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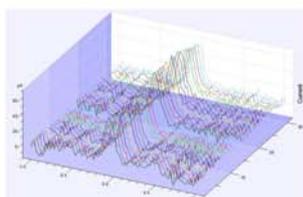
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Editorial

As a school pupil, I was captivated by Dr. W. R. Jones's 1955 classic Pelican Book *Minerals in Industry* (third edition), which started by observing Mankind's tendency to taxonomize societal-beneficial technological industry, and noted that the more-developed parts of human society had then moved into the "Uranium Age". In a slight echo to those sentiments, whilst noting that 2009 marks 50 years since the award of the Nobel Prize for Chemistry to Professor Jaroslav Heyrovský "for his discovery and development of the polarographic methods of analysis", and 100 years since the award of the Nobel Prize for Chemistry to his "scientific grandfather" (via Professor Donnan, FRS), Professor Wilhelm Ostwald "in recognition of his work on catalysis and for his investigations into the fundamental principles governing chemical equilibria and rates of reaction", (as well as ten years since the publication of the late Professor Conway's book on *Electrochemical Capacitors* and Professor Bartlett's book on *Electronic Noses*, 20 years since the publication of Professor Bard's true scanning electrochemical microscope, and 30 years since the late Professor Laviron published his theory of quasi-reversible voltammetry of adsorbed species) it gives me immense pleasure in observing the major rôle our subject (in its broadest sense) plays today in applications ranging from alternative energy systems and in environmental monitoring, nanoscience engineering and materials including corrosion-inhibition, therapeutic devices and next-generation healthcare, and to the conservation of cultural heritage, archaeology and art – see the recent video work by the Turkish-born artist Sarkis for an example of the latter. Recently, the French magazine *L'actualité Chimique* has noted that our subject is *le bel exemple d'une pluridisciplinarité d'actualité* (q.v. issue 327-328, 2009). Moreover, the Organisation for Economic Co-operation and Development noted the importance of our subject in their June, 2009 report: *Policy response to the economic crisis: investing in innovation for long-term growth*. Long may this fruitful era continue!

On a separate note, to mark the retirement of Professor A. Hamnett as Vice-Chancellor and Principal at Strathclyde University, I have included a su-do-ku puzzle on page 50; please send your electronic solutions to me at the address below. The first correct solution drawn (at random) on October 31, 2009 will receive a hardcopy of Professor Hamnett's book *Electrochemistry* (co-authored with Professors Hamann and Vielstich).

I thank all those who have so generously provided materials for this issue, in particular the sponsors of this magazine, and all those who have provided feedback on this publication, especially Professor D. Pletcher.



Editor

If you wish to notify the editor with your view on the material or the content of any item in this issue, or your wish to contribute to the newsletter, please write to the editor at:

electrochemistry.newsletter@googlemail.com

Congratulations to....



Professor Dr. Christian André AMATORE, member of the *Haut Conseil de la Science et de la Technologie of the Government of the Fifth French Republic*, and of Ecole normale supérieure, Paris, France, and Delegate for the Chemistry Section of the *Académie des Sciences, Institut de France* on his election to Fellow of *The Royal Society of Chemistry*.



Professor Philip N. BARTLETT of The University of Southampton, United Kingdom, recipient of the *Katsumi-Niki Prize for Bioelectrochemistry* of the *International Society of Electrochemistry*. Professor Bartlett's research interests cover the following principal areas. Electrodeposition in supercritical fluids, bioelectrochemistry and biosensors, surface-enhanced Raman spectroscopy, nanostructured materials and self-assembly.



Professor Peter G. BRUCE, FRS of The University of St. Andrews, United Kingdom, recipient of a *Research Award* from *The Electrochemical Society, Battery Division*. Professor Bruce's research interests embrace the synthesis and characterization of new materials (extended arrays and polymers) with new properties or combinations of properties, especially energy materials for new generations of energy conversion and storage devices. Recent efforts have focused on the synthesis and understanding of nanoelectrodes for lithium-ion batteries, including nanowire anodes and mesoporous cathodes, novel approaches to high capacity cathodes, and the influence of order on the conductivity of polymer electrolytes.



Dr. Petra CAMERON of The University of Bath, United Kingdom, recipient of a *Harrison-Meldola Prize* from *The Royal Society of Chemistry* for "her pioneering research on solar cells", and an *Electrochimica Acta Award for Young Electrochemists* from the *International Society of Electrochemistry*.



Professor A. Robert HILLMAN (*left*) of The University of Leicester, United Kingdom, on his election to President of the *International Society of Electrochemistry*. We wish him well in his new post. We thank fellow reader, Professor Dr. Christopher M. A. BRETT (*right*) of The Universidade de Coimbra, Portugal who is the Past-President of the *International Society of Electrochemistry*.



Professor Christopher J. PICKETT of The University of East Anglia, United Kingdom, recipient of the *Ludwig Mond Award* of *The Royal Society of Chemistry*, for his "electrochemical, synthetic, spectroscopic and mechanistic studies of key metalloenzymes: the nitrogenases and the hydrogenases." Professor Pickett is Founder and Director of Chameleon Biosurfaces, Ltd., which was set up in 2003 to develop electropolymer materials for biomedical and other applications.



The Editor additionally warmly congratulates Professor Bernd SCHÖLLHORN of Ecole normale supérieure, Paris, France, on his election to a Professorship (of the Second Class) at the Laboratoire d'Électrochimie Moléculaire, Université Paris Diderot, France.



Professor A. Anthony. WRAGG, of The University of Exeter, United Kingdom, and formerly Editor of the *Journal of Applied Electrochemistry*, recipient of the *Castner Medal* of *The Society of Chemical Industry*.

The following is a brief summary of Professor Wragg's background taken from the SCI webpages.

"Professor Wragg obtained a first class honours degree in Chemical Engineering at the then University of Manchester of Science and Technology (UMIST) in 1964 and went on to study for his PhD under the supervision of Professor T K Ross. The topic was *Electrochemical studies of mass transfer in an annular duct*. This set the tone for the majority of Professor Wragg's work which in the main lay at the interface between electrochemistry and chemical engineering.

"He continued at Manchester until the end of 1969 before moving to Exeter University in January 1970 and he has continued there ever since, teaching and researching in heat and mass transfer, fluid dynamics, energy conversion, corrosion science and electrochemical engineering. He has authored some 160 journal papers and edited two volumes. Research papers have covered areas such as electrochemical simulation of heat transfer, electrochemical reactor analysis, natural convection in electrolysis, electrohydrometallurgy, two and three phase electrolysis systems, fuel cell modelling and corrosion.

"One of Professor Wragg's major contributions to electrochemistry has been his editorship for 26 years of the *Journal of Applied Electrochemistry*. He took on this role from Professor Pletcher in 1983 and has just relinquished it in 2009. Tony has served on the SCI's Electrochemical Technology Group (ECTG) committee for 30 years and has been a member of the European Federation of Chemical Engineering Working Party on Electrochemical Engineering (EFChEWP) for a similar period. In these capacities he has organised and taught on a variety of symposia and summer schools.

"Professor Wragg served a four-year period as Dean of the Faculty of Engineering at Exeter in the 1990s. He has received many international short and longer term visitors to Exeter and collaborated in a number of European collaborations such as Tempus, Erasmus, BRITE Euram and COST, thus interfacing with many European colleagues in the electrochemistry field. In 2002 he was awarded the Votocka Medal by the Prague Institute of Chemical Technology for services to international collaboration between that Institute and Exeter."

"Professor Wragg continues to serve on the ECTG and EFChEWP committees and the SCI Finance and Investments Advisory Committee and also serves in an advisory role for *J Applied Electrochemistry*, in occasional speaking engagements, and in refereeing for a variety of Journals."



Mr. Micheál D. SCANLON of The Tyndall National Institute, Ireland, who has been awarded the *Ronald Belcher Lectureship* of *The Royal Society of Chemistry* for his work on "electrochemical ion transfer between immiscible electrolyte solutions and the behavior of biological macromolecules at these interfaces."

The following is a brief summary of Mr. Scanlon's background taken from the RSC webpages.

"Micheál Scanlon, originally from County Limerick in Ireland, is currently completing his PhD research with Dr. Damien W. M. Arrigan in the Life Sciences Interface Group at the Tyndall National Institute, University College Cork.

"His studies involve investigating processes of bio-analytical importance at polarised liquid | liquid interfaces or, as often termed, the interface between two immiscible electrolyte solutions (ITIES). In particular he is interested in miniaturising these interfaces using solid-state porous membranes in order to increase the sensitivity of the analytical response and study any interesting phenomena that may occur at micro- and nano- liquid | liquid interface arrays in the presence of bio-molecules. Micheál has thus far co-authored 6 papers in this field.

"Micheál also completed his undergraduate degree in Chemistry at University College Cork where he won the Reilly Prize, awarded to the candidate who obtains 1st place in the final year chemistry examinations and has obtained Class I (with honours), and an EMBARK Postgraduate Scholarship by the Irish Research Council for Science, Engineering, and Technology (IRCSET) to complete his postgraduate studies.

"His interests lie in the field of (bio)electrochemistry, miniaturised polarised liquid | liquid interface arrays, and biosensors."

What do we do?

SCI Electrochemistry Technology Group

The Electrochemical Technology Technical Interest Group of the Society of Chemical Industry is involved in all aspects of the application of electrochemical science and engineering. The Group's aim is to promote research and development of electrochemistry which leads to the production of appropriate technologies and industrial and consumer products. The Group provides an interface between academia and industry and is a forum for promoting research and collaboration between a range of scientific and engineering disciplines.

Electrochemical activities cut across all industrial sectors, including chemical, pharmaceutical, electrical, electronic and micro-electronic, information technology, mining and metallurgical, biotechnology, transportation, medical, water and wastewater. As such, the Group's interests include applications of electrochemistry in:

- sensors and monitors,
- energy conversion and storage,
- synthesis of chemicals, pharmaceuticals, biochemicals, polymers and electronic materials,
- materials protection, processing and fabrication, and
- environmental protection and control.

The ECTG collaborates with the Royal Society of Chemistry's Electrochemistry Group to promote the research of electrochemistry in academia and industry. The SCI which is the umbrella organisation of ECTG has undergone a radical restructuring in the last two years resulting in the establishment of a new code of governance for the society. ECTG participated actively during the consultation process and worked as part of the transition members' advisory committee (TMAC). Despite the restructuring of SCI, ECTG is still very active and continues to collaborate with the Electrochemistry Group of the Royal Society of Chemistry. The joint committee of ECTG and RSC publish the quarterly Newsletter.

Electrochem 2010 is scheduled to take place at the University of Wolverhampton from the 13th to the 15th September next year and would be coordinated by me.



Dr. Chike F. Oduza
Chairman of SCI ECTG
Reader in Process Engineering and Mngement
School of Engineering and Built Environment
University of Wolverhampton, West Midlands, UK

Want to know more?

<http://www.soci.org/Membership-and-Networks/Technical-Groups/Electrochemical-Technology-Group>

What do we do? *his*

RSC Electrochemistry Group

A pivotal rôle: the Electrochemistry Group plays an important part as the field takes centre stage in the quest for alternative energies.

