

# BRITISH AND IRISH ASSOCIATION FOR THE PROPERTIES OF WATER AND STEAM

A Member of the International Association for  
the Properties of Water and Steam

# BIAPWS

[www.biapws.org](http://www.biapws.org)

## BIAPWS Annual Report 2011

### 1. Introduction

The British and Irish Association for the Properties of Water and Steam (BIAPWS) is the UK and Ireland national committee of the International Association for the Properties of Water and Steam (IAPWS) and the representative body for Power Plant Chemistry in the UK and Ireland. BIAPWS is a not for profit organisation. This is the annual report of the activities of BIAPWS for the year to April 2011.

2010/11 has been another successful year for BIAPWS. Membership has remained strong, BIAPWS events have been well supported and the BIAPWS symposium and BIAPWS Award have both been successful. In 2010/11 specifically, BIAPWS has improved its links with professional bodies whose interests overlap with those of BIAPWS.

If you would like to know more about BIAPWS, feel free to contact one of the BIAPWS Officers listed below, visit our web site [www.biapws.org](http://www.biapws.org) or e-mail [contact.us@biapws.co.uk](mailto:contact.us@biapws.co.uk).

### 2. BIAPWS Membership

BIAPWS membership has remained strong and BIAPWS is currently supported by nineteen industrial sponsors, six ordinary members and seven corresponding members. In 2010/11 BIAPWS was pleased to welcome AES and Watercare International as new industrial sponsors. BIAPWS committee meetings are held three times a year, and attendance at these continues to be very good, typically around twenty. BIAPWS committee meetings are preceded by a couple of technical presentations, which always generate a high level of interest. Industrial member's representatives are able to bring a colleague to the meeting to benefit from and contribute to the discussions.

BIAPWS has a strong membership representation in the area of power plant chemistry. However, other areas that are of relevance to IAPWS, for example the thermophysical properties of water and steam and the physical chemistry of aqueous solutions, are less well represented and BIAPWS remains keen to expand its individual membership in these areas.

BIAPWS finances are in good stable condition and it is pleasing that, as a result, membership fees for sponsoring organisations have remained unchanged for the second year running.

### 3. IAPWS Activities

BIAPWS has continued to support IAPWS through its formal membership and participation in IAPWS activities. A number of BIAPWS committee members are represented on IAPWS working groups, in particular Power Cycle Chemistry (PCC). BIAPWS members of the PCC working group are also supporting the production of a new suite of IAPWS Technical Guidance Documents that are expected to provide a valuable resource to those involved power cycle chemistry.

IAPWS holds annual meetings and BIAPWS members support these events by participating in the relevant IAPWS working groups. In addition, BIAPWS is represented on the executive committee of IAPWS. Every four or five years IAPWS holds the International Conference on the Properties of Water and Steam (ICPWS) in place of the annual meeting. The next such conference will be the 16<sup>th</sup> and this will be hosted by BIAPWS and held in the UK in 2013. It has been over fifty years since this conference has been held in the UK and BIAPWS is looking forward to a welcome return to where the very first such conference was

BIAPWS is sponsored by: ABB; AES; Alstom Power; Amec; Centrica Energy; EDF Energy; E.ON UK; ESB Energy International; GDF-Suez (Teesside Power); Hach Lange; Rolls-Royce; RWE-npower; Scottish Power; Serco Group; Swan Analytical (UK); Thames Power Services; Watercare International.

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Secretary: Dr R R Harries, 6, Montague Drive, Loughborough, Leics. LE11 3SB, UK.

Treasurer: Mr E G Huff, Plush Hill, All Stretton, Shropshire, SY6 6JP, UK

held in 1929. A BIAPWS sub-group has been formed to lead the work on ICPWS 16 and the sub-group hopes to sign an agreement with the Institution of Mechanical Engineers (IMechE) for the conference organisation shortly.

For further information on the activities of IAPWS, visit the IAPWS web site, [www.iapws.org](http://www.iapws.org).

