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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. This edition is dedicated to product news that will be shown at the **Glasstec exhibition** held during 23–26 October 2012 in Düsseldorf, Germany. Our stands for Glass Service and FlammaTec can be found in Hall **15 C04** and **C08**.

In this edition we will reveal to you some breaking news about our new level of advanced model based predictive furnace, forehearth, and annealing control that has evolved from *Expert System ES III™* into *Expert System ES IV™*, again a totally new way of making glass melting production more automatic, stable and efficient with less or no human intervention.

Please note in your agenda also the dates of 25–27 June 2013, for our **12<sup>th</sup> International Seminar on Furnace Design - Operation & Process Simulation**, as well as the **4<sup>th</sup> Glass Forming Simulation Workshop**, a very important biannual event for GS and our customers. The GS Seminar is recognized as the world-leading event for all people who optimize furnace designs with the help of advanced modeling tools. Our event in Velke Karlovice will be followed by the ICG conference in Prague during the first week of July.

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. We are looking forward to meeting you in person at Glasstec, or at any other future event, and to have very interesting personal discussions. I invite you to stop by our Glasstec stand to experience our live 3D furnace animations.

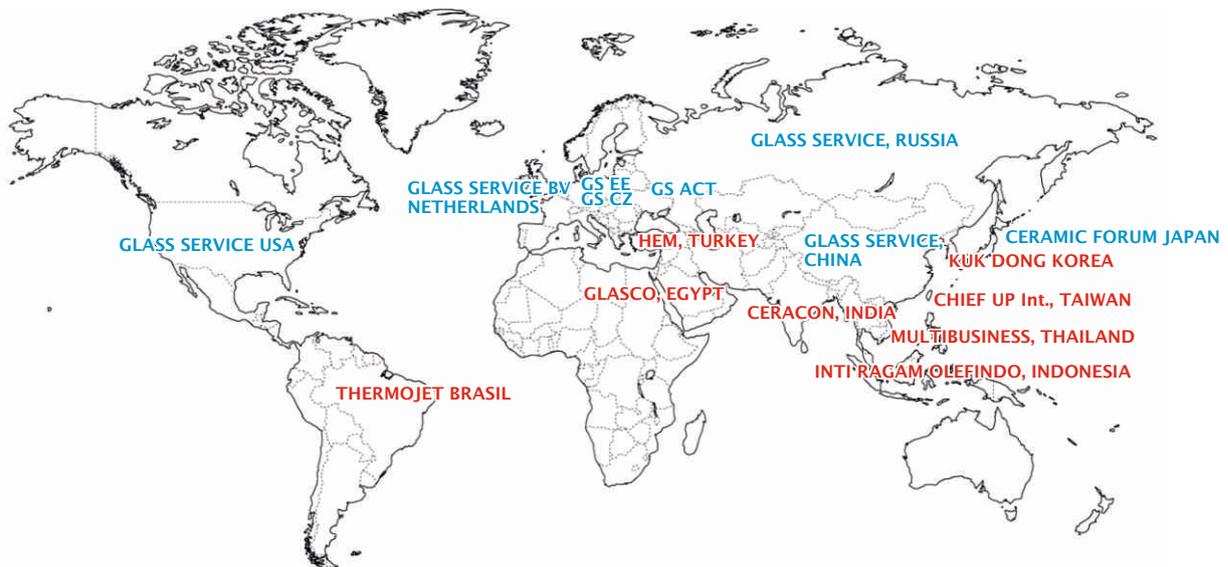
Josef Chmelar

# GS reorganization and expansion of sales network

In January of 2012 **Frantisek Matustik** was appointed as Managing Director of Operations of the Glass Service Headquarters in Vsetin, Czech Republic. Franta had already been working for Glass Service for more than 20 years and started his glass melting career before that at Schott Glass Works. For Glass Service he worked predominantly for the Expert System Department traveling to all corners of the world.

**Josef Konarik**, former Manager of the Financial Department was promoted to Managing Director of Finances. Both Franta and Josef will manage the daily activities within the Vsetin office. Recently they have been quite occupied with improving our services in several departments, such as: laboratory, modeling services, software development, engineering, and sales.

The success of the above promotions is allowing **Petr Chmelar**, Vice President of Glass Service Group, more freedom to focus on managing and expanding the GS sales network. Presently we have sales & regional offices active in the Czech Republic (Teplice), Slovakia (Kalinovo), the Netherlands (Maastricht), the United States (Stuart, FL), China (Qingdao), and Japan (Tokyo). Besides management of our existing offices, Petr will focus on expansion of sales in Central Asia, India, the Middle East, Brazil, and Russia.



