

# SGT NEWS



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Technology

## BOSC D'ANTIC ON GLASS MAKING

Including essays on the  
manufacture of faience and the  
assaying of ores, published  
1758–80

Translated by Michael  
Cable

This is the second of three volumes illustrating progress in understanding glassmaking from the 17th century to the early part of the 19th. The first was Christopher Merrett's *Art of Glass* of 1662, an extensively annotated translation of Antonio Neri's *L'Arte Vetraria* first published in Florence in 1612. This volume from France covers the years 1758–80 and the third will describe glass technology in Austria and Germany in 1820–35. Each of these shows notable advances in understanding over the previous volume.

Paul Bosc D'Antic was a Protestant physician who became fascinated by glass making and gained influential friends who gave him the task of improving the manufacture of plate glass at Saint-Gobain in 1755. He spent two years there before being dismissed but continued to make his career in glassmaking.

At one stage he came to England hoping for a post at Ravenhead but was disappointed. After returning to France he eventually became physician to the King.

He wrote extensively and very readably on glassmaking and several other subjects, in papers published between 1758 and the appearance of his *Collected Works* in 1780. His most important essay is a long one on *Means of improving glassmaking in France* which in 1760 won him a prize offered by the Royal Academy of Sciences but also offended his erstwhile employers at Saint-Gobain. It was supplemented by extensive notes written for the 1780 publication.

This volume contains translations of the *Preliminary Discourse* that he wrote for the *Collected Works*, the prize essay with the notes inserted where appropriate, nine others concerned with various aspects of glassmaking, and two more on the assaying of ores and on the manufacture of faience.

The subjects of the nine papers include: bubbles in glass, smears in glass, crucibles from the Auvergne, manufacture of potash, use of unusual minerals as raw materials, and manufacture of sheet glass.

The volume is 250 pages long with six illustrations, A5 format (210 mm x 148 mm), ISBN 0-900682-44-2. Paperback. £25.00 (£20.00 SGT members). ■

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### EIGHTH ESG CONFERENCE ON GLASS SCIENCE AND TECHNOLOGY

The Society of Glass Technology has been selected to host the 2006 meeting of the European Society of Glass Science and Technology. The meeting will be held on 10–14 September 2006 at St Peter's Campus, University of Sunderland.

The ESG series of meetings normally feature two or more parallel sessions, one covers purely scientific research while the other covers industrial and technological developments.

The Sunderland meeting will draw some of its influence from the host city and the rich heritage of glassmaking and the strong support of current glassmaking that is provided in the region from the National Glass Centre and the glass-based courses at the University of Sunderland.

The ESG Conference is held every two years in a different host country. The scope of this conference is to promote glass science and technology and, in particular, to enhance interaction among experts working on diverse areas such as glass manufacturing, glass archaeology, art and environmental issues, as well as glass science and applications.

The most recent conference held in Athens in April 2004 included around 80 oral papers and 40 poster presentations covering a wide range of interests, eg Ta-Luft implementation of the European glass Bref, glass melting economics, sol-gel synthesis of bioglass composites, development of high gain tellurite and borophosphate glasses for broadband applications, and glass contact performance of traditional and novel pot materials.

The proceedings of the Athens meeting will be published in *Glass Technology* and *Physics and Chemistry of Glasses* in 2005.

The second announcement and call for abstract submissions will be sent out in November 2005 and the abstract submission deadline will be April 2006.

Further information can be obtained from Christine Brown at the Society.

# STANDARD SAMPLES

The Analysis & Properties Committee of the Society of Glass Technology has completed its analysis of two new certified reference materials (CRM) for amber and green coloured glasses. The standard samples were approved by the Council of the Society of Glass Technology in November 2000.

The laboratories involved in the process have all followed ISO guidelines for the production and traceability of analytical data.

## INTENDED USE AND STABILITY

The samples are available in the form of glass pieces and also as 40 mm diameter discs.

They are intended for the verification of analytical methods, such as those used by the participating laboratories, for the calibration of analytical instruments in cases where the calibration of primary substances (pure stoichiometric compounds) is not possible and for establishing secondary reference materials.

The solid disc is intended for establishing and checking the calibration of x-ray spectrometers for the analysis of similar materials. The "as received" surface should be ground and polished.

The traceability of this CRM is ensured by the use of either stoichiometric analytical techniques or methods that are calibrated against pure compounds.

