

## CERAMIC SOCIETY ANNUAL REPORT FOR 2014

### 1. Board/Committee membership

During 2014, The Ceramics Society (CerSoc) has continued with three committees, which are: Cementitious Materials (CemMat), Ceramics Science (CerSci) and the International Clay Technology Association (ICTa). The Ceramics Society has maintained close links with the independent Society of Glass Technology (SGT), which has two members on the Board. Neither are members of IOM3, but perform the service of linking IOM3 with another, relevant organisation. During the year, there have been minor changes in Board membership. Mark Russell has replaced Julie Stegemann as Secretary of the CemMat Committee. At the end of the year, Steve Brooks indicated that changes in his business role mean he will be spending 50% of his time overseas and he is having to cut back on the time he devotes to IOM3 activities. He will remain a corresponding Board member. The current Ceramic Society Board membership consists of:

<b>Name</b>	<b>Affiliation</b>
Guy Armitage	Chairman, ICTa
Emma Barney	Secretary, SGT Basic Science and Technology Technical Committee
Jon Binner	Chairman
Mike Chapman	Secretary, ICTa
Emma Claxton	Chairman, CerSci
Geoff Hale	Technical Division Coordinator, IOM3 and Secretary to Board
Chris Hallas	Past Chairman
David Moore	Managing Editor, SGT
Mark Russell	Secretary, CemMat
Mark Tyrer	Chairman, CemMat
Luc Vanderperre	Secretary, CerSci
<i>Ex-officio</i>	
Steve Brooks	Past Chairman, CemMat
Francis Morrall	British Ceramics Confederation
Andy Rotherham	Proskills UK Group

### 2. Board/Committee meetings

Over the past 12 months, CerSoc has continued with a combination of face-to-face and web conferencing meetings, as detailed below.

Meeting date	Type of meeting	Number involved
16 <sup>th</sup> January 2014	Face-to-face	6
2 <sup>nd</sup> May 2014	Web conferencing	6
30 <sup>th</sup> June 2014	Face-to-face	5
22 <sup>nd</sup> September 2014	Web conferencing	6
1 <sup>st</sup> December 2014	Face-to-face	10 plus 1 guest

The numbers attending have been similar to 2013. The higher numbers in December were the result of an opportunity to interact with an EPSRC representative – covered later. It is not expected that the Chair and the Secretary of each Committee will be involved in each meeting, although both are always welcome.

### 3. Activities during 2014

#### 3.1. Technical programme

An ICTa technical “Roadshow” – a webinar based activity – was hosted by the Yorkshire Local Society on 18<sup>th</sup> February 2014, with the topic being “Clay preparation”. Once again, this was relayed by web conferencing to a number of other ICTa branches.

The annual ClayTech UK conference and exhibition took place on 20<sup>th</sup> November at the Staffordshire Showground. The exhibition was larger than in previous years and the total number of delegates and exhibitors attending was close to 150. This year’s event incorporated the 54<sup>th</sup> Mellor Memorial Lecture, entitled *An Invitation for Brick Quality Control to Join the 21<sup>st</sup> Century*, which was given by Prof. Denis Brosnan of Clemson University North Carolina, USA.

CemMat (on behalf of IOM3) was one of the sponsors of the 2<sup>nd</sup> Young Researchers’ Forum (YRF) on Construction Materials held at University College London on 19<sup>th</sup> February 2014. 70 delegates attended from 8 countries, with 14 papers and 26 posters presented. The IOM3 Prize went to Miss Julia Herterich, University of Leeds. A paper reporting on this event was published in the ICE Journal *Construction Materials* Sept 2014 (see Goodier, C.I. et al. Volume 167, Issue 6, September 2014 pages 281 –282). The YRF is a multi-institutional meeting convened on this occasion by the Institute of Concrete Technology. IOM3 (via CemMat) agreed to host the next meeting in 2016 at Imperial College.

CemMat organised the 34<sup>th</sup> Cement and Concrete Science Conference which took place at the University of Sheffield from 13<sup>th</sup>-15<sup>th</sup> September, with 120 delegates attending. 32 papers were presented with an additional 45 posters.

This was followed by a one day workshop on cements for nuclear waste isolation, also held in Sheffield on 16<sup>th</sup> September 2014.

An IOM3 ‘Delegation’ made a return visit to the *China Concrete and Cement Producers’ Association* in Beijing on 14<sup>th</sup> October 2014. (Yun Bai, John Provis & Mark Tyrer representing IOM3), following their delegation’s visit to CemMat-IOM3 in 2013.

CemMat published their Spring newsletter in March 2014, which has a circulation of ~2200 readers.

As in 2013, SGT organised a Furnace Solutions Training Day at Lucideon (formerly Ceram), Stoke-on-Trent on 4<sup>th</sup> June. This was followed on 5<sup>th</sup> June by Furnace Solutions 9 at the same venue.

The SGT Annual Meeting [incorporating the Living Glass/Glassac (Glass Art and Conservation) conference] was held at Durham University between 10<sup>th</sup> and 13<sup>th</sup> September.

