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glassnews

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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 2018 in Düsseldorf, Germany held from 23 to 26 October. Our joint stand for Glass Service and FlammaTec can be found in **Hall 15 D11 & E8**. Our colleagues from **F.I.C. (UK) Limited** and **F.I.C. Germany** can be found in **Hall 13 G63**.

Please note in your agenda the dates of 22–23 May 2019, for our **15th International Seminar on Furnace Design - Operation & Process Simulation**. This very important bi-annual event is for GS and our customers, and this year will focus on CO_2 reduction. 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.

The GLASS SERVICE group continues to grow this year by opening a subsidiary office of **F.I.C. Germany GmbH** in Weiden, Germany. We continue to profile GLASS SERVICE as the company to find not only the most optimal glass melting concepts, but also the hardware that introduces energy into the glass melt efficiently and in an environmentally-friendly way. We can see that fossil fuel prices are creating an increased customer demand to improve energy efficiency and move towards cleaner electric energy. The introduction of CO_2 trading further motivates this trend. As always, GS software solutions can be relied upon to provide these benefits during glass production.

Our Expert Systems, thanks to interest in Industry 4.0, has reached an impressive installation base of over 200 installations. GS has become the leader in the Glass Industry for high level automatic process control and even expands this technology to the Alumina and Cement Industries.

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

Josef Chmelar, President & CEO

Christoph Jatzwauk strengthens F.I.C. in Germany

By Petr Chmelar

Effective March 2018, F.I.C. (UK) Limited has appointed **Christoph Jatzwauk** as Managing Director of F.I.C. Germany GmbH, focusing on mainland Europe sales.

Mr. Jatzwauk (in photo) has over 25 years of experience in HORN with the design, construction and optimization of all types of glass furnaces and sizes, as well as hands-on experience working for almost two years at BSN Glasspack in Budenheim.

Mr. Stuart Hakes, Chief Executive of F.I.C. (UK) Limited comments, "We believe the addition of Christoph to our team allows us to respond more quickly to customer demand in mainland Europe and around the Globe, especially for our electric boosting systems. This is for both conventional requirements and the realisation that Hybrid Super-boosting is an aid to reducing emissions, as well as a new generation for All-Electric melting. The expertise that Christoph brings will keep us Number One with regard to the development of environmentally-friendly partial and full Electric Melting know-how. We see growth in demand for electric melting by using renewable resources to generate electricity, as one of the most efficient ways to reduce the CO_2 footprint".

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

CO_2 free Glass Melting

By Erik Muijsenberg and Stuart Hakes

When GS acquired F.I.C. (UK) Limited, based in Penzance, UK from its previous owner in January of 2014, we foresaw a bright future for Electric glass melting that would be free of CO_2 emissions. Additionally, issues such as NO_x, SO_x and dust would dissappear like snow melting in the sunshine. This is a reality.

Those with children or love for mankind should be concerned about the large amounts of CO_2 emissions from manufacturing industries. We should not only reduce CO_2 emissions in light of commercial or legislative incentives, but preserve the quality of life on Earth for generations to come. Companies such as Heineken have embraced these ideas and are motivating their suppliers of alumina cans, plastic containers and beautiful glass bottles to begin producing packaging without the „C“ inside, as they say, „DROP THE CARBON.“

The growth of renewable generated electricity is reaching a tremendous 35 % average in Europe. Austria, Albania and Portugal have already reached 70 %, and the Scandinavian countries are at 100 %. This leads to electricity pricing becoming less dependent on rising fossil fuel prices. Electricity generated by large windmills from 4–10 MW can now cost 4 Eurocent/kWh. With the increasing costs of CO_2 emissions (in recent months) have been 22 Euro per ton.

Graph of CO_2 development recently around 22 Euro per ton:

