

ESR SPECTROSCOPY GROUP

Newsletter August 2011

44th Annual International Meeting of the ESR Spectroscopy Group of the Royal Society of Chemistry

The 44th Annual International Meeting of the ESR Spectroscopy Group of the Royal Society of Chemistry (RSC) was held at the University of York from 3rd – 7th April 2011. The meeting, attended by 126 delegates, was held in the National Science Learning Centre on the York campus. This made an excellent venue for lectures, posters, receptions and scientific discussions late into the night. York has hosted 7 conferences of the RSC ESR group between 1971 and 2011. Dick Norman, the founding Head of York Chemistry, and Bruce Gilbert (appointed a Lecturer in 1965), pioneered EPR research in York. One of their PhD students, Mike Davies, was appointed an academic at York in 1990s before moving to Australia. Victor Chechik, appointed at York in 1999, expertly organised, managed and ran the 2011 meeting; the great success of the meeting was in no small part due to his herculean efforts which were ably supported by the York team.

Since 1986 Bruker BioSpin has generously sponsored an annual Lectureship and Prize, given to a scientist who has made major contributions to the application of EPR spectroscopy. The Bruker Lectureship and Prize for 2011 was awarded to Thomas Prisner (University of Frankfurt), who lectured on “New developments in EPR and DNP and application to biomolecular research”. His entertaining and genuinely inspirational lecture, introduced by Fraser MacMillan (University of East Anglia) who reviewed many of the contributions Thomas had made to the field, was enjoyed by a packed lecture theatre.

Fraser highlighted how many of the people that had been supervised and mentored by Thomas had subsequently gone on to do great work of their own.



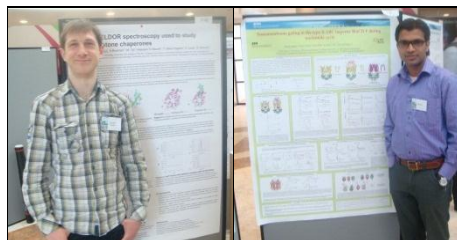
Presentation of the 2011 Bruker Prize to Thomas Prisner. From left to right: Mark Newton (Chairman RSC ESR Group), Jeremy Lea (Managing Director, Bruker UK Ltd), Thomas Prisner and Peter Höefer (Director for EPR at Bruker). Picture courtesy of Art Heiss.

At the RSC ESR Group meeting JEOL (UK) Ltd generously sponsor the young researcher lecture competition. The 2011 winner of the JEOL Prize, Petra Lüders (Laboratory of Physical Chemistry, ETH Zurich) talked on *Distance Measurements on Lanthanide Ion-Nitroxide Radical Spin Pairs in the Nanometre Range by Relaxation Enhancement*. The runners up, who both received a monetary prize, were Ivan Krstić (Institute of Physical and Theoretical Chemistry, Goethe University Frankfurt): *In-cell PELDOR on Nucleic Acids* and Maxie Roessler (Department of Chemistry, University of Oxford): *A Single Supernumerary Cysteine Adjacent to the Proximal Fe-S Cluster Confers Oxygen Tolerance on a [NiFe]-Hydrogenase*.



Peter Meadows of JEOL (UK) Ltd presents the JEOL prize to Petra Lüders (left), and congratulates the runners-up Ivan Krstić and Maxie Roessler (right). Picture courtesy of Tim Smith

The British Biophysical Society (BBS) sponsored a poster competition prize at the 2011 RSC ESR Group meeting and the winners were Richard Ward (School of Life Sciences, University of Dundee and now School of Biology, University of St Andrews): *PELDOR spectroscopy used to study histone chaperones* and Benesh Joseph (Laboratory for Physical Chemistry, ETH Zurich): *Transmembrane gating in the type II ABC importer BtuCD-F during nucleotide cycle*. Other meeting sponsors were the University of York and the RSC.



BBS poster competition winners Richard Ward (left) and Benesh Joseph (right)

Keynote lectures were presented by Victor Chechik (University of York): *Using spin traps in heterogeneous reactions*, Stephen Hill (Florida State

University): *Molecular Magnetism and Multi-High-Frequency EPR at the National High Magnetic Field Laboratory*, Wayne Hubbell (University of California, Los Angeles): *Exploring the energy landscape and dynamic modes of a protein with site directed spin labelling*, and David Collison (University of Manchester): *Electronic structure of large polymetallic molecules: a multi-frequency EPR approach*.

Invited lectures were presented by Snorri Sigurdsson (University of Iceland): *Non-covalent and site-directed spin labelling of nucleic acids*, Hassane Mchaourab (Vanderbilt University): *Protein Conformational dynamics from spin labelling EPR spectroscopy*, Eric McInnes (University of Manchester): *A spectroscopic study of exchange-coupled orbitally-degenerate ions: six-coordinate cobalt(II) dimers*, Howard Halpern (University of Chicago): *Spectral information from unexpected places: tumour physiology with in vivo EPR imaging*, Michael Davies (Heart Research Institute, Sydney): *Radical transfer reactions mediated by heme proteins and their prevention*, and Stefan Weber (Albert-Ludwigs-Universität Freiburg): *Origin of Light-Induced Spin-Correlated Radical Pairs in Cryptochromes and Related Blue-Light Active Proteins*.

