Panczer², A. Soleilhavoup³, T. Charpentier³,
O. Majérus⁴, D. Caurant⁴, P. Barboux⁴
¹CEA, DEN, LCLT, Bagnols-sur-Cèze, France
²LPCML, Villeurbanne, France
³CEA, DSM, LSDRM, Gif-sur-Yvette, France
⁴LCMCP-ENSCP, Chimie Paristech-CNRS, Paris, France
Structural investigation of lanthanum enriched borosilicate glasses and their alteration layers
- 13.55 O. Prokhorenko
Laboratory of Glass Properties, LLC,
St.-Petersburg, Russia
Finding optimal glass formulas
- 14.20 A. Barascu¹, K. Klingner², D. Enke¹, T. Rainer³,
F. Syrowatka⁴, H. Roggendorf⁵
¹Universität Leipzig, Institut für Technische Chemie,
Leipzig, Germany
²GNF Gesellschaft zur Förderung der naturwissenschaftlich-technischen Forschung in Berlin-Adlershof e. V.,
Berlin, Germany
³Boraident GmbH, Halle, Germany
⁴Interdisciplinary Scientific Centre of Materials Research,
Martin-Luther University Halle-Wittenberg,
Halle, Germany
⁵Institute of Physics, Martin-Luther University
Halle-Wittenberg, Halle, Germany
Oriented pore systems by deformation of phase separating sodium borosilicate glasses
- 14.45 E. Régnier¹, O. Delattre¹, J. Renard¹, R. Torrecillas¹,
S. Poissonnet², R. Podor³, J. Ravaux³, S. Schuller¹
¹CEAEA, DEN, DTCD, SECM, LDMC,
Bagnols-sur-Cèze, France
²CEAEA, DEN, DMN, SRMP, Gif-sur-Yvette, France
³ICSM Marcoule, Bagnols-sur-Cèze, France
Crystallization study in model HLW nuclear glass
- 15.10 Coffee break
- 15.40 A. Herrmann, A. Gawronski, C. Rüssel
Otto-Schott-Institute, Jena University, Jena, Germany
Rare earth doped alumo-silicate-glasses as potential high power laser materials
- 16.05 A. Saberi, Z. Negahdari, T. Gerdes, M. Willert-Porada
Chair of Materials Processing, University of Bayreuth,
Bayreuth, Germany
Effect of crucible materials and microwave re-heating on optical properties of Gold Ruby BaO-glasses

- 16.30 G. Tricot, P. Rajbhandari
UCCS-CS (Unité de Catalyse et de Chimie du Solide),
USTL-ENSCL, Université de Lille 1, Villeneuve d'Ascq,
France
**Impact of doping on the thermal stability of
low-Tg phosphate glasses**
- 16.55 A. Heft, B. Grünler, T. Heinze
Innovent e.V., Department of Surface Engineering,
Jena, Germany
**Novel laminated glasses with photochromic
functionalized polysaccharides**
- 17.20 End of session