#### 3.2. Web-site developments

The main Ceramics Society microsite and the associated committee microsities have been maintained over the year. As noted 12 months ago, adding news items originating from Board and Committee members on a regular basis would mean the sites look much fresher. Unfortunately, information rarely comes forward from the constituent committees.

#### 3.3. Engagement with technical community and/or local societies

CemMat has informal links with the Materials Chemistry Committee (part of the Materials Science and Technology Division). Mark Tyrer (Chair of CemMat) is a member of the MCC. CemMat will support the Hume-Rothery Seminar to be organised by MCC in 2015.

The ICTa Education and Training Trust Operating Committee continues to oversee the education courses run in conjunction with IOM3 at Level 2 and 3 in Clay Building Products. The current 2014-2015 courses commenced in November and are fully subscribed (17 at Level 2 and 13 at Level 3). The courses will be revalidated in 2016 and a detailed assessment of both courses is underway.

ICTa is heavily involved in the development of a three year Foundation Degree, incorporating a Heavy Clay Technology pathway (as part of a wider Construction Products Technology programme), run via Derby University. ICTa is responsible for providing the course content for the

clay-specific modules. The first series of modules for Year 2 of the course has been completed and delivered during 2014, with the development work funded by the ICT Education and Training Trust, with support from IOM3. The course has been well supported by Industry, both in terms of staff time to contribute to the preparation of course content and by enrolling students.

On 18<sup>th</sup> September, the North Staffordshire branch of ICTa organised a Study Tour day to Quinn Glass, open to all ICTa members and guests. Unfortunately, the turnout was far lower than anticipated.

ICTa has well established links with the Institute of Packaging, South Midlands Mining & Minerals Institute and Western Institute of Mining and Minerals, which are a great help to various local societies with activities and programmes.

A North Staffordshire local society representative, Peter Keeley will speak at the Midlands heat of the Young Person's Lecture Competition (to be held at Keele University, March 2015) on "The Recovery of Valuable Metals from Secondary Sources via Thermal Plasma Arc Technology".

The North East Section of SGT and the Energy Institute visited Guardian Glass in Goole.

### **3.4. Contributions to IOM3 house journals (and other journal issues)**

CemMat was involved in selecting papers from the 32<sup>nd</sup> and 33<sup>rd</sup> Cement and Concrete Science Conferences (held at Queen's University Belfast and University of Portsmouth in 2012 and 2013 respectively) which have been assembled to create a special edition of *Advances in Applied Ceramics 'Cement and Concrete Science'* vol 113 No.8, published in November 2014.

The magazine team at IOM3 is responsible for *Clay Technology*. They are supported by the ICTa Education and Training Trust Operating Committee, which helps to identify potential contributors and articles for the magazine. Peter Betts was the key contact for the first part of 2014 and has since been replaced by David Baggaley, who has returned to this role.

The Ceramic Science Committee has responsibility for reviewing shortlisted papers to be considered for the Pfeil Award (for published work of particular merit in the field of ceramics). The resulting nomination is considered by the Ceramics Society Board who makes a final recommendation to the Awards Committee at IOM3.

SGT published six issues each of *Glass Technology* and *Physics and Chemistry of Glasses* during 2014. Both are print and electronic with online peer review systems.

### **3.5. Other**

As well as the web conferencing meetings held by the Ceramics Society Board, which demonstrate a more sustainable meetings process, the Ceramic Science Committee endeavours where possible to hold committee meetings in conjunction with another activity to minimise the carbon footprint of the meetings.

The delivery of clay technology courses by predominantly distance learning methods helps to minimise carbon footprint as students do not need to travel for each session. If the level 2 and level 3 courses were delivered online, there would be reductions in use of paper, printing, copying and transport costs.

A Ceramics Society display (for Carlton House Terrace) is under development but has taken far longer to complete than anticipated at the outset. Display material has been compiled successfully by CemMat and SGT but other boards are outstanding. It is hoped this display can be mounted at IOM3 in London from around March 2015 onwards.

David Moore represented SGT/UK on International Commission on Glass (ICG) and European Society of Glass Science and Technology (ESG) board meetings.

SGT has contributed to the government consultation on 2050 carbon reduction targets and road mapping exercise.

Professor Hand is the President of the ESG as host of the next conference in 2016.

Emma Barney and Alex Hannon were successful in bidding for the Borates/Phosphates conference for 2017.

## 4. Strategy and Objectives for 2014

### 4.1. Opportunities and constraints

**Opportunity:** To improve the image and perception of cement-based materials among the broader community by publishing high quality exciting articles on cement science topics in *Materials World*.

**Opportunity:** To persuade key industry leaders in the clay building products sector of the value of their individual employees being members of IoM3/ICTa, particularly now that the fortunes of the heavy clay sector are improving and that education, training and development of staff is recognised as a key objective. A presentation to the Brick Development Association (BDA) Management Board on this key issue is essential. Plan is for a two-pronged approach - Ian Bowbrick on importance of professional qualifications and membership, followed by Paula Wardle on training opportunities and the need for staff to contribute to ICTa committees.