### SGT10 Amber soda-lime-silica container glass (mass%)

|                  |                                |                                |      |      |      |                   |                  |                  |                 |                                |
|------------------|--------------------------------|--------------------------------|------|------|------|-------------------|------------------|------------------|-----------------|--------------------------------|
| SiO <sub>2</sub> | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | CaO  | MgO  | BaO  | Na <sub>2</sub> O | K <sub>2</sub> O | TiO <sub>2</sub> | SO <sub>3</sub> | Cr <sub>2</sub> O <sub>3</sub> |
| 72.8             | 1.62                           | 0.325                          | 10.6 | 1.82 | 0.02 | 12.2              | 0.35             | 0.09             | 0.05            | 0.020                          |

### SGT11 Green soda-lime-silica container glass (mass%)

|                  |                                |                                |      |      |       |                   |                  |                  |                 |                                |
|------------------|--------------------------------|--------------------------------|------|------|-------|-------------------|------------------|------------------|-----------------|--------------------------------|
| SiO <sub>2</sub> | Al <sub>2</sub> O <sub>3</sub> | Fe <sub>2</sub> O <sub>3</sub> | CaO  | MgO  | BaO   | Na <sub>2</sub> O | K <sub>2</sub> O | TiO <sub>2</sub> | SO <sub>3</sub> | Cr <sub>2</sub> O <sub>3</sub> |
| 70.7             | 1.83                           | 0.342                          | 10.3 | 2.14 | 0.031 | 13.6              | 0.69             | 0.068            | 0.06            | 0.205                          |

There are also values for ZrO<sub>2</sub> and Mn<sub>3</sub>O<sub>4</sub>.

These add to the existing range of standard sand and glass samples for analysis and calibration purposes.

## GLASSES

**Standard Glass No. 4.** Fluoride Opal Glass  
Also available as 6mm thick sheets to special order, price on application.

**Standard Glass No. 5.** Soda-Lime-Magnesia-Silica Glass

**Standard Glass No. 6.** Soda-Lime-Silica Glass

**Standard Glass No. 7.** Soda-Lime-Silica Glass

Two lead glasses were received by the Analysis & Properties Committee but because of time limitations Glass No. 9 was not analysed by all of the collaborating laboratories. This glass has a lower lead oxide content, about 28% PbO, than Glass No. 8 and although it cannot be offered as a certified material, it could be useful as a subsidiary calibration check.

**Standard Glass No. 8.** Lead oxide-potassium oxide-silica glass (30.59 wt% PbO)

**Standard Glass No. 9.** Probable composition available.

## SANDS

**Standard Sand No. 1.** 200g packs at £20.00 plus postage (Al<sub>2</sub>O<sub>3</sub> 0.061, Fe<sub>2</sub>O<sub>3</sub> 0.014, TiO<sub>2</sub> 0.026).

**Standard Sand No. 6.** (Al<sub>2</sub>O<sub>3</sub> 0.06, Fe<sub>2</sub>O<sub>3</sub> 0.032, TiO<sub>2</sub> 0.024)

**Standard Sand No. 8.** (Al<sub>2</sub>O<sub>3</sub> 2.07, Fe<sub>2</sub>O<sub>3</sub> 0.26, TiO<sub>2</sub> 0.073, K<sub>2</sub>O 1.06)

**Standard Sand No. 9.** (Al<sub>2</sub>O<sub>3</sub> 1.35, Fe<sub>2</sub>O<sub>3</sub> 0.103, TiO<sub>2</sub> 0.044, K<sub>2</sub>O 0.82). ■



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# GLASS: PAST, PRESENT AND FUTURE

The 2005 Annual Meeting of the Society of Glass Technology moves to September. The meeting will be held in Sheffield and marks the 90th Anniversary of the founding of the Department of Glass Technology and coincides with the centenary of the University of Sheffield's Charter. During 7-10 September there will be events celebrating the contributions made by the Society's founder, W E S Turner, the first Professor of Glass Technology, and his continuing influence.

### *Sessions Celebrating the work of Professor M Cable and Professor H Schaeffer*

A key aim of the meeting is to

celebrate the contributions over many years of Professors Cable and Schaeffer to glass science and technology. Sessions will be devoted to their research interests, presented principally by speakers they have worked with.