The current upsurge of interest in alternative methods of energy conversion and storage – supercapacitors, fuel cells, photo-voltaic cells and batteries – has increased the profile of electrochemistry in recent years, since it underpins all of the above. In fact, UK academe and industry have a very strong tradition in electrochemistry, which continues to the present day. The RSC Electrochemistry group acts as a national focus for activity in the field, and as a bridge between national activity and electrochemistry world-wide. Representatives of the two international electrochemical organisations (the International Society of Electrochemistry, and the Electrochemical Society) sit on the RSC group's executive committee, which is currently chaired by Andrew Mount of Edinburgh University. The group also maintains strong links with related committees (both within and beyond the RSC), specifically the Society of Chemical Industry (SCI) Electrochemical Technology group, the RSC Electroanalytical group (Analytical Division) and the Institute of Corrosion.

Reaching out

The group has long recognised the importance of 'outreach' activities. Roger Mortimer of Loughborough University and former committee chair, Phil Bartlett of Southampton University, instigated a project that has brought 200 dye-sensitised solar cells into the classrooms of UK schools and colleges. This was funded via the Electrochemistry group committee and (from 2005) an EPSRC Partnership for Public Awareness grant. The aim of this far-sighted scheme is to highlight the importance of electrochemical processes as alternatives to fossil fuels in energy generation. Additional links, which have enabled further dissemination of the solar cells, have been developed with other national education schemes, such as the RSC Aim Higher project and the Bristol University ChemLabS Initiative.

Emerging energy technologies

Raising the profile of the contribution that electrochemistry makes to emerging energy technologies is still a key issue for the group, which is engaging actively with the RSC's policy section in energy and related areas. Committee member, Ed Wright, of Johnson Matthey plc, says that electrochemistry has always been important to our company. "Initially this has come through developing, manufacturing and supplying catalysts and electrodes to the electrochemistry community. "The recent emergence of real fuel cell products and markets has led to an increased focus in the area and we have established a dedicated purpose-built facility to manufacture the membrane electrode assemblies for use in the growing range of fuel cell applications. "As well as the industrial developmental work, fundamental knowledge is required to help understand the processes occurring and to guide the development of new materials. Much of this is undertaken through collaborations with universities and other companies, and involvement in the electrochemistry community helps to provide such links."

Get involved

As well as the annual Electrochem meeting, a number of one day regional meetings are held in different parts of the UK each year – these are primarily intended as a relaxed forum for postgraduate students to present their work, with the best student speakers winning registration (and a slot in the programme of talks) at the Electrochem meeting.

The cost of membership for the Electrochemistry Group is only £2 *per annum*. To join, tick the box on your subscription, or contact the RSC membership department.

Tel:+44(0)1223 432141; membership@rsc.org.



Written by Professor R. A. W. Dryfe
on behalf of the RSC Electrochemistry Group Executive Committee
The University of Manchester

Originally published in RSC News, June 2009

Want to know more?

<http://www.rsc.org/electrochemistry>

PhD position in Electrochemistry at the University of Bologna

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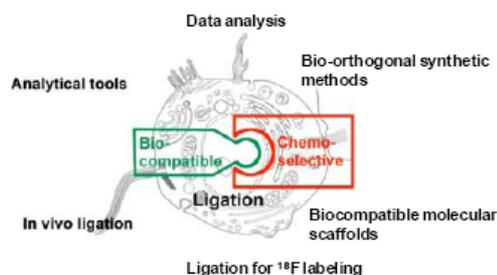


Place : Laboratory of Electrochemistry, Department of Chemistry « G. Ciamician », Alma Mater Studiorum, University of Bologna, Bologna, Italy.

<http://www.chimica.unibo.it>

Title : Bio-Orthogonal Chemo-Specific Ligation (BioChemLig)

Within the Marie Curie Initial Training Network BioChemLig, we are offering a PhD position for a period of 3 years to research on new ligation reactions discovery. Scientists working in the BioChemLig project aim at the design and characterization of new molecular/supramolecular functional nanoscale architectures for the development of *ultra-high sensitivity biomolecules recognition platforms* and *engineered biocatalytic systems*. In particular, the project to be developed in the Group of Electrochemistry aims at the *development of new probes for the electrochemical and electrochemiluminescent detection of important biomarkers also taking advantage of the unique features of novel carbon nanostructures (graphene and carbon nanotubes)*.



The candidate should have a good background in electrochemistry, analytical and physical chemistry in general and should be ready to interact with the other partners from the consortium as well as with other Italian and international research Groups. The PhD fellow will participate in an integrative research project using a panel of methodologies including electrochemistry, high throughput screening, immunoanalysis, ligation of macromolecules and nanoparticles. The PhD fellow will also receive comprehensive training in various fields such as combinatorial chemistry, immunoassays techniques, molecular modeling and nanobiotechnology.

Applicants must have a diploma giving access to doctoral studies. Experience of working in a laboratory environment and interdisciplinary thinking are highly desirable.

Preferred education profile : MSc in electrochemistry, analytical or physical chemistry.

To apply:

Applicants should send an e-mail with CV and 2 letters of recommendation to Francesco.Paolucci@unibo.it

Please, notice that in order to be eligible to the PhD School in Chemical Science of the University of Bologna, formal applications have to be submitted (by internet) to the University of Bologna by mid-September, 2009. Further information and application form may be found at: <http://www.eng.unibo.it/PortaleEn/Research/Research+Doctorates/>

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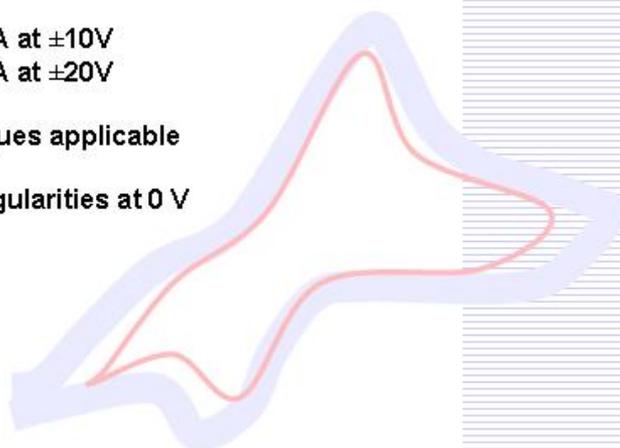
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For more information contact

Steve Fryatt at Alvatek

Tel 01666 500991
info@alvatek.co.uk

PhD position in Organic Chemistry at the University of Bologna

FP7/People Marie Curie Action



Place : Laboratory of Organic Chemistry, Department of Chemistry « G. Ciamician », Alma Mater Studiorum, University of Bologna, Bologna, Italy.

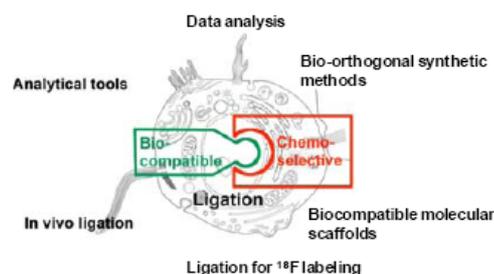
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Scientists working in the BioChemLig project aim at the design and characterization of new molecular/supramolecular functional nanoscale architectures for the development of ultra-high sensitivity biomolecules recognition platforms and engineered biocatalytic systems. In particular, the project to be developed in the Group of Organic Chemistry aims at the synthesis of new electrochemical and electrochemiluminescent active ligands able to react with important biomarkers “on water” or “in the presence of water”. Organocatalytic reactions will be ex-novo developed for effective bio-ligation. In addition organocatalytic-organometallic reaction will be studied as complementary projects.

The candidate should have a good background in organic synthesis, ligands design, and in particular in catalytic reactions. Previous experience in organocatalysis is also an advantage. The candidate should be ready to interact with the other partners from the consortium as well as with other Italian and international research Groups. The PhD fellow will participate in an integrative research project using a panel of methodologies including electrochemistry, high throughput screening, immunoanalysis, ligation of macromolecules and nanoparticles. The PhD fellow will also receive comprehensive training in various fields such as combinatorial chemistry, immunoassays techniques, molecular modeling and nanobiotechnology.



Applicants must have a diploma giving access to doctoral studies. Experience of working in a laboratory environment and interdisciplinary thinking are highly desirable.

Preferred education profile : MSc in electrochemistry, analytical or physical chemistry.

To apply:

Applicants should send an e-mail with CV and 2 letters of recommendation to piergiorgio.cozzi@unibo.it

Please, notice that in order to be eligible to the PhD School in Chemical Science of the University of Bologna, formal applications have to be submitted (by internet) to the University of Bologna by mid-September, 2009. Further information and application form may be found at: <http://www.eng.unibo.it/PortaleEn/Research/Research+Doctorates/>



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ISE REGIONAL STUDENT MEETINGS

Graduate Students who are members of ISE and intend to organize a **Regional Student Meeting** can apply for ISE financial support. **Regional Student Meetings** are typically one-day meetings involving graduate students active in the geographic area where the meeting takes place.

The format of the meeting (oral presentations, posters, discussion sessions, other) is autonomously decided by the organizers who will be responsible for securing a venue and collecting registrations. No registration fee should be requested. No later than one month after the meeting, the organizer(s) will send to the ISE Office a report on the event, including the names and the e-mail addresses of the participants. The participants will be encouraged to apply for ISE membership. An overview of the report accompanied by suitable pictures if available will be posted on the ISE website under Student Activities.

Applications for ISE support must be sent by e-mail to the **ISE Office (info@ise-online.org)**, with a copy to the Regional Representative of the country where the meeting is organized, 3-12 months before the meeting date, using the **application form (q.v. page 18)**. The local ISE Regional Representative (*Professor Robert A. W. DRYFE of The University of Manchester, for the United Kingdom*), if requested, will assist the potential meeting organizer in the preparation of the application. Applications will be analyzed by a committee consisting of (i) ISE Secretary General, (ii) ISE Treasurer, (iii) ISE Vice President responsible for Educational Activity and (iv) ISE Vice President responsible for Regional Sections.

The response will be communicated to the applicant and to the relevant Regional Representative no later than 1 month after the application submission.

The maximum financial support will be **600 €**; the expected use of the funds must be specified in the application. Co-sponsoring by other Societies and/or institutions is possible.

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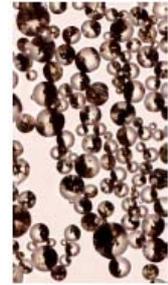
Send the filled in form by e-mail to the ISE OFFICE : info@ise-online.org

ALL the parts of this form, including the bank details, must be filled by the meeting organizer, in collaboration with the local Regional Representative. Incomplete forms will not be processed.	
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MEETING VENUE:	
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FACULTY SPONSOR First Name: Last Name: Institution: E-mail:	
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EXPECTED NUMBER OF PARTICIPANTS - From the local Region - From other Regions	
REQUEST OF FINANCIAL SUPPORT - Support requested (maximum 600 €) - Proposed use of funds (itemized)	
OTHER EXPECTED SPONSORS, if any	
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UK Polymer Colloids Forum

14th UKPCF Annual Meeting, 14-16 September 2009,
The University of Hull, Kingston-upon-Hull, UK



This meeting will be held at The Lawns Centre building (halls of residence) which is located in the beautiful East Yorkshire village of Cottingham, about three miles from the main campus of the University of Hull. The meeting will have four sessions, starting at 14H00 on Monday, September 14, 2009 and finishing at 13H30 on Wednesday, September 16, 2009.

