

NEWSLETTER



Serving Electrochemical Science, Technology and Engineering within
the catchment of

The Royal Society of Chemistry
and
The Society of Chemical Industry



Where science meets business
an environment to advance knowledge exchange

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Editorial

This newsletter comes few weeks before the **Electrochem 2016** conference, that will take place at the University of Leicester. It is refreshing that the organisers dedicated this meeting to celebrate the 75th anniversary of a publication which led to the development of modern potentiostats. Nowadays it would be nearly impossible to carry out our daily work without this fundamental piece of equipment. Hickling's invention of the three electrode potentiostat was greatly enhanced by the advent of the low cost operational amplifiers towards the end of the 1950's. The control of the electrode potential provided one of the most important tools for electrochemists.

The 21st annual Electrochem meeting will be held at the location of the discovery of the potentiostat and promises to be an exciting opportunity for everyone specially for PhD students, for whom the **Electrochem** meetings is an excellent opportunity to network: <https://www2.le.ac.uk/conference/electrochem2016>.

This issue includes a 'Reflections on Impact' by David Hodgson and as usual, several conference reports held in 2015-2016 by a number of students who benefit from grants provided by the SCI electrochemical technology, RSC electrochemistry and RSC electroanalytical sensing systems groups, plus information on conferences and highlights of coming events. The electrochemical calendar and new product information is included.

I welcome any feedback and suggestions or contributions from readers for future issues.



If you wish to notify the editor with your view on the material or the content of any item in this issue, or if you wish to contribute to the newsletter, please write to the Editor-in-Chief (Carlos Ponce-de-León, Faculty of Engineering and the Environment University of Southampton) at:

capla@soton.ac.uk

Missed a copy? You can catch up on all the news via our web-space hosted by the Royal Society of Chemistry at the following URL.

<http://www.rsc.org/Membership/Networking/InterestGroups/Electrochemistry/news.asp>

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Electrochem 2016

Stamford Court, University of Leicester

17-19 August 2016

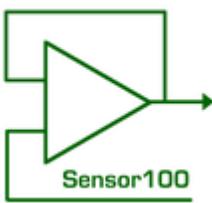
To celebrate the 75th anniversary of the submission of [Hickling's seminal publication](#) outlining control of potential at a working electrode, regarded as the invention of the potentiostat, we are pleased to announce that the 21st annual Electrochem meeting will be held at the location of its discovery, the University of Leicester, in August 2016.

[There will be a diverse range of symposia covering:](#)

- [Energy, Materials and Green Electrochemistry](#)
- [Electrochemical Sensing](#)
- [Electrochemical Techniques and Tools](#)

The conference will be held at [Stamford Court](#), the University of Leicester's premier conference venue, newly renovated with seating for up to 270 people. Accommodation will be available adjacent to the conference site.

Sponsors:



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Programme for Electrochem 2016



UNIVERSITY OF
LEICESTER



Please see the registration desk if you require a parking permit

Wifi Network: Leicester Conferences

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*Eduroam also available

Wednesday Afternoon

12:00	13:00	Buffet Lunch + Registration		
13:00	13:10	Introduction + House keeping		
13:10	13:30	Rachel Sapstead Acquisition of Time-Resolved Neutron Reflectivity Data for Dynamic Electrochemical Experiments	Asuman Unal The Effect of MWCNT on Electrochemical Deposition of Polyaniline and Polypyrrole Films and Their Redox Switching in Ionic Liquid	Kamonwad Ngamchuea (Regional Prize Winner) Handheld Electrochemical Device for the Determination of the Strength of Garlic
13:30	13:50	Vivek J. Padmanabhan In Situ Surface Enhanced Infrared Spectroscopy to Track Interfacial Processes Relevant to Non-Aqueous Lithium-Oxygen Batteries	Matteo Bonomo Effect of Non Conjugated Pending Groups on the Sensitizing Action of Alkylated Squaraines in NiO Based p-DSCs	Paolo Bertoncello PDMBI-Chemically Modified Electrodes: Charge Transport Properties and Electroanalytical Applications
13:50	14:10	Siti Nurul Azaria In-situ Electrochemical Characterisation of Iron Sulfide-Electrolyte Interface under Anoxic Conditions	Jet-Sing M. Lee Porosity-Engineered Carbons for Supercapacitive Energy Storage Using Conjugated Microporous Polymer Precursors	Kevin C. Honeychurch Voltammetric Behaviour and Determination of Clonazepam Using a Disposable Screen-Printed Sensor and Its Determination in Serum and Wine
14:10	14:30	Sarah Horswell The Effect of Applied Electric Field on Structure of Lipid Bilayers	Mohamed Mamlouk Effect of the Radiation Dose Rate on the Stability of LDPE Based Alkaline Anion Exchange Membranes for Electrolysers	Damion K Corrigan Rapid Electrochemical Assays for Biomedical Applications
14:30	15:40	Refreshments, Posters, Exhibitors/Accommodation Check-In		
15:40	16:00	Mailis M. Lounasvuori Effect of Electrode Potential on the Acid/base Properties of Graphene Nanoflakes		
16:00	16:20	Andy Wain (Keynote) Using Spectroelectrochemistry to Probe Surface Reaction Pathways in Heterogeneous Catalysis	Dongwei Du Achieving Both High Selectivity and Current Density for CO ₂ Reduction to Formate on Nanoporous Tin Foam Electrocatalysts	Mark Platt Tunable Nanopore: Resistive Pulses and Current Rectification
16:20	16:40		Frank Marken Intrinsically Microporous Films and Membranes in Electrochemistry	Robert P. Johnson Base Flipping within a Nanopore Reveals the Identity of DNA Bases at the Single Molecule Level
16:40	17:00	Samuel Guy Booth XAS Spectroelectrochemistry to Follow Metallic Nanoparticle Deposition at a Liquid/Liquid Interface	Dona Thanuja Galhena (Regional Prize Winner) Comparison of the Influence of Different Conductive Additives on the Electrochemical Performance of Activated Carbon Based Supercapacitors	Sunil K. Arya Electrochemical ELISA for Sensitive Detection of Tumor Necrosis Factor-Alpha in Undiluted Serum using a Modified Comb Shaped Gold Electrode Microarray
17:00	17:20	Antoine Baars Equivalent Circuit Fitting with Nonlinear Elements	Lisa Kleiminger (RSC:ES Prize Winner) Electrochemical Performance of Solid Oxide Electrolysers with 3D Inkjet Printed Microstructures	Harry Sherman Electrochemical Detection of Iron Reduction by Epithelial and Macrophage Cells.
17:20		Close		
18:00	19:00	Wednesday Evening Poster Session & Social Gathering		
19:00		Dinner John Foster Hall		

Thursday

07:30	08:30	Breakfast John Foster Hall		
09:00	09:50		Plenary - Geoffrey Barker Medal Lecture: Richard J Nichols	
10:00	10:20	Isidoro López Marín Cryo-Spectroelectrochemistry of Temperature Sensitive Copper-Oxygen Complexes	Luis Fernando Arenas Electrodeposition of Platinum on Porous Titanium Materials from a Flowing Electrolyte	Anuj Joshi Mesoporous Nitrogen Containing Carbon Material for Sensitive and Selective Electrochemical Detection of Heavy Metal Ions.
10:20	10:40	Robert Dalgliesh Current and Future Electrochemistry Capabilities at the ISIS Neutron Scattering Facility	Jagdeep Singh Sagu Anodized Steel Electrodes for Supercapacitors	Ronan Baron Differentiation and Quantification of Cross-Interfering Gases in Air Quality Monitoring
10:40	11:00	Narinder Bains The Effect of Ultrasound on Acid Copper Electroplating Additive -Sulphopropyl Sulphonate	Noemí Aguiló-Aguayo Embroidered Three-Dimensional Electrodes for Redox Flow Batteries	Sahar S. Alabdullah Acidity in Deep Eutectic Solvents and Ionic Liquids
11:00	11:40	Refreshments, Posters, Exhibitors		
11:40	12:00	Dhuha Albusalih Electroplated Nanocomposites: Cobalt and Nickel Coatings with Nano SiC Particles Produced by Pulse Reverse Plating (PRP) Technique	Mark Symes Efficient Electrocatalytic Water Oxidation at Neutral and High pH by Adventitious Nickel at Nanomolar Concentrations	Keynote: A. Robert Hillman Electrochemical Defluoridation of Water Using Electroactive Copolymer Films Based on Polyaniline and Derivatives
12:00	12:20	Jamil A Juma The Effect of Organic Additives in Electrodeposition of Co from Deep Eutectic Solvents	Wen-Feng Lin Development of Highly Efficient Electrocatalysts for Direct Alcohol Fuel Cells	

12:20	12:40	Salih Cihangir Super-efficient Deposition using Powder Pulse Plating	Ahmed Al-Basam Dissolution of Pyrite and Other Iron Sulfide Minerals using Deep Eutectic Solvents	Bruno de Souza Machado Influence of Flow Direction on the Performance of a Representative Anion Exchange Membrane Fuel Cell: A Computational Analysis	
12:40	13:00	Azhar Y Al-Murshed Diffusion in Deep Eutectic Solvents-Water Mixtures	Dmytro Kozak Electrorecovery of Neodymium Ions From Cyphos®IL-101/Ethanol Electrolyte Containing Hydrogen Chloride at Room Temperature	Edward Brightman Measurement and Control of pH in Solid Polymer Electrolytes	
13:00	14:00	Lunch, Posters, Exhibitors			
14:00	15:00	Plenary - John-Albery Memorial Lecture: Serge Lemay			
15:00	15:20	Edward Frank Dalton Forgotten Applications of the Rotating Ring-Disk Electrode	Aurelie Rovetta Cobalt Hydroxide Nanoflakes for Energy Conversion and Storage Applications	Jacek Lapinski Methods Of Studying Protective Coating For Bipolar Plates In Flexiplanar PEMFC	
15:20	16:00	Refreshments, Posters, Exhibitors			
16:00	16:20	Chuhong Lin The Hydrogen Oxidation Reaction on Platinum Nanoparticles: Understanding the Kinetics of Electrocatalytic Reactions via 'Nano-Impacts'	Micheál D. Scanlon Towards Solar Energy Conversion without Solid Electrodes utilizing Dye-sensitized Electroactive Soft Interfaces	Naseem Iqbal ZIF Derived Cathode Catalyst for Proton Exchange Membrane Fuel Cell	
16:20	16:40	Edmund Dickinson "COMSOL Multiphysics® for Electrochemists"	Federico M Pesci Layered Transition Metal Dichalcogenides Bulk Heterostructures as Photoanodes in Photoelectrochemical Cells	Prasanna Mani Assessment of Cathode Levers to Enhance High Current Density PEMFCs	
16:40	17:00	Zakiya Al Amri Deposition of Pt Nanoclusters on Au and their Catalytic Activity Toward Formic Acid Oxidation	Michelle Browne (Regional Prize Winner) Synthesis, Characterisation and Evaluation of Transition Metal Oxides for the Oxygen Evolution Reaction (OER) in Alkaline Media	James T. Frith Lithium-Oxygen Battery with Binary Electrolyte and Dual Mediators for Optimized Performance	
17:00	17:20	Francesca Bevan Mineral Processing of Using Deep Eutectic Solvents	Andrew Ballantyne Immersion Coatings of Au and Pd from Deep Eutectic Solvents: Influence of Speciation on Galvanic Processes	Hani Ismail Novel Battery Chemistries Using Electrically Conducting Polymers Synthesized from Deep Eutectic Solvents	
17:20		Close			
19:00		Thursday Evening Conference Dinner John Foster Hall			

Friday Morning

07:30	08:30	Breakfast John Foster Hall				
09:00	09:50	Plenary - Faraday Medal Lecture: Justin Gooding				
10:00	10:20	Tim Albrecht (Keynote) Machine Learning for the Analysis of Single-Molecule Charge Transport Data		Andrew Lodge The Electrodeposition of Vertically Aligned Mesoporous Silica Films for Use as Templates for the Electrodeposition of Nanowires in Supercritical Fluids	Filipe Braga Nogueira Potassium Superoxide Batteries using Practical Carbon Supports	
10:20	10:40			Eden May Dela Pena Pulse Deposition of Copper Using an Additive-Containing EnFACE Electrolyte	Abdallah H Abdalla Study of Mixed Metal Sulfide as Potential Electrodes for Rechargeable Nickel-Iron Battery	
10:40	11:00	Belle Taylor Electrochemical Investigation In Gaseous Plasma Media		Jaibo Le (Regional Prize Winner) Determining Potential of Zero Charge from Density Functional Theory based Molecular Dynamics	Nuria Garcia-Araez A Quantitative Tool to Predict the Phase Composition of Lithium-Sulfur Batteries	
11:00	11:40	Refreshments, Posters, Exhibitors				
11:40	12:00	John Collins The Application of Electrochemistry in the Nuclear Industry: Development of the ELENDES process from laboratory to pilot scale	Fikret Yildrim Sliding Wear Mechanisms with Variable Electroplated Co-W Alloys	Petar Martin Radjenovic Electrochemistry of Dioxygen in Novel Ionic Liquid and Solvent Blend Systems for Non-Aqueous Li-O ₂ Batteries		
12:00	12:20	Dr Steven Brewer Scaling Up of Aluminium Electroplating Processes from Ionic Liquids and Deep Eutectic Solvents	Hasan Al-Esary Electrodeposition of Bright Zinc – Nickel Alloy from Deep Eutectic Solvent	Jun Wang Morphological Effects on High-Voltage Spinel LiNi _{0.5} Mn _{1.5} O ₄ Cathode Materials for Lithium-Ion Batteries		
12:20	12:40	Jalil Hussein Kareem Extraction and Electrocatalytic Polymerisation of Thiophene from Oil Using Ionic Liquids	Nicola Comisso Oxygen Bubble Templatized Anodic Deposition of Porous Oxides	William Richardson Identifying Solution Based Catalysts for the Lithium-Oxygen Battery		
12:40	13:00	Eduardo N. Schulz Experimental/Theoretical Study of the Effect of Chloride and Sulphate Anions over the Electrochemical Deposition of Rh over Ag Substrate	Shannon Stodd Lanthanide Salts as Deep Eutectic Solvents	Stephen Worrall Electrochemically Deposited HKUST-1 Electrode Coatings and Their Application in Rudimentary Redox Based Data Storage		
13:00		Close				

Electrochemical Techniques & Tools
Energy, Materials & Green
Electrochemical Sensing
Electrochemistry for Fuel Cells

Reflections

You want to commercialise this? Why?

