



RACI Electrochemistry Division

Newsletter

No.7

December 1999

Editorial

Welcome to the 7th issue of the EDRACI newsletter. In this issue you will find information on Division activities including the new website, the Electrochemistry Education Project, and details of two major Division conferences (11RACIC and 11AEC) planned for the next 12 months, amongst other things.

Remember to tell your new students, research fellows, colleagues etc. of this newsletter and ask them to email me to have their name put on the distribution list.

Electrochemistry Division Website

At last the Division has an active website! The site contains back issues of newsletters, info on conferences, committee contact details, etc. You can access it from the RACI site, or go direct to: www.adinstruments.com/EDRACI/

Many thanks to Paul Duckworth for the time and energy in getting the site up, and to ADInstruments for supporting it. We hope to keep updating the site so that information is current. Please send any comments on what's good and what's not to me.

Electrochemistry Education Project

The Division has been collecting information from chemistry departments in Australia and New Zealand on the way electrochemistry is taught and learned. All university chemistry departments were approached for information. Simultaneously, electrochemistry experiments and lecture demonstrations used in the universities have been collated. The collation process is in its last phase and the aim is to have two booklets – one containing information on teaching resources and the other containing electrochemistry experiments and demonstrations – ready to be launched at 11RACIC in February. These should be valuable resources to electrochemists. Anyone who has not contributed but would like to should contact me urgently.

11RACIC

The 11th RACI Convention (11RACIC, formerly National Conventions of the RACI) will be held in Canberra from 6-11 Feb. 2000. Registration brochures are available from the convention organisers via the website: www.11RACIC.conf.au

The Electrochemistry Division is planning for a significant 3-day program at the convention, based around the theme of Electrochemistry and Materials. This theme will include materials for energy conversion and storage, advances in solid polymer electrolytes, advanced coatings for corrosion protection and new sensing materials. The final day of the program will focus on design, synthesis, characterisation and use of electrofunctional polymers, which have prospective applications in corrosion protection, biomaterials, polymer electronics, artificial muscles and electronic noses.

Note that the Bloom-Gutmann Prize for the best poster presented by a postgraduate student will be awarded at 11RACIC. The book of Electrochemistry Experiments and Demonstrations will also be launched. If you have queries about the Electrochemistry Division program at 11RACIC or wish to submit a poster, contact Gordon Wallace (details under "Workshop on Carbon Nanotubes" below).

11AEC

The Division Committee accepted an offer to run the next EDRACI conference, the 11th Australasian Electrochemistry Conference (11AEC) at the University of Western Sydney, Parramatta campus, from 10-14 December, 2000. The chair of the Organising Committee is A.Prof. Sam Adeloju. Tentative themes are:

Electrochemistry and Medicine, Electrochemical Processing, Electrochemical Sensors, Bioelectrochemistry, and Energy, with a session at which the Breyer and Stokes awards will be presented.

Further details will be forthcoming but put the date in your new diaries now!

Workshop on Carbon Nanotubes

The First Australian Workshop on Carbon Nanotubes, organised by the Intelligent Polymer Research Institute will be held at the University of Wollongong on February 2-4, 2000.

The recent discovery of carbon nanotubes has created enormous interest due to their unique properties. Their electronic properties are such that they may be metallic or semiconducting in nature. They also have exceptional mechanical properties and can be made chiral or as double helices. There is now theoretical and experimental evidence that NTs can operate as sensors and actuators as well as providing impressive performance when used in photovoltaic and polymer light emitting devices for hydrogen generation and membrane separations. The purpose of this workshop is to review the state of the art in synthesis/fabrication, characterisation, and applications of Carbon Nanotubes.

Speakers include Dr. Ray Baughman (Allied Signal, USA), Dr. Liming Dai (CSIRO, Australia), and Dr. Geoff Spinks (IPRI, Australia).