## New area sales manager for Asia Pacific



Effective February 2012, Glass Service has appointed **George Roessler** as Area Sales Manager for Asia Pacific.

George is a ceramic engineer with more than thirty years experience in the glass industry. He has extensive float glass experience and expert knowledge of glass compositions, melting, and conditioning processes. He is a winner of the Six Sigma Black Belt Polaris Award. George entered the glass industry as an employee of PPG (9 years) and came to GS from NSG/Pilkington (23 years). George's main sales area will be Central Asia as well as supporting active sales in North and South America.

He is married to Sherry and together they have two boys Scott (31) and Kevin (29), and two grandchildren. George enjoys backpacking, canoeing, downhill skiing, and golf. He lives in Toledo, Ohio, nicknamed the "Glass City" due to the number of glass companies in town.

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

## A pot furnace for Seychelles

By Frantisek Masarik



Glass making and enjoying your holiday can go hand in hand. Last year Glass Service supplied one of its turn-key pot furnaces to the Baie Lazar Primary School on one of the beautiful islands of the Seychelles, located near Madagascar in the Indian Ocean.

When Lucy Hickerson-Luc, originally from the USA, arrived at the school in 1986 to teach the Arts, she discovered very few facilities for extracurricular activities for the children. With many hotels importing drinking bottles for tourist sales, there was a huge amount of waste cullet available that was not being used. Converting this waste into useful products and/or beautiful art by the young students has been an excellent solution for this island republic.

Ms. Hickerson-Luc was able to raise funds with the help of several organizations to create a new craft workshop called, "Atelye Pour Aprann Nuovo Artizana" (APANA). Here students make paintings and melt glass to make beautiful new products from waste cullet with the help of user-friendly GS Pot Furnace technology.

Ms. Hickerson-Luc, a former actress, inherited this spirit from her mother who was an artist and art teacher and had eight children.

## Glass Service adds assistance support to automatic control in *Expert System ES IV™*



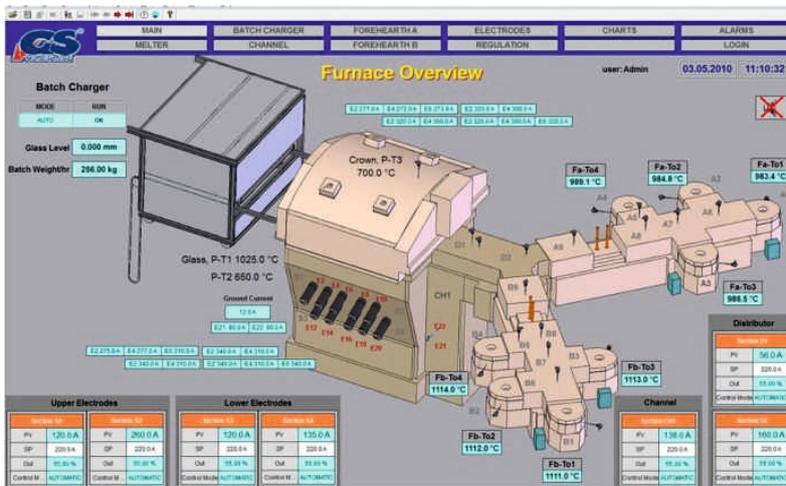
By Robert Bodi

Glass Service has installed more than ninety (90) advanced control solutions, including the *Expert System ES III™*, in glass plants worldwide. Our main areas of glass production within the industry are:

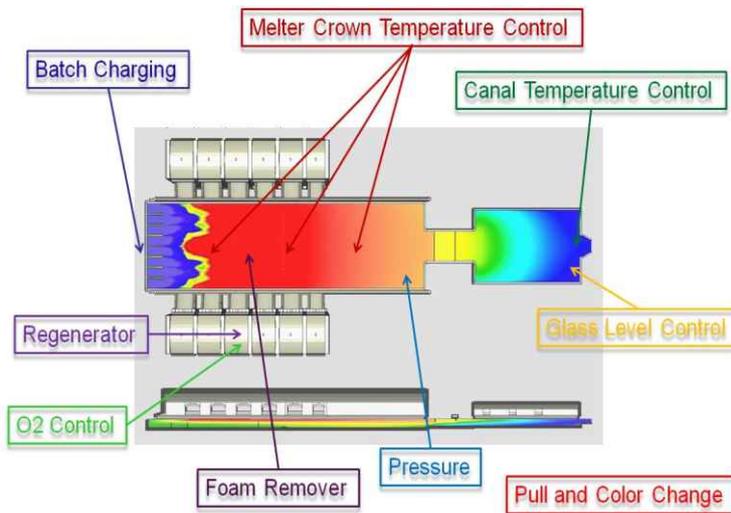
- Float and Sheet Glass
- Solar Glass
- Composite Fiber
- Insulation Fiber
- Container Glass
- Specialty Glasses

The *Expert System ES III™* improved upon *Expert System ES II™* and was first installed about 1995. Thanks to customer feedback we had many new ideas to integrate into *ES III™*, one being batch visualization. In the last decade there have been so many new ideas that GS decided to completely change the concept of how we optimize furnace control, and this newly-developed system – *Expert System ES IV™* – is to be introduced at Glasstec.