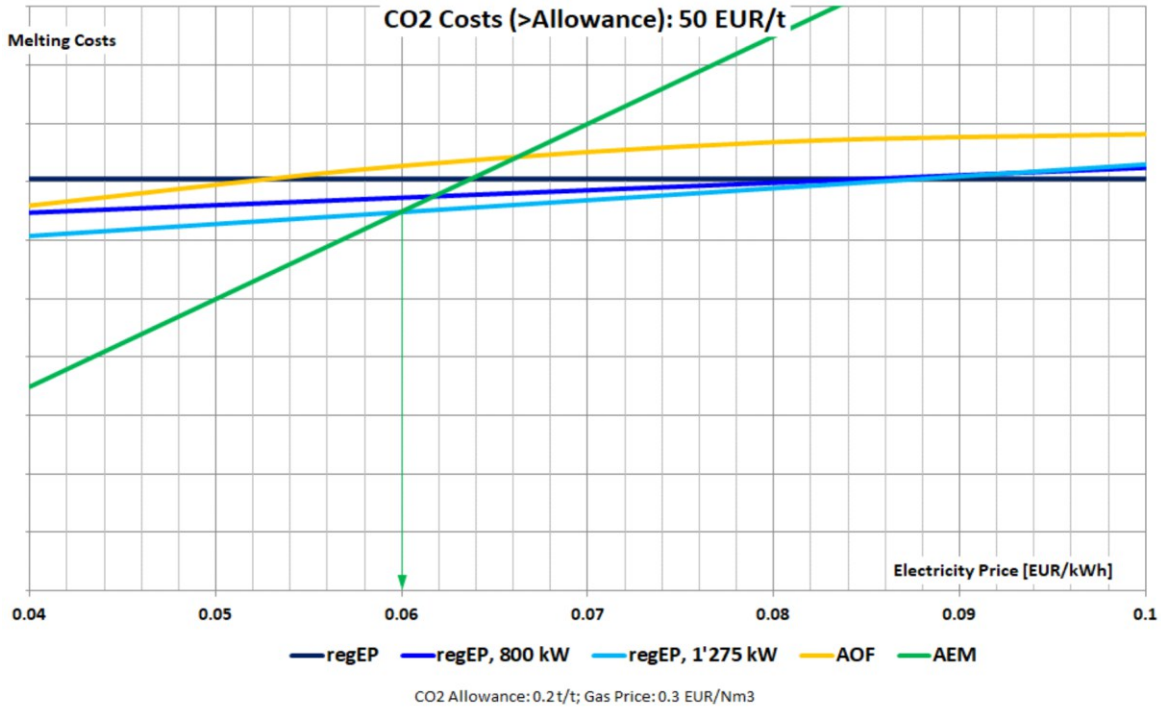
GO IN-DEPTH ON CO_2 EUROPEAN EMISSION ALLOWANCE PRICE

Source: https://markets.businessinsider.com/commodities/co2-emissionsrechte

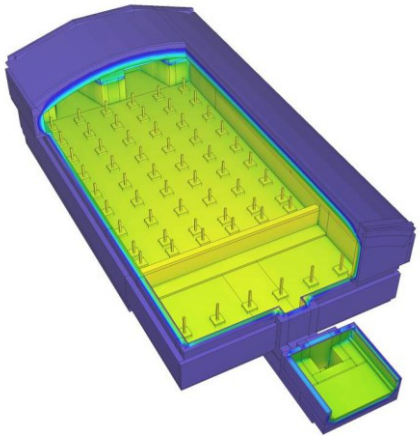
In cooperation with GS leading modeling tools, F.I.C. has designed an All Electric Hot Top Melting design for large (container) glass production that solves CO_2 reduction goals and secondarily lowers melting costs.

In the following graph we show the glass melting costs breakeven point of All Electric versus a Regenerative Gas Fired furnace as a function of electricity costs. This assumes CO_2 emissons will cost 50 Euro per ton above the allowance of 0.2 ton CO_2 per ton of molten glass. The graph shows that if electricity costs are lower than 6 Euro cent per kWh the electric melting is more economical.

Graph of breakeven points:



All electric hot top melter with F.I.C. SUPER Boost:



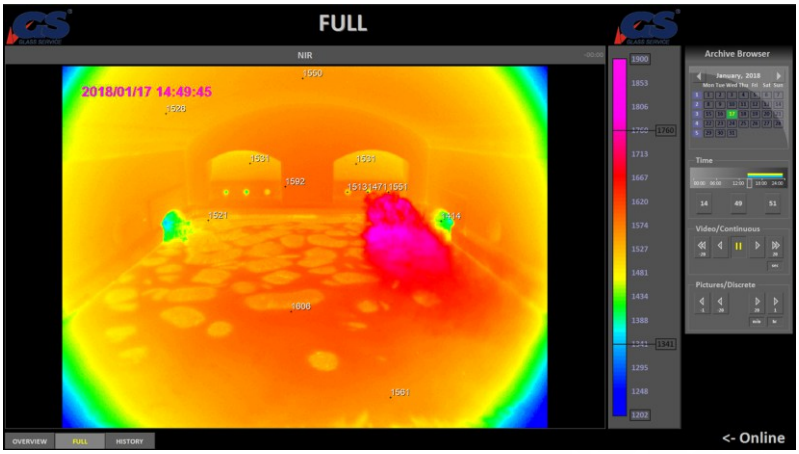
A-SENS, in cooperation with GS Engineering, developed a High Resolution Near Infrared (NIR) Furnace Camera

By Frantisek Masarik

GLASS SERVICE Engineering delivers complete small electric melters for high quality production. Our main area of focus includes special glasses such as optical and crystal, as well as borosilicate.

A·sens AUGMENTED SENSORS & SYSTEMS

Over the last year GS has created a new joint venture in cooperation with the Croatian company, GEOLUX. Bringing to market a near Infared Camera with very high resolution of 1.3 million pixels is our goal, as this is not currently available today. Our ***A-SENS*** camera allows us to monitor and identify the batch blanket position as well as measure 1.3 million individual temperatures inside the furnace at the same time. This information can be fed into ***Expert System ES III***™ producing an Industry 4.0 interaction between equipment and software without the need for human interpretation and transferring of information.



