
GS GROUP & MASSO

Glass Defects, Refractory & Technology Training

4 – 8 September 2017 | Lyon

Glass Service (GS)
FlammaTec (FT)
F.I.C. UK (FIC)
GEM Projects (GEM)
Vidrio Engineering (VE)
Comercial Quimica Masso (MASSO)

A. AGENDA 4 DAYS TRAINING

1. GLASS MELTING TECHNOLOGY [MONDAY 4TH SEPTEMBER]

GEM, GS

- Introduction: What is glass? A brief history of glass (*Geert Jacobs – GEM*, in French if preferred)
- Structure of glass and glass chemistry
- Physical properties of glass and glass melts (viscosity, density, colour, ...)
- Glass raw materials and batch calculation
- Glass recycling
- Glass furnaces; types, design and functioning
- Melting, fining, homogenisation and conditioning processes
- Furnace control and operation

- Heat Balance and Benchmarking (*Hans Mahrenholtz - GS*)

Questions/ Answers

2. GLASS DEFECTS AND THE POSSIBLE SOURCES [TUESDAY 5TH SEPTEMBER]

GS, MASSO

- Bubble analysis and possible sources (*Filip Janos - GS*)
 - How are bubbles analysed
 - Which different sources can create bubbles and how they appear in the final product
- Solid defect analysis and possible sources (*Martina Jezikova - GS*)
 - How are solid defects analysed
 - Which different sources can create solid defects and how they appear in the final product
- What is the difference between corrosion and exudation of fused-cast AZS (*Jerome Canaguier - MASSO*)

Questions/ Answers

3. REFRACTORY DEFECTS, QUALITY CONTROL AND NEW POSSIBILITIES

[WEDNESDAY 6TH SEPTEMBER & THURSDAY 7TH SEPTEMBER]

MASSO, FT

- How to reduce glass defects generated by fused-cast AZS (*Jérôme Canaguier, MASSO*)
- Latest improvements on feeder refractory expendables (*Mathieu Girard, MASSO*)
- Quality control and inspection of refractories applied to sintered products, AZS, feeder channels and chromium throat (*Mathieu Girard, MASSO*)
- Combustion optimization (*Petr Vojtech - FT*)

Questions/ Answers

4. FURNACE OPTIMIZATION AND CONTAINER GLASS FORMING

[FRIDAY 8TH SEPTEMBER]

FIC, GS, VE

- Electric Boosting Optimization (*Stuart Hakes, FIC*)
- Furnace Design Optimization (*Erik Muijsenberg, GS*)
- Furnace Control Optimization (*Erik Muijsenberg, GS*)
- The numerical modeling and the IS Forming platform (*Javier Jimenez, VE/GS*)
 - Introduction to modeling, story and overview. 15´
 - Delivery equipment and gob loading analysis. 20´
 - Mold equipment cooling and Heat transfer plus CFD analysis. 40´
 - Parison definition and glass viscoelastic calculation. 40´
 - Mold halves arcuate seams set up and Structural analysis. 20´
 - Glass container loads and Stress analysis. 40´

Questions/ Answers

B. TIMING & LOCATION

The training will be held 4-8 September 2017 at Masso office in Lyon, France.

Planned Timing each day

08:45 – 09:10	Morning welcome with coffee and sweet food
09:15 – 12:00	Training with 10-minute break at about 10:45
12:00 – 13:30	Lunch
13:30 – 13:40	Coffee in meeting room
13:45 – 17:15	Training with 15-minute break at about 15:20
17:15 – 18:00	Training staff available for additional question
18:00 – 19:15	Free time
19:15	Dinner time (time to socialize and ask questions to trainers)

C. PRICING

1 training day 650 EUR
4 training days 2.500 EUR

Price includes training, digital copy of presented materials and slides, coffee and refreshment during the breaks, 4 lunches and 4 times dinner (if complete training is selected).

100 % payment with registration. If cancelled till 1.8.2017, 80 % refund will be made.

D. LANGUAGE

Training will be given, depending on the audience, in English and French language.

E. BIO OF THE TRAINERS

Jerome Canaguier (Masso)

Jerome Canaguier graduated from Ceramic Engineer school of Limoges in 1995. From 1998, he founded and developed a refractory solutions department for glass industry at Comercial Quimica Masso, a family owned Spanish company, employing today 320+ persons.

He has gained experience in the quality control of refractory, especially fused-cast AZS, after more than 100 major inspections. In 2008, he has built a team dedicated to innovate from the elaboration of refractory recipes to the follow-up of running furnaces. In 2014 he has started the training of some glass factories focusing on technological, economical and human aspects behind the choice of a fused-cast materials supplier, in a fast-changing environment. In the last 5 years, his team (10+ members) has brought new refractory solutions to the glass industry (float, container, cosmetic, lighting...) throughout the 5 continents.

In 2016 he has presented his first lecture at the Czech Glass Society conference about the electric melting, whose title was: "How to reduce the risk of defects generated by fused-cast AZS?"

Mathieu Girard (Masso)

Mathieu Girard graduated from Ceramic Engineer School of Limoges in 2008. He started the same year in Masso as Manager for Sintered Refractories. He is in charge of Quality, Innovation and Sales for the sintered range of products. In the past 8 years, he supervised more than 30 major refractory installations in different industries such as Glass, Foundry, Cement and Lime all over the world.

He is also in charge of 180+ feeders to follow the Masso brand dedicated to Expendables, in 4 continents.