Session 22

Room 0.2/0.3 Berlin/Copenhagen

Crystallization

- Chair: Prof. Dr. Christian Rüssel, Jena, Germany
Dr. Ralf Müller, Berlin, Germany
- 13.30 M. Dubiel, M. Stiebing, J. Haug
Institute of Physics, Martin Luther University of
Halle-Wittenberg, Halle, Germany
**Nucleation and growth of Ag-Au nanoparticles
by ion exchange processes**
- 13.55 A. Saitoh, S. Anan, H. Takebe
Graduate School of Science and Engineering, Ehime
University, Matsuyama, Ehime, Japan
**Thermal properties and crystallization behavior
in ZnO-SnO-P₂O₅ glasses**
- 14.20 W. Wisniewski, C.A. Baptista, C. Rüssel
Otto-Schott-Institute, Jena University, Jena, Germany
**Orientation of surface crystallized cordierite
studied by Electron Backscatter Diffraction (EBSD)**
- 14.45 P. Quiroz, B. Halbedel
Fakultät Maschinenbau, Institut für Werkstofftechnik,
Fachgebiet Anorganisch-Nichtmetallische
Werkstoffe, Technische Universität Ilmenau, Ilmenau,
Germany
**Kinetic study of crystallization titanium substituted
barium hexaferrite in a glassy matrix of the system
BaO-Fe₂O₃-TiO₂-B₂O₃**
- 15.10 Coffee break
- 15.40 C. Bocker, M. Michaelis, C. Rüssel
Otto-Schott-Institute, Jena University, Jena, Germany
**The crystallization of barium zinc silicate in glass-
ceramics studied in-situ by electron microscopy**
- 16.05 A. de Pablos-Martín, F. Muñoz, A. Duran, M.J. Pascual
Instituto de Cerámica y Vidrio (ICV-CSIC), Madrid, Spain
**Influence of the mixed alkali effect on the
nano-crystallisation of LaF₃ containing glasses**
- 16.30 A. Saberi, M. Willert-Porada
Chair of Materials Processing, University of Bayreuth,
Bayreuth, Germany
**Predicting feasibility of phase separation and
crystallization path in glasses by means of
computational thermodynamics**
- 16.55 A. R.Allu¹, A. Goel², D.U. Tulyaganov³, M.J. Pascual⁴,
N.M. Washton², J. M.F. Ferreira¹
¹Department of Ceramics and Glass Engineering,
University of Aveiro, Aveiro, Portugal
²Pacific Northwest National Laboratory, Richland, WA, USA
³Turin Polytechnic University in Tashkent, Tashkent,
Uzbekistan
⁴Instituto de Ceramica y Vidrio (CSIC), Madrid, Spain
**Sintering and devitrification properties of glasses
along gehlenite –akermanite join**
- 17.20 End of session

Session 23

Room 0.9 Athens

Mechanical & diverse properties of glass

Chair: Dr. Christian Roos, Bülach, Switzerland
Prof. Dr. Y. Yue, Aalborg, Denmark

- 13.30 D. Möncke^{1, 2}, L. Wondraczek¹, E. I. Kamitsos²,
D. Palles², N. Zacharias³, M. Kaparou^{3, 4},
M. Papageorgiou^{4, 5}, A. Oikonomou⁶
¹Institute of Glass and Ceramics, Department of
Materials Science, University of Erlangen-Nürnberg,
Erlangen, Germany
²Theoretical and Physical Chemistry Institute,
National Hellenic Research Foundation, Athens, Greece
³Laboratory of Archaeometry, Dept. of History,
Archaeology and Cultural Resources Management,
University of Peloponnese, Kalamata, Greece
⁴Institute of Materials Science, N.C.S.R. Demokritos,
Attiki, Greece
⁵Department of History and Archaeology, National and
Kapodistrian University of Athens, Ilissia, Athens
⁶Department of Materials Science and Engineering,
The University of Ioannina, Ioannina, Greece

**Examination of greek archaeological glasses from
the mycenaean to roman period by Infrared and
Raman Spectroscopy**

- 13.55 Y. Yue
Section of Chemistry, Aalborg University,
Aalborg, Denmark
**Response of mechanical properties of glasses to
their chemical, thermal and mechanical histories**
- 14.20 S. Striepe¹, J. Deubener¹, N. Da², L. Wondraczek²,
S. Sirotkin²
¹Institute of Non-Metallic Materials, Clausthal University
of Technology, Clausthal-Zellerfeld, Germany
²Institute of Glass and Ceramics, Department of
Materials Science, University of Erlangen-Nürnberg,
Erlangen, Germany
Mechanical properties of sulfophosphate-glasses
- 14.45 S. Cramm¹, J. Deubener¹, S. Dultz², H. Behrens²
¹Institute of Non-Metallic Materials, Clausthal University
of Technology, Clausthal-Zellerfeld, Germany
²Institute of Mineralogy, Leibniz University of Hannover,
Hannover, Germany
**Surficial alterations and mechanical properties
of commercial soda-lime-silica glasses after long
term corrosion in saline environments**
- 15.10 Coffee break
- 15.40 A. Winterstein¹, K. Tanaka², D. Möncke¹, L. Wondraczek¹
¹Institute of Glass and Ceramics, Department of
Materials Science, University of Erlangen-Nürnberg,
Erlangen, Germany
²Kyoto University, Kyoto, Japan
**Magneto-optical properties of Mn²⁺-containing
glasses**

