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## Welcome to our Glasstec Düsseldorf edition of the Glass Service Newsletter

By Josef Chmelar  
President of Glass Service Group



Dear customers, partners and friends,

Welcome to our Glass Service (GS) newsletter. We want to inform you about GS growth and new products that will be shown at Glasstec 2014 in Düsseldorf, Germany. Our joint stand for Glass Service and FlammaTec can be found in **Hall 15 C10 & C08**. Newly acquired company **F.I.C. (UK) Limited** will continue to operate independently and will be located at **Hall 13 G63**.

Please note in your agenda the dates of **17-18 June 2015**, for our **13th International Seminar on Furnace Design - Operation & Process Simulation**, a very important bi-annual event for GS and our customers. The International Commission on Glass Technical Committee 21 (ICG TC21) meeting on furnace design and operation will also be held during the event. In fact, the entire conference is an initiative supported by TC21.

GS and STG Cottbus joint venture **FlammaTec, spol. s r.o.** opened a subsidiary office **FlammaTec GmbH** in Cottbus, Germany. Further GS has acquired **F.I.C. (UK) Limited**, Penzance UK. We want to profile Glass Service as the company to not only find for you the most optimal glass melting concepts, but also to offer you with hardware that introduces the energy most efficiently and environment-friendly to your glass melt. We can see that continuing high fuel prices are creating an increasing customer demand to improve energy efficiency. As always, GS software solutions can be relied upon to provide these benefits during glass production.

Our Expert Systems II, III and IV have reached an impressive installation base of over 100 installations.

We are looking forward to meeting you in person at Glasstec, or at any other future event, and to have very interesting personal discussions.

Josef Chmelar, CEO

## New key account manager for Russia



By Petr Chmelar

Effective January 2013, GS has appointed **Yury Zozulya** as Key Account Manager for our Russian speaking sales territory. **Miroslav Kovac** remains Area Sales Manager.

Yury is a glass technology engineer with more than 7 years experience in the glass industry. He is a graduate of Belgorod State Technological University (named for V.G. Shukhov), and has extensive float glass experience and expert knowledge of glass compositions, melting, and conditioning processes.

Yury entered the glass industry as an employee of Sisecam (4 years) and came to GS from Guardian Industries (2.5 years). He is married to Rimma and together they live in Moscow, Russia. Yury enjoys snowboarding, volleyball, swimming and badminton.

We wish Yury much success in this new and challenging position.

Presently we have sales & regional offices active in the Czech Republic (Teplice), Slovakia (Kalinovo), the Netherlands (Maastricht), the United States (Stuart, FL), China (Qingdao), Japan (Tokyo), and now in Russia (Moscow).

## GS Engineering delivering cold top electric melter



By Frantisek Masarik

GS Engineering delivers complete small electric melters for any production type. Our main areas of focus include special glasses such as optical & crystal, as well as borosilicate.

We also continue to deliver electric pot furnaces, as well as specialized laboratory furnaces such as our High Temperature Observation furnace to study glass batch melting and our Rapidox (quick redox measurement) furnace.

The photo on the left is of our most recent Continuous Melter, which is especially well-suited for high quality glass.

The majority of our Electric boosting installations is now done by F.I.C. (UK).

# **Expert System ES III™** becomes the standard for automatic furnace and forehearth control for the glass industry



By Robert Bodi

Many glass industry suppliers choose the GS **Expert System ES III™** as the industry standard for advanced model-based expert control systems for melters and forehearths. GS is a leader in this field, with over 15 years of experience with various glass types.

SORG GmbH will act as a reseller of **ES III™** but also develop projects independently of GS.

SORG will place special emphasis on integrating **ES III™** into the line of SORG 340S forehearths. As a tightly embedded option, **ES III™** will make day to day forehearth operations even easier.

Both parties see this as a win/win situation offering substantial benefits for SORG, GS, and their customers. GS anticipates an expansion of its base to other important suppliers for the glass industry.

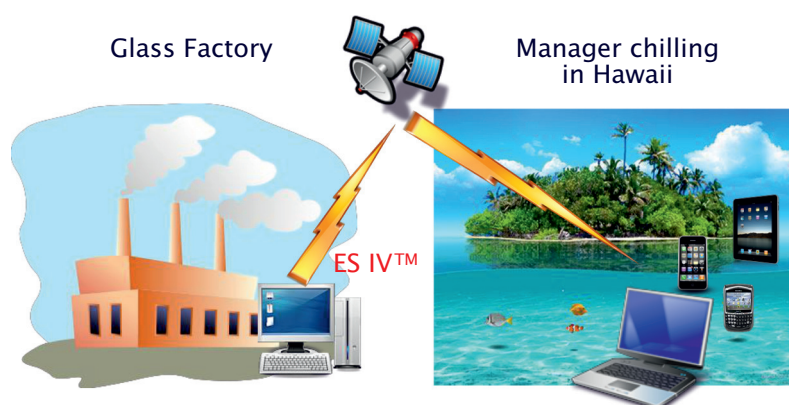
To date GS has installed well over 100 advanced control solutions, including the **Expert System ES III™**, in glass plants worldwide. Our main areas of glass production within the industry are:

Float & Sheet glass  
Solar glass  
Composite Fiber

Insulation Fiber  
Container glass  
Specialty glasses

We continue to work on updating **ES III™** into **ES IV™**, which has been expanded with a line of assistants to help operators maintain furnace control within a much closer range of optimal values. The release of **ES IV™** is expected in 2016.