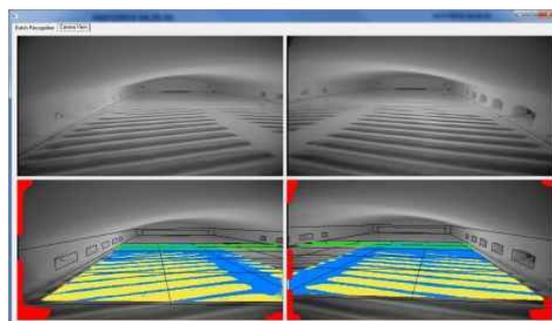
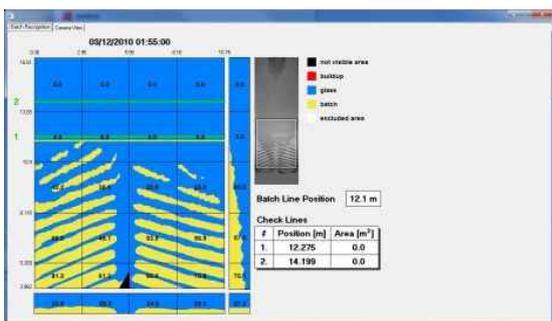
One of the main changes is moving on to a new Graphical User Interface with a more standard and professional look and feel, providing a visual advantage to the furnace operator of the actual status of the furnace operation. Such an example can be seen in the figure below.



Further, the basic model-based predictive control heart of the ES IV™ was expanded with a line of assistants that will help the operators keep the furnace under control and in much closer range of optimal values. Below is a selection of these assistants (typical float furnace):



The line of assistants also includes our popular batch visualization assistant. A reliable camera system can give 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 Flex burners booming

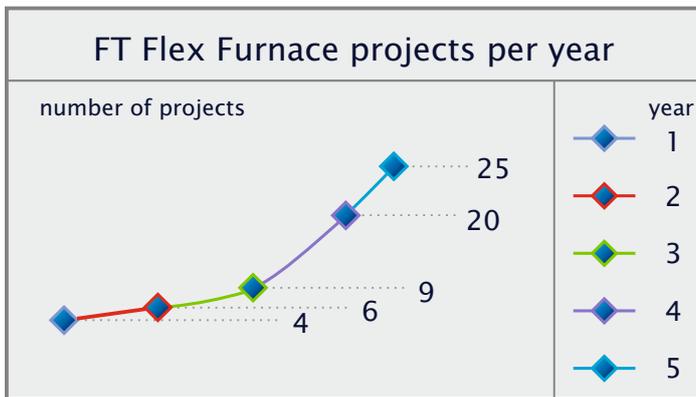
## Advanced combustion technology for glass furnaces

By Petr Vojtech



The sales for GS daughter company FlammaTec continue to grow exponentially. The company will soon celebrate its 5<sup>th</sup> year of existence with an excellent track record. 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 under-port flex burner is especially appreciated by our customers. This results in optimal melting performance while allowing flexible operation. To date, sales in 2012 have already doubled 2011 sales, which itself tripled the sales in 2010. The burner is so successful that even other suppliers to the industry appreciate its innovative approach and try to learn from it.



Sales for last 5 years of FlammaTec Flex burner

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

To date we have achieved an impressive record of references on existing as well as green field projects for float and container glass using FlammaTec Flex burners.