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- 16.05 T. Wilantewicz¹, J. Varner²
¹Corning Inc., Corning, NY, USA
²Inamori School of Engineering, NYS College of
Ceramics, Alfred University, Alfred, NY, USA
**The relationship between glass composition and
crack initiation**
- 16.30 A.M. Efimov, A.I. Ignatiev, N.V. Nikonorov,
E.S. Postnikov, National Research University of
Information Technologies, Mechanics, and Optics,
St.-Petersburg, Russia
**UV-VIS spectroscopic manifestations of silver in
photo-thermo-refractive glass matrices**
- 16.55 B. Rufflé^{1, 2}, M. Foret^{1, 2}, C. Weigel^{1, 2}, R. Vacher^{1, 2}
¹Université Montpellier ², Laboratoire Charles Coulomb
UMR 5221, Montpellier, France,
²CNRS, Laboratoire Charles Coulomb UMR 5221,
Montpellier, France
**Anomalous temperature-hardening of the elastic
modulus in vitreous silica**
- 17.20 End of session

Session 24

Room 0.11 Press Centre

Biomedical applications

- Chair: Prof. Dr. Wolfram Höland, Schaan, Liechtenstein
Leena Hupa, Turku, Finland
- 13.30 S. Fagerlund, L. Hupa, M. Hupa
Process Chemistry Centre, Abo Akademi University,
Turku, Finland
Initial dissolution rate of sixteen glasses with potential for medical applications
- 13.55 N. Kanwal¹, I. Abrahams¹, N. Karpukhina²
¹School of Biological and Chemical Sciences, Queen Mary University of London, London, United Kingdom
²Dental Physical Sciences, Institute of Dentistry, Queen Mary University of London, London, United Kingdom
Structure and solubility behavior of zinc containing metaphosphate to invert phosphate glasses
- 14.20 J. Massera, S. Fagerlund, L. Hupa, M. Hupa
Process Chemistry Centre, Abo Akademi University,
Turku, Finland
Crystallization behavior of commercial bioactive glasses and its impact on bioactivity
- 14.45 D.S. Brauer¹, T. Kasuga²
¹Unit of Dental Physical Sciences, Queen Mary University of London, London, United Kingdom
²Department of Frontier Materials, Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Japan
Phosphate invert glasses with improved processing
- 15.10 Coffee break
- 15.40 L. Varila¹, T. Lehtonen², J. Tuominen², L. Hupa¹
¹Process Chemistry Centre, Abo Akademi University, Turku, Finland
²Vivoxid Ltd. Turku, Finland
Influence of lactic acid on dissolution of low silica glasses in acidic and buffered solutions
- 16.05 C. Ritzberger, M. Schweiger, V.M. Rheinberger, W. Höland
Ivoclar Vivadent AG, Forschung und Entwicklung, Schaan, Liechtenstein
Glass-ceramics as veneering materials for high strength sintered ceramics

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- 16.30 S. Kapoor², A. Goel^{1,2}, R.R. Rajagopal², M.J. Pascual³,
H.-W. Kim^{4,5}, J.M.F. Ferreira²
¹Pacific Northwest National Laboratory, Richland, WA, USA
²Department of Ceramics and Glass Engineering,
University of Aveiro, Aveiro, Portugal
³Instituto de Cerámica y Vidrio (CSIC), Madrid, Spain
⁴Department of Nanobiomedical Science and WCU
Research Centre, Dankook University, South Korea
⁵Institute of Tissue Regeneration Engineering (ITREN),
Dankook University, Cheonan, South Korea
**Alkali-free bioactive glasses for bone tissue
engineering: A preliminary investigation**
- 16.55 I. Kansal¹, A. Goel², D.U. Tulyaganov^{1,3}, J.M.F. Ferreira¹
¹Department of Ceramics and Glass Engineering,
University of Aveiro, Aveiro, Portugal
²Pacific Northwest National Laboratory,
Richland, WA, USA
³Turin Polytechnic University in Tashkent,
Tashkent, Uzbekistan
**Fluoride containing bioactive glass-ceramics for
bone regeneration**
- 17.20 End of session

Poster Show

The posters will be on display during the entire conference. Authors will be available at their posters at the following dates:

- **Monday, 4 June 2012 starting 18.30**
during special poster show and reception
- **Tuesday, 5 June 2012 from 10.10 to 10.40 and from 15.30 to 16.00**
during coffee breaks of the sessions
- **Wednesday, 6 June 2012 from 10.10 to 10.40**
during coffee break

Institute of Mineral Engineering, Department of Glass and Ceramic Composites, RWTH Aachen University, Aachen, Germany