In this phase of my career I'm fortunate to work with people really excited about their science and the prospect of commercialising their research. My company works at the interface of science and commerce, helping researchers to shape the technology and business proposition for commercial value. One of the standard questions we get to at some point in a business planning session is "What does an exit look like?".

Why do we ask this? It's simple really; because it's the way financial investors get their money back (ideally with a profit) to demonstrate to their investors that they can make money. So it's quite important.

I was in a similar situation recently and asked the question "What does an exit look like?" and we talked through the usual options (trade sale, IPO....) when a thought hit me and I asked a different question "Why do you want to commercialise this research". Surprisingly, no one had thought 'why'. That's not quite true, some ideas were expressed "we're encouraged to by EPSRC", "it will look good on my CV to have a spin-out" and the best "why not?"

I realised at that point that we don't think enough of the 'why?'. And we really should, because commercialising science is tough. It will take longer and cost more money than you think at the start and there will be personal and professional challenges along the way. So knowing the 'why?' is important to see you through the difficult times. Knowing why will also help the researcher to work out what role they want to take in the commercialisation process.

I canvassed some people I know in spin-outs, or have had spin-outs, about their motivations at the start and some really interesting answers came back.

- 'I wanted to offer something to the industry'
- 'I really liked the idea of creating some jobs'
- 'I wanted something tangible to point at and say – I did that'
- 'I wanted to make a difference to the environment'

Nobody mentioned money. This mini-survey chimed with a recent interview I heard with Jim Collins, the author of some great books on building businesses. In the interview he stated that no truly great company sets out to purely make money. He didn't denigrate the idea of making money, but pointed out that money was often a secondary driver.

So before you think of what the exit looks like, work out why you want to do it in the first place.

David Hodgson
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More Meetings:



INTERNATIONAL SOCIETY OF ELECTROCHEMISTRY • ISE

67th Annual Meeting of the International Society of Electrochemistry

Give your poster more exposure with additional viewing on the ISE APP available for Smartphones and Tablets.

Upload your POSTER here

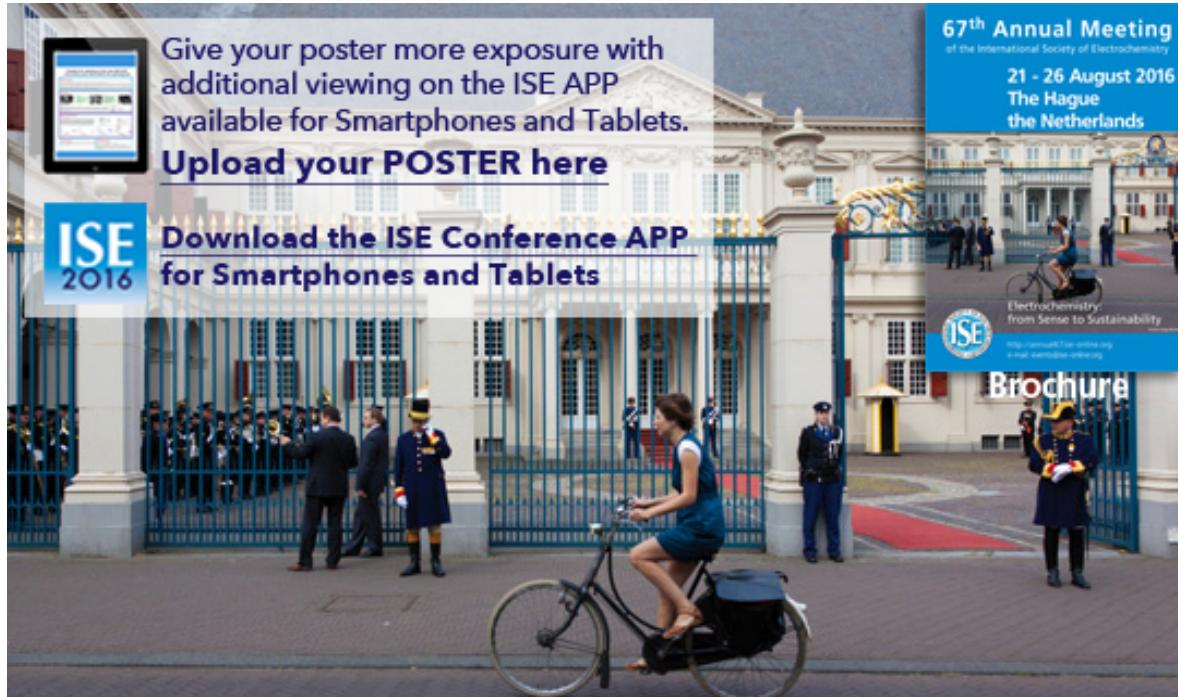
ISE 2016 Download the ISE Conference APP for Smartphones and Tablets

67th Annual Meeting of the International Society of Electrochemistry
21 - 26 August 2016
The Hague
the Netherlands

Electrochemistry: from Sense to Sustainability
<http://ise2016.huu.nl> email@ise2016.huu.nl

Brochure

Complete program and Short program (PDF)



21-26 August, 2016
The Hague, The Netherlands
Electrochemistry: from Sense to Sustainability

Forthcoming Annual (Autumn) and ISE Topical Meetings

2017:

19 - 22 March, Buenos Aires, **Argentina** (**20th ISE Topical Meeting**)
[\(more information\)](#)

23 - 26 April, Szeged, **Hungary** (**21st ISE Topical Meeting**)
[\(more information\)](#)

27 August - 1 September, Providence, RI, **USA** (**68th Annual Meeting**)
[\(more information\)](#)

2018 2 - 7 September, Bologna, **Italy** (**69th Annual Meeting**)

2019 4 - 9 August, Durban, **South Africa** (**70th Annual Meeting**)

2020 30 August - 4 September, Belgrade, **Serbia** (**71st Annual Meeting**)

Meetings Sponsor by The International Society of Electrochemistry:

Chronological order

Reactivity of nanoparticles for efficient and sustainable energy production -IV

Date: 7-12 August 2016

Location: Gilleleje, Denmark

Sponsored by: Division 3

Contact: [Birgit Bohn](#)

Conference details: www.cinf.dtu.dk/summer-school-2016

Gordon Research Conference: Fuel Cells

Date: 7-12 August 2016

Location: Eaton, MA, USA

Sponsored by: Division 7

Contact: [Adam Weber](#)

Conference details: <https://www.grc.org/programs.aspx?id=12882>

International Symposium on Polymer Electrolytes 15

Date: 15-19 August 2016

Location: Uppsala, Sweden

Sponsored by: Division 3

Contact: [Daniel Brandell](#)

Conference details: www.delegia.com/ispe2016

Summer meeting on bio-electrochemistry 2016

Date: 16-19 August 2016

Location: Antwerp, Belgium

Sponsored by: Division 2

Contact: [Karolien De Wael](#)

Conference details: <https://www.uantwerpen.be/en/conferences/summer-meeting-bioelectrochemistry/>

Electrochemical Methods for Nanotechnology

Date: 17-19 August 2016

Location: Brussels, Belgium

Sponsored by: Division 4

Contact: [Herman Terryn](#)

Conference details: www.surfgroup.be/emnt2016

International Meeting on Electrochromics

Date: 28 August -1 September 2016

Location: Delft, Netherlands

Sponsored by: Division 3

Contact: [Bernard Dam](#)

Conference details: <http://www.ime-12.nl>

Advanced Batteries, Accumulators and Fuel Cells

Date: 28 August 2016

Location: Brno, Czech Republic

Sponsored by: Division 3

Contact: [Jiri Vondrak](#)

Conference details: www.aba-brno.cz

International Summer School on CO₂ Conversion: From Fundamentals towards Applications

Date: 28 August -2 September 2016

Location: Villars-sur-Ollons, Switzerland

Sponsored by: Division 7

Contact: [Peter Broekmann](#)

Conference details: <http://villars2016.dcb.unibe.ch/>

2nd International Meeting on Electrogenerated Chemiluminescence

Date: 29-31 August 2016

Location: Bordeaux, France

Sponsored by: Division 1 & 6

Contact: [Neso Sojic](#)

Conference details: <http://ecl2016.sciencesconf.org/>

9th International Conference on Interfaces against Pollution

Date: 4-7 September 2016

Location: Lleida, Spain

Sponsored by: EC

Contact: [Josep Galceran](#)

Conference details: www.iap2016.org

International Conference on Advances in Semiconductors and Catalysts for Photoelectrochemical Fuel Production

Date: 5-6 September 2016

Location: Berlin, Germany

Sponsored by: Division 3

Contact: [Peter Strasser](#)

Conference details: <http://www.nanoge.org/SolarFuel16/index.php>

Molarnet Workshop

Date: 6-10 September 2016

Location: Lecce, Italy

Sponsored by: Division 6

Contact: [Rosaria Rinaldi](#)

Conference details: www.molarnetworkshop.eu

Giornate dell'Elettrochimica Italiana - Annual Meeting of the Electrochemistry

Division of the Italian Chemical Society

Date: 11-14 September 2016

Location: Gargnano (Brescia), Italy

Sponsored by: EC

Contact: [Marco Musiani](#)

Conference details: <https://users.unimi.it/GEI2016/>

Redox Films for Energy Conversion - bioelectrochemical and molecular systems

Date: 13 September 2016

Location: Marseille, France

Sponsored by: Division 2 and 7

Contact: [Christophe Léger](#)

Conference details: <https://anrdfgshields.wordpress.com/redox-films-for-energy-conversion/>

2nd E3 Mediterranean Symposium: Electrochemistry for Environment and Energy

Date: 14-16 September 2016

Location: Gargnano (Brescia), Italy

Sponsored by: EC

Contact: [Luigi Falciola](#)

Conference details: http://users.unimi.it/E3_2016/

International Symposium on Electrocatalysis

Date: 11-14 September 2016

Location: Hayama town, Kanagawa-ken, Japan

Sponsored by: EC

Contact: [Shigenori Mitsushima](#)

Conference details: <http://www.cel.ynu.ac.jp/ecat2016/>

Portuguese Society of Electrochemistry & XVIII Iberian meeting of Electrochemistry

Date: 14-17 September 2016

Location: Braganca, Portugal

Sponsored by: EC

Contact: [Conceicao Angelico](#)

Conference details: <http://www.esa.ipb.pt/spe2016>

European Materials Research Society Fall Meeting 2016

Date: 19-22 September 2016

Location: Warsaw, Poland

Sponsored by: Division 3 & 4

Contact: [Silvia Bodoardo](#)

Conference details: <http://www.european-mrs.com/meetings/2016-fall>

ELECTROCHEMISTRY 2016

Date: 26-28 September 2016

Location: Goslar, Germany

Sponsored by: EC

Contact: [Thomas Turek](#)

Conference details: www.gdch.de/electrochemistry2016

11th European Space Power Conference

Date: 3-7 October 2016

Location: Thessaloniki, Greece

Sponsored by: EC

Contact: [Dimitrios Niakolas](#)

Conference details: <http://www.espc2016.com/>

4th Ertl Symposium on Chemical Processes on Solid Surfaces: Water at Interfaces

Date: 11-13 October 2016

Location: Berlin, Germany

Sponsored by: Division 7

Contact: [Jaeyoung Lee](#)

Conference details: http://www.fhi-berlin.mpg.de/acnew/ertl-symposium_2016/pages/home.html

MicroEchem 2016 - First Autumn School in Electrochemical Energy Storage

Date: 6-9 November 2016

Location: Queretaro, Mexico

Sponsored by: EC

Contact: [Jorge Vazquez-Arenas](#)
Conference details: <http://microechem2016.comli.com/index.html>

2016 - Sustainable Industrial Processing Summit & Exhibition

Date: 6-10 November 2016
Location: Sanya, China
Sponsored by: EC
Contact: [Florian Kongoli](#)
Conference details: <http://www.flogen.org/sips2016>

12th ISEAC International Discussion Meet in Electrochemistry

Date: 7 December 2016
Location: Mumbai, India
Sponsored by: EC
Contact: [Suresh Kumar Aggarwal](#)
Conference details: www.iseac.org

3rd International Conference on Sodium Batteries

Date: 7-9 December 2016
Location: Geelong, Australia
Sponsored by: Division 3
Contact: [Timothy Khoo](#)
Conference details: <http://nabattsymp.deakin.edu.au>

First European Biosensor Symposium/ 10th German Biosensor Symposium

Date: 20-23 March 2017
Location: Potsdam, Germany
Sponsored by: Division 2
Contact: [Ulla Wollenberger](#)
Conference details: www.EBS2017.com