The general topics (not exhaustive) for this meeting will be:

1. **Stabilisation of foams and emulsions with colloid particles.**
2. **Fabrication and applications of multifunctional colloids.**
3. **Novel techniques and materials for microencapsulation.**
4. **Self-assembly of novel functional materials and smart surfaces.**
5. **Nanosensors and detection based on colloids and polymers.**

Organisers: PAUNOV Vesselin, LOW Diane & WADHAWAN Jay

Want to know more?

<http://www.hull.ac.uk/scg/ukpcf2009>

electrochem09

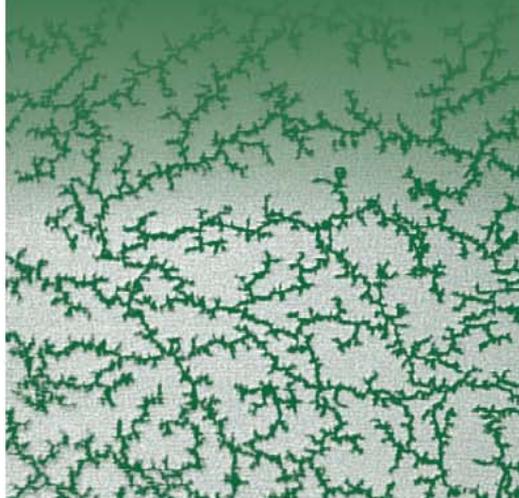
**16th and 17th
September 2009**

at The University of Manchester
incorporating the 50th
Corrosion Science Symposium

Lead organisers –

**Robert Dryfe, Nick Stevens
Peter Fielden & Ted Roberts**
The University of Manchester

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and seven symposia.



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Plenary lectures:

RSC Electrochemistry group Faraday medallist – Professor Reg Penner, University of California Irvine

ICorr Evans Award Winner – Professor Christofer Leygraf, KTH Stockholm

SCI Castner Medallist – to be announced

Call for abstracts:

Please go to www.meeting.co.uk/confercare/electrochem09 to upload your abstract.

Please limit your abstract to 250 words and indicate if you prefer oral or poster presentation. The deadline for submission is Sunday 31st May.

Exhibition:

The meeting rooms, coffee/exhibition area are within close proximity, ensuring high visibility to delegates. **If you are interested in booking space, then please ring 0161 306 4089 or email mcc.reg@manchester.ac.uk**

Themes:

Symposia are being organised as follows

Clean Energy Incorporating Fuel Cells and Semiconductor photoelectrochemistry/excitonic solar cells

- *semiconductor photoelectrochemistry, excitonic solar cells, fuel cell processes, electrochemical energy storage*
Dan Brett (UCL), David Fermin, (Bristol)

Electroanalysis & Sensors

- *electrochemical bio-sensors, enzyme and protein electrochemistry, micro-fluidic systems in electrochemistry*
Craig Banks (MMU), John Hart (UWE), Peter Fielden (Manchester)

Electrochemistry under Non-conventional Conditions

- *plasmas, microwaves, ultrasound, field effects, temperature effects, unusual media*
Daren Caruana (UCL), Frank Marken (Bath)

Electrodeposition: from the nano to macro scale

- *templating, composites and thin films, monolayers, nanoparticle preparation*
Natasa Vasiljevic (Bristol), Frank Walsh (Southampton)

Environmental Electrochemistry

- *treatment technologies, recycling and regeneration, clean synthesis/manufacture, low-carbon solutions*
Geoff Kelsall (Imperial), Ted Roberts (Manchester)

Materials Degradation INCORPORATING the 50th Corrosion Science Symposium

- *localised corrosion, corrosion and materials failure in the nuclear industry, coatings, atmospheric corrosion, modelling of corrosion processes*
Sudipta Roy (Newcastle), Nick Stevens (Manchester)

Organic Materials In Electrochemistry

- *electroorganic synthesis, conducting polymers, chemically-modified electrodes, ionic liquids, novel organic membranes, biomolecule-modified electrodes and smart electrode materials*
Damien Arrigan (Tyndall), Darren Walsh (Nottingham)

**Poster session:**

Posters will be displayed in the coffee/exhibition area throughout the meeting. There will also be a formal poster session scheduled into the programme.

Accommodation:

En-suite student accommodation has been reserved in a new hall of residence (opened in 2008). The cost for bed and breakfast is just £39.50 per night.

As an alternative, nearby hotel accommodation will also be offered on the registration form at preferential rates. Accommodation will also be available for those wishing to arrive in Manchester the day before the meeting begins and/or those wishing to remain for an extra night.

Registration:

Member (RSC, SCI, ISE, ICorr, ECS) = £200.00

Student Member (RSC, SCI, ISE, ICorr, ECS) = £125.00

Non-member = £275.00 (student = £150.00)

Prices Increase after 12th July 2009. Online registration will open in March.

The registration fee includes attendance at all sessions, refreshments, lunches and conference dinner.

Registration will open at 0830 hours on Wednesday 16th September with the first session commencing at 1000 hours. On both days there will be keynote lectures and parallel sessions of contributed lectures, followed by the conference dinner in nearby University Place. The event finishes at 1630 hours on 17th September.

The University campus spreads south from the city centre and the specific conference venue is just a 10 – 15 minute walk from Manchester Oxford Road and Manchester Piccadilly railway stations and on a very busy bus route. Direct trains run to both stations from Manchester Airport (ca 20 minutes journey time). Further information on location and travel will be forwarded with your booking confirmation.



electrochem09

Please register online at:

www.meeting.co.uk/confercare/electrochem09

or complete this registration form and return it with full payment to the address indicated.
PLEASE USE BLOCK CAPITALS.

The registration form and payment should be returned to:
Electrochem 09
ConferCare, The University of Manchester,
Barnes Wallis Building, Sackville Street,
Manchester, M60 1QD, UK

Tel: +44 (0)161 306 4068
Fax: +44 (0)161 306 4070
Email: mcc.reg@manchester.ac.uk

A. PERSONAL DETAILS

Title (Prof/Dr/Mr/Mrs/Ms/Miss):

Last Name:

First Name:

(This information will be used in the production of badges)

Institution:

Position:

Department:

Contact Address:

Postcode: Country:

Email:

Telephone: Fax:

Please indicate any special requirements, e.g. diet, access etc:

B. REGISTRATION

(includes attendance at all sessions, refreshments, lunches and conference dinner)

	Before 12/7/09	After 12/7/09
Member Registration	£200	£250
Non-member Registration	£275	£325
Student Member Registration	£125	£150
Student Non-member Registration	£150	£175

Membership Number
(RSC, SCI, ISE, ICorr, ECS - please circle your affiliation)

C. ACCOMMODATION

Accommodation is available in an en-suite University hall of residence or in local hotels at discounted rates. Please tick your choices accordingly.

En-suite student hall of residence £39.50 per night (single only)				
Double N/A	Single	15th	16th	17th
Ibis Hotel, Charles Street (2*) single £55 and double £60 per night				
Double	Single	15th	16th	17th
Ramada Piccadilly Hotel, Portland Street (3*) single £99 and double £109 per night				
Double	Single	15th	16th	17th

D. PAYMENT

Full payment should accompany your registration.

Please charge my credit/debit card: VISA / MASTERCARD / DELTA / MAESTRO
(please delete as appropriate)

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I enclose a cheque in sterling made payable to The University of Manchester.

Please invoice

Purchase Order Number

Total Costs	
REGISTRATION (B)	£
ACCOMMODATION (C)	£
GRAND TOTAL	£

E. BOOKING CONDITIONS

Cancellation policy:- Cancellations received before 29th August will receive a full refund less a £50 admin charge. After this date, there will be no refund, but substitutions will be accepted if written notification is received. Confirmation:- Booking requests will be confirmed only when forms AND payment have been received.

Data Protection:- Your contact details will appear on the conference participants' list. If you do NOT wish your details to be included, then please tick the box

F. DECLARATION

I have read and understand the booking conditions set out above and enclose full payment.

Signed:

Date:



Dr. Dan BRETTE received his first degree in Chemistry from King's College, University of London in 1996 and M.Sc. in Analytical Chemistry from Birkbeck College London in 1997. In 2000 he obtained his Ph.D. in Physical Chemistry from Imperial College, University of London (ICL) on the Electrochemistry of Self-Assembled Monolayers. Dr. Brett then worked as a Research Associate in the Department of Chemistry and Department of Chemical Engineering (ICL) looking at various aspects of fuel cell science and engineering. In 2006 he was promoted to Research Fellow in the Department of Earth Science and Engineering (ICL) and joined the Department of Chemical Engineering at University College, London (UCL) as a Lecturer in Energy in 2007.

Dr. Brett has published over 70 scientific papers (35 peer reviewed) plus a book on novel fuel cell testing methods. His research interests include: electrochemical energy conversion and storage, hybrid energy systems, renewable energy, micro-generation, electrochemical techniques and instrumentation development.

He is the Secretary of the Society of Chemical Industry Electrochemical Technology Group, Associate Editor of the Analytical Chemistry section of The Scientific World Journal, Co-founder of the ICL Fuel Cell Network, Honorary Lecturer in the Department of Earth Science and Engineering, ICL and Co-Director of The Centre for CO₂ Technology, UCL. He leads the Micro-generation research theme within the UKERC, is a member of the DIUS Chemical and Biological Metrology Working Group and is a founding member of IonIQ, a new energy and fuel cell consultancy company.

Find out more on:

UCL: <http://www.ucl.ac.uk/chemeng/staff/brett>

The Centre for CO₂ Technology: <http://www.ucl.ac.uk/centre-for-co2-technology/>

IonIQ: <http://www.ioniqconsulting.com>

Dr. Petra CAMERON is currently a RCUK academic fellow at the University of Bath. In 2009 she was awarded a Harrison-Meldola memorial prize by the Royal Society of Chemistry for her original contributions to research in chemistry. She was also awarded an Electrochimica Acta Travel Award by Elsevier and the International Society of Electrochemistry (ISE) to allow her to give an oral presentation at the ISE 60th Annual meeting in Beijing, August 2009.

Dr. Cameron did her undergraduate degree at the University of Edinburgh with a master's project in electroactive polymers. She gained her PhD for research on the fundamental properties of photoelectrochemical cells from the University of Bath in 2005. During her PhD, she was chosen to be one of twenty UK representatives to the 52nd meeting of Chemistry Nobel Prize winners in Lindau, Germany. After completing her PhD she was awarded an Alexander Van Humboldt Research Fellowship to work at the Max Plank Institute for Polymer Research (MPI-P) in Mainz, Germany. There she carried out independent research within the material science group led by Prof. Wolfgang Knoll.

She has published 17 papers in the scientific literature since 2003 and recently completed two invited book chapters for Wiley-VCH. She has been an invited speaker at more than six international seminars; last year she gave an invited talk in the centre for co-ordination chemistry at the CNRS in Toulouse.