Furnace camera and retraction mechanism

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

By Erik Muijsenberg

Glass industry suppliers and customers have chosen the ***GS Expert System ES III™*** as the industry standard for advanced Model Predictive Control-based expert control systems for melters and forehearths. GS is an unrivaled leader in this field, with over 20 years of experience with various glass types.

SORG & ACSI act as resellers of ***ES III™***, and also develop projects independently of GS.

GS is anticipating an expansion of its base to other important suppliers for the glass industry.

To date GS has installed well over 200 advanced control solutions, including the ***Expert System ES III™***, in glass plants worldwide. Our main areas of glass production within the industry are among all segments: including, but not limited to, float, container, fibers and special glasses.

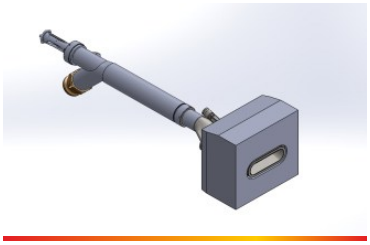
We continue to work on updating ***ES III™*** into ***ES IV™***, which has been expanded with a line of assistants to help operators to maintain furnace control within a much closer range of optimal values. The release of ***ES IV™*** is expected in 2019.

Model-Predictive-Control (MPC) allows predictions on how the Process will behave in the future and is not restricted to only looking backwards to what just happened, which is the role of a Proportional-Integral-Derivative (PID) controller.

FlammaTec introduces Flat Flame UP Gas Injector

By Petr Vojtech

FlammaTec is a joint venture of STG Combustion Control GmbH & Co KG of Cottbus, Germany; and GLASS SERVICE, a.s. of Vsetin, Czech Republic.



The sales of FlammaTec continue to grow at a steadily increasing rate. After 10 years of operation the number of employees and burner installations have further expanded. In addition, the equipment supply has grown by delivering complete skids and a technically advanced oxygen-gas burner. During Glasstec, we will introduce the new **Flat FreeJet Undeport Gas Injector** that promises an energy efficiency increase of up to 3 %.

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 customers. This results in optimal melting performance and flexible operation. FlammaTec has supplied more than 3,600 burners to the glass industry. Thermally efficient combustion and lower emissions is our focus for the complete burner line.

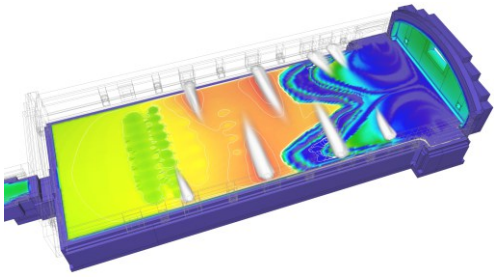
FlammaTec now offers the following advanced LoNO$_x$ types of burner:

- Underport Gas Injector, FlexJet or FreeJet or Flat FreeJet
- Underport Gas/Oil Dual Injector, FlexJet or FreeJet
- Underport Heavy Oil Injector (also can be used for backup solutions)
- Sideport Gas Injector, FlexJet
- Oxy/Gas Burner

For more information please contact:
Petr Vojtech (petr.vojtech@flammatec.com), Andreas Birle (andreas.birle@flammatec.com)

GFM 4&5 – New batch model

By Erik Muijsenberg



A majority of all glass furnace designs today have been optimized by the GS Glass Furnace Model (GS GFM). More than 36 glass makers and supplier companies are using **GS GFM** software with an approximate total of more than 200 licenses, actively used by an estimated 100 engineers.

GS GFM has become the standard of furnace modeling within the glass community, facilitating virtual cooperation among companies.

During our 15th Int. Seminar in May 2019 we will initiate the release of the first stage of a new 3D batch model, which will be a great step forward.

ISO 9001 & 14001 for GS Raw Materials supplies ISO 9001 for GS Laboratory analyses

By Tomas Chmelar

GLASS SERVICE strives to keep its current customers, as well as to acquire new ones through continuous satisfaction of customer needs with quality services and goods. To meet this vision, the company realizes a simple and efficient quality management system for the division of purchase, sales and storage of raw materials for glass production.

For this reason GLASS SERVICE is ISO 9001 and ISO 14001 certified:

ISO 9001 (Quality Management System) for:
- purchase and sales of raw materials for the glass industry
- laboratory services for the glass industry

ISO 14001 (Environmental Management System) for:
- purchase and sales of raw materials for the glass industry

GS & F.I.C. (UK) are proud to announce sponsorship of the 26th ICF Technical Exchange Conference organized by Swarovski

The 26th ICF Technical Exchange Conference will be held **October 28-31, 2018** at Hotel Panorama Royal in Bad Häring, Tirol, Austria, just minutes away from Swarovski headquarters.

During this event Mr. Erik Muijsenberg, Vice President of GS, will present a paper in cooperation with the Swarovski team concerning implementation of ***Expert System ES III™*** on Swarovski melting equipment, effectively upgrading their operations to **Industry 4.0** standards.

22-23 May 2019

15th Int. Seminar on Furnace Design
Velke Karlovice, CZ

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