European Materials Research Society Spring Meeting 2017

Date: 22-26 May 2017
Location: Strasbourg, France
Sponsored by: Division 3
Contact: [Alexandru Vlad](#)
Conference details: <http://www.european-mrs.com/advanced-materials-and-systems-electrochemical-energy-storage-emrs>

11th European Symposium on Electrochemical Engineering

Date: 4-6 June 2017

Location: Prague, Czech Republic

Sponsored by: Division 5

Contact: [Karel Bouzek](#)

Conference details: <http://www.electrochemical-engineering.eu/2017/>

21st International Conference on Solid State Ionics

Date: 18-23 June 2017

Location: Padova, Italy

Sponsored by: Division 3

Contact: [Vito Di Noto](#)

Conference details: <http://www.chimica.unipd.it/ssi21/>

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Meetings Sponsor by The Electrochemical Society:

Biannual Spring Meetings

231st ECS Meeting

May 28-June 2, 2017 — New Orleans, LA

Hilton New Orleans Riverside

[Symposium/Organizer info](#)

233rd ECS Meeting

May 13-17, 2018 — Seattle, WA

Seattle Sheraton and Washington State Convention Center

235th ECS Meeting

May 26-May 31, 2019 — Dallas, TX

Sheraton Dallas

237th ECS Meeting

May 10-15, 2020 — Montreal, Canada

Palais des congress de Montreal

Biannual Fall Meetings

[PRiME 2016](#)

October 2-7, 2016 — Honolulu, HI

Hawaii Convention Center & Hilton Hawaiian Village

232nd ECS Meeting

October 1-6, 2017 — National Harbor, MD (greater Washington, DC area)

Gaylord National Resort and Convention Center

[Symposium/Organizer info](#)

AiMES 2018

September 30-October 4, 2018 — Cancun, Mexico

Moon Palace Resort

236th ECS Meeting

October 13-17, 2019 — Atlanta, GA

Hilton Atlanta

PRiME 2020

October 4-9, 2020 — Honolulu, HI

Hawaii Convention Center & Hilton Hawaiian Village

2016 Sponsored Meetings

China Semiconductor Technology International Conference (CSTIC)
March 2016 — Shanghai, China

18th Topical Meeting of the International Society of Electrochemistry
March 9-11, 2016 — Gwangju, Korea

[Next Generation Electrochemistry \(NGenE\)](#)

June 13-18, 2016 — Chicago, IL, USA
University of Illinois at Chicago

[18th International Meeting on Lithium Batteries \(IMLB\)](#)

June 19-24, 2016 — Chicago, Illinois
[Submit abstracts](#)

[5th International Conference from Nanoparticles and Nanomaterials to Nanodevices and Nanosystems \(IC4N\)](#)

June 26-30, 2016 — Peloponnese, Greece

67th Annual Meeting of the International Society of Electrochemistry
August 21-26, 2016 — The Hague, The Netherlands

5th International Conference on Metal-Organic Frameworks & Open Framework Compounds (MOF 2016)
September 16-19, 2016 — Long Beach, CA

[11th European Space Power Conference \(ESPC 2016\)](#)

October 3-7, 2016 — Thessaloniki, Greece

2017 Sponsored Meetings

[68th Annual Meeting of the International Society of Electrochemistry](#)
August 27-September 1, 2017 — Providence, RI, USA

[Sixth International Conference on Electrophoretic Deposition: Fundamentals and Applications \(EPD-2017\)](#)

October 1-6, 2017 — Gyeongju, South Korea

2017 Satellite Meetings

[SOFC-XV](#)

July 23-28, 2017 — Hollywood, FL, USA

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Meetings Reports (International):

4th Zing Electrochemistry Conference 2015

The 4th Zing Electrochemistry meeting that took place in Algarve, Portugal hosted around 50-60 academics at a beautiful venue over a few days. There were quite a mix of researchers from the Europe, Japan and the Americas presenting with talks on nano-electrochemistry, corrosion chemistry and next generation energy storage systems. My personal highlights were Richard McCreery's (University of Alberta) plenary talk on molecular junction electrodes which are being commercialised in electric guitar amplifiers, Susumu Kuwabata's (Osaka University) presentation of in-situ scanning electron microscopic videos of nanoparticle growth and Hubert Girault's (who recently left École Polytechnique Federale De Lausanne) perspectives on an energy storage (and distribution) revolution based on liquid-liquid redox systems. There was a good mix of applied and fundamental research presented, the quality of which were absolutely superb.

It was great being at a relatively small meeting as I could catch a quick conversation with 'big names' in the field with relatively little effort. Presenting my work in front of such distinguished audience members was a bit more intimidating than usual but it turned out to be a positive experience for me as I received positive feedback and new suggestions which I genuinely think may be worth pursuing. I guess this is what networking and conferences are all about? Feedback or getting any sort of attention for that matter means quite a lot to young researchers like myself and I am grateful for the opportunity to be there as it just would not have been possible without financial support from the British Carbon group and the RSC Electrochemistry group.

Sunyhik Ahn, 3rd year PhD, University of Bath



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Meetings Reports (International):

Conference Report

14th IEEE SENSORS Conference, Busan, South Korea, 1-4 November 2015

IEEE Sensors 2015 conference is one of the biggest conferences held yearly and is attended by delegates from all over the world. It was a 4-day conference where posters and presentations were delivered by researchers from academia and industry drawing light on the wide applications of sensors. With the financial support from the Electrochemistry group of the Royal Society of Chemistry (RSC), I was able to present my work in the form of oral presentation.

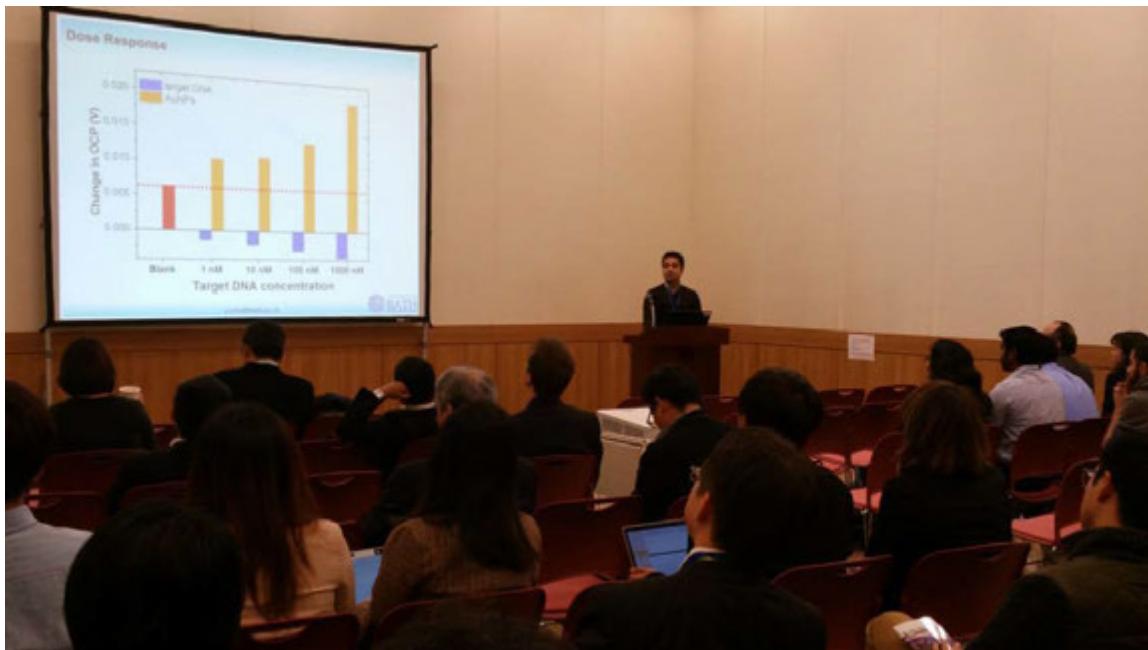
The conference was segregated into well organised themed sessions with oral talks, workshops, industrial exhibitions and poster sessions. For the same, I submitted an abstract entitled 'A Simple and Highly Sensitive Electrochemical Platform for Detection of MicroRNAs' that was accepted for oral presentation at the conference. My PhD research project aims to develop DNA based electrochemical platforms for detection of biomarkers for prostate cancer. To be more specific, I have been working in collaboration with our collaborators within the Marie Curie Initial Training Network- PROSENSE to develop DNA aptamer based approaches to detect protein biomarkers and also looking into miRNA detection. The strategies that are being developed are quite transferable to different platforms to look into different detection techniques and IEEE Sensors provide that interdisciplinary platform to spread the idea. The invited talks during the conference were truly inspiring and showcased the state-of-the art technologies in the sensor technology for a wide range of applications.

My presentation was in the first session of the third day of the conference. My presentation grabbed a considerable amount of interest from the audience. Expected questions arose which demonstrated the interest of using our technology with their respective platforms.

I had long been curious to know how the sensor field is developing, not just in biosensors but also other kind of sensors and indeed this conference didn't fail to draw light on it. The 4-day conference was filled with exciting research going around. After discussion with various professors and students, it definitely helped me to better decide which area to look into after finishing my PhD. Nonetheless, apart from giving a presentation on such a global platform, it also resulted into a proceeding paper which will be available online under IEEE proceedings 2015.

Last but not the least, I would sincerely like to thank Electrochemistry group of the Royal Society of Chemistry (RSC) for the support to realise this wonderful trip that will definitely benefit me professionally in long run. Not just professionally, but it was quite an experience to know South Korean culture which was another added advantage of the trip.

Pawan Jolly, Department of Electronic and Electrical Engineering, University of Bath, UK



Presentation time: Acknowledging Royal Society of Chemistry- Electrochemistry Group



***Cultural event at the Conference being attended with Ioulia
Tzouvadaki from EPFL, Switzerland***

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Meetings Reports (International):

227th Electrochemical Society Meeting, Chicago, Illinois, United States, May 24th – 28th

With the generous support of the Royal Society of Chemistry Electrochemistry Group and the Electrochemical Society Student Travel Award I was able to attend the 227th Electrochemical Society Meeting hosted from 24th to 28th May 2015 at the Hilton Chicago in Illinois, USA. This conference gathered electrochemists from around the globe, providing an opportunity to meet other scientists and engineers from countries including the United States, Germany and Japan.

The meeting program was varied and filled with interesting and engaging lectures, and several times I found myself rushing between floors to attend not to be missed talks on time. Many of the presentations in the interfaces session in Symposium I were of particular interest to me. These talks included discussions on recent developments pertaining to the research of strontium segregation from electroceramics. Strontium segregation is a known degradation process which can affect oxide materials applied in fuel cells and other energy storage devices. As I have experienced the effects of the insulating layer formed by this phenomena in my own research it was interesting to hear speakers discuss the causes and control of this type of degradation.

On Wednesday, the fourth day of the conference, I presented my current PhD research in an oral presentation with the title “Optimising Surface Segregation & Defect Structure of $\text{La}_{0.5}\text{Sr}_{0.5}\text{Mn}_{0.5}\text{Co}_{0.5}\text{O}_{3-\delta}$ (LSMC)”. Whilst I have had the opportunity to present my work at conferences in the United Kingdom in poster format, this was my first intercontinental conference and my first oral presentation. My talk generated interest among the audience present and I received constructive feedback for potential avenues of future research.

My research, and the main content of my talk, is based on the fundamental investigation of LSMC as an electroceramic materials for use in solid state energy storage devices including fuel cells, electrolyzers and metal-air batteries. In particular I am investigating whether oxygen deficient perovskite thin films can improve the reaction kinetics of oxygen reduction and oxygen evolution reactions. My PhD research project is supervised by Dr Ainara Aguadero and Professor Stephen Skinner at Imperial College London in the Department of Materials.



Inside views of corridors in the Hilton Chicago, the imposing location where the 227th ECS Meeting was hosted



Wednesday May 27th 2015 Boulevard Room C 105 - Oxygen Electrodes III

Due to the sheer size and variety of this electrochemistry conference there were also occasions where talks were not directly related to my research. These provided the opportunity for networking. During the week of the conference I was able to speak with several key academics in the field, including Professor Bilge Yildiz from MIT and Professor John Irvine from the University of St. Andrews, both of whom also gave invited talks. With the latter I had the opportunity to enjoy a classic Chicago deep dish pizza as well! Further, I met several researchers who used to work in the group I am now a part of and their advice on low energy ion scattering was very much appreciated.

I wish to thank the RSC Electrochemistry Group for your support, which made this experience possible.

Celeste van den Bosch

Department of Materials Imperial College London



Chicago sight-seeing included a visit to Cloud Gate (a.k.a The Bean) in Millennium Park, a short walk from the location of the conference in the South Loop. My supervisor, Ainara Aguadero, and I are indicated within the red circle



View from the bar on the 96th floor of the John Hancock Center Tower where the end of a successful five-days of the ECS conference was toasted with other members of the Imperial College London Electroceramics group.

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Meetings Reports (International):

Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy Atlanta, USA, February 2016

Pittcon 2016 was attended by almost 13,000 conferees and exhibitor staff, taking over the vast Georgia World Congress Centre for one week in March. A wide range of disciplines were represented but there was no shortage of symposia on electrochemistry and sensors. The excellent Wallace H Coulter lecture “How Optical Single-Molecule Detection in Solids Led to Super-Resolution Nanoscopy in Cells and Beyond” which opened the conference was presented by Professor William E Moerner, the 2014 Chemistry Nobel Laureate.