1. W. Jatmiko, K. Hellmann, S. Thiele, R. Conrardt
Assessment of batch melting behavior – A poster showing how to close the gap between lab and industrial scale

Chair of Material Processing, University of Bayreuth, Bayreuth, Germany

2. A. Saberi, A. Rosin, T. Gerdes, M. Willert-Porada
Granulated glass batch: an approach to improve the efficiency of electric heated glass tanks

BAM Federal Institute for Materials Research and Testing, Berlin, Germany

3. P. Ried, M. Gaber, M. Paul, M. Dittrich, S. Pflaum¹, R. Müller, J. Deubener¹
¹Institute of Non-Metallic Materials, Clausthal University of Technology, Clausthal-Zellerfeld, Germany
Hydrogen permeation in glass measured by EGA

Institute of Non-Metallic Materials, Clausthal University of Technology, Clausthal-Zellerfeld, Germany

4. T. Peter, J. Deubener
Secondary neutral mass spectrometry (SNMS) for depth profiling of glass surfaces in the nm range
5. S. Striepe, M.M. Smedskjaer¹, U. Bauer², H. Behrens², J. Deubener, R.E. Youngman¹, M. Potuzak¹, J.C. Mauro¹, Y. Yue³
¹ Science and Technology Division, Corning Incorporated, Corning, NY, USA
² Institute of Mineralogy, Leibniz University Hannover, Hannover, Germany
³ Section of Chemistry, Aalborg University, Aalborg, Denmark
Hardness and crack behavior of compressed borate glasses

Poster Show

6. S. Pflaum, P. Ried ¹, M. Gaber ¹, R. Müller ¹,
J. Deubener
¹ Bundesanstalt für Materialforschung und -prüfung
(BAM), Berlin, Germany
**Ionic porosity in silicate glasses and hydrogen
permeability at temperatures below glass
transition**

Institute of Glass and Ceramic, Department of Materials Science, University of Erlangen-Nürnberg, Erlangen, Germany

7. L. Wondraczek, M. Batentschuk, B. Seemann,
R. Borchardt, P. Schweizer, S. Schreiner, X. Xia
**Solar spectral conversion in glass-based algae
reactors for efficient biomass production**
8. S. Reibstein, J. Herbst, L. Wondraczek
**Formation of metallic nanoparticles in ionic
sulfophosphate glasses**
9. G. Gao, S. Reibstein, L. Wondraczek
**Tunable dual-mode photoluminescence from
nanocrystalline Eu-doped Li₂ZnSiO₄ silicate
glass ceramic phosphors**
10. S. Sirotkin, L. Wondraczek
**Heavily Mn²⁺ and Fe²⁺ -doped sulfophosphate
glasses**
11. R. Meszaros, D. Orzol, L. Wondraczek,
K. Tiedemann ¹, S. Komarova ¹, J.E. Barralet ¹
Faculty of Dentistry, McGill University, Montreal,
Quebec, Canada
**Ionic sulphophosphate glasses for biomaterial
applications**
12. K.H. Nielsen, M.M. Smedskjaer ¹, Y. Yue ¹,
M. Peng ², L. Wondraczek
¹ Section of Chemistry, Department of Biotech-
nology, Chemistry and Environmental Engineering,
Aalborg University, Aalborg, Denmark
² MOE Lab of Specially Functional Materials and
Institute of Optical Communication Materials,
South China University of Technology, Guangzhou,
PR China
**Optical properties of thermally reduced
bismuth-doped sodium aluminosilicate glasses**
13. B. Stolte, T. Hofmann ¹, L. Wondraczek
¹ Centrosolar Glas GmbH, Fürth, Germany
**Long-term reliability of AR-coated glasses for
building-integrated photovoltaics**

Poster Show

14. D. Möncke, A. Herrmann ¹, D. Ehrh ¹, M. Friedrich ²,
E. I. Kamitsos ³
¹ Otto-Schott-Institut für Glaschemie, Friedrich-Schiller-Universität Jena, Jena, Germany
² Institut für Anorganische und Analytische Chemie, Friedrich-Schiller-Universität Jena, Jena, Germany
³ Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Athens, Greece
Optical basicity, Bonding, ion-ion interactions and cluster formation of Mn²⁺ ions in different glass systems, probed by EPR and fluorescence spectroscopy