Find out more on: <http://www.bath.ac.uk/chemistry/people/cameron/> and <http://people.bath.ac.uk/chppjc/>



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Announcements

Alvatek & Palm Instruments

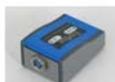
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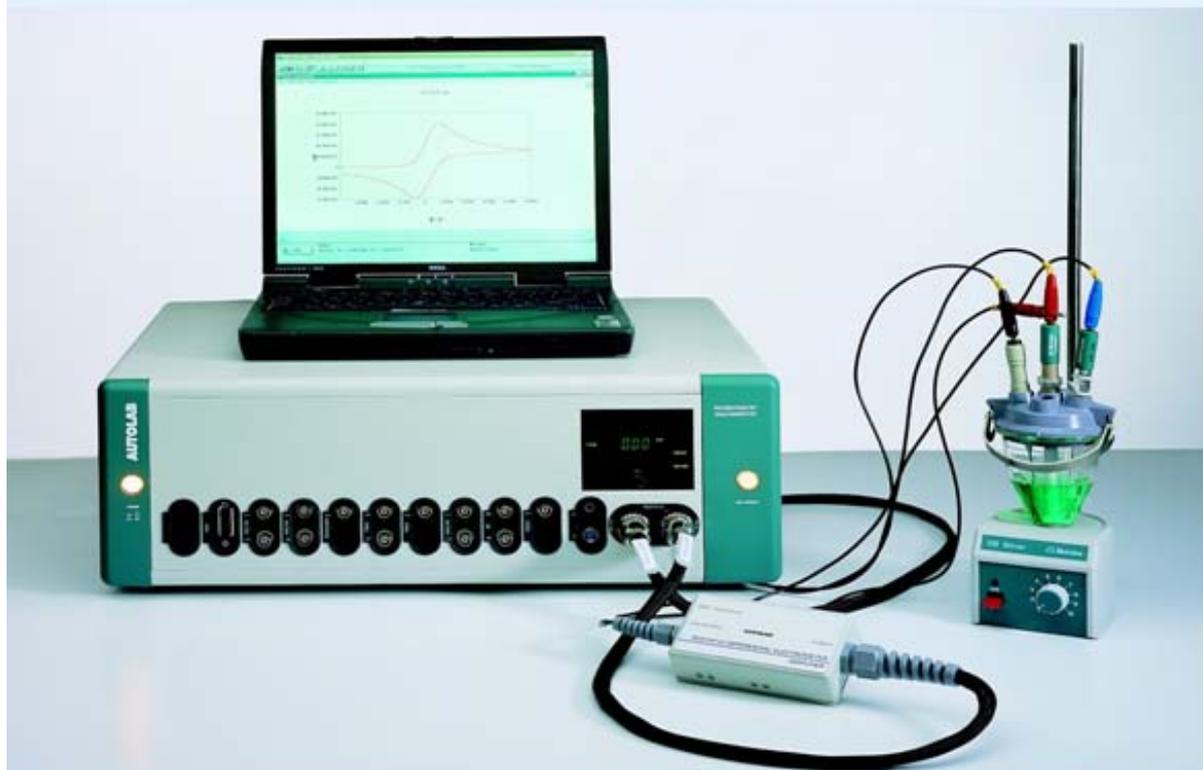
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**Bath
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Summer School 2010**



**Theory and Practice
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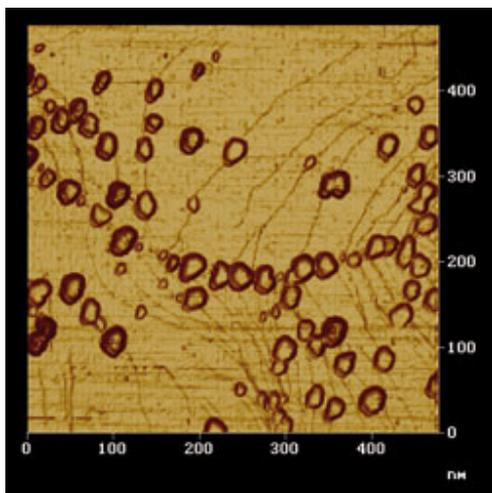
20th—23rd July

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Meeting Reports

Electrochem'08

September 15-17, 2008, University of Liverpool, UK



An in-situ scanning tunnelling microscopy image of bulk copper growth centres forming on a gold substrate. Using such images we can study how the solution chemistry affects the formation of nanometre-size metal particles on surfaces. Image and caption taken from SCI webpage.

organisation was by SCI. Registration was about £320, *i.e.* very expensive. This included lunch buffets (snacks), coffees, biscuits, and a conference dinner.

The 14th annual International Electrochemistry Conference, Electrochem 2008, was held in Liverpool in September 15 – 17, 2009.

The Royal Society of Chemistry Electroanalytical Interest Group (EAG) ran sessions on Monday and Tuesday afternoon on the topic of electroanalytical sensors.

The EAG sessions had a total of eleven talks, and one plenary talk by Damien Arrigan (Chips and Gravy: the development of engineered electrochemical systems for biomolecular detection). The topics of the eleven regular talks were varied and covered biosensors, screen printed devices, disposable flow cells, biomedical sensors, pH sensors, microwire sensors for arsenic, ion sensors for explosions, carbon nanotubes for chilli peppers and lysozyme detection. All in all a successful and interesting programme.

The combined meeting had about 95 participants. There was a good set of invited plenary talks.

The meeting was organised locally by Simon Higgins for the Electrochemistry group of the RSC, whilst the practical

C. M. G. van den Berg
School of Chemistry, University of Liverpool
on behalf of the RSC Electroanalytical Interest Group
*Conveyed by Professor B. Birch,
Luton University, Luton, UK.*

The Editor notes that the quoted cost was for "last-minute" delegates who at the time of application were not RSC, SCI, ISE or ECS members. Similar costs were incurred by those in the same category at Electrochem'07. For Electrochem'09, members of a plethora of professional societies and communities-of-interest will be able to attend at discounted prices, *q.v.* page 23.

60th Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy ("Pittcon")
March 8-13, 2009, Chicago, Illinois, United States of America



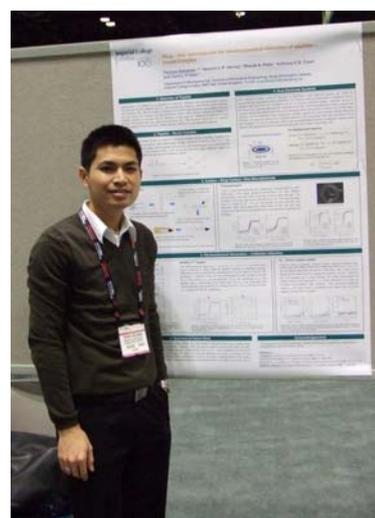
Chicago town (a view from the John Hancock centre).

Pittcon is one of the biggest conferences and expositions aimed at individuals who work in the broad field of laboratory science. It also targets companies which market to the instrumental and analytical researchers. The conference has been run every year since 1950 and located in the US. For this year, the 60th Pittcon was held in Chicago which boasts a beautiful landscape and has an attractive music scene.

There were approximately 19000 delegates from all over the world who participated in symposia via oral and poster presentations, short courses, networking sessions and laboratory equipment expositions. Themes and programmes covered all areas of analytical science including environmental, pharmaceutical, biochemical,

biomedical and polymer technology. Typically, nanotechnology played a major rôle and is probably the most popular in number of applications presented. The highlights of the conference include the heritage award and the plenary lecture in opening session which was held on the first day. The Pittcon heritage award goes to Dr Alfred Bader who is the founder of Sigma-Aldrich Chemical Company. Dr Bader was appreciated and detailed his experience when he started his business with his partner, which later become a big brand and well-known Sigma-Aldrich Company. He encouraged all of us to take a risk in our research and work where there might be less chance to success. In plenary lecture, Professor George M. Whitesides presented his noteworthy work in title "Paper Diagnostics-Using First World Science in Developing Economies", which essentially exploited paper chromatography as a zero-cost method. It was interesting to know that analytical measurements could be performed in the area where equipments and facilities are limited. Professor Whitesides is currently the Professor in Department of Chemistry and Chemical Biology, Harvard University. I am sure that we are all fulfilled with the talks and more enjoy with welcome drinks provided by the conference after the opening session.

Due to the large number of delegates, and with limited time, we were allowed only two hours to present our poster. However, the poster session were held near the trade exposition, we all enjoyed a large amount of interest including a useful conversation with Jon Howell, SEAC secretary, who gave me some tips and useful references for my work. The trade exposition were also spectacle with many booths of laboratory science companies including demonstrations for example; Sigma-Aldrich, Agilent, Thermo Scientific, ZEISS and particular interest CH Instruments where we had a chance to discuss about the custom built instrument for our applications. US affectation for selling and showmanship were much in evidence possibly because of the recession. For oral presentations, there are a number of works based on separation science, electrochemical methods, atomic, molecular and ion spectroscopy. The hot issue would be a miniaturized system such as microfluidic devices applied in spectroscopic or electrochemical detection. In electrochemical methods where I mostly attended to the talk, major works were about electrochemical monitoring of neuroactive compounds with *in vitro* and *in vivo* applications. Moreover, there are some woks on molecular recognition using aptamers biosensor for biomedical applications, ion selective sensor and biofuel cell. To me, some talks are quite interesting, for example; talks given by Prof Aaron Wheeler ("Digital microfluidics for pharmaceutical screening assays"), Prof Susan Lante ("Development of microchip based sampling and separation systems for in vivo and in vitro monitoring of bioprocesses") and Prof Charles Martin ("Nano test-tube").



Mr Parinya Seelanan presenting his poster at Pittcon 2009

For almost a week in the conference, I had such a pleasant time. Staffs and facilities for the conference are very well-organised. Pittcon provides a good opportunity to broaden my knowledge in a large area of analytical science, to meet and discuss with new people, including outstanding scientists. I gratefully thank the Electrochemistry group of RSC for financial support. Special thanks to Dr Danny O'Hare, my supervisor, and all members of the e-sensor group for their help and support.

Parinya Seelanan
Department of Bioengineering
Imperial College London, UK

Elecnano3: Electrochemistry in Nanosciences April 20-22, 2009, Paris, France



*Delegates at Elecnano3.
Can you spot Dr. Andrew J. Wain
(of the National Physical Laboratory)?*

This meeting, the third in its series (previous editions were held in Lyon (2007) and Paris (2006)), was based at the new campus of Université de Paris VII, Denis Diderot (which these days is referred to as Université Paris Diderot) at site of the former Parisian milling industry in the 13th district of Paris, on the left bank of the Seine, and easily within walking distance from the French National Library and the French Finance Ministry. Paris VII moved to this new location from its co-share at Place Jussieu with Paris VI in 2007. The campus is wonderfully attractive, although the bile-green Bâtiment Lavoisier (where the infamous *Laboratoire d'Electrochimie Moléculaire* is based) is not to every Frenchman's taste! The conference lead organisers, Professor Fethi Bedioui (President of the Electrochemistry Group of the *Société Chimique de France*) and Professor Jean-Christophe Lacroix, and the local organising committee (which included Professors Limoges, Maisonhaute and Robert) are certainly to be congratulated for arranging the conference in such a beautiful location (and at such low cost).