### *Industrial and Scientific Sessions*

Further sessions will cover wider aspects of glass science and technology including a one day industrial session and the New Researchers Forum on Glass.

### *Turner Memorial Lecture*

Dr David Whitehouse, director of Corning Glass Museum and editor of the Journal of Glass Studies will present the Turner

Memorial Lecture on Thursday 8 September.

### *History and Heritage of Glass*

The Special Interest Group will hold another in its series of one day meetings on Saturday 10 September. A historical theme will also be covered by the Turner Memorial Lecture and some of the contributors to the session celebrating Professor Cable.

The Annual Meeting will be based at Halifax Hall of Residence with the Turner Memorial Lecture and the following conference dinner held in the main University complex.

Further details on the conference can be obtained from Christine Brown at the Society. ■

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The ESG series of meetings normally feature two or more parallel sessions, one covers purely scientific research the other covering industrial and technological developments. The 2006 conference will also incorporate some sessions from the vibrant studio community in the region, and the meeting will

be supported by the UK Energy Institute with a number of sessions looking at energy sources of the future.

The Sunderland meeting will draw some of its influence from the host city and the rich heritage of glass making and the strong support of current glass making that is provided in the region from the National Glass Centre and the glass based courses at the University of Sunderland. Sunderland is accessible from the main London–Edinburgh railway line and has international airports and sea ports nearby.

The ESG Conference is held every two years in a different host country. The scope of this conference is to promote glass science and technology and, in particular, to enhance interaction among experts working on diverse areas such as glass manufacturing, glass archaeology, art and environmental issues, as well as glass science and applications.

Topics will include, but will not be limited to, the following:

- Furnace technologies and refractories
- Glass melting and forming
- Water and sulphur in glass
- Energy and environmental issues
- Glass products and quality control
- Glass structure and properties
- Sol-gel processing
- Glass surfaces
- Nucleation and crystallisation
- Glassy and glass-ceramic nanomaterials
- Glasses in optics and photonics
- Novel glasses and applications in medicine, dentistry, biotechnology
- Glass art
- History and Heritage of Glass

The most recent conference held in Athens in April 2004 included around 80 oral papers and 40 poster presentations covering a wide range of interests. Topics included Ta-Luft implementation of the European glass Bref, glass melting economies, sol-gel synthesis of bioglass composites, development of high gain tellurite and borophosphate glasses for broadband applications, and glass contact performance of traditional and novel pot materials. The proceedings of the Athens meeting will be published in *Glass Technology* and *Physics and Chemistry of Glasses* in 2005.



### LOCAL SECTION CONTACTS

For details of forthcoming local section events in your area, contact the following. All SGT members and non-members welcome.

#### London

– Mr M Holden,  
BH-F (Engineering) Ltd,  
4A Cburchward,  
Southmead Park, Didcot,  
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Tel 01235 517202.

#### Midlands

– Mr R Nickels,  
4 Boundary Way,  
Compton, Wolverhampton,  
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#### North East

– Mr W Brooks,  
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– Dr D Martlew,  
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#### INDIA

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Tel 473 3496.

## ELECTRONIC JOURNALS

The refereed papers from *Glass Technology* and *Physics and Chemistry of Glasses* are available through the Internet via the Society of Glass Technology web site. This is a new feature and is available to members and non-member subscribers of the journals.

The Society is working with Ingenta, the leading host of professional and academic publishers on the web, to provide this service. The issues viewable on-line will be from the 1998 volumes onwards. The 2002 volumes onwards will also have links from their references to other on-line publications and reciprocal links will be built up from other electronic journals. This will provide better services for authors and researchers alike, crosslinking the mass of information available.

Since its launch in May 1998, Ingenta has grown to become the leading Web infomediary empowering the exchange of academic and professional content online. With the acquisition of another major provider, Catchword, Ingenta supplies access to: 5400+ full-text online publications, 26,000+ publications.

The IngentaConnect platform was launched in Autumn 2004 and receives up to 12,000,000 users a month. A broad range of content types is made available to users, under subscription and through a variety of different payment models such as library payment accounts, individual subscription sales and article pay-per-view access. The site offers tools designed to integrate the IngentaConnect platform with popular browsers and search engines such as Firefox and Google. Users can also take advantage of features such as flagged subscriptions, marked lists, reference linking and alerting services.