Institute of Ceramic, Glass and Construction Materials, TU Bergakademie Freiberg, Freiberg, Germany

15. C. Hartwig ¹, G. Bergmann ²
¹ Schrader Glasformenbau GmbH & Co. KG, Porta Westfalica, Germany
² Research Association of the German Glass Industry (HVG), Offenbach, Germany
Application of an alternative forming material and reduction of swabbing in the container glass industry; HVG/IGF/AiF-Nr. 16158 BG

Institute of Physics, Martin-Luther-University Halle-Wittenberg, Halle, Germany

16. T. Pfeiffer, H. Roggendorf
Mineralogical and chemical characterization of some slag glasses
17. M. Dathe, T. Pfeiffer, H. Roggendorf
In-situ surface characterization by optical microscopy during corrosion tests of sodium silicate glasses

Ilmenau University of Technology, Faculty of Mechanical Engineering, Department of Inorganic-Nonmetallic Materials, Ilmenau, Germany

18. M. Leidel, B. Halbedel
Optical evaluation of the effect of stirring methods to the homogeneity as a contribution for the improvement of glass melting-technologies

Kreisel GmbH & Co. KG, Krauschwitz, Germany

19. J. Zepter, W. Kreisel
Recuperators – still available solution for energy savings – heat exchange from two parallel running, substantially separated systems

Poster Show

Fakultät Werkstofftechnik, Georg-Simon-Ohm Hochschule Nürnberg, Nürnberg, Germany

20. T. Reichel, A. Lenhart, A. Hoppe ¹, A.R. Boccaccini ¹
¹ Lehrstuhl für Biomaterialien, Universität Erlangen-Nürnberg, Erlangen, Germany
Development and characterization of novel bio-active glasses based on the 13-93 glass system

Nippon Electric Glass Co., Ltd., Otsu, Shiga, Japan

21. S. Nakane, S. Ogawa, K. Kawamoto, S. Nishida, K. Choju, H. Yamazaki
Study on Fe ion coloration in lithium aluminosilicate glass ceramics

School of Engineering – Glass Group, Växjö University, Växjö, Sweden

22. S. Ali, J. Grins ¹, B. Jonson
¹ Department of Materials and Environmental Chemistry, Stockholm University, Stockholm, Sweden
Raman spectra of Ca-Si-O-N glasses

Glass Service Inc., Vsetin, Czech Republic

23. M. Eisenga
Glass Service Inc., Vsetin, Czech Republic
Cost minimization by model based control

Institute of Physics, Wrocław University of Technology Wybrzeże, Wrocław, Poland

24. E. Rysiakiewicz-Pasek, A. Ciżman, A. Sieradzki, T. V. Antropova ¹, R. Poprawski
¹ Grebenshchikov Institute of Silicate Chemistry, Russian Academy of Sciences, St.-Petersburg, Russia
Phase instability induced by size effect in KDP-porous glass nanocomposites
25. E. Rysiakiewicz-Pasek, E. Koroleva ^{1,2}, A. Naberezhnov ^{1,2}, A. Sysoeva ¹, M. Seregin ¹, M. Tovar ³
¹ Ioffe Phys.-Tech. Institute RAS, St.-Petersburg, Russia
² St.-Petersburg State Polytechnical University, St.-Petersburg, Russia
³ Helmholtz Zentrum Berlin, Berlin, Germany
Dielectric properties and crystal structure of nanostructured potassium nitrate

Exhibition of suppliers at 11th ESG Conference

4 – 6 June 2012 in Maastricht (NL)

MECC (Forum), Foyer Trajectum

The following companies will be represented:

- Air Products PLC, Walton on Thames (UK)
www.airproducts.co.uk/glas
- CelSian Glas & Solar b.v., 5612 AP Eindhoven (NL)
www.celsian.nl
- FlammaTec, Ltd., 75501 Vsetín (CZ)
www.flammatec.com
- Glass Service, Inc., 75501 Vsetín (CZ)
www.gsl.cz
- Heye International GmbH, 31683 Obernkirchen (DE)
www.hey-international.com
- ilis gmbh, 91052 Erlangen (DE)
www.ilis.de
- LumaSense Technologies GmbH, 60326 Frankfurt (DE)
www.lumasenseinc.com
- Praxair Euroholding S.L., Madrid (ES)
www.praxair.com

(date: 23.01.2012)

General Information

Registration of participants

For participation in the 11th ESG Conference and the DGG Meeting 2012 please complete and send in the attached **registration form** or register **online at www.hvg-dgg.de**.