The conference, organised by French speakers but held exclusively in English (except for the lunch service), hosted merely five delegates from the United Kingdom (one of those, from Liverpool University, was of French nationality; another was an exhibitor from Uniscan, Ltd, and two others from the National Physical Laboratory). After a few welcoming words from Professor Bidon, Professor Bard presented the first of four plenary lectures, his, on applying SECM to discovering and studying electrocatalysts. Other lectures in this class included those by Professor Schuhmann (on the convolution of topography and local electrochemical activity in SECM), Professor Amatore (on nanosecond voltammetry to address electron communication *inside* molecules), and a magnificent lecture on electron transport via redox molecules by Professor Tao.

Particularly fascinating keynote lectures were given by Professor Lefrou (on numerical simulations for SECM), Professor Kanoufi (on the micropatterning of surfaces with organic layers) and Professor Demaille (on elastic diffusion quantified using combined AMF/SECM). Other notable oral contributions were from Professor Pinson, Dr. Sánchez-Sánchez, Professor Hapiot's group, Professor Girault's group, Dr. Arrigan, and Dr. Nicholson (from the National Physical Laboratory). In the spirit of enabling open-access to the keynote and plenary lectures (presumably thereby anticipating paradigm shifts in the dissemination of valuable conference presentations) these had been recorded; I am informed that pod-casts of these will be available at some time on the conference website.



*Plenary lecturers. Clockwise
from top left: Professors
Bard, Amatore, Tao and
Schuhmann.*

The 1.5 – 2.5 h lunch breaks provided ample time to eat at the local CROUS (these restaurants typically provide wonderful three course meals to Parisian students – and postdoctoral trainees, and at 3.20 €, 2005 prices, represent excellence in number-of-tasty-mouthfuls-per-centime) and catch-up with colleagues and familiar faces, with enough time to view and discuss the poster presentations. The superb banquet on the Seine was enjoyed by all. Post-conference drinks, held in the nearest public house (a British chain-pub), *The Frog at the British Library*, allowed some of local organising committee time to relax after their super-efficient work.

Overall, this short meeting afforded a wonderful opportunity for learning in a rich academic environment.

jw
Kingston-upon-Hull

5th Kurt Schwabe Symposium: From Corrosion to Semiconductors May 24-28, 2009, Erlangen, Germany



The Castle in Erlangen, which is also the administration centre of the Friedrich-Alexander-Universität Erlangen-Nürnberg.

Erlangen is a lovely Franco-Bavarian town with an impressive castle that doubles as the administration centre of its university. The main topics covered by the wonderfully stimulating programme arranged by Professor Drs. Schmuki and Strehblow were corrosion, semiconductors and solar cells – topics of great value to society. The parallel sessions of corrosion with nanotechnology or nanostructures, or corrosion with nanotechnology for solar cell research, or oxide characterisation and stability crossed with nanoarchitectures, ensured that there was an enormous amount of time available to simply enjoy knowledge enrichment.

Notable lectures were by Professor Boukherroub (on silicon dissolution), Professor Koshida (on nanosilicon ballistic electron emitters), Professor Wark (on the proton conductivity of ordered mesoporous materials), Professor Mandler (on the use of sol-gels to inhibit magnesium corrosion), ISE Professor President Hillman (on the EQCM study of aluminium deposition in room

temperature ionic liquids), Professor Hagfeldr (on an integrated approach to dye-sensitised solar cells), Professor Morin (on her recent work on TiO₂ films sprinkled with CdSe_xS_{1-x} quantum dots), Professor Dr. Schmuki (on the application of TiO₂ nanotubes for solar cells), Professor Hebert (on coupled ion migration and stress-driven transport in oxide films, recently published in *Nature Materials*), Professor Kelly (on silicon carbide as a photocathode for water splitting and hydrogen storage), Professor Pleith (on insights into electrodeposition), Professor Krysinski (on the synthesis and surface modification of magnetic nanoparticles), Professor Bund (on his recent work with Professor White on diffusion-migration controlled gating at conical nanopores) and Professor Bastide (on localised etching of silicon using metal nanoparticles). Several poster sessions (which included ample opportunity to meet familiar faces and discuss new ideas), allowed for knowledge enhancement.

The social scene was very well managed; the free lunchtimes enabled the further exploration of Erlangen. I was very impressed by the range of ethnic shops and restaurants available (and am very grateful to the Indian members of Professor Schmuki's group for showing me the Indian fast food outlets – this as a result of losing a "hot-chilli" eating competition with the host), but was disappointed in my hunt for Professor Schmuki's recent book in two local academic bookshops. Nevertheless, I managed to pass excess-time reading, at break-neck speed, the delightful recent volume by Baroness Archer (*q.v.* page 48) under the much-welcomed shade afforded by the Huguenot Church in Erlangen. The conference banquet included a tribute to Professor Schmuki's predecessor at Erlangen, Emeritus Professor

Helmut Kerscher, and concluded with a fantastic fire-eating display! At the end of the conference, delegates were invited to the local beer festival.

An excellent conference, which offered much food for thought. I wish to thank Professor Schmuki and all of his group for all of their generosity.

jw,
Kingston-upon-Hull

5th ECHEMS Meeting
June 7-10, 2009, Weingarten, Germany

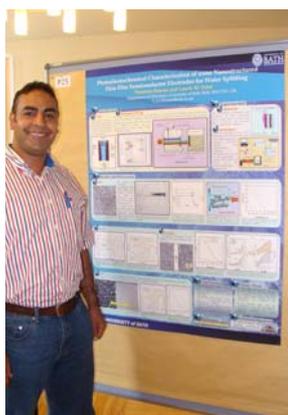


The Basilica at Weingarten, Germany.

The conference was held in the very beautiful and quiet city of Weingarten in southern Germany. The city boasts an amazing Basilica and a beautiful Science Academy, in which most of the delegates rested during the conference.

The conference covered topics such as redox-active monomers, polymers and materials: basic research and application, electrochemistry of nanostructures and electrochemical methods for their investigation, electrosynthesis of molecules and materials, new electroanalytical techniques for characterization of redox-active species, materials and supramolecular assemblies, and electrochemistry in non-conventional environments.

The meeting was very well organized by Bernd Speiser, Gunther Wittstock, Jürgen Heinze and Britta Rochier, attended by 86 participants from 23 countries, featuring five keynote lectures, 30 oral presentations, and 36 posters. From my perspective, all the lectures were highly informative and useful to my research training. The Posters were very good and there were three prizes for the best three posters, the top prize went to Noreen Siraj working in Austria with Prof. G. Grampp.



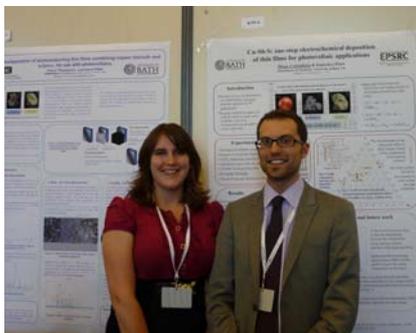
Mr. Ibrahim Hassan with his poster.

Although the meeting was very rich of very useful scientific discussions, there were many very interesting activities such as visiting of the amazing Basilica and listening to the unique organ. We also managed to visit the Zeppelin museum and we enjoyed the informative guidance explaining the history of these aircraft – a reminder of the delights and pitfalls of a former hydrogen-based transport. In the spirit of encouraging further scientific discussion, a fantastic boat trip from Friederichs-Hafen to Meersburg across the Bodensee was arranged. The beauty of the lake and the views into Switzerland and Austria greatly facilitated this.

Generally, the meeting provided a very good opportunity for the young scientists to meet in person and discuss with more senior scientists. I very much enjoyed meeting and discussing with Kevin D. Moeller, Alan M. Bond, Lorenz Walder, Klaus Müllen, Bernd Speiser, and Jürgen Heinze.

Ibrahim Hassan
School of Chemistry
The University of Bath, UK

E-MRS Spring Meeting
June 8-12, 2009, Strasbourg, France



Ms. Claire Thompson pictured with Diego Colombara and her poster.

The spring meeting of the E-MRS this year was once again held in the stunning and sunny city of Strasbourg. The vast conference centre, Palais de la Musique et des Congrès itself was dwarfed only by the European Parliament, standing only a few minutes walk away. With symposia on subjects ranging from inorganic and nanostructured photovoltaics to bioinspired and biointegrated materials as new frontier nanomaterials, there was something for every type of chemist, not just the electrochemist.

The conference itself was attended by well over 3000 people from more than 40 different countries. Despite the large number of attendees there was plenty of time for lively discussions and networking over lunch and during the many interesting poster sessions.

The sessions started on Monday with a packed schedule of talks setting a precedent for the rest of the week. Wednesday saw an afternoon of plenary lectures including a dynamic and thought provoking talk from Alexander. M. Bradshaw from the Max-Planck Institute, entitled "long term energy supply: Can we leave it entirely to the sun and wind". Discussing all aspects of alternative energies, in particular nuclear fusion and its viability as an energy source. This brilliant lecture was accessible to audiences of a wide range of interests. The conference was also in for a treat with a presentation by Noble Laureate Alan Heeger discussing current research carried out within his group on plastic solar cells. My poster session came on Thursday giving me plenty of opportunity to discuss my work and ideas with experts in the field, within a very supportive and encouraging atmosphere. It was a good environment in which to receive feedback and some very useful tips on how my work could go forward and be improved upon.

There were also a series of inspiring workshops running throughout the week, which aimed to encourage innovation and entrepreneurship within science, with the following talks and discussions taking place.

- Carbon Dioxide: a new Material for Energy Storage.
- Photovoltaic Technologies – a European Strength: Challenges for Materials Research.
- Developing Entrepreneurship in Europe: Best Practices and Innovative Ideas.
- Workshop Symposium A: Nanotechnology for Energy Applications.
- Exhibition Symposium F: Multiflexioxides.

All-in-all it was a very enjoyable week and I have learned a lot, with my main interest lying in the electrodeposition of metals and semiconductor materials for photovoltaic applications, there were many lectures covering similar subjects enabling me to further improve my knowledge of the broader subject area. There was also plenty of free time in the evening to soak up the French culture, enjoying the beautiful food and seeing the sights the city had to offer.



The European Parliament at Strasbourg.

I would like to thank the RSC electrochemistry group for their generous funding which has allowed me to attend this event.

Claire Louise Thompson
School of Chemistry
The University of Bath, UK

Electrochemistry Research Symposium
December 17, 2008, The Manchester Metropolitan University, UK



About fifty people (professors, company officers, lecturers and students) converged, on the afternoon of December 17, 2008, in the University Assembly Hall of the John Dalton Building in Manchester to listen to hot topics in Electrochemistry, hosted by Dr. Craig Banks. Given the release of the RAE results that morning, the pre-meeting air, heavily suffocated by the wonderings of which departments had made gains and which had not in the important rankings, was cleared by the fragrant and radiant arrival of the distinguished invited speakers (RSC Theophilus Redwood Lecturer Dr. Frank Marken, Dr. Damien Arrigan and Professor Robert Dryfe) and our host.



This symposium, sponsored by The Royal Society of Chemistry and The Manchester Metropolitan University (MMU), was opened by the Vice-Chancellor of MMU (Professor John Brooks), who refused to comment on the performance of the Division of Chemistry and Materials in the School of Biology, Chemistry and Health Science at MMU; we had to wait until 00H01 that night.