With over 2,000 sessions over 5 days, it isn’t possible to see all of the electrochemistry research being presented. Personal highlights included “Real-Time Monitoring Urinary Encrustation Using Quartz Crystal Microbalance Sensor” by Peghan Abadian (Northeastern University) and “Cloud Point Extraction for Electroanalysis: Anodic Stripping Voltammetry of Lead” by Cory A Rusinek (Cincinnati), both of which provided unique insights into solving the problem of sensor fouling. “Targeted Discovery of Disinfection By-Products in Swimming Pools and Hot Tubs” by Susan D Richardson (South Carolina) was a terrific presentation showcasing a novel approach in searching for the products of chlorine reacting with organic matter, although it does put you off going to the pool.

Many of the presentations were electrochemistry-related and there were some especially good talks on sensor research. “Electrochemical Metal Determination for Point-of-Care Assessment of Environmental Exposure” by Ian Paputsky (Cincinnati) presented an innovative miniature, single use, all-in-one electrochemistry set. “Electrochemical Application of Boron-Doped Diamond Electrodes” by Yasuaki Einaga (Keio) served as an introduction for anyone working with boron-doped diamond and also reported on proven applications for BDD sensors in virtually every area of analytical chemistry. “Building a ‘well-tempered’ Biosensor for Real-Time Neurochemical Sensors” by Martyn Boutelle (Imperial College London) highlighted the temperamental nature of electrochemical biosensors versus the expectations of industry that everything can be easily standardised. The expo floor was enormous, occupying almost 125,000 square metres. 1,539 booths pedalling every conceivable chemistry-related product or service was there offering advice, quotations and free pens. One of the more unusual marketing techniques involved the hourly appearance of a therapy dog (a St. Bernard named Toby), intended to cajole conferees into buying HPLC parts. Companies of all sizes were in attendance: I was delighted when I unexpectedly found a small retailer of legacy equipment that could sell software for an older system I use in my research, whereas the larger companies insisted I would have to purchase a costly upgrade.

With a generous bursary from the Electrochemistry group I was able to attend Pittcon and present a poster to show off my results from the first 14 months of my doctorate at the

Department of Civil and Environmental Engineering at Imperial College London. “Breaking the Biofouling Code: Towards Reliable In-Pipe Water Quality Sensors” facilitated the swapping of the odd business card, making connections with other researchers and exhibitor staff that have proven to be very useful so far. There was real competition for an audience however as the other posters in the “Environmental Water Quality and Analysis Session” as well as in the “Electrochemistry” session were of a very high standard. In particular, “Continuous Electroporation Through a Mesoporous Gold Membrane” by Juliette Experton (Florida) revealed that electroporation may be possible at relatively low potentials, and “Development of an Arduino Shield for Water Quality Analysis” by Michael Chia (Northern Kentucky).

Pittcon was a marvellous opportunity to show my research to the international chemistry community, meet with other researchers and learn of recent developments in electrochemistry. I would happily recommend Pittcon to other early career researchers.

Reference: “Pittcon 2016 in Atlanta, Another Success Story”
(<http://www.prweb.com/releases/2016/03/prweb13272036.htm>).

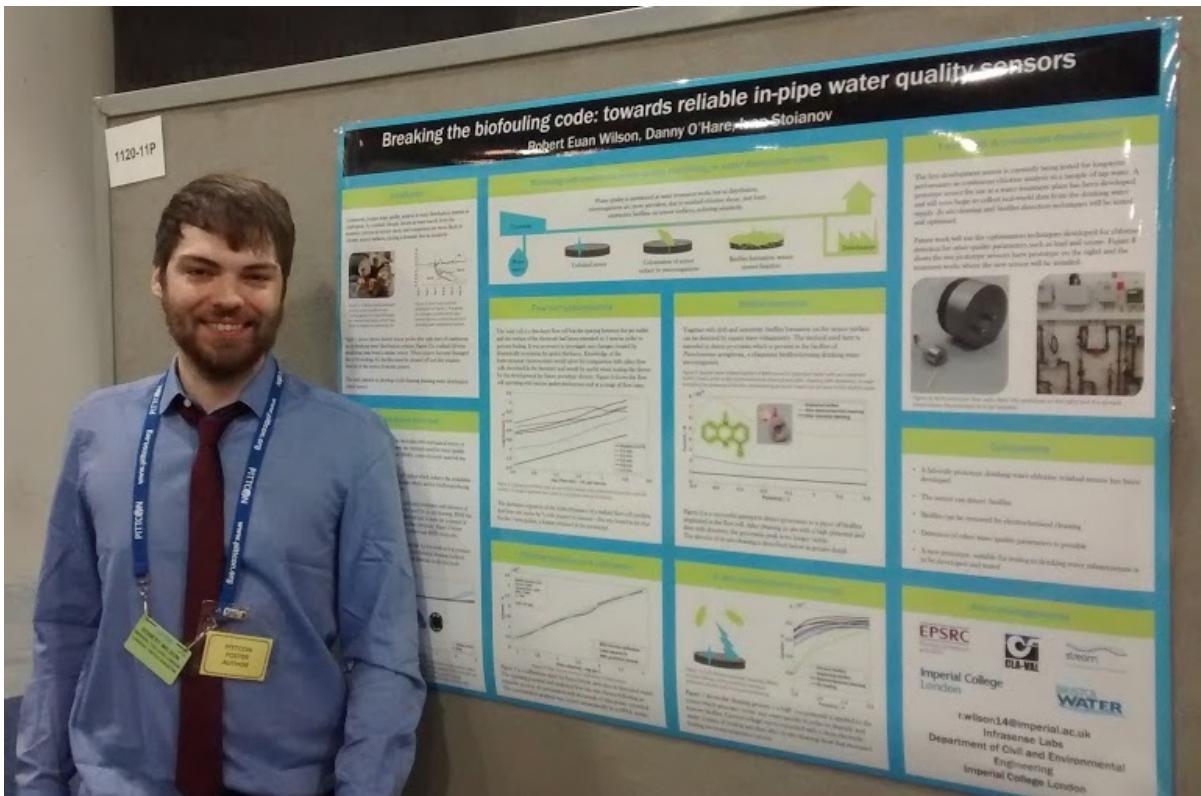
Euan Wilson
EngD Student
Imperial College London



1- The Expo floor at Pittcon 2016



2 - Toby the St. Bernard



3 - Me and my poster

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Meetings Reports (International):

6th Baltic Electrochemistry Conference, Helsinki, Finland, June 15th – 17th 2016

With the support of the RSC Electrochemistry Group travel bursary, I was able to attend the 6th Baltic Electrochemistry Conference in Helsinki, Finland from 15th to 17th June 2016. Eight years had passed since the previous Meeting in Tartu, Estonia, and when giving his welcome speech, Prof Murtomäki from Aalto University confessed he wasn't sure there would be enough interest for the conference. He was delighted to

find that his concerns proved unfounded, as the conference attracted over 160 delegates from as far as South Korea, Israel and the United States. There was a packed programme of oral presentations over three days and plenty of opportunities to study the poster presentations on display.

The theme of the conference was "Electrochemistry of Functional Interfaces and Materials", and perusing the abstracts before the start of the conference I was excited to see the breadth of topics on offer. The talks kicked off with an excellent plenary lecture by Prof Amatore from ENS on vesicular exocytosis and continued with interesting contributions on topics ranging from biosensors to redox flow batteries. After a delicious buffet lunch we were treated to an invited talk by Prof Schmuki from Friedrich-Alexander-University of Erlangen-Nürnberg discussing the recent progress in growing highly ordered TiO₂ nanotube arrays, followed by more high quality presentations on oxygen reduction, electrode manufacturing for lithium-ion batteries and other topics. The first day concluded with an extended poster session.



Helsinki bathing in sunshine.



Poster session on day 2.

On the second day of the conference we started with talks on ion-selective electrodes, potentiometric pH measurements and hydrogen peroxide detection. The second session of the day was dedicated to conducting polymers and it was opened by Prof Hillman from University of Leicester who presented his group's work on electrochemically switched ion exchange for defluoridation of water. The invited talk of the day was by Prof Grundmeier from Paderborn

University on nanocrystalline ZnO films, comparing different deposition methods and plasma treatments. A second extended poster session took place after the afternoon coffee break followed by the final session of the day with talks on spectroelectrochemistry and photoelectrochemistry.

The conference dinner was held at Hilton Helsinki

Kalastajatorppa, set in a quiet location by a private beach overlooking the Gulf of Finland. We were served Finnish delicacies from an abundant buffet, and entertainment was provided by a

symphony orchestra in which Prof Murtomäki also plays. The winner of the best poster prize was announced at the conference dinner, and the prize went to Xing Fan from Chongqing University for her poster highlighting the potential of flexible electronics with a hybrid power source. The dinner was rounded off with coffee and brandy, or cloudberry liqueur for those feeling adventurous – cloudberrries are a Finnish specialty that get served on special occasions, but they are not to everyone's taste!



Conference dinner.



[Professor Enn Lust.](#)

The last day of the conference had arrived. The first session was devoted largely to computational chemistry, whereas the theme of the second session was battery technology. Prof Feliu from the University of Alicante gave the final invited talk on anion adsorption and interfacial acid/base properties at model Pt(111) electrodes. We were honoured to hear Prof Lust from the University of Tartu give the

final talk of the conference with a great contribution on polymer electrolyte fuel cells, with a particular focus on the carbon support for the Pt catalyst. All that remained, then, was closing remarks from the organisers and a promise that the next Baltic Electrochemistry Conference will be held in Tartu, Estonia either next year or in two years' time. We emerged from the conference venue to glorious sunshine. After such a successful conference in Helsinki I am sure we are all eager to take part next time.

I would like to thank the RSC Electrochemistry Group again for awarding me a travel bursary to attend this conference.

Mailis Lounasvuori
University College London

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Meetings Reports International:

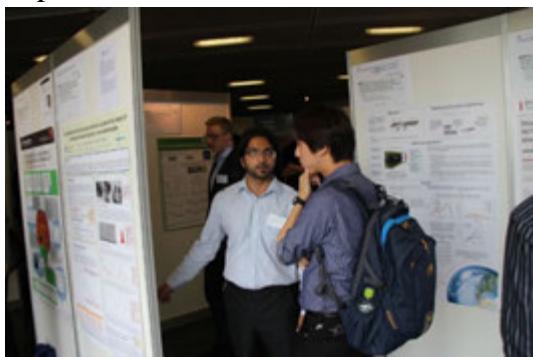
12th European SOFC and SOE Forum, Lucerne, Switzerland, 5th – 8th July 2016

The 12th European SOFC and SOE Forum was the 20th in its series on fuel cell and hydrogen technology. It was organised by Olivier Bucheli and Michael Spirig and was held at the KKL, the Culture and Congress Centre of Lucerne, Switzerland. The forum focused on bringing together the scientific and technical communities surrounding high temperature electroceramic technologies.



The KKL, Lucerne Culture and Congress Centre, location of the 12th European SOFC and SOE Forum.

Due to the support of the RSC Electrochemistry Group I was able to present a poster entitled 'A combined microstructural and ionic conductivity study of multiple aliovalent doping in ceria electrolytes' at two extended poster sessions among many other high quality contributions. This allowed ample opportunity for direct scientific exchange such as a discussion surrounding the synthesis of these materials and the mess they can make in the lab as well as discussions on the difference between using transition metal and lanthanide dopants in materials based on ceria and the effect on electronic and ionic conductivity.



A poster session, my poster is on the left. Photo credit to EFCF.

I arrived in Lucerne on the Tuesday afternoon where I proceeded to register and display my poster in preparation for the next few days. This was followed by a welcome gathering on the terrace of the KKL where I recognised Dr Karmele Vidal from the University of

Basque Country, Spain due to previous collaboration with the group and was introduced to Aritz Wain, a member of the same group at the University of Basque Country.



From left to right: Aritz Wain, Dr Karmele Vidal and myself on the terrace of the KKL.

The Wednesday and Thursday began with keynote talks including one on the current status of the fuel cell industry in Korea by Dr Hae-Weon Lee. Another was by Sean James from Microsoft highlighting the need for fuel cells, particularly solid oxide fuel cells due to their ability to run on natural gas, in providing energy for data centres which are becoming larger and more numerable due to the increasing reliance of modern businesses on technology. These keynote talks were followed by parallel oral presentation sessions on topics varying from the basic properties of materials to overviews of where SOFCs and SOEs stand at the industrial level. Companies represented include Hexis, Ceres Power and Boeing to name a few.

Dinner was organised by the conference for the Thursday evening on a historic paddle wheel steamer which took us on a tour of Lake Lucerne and combined excellent food with stunning scenery. This also provided opportunity to talk with representatives from academia and industry. Further oral presentations took place on the Friday including two very interesting talks on cathode interfaces by Professor John Kilner from Imperial College London and an engaging keynote on 'New materials, structures and concepts for solid oxide cells' by Professor John Irvine from the University of St Andrews.

Attending the 12th European SOFC and SOE Forum enabled me to come into contact with academics and particularly industry professionals which I may not have had the opportunity to do otherwise. I also learnt a great deal about how my research fits into SOFC development at a larger scale and the huge breadth of research taking place in this field. Fortunately, I had time to explore Lucerne on the Friday evening, bringing to an end this fascinating week.



Left: a view of the mountains from the paddle steamer during the dinner on the lake and right: a view of Lucerne from the top of the town wall.