Each registration form is to be used for only one participant (incl. 1 accompanying person).

The registration is to be sent to:

Deutsche Glastechnische Gesellschaft e.V.
Siemensstraße 45
63071 Offenbach
GERMANY

by 4 May 2012 at the latest.

Please fill out the form completely and well readably (print or type) as it will serve, among other things, as document for the compilation of the list of participants.

Registration fees

Registration card (**early bird registration by 31 March 2012!**)

	by 31.3.12	from 1.4.12
DGG members	€ 580,-	€ 635,-
Non-members	€ 760,-	€ 850,-
Persons affiliated to universities	€ 485,-	€ 535,-
Students (oral presentation or poster)	€ 120,-	€ 130,-
Students	€ 180,-	€ 195,-
Retirees	€ 330,-	€ 370,-
Accompanying persons (members of family)	€ 200,-	€ 235,-
Reception	free of charge	
Banquet	free of charge	
Plant trips	€ 29,-	

Participation in any meeting event is **not possible without registration card**.

The registration fee **includes 19% Dutch VAT**. This amount is normally recoverable by the tax refund procedure.

The fees for the registration cards are to be paid **free of bank commission** to:

Postbank Account 556 06-602 (Postbank Frankfurt/M., Bank Sorting Code 500 100 60), IBAN DE05 5001 0060 0055 6066 02, BIC (Swift Code) PBNKDEFF, Code "ESG 2012 Maastricht". Please include participant's name and invoice number on all money transfers.

Only Visacard or American Express is accepted for payment with credit card. Please note: **Credit card payment** involves an **additional fee of 5 %**. Participants from abroad may pay their fees also at the Conference office.

Cancellation

Cancellations have to be notified in writing to DGG office or at wiese@hvg-dgg.de.

We kindly ask your understanding that in the event of a cancellation of registration after 18 May 2012, 30 % of the respective registration fees will be charged. Fees for plant trips cannot be remitted.

Exhibition of Suppliers

Within the framework of the Meeting suppliers will have the opportunity to display their products and services to the meeting participants. For further information on the exhibition terms, please contact:

Anzeigenverwaltung und Firmenausstellungen der DGG
Carmen Morbitzer
Siemensstraße 45
63071 Offenbach
Tel.: +49 69 975861-26; Fax: +49 69 975861-99
E-Mail: morbitzer@hvg-dgg.de

Conference language

The conference language is English.

Conference venue

MECC (Forum) Maastricht
Forum 100
6229 GV Maastricht NL
The Netherlands
T: +31 43 3838-383; F: +31 43 3838-300
E-Mail: info@mecc.nl
www.mecc.nl

Hotel accommodation

The nearest hotels to MECC are the NH Hotel and the Apart Hotel Randwyck.

The room reservations at Maastricht hotels will be handled by the MECC Maastricht Booking Service. For bookings please use **only** the enclosed reservation form or the online reservation system: <https://www.rai-hotelservice.com/compass/webdirect.cfm?code=esg2012>. (Reservations by **2 April 2012** at the latest).

Inquiries are to be sent to:

MECC Maastricht
Maastricht Booking Service
P.O.Box 1630
6201 BP Maastricht
The Netherlands
T: +31 43 3838-359; F: +31 43 3838-309
E-Mail: mbs@mecc.nl
www.maastrichtbookingservice.nl

Conference office

The conference office is located in the Foyer "Trajectum" of MECC. Opening hours are:

Sunday,	3 June 2012	16.00 to 19.30;
Monday,	4 June 2012	8.00 to 20.00;
Tuesday,	5 June 2012	8.00 to 18.00;
Wednesday,	6 June 2012	8.00 to 16.00.

Conference Office phone: +31 43 3838-535;

Fax: +31 43 3838-536

Cell phones

We kindly ask you to switch off your cell phones in the session rooms.

Lunch break

At lunch hour on Monday, Tuesday and Wednesday a light meal will be provided at the Foyers (the meal is included in the meeting fees). For the very short break at Monday you will get a packed lunch.