**Is your best operator always sharp and available? 24 hours per day? 7 days a week? 365 days a year?**



The line of assistants also includes our popular batch visualization assistant. A reliable camera system offers more consistent and reproducible batch position monitoring. Further digitizing of the batch position and feeding it into **ES IV™** allows the operator to make control adjustments to the automatic furnace operation, thereby stabilizing the furnace operation, and making the lives of operators much easier.

# FlammaTec opened a subsidiary office in Germany

By Petr Vojtech



FlammaTec is a joint venture of STG Combustion Control GmbH & Co KG, of Cottbus, Germany; and Glass Service, Inc.

The sales of FlammaTec continue to grow tremendously. After 6 years of operation, the amount of burners and employees has now doubled by opening the FlammaTec GmbH subsidiary office in Cottbus, Germany. Now all former combustion equipment from STG Cottbus has been integrated into the FlammaTec product line.

Further, we hereby announce a new oxy-gas burner (developed in-house) with an excellent performance - thanks to GS modeling optimization.

The **FlammaTec Flex** line of burners has received a great response from many glass producers throughout the world. The advanced remote reproducibility of optimal flame settings of our FlammaTec underport flex burner is especially appreciated by our customers. This results in optimal melting performance and flexible operation. From its start till 2013 FlammaTec supplied more than 1800 burners to the glass industry.

Thermal efficient combustion and lower emissions is our focus for the complete burner line.

FlammaTec now offers the following advanced LoNOx burner types:

- Underport Gas Injector, Flex or Freejet
- Underport Gas/Oil Dual Injector, Flex or Freejet
- Underport Heavy Oil Injector (also can be used for backup solutions)
- Sideport Gas Injector, Flex
- New Oxy/Gas Burner



For more information please contact:  
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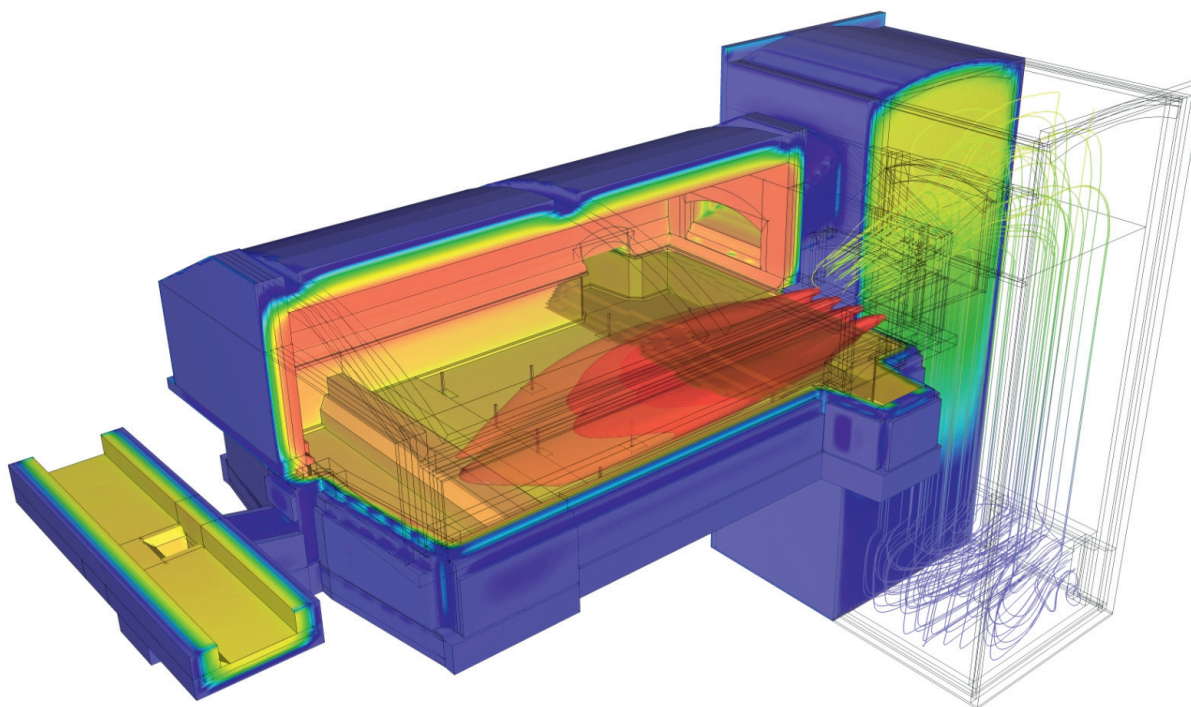
## GFM 5 CAD release

By Erik Muijsenberg

A majority of all glass furnace designs today have been optimized by the GS Glass Furnace Model (GS GFM). More than 35 glass maker and supplier companies are using **GS GFM** software with an approximate total of 200 licenses, actively used by an estimated 100 engineers.