For more information please contact one of the co-chairs:

Dr. Liming Dai Prof. Gordon Wallace

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E-mail: L.Dai@chem.csiro.au E-mail: gordon_wallace@uow.edu.au

or visit <http://www.uow.edu.au/science/research/ipri/Conferences.html>

Division Committee Meeting

The Electrochemistry Division Committee met in Wollongong in April. A summary of items which were discussed/decided is:

- * arrangements for 11RACIC and 11AEC were discussed – see above
- * medals for future Bloom-Gutmann prizes are being struck
- * items from the RACI Full Council were noted, including the possible shift of National Secretariat from Melbourne to Canberra, and restructuring of the Council

Electrochemistry Discussion List

Remember that you or your colleagues or students can join the EDRACI electrochemistry discussion list; you can subscribe as follows:

Send the message:

"SUBSCRIBE ELECTROCHEM-L"

with an empty subject line to

"MAILSERV@LISTS.UNISA.EDU.AU"

Remember to turn your signature file off. You'll receive a welcome message telling you how to send messages to the list and how to unsubscribe. Please remember to use the list to distribute information to other electrochemists around Australia, New Zealand and beyond.

News from IUPAC

The following is an edited version of a message received from Prof. Bob Gilbert after the IUPAC General Assembly in Berlin:

"IUPAC has approved major changes to the way it runs, which will make it much more effective, and also creates new opportunities for Australians to participate in and/or lead IUPAC projects. More

details can be found from the IUPAC website (www.iupac.org), and of course I will be happy to provide more information.

1. IUPAC projects are, in brief, something that requires international input and international output. Two brief examples (see the list of Projects on the website for far greater detail):

(a) creating agreed terminology in a particular field;

(b) international collaboration to establish reliable values and/or techniques for particular quantities.

2. Anyone can now initiate a project, small amounts of funding for this are available from IUPAC (e.g. to support travel for a workshop) and new projects require new people. There are appropriate criteria for projects and a project application form, available from the website. I would be happy to send examples of the project applications for some projects which have been successfully funded, and to discuss projects with any RACI Division member.

3. IUPAC projects, Divisions and Commissions all have National Representatives who partake in decisions and are automatically informed of all current and proposed activities. This also gives participants an official IUPAC position, which can sometimes be useful. For this, you need to be properly proposed by the appropriate body (in our case, the National Committee for Chemistry of the Australian Academy of Science, which is chaired by David Black). David and/or myself would be happy to discuss this with anyone interested."

Professor R G Gilbert

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President, IUPAC Macromolecular Division

Silver Chloride Electrodes

If you are making bio- or other electrochemical sensors then you can incorporate a Ag/AgCl electrode on the sensor. Ag/AgCl ink can be screen printed onto flexible or rigid substrates. The ink is available from Metech (who also make silver-containing conductive epoxies and other electronic materials). Fax: +1 702 885 8835, email: metpoly@aol.com, www.metechnic.com. For other electrically conductive adhesives check out Ablestik: www.ablestik.com.

(from Paul Duckworth, ADInstruments)

Poly Instruments

Poly Instruments, based in Melbourne, are the Australian distributors for Solartron equipment. Solartron manufacture potentiostats, galvanostats, electrochemical interfaces, electrochemical software and electrochemical impedance spectroscopy equipment. A recent addition to the range includes a localized EIS system which allows scanning of a surface and plotting of impedance data. Contact Fred Koshir, Poly Instruments, tel: (03) 9697 1996, fax: (03) 9699 9166, email: fredkosh@connexus.net.au

Metrohm buys Eco-Chemie

Eco-Chemie is a company based in The Netherlands which produces research grade electrochemical instruments and associated software. The 3 basic instruments are a low noise general purpose potentiostat/galvanostat for analytical and electrochemical applications, a potentiostat/galvanostat with high current output (up to 1A) used mainly in research, and a compact and more economic version of the general purpose instrument.

A feature of most Eco-Chemie instruments is their modularity which allows users to "build" a system for their applications; modules include an ac-impedance module, a low current amplifier and a bipotentiostat.

The software is designed by electrochemists for electrochemists; the packages available include Frequency Response Analysis, General Purpose Electrochemical System, and Electro Analytical System for voltammetric analysis.