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Meetings Reports International:

19th Topical Meeting of the International Society of Electrochemistry “Electrochemistry at Modified Interfaces” 17- 20 April 2016. Auckland, New Zealand.

Thanks to the support of the RSC Electrochemistry Group, I travelled to the remote and beautiful New Zealand to participate in the 19th Topical Meeting of the International Society of Electrochemistry. The conference was held at the Faculty of Engineering of the University of Auckland, next Albert Park and at walking distance from the Sky tower, which dominates the city view. Academics and students from around the world found here a space to share their work, discuss their findings, establish collaborations and, of course, to meet old colleagues and make new friends.



Me at the Faculty of Engineering of the University of Auckland.

David Williams from the University of Auckland inaugurated the meeting, welcoming the attendants and reviewing of the scientific community of the region. Following this, Justin Gooding (UNSW, Australia) delivered the first invited

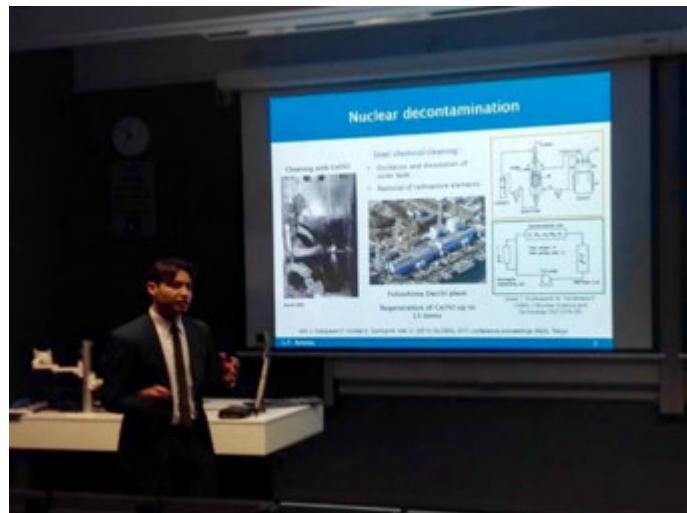
keynote, presenting interesting developments on modified Si surfaces for illumination-activated electrochemistry. Afterwards, Ulrich Stimming (Newcastle University, UK) showed in his keynote the effects of functionalization of carbon felt electrodes for redox flow batteries, a topic that I followed with attention, as my research deals with the zinc-cerium redox flow battery. The talk by Hubert Giraoult (EPFL, Switzerland) on electrochemistry at heterogeneous interfaces was also interesting and I was happy to meet Andrej Czerwiński (Industrial Chemistry Research Institute , Poland) in person, whose papers on the deposition of noble metals on porous electrodes are well known by our group. The usual coffee breaks and a well-balanced lunch (with a surprising amount of beet) gave place to nice conversations. It was interesting to see that for most of us this was our first visit to New Zealand, finding Auckland an agreeable city with its blend of British, Maori and Asian cultures. We all looked forward to explore the place. The poster session took place that evening and many interesting pieces of research were presented. We also had a chance to try the excellent New Zealand wine.



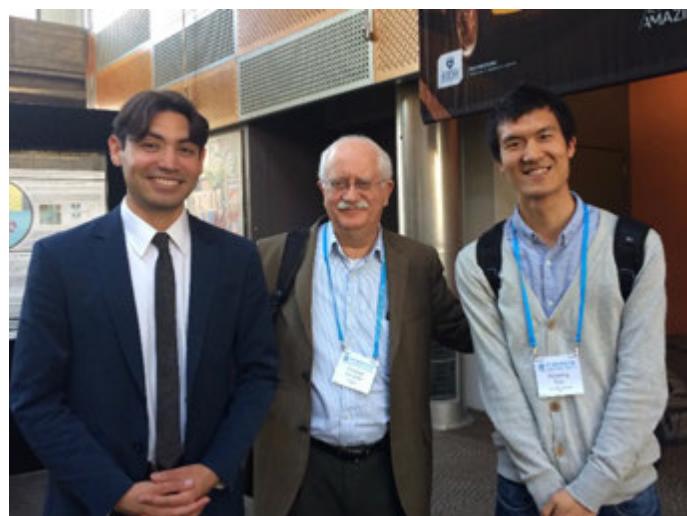
Professor Ulrich Stimming's talk on vanadium flow batteries.

The second day began with the keynote by Mary Ryan (Imperial College London, UK) on the advanced characterization of corrosion of prosthesis and the toxicity of nanoparticles produced during this process. My talk took place that morning in the session chaired by Hubert Giraoult. I presented the industrial uses of Ce(IV), a powerful oxidant that can be regenerated in electrochemical reactors and demonstrated how the use of highly porous platinized titanium electrodes is

essential to maintain high energy efficiency. I answered several questions and received useful advice from Anthony Kucernak (Imperial College London, UK) and Kin-Ming Ying (Yuan Ze University, Taiwan). Christian Amatore gave me also some valuable career advice. I spent the rest of the day more relaxed, listening to the stimulating talks.



My presentation on cerium-based industrial electrochemical processes.



A photo with Christian Amatore, current president of the ISE.

The gala dinner took place that evening at the Royal New Zealand Yacht Squadron, in the marina of Auckland and next to its iconic bridge. I walked there to get a view of the city at night and joined Justin Gooding and Daniel Scherer, who had the same idea. We talked on the way about the differences between Australia and New Zealand and about the etymology of the Spanish word for sweet potato. We all enjoyed our three-course supper surrounded by cruiser models and sailing trophies. The dishes were made with local fresh products and received general praise. Before dessert, Christian Amatore, the president of the ISE, gave a short speech and recommended young students to avoid getting old. He also delivered the prizes for the best posters. As always, the dinners of the ISE are a great opportunity to learn from others and to establish academic and personal relations.



Dinner at the Royal New Zealand Yacht Squadron.

The last day initiated with the presentation by Jadranka Travas-Sejdic (University of Auckland, New Zealand) on the diversity of functionalized conductive polymers, many of them characterized electrochemically. The attendants showed a great sense of duty, nearly all of them arrived on time to the sessions, despite the excesses of the previous night. After the remaining presentations, the organizing committee gave a final speech, thanking everyone for their work and participation. Finally, it was announced that a special issue of *Electrochimica Acta* would be devoted to this meeting and edited by Conor Hogan and Sergio Trasatti. We used our last lunch together to interchange emails, business cards, and LinkedIn or Facebook accounts. Most of us took advantage of this trip to New Zealand to visit

the many touristic and natural attractions that this country has to offer. It is not difficult to obtain amazing photos, even in the city of Auckland.



The beautiful and remote city of Auckland, New Zealand.

I gratefully acknowledge the support of the RSC and the Mexican government:



Luis F. Arenas, AMRSC
e-mail: Ifam1g13@soton.ac.uk
Electrochemical Engineering Laboratory
University of Southampton, UK

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Meetings Reports (National):

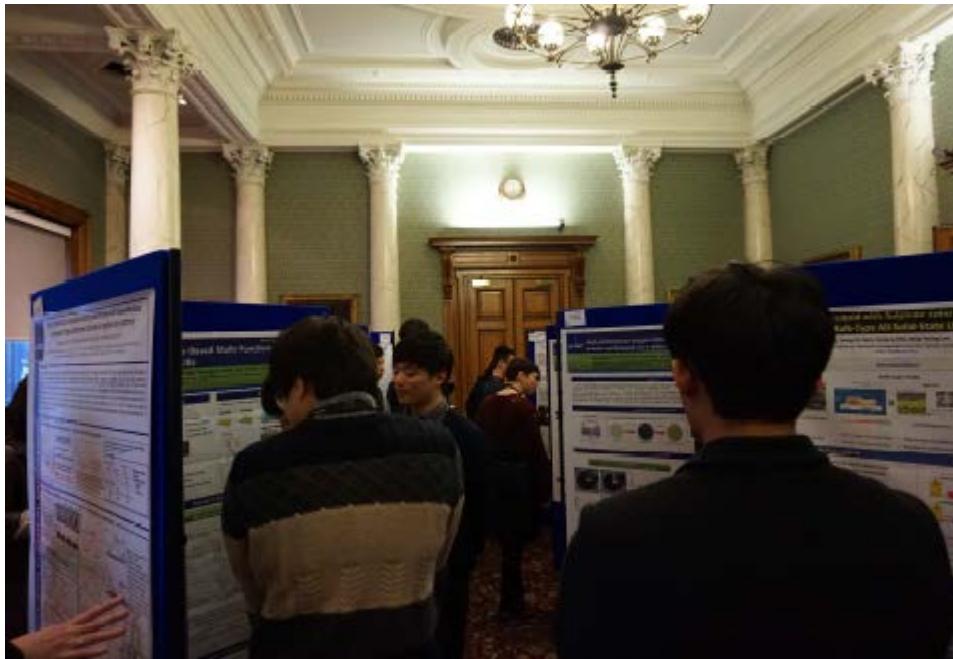
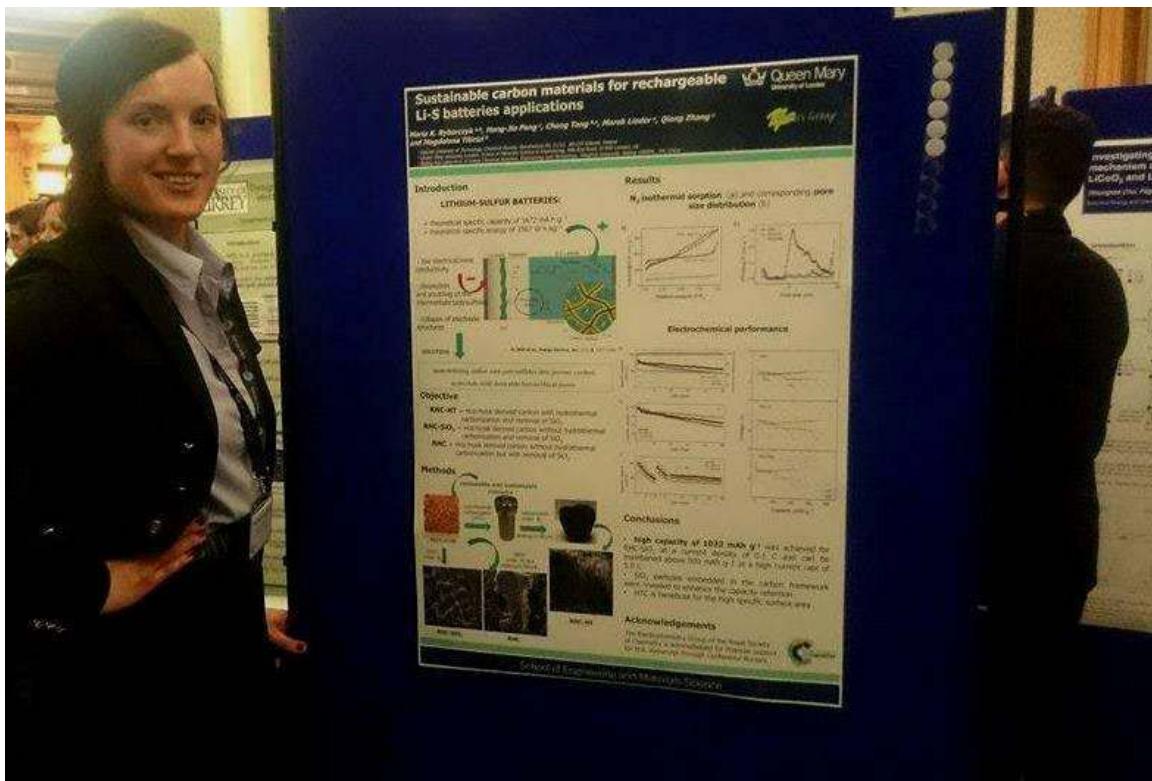
UK-Korea Symposium on Lithium and Sodium Batteries

18 January 2016 09:30 - 19 January 2016 16:00, London, United Kingdom

The UK-Korea Symposium on batteries was organized this year in London. It was a joint meeting inspired by the Royal Society of Chemistry and the Ulsan National Institute of Science and Technology (UNIST). It provided a platform for contribution to the development in the field of different aspects of lithium-ion, sodium-ion, metal-air batteries (for e.g. Li, Na and Zn) and other energy storage devices. The Scientific Committee consisting of Prof. Peter Bruce from University of Oxford together with Prof. Jaephil Cho from UNIST delivered also presentations at the conference as well as considered all perspectives of next generation materials. As a PhD student in the Prof. Lieder's group, I was given the chance to have a poster presentation within the research works directed by Prof. Titirici (QMUL, UK) in collaboration with researchers from China. The main motivation behind my work is the production of sustainable materials from renewable resources for energy conversion and storage. Here, by simple thermal decomposition of low-cost precursors mainly from biomass, carbon as well as hybrid materials can be prepared. There is still a need for research area in search of new rechargeable battery systems which incorporate inexpensive, light weight active materials. Among the various candidate materials, porous carbons have received great attention since they provide a high surface area, electrically-conductive framework. It opens also opportunities to future areas of growth in this exciting field. During the symposium everyone had a possibility to share their ideas which is a great beneficial for the energy demand investigations around the world.

For early-stage researchers the network's training is always valuable in their further career. Therefore, I greatly appreciate financial support which enable me to come in and present the work done in collaboration. Thank you to the RSC Electrochemistry Group for your support, which made this experience possible.