**GS GFM** has become the standard of furnace modeling within the glass community and therefore virtual cooperation among companies is more easily facilitated.

At the start of 2015 we will begin to release the first parts of a new version **GS GFM 5**, which will be a great step forward. The CAD furnace design tool that is required to operate **GFM 5** is also functional for **GFM 4**, and will upgrade our customers to design furnace in a true 3D CAD environment.



Example model of an end fired glass furnace

Temperature field on wall surfaces and isosurfaces of flames are shown.



# Glass Service acquires F.I.C. (UK) Limited

By Erik Muijsenberg



GS has acquired **F.I.C. (UK) Limited**, based in Penzance, UK from its previous owner CNUD EFCO International NV/SA, effective in January of 2014.

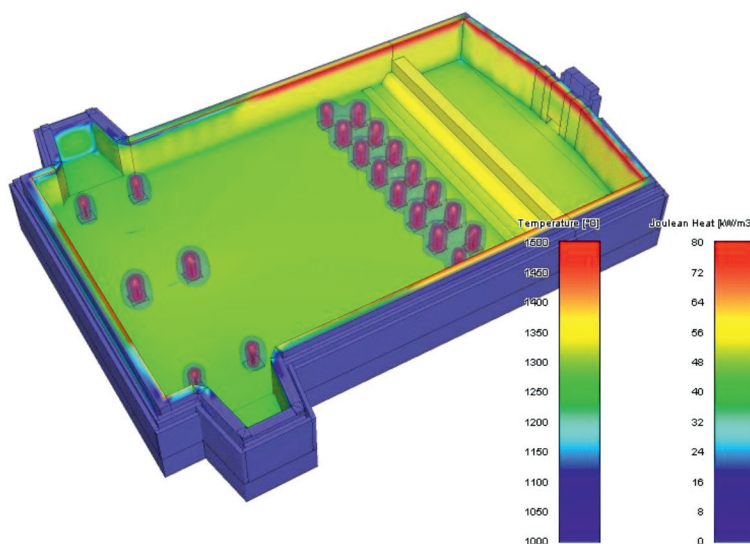
F.I.C. will continue to operate as an independent specialist and supplier of electric glass melting equipment serving the worldwide glass industry from its UK plant.

F.I.C. designs and supplies electrical boosting systems for all glass types and manufacturing processes including TFT, LCD, float, fiber, holloware and borosilicate. Additionally, F.I.C. supplies all-electric furnaces and forehearth, offering advanced glass conditioning options with the Isothermal unit to improve side-to-middle and top-to-bottom temperature gradients.

F.I.C. offers systems to extract heat out of the glass to aid glass conditioning and reduce gas consumption through the use of removable water-cooled tubes. These tubes can be placed anywhere from the throat to the back of the forehearth. They can also be inserted adjacent to severely eroded refractories to delay or even prevent premature replacement of these areas.

Within the range of electrode holders manufactured by F.I.C. is the High 'Q' holder, in which the cooling circuit is replaceable in less than 10 minutes. More than 10,000 of these holders have been supplied since their introduction about 20 years ago. Recently F.I.C. has introduced the Maxi 'Q' holder which is constructed such that no welded portion is located within the refractory, and it has the largest cross-sectional area of waterway when compared to all other holder designs.

This new relationship with GS will bring tremendous benefits to F.I.C.'s customers with the availability of modeling capabilities, as well as the extensive GS glass defect laboratory and testing facilities.



Example of a barrier boosting and hotspot boosting optimised installation in a container glass furnace.

# Summary of Glass Service group product and service range

## Products & Services



FURNACE SIMULATION



ADVANCED FURNACE CONTROL ES III™



LAB SERVICES



ENGINEERING FOR MELTING & FURNACE TECHNOLOGY



FORMING SIMULATION



FURNACE AUDIT



RAW MATERIALS DELIVERIES



## New Developments



BATCH POSITION SYSTEM IDENTIFICATION - BATCH SENSOR SYSTEM



HIGH TEMPERATURE FURNACE CAMERA SYSTEM AND BATCH ANALYSIS



EXTREMELY SMALL BUBBLE ANALYSIS



SHEET GLASS FORMING MODELING



FLAMMATEC OXY FLEX BURNER



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