Images of MMU.

Dr. Frank Marken, Bath University, spoke first as part of his RSC Theophilus Redwood prize schedule, detailing the history of the prize, followed by an elegantly exploration of the use of microwaves in electroanalysis, presenting the enhanced rates of mass transport to electrodes, the changes in the chemistry in the presence of high energy radiation, and even exotic results suggesting plasma formation.

In a return to the Manchester area, Dr. Damien Arrigan followed suit, discussing an the use of miniaturised electrified liquid/liquid interfaces for the detection of biomolecules. Impressively, Dr. Arrigan detailed the radiant transformation of a classical tool into a device of commercial significance and value.

The last speaker, Professor Dryfe, is an outstanding communicator. His engaging and pedagogic talk, essentially on the electro-formation of Pickering emulsions at fluid/fluid interfaces (of the condensed phase variety), elegantly related micro-scale phenomena to the formation of nanostructures by careful manipulation of the molecular electrochemistries.

The meeting concluded with a generous buffet and wine reception, mixed with a poster session detailing student projects at MMU. Our thanks go to Dr. Craig Banks for organising this meeting – a pre-Christmas delight!

jw
Kingston-upon-Hull



Professor J. F. Rusling.

Midlands Electrochemistry Group (MEG) Meeting 09
April 1, 2009, The University of Nottingham, UK

The 2009 Midlands Electrochemistry Group Meeting was held at the University of Nottingham on the 1st of April and 52 delegates made the trip to Nottingham for the Meeting. The meeting was especially memorable as it was also attended by Professor Rusling from the University of Connecticut, who delivered a fascinating plenary lecture on bioelectronic arrays for toxicity screening. Readers will, of course know that Professor Rusling was taught by Professor Zuman, who, himself, was a student of Professor Heyrovský – winner of the Nobel Prize in Chemistry 50 years ago.

There were ten talks in total, seven of which were delivered by PhD students from the Universities of Leicester, Warwick, Bath and Nottingham. During the morning session, we listened to excellent presentations on the applications of localized corrosion in finger print detection, evanescent wave cavity ring-down spectroscopy for probing electrochemical processes, and the applications of microwaves in electrochemistry.

Following lunch and a poster session, the afternoon was opened by Professor Fletcher with an informative and entertaining lecture on electron transfer. This was followed by presentations on the development of electrode materials for fuel cells and oxygen sensors. These were delivered by Laura Hutton (University of Warwick) and Shee-Yen Ang (University of Nottingham), who won the prizes for the best student presentations and will present their research at Electrochem 09 in Manchester.

The award for best poster presentation went to Carrie-Anne McGeouch (University of Warwick) for her excellent poster describing the development of an electrochemical method for studying the dissolution of enamel. The final presentations of the afternoon covered the topics of nanostructured electrocatalysts for selective oxygen reduction, electrodeposition from ionic liquids and redox modified ionic liquids.

I am pleased to say we enjoyed a successful and educational meeting, which demonstrated the wide scope and quality of electrochemistry in the midlands. Finally, I hope the support for this event is continued in the future and I look forward to attending the next meeting.

Lee Johnson
School of Chemistry
The University of Nottingham, UK



Prize winners: Laura Hutton, Shee-Yen Ang (with Professor S. Fletcher) and Carrie-Anne McGeouch. (with Dr. D. Walsh).

Mini-RHINE Symposium 2009 April 3, 2009, The University of Hull, UK

The beginning of April saw the coming together of electrochemists from around the country for the Rhine Electrochemistry Meeting'09, hosted by Dr J. Wadhawan at the University of Hull. The Old Grey Mare Inn held our initial, informal gathering the night before the conference truly commenced, and our preliminary introductions took place in this very relaxed, friendly setting. There were delegations present from Nottingham Trent, Nottingham, Hull and Bath universities, and it was refreshing to allow everyone to get to know each other over a pint, paving the way for some lively discussion between the groups.

The conference's official proceedings started the following morning with the welcome and introductions from the host followed by a talk from Dr. N. S. Lawrence from Schlumberger, outlining how they are applying electrochemical techniques to the *in situ* sensing and determination of the composition of oil deep underground, where many adverse conditions such as heat and highly corrosive compounds have prevented such analysis in the past.

Next it was time for the first round of student talks delivered from two (rather nervous) first year PhD students at Bath University, including myself. These focused on photo processes of rhodamine family dyes at liquid | liquid interfaces for application in light harvesting by A. M. Collins, followed by J. D. Watkins' insightful talk about macro droplet sono-emulsions and their possibilities for triple phase organic synthesis.

The next two talks were given by students at the Nottingham Trent, and had a health care theme. M. M. Villalba gave a wonderful presentation (including some fantastic animations!) on a sensor designed to detect molecules which are markers of stress within horses based on a simple, non-invasive saliva test. D. Sharp then outlined his research into

'smart bandages'. This innovative idea could potentially allow the National Health Service to save millions of pounds and patients, by simply detecting the chemical signs of infection within a wound earlier via simple and cheap electrochemical sensors placed within the bandages or dressings.

By this point it was time for some lunch and the poster session. After helping ourselves to the buffet (repeatedly!), we had time to wander around and take a look at the posters. It is safe to say that this opportunity to talk to each other about our respective work was both entertaining and invaluable, and just before the next talk, the host took a group of us on a tour of the University and its Chemistry facilities. Readers may be aware of the devastation caused to the Hull Chemistry Department and Library during the 2007 June floods (parts of the Department were submerged under six-feet of water). Nevertheless, we were very impressed to learn that Professor J. H. P. Utley studied for his doctorate at Hull in the 1960s (and were delighted to see his thesis, carefully protected from the floods, in the Library).



Mini-RHINE meeting in pictures.

Bravely (as we had just settled back into our seats with full stomachs!), Dr J. Wadhawan presented a fascinating and thorough tutorial overview of modelling and simulating voltammetric waveforms. This brought back some of the key concepts that we should have remembered from our undergraduate days. For many, including myself, I think this was a welcome cue to dig out some old lecture notes and refresh the grey cells a little! Alongside some of the basic concepts, we were also introduced to some rather unique and novel ones, especially concerning work on very fast scan rates. All-in-all quite an eye-opener!

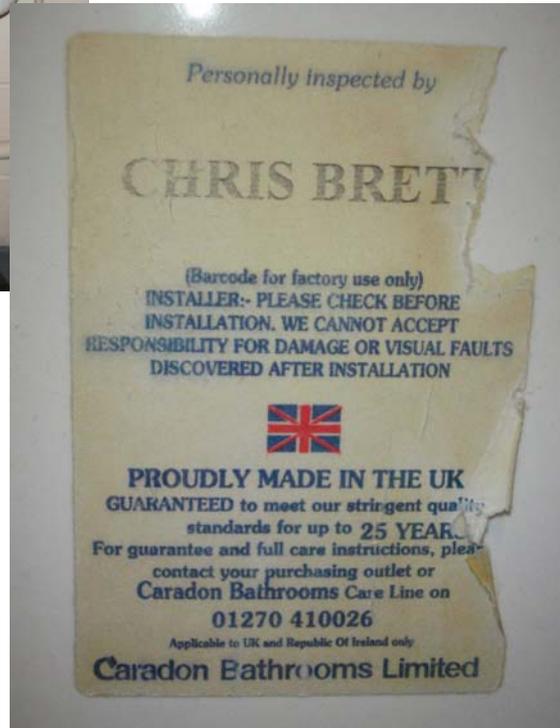
Finally there was the last round of student talks, delivered from the University of Nottingham. S.-Y. Ang gave a very informative presentation on using supercritical fluids for oxygen reduction, followed by L. Johnson's talk on catalysis on conducting polymers. The day of talks was brought to completion by J. J. Horn who is a Knowledge Transfer Partnership associate at Analox Sensor Technology, Ltd. The event was then rounded off with another thoroughly enjoyable informal gathering in the form of a wine reception hosted by Steve Fryatt of Alvatek Ltd, with best student talk and poster prizes generously awarded by Dr. Andrew White of Ametek to Ms. Villalba and A. M. Collins. These two generous companies exhibited their potentiostats at the event.

What is always a fascinating thing at such conferences is learning just how many applications of electrochemistry there are. Throughout the day, many topics were discussed, both in the various presentations and the informal discussions, which both provided interesting points of conversation, and also helped to widen our minds on extra possibilities we may have not thought of before. Many thanks go to the local group for hosting the conference and for making the event a success.

Andrew M. Collins
School of Chemistry
The University of Bath, UK

Readers' Notes

ISE Bureaucracy Gone Too Far?



Supplied kindly by A. Reader and A. C. Complice who visited Huddersfield, UK in January, 2009.

Student Conference Bursaries

The Student Bursary Scheme provides financial support to promising postgraduate students to attend a major electrochemistry conference abroad. This includes UK based students travelling to a conference abroad and students based abroad wishing to attend a conference in the UK. The Bursary Scheme is open to all postgraduate student members of the RSC's Electrochemistry Group undertaking research in electrochemistry. Applications shall consist of:

- (i) the application form (download from <http://www.rsc.org/lap/rsccom/dab/fara005bursary.htm>),
- (ii) the abstract submitted to the conference organisers,
- (iii) one A4 page *curriculum vitae* stressing academic and scientific achievements (e.g., research articles, oral and poster presentations *made by the applicant*).

Applications may be made at any time of the year and shall be submitted to the Group Secretary in electronic form.

The selection committee of the Electrochemistry Group shall decide the sum awarded. Under normal circumstances this sum shall not exceed £300.

Successful applicants shall produce a conference report article for the Newsletter.

Candidates should submit their applications directly to the Dr Frank Marken, the Group Secretary (f.marken@bath.ac.uk).

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RSC Electrochemistry Group: Annual Report 2008-9

MEMBERSHIP

According to the RSC, the group has 400 members.

MEMBERSHIP OF THE EXECUTIVE COMMITTEE

Dr. Peter Birkin, **Treasurer (2006-2011)**, Southampton University.
Dr. Alison J. Davenport, ECS rep., University of Birmingham.
Dr Darryl Dawson, Industry rep., Alphasense.
Dr Robert Dryfe, ISE rep., organiser of Electrochem 2009, UMIST.
Dr. Anthony Kucernak, Academic rep., Imperial College London.
Dr. Frank Marken, **Secretary (2006-2011)**, University of Bath.
Dr. Andy Mount, **Chairman (2008-2011)**, Edinburgh University.
Dr. Chris Slevin, Industry rep., Stirling Medical
Dr. Ed Wright, Industry rep., Johnson Matthey.
Dr. Jay Wadhawan, **Editor of the Newsletter (2007-2012)**, University of Hull
Dr. David Fermin, academic rep., University of Bristol
Dr. Katherine Holt, academic rep., UCL

ACTIVITIES UNDERTAKEN IN 2008/2009

Annual general meeting

The last General Assembly was held during the Electrochem 2008 conference at University of Liverpool (15th – 17th September 2008).