Car Parking

The eight parking lots around MECC Maastricht provide space for more than 2000 cars. When passing through the barrier arms at the entrances to the parking garage or parking lots, you will not receive a card. In order to leave the parking facilities, you will need to buy an exit ticket from the parking ticket dispenser in the MECC Maastricht entrance hall.

Confirmation of participation, Conference documents

Participants will receive a confirmation if their registration is submitted to the Deutsche Glastechnische Gesellschaft by 4 May 2012. Conference documents will not be sent out; the participants are requested to collect them at the Conference office. An abstracts booklet of the papers and posters is included in the participation fee. It may be collected for a voucher (see Conference documents) at the Conference office.

List of participants

The list of participants will be available (free of charge) at the Conference office and includes all participants having registered by 4 May 2012.

Meeting gift

It may be collected for a voucher (see Conference documents) at the Conference office.

Leisure

Maastricht and its surrounds have a great deal of cultural attractions on offer, such as museums, churches, city walks, concerts and theatres. Maastricht is also known for its delightful shops, chic boutiques, excellent restaurants and lively atmosphere. The compact nature of the city and MECC Maastricht's favourable location mean the historical city centre is a walking distance away

from the exhibition and conference centre. The location and its surrounds merge to create a unique ambience. Because the city offers a wide range of options, Maastricht has something for everyone. It is therefore worth your while to combine a visit to MECC Maastricht with activities and excursions.

Discover the city of Maastricht through the local tourist office: www.vvv-maastricht.eu/home.html

Journey to MECC Maastricht (NL)

By car

Signing of MECC Maastricht is visible as soon as you reach the outer ring of Maastricht. Follow these signs until you reach the MECC car park. If you are travelling south on the A2/E25 motorway (from Amsterdam-Eindhoven), take exit 55 signed 'Randwyck-MECC'. If you are travelling north on the A2/E25 motorway (from Paris-Liège), take exit 56 signed for 'Gronsveld-MECC'.

By bus

Maastricht's metropolitan bus company runs a regular service between the city centre, Maastricht Central Station and MECC Maastricht. There is a bus about every five minutes (bus stop "Forum").

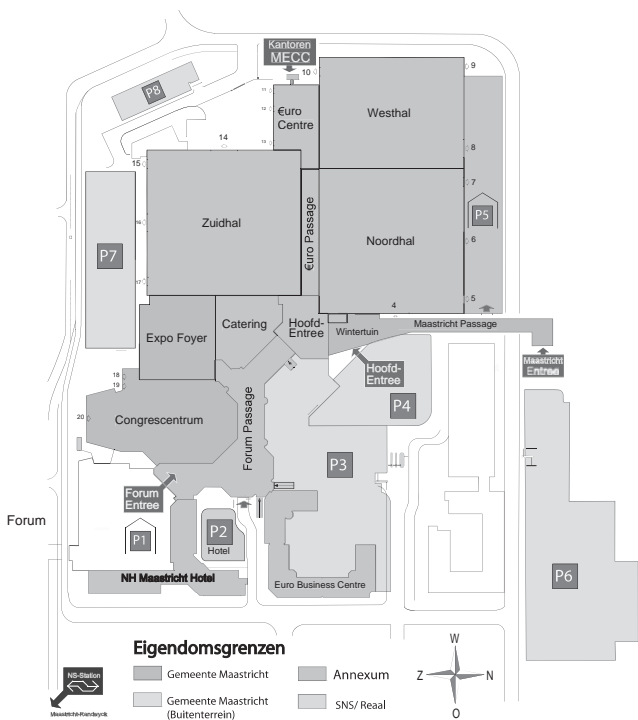
By train

"Maastricht-Randwyck" station is located 250 metres from MECC Maastricht and is part of the national and international railway network. There are frequent trains to Maastricht Central Station, which is also linked to the national and international railway network.