Pictures from the poster session:



Group photo of participants at the UK-Korea Symposium on Lithium and Sodium Batteries in London:



Summarizing, a participation in the UK-Korea Symposium on Batteries is a credible opportunity for my scientific development as well as networking with leading researchers from Korea and the UK. I received guidance and advice regarding my research, and expanded my knowledge of other exciting and important research within the broad field of energy sector.

Maria Rybarczyk (PhD Student)

Chemical Faculty

Gdansk University of Technology

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Meetings Reports (National):

ISE Satellite Student Regional Symposium “Great Western Electrochemistry Meeting” University of Bath, Monday 27th June 2016

The 2016 GWEM event was held at the University of Bath and brought together postgraduate presenters and participants from Bristol, Oxford, Bath, Loughborough, Exeter, and Cardiff with invited international guest speakers from Delft (Dr. Liza Rassaei), from Groningen (Dr. Klaus Mathwig), and from La Trobe University Melbourne (Dr. Conor Hogan). The meeting was supported by the ISE, RSC, and by commercial exhibitors with displays to complement the poster sessions. After four sessions with in total 15 talks chaired by PhD students and postdocs the event finished with the award of prizes and wine and nibbles (leading to further discussions in the pub).

The meeting started with teas and coffees at 10am and talks in the first session by Gael Gobaille-Shaw (Bristol) on the development of novel oxygen reduction catalyst materials and “Catalysis with Lanthanum Barium Manganates”. Kelly Westmacott (Bristol) then reported about her work in electroanalysis entitled “Voltammetric Analysis of Vitamins B1, B2, and B6 using Screen Printed Carbon Electrodes”. The topic then moved to the electrochemical detection of nanoparticulate systems with Stanislav V. Sokolov (Oxford) reporting about “Reversible or not? Distinguishing Agglomeration and Aggregation at the Nanoscale Using Electrochemistry”. The first session was concluded with Tom Bartlett (Oxford) presenting “Formation and Characterisation of Ag-Nano-Arrays Using Nano-Impacts”. The break with teas and coffees was an opportunity for further discussion and for poster presentation.

The second session started with Kamonwad (Dia) Ngamchuea (Oxford) explaining “A Handheld Electrochemical Sensor for the Determination of the Strength of Garlic”. Zakiya Al Amri (Bristol) then presented “Thickness and Structure Dependent Activity of Pt Thin Films Towards the Carbon Monoxide and Formic Acid Oxidation Reactions”. The strong analytical theme then continued with an invited guest lecture by Professor Conor Hogan from La Trobe University (Melbourne) entitled “Understanding, Designing, and Controlling the Electrochemiluminescence of Cyclometallated Iridium Complexes”. Conor introduced the audience to multi-colour electrochemiluminescence techniques, applications on mobile phones in electrochemistry and luminescence sensing, and to a novel class of luminophors with designer colour and sensitivity. A lot of elegant electro-analytical work to further discuss in the lunch break.

In the afternoon session Dr. Elena Madrid (Bath) started with a talk about “Ionic Diode Materials” introducing the effects observed during current flow through micro-membranes and how current rectification in ionic diodes can be observed and exploited. Pavel Zhurauski (Bath) then explained “Self-Assembled Aptamer Modified Redox Activated Gold Nanoparticles for Cancer Biomarker Detection”. Two guest lectures then introduced the audience to nano-gap electrodes and stochastic voltammetry as very recent innovations in electrochemistry. Dr Liza Rassaei (Delft) discussed “Tuning the Selectivity of Nanogap Sensors” and Dr. Klaus Mathwig (Groningen) presented “Stochastic Amperometry in nanoscale Electrochemical Devices”. After more coffee and tea, the final session of the day was started with Dr. Yongde Xia (Exeter) explaining “Novel Porous Carbon-Based Nanocomposites for Oxygen Electrocatalysis Reactions”. This work led into the topics catalyst design and molecular level reactivity. Zuhayr Rymansaib (Bath) then presented “All-Polystyrene 3D-Printed Electrochemical Systems” where a general methodology for fabrication of devices based on additive manufacturing was suggested. Oliver Donovan-Sheppard (Cardiff) presented “Combining Cyclic Voltammetry and Advanced Raman Spectroscopy to Investigate Catalytic Hydrogenation Reactions” and the idea of “shiners” reporting molecular details during reactions at complex interfaces. Last-not-least, Rosemary Brown (Bath) gave a talk on “Phytantriol Q224 Cubic Phase Deposit Allows Bistable Switching of Microhole Ion Flow” where structural changes in cubic and hexagonal lipid phases were investigated *in situ* with the help of electrochemical methods.

All-in-all, this was a successful day of electrochemistry and a difficult final task for the jury to award prizes. The “Alvatek” poster prizes were awarded to Pavel Zhurauski (Bath) for his poster “Nanopatterning of Ferrocene on Self-Assembled Au Nanoparticles for Aptasensor Developppment” and to Andrew McInnes (Loughboorugh) for his poster “Enhanced Photochemical Water Splitting Using Mass-Selected Nano-Clusters”. The “Metrohm” prize for presentation was awarded to Stanislav V. Sokolov (Oxford) for his talk on “Distinguishing Agglomeration and Aggregataion at the Nanoscale” and the first prize for the best presentation (with free registration at Electrochem 2016 in Leicester) was given to Kamonwad Ngamchuea (Oxford) for her talk on “A Handheld Electrochemical Garlic Strength Sensor”.

Bath

Frank Marken

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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 (see <http://www.rsc.org/ScienceAndTechnology/Funding/TravelGrants/InterestGroups.asp>),
- (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 RSC Electrochemistry Group Secretary:

Dr. Upul Wijayantha (email: U.Wijayantha@lboro.ac.uk).

Related: also see RSC travel bursaries

<http://www.rsc.org/Membership/Networking/InterestGroups/Electrochemistry/StudentBursaryScheme.asp>

Echem.NET

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Electrochemical Science and Technology Information Resource (ESTIR)

The ESTIR and related websites operate under the auspices of the Ernest B. Yeager Centre for Electrochemical Sciences (YCES), Case Western Reserve University.

Currently around 50 UK Electrochemistry Groups are featured on this website.

Check them out, update your profile or add your group at the following URL.

<http://electrochem.cwru.edu/estir/grads.htm>

or

<http://electrochem.cwru.edu/estir/history.htm>

For more information, contact:

**Zoltan Nagy, Visiting Scholar
Department of Chemistry, Campus Box 3290
The University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-3290, USA
Telephone: USA-(919) 272-2228
E-mail: nagyz@email.unc.edu**

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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**. The local ISE Regional Representative (**Dr. Tim ALBRECHT of Imperial College London, 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.

Find out more:

<http://www.ise-online.org>

Future SCI Events (Editors Selection)

Energy Research

05 Sep 2016, Scotland Group

Particles at Interfaces

07 - 09 Sep 2016, Colloid and Surface Chemistry Group

Private Tour Whipple Museum of the History of Science

06 Oct 2016, Cambridge and Great Eastern Group

As if by Magic! Spectacular Chemistry Demonstration

03 Nov 2016, Cambridge and Great Eastern Group

Young Chemist in Industry 2016

10 Nov 2016, Young Chemists' Panel

Future RSC Events (Editors Selection)



Single Entity Electrochemistry: Faraday Discussion

31 August - 2 September 2016, York, United Kingdom

This Faraday Discussion aims to bring together leading scientists to discuss key challenges in the design, execution, analysis, theory and interpretation of single entity electrochemistry experiments.



Reaction Rate Theory: Faraday Discussion

19 - 21 September 2016, Cambridge, United Kingdom

The aim of this discussion meeting is to bring together theoretical and physical chemists, molecular biologists, solid state physicists and bio-physicists in academia and industry.

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Product Information



Electrochemistry Product News

EmStat³ blue



- 8 hours of batterylife
- USB or Bluetooth communication
- potential range of $\pm 4V$
- current ranges from 1 nA to 100 mA
- ideal for sensor applications

Optional:

- 8 or 16 channel multiplexer
- stirrer control
- Pt1000 temperature sensor
- differential electrometer amplifier

software for Windows and Android



PalmSens
Compact Electrochemical Interfaces

**BaSyTec**

Battery Test Systems

**BASYTEC Battery cyclers and capacity testing systems**

We are delighted to announce that we have signed an exclusive UK distribution agreement with BaSyTec GmbH.

BaSyTec is a leading supplier of high quality battery test systems with installations worldwide. BaSyTec systems have proven, superior capabilities – such as 3-electrode measurements as standard – excellent accuracy, powerful software, and all at lower cost.

(Shown here, the 32 Channel Test System 32 x 5A channels. Parallel operation capability)

The BaSyTec range extends to high channel counts (to 480 channels) and also to high power systems to 1000V and 1000A in both stand-alone and networked configurations.

Finally, BaSyTec offers the portable, low cost Battery Capacity Test instruments (BCT) range which extends to 32A and 600W. These provide an in-situ measurement of battery capacity and internal resistance using a defined discharge test. Please contact us for more information or to arrange a demonstration.

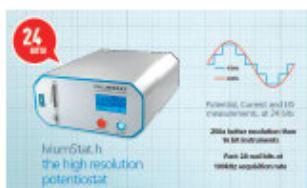
**Nanjing Jartul Electronics Co., Ltd****Jartul Electronic Loads**

Alvatek is now the exclusive distributor for Nanjing Jartul Electronics. Jartul offers a broad range of electronic loads from low power laboratory loads up to a powerful 500V/240A/6kW unit. These are surprising low-cost and range from around £500 for 30A/150V to around £6,000 for the most powerful unit. Please contact us for more information or to arrange a demonstration.

**IviumStat.h - 256x Resolution Improvement**

Ivium's new models with 24-bit measurement and 20-bit output resolution delivers:

- Ability to measure small signals on top of large background signals
- Faster speed (less switching and internal adjustments)
- Reduced discontinuities / noise due to switched ranges
- Better linearity
- 20 bits output – 20uV resolution over a full 10V sweep.

**Ivium "DataSecure" Module**

Network and protect your vital data in the event of a PC crash. Used with any Ivium potentiostat, this is a USB-connected data store with WiFi and LAN connection to the outside world. IviumSoft then runs on a PC networked to the instrument by WiFi or LAN. Should the pc connection be lost, or the PC crash, data will continue to be recorded onto the integral SD and, when the connection resumes, the data will be recovered and the system resynchronised.

Tel: 01666 500991 Email: info@alvatek.co.uk

www.alvatek.co.uk

New Product Information

Distributed in the UK by



ALVATEK

T. 01666 500991

E. info@alvatek.co.uk

Electrochemistry?
There's an app for that



Use your PalmSens and EmStat
with a tablet or smartphone



Bluetooth®

● **PalmSens** ● ● ●
Compact Electrochemical Interfaces

New Product Information



Potentiostat / Galvanostat / Impedance Analyser



Potentiostat



EmStat3 with integrated 8 channel multiplexer (MUX8)



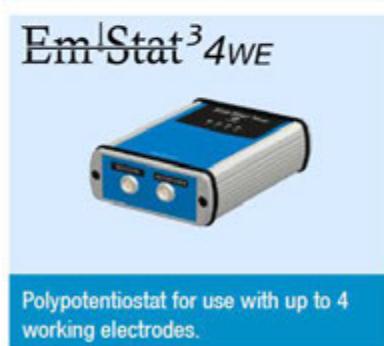
EmStat3 with integrated 16 channel multiplexer (MUX16)



4 channel multipotentiostat with EmStat3 modules



4, 8 or 12 channel multipotentiostat with EmStat3 or EmStat3+ modules



Polypotentiostat for use with up to 4 working electrodes.

Distributed in the UK by

ALVATEK
Tel: 01666 500991
Email: info@alvatek.co.uk
www.alvatek.co.uk

New Product Information



Tel: 01666 500991

Electrochemistry, Fuel Cell & Battery Research & Test Solutions

April 2013:

ALVATEK and BASi sign UK distribution contract

A Selection from the BASi range of electrochemistry accessories.
These can be found at www.basinc.com/products/ec.html

Electrochemical Cell Packages

- C-3 Cell Stand for Voltammetry
- Controlled Growth Mercury Electrode (CGME) for Polarography
- RDE-2 Rotating Disk Electrode
- Bulk Electrolysis Cell
- Thin-Layer Cross-Flow Cell
- Spectroelectrochemical Cell
- Glucose Sensor Interface



Electrodes

- Working Electrodes for Voltammetry
- Working Electrodes for Bulk Electrolysis
- Microelectrodes
- Reference Electrodes
- Auxiliary Electrodes
- Wired Enzyme Electrode
- Polishing Kit and Supplies



Cells

- Cell Vials
- Cell Tops
- Gas Sparging & Magnetic Stirring
- VC-2 Voltammetry Cell
- Low Volume Cell

For more information on any of the above products please contact Steve Fryatt at Alvatek



Tel: 01666 500991 Email: info@alvatek.co.uk

www.alvatek.co.uk

New Product Information

WHISTONBROOK TECHNOLOGIES LIMITED

'experts in electrochemical equipment'



Whistonbrook Technologies

Tel: 01582 434252

www.whistonbrook.com

Whistonbrook Technologies design, manufacture and supply a full range of standard and custom potentiostats and other electrochemical instrumentation to meet all your needs.