Committee meetings

The Executive Committee met on a regular basis: three Executive Committee Meetings took place during the year (16th September 2008 in Liverpool, 8th January 2009 in London, 16th April 2009 in Manchester). As in previous years, at every meeting the Executive Committee also had joint committee meetings with the SCI Electrochemical Technology Group (co-organisers of the Electrochem conference and contributors to the Newsletter) at all of these meetings.

Conferences

Since 1994 the Group has been organising (in partnership with the SCI Electrochemical Technology Group and RSC Electroanalytical Group) the annual meeting of the UK electrochemical community known as the Electrochem conference. The event usually held in late August early September, lasts for two and a half days and is attended by around two hundred delegates and exhibitors from academia and industry. Most attendees come from the UK but every year the conference is also welcoming many foreign and overseas electrochemists. The Group strongly supports and encourages the involvement of postgraduate students and in order to select appropriate high quality presentation, regional meetings are held. As an incentive for the regional meetings, free participation is given to the two best-presentation winners at the regional meetings.

Electrochem 2004 took place at the University of Leicester, Electrochem 2005 at the University of Northumbria at Newcastle, Electrochem 2006 at Heriot-Watt University Edinburgh merged with the ISE meeting, Electrochem 2007 with a strong bio-electrochemical theme was held at

Imperial College London, and Electrochem 2008 was successfully held at the University of Liverpool. This year the Electrochem 2009 will be held together with the 50th Corrosion Science Symposium at the University of Liverpool (16th and 17th September 2009) with a focus on electroplating from nano- to macro-scale and many invited international and national speakers. Symposium titles are

- Clean Energy incorporating Fuel Cells and Semiconductor photo-electro-chemistry/exitonic solar cells
- Electroanalysis & Sensors
- Electrochemistry under Non-conventional Conditions
- Electrodeposition from the nano to macro scale
- Environmental Electrochemistry
- Materials Degradation INCORPORATING the 50th Corrosion Science Symposium
- Organic Materials in Electrochemistry

Regional meetings

The Electrochemistry Group supports and sponsors one-day regional graduate meetings in various regions of the UK. This year meetings have been organised and held in Nottingham, Hull, and Bath. From each of these meetings winning student presentations have been awarded free registration and a presentation slot at the Electrochem 2009 in Manchester.

Student Bursaries

In 1999, the Group Executive Committee introduced a scheme to offer a limited number of Postgraduate Student Bursaries. The aim of the Student Bursary Scheme is to provide financial support (300£) to a small number of promising postgraduate students to attend a major electrochemistry conference abroad. The student is expected to present work at the conference and to report back to the Newsletter editor. Details of the scheme are advertised in the Newsletter and application forms can be found on the Electrochemistry Group website. In 2008/9 this bursary was awarded to 8 students participating in various conferences in the US, Germany, France, etc. and very interesting reports have appeared in the newsletter.

Links with other societies and RSC subject groups

The Group has maintained strong links with major overseas Electrochemistry Groups, particularly the ISE (The International Society of Electrochemistry) and ECS (The Electrochemical Society). Both societies now have representatives on the Group Executive Committee, and both now sponsor financially parts of the annual Electrochem meeting. The two representatives publish Newsletter articles to promote the links with ISE and ECS. The Group is also developing closer links with the Institute of Corrosion. The group also has a representative from the RSC Electroanalytical Group co-opted onto the executive committee.

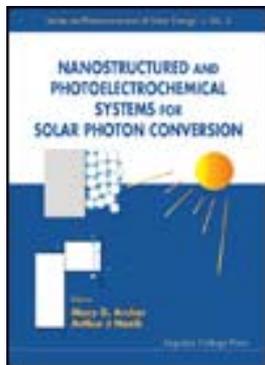
FARADAY MEDAL

The Group has been awarding a Faraday Medal since the early sixties. In 1999 the Executive Committee reviewed and revised the rules for awarding the Medal. Past recipients include 1999 - Dr Philippe Allongue (CNRS, Paris), 2000 - Professor Alan Bond (Australia), 2001 - Professor Michael Grätzel (Switzerland), 2002 - Professor Henry White (USA), 2003 - Professor Dieter Kolb (Germany), 2004 - Daniel Scherson (USA), 2005 - Professor R M Wightman (USA), 2006 - Professor Hubert Girault (Switzerland), 2007 - Professor Christian Amatore (Paris, France), 2008 - Professor Nate Lewis, and in 2009 it will be awarded to Professor Reg Penner (USA) at the Electrochem 2009 meeting in Manchester (16th - 17th September 2009).

NEWSLETTER

In 2003 Dr Daren Caruana from UCL started his term of office as Newsletter editor and in 2007 he passed on this responsibility to Dr. Jay Wadhawan (University of Hull). The Newsletter is published three times a year and is the main news medium for the Group. Each edition is now available as a PDF document online (RSC Electrochemistry group web site). In the past the paper copy the Newsletter had a circulation greater than one thousand (a significant number of copies were mailed to overseas members) and we are hoping to now further improve the circulation with the new PDF format. The editor of the Newsletter always welcomes unsolicited contributions from members of the Electrochemistry Group (including conference reports, news items, new books, opinions, and new developments).

EbookREV



Nanostructured and Photoelectrochemical Systems for Solar Photon Conversion
M. D. Archer, A. J. Nozik (editors)
Volume 3 in Series on Photoconversion of Solar Energy
Imperial College Press, London, 2008
ISBN: 13 078-1-86094-225-6
Cost: £97.00
760 pages

French magazine *Science et Vie* (equivalent in stature to *Scientific American* and *New Scientist*) queried in May this year as to why it is to solar energy that we are finally turning in our quest for immediate sources of alternative energy? In this current socio-economic climate, this book edited by Baroness Archer and Professor Nozik is a godsend which supports Electrochemistry as being central to the development of

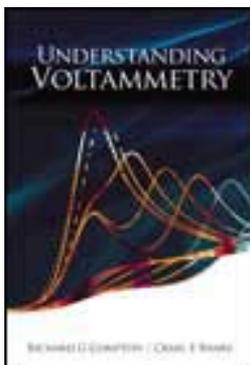
efficient solar cells, attracting big name contributors such as Professors Grätzel, Hodes, Lewis, Licht, Memming, Miller, Nelson and Peter (as well as the editors).

If my understanding is correct, this book was originally aimed at being published in 2001 (at a similar time to volume 6 of Bard and Stratmann's *Encyclopædia of Electrochemistry*), but with obvious and understandable delays, this eagerly-awaited book burst onto the scene seven years later (together with Baroness Archer's History of the Chemistry Chair at Cambridge, the latter being published months before Professor Sir John Rowlinson's history of Oxford Chemistry). It is one that does not disappoint, and given Baroness Archer's current rôles as President of the UK Solar Energy Society and of the UK's National Energy Foundation, and Professor Nozik's former position as Editor-in-Chief at *J. Phys. Chem.*, references are reasonably up-to-date.

In a style that is only characteristic of Baroness Archer (*q.v.* her papers written during her stay at The Royal Institution), the book is elegant, well-compiled and superbly-presented, quoting poetry at the start of each chapter to illustrate (and perhaps reaffirm) the inspiration that the Sun and the concept of atoms have provided for countless human societies and tribes. Baroness Archer commences with an insightful overview detailing the essential context. In the spirit of providing a modern account of the fundamental science underpinning technological advances, Baroness Archer is to be applauded for including chapters on photoelectrochemistry (by Professors Miller and Memming), quantum-confined structures (by Professor Nozik), electron transfer (by Baroness Archer) and heterogeneous catalysis at metal-oxide surfaces (by Professor Serpone). These chapters are very well written, and pleasingly assume a working knowledge of quantum electrochemistry. Systems chemistry is next covered, with a chapter on inorganic extended junction devices, and a second on solar energy concepts based on bulk organic donor-acceptor heterogeneous junctions. The following three chapters deal with photoelectrochemical batteries and storage systems: dye-sensitised mesoscopic solar cells (by Professors Grätzel and Durrant), semiconductor/liquid junction photoelectrochemical solar cells (by Professor Lewis and his students) and photoelectrochemical storage cells (by Professors Licht and Hodes). Of all the chapters of the book, it is these three which disappoint the most, as they are similar to those found in other recent photoelectrochemistry works. Nevertheless, they emphasise the protagonist rôle played by Electrochemistry. The book concludes with two superb chapters on the use of spectroscopy to measure ultrafast photoinduced electron transfer (by Professor Lian and his student), and on experimental techniques in photoelectrochemistry (penned by Professors Peter and Tributsch – both former members of Professor Gerischer's school).

All-in-all, this is a simply wonderful book which, anyone with an holistic understanding of modern quantum physical chemistry, will enjoy savouring. Baroness Archer and Professor Nozik are to be congratulated for their efforts in producing a timely and delightful book.

jw
Kingston-upon-Hull



Understanding Voltammetry

R. G. Compton, C. E. Banks

World Scientific Publishing Co. Pte. Ltd., Singapore, 2007

ISBN: 13 978-981-270-625-6

Cost: 47.65 €

371 pages

Only a highly confident electrochemist would set out to write a one-volume account of voltammetry. And only a highly accomplished one could produce a book that manages to be distinctive whilst covering a plethora of important topics, but not cramped by detail, giving due weight to the physical, molecular and analytical aspects of voltammetry, as well as to some of the extraordinary personalities behind some of the discoveries in voltammetry.

Professor Compton and Dr. Banks certainly do not lack confidence, and their talents are well-suited to the task. Their speciality is, amidst the mastering of hard facts via *a posteriori* methods, in the telling of anecdotes either to support conclusions, or to instigate further investigation. However, it is not immediately obvious as to why the world would want another single book on voltammetry, given Professor Savéant's 2006 text. Thankfully, Claude Allègre (a former minister of National Education, Research and Technology of the French Government) rescues us by noting that "*pendant trop longtemps, parce que la science est parfois difficile à assimiler, les scientifiques ont cru qu'ils appartenaient à une caste supérieure, qu'ils étaient en quelque sorte les brahmanes de la société moderne. Ils ont aujourd'hui compris qu'ils fallait impérativement sortir de leur tour d'ivoire. La société le leur demande, plus même, elle l'exige.*" The authors' approach thus becomes understood, and, coupled with the absence of Laplace transformations, whilst retaining a reasonably healthy degree of mathematics, translates into a highly marketable, learner-centred text, which conveys to the reader the authors' joy of understanding how and why materials react at electrodes.

As with most first courses in electrochemistry, this book starts with a discussion on equilibrium electrochemistry followed by electrode kinetics, diffusion, cyclic voltammetry first at large electrodes then at smaller ones. The sixth chapter deals with partially blocked electrodes and other composite surfaces, followed by chapters on homogeneous molecular chemistry (which is correctly mixed with adsorption, and also microparticle and droplet voltammetry – two new areas which Professor Bockris recently described as "fascinating"), hydrodynamic voltammetry followed by a chapter on analytical voltammetry. An appendix details the rudimentary basics of the numerical simulation of voltammetry. Each chapter builds on principles, and demonstrates some highly elegant research work undertaken within Professor Compton's laboratory, highlighting the true nature of this book – it is not a textbook *per se*, but rather it is the sketch of a personal journey, albeit one which continually enlightens the reader.

The authors' respect for, and appreciation of, Professor Savéant's and Professor Laviron's work is very well noted throughout the book, especially in the seventh chapter, which also builds on elements of Professor Compton's *Chemistry in Britain* article co-authored by ISE Professor President Hillman.