**Opportunity:** The end of funding for the Structural CERamics Network (SCERN), run by Julie Yeomans from Surrey University, means there is a need to have more industrial and key academic input into the meetings programme to motivate a wider audience to continue to participate (as evidenced by a very strong turnout at the last SCERN meeting). The Ceramic Science Committee has decided to re-widen the scope of the 1-DRAC meetings from a meeting where PhD students and early stage PDRA's can present, to a meeting where there are also a number of speakers from industry and/or more senior academics. This also means there is an opportunity to organise more themed meetings in conjunction with other groups inside and outside IOM3.

**Opportunity:** The Glass Academy initiative (and potential new premises in Sheffield) to promote skills and development across the glass manufacturing sector may be of benefit to SGT as it should provide a new source of potential members for their information resources.

**Constraint:** Limited recognition of the importance of professional development by employers and increasing demands on individual's time may often restrict their ability to serve on IOM3 bodies.

### 4.2. Specific targets for 2015

- Complete Ceramics Society display for 1CHT before the move to the new building (All).
- To hold all the events that are detailed in this document (All).
- Develop a system to regularly update news items on the microsites, via contributions provided by Board and Committee members. Aim for at least 2 items on each microsite per month (All).
- Organise the first of the new style 1-DRAC meetings in London in April 2015 in conjunction with the Defence Ceramic Network (*Ceramic Science*).
- Make contact with the high temperature materials group at IOM3 to collaborate on a possible second themed 1-DRAC meeting (*Ceramic Science*).
- Expand existing external links and develop opportunities for mutual co-operation : Many dialogues are ongoing [Royal Microscopical Society / Concrete Petrography Group, at Geological Society / Royal Society of Chemistry / Inst. Concrete Technology / Inst. Civil Engineers and several others]. (*Cementitious Materials*).
- Develop and deliver a 3-day study tour (UK-based) for staff working in the heavy clay sector (*ICTa*).
- Complete development of the remaining Foundation Degree units for the clay technology pathway. Writer and review groups have been set up to achieve this, with Derby University constructing the online teaching material (*ICTa*).
- Publish books by Ian Donald, John Hemsley, Trevor Gledhill and Michael Cable. Develop ePub versions (*SGT*)

### 4.3. Outline plans for the 4 years beyond 2015

- Book: There has been some discussion about production of a joint textbook from the Cementitious Materials Group. An initial meeting with Maney has shown they are interested. Progress is however slow.
- CemMat plan to continue expansion of the reader base for their newsletter. Aim is to reach 3000.
- Young Researchers Forum in Construction Materials to be organised by CemMat at Imperial College in 2016.
- Achieve successful revalidation (with PAA\VQ-SET, the awarding body) of the Clay Building Products Level 2 and 3 courses during 2016.
- Celebrate 100<sup>th</sup> anniversary of SGT in 2016 with Annual Meeting and European Society of Glass Science and Technology conference in Sheffield, from 5<sup>th</sup>-9<sup>th</sup> September.

### 5. Other matters

**None**

### Appendix: Technical Programme as of December 2014

Date	Status (Held / Progressing / Planned)	Title	Location	Organising Division(s) / Cttee(s) / Collaborators	Financial underwriter (IOM3 / Local / Other)	Target No's	Actual No's
18/02/2014	Held	Technical Roadshow Webinar on Clay Preparation	Wakefield	ICTa Yorkshire branch	ICTa	50	?
19/02/2014	Held	2 <sup>nd</sup> Young Researchers Forum meeting	UCL - Civils	ICT/ICE/SCI...	ICT	50	70
04/06/2014	Held	Furnace Solutions Training Day 2	Lucideon, Stoke	SGT	SGT	60	60
05/06/2014	Held	Furnace Solutions 9	Lucideon, Stoke	SGT	SGT	90	90
10-13/09/2014r	Held	Living Glass/Glassac	U. Durham	SGT	SGT	100	140
13-15/09/2014	Held	34 <sup>th</sup> Cement and Concrete Science conference	U. Sheffield	Cementitious Materials Group	U. Sheffield	70	120
18/09/2014	Held	Study tour to Quinn Glass	Elton, Wirral, Cheshire	ICTa North Staffs branch	ICTa	30+	Low
17/02/15	Planned	Technical Roadshow Webinar	West Midlands Local Society to host	ICTa and Proskills	ICTa	60	
24/04/2015	Progressing	1-DAY-RESEARCH meeting on ADVANCED CERAMICS (1 DRAC)	Imperial College	Ceramic Science/ Defence Ceramic Network	Local	40	
09/15	Progressing	3-Day study tour	Stoke area	ICTa	ICTa	30	
01/09/2015	Planned	35 <sup>th</sup> Cement and Concrete Science conference	U. Aberdeen	Cementitious Materials Group	U Aberdeen	70	
19/11/2015	Planned	ClayTech UK 2015 Conference & Exhibition	Staffordshire Showground	IoM3/ICTa	IOM3	150	
05-09/09/2016	Planned	European Society of Glass Science and Technology conference	Sheffield	SGT	SGT	100	