Analogue Potentiostats

- Low noise analogue potentiostats
- Single channel and dual channel units
- Current ranges from 1nA to 10mA

Prices from £1990

Point of Care (POC) and Medical Diagnostic Instrumentation

- Instruments and software developed for medical diagnostic sensors



Electrochemical Instruments for Student Experiments

- Potentiostats
- Amplifiers for Neuroscience
- Galvanostats
- High impedance buffer amplifiers
- Loads for fuel cells
- Analogue and Digital

Prices from £325*

*cost of 20 off

Digital Instrumentation with PC software packages

- EzeScan 4 – entry level potentiostat
- EzePG – potentiostat/galvanostat
- Quad potentiostat – four channel potentiostat
- EzeTouch – portable touch screen potentiostat

Prices from £2470



Website	www.whistonbrook.com
Telephone	01582 434252
Email	info@whistonbrook.com

Whistonbrook Technologies Limited, Unit C24, 110 Butterfield, Great Marlins, Luton, Beds, LU2 8DL

New Product Information



BioLogic
Science Instruments



ec-lab

EC-Lab Ltd
www.ec-lab.co.uk Tel: 01753 822522
Email sales@ec-lab.co.uk

MTZ-35

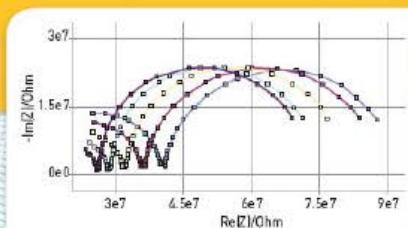
The new benchmark of impedance analyzers



Exploring new frontiers of impedance testing
with a wide frequency range impedance analyzer
and a full range of ancillary equipment.

MEASUREMENT RANGES

- Frequency range 10 μ Hz to 35 MHz
- Inductance 10 nH to 10 kH
- Capacitance 1 pF to 1000 μ F
- Resistance 1 m Ω to 100 M Ω



A Nyquist plot showing the relationship between the real part of impedance (ReZ) and the imaginary part of impedance (ImZ). The x-axis is labeled 'ReZ/Ohm' and ranges from 3e7 to 9e7. The y-axis is labeled 'ImZ/Ohm' and ranges from 0e0 to 3e7. The plot shows a complex impedance curve with a central peak and several smaller features, likely representing a capacitor in series with a resistor.

New Product Information

HIGH END MULTICHANNEL POTENTIOSTAT/GALVANOSTAT

VSP-300

The ultimate versatile multipotentiostat



BioLogic
Science Instruments

APPLICATIONS

- Batteries/supercapacitors
- Fuel cells/photovoltaic cells
- Fundamental electrochemistry
- Corrosion
- Sensors
- Materials



ec-lab

EC-Lab Ltd
www.ec-lab.co.uk

Tel: 01753 822522
Email sales@ec-lab.co.uk

New Product Information

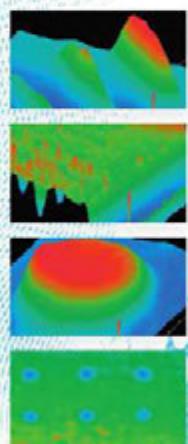


NEW product

M470

Introducing the 4th generation of scanning probe electrochemical workstations

Application areas:
bio-sensors,
biochemistry,
corrosion,
coatings,
catalysts...



- **9 available techniques:**
SECM, LEIS, SVP, SDS, SKP, OSP, ic-SECM, ac-SECM, ac-SDS
- **High performance scanning stage:**
0.09 nm ultimate z-resolution,
20 nm resolution on all axes,
100 mm scan range on all axes,
10 mm/s max scan speed
- **New innovative techniques:**
ic-SECM offering true simultaneous imaging of topography and reactivity,
ac-SECM offering measurement of surface conductivity without a mediator.
- **Fully integrated potentiostat/galvanostat/FRA:**
±10 V potential range, current ranges from **1 A to 1 nA**,
1 MHz to 1 µHz EIS capability

Product designed and manufactured by Uniscan Instruments Ltd.
a Bio-Logic SAS company

BioLogic
Science Instruments

www.bio-logic.info

ec-lab
EC-Lab Ltd.
www.ec-lab.co.uk Tel: 01753 822522
E-mail: sales@ec-lab.co.uk

New Product Information

VMP-300

POTENTIOSTAT/GALVANOSTAT



ec-lab

The ultimate multichannel electrochemical workstation



Modularity

- Multi-users
- Up to 16 independent channels
- EIS capability (10 μ Hz to 7 MHz)
- Ultra Low Current (100 nA to 1 pA)
- Current boosters: 1A/48V, 2A/30V, 4A/14V, 10A/5V
- Current boosters in parallel
- Linear Scan Generator (1 MV/s)



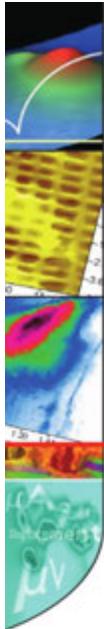
Unique features

- Up to 48 V control
- Up to 150 A (amplifiers in parallel)
- 1 pA min. current range
- 1 μ s min. acquisition time

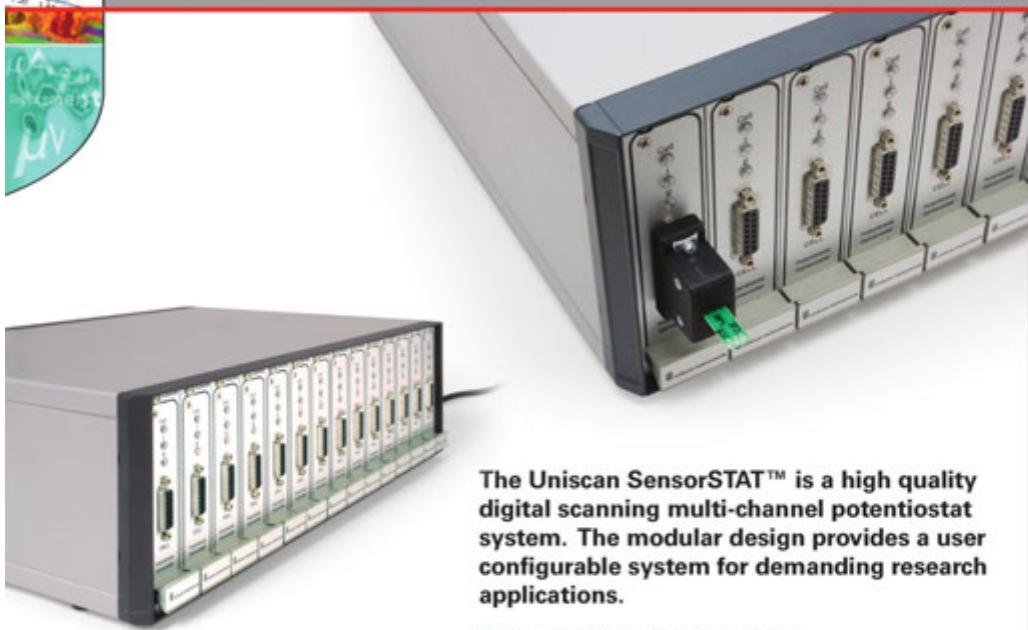


 ec-lab
EC-Lab Ltd. Tel: 01753 822522
www.ec-lab.co.uk E-mail: sales@ec-lab.co.uk

New Product Information



SensorSTAT



The Uniscan SensorSTAT™ is a high quality digital scanning multi-channel potentiostat system. The modular design provides a user configurable system for demanding research applications.

- Configurable for 8 to 14 channels
- Single USB connection controls all channels
- Ultra low noise current performance
- UiEChem™ software supplied with system
- Analogue triggering
- 5-WE multiplexing on each channel
- Interfaces to commercial electrochemical sensors
- User programmable techniques via macro programming
- ActiveX software for LabView™ applications



Üuniscan instruments
A  BioLogic company
Scientific Instruments

Represented by:



ec-lab

Web: www.ec-lab.co.uk Tel: +44(0)1753 822522
e-mail: sales@ec-lab.co.uk Fax: +44(0)1753 822002

uniscan instruments

New Product Information

Metrohm Autolab



Metrohm Autolab has been a member of the Metrohm Group since 1999. Metrohm Autolab customers can look expect excellent sales and service support from a dedicated team of Electrochemists based at Metrohm's prestigious laboratories at Daresbury near Runcorn.

Metrohm Autolab produces four different potentiostat/galvanostat lines for a wide range of electrochemical applications, as well as modular extensions, software and accessories.



www.metrohm-autolab.co.uk
Tel: 01928 579 600
Email: autolab@metrohm.co.uk

New Product Information



µStat 8000P Multi Potentiostat

Ref. STAT8000P



DropSens is proud to announce the launch of the NEW portable Multi Potentiostat µStat 8000P.

Our brand new instrument, of only 22x20x7 cm, includes 8 channels that can act at the same time as 8 independent potentiostats; it also includes one multichannel that can act as a potentiostat where up to 8 working electrodes share an auxiliary and a reference electrode.

With µStat 8000P users can perform up to 8 different electrochemical techniques at the same time; or carry out the study of one technique's parameter in just one step by applying the same electrochemical technique in several channels but selecting different values for the parameter under study. These are just examples of the enormous capabilities that our new instrument offers.

µStat 8000P can be applied for Voltammetric or Amperometric measurements, including 11 electroanalytical techniques. In addition, µStat 8000P owners can later upgrade their instrument to a µStat 8000 by just purchasing an extension. This self-upgrade does not require any hardware modification, but it is implemented by means of a Galvanostat software update kit.

The NEW portable Multi Potentiostat is Li-ion Battery powered (DC charger adaptor also compatible), and can be easily connected to a PC via USB or Bluetooth®.

µStat 8000P is controlled by the powerful software "DropView 8400" which allows plotting of the measurements and performing the analysis of results. DropView software provides powerful functions such as experimental control, graphs or file handling, among others.

Available techniques:

POTENTIOSTAT

Voltammetry

LSV	Linear Sweep Voltammetry
CV	Cyclic Voltammetry
SWV	Square Wave Voltammetry
DPV	Differential Pulse Voltammetry
NPV	Normal Pulse Voltammetry
NDP	Differential Normal Pulse Voltammetry
ACV	AC Voltammetry

Amperometry

AD	Amperometric Detection
FA	Fast Amperometry ($t_{rec} < 0.1$ s)
PAD	Pulsed Amperometric Detection
ZRA	Zero Resistance Amperometry

Contact us:

email: dropsens@metrohm.co.uk | website: dropsens.co.uk | Tel: 01928 579 600

New Product Information



µStat 8000P Multi Potentiostat

Ref. STAT8000P

Instrument Specifications	
● Power	Li-ion Battery (3500 mAh) USB DC charger adaptor compatible (5 V, 15 W)
● PC interface	Bluetooth® USB
● Operating modes	8x 1 Channel Potentiostat 1x 8 Channel Potentiostat
● DC-Potential range	±4.096 V
● Current ranges (potentiostat)	±1 nA to ±100 mA (9 ranges)
● Maximum measurable current	±80 mA
● Rise time	20 µs
● Applied Potential Resolution	1 mV
● Measured Current Resolution	0.025 % of current range (1 pA on lowest current range)
● Potential Accuracy	±0.2 %
● Current Accuracy	≤0.5 % (current range dependent)
● External inputs/outputs	- 5 Digital Input/Output pins [PIO 1, PIO 2, PIO 3, PIO 4, PIO 5] - 3 Analog Inputs multiplexing PIO 1, PIO 2, PIO 3 - 2 Analog Outputs (configurable I-out or E-out) LCD display in front panel
● Indicators	LCD display in front panel
● Dimensions	22.2 cm x 20.5 cm x 7.5 cm (L x W x H)
● Weight	1.6 kg

Control Specifications		
General	Conditioning stage duration:	0 – 1300 s
Pretreatment	Deposition stage duration:	0 – 1300 s
	Equilibration stage duration:	0 – 1300 s
General	Begin, End, Base, Vertex potentials:	-4.096 V to +4.096 V
Parameters	Step potential:	1 mV to 500 mV
	Pulse potential:	1 mV to 250 mV
	Scan rate:	1 ms up to 1.3 s per step
Specific	SWV	Frequency: 1 Hz to 400 Hz Amplitude: 1 mV to 250 mV
Parameters	DPP, NPP, NDPP	Modulation time: 1 ms to 1300 ms Pulse time: 1 ms to 1300 ms
	ACV	Frequency: 2 Hz to 250 Hz Amplitude: 5 mV to 250 mV (RMS)
	Chrono. Methods (AD, ZRA)	Interval time: 0.1 s to 1300 s Run time: Hours (65000 points)
	Fast Chrono. Methods (FA)	Interval time: 1 ms to 1300 ms Run time: Hours (65000 points)
	PAD	Pulse time: 1 ms to 1300 ms Interval time: 10 ms to 1300 ms Run time: Hours (65000 points)

Specifications are subject to change without previous notice

Related products



CABSTAT1



CABSTATMULTI



CAST



CAST8X



8X110

Contact us:

email: dropsens@metrohm.co.uk | website: dropsens.co.uk | Tel: 01928 579 600

PARSTAT™ MC

multichannel potentiostat/galvanostat

Protect Your Experiment From
the Unexpected



Designed to protect your experiment from the unexpected, the PARSTAT™ MC is the most modular and robust multi-channel electrochemical testing platform on the market. It builds on our industry-leading 50+ years of experience in potentiostat development and software user-interface design.