Eco-Chemie has had a long association with Metrohm (manufacturer of ion analysis instruments including pH meters, voltammeters, autotitrators, ion chromatographs, etc.) and has made use of

Metrohm's electrochemical accessories, e.g. stands, electrodes. Metrohm factory trains its field technicians so that its instruments are effectively serviced and maintained through their lives. Metrohm has recently purchased Eco-Chemie and, as from 1999, Eco-Chemie will be managed and run by Metrohm. This acquisition opens a new avenue for supported, research-grade electrochemistry instruments.

John Morris Scientific, with offices in each State and New Zealand, has represented Metrohm for over 10 years and will now represent Eco-Chemie by servicing, maintaining and supporting research-grade potentiostats and galvanostats. Contact Mr. Dante A. Crisante at John Morris Scientific, tel: (02) 9417 8877, email: jms@enternet.com.au.

Journals On-Line

Free internet access to the Elsevier journals:

Journal of Electroanalytical Chemistry
Electrochemistry Communications
Bioelectrochemistry and Bioenergetics
Electrochimica Acta
Journal of Power Sources

is currently available to Chemweb members (membership is also free). Check it out on <http://chemweb.com/>

Websites

The web site for the US-based Society for Electroanalytical Chemistry is at <http://seac.tufts.edu/>. The site contains details of electrochemical meetings, journals, and an online newsletter.

Paul Duckworth (ADInstruments) has provided an updated list of web sites with information about electrochemical and related instrumentation. The list is at the end of the newsletter.

Other Forthcoming Conferences (see the EDRACI website for a more complete list)

ESEAC 2000 – 8th International Conference on Electroanalysis
European Society for Electro Analytical Chemistry (ESEAC) and other bodies
Bonn, Germany, June 11-15, 2000
www-upb.ipc.kfa-juelich.de/eseac2000.htm

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ICAS 2001 – International Congress on Analytical Sciences 2001
Waseda University, Tokyo, Japan, Aug. 6-10, 2001
<http://laser.chem.t.u-tokyo.ac.jp/icas2001/index.htm>

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Secretariat of ICAS 2001
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(from Paul Duckworth, ADInstruments)

Electrochemistry Company Websites (see the EDRACI website for a more complete list)

ADInstruments
<http://www.adinstruments.com/>

Analytical Sensors Inc.
<http://www.asi-sensors.com/>

BAS
<http://www.bioanalytical.com/>

Chemtronics
<http://www.chemtronics.com.au/>

Diamond General
<http://www.diamondgeneral.com/>

EG&G Princeton Applied Research
http://www.egginc.com/bin/webmate/egg/page/egg/view_division/Divisions/Inst139

Electrosynthesis Company
<http://www.electrosynthesis.com/>

Heka
<http://www.heka.com/>

Keithley Instruments Inc.
<http://www.keithley.com/>

Metrohm
<http://www.metrohm.ch/>

Orion Research
<http://www.orionres.com/>

Radiometer
<http://www.radiometer.com/>

Solartron
<http://www.solartron.com/>

Sycopel Scientific
<http://www.sycopel.com/>

Warner
<http://www.warnerinstrument.com/>

AMEL
<http://www.amelsrl.com/>

Axon Instruments Inc.
<http://www.axonet.com/>

BioLogic
<http://www.bio-logic.fr/>

Cypress
<http://www.cypresshome.com/>

Eco Chemie
<http://www.ecochemie.nl/>

Gamry
<http://www.gamry.com/>

Ionode
<http://www.ionode.com.au/>

KH Design and Development
<http://www.khdesign.demon.co.uk/>

Microelectrodes Inc.
<http://www.microelectrodes.com/>

Pine
<http://www.pineinst.com/>

Sensorex
<http://www.sensorex.com/>

Stanford Research Systems
<http://www.srsys.com/>

TPS
<http://www.tpssite.com.au/>

WPI
<http://www.wpiinc.com/>

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