The title, authors and abstracts of other journals can be viewed on line, and a pay-per-view facility can be offered for anyone wanting full access to the publication.

Members with more than three years service will have full access to the available issues. More recent members will have graduated rights to view the volumes: two years for a new member, an additional two for those renewing for the second year, and full rights for subsequent renewals.

The December 2000 issue of *Glass Technology* and the June 2001 issues of *Physics and Chemistry of Glasses* are freely viewable as sample publications.

For further information either view the links from [www.sgt.org](http://www.sgt.org) or [www.ingentaconnect.com/content/sgt/](http://www.ingentaconnect.com/content/sgt/)

## EIGHTH ESG CONFERENCE (continued)

The Conference Organising Committee would like to express its thanks to the following organisations for their contributions to date: University of Sunderland, Sunderland City Council, Energy Institute, Tyne and Wear Museum and The National Glass Centre.

The Second Announcement will be sent out in November 2005. The Abstract submission deadline is March 2006, early registration deadline is 30 June 2006 and full paper submission deadline is 10 September 2006.

Topics will include, but will not be limited to, the following:

- Furnace technologies and refractories

- Glass melting and forming
- Water and sulphur in glass
- Energy and environmental issues
- Glass products and quality control
- Glass structure and properties
- Sol-gel processing
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## THE FIFTH INTERNATIONAL CONFERENCE ON BORATE GLASSES, CRYSTALS AND MELTS: NEW TECHNIQUES AND PRACTICAL APPLICATIONS

The fifth borates conference will be held on 10–14 July 2005 at the University of Trento, Trento, Italy. Professor Giuseppe Dalba of the Department of Physics is the conference chairman.

It follows the previous meetings held at Alfred, New York, USA (1977); Abingdon, UK (1996); Sofia, Bulgaria (1999) and Cedar Rapids, USA (2002). This Fifth Borate Conference will focus on new techniques in the study of the structure and properties of these materials, and their practical applications.

Topics to be covered include: short and intermediate range order in borate glasses and melts; EPR, XAFS, XPS, IR, Raman, NMR, and diffraction studies of borates; new spectroscopic techniques; structure and physical properties; novel borate glasses and crystals; thermodynamics of borate systems; local thermal properties; optical properties and materials; computer simulation and modelling; industrial applications; phase separation and inhomogeneities; superionic systems and ionic conductivity; biomedical applications; and mineralogical crystals.

The Conference will provide the opportunity to

make oral presentations as well as contributing to a poster session. Special care will be taken to ensure time for questions and discussions, as well as to organise round tables on topics which will share a particular interest for the participants. The Conference will conclude with a summary discussion amongst all attendees.

Accepted abstracts will be prepared in booklet form and given to the attendees at the conference. Presented papers will be refereed and selected for publication in the proceedings of the conference, which will also include the round table discussions. *Glass Technology* and *Physics and Chemistry of Glasses* have again been chosen to publish the peer reviewed papers.

The Conference will take place at the Conference Center Panorama located on a rocky spur at about 560m above sea level. The place is quiet and isolated, but very close to the town centre, which can be reached by car in 10 min and cable car in 4 min. The Center has a large conference room, two small meeting rooms, a hotel and a restaurant.

For more information, please contact the Conference Chairman: Giuseppe Dalba, Dipartimento di Fisica, Università di Trento, Via Sommarive 14, 38050 Povo, Trento, Italy. Email borate@science.unitn.it ■



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### JOURNAL OF THE SOCIETY OF GLASS TECHNOLOGY

The *Journal* was published by the Society until 1959 when it was split into parts A and B; *Glass Technology* and *Physics and Chemistry of Glasses*. The 1918 and 1952 volumes of JSGT can be viewed from the Society of Glass Technology web site.

The contents pages of all the volumes from 1917 can be viewed on the SGT web site. Copies of papers can be copied to order. The contents pages of *Glass Technology* and *Physics and Chemistry of Glasses* are also now available to view on the SGT website.

### GLASS TO METAL SEALS

A new version of *Glass to Metal Seals* is in preparation for publication. The original book by JH Partridge was published in 1949. Ian Donald of AWE Aldermaston has completed a revision of the original incorporating the many advances that have been made in the 56 years since it was published.

The expected publication date for the revised edition is September 2005. More information will be provided as publication date nears.