For more information please contact:  
Petr Vojtech (petr.vojtech@flammatec.com)



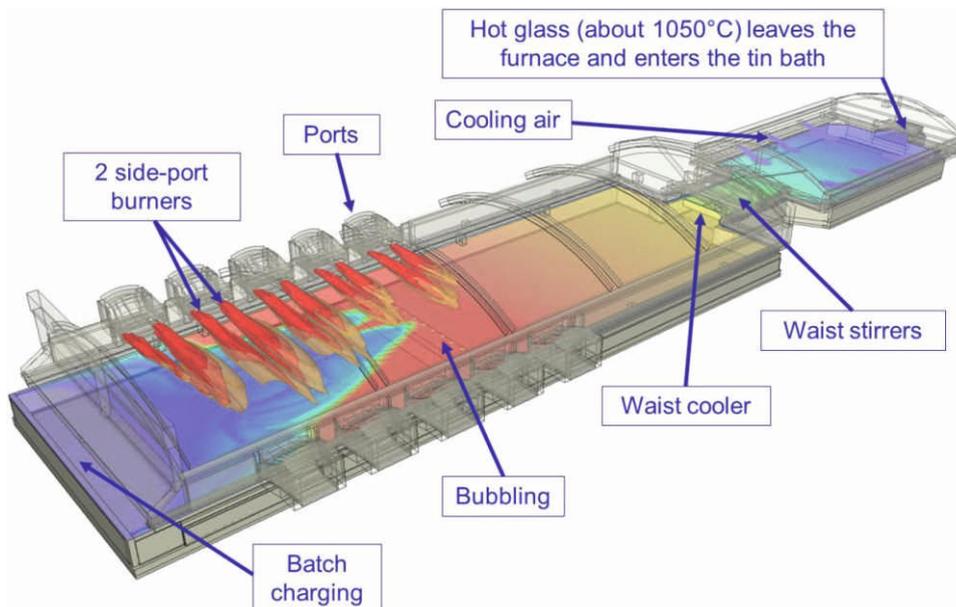
## GS Glass Furnace Model

By Erik Muijsenberg

The GS Glass Furnace Model (GS GFM) is used by the majority of leading glass manufacturers who wish to design an efficient and high quality furnace. Last year GS had the pleasure to add several glass makers as well as suppliers to our list of customers and some existing customers expanded the number of licenses they use due to the high demand of jobs they have to solve. Some of the recent developments added calculation of the Lorentz force which occurs near the glass melting electrodes.

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

After more than six years of steady progress, we are seeing promising functionality of GS GFM 5. Release of this new technology to our customers is expected in 2013.



Example model of a cross-fired regenerative float glass furnace  
- temperature field on glass surface and isosurfaces of flames are shown.

## Glass Service supply of raw materials applied successfully for REACH



By Jiri Uhlir and Tomas Chmelar

Glass Service has been supplying special raw materials to many of our existing customers for over three years. We have recognized that supply of reliable high-quality raw material for a good price has become critical in order to produce optimal quality with profitable conditions. We are therefore able to supply the following raw materials:

Commodities  
Special raw materials  
Rare earths oxides  
Polishing compounds

As a special note concerning our raw materials, we ensure full REACH compliance and can thereby supply these materials throughout the European Union (EU) with guarantee of safe use.

### What is REACH?

REACH stands for the Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals. Enforced since 1 June 2007, REACH is a strict and restrictive health, safety and environmental regulation, which maps and controls the use of chemicals throughout the EU. It provides parameters for safety during all stages of chemical life cycle, including composition, storage and handling.

### REACH registration

Each chemical which poses even a minor risk to the environment and/or human health **must be registered** under REACH. The registration obligation rests on the body responsible for placing the chemical on the EU market (i.e. import/manufacture).

Registration is a robust task: it requires submitting highly detailed information (several thousand pieces) on the chemical to the European Chemicals Agency (ECHA). A single REACH registration often requires several years of work and modern large companies devote entire departments to meeting these requirements.

### Does REACH affect us?

REACH affects virtually every single industrial business in the EU, and there is zero tolerance. Failing to meet the requirements of REACH means **NO market**. (Prohibition to sell and/or use the particular chemical is immediate if regulations are not adhered to.)

### Compliance with REACH

All raw materials supplied by GS, including Barium Carbonate, Zinc Oxide, Diantimony Trioxide, and Lead Silicate, are registered by REACH or awaiting registration prior to a relevant deadline. It is interesting to note that GS is the only company holding a registration for Lead Silicate. All registered chemicals are assigned a **REACH registration number** by ECHA as a token of the registration being successful, which Glass Service provides to all customers as proof of compliance.

It is unfortunate that some companies will inevitably try to bypass REACH or delay its integration into their workflow, as complying with REACH is expensive and difficult. This is not the attitude of Glass Service. Under a zero-risk policy, we have dealt with REACH head on and met **all** of its requirements to assure maximum safety for our customers. In this regard, Glass Service has become a foremost source of premium quality raw materials, with a steady and secure supply stream.

Glass Service, Inc., Rokytnice 60, 75501 Vsetin, Czech Republic

T: +420 571 498 511, F: +420 571 498 599, info@gsi.cz

**Editing board:** Erik Muijsenberg, Jana Chovancova, Jana Schachlova