

SGT NEWS



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OPERATING EXPERIENCE OF FURNACE TRACKER

The Datapaq Furnace Tracker System is used to provide a temperature profile of products as they pass through a conveyor heating system. Chris Baldwin, technical engineer with Stein Atkinson Stordy, related his company's experiences with the equipment to the Midlands Section.

Before the introduction of remote sensing equipment, temperature measurement had to be made with trailing thermocouples. Their use usually entailed some interruption in the conveyor or even a halt in the production line. By comparison, the Datapaq records thermocouple data and downloads it into a portable computer.

The measurement system consists of a high accuracy logger, with either six or eight channels and a temperature range of -1000°C. The logger is protected inside a range of thermal barriers, the choice of which depends on the speed of the conveyor and the maximum temperature attained. A phase change material in the barrier acts as a heat sink, prolonging

durability but there is also a trade-off of size with durability.

The logging process consists of first attaching the thermocouples by frit to the items to be annealed. The reset logger is then inserted in the barrier (recording can be triggered at a threshold temperature or suitable time interval). This is followed by running the equipment through the lehr, removing the logger and downloading the data. The data is analysed on the PC by Furnace Tracker Elite software. This provides graphical data for immediate interpretation. A standard report package can be used to fax back data to support for further interpretation.

The Furnace Tracker system has many advantages over the trailing thermocouple method because there is no time-consuming set-up, rare loss of signal and rapid data analysis and reporting. However, the logger cannot be used on rotating products or long fast coil lines and it needs to be calibrated on a regular basis.

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AMERICAN AND BRITISH STUDIO GLASS

In a celebration of the continuing success of the studio glass movement, Dave Traub presented a personal illustration of the differences between American and British movements to the Midlands Section.

The studio glass movement began in 1962, from a seminar held at the Toledo Museum of Art in Ohio. It has developed into a divergent worldwide discipline, using traditional and novel glassmaking techniques. Academically, the American movement has been part of the art department, where anything goes and technique is not necessarily a strong point. In the UK the movement has classically been part of the design department, where an end

product has been achieved by adherence to the correct methods.

Size is very important for American artists; William Morris has produced 4ft 6in monoliths, Joel Myers makes large 2ft-3ft diameter vases. Some artists in Britain are now seen to be following this trend but typically, the product is much smaller.

In the USA, the movement has not had time to develop an established tradition, there is no real history to fall back on and some artists have had to reinvent processes or have borrowed from other sources and adapted other materials into their work. People from different disciplines are also free to use this medium.

In contrast to the freedom of America, the British movement is a more serious affair and the vessel a more important vehicle for expression, whereas American works are more abstract. This does not mean originality is lost; plagiarism is unknown.

British works of art are more decorative, whereas those of Americans are fine arts but what they have in common is that they are both about art. American works can look good and make a statement but may not be the best quality. In Britain, it is harder to see works as sculpture rather than decorative but communications and access to technology is much easier through the Society of Glass Technology.

IN PRINT

The June issue of *Glass Technology* will feature selected papers from the Hand-Made Section's October 1992 Symposium on Lead. Papers deal with the mechanical structure of chemically strengthened glasses, the effects of impurities and OH-on leakage currents in fused silica and glass composition control by the simultaneous measurement of density and softening points.

Physics and Chemistry of Glasses has papers on the structure of undensified and densified glasses, hydrogen reactivity of barium gallosilicates, emission spectra of CdS in sol gel derived glasses, Ni²⁺ in alkali borates, property-structure relations in PbO-B₂O₃-MoO₃, x-ray diffraction of TiO₂-PbO, sintering and crystallisation of xerogel powders and spectra of rare earth aluminosilicates.



Society of Glass Technology, 20 Hallam Gate Road, Sheffield S10 5BT. Tel 0742 663168. Fax: 0742 665252.

The cost of coating a bottle can be the difference between a competitive and a loss-making product. Niches do exist in the drinks industry, however, where strong brand identifiers are needed to attract the targeted market. The various application methods were discussed by Alan Jones of coatings supplier Carrs Paints at the London Section's joint meeting with the South East Plastics and Rubber Group of the Institute of Materials.

Carrs Paints has backed the Vapocure process by providing polyisocyanate resin stock for the coating of one-trip bottles. The container is loaded onto a conveyor, where it is first cleaned, pretreated and then dried. A spray coating is applied before the line enters a permeation chamber, where moisture and an enabling catalyst cure the organic coating. Following post cure drying, the bottle is offloaded and sent on for filling.

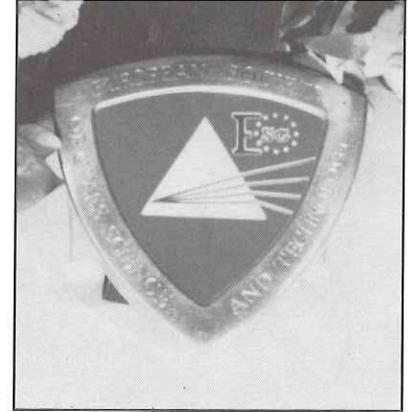
Using technology originally developed for the automotive industry,

EUROPEAN BADGE OF OFFICE

The Society of Glass Technology has presented a presidential badge to the European Society of Glass Science and Technology. The badge was the idea of the first chairman of the ESG, Mr W S Lee, who was president of the SGT at the time of the European Society's formation.

The commemorative badge will be worn by present chairman of the ESG, Dr Fabiano Nicoletti of the Stazione Sperimentale del Vetro, Venice, Italy at the second international conference on the Fundamentals of Glass Science and Technology in Venice on 21-24 June 1993.

Jane Beebe of Dartington Glass designed the badge and made and engraved the glass; both the glass and the work were donated by Dartington. Each edge is the arc of a circle 8in in diameter, with the opposite apex as its centre. There



are four layers of glass - blue, white, blue and at the back, clear - with the top blue layer and the white layer being cut through to form the ESG crest.

Engelhard Ltd donated the silver surround and had it engraved on its front with the name of the ESG; acknowledgements to Dartington and Engelhard are engraved on the back of the silver.

The crest depicts a prism splitting light into its component colours, together with the ESG monogram and the 12 stars of the European Community.

The ESG was formed in 1990, with the Society of Glass Technology of the UK, the Deutsche Glastechnische Gesellschaft of Germany and the Union Scientifique Continentale du Verre, which covers the Francophone nations of Europe, as its founding members. The first international meeting was held in Sheffield in 1991.

COATINGS FOR BOTTLES

The Colorglas process can apply transparent and opaque coatings on glass. Electrostatic spraying follows the standard preconditioning stage. Any solvent is flushed off and the organic coating is cured before the final blast cooling stage. Depending on coating thickness, between 100 and 200 bottles/min can be processed.

Future environmental considerations have been anticipated. Volatile organic solvents are being replaced by water-based systems, high solids or dry powder coatings. The organic coating is volatilised well below the melting point of the glass and does not interfere with recycling. Another environmental benefit is the replacement of opal glass with a coated clear version, preventing confusion in classifying opal at the bottle bank. A major acquisition for this process was the Malibu brand.

Organic coating remains a small force in the glass industry but the process has advantages where short runs

for promotions and novel products are trying to gain a foothold in very competitive markets. The burden of a potential 1½ pence of added cost is set against greater margins on the retail price. If these margins come under pressure and costs have to be reduced, it may become one of the first victims.

INFORMED OPINION

Society members are invited to contribute both technical and general interest news items for publication in SGT News. If there is a topic on which you would like to voice an opinion, contact David Moore on Sheffield (0742) 663168.