Martina Jezikova (GS)

Martina Jezikova is currently working as a laboratory engineer in GS. She joined GS laboratory team four years ago after graduating from University of Pardubice, Faculty of Chemical Engineering in 2010 and working as a specialist in the printing industry for two years. She focuses mainly on solid glass defects analyses.

Filip Janos (GS)

Filip Janos was born in Czech Republic on May 30, 1979. He graduated from Faculty of Chemistry at Brno University of Technology, Czech Republic in June 2005. After completion of his master's degree in Material chemistry, he joined GS. Currently, he is a laboratory engineer responsible for the bubble glass defect analysis, glass properties measurement, refractory testing and high temperature observation testing of the glass batches.

Stuart Hakes (FIC UK)

Production manager ACI New Zealand.
50 years of melting experience
MD at FIC UK.

Petr Vojtech (FlammaTec)

Petr Vojtech graduated from Technical University of Metallurgy of Ostrava in 1985 as combustion engineer. After graduation he worked as technologist and later on as chief of laboratory and research department in GTC glass plant for TV tube production tin Valasske Mezirici. In 1991 he graduated from University of Chemistry in Prague. From 1993 he worked in Research and Development Department in Calofrig Borovany, later on as Production Manager in the same company, focused on refractory production. From 1996 he worked as application engineer for Messer Griesheim company, responsible for Glass and Ceramic industry worldwide. In 2001 he became Plant Manager in Crystalex, lead crystal high quality tableware production. In 2005 he joined Glass Service a.s. as Area sales Manager, responsible for sales in Central and Eastern Europe, later after FlammaTec company foundation in 2008 he became Managing Director of FlammaTec company.

Geert Jacobs (GEM Projects/GS)

Geert Jacobs graduated as a geologist from the University of Ghent and graduated in informatics/computer science from the University of Brussels. From 1987 till 2001 he worked as a glass technologist at Verlipack and 'La manufacture du Verre' in Belgium. From 2001 till 2004 he worked for the TNO Glass group, involved in glass melting improvement projects and furnace modelling. In 2004, he started his own glass technology consulting business Gem-Projects, advising and assisting glass manufacturers, for more than 12 years now, in the fields of raw materials & glass recycling, glass chemistry & physics, melting furnaces, glass production and glass products quality.

Javier Jiménez (Vidrio Engineering/GS)

Javier Jiménez, graduated from Mechanical Engineering in Escuela Superior de Ingenieros Industriales de Madrid in 1972 and got a Master degree in Manufacturing Management by la Escuela de Organización Industrial de Madrid in 1974.

He bears more than 40 years of professional activity, always in the technical management field covering different scenarios of the glass container manufacturing process. His integration in several multinationals scenarios, first within American and then European Glass makers, allowed him to direct access to those software packages pioneers in simulating the forming process launched in the USA and Europe early during late seventies.

As active member of the R&D team set up by the European multinational group BSN - operating plants in France, Spain and Nederland- in the nineties, he collaborated developing and implementing new numerical calculation tools. These second generation of modeling programs widened significantly the knowledge field of heat transfer to mold equipment, allowing the study of half circles drilled with holes (Vertitherm), but also those molds featuring cooling fins and . This group launched as well one of the first truly viscoelastic simulation with high levels of prediction in glass thickness final distribution, although still restricted to 2D

condition was maintained. Javier has participated along the first decade of this century in different projects in the modeling field of glass container forming that brought significant advances and enhancement to this relatively new and hardly known engineering package.

Hans Mahrenholtz (GS)

Hans Mahrenholtz holds an eng. degree (Dipl.-Ing.) of the TECHNICAL UNIVERSITY of CLAUSTHAL, Germany for Ceramics (including Glass) and Energy Process Engineering.

Hans started his business career working for SORG, Germany, beginning in 1989 and ending 1994 as Assistant to the R&D Manager.

From 1994 to 1999 Hans was running his own business offering glass specific software and project management for glass manufacturing companies.

From 2000 to 2009 Hans was working for LINDE, LINDE GAS DIVISION, Germany, ending as Head of Industry Segment Glass & Fibres, responsible for R&D and New Sales within the glass industry.

From 2010 to 2015 Hans was working as a General Manager for GLASSGLOBAL, mainly responsible for Glass Technology and Consulting.

Since 01 December 2015 Hans is working as a Senior Sales Consultant for GS, Czechia with activities in Sales, Marketing, Product Development and Consulting (including Audits).

Erik Muijsenberg (GS)

Erik Muijsenberg graduated from Mechanical engineering at the University of Eindhoven in 1990. After this he has been working for 8 years at TNO Glass group in Eindhoven involved in furnace modeling and glass melting technology.

In 1998 he switched to Glass Service starting their 1st subsidiary office in Maastricht the Netherlands. After 11 years he moved in 2009 to Glass Service Head Quarters in Czech Republic to become group Vice President.

Besides this, Erik is Chairman of the Technical Committee 21, Modeling of Glass Melts of the International commission on Glass (ICG).

He has been awarded together with his former colleagues in 1997 with the Otto Schott award and has received in 2012 from the German Glass Society the Adolf Dietzel Industry Award for his contribution to the development and acceptance of glass furnace modeling & optimization in the German glass industry. In 2014 the British Glass society decided to make him a Fellow member.

Since 2016 he has become ICG Steering Committee member.

Interested to attend the training? Please contact:

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