In summary, this is an excellent, insightful, cost-effective, and pedagogically structured book, written by a master and his apprentice for a wide audience of industrialists and academics (students and professors) in a range of disciplines such as chemistry, engineering, physics, ecology, *et hoc genus omne*. It is the only book I know which my students commend highly in terms of being very useful for their learning. Moreover, on my last two visits to Paris in April and June, I observed that it is one of only a handful of books that are in immediate reach of Professor Amatore's office desk.

jw
Kingston-upon-Hull

pseudoMATHS

(After an original idea developed by Christine Oudin.) Solve the problems to discover a su-do-ku grid...

A				B		C		D
	E				F		G	
H			I			J		
	K							
L								M
							N	
		O			P			Q
	W		X				R	
S		T		U				V

$$\int_0^1 (\alpha + 1)(\alpha^2 + 2\alpha - 1) d\alpha = \frac{C}{A} \text{ with } \frac{C}{A} \text{ irreducible}$$

$$\int_{\frac{1}{2}}^1 (2\alpha + 1) \ln(2\alpha) d\alpha = \ln(I) - \frac{B}{S-1} \text{ with } \frac{B}{S-1} \text{ irreducible}$$

$$\int_0^{\frac{\pi}{2}} \alpha \sin(\alpha) d\alpha = D$$

$$\int_1^4 \frac{\alpha^3 + 2\alpha^2 + 4\alpha}{\alpha^2} d\alpha = G \ln(E) + \frac{27}{E}$$

$$\int_0^2 \frac{6}{\sqrt{4\alpha+1}} d\alpha = F$$

$$\exp\left\{\int_0^{\frac{\pi}{4}} 6 \tan(\alpha) d\alpha\right\} = H$$

J is the value of the discriminant of $2\alpha^2 - 7\alpha + 5 = 0$

$$\int_0^{\frac{\pi}{6}} \sin(4\alpha) \cos(2\alpha) d\alpha = \frac{K}{FI}$$

$$L = 2009^2 - 2008 \times 2010$$

$$\int_0^1 \frac{\alpha}{\sqrt{\alpha+1}} d\alpha = \frac{R - \sqrt{M}}{P}$$

$$\int_0^{\frac{\pi}{6}} \frac{\tan \alpha}{1 + \sin^2 \alpha} d\alpha = \frac{1}{2} \ln\left(\sqrt{\frac{N}{W}}\right)$$

$$O = 2 \left(1 + \int_{\frac{\pi}{4}}^{\frac{\pi}{3}} \frac{1}{\cos^2(\alpha)} d\alpha\right)^2$$

$$T = 1 + \frac{1}{\int_0^{\frac{\pi}{4}} \cos^4(\alpha) d\alpha - \frac{3\pi}{32}}$$

$$\int_1^2 \frac{2}{(3\alpha-1)^2} d\alpha = \frac{U}{Q} \text{ with } \frac{U}{Q} \text{ irreducible}$$

$$\int_{-3}^0 \frac{1}{2\alpha-1} d\alpha = -\ln(\sqrt{V})$$

$$X = W + \int_{-\frac{\pi}{6}}^{\frac{5\pi}{6}} |\sin(\alpha)| d\alpha$$



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Diffusion

12-14 August 2009

International Symposium on Frontiers of Electrochemical Science and Technology
Xi'an, China

Contact: Cheng-Xiao Zhang, cxzhang@snnu.edu.cn
ise-FEST2009@snnu.edu.cn
<http://www.chem.snnu.edu.cn/FEST2009>

16-21 August, 2009

60th Annual Meeting of the International Society of Electrochemistry (ISE)
Emerging Trends and Challenges in Electrochemistry

Beijing, China
events@ise-online.org
<http://event09.ise-online.org/>

22-25 August 2009

International Symposium on Electrochemistry for Energy Conversion and Storage

Wuhan-Three Gorges, China
Co-Chairs: Profs. L. Zhuang, M. Pan
3gorges2009@gmail.com
www.3gorges2009.cn

23-24 August 2009

5th International Fuel Cell Workshop (IFCW 2009)
Kofu, Japan

Chair: Masahiro Watanabe
m-watanabe@yamanashi.ac.jp
<http://fc-nano.yamanashi.ac.jp/english/topics/3.html>

23-26 August 2009

International Symposium on Nanoelectrochemistry and Spectroelectrochemistry

Xiamen, China
Contact: Bin Ren, bren@xmu.edu.cn
xmuconference@gmail.com
<http://210.34.15.15/isexiamen>

6-10 September, 2009

EUROCORR'2009

Nice, France
Contact: M. Pierre
info@cefracor.org
<http://eurocorr.org/EUROCRR+2009.html>

6-11 September 2009

5th European Summer School on Electrochemical Engineering

Almagro, Ciudad Real, Spain
Chair: M.A. Rodrigo

congreso.essee5@uclm.es
<http://www.uclm.es/dep/diq/essee5>

16-17 September 2009

ELECTROCHEM 2009

Manchester, UK
Contact: R. Dryfe
robert.dryfe@manchester.ac.uk
Confercare STARS
mcc.reg@manchester.ac.uk
<http://www.meeting.co.uk/confercare/electrochem09/>

20-23 September 2009

12th European Conference on Solid State Chemistry (ECSSC 2009)

(Sessions on batteries and energy storage, SOFC's, electrode materials, electrolyte materials, photovoltaics, and supercapacitors)
Münster, Germany
Co-chairs: R. Pöttgen, M. Winter
ecssc09@uni-muenster.de
www.gdch.de/ecssc2009

23-24 September 2009

Eurointerfinish 2009

Bremen, Germany
Contact: u.koenig@zvo.org
<http://www.dgo-online.de/>

1-3 October 2009

Fourth International Workshop on Biosensors for Food Safety and Environmental Monitoring

Tangiers, Morocco
Organizers: A. Amine (*Chair*), C.M.A. Brett, G. Palleschi
a.amine@univh2m.ac.ma
<http://www.biocap.ma>

4-9 October 2009

216th Meeting of The Electrochemical Society (ECS)

Vienna, Austria
7-8 October 2009
<http://www.electrochem.org>

Principles and Applications of Fuel Cell Technologies

Hartford, Connecticut (USA)
Contact: Bill Ebner
info@SeminarsforEngineers.com
<http://www.seminarsforengineers.com/fuelcell/>

8-11 October 2009

8th Electrochemistry Meeting in Turkey

Side-Antalya, Turkey

Co-chairs: A.O. Solak, M. Güllü

aliosman.solak@gmail.com,

gullu@science.ankara.edu.tr

<http://www.elektrokimya.org>

6-10 November 2009

4th International Workshop on Surface

**Modification for Chemical and
Biochemical Sensing (SMCBS'2009)**

Przegorzaly, Poland

Contact: Wlodzimierz Kutner

wkutner@ichf.edu.pl

26-27 November 2009

**International Symposium on Electrochemical
Machining Technology**

Dresden, Germany

Contact: Michael Schneider

Michael.Schneider@ikts.fraunhofer.de

<http://www.ikts.fraunhofer.de>

2-4 December 2009

**10th International symposium on Kinetics in
Analytical Chemistry**

Cape Town, South Africa

Contact: Priscilla Baker

pbaker@uwc.ac.za

<http://associated.sun.ac.za/UWC/KAC2009/>

December 3, 2009

**Gas sensors: electrochemical and
exotic**

GASG SCI Joint Colloquium

SCI International Headquarters,

London, UK

Contact: Dr Joe Watson

School of Engineering, Swansea

University,

Swansea SA2 8PP, United Kingdom.

j.watson@swansea.ac.uk

9 December 2009

Modern Electroanalytical Methods 2009

Prague, Czech Republic

Contact: Jiri Barek

barek@natur.cuni.cz

<http://www.natur.cuni.cz/heyrovsky/>

11-15 January 2010

**International Battery Association (IBA) Meeting &
Pacific Power Source**

Symposium (PPSS) 2010

Waikoloa, Hawaii, USA

Organizers: B.Y. Liaw, M. Winter, R.J. Brodd

bliaw@hawaii.edu

<http://www.outreach.hawaii.edu/hpsc/>

11-15 January 2010

**Conservation of Archaeological and Historic
Metallic Artefacts:**

The need for Electrochemical Techniques

Leiden, The Netherlands

Contact: Annemie Adriaens

annemie.adriaens@ugent.be

19-20 January 2010

**13th Annual Meeting of the Israel Analytical
Chemical Society**

Tel Aviv, Israel

Contact: Daniel Mandler

annemie.adriaens@ugent.be

<http://isranalytica.org.il>

14-19 March 2010

**Conference on Molten Salts and Ionic Liquids
(EUCHEM 2010)**

Bamberg, Germany

Chair: Peter Wasserscheid

Contact: Sabine Urbanczyk (Dechema e.V.)

urbanczyk@dechema.de

<http://www.dechema.de/euchem2010>

28-31 March 2010

**2nd International Conference on Funcional
Nanocoatings**

Dresden, Germany

Contact: Waldfried Plieth

Waldfried.Plieth@chemie.tu-dresden.de

<http://www.nanocoatings2010.de>

25-30 April 2010

**217th Meeting of The Electrochemical Society
(ECS)**

Vancouver, Canada

<http://www.electrochem.org>

3-6 May 2010
8th Spring Meeting of the International Society of Electrochemistry (ISE)
Advances in Corrosion Science for Lifetime Prediction and Sustainability:
A Celebration of the 100th Birthday of Mars Fontana
Columbus, Ohio, USA
Chair: Gerald Frankel
frankel.10@osu.edu
<http://spring10.ise-online.org/index.php>

6-10 June 2010
2nd Regional Symposium on Electrochemistry – South-East Europe
Belgrade, Serbia
Contact: Vladimir Jović
vladajovic@imsi.rs
<http://rse-see.net>

6-11 June 2010
8th International Symposium on Electrochemical Impedance Spectroscopy
Carvoeiro, Algarve, Portugal
Contact:
<http://www.eis2010.org>

29 August-3 September 2010
12th International Symposium on Polymer Electrolytes (ISPE-12)
Padua, Italy
Chair: Vito Di Noto
ispe12@chimica.unipd.it
www.chimica.unipd.it/ispe12

13-15 September 2010
Electrochemistry 2010 "From microscopic understanding to global impact"
Bochum, Germany
Co-chairs: Wolfgang Schuhmann, Gunther Wittstock
wolfgang.schuhmann@rub.de
gunther.wittstock@uni-oldenburg.de

26 September-1st October 2010
61st Annual Meeting of the International Society of Electrochemistry (ISE)
Electrochemistry from Biology to Physics
Nice, France
Chair: Bernard Tribollet
events@ise-online.org
<http://event10.ise-online.org/>

10-15, October 2010
218th Meeting of The Electrochemical Society (ECS)
Las Vegas, Nevada, USA
<http://www.electrochem.org/>

24-29 October 2010
9th International Frumkin Symposium
Electrochemical Technologies and Materials for 21st Century
Moscow, Russia
Contact: Alexey Danilov
danilov@phyche.ac.ru
<http://phyche.ac.ru/frumkinsymp/>