

exhibit high chemical resistance. Important cost savings have also been realised for the benefit of customers processing sputtered glass. When gluing glass, it is necessary to print a colour between the glass and the glue to protect the glue from UV light and to hide the adhesive area. Ferro's recently developed colours avoid the need for coating removal, providing a perfect base for glass adhesion.

Also on show were the company's latest dust-free forehearth pearls and frits, including fluorescent glass, as well as HTP organic printing colours for container glass, which are now available in a gloss series, as well as special effects like neon and metallic.

FIC (UK) exhibited its expertise in the design and manufacture of electro-heat systems for boosting and conditioning in a wide range of glass types and manufacturing processes, including flat and hollow soda lime glasses and the full range of TV glasses, fibre glass and tableware glasses. FIC was founded in 1980 and was the first in the industry to be accredited to ISO 9001 for the design and manufacture of all-electric glass melting and boosting systems. The company is based at Penzance, Cornwall, from where business is co-ordinated throughout the world, both direct and via agencies in many different countries.

Engineers on the **Fickert + Winterling Maschinenbau** stand informed visitors about the latest trends and technologies for the cast glass industry. Areas of expertise include solar glass rolling machines, cast glass rolling machines, wire mesh feeding equipment, wire mesh tearing machines, cast glass cutting lines, sheet glass drawing machines, refractory cutting and milling machines, glass cutting machines, glass surface and grinding machines, stirrers and spare parts.

Fima-Olimpia Fonderie demonstrated its latest technological innovations for quality products in the glass moulds sector.

Fives promoted its design and supply of thermal equipment and complete assemblies for float glass production (air pollution control, melting furnaces, tin baths and annealing lehrs), for patterned glass production (air pollution control, melting furnaces, rolling machines

and annealing lehrs) and for hollow glass production and special glass (melting furnaces and conditioning equipment). The glass teams presented their latest innovations, including: Prium PlanarTek innovative combustion technology for forehearths and working ends; the Prium VariCool electrode holder, an advanced electrode holder with a superior cooling capacity; the Prium Bath HAC, a modern proprietary cooling system based on hot air cooling; and Prium Bath TR edge control, a radical rotating knurl design, presenting a breakthrough in forming technologies.

FlammaTec Ltd exhibited advanced combustion technologies for the glass industry. The company's FT burners are suitable for all applications on regenerative furnaces, providing a tunable and highly luminous flame with underport or sideport installation, oil, gas, dual fuel, fast batch melting and producing low NO_x levels.

Bronze alloys for moulds for the production of glass bottles and jars were highlighted by **Fonderie Bartalesi**.

Forglass co-operates with glassworks, providing a complete range of services related to investments, maintenance and current repairs. At glasstec, the company promoted its comprehensive solutions for glass factories, including glass melting tanks and forehearths, batch houses and cullet transportation systems, IS forming machines, annealing lehrs, maintenance projects, the relocation of production lines and facilities, steel construction manufacturing plant and electric systems and installations.

Forma Glas exhibited as an innovative manufacturer of glass production machines for stemware, tumblers and press articles from Austria. With more than 120 years of experience, the company builds individual machines and complete production plants. Exhibits included a high speed tumbler and stemware line for capacities of up to 75,000 tumblers and 60,000 stemware items/day. Forma also promoted its latest generation automatic crack-off machine, featuring laser technology and providing a capacity of up to 75,000 glasses/day, together with single, double and triple loading systems.

Fosbel promoted its technology,

expertise, manpower and materials to increase productivity and extend the life of furnaces in the glass and other industries. Its broad range of preventative maintenance and remedial repair services include ceramic welding, Fosbel's innovative refractory repair performed at operating temperature, as well as condition monitoring, inspections, rebricking/rebuilding and other innovative hot repair technologies.

Fuchs showcased all of its technologies, as well as announcing that all glass industry lubricants will now be rebranded with a single family name. Since October 2016, all Fuchs glass industry lubricants have been marketed under the VITROLIS brand, providing consistent product offerings across all industries. Specialists from the company's glass team were available to answer any questions about the rebrand and concerning product offerings by application.

Leading suppliers of complex automation and drive solutions for the glass container industry, **futronic** promoted its FMT24S control system, the FMT24S electronic key system and other interesting products. The automation specialist highlighted a recently developed upgrade kit for its EPRO control including key features of the FMT24S. The EPRO control, which has been performing impeccably for many years at glassworks throughout the world, is gradually coming up against its technological limits "The EPRO's ArcNet communication structure is obsolete and several of its components are no longer manufactured and therefore difficult to obtain" Wolfgang Lachmann, Managing Director Development and Technology at futronic explained, while emphasizing that a comprehensive retrofit is the only way out of this dilemma. "With the upgrade kit, we can offer a bridging technology to bring the EPRO control up-to-date for an altogether manageable investment."



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Presenting the latest areas of business for industrial printing on glass, **Gallus-Heidelberg's** innovations on show included the C-Line system for direct printing on containers. Already in operation at different glass plants >