- The *ultimate* in modular design
- Widest dynamic current range of 2 Amps to 4 nA (120 fA resolution) as standard - No need for expensive hardware options
- Hot-swappable channels allow potentiostats to be added or removed without interruption of experiments on other channels
- Fast data acquisition at 500 kS/sec allows for a wide range of high speed applications
- Features the most popular electrochemical acquisition and analysis software solution, VersaStudio
- Floating ground allows testing of multiple samples in the same cell



**Princeton
Applied
Research**

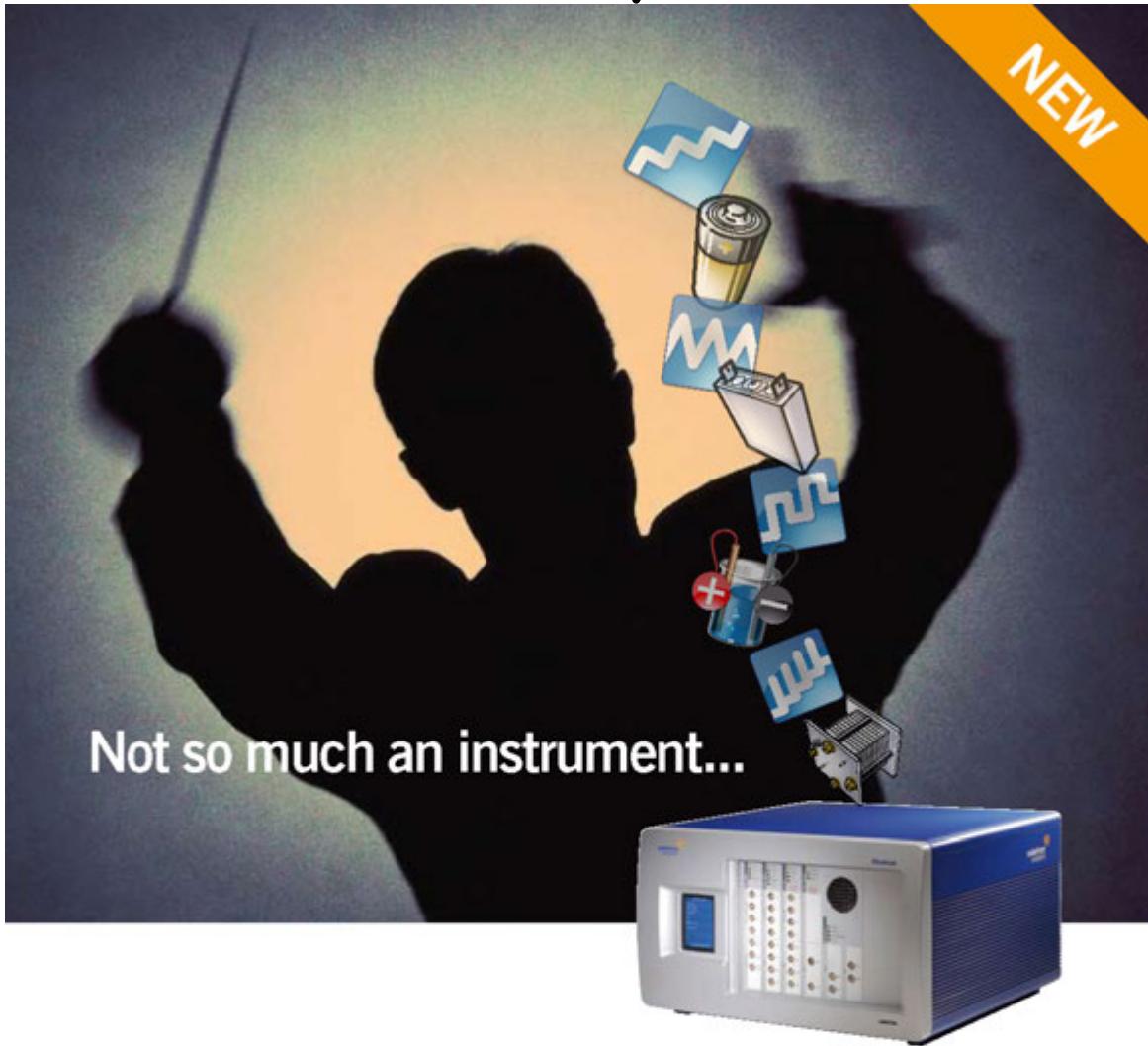
www.princetonappliedresearch.com

pari.info@ametek.com

P: 865.425.1289 F: 865.481.2410

AMETEK

New Product Information



The definitive modular system for electrochemical research, ModuLab delivers sublime performance for a vast repertoire of applications...

- High performance 'Plug & Play' modules
- 64 MS/s smooth scan - LSV, LSP, CV
- Up to 1 MS/s data acquisition - pulse, CV
- 100 sA current resolution
- Up to ± 25 A current - scan / pulse
- ± 100 V compliance and polarization
- 10 $\mu\Omega$ impedance measurement
- >100 TQ impedance measurement
- Multiple high-speed EIS techniques

Analytical
battery / fuel cell
Nanotechnology
Microelectrodes
Corrosion and coatings
Fundamental research

...more an orchestra.

solartron
analytical

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Fax: 1-865-421-2410
UK: Tel: +44 (0)1252 556800
Fax: +44 (0)1252 556899
Email: solartron.info@ametek.com
www.solartronanalytical.com

AMETEK



ModuLab the new **gold** standard for electrochemical instrumentation

To compose an electrochemical test system that's totally in tune with your research requirements, contact Solartron today.

New Product Information

New Solartron EnergyLab XM for Energy Research

The Solartron EnergyLab XM is an electrochemical impedance workstation designed specifically for energy storage research:

- Batteries
- Supercapacitors
- Fuel cells

New Application-Focussed Product Line

The EnergyLab XM is the first of a new application-specific range of potentiostats from Solartron Analytical (Ametek), with small footprints and affordable pricing. There will be four systems in the range, which will be launched over the coming months.

Follow Blue Scientific on Linked In to receive details of the new instruments as they are announced.

EnergyLab XM

The first product in the series to launch is EnergyLab XM, for impedance testing of a variety of energy storage devices, including the testing of batteries, supercapacitors and fuel cells. The system includes all components required for this area of research, eliminating the need for costly hardware add-ons. The system includes:

- A reference grade potentiostat
- Frequency response analyser (FRA)
- 2A booster

The unit may be operated in boosted or unboosted mode (with automatic switching), providing optimum test conditions and accuracy for a wide range of devices.

EnergyLab XM's extreme sensitivity is ideal for complete characterisation of prototype low current or low impedance new generation cells. If high current is needed, external boosters can be connected and automatically controlled, allowing fully integrated high current tests at up to 100A.

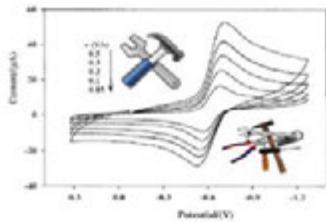
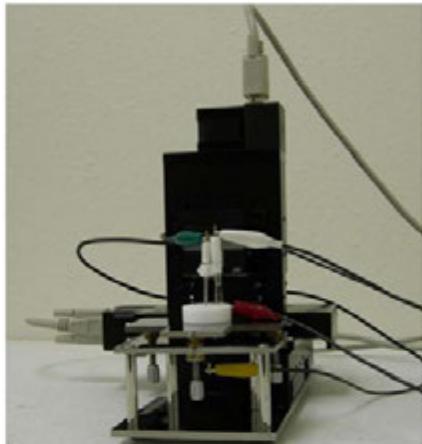
For more information and quotes, please contact Blue Scientific, exclusive distributor for Solartron Analytical in the UK and Ireland, on 01223 422 269 or info@blue-scientific.com



www.blue-scientific.com

Tools for Electrochemists!!!

CH Instruments at IJ Cambria Scientific



CHI920D SECM

The latest closed loop scanning electrochemical microscope

Products and accessories

- Wide range of electrochemical instrumentation; as well as potentiostats (and bipotentiostat) we have multiplexers, multichannel potentiostats, EQCM, and electrochemical detectors (ECDs) for LC and sensor use.
- Modules for very low current (pA range), compliance boost and rotating ring disk electrodes (RRDE)
- All instruments are very well developed and available at a very cost effective price; software included!
- In addition, we distribute the excellent ALS Ltd range of electrochemical accessories. We always keep a large stock of reference electrodes, working electrodes (including microelectrodes), and counter electrodes.
- We will almost always have the accessory parts that you require in stock for rapid delivery

Contact:

IJ Cambria Scientific Ltd • 39 Clos Bryn Haul • Llwynhendy •

Llanelli • Carmarthenshire • SA14 9DZ • UK

Phone: 01554 835050 • Fax: 01554 835060 • E-mail: info@ijcambria.com

(Mobile: 07957 287343)

IJ Cambria Scientific: www.ijcambria.com

(Reg. No. 4737857)

IJ CAMBRIA
SCIENTIFIC

New Product Information



» POTENTIAL IN
ELECTROCHEMISTRY

Thin-film technologies enable the manufacture of standard and customized (micro)electrodes with a low-cost, high precision and resolution. Micrux can adapt the electrochemical system to the requirements of the customers applications.

Thin-film accessories: flow cell and universal connector have been developed to use in combination with these electrodes.



» PROFICIENCY IN
MICROFLUIDICS

Micrux has experience in developing capillary Electrophoresis microchips with electrochemical detection and the small and totally portable instrumentation to use them: Holder, iHVStat, miniPump, etc.



www.micruxfluidic.com

sales@micruxfluidic.com



Innovative Solutions for Multiple Applications



Accessories for Microfluidics & Electrochemistry

www.micruxfluidic.com



Unión Europea

Fondo Europeo
de Desarrollo Regional





SCI

Where science meets business

Electrochemical Technology

The Electrochemical Technology Technical Interest Group 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.



Industrial sectors

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:

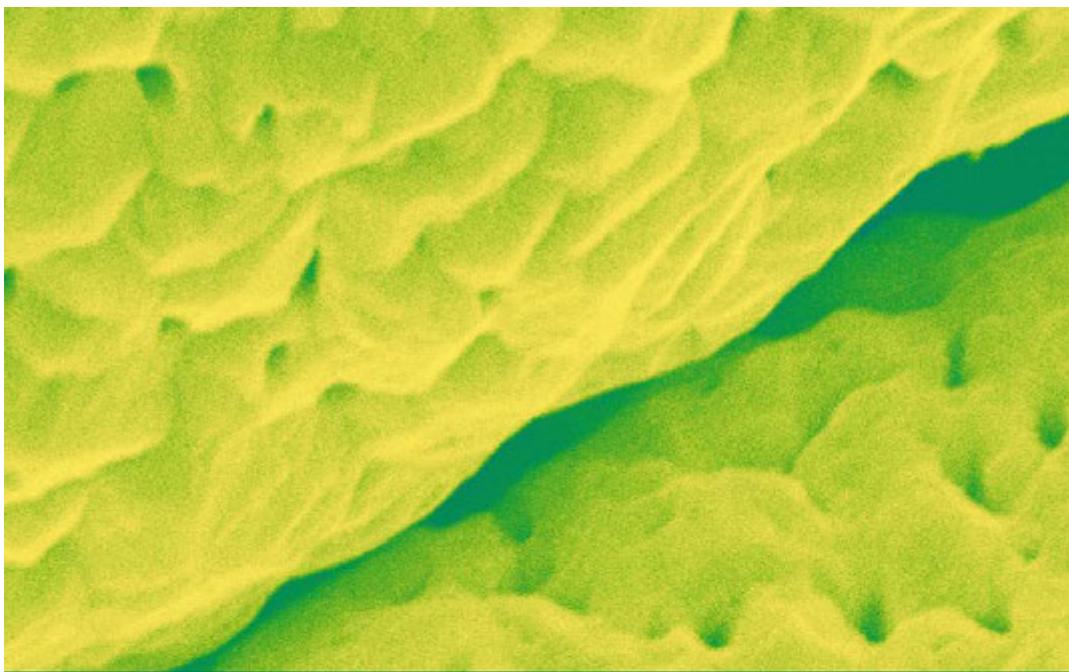
- ▶ sensors and monitors
- ▶ energy conversion and storage
- ▶ synthesis of chemicals, pharmaceuticals, biochemicals, polymers and electronic materials
- ▶ materials protection, processing and fabrication
- ▶ environmental protection and control

Join at:

<http://www.soci.org/membership-and-networks/technical-groups/electrochemical-technology-group>

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RSC Electrochemistry Group



RSC Electrochemistry Group

This RSC Group is part of the Faraday Division, involved in all aspects of electrochemical processes (fuel cells, energy sources, analytical devices and sensors, electrochemical planting and synthesis, fundamental research etc).

Activities:

- The Group organises the annual 'Electrochem' meetings (Faraday Medal) to reward outstanding international scientists. For up-to-date information, go to the RSC's web pages for the Electrochemistry Group.
- The Electrochemistry newsletter: available quarterly, in pdf, from our RSC web pages, it highlights events' reports and general sector's news and insights.
- Student bursaries: to support/encourage graduate students giving lectures on their PhD work at national and/or international conferences.
- Outreach: activities involving the public and schools to raise awareness of the fundamental importance of electrochemical processes today.

RSC | Advancing the
Chemical Sciences

www.rsc.org/electrochemistry

Join at:

<http://www.rsc.org/Membership/Networking/InterestGroups/Electrochemistry/>

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The Electroanalytical Sensing Systems Group

The Electroanalytical Sensing Systems Group is one of the RSC's many Interest Groups. The Interest Groups are member driven groups which exist to benefit RSC members, and the wider chemical science community, in line with the RSC's strategy and charter.

Join at:

<http://www.rsc.org/Membership/Networking/InterestGroups/Electroanalytical/>

END

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