By plane

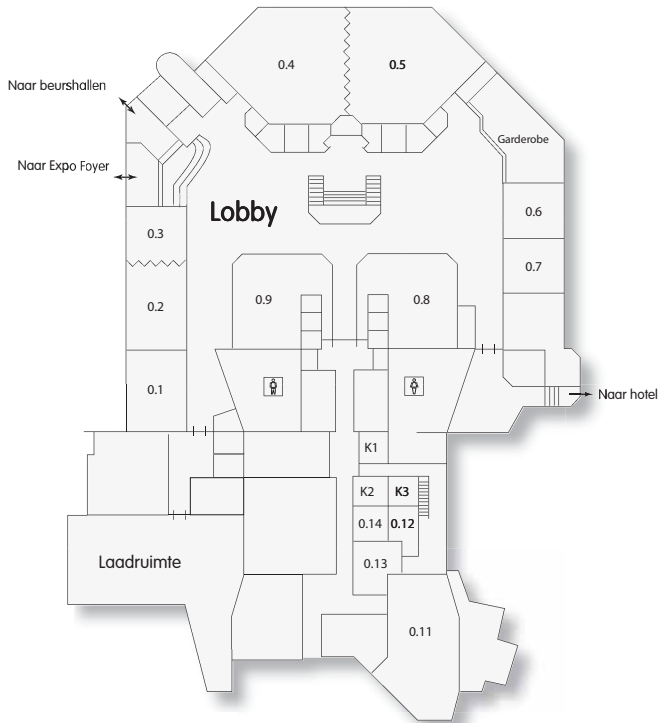
Maastricht-Aachen Airport is located 10 kilometres from MECC Maastricht and only 15 minutes away by car, taxi or bus.

MECC MAASTRICHT



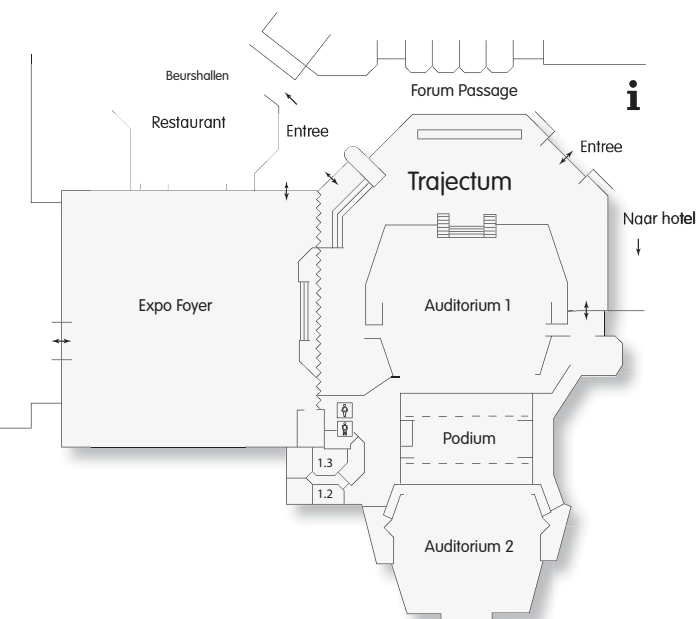
Plattegrond MECC Maastricht

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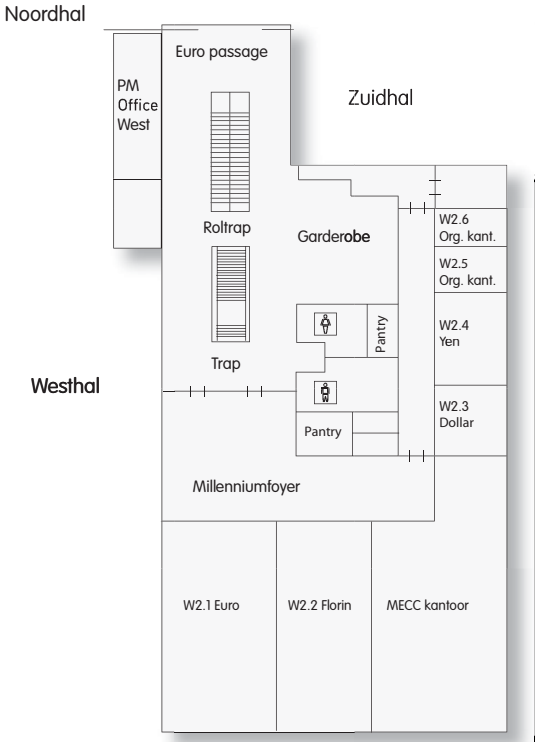
Plattegrond MECC Maastricht

1-niveau



Plattegrond MECC Maastricht

€uro Centre



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Fax: +49 69 975861-99
E-Mail: dgg@hvg-dgg.de
www.hvg-dgg.de
Konferenzsekretariat / Conference Secretariat
Tel.: +49 69 975861-29

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