## 4. BIAPWS Award

The BIAPWS Award is given annually by BIAPWS to qualifying students as a means of promoting awareness of the topics of interest to BIAPWS and their industrial application. In 2010 the BIAPWS award was co-sponsored by Serco Technical Consulting (Services) and the award recipient was Angela Bradbury of the University of Cambridge. The Award is given in the form of contributory funding by BIAPWS for a work experience placement for the student. Angela spent three months working on a project to review environmentally assisted cracking susceptibility of austenitic stainless steels. Angela gave an excellent presentation on her work at the BIAPWS committee meeting in January 2011.

Many past BIAPWS Award winners have since gone on to full time employment in power generation, demonstrating significant success for the Award in attracting high calibre individuals to the industry.

BIAPWS has also continued to sponsor and judge prizes for energy related projects at a schools science fair in Hinckley, Leicestershire. It is currently looking for new opportunities to support ventures of this nature.

## 5. BIAPWS Symposium

The 12th BIAPWS Symposium, 'Progress in Environmental and Cycle Chemistry', took place at the Village Hotel, Nottingham, on 21 April 2010. This was preceded by a half day workshop on 20 April. Two sessions were held in the Symposium: 'Environmental Issues for Power Plant Water Use and Treatment' and 'Cycle Chemistry and Corrosion', whilst two sessions were held in the workshop, on 'Flow Accelerated Corrosion Modeling and Inspection' and on 'Water Treatment Plant Organic Removal, Optimisation and Troubleshooting'. The popularity of this event continues to increase and over seventy delegates attended the Symposium and over forty attended the workshop. A summary report of the event was published in the journal Power Plant Chemistry. BIAPWS would like to extend its gratitude to all those who helped to make this event such a success.

The 13<sup>th</sup> BIAPWS Symposium and Workshop will take place on 6 and 7 April 2011 at the Village Hotel, Nottingham.

## 6. BSI Representation

In recent years BIAPWS has participated in formal Standards Committees of relevance to its members. As a result BIAPWS is currently represented on three British Standards Committees:

- PVE/2: Water Tube and Shell Boilers. This committee is of relevance to BIAPWS because it is the UK standards committee with responsibility for BS EN 12952-12:2003: Water-tube boilers and auxiliary installations - requirements for boiler feedwater and boiler water quality, and BS EN 12953-10:2003 Shell boilers - Requirements for feedwater and boiler water quality. BIAPWS has led on behalf of other European power plant chemistry specialists to lobby for these standards to be revised and improved. In 2010, the European body responsible for these standards agreed to their revision. BIAPWS would like to recognise the invaluable contribution of its representative on this committee, Dr. Geoff Bignold, in securing this agreement. Further work is required, however, before improved standards will be available.
- CII/62: Treatment of water for boilers. This committee is of relevance to BIAPWS because it is the UK standards committee with responsibility for BS 2486:1997 Recommendations for treatment of water for steam boilers and water heaters. Currently, this committee is not active
- EH/3/6: Water quality - sampling. This committee is of relevance to BIAPWS because it is the UK standards committee with responsibility for BS 6068-6.7:1994 (ISO 5667-7:1993) Guidance on

sampling of water and steam in boiler plants. BIAPWS is expecting to take a lead in revising this document in the forthcoming years.

### **7. Interaction with Professional Organisations**

Because of the diverse nature of the interests of IAPWS, the areas of interest to BIAPWS overlap with the areas of interest of a number of professional bodies. As a result, BIAPWS has corresponded over the last year with a number of bodies with the aim of sharing information and closer working. BIAPWS is now represented on the Water Science Forum of the Royal Society of Chemistry and is liaising with the Water Subject Group of the Institution of Chemical Engineers (IChemE). BIAPWS is also interacting with the Power Industries Division of the IMechE with reference to the organisation of ICPWS 16.

### **8. Closing Remark**

In what will be my last BIAPWS report, I would like to express my sincerest gratitude to all those individuals and organisations who contribute, sometimes in personal time, to the workings of BIAPWS and in support of BIAPWS activities. Without these contributions, BIAPWS would not be able to function effectively.

Dr. Andy Rudge  
Chair, British & Irish Association for the Properties of Water and Steam  
March 2011