Catering at the University of York was of a high standard but the excellent Conference Banquet was held in the Great Hall of the Merchant Adventurers' Hall which is a medieval guildhall in the city of York and was one of the most important buildings in the medieval city. The major part of it was built between 1357 and 1361 by a group of influential men and women who came together to form a religious fraternity called the Guild of Our Lord Jesus and the Blessed Virgin Mary. In 1430 the fraternity was granted a royal charter by King Henry VI and renamed 'The Mistry of Mercers'. It was granted the status of the Company of Merchant Adventurers (<http://www.theyorkcompany.co.uk/>) of York by Queen Elizabeth I in the sixteenth century.



The 44th Annual International Meeting of the ESR Spectroscopy Group of the Royal Society of Chemistry. Picture taken outside Merchant Adventurers' Hall prior to the Conference Banquet. Picture courtesy of Art Heiss – who is missing from the ensemble!

The International EPR (ESR) Society

President: Prof. Jack Freed Secretary: Prof. Sushil K. Misra Treasurer: Prof. Tatyana Smirnova

The International EPR Society (IES) has been an internationally active group since its inception in 1989. The Society aims to stimulate scientific development of EPR, facilitate communication among EPR (ESR) researchers, and encourage the use of EPR techniques across a wide variety of research fields. The EPR Newsletter is available by visiting the Newsletter website (<http://www.epr-newsletter.ethz.ch/>). There the members of the Society can download the most recent issue or peruse the older ones. The 2011 IES Awardees were:

Gold Medal: Ronald P. Mason

Silver Medal – Instrumentation: Keith Earle & Graham Smith

Young Investigator Awards: Enrica Bordignon and Alexey Silakov

IES Fellows of the Society: Michael Baker, Lowell Kispert, Klaus Moebius

ANATOLE ABRAGAM 1915- 2011



Anatole Abragam, a true giant of Magnetic Resonance, died on June 8 2011. He was without doubt a creative pioneer in NMR, EPR and their combination. With Brebis Bleaney (1915-2006), an outstanding figure in Oxford Physics, he wrote *Electron Paramagnetic Resonance of Transition Ions*, which remains a much sort after (>£200 second hand!), but sadly out of print primary text for EPR spectroscopists.

The International Zavoisky Award 2010

Hans Wolfgang Spiess (Max-Planck-Institute for Polymer Research, Mainz, Germany) for his contribution to pulse magnetic resonance methodology in elucidating structure, order and dynamics of supramolecular systems.

News from the EPSRC UK National EPR Research Facility & Service

After a successful tendering process, the contract for hosting the new EPR "mid-range facility" has been awarded to the University of Manchester. The Facility will be housed in state-of-the-art laboratories in the Photon Science Institute, 100 yards from the School of Chemistry. Experimental techniques will include c.w. EPR at 1, 4, 9, 24, 34 and 94 GHz, with pulsed methods (including ESEEM, ENDOR, PELDOR/DEER) at 4, 9 and 34 GHz. Further experiments are available through partners at the Universities of Oxford (Arzhang Ardavan) and St Andrews (Graham Smith), with arrangements for broadband frequency domain EPR in Stuttgart (Joris van Slageren) and c.w. high frequency/field EPR in Grenoble (Dr Barra). Bruker Biospin is supporting the appointment of an Applications Scientist/Senior Lecturer associated with the Facility. To discuss applications to the Service (www.epr.chemistry.manchester.ac.uk), contact David.Collison@manchester.ac.uk or Eric.McInnes@manchester.ac.uk.

Upcoming EPR Meetings

Oct 12, 2011: EPR Spectroscopy in Pharmaceutical Research and Development, AstraZeneca at Macclesfield, Cheshire. <http://www.rsc.org/ConferencesAndEvents/conference/alldetails.cfm?evd=108413>

Nov 4, 2011 - Nov 6, 2011: The 40th Southeastern Magnetic Resonance Conference Atlanta, Georgia, USA. <http://chemistry.gsu.edu/SEMRC/>

Nov 15, 2011 - Nov 16, 2011: Bruker NMR and EPR Users' Meeting and Seminars 2011 at the Coventry Hilton. <http://www.bruker.com/uk>

Nov 16, 2011 - Nov 20, 2011: A joint Conference of the 2nd International Symposium on Electron Spin Science & the 50th Annual Meeting of the Society of Electron Spin Science and Technology Matsushima (Sendai), Japan. <http://res.tagen.tohoku.ac.jp/SEST2011/>

ESR GROUP COMMITTEE (2010-11).

Name	Period	Email
Chairman	Mark Newton	2010-13 m.e.newton@warwick.ac.uk
Secretary	Eric McInnes	2011-15 Eric.McInnes@manchester.ac.uk
Treasurer	Fraser MacMillan	2010-14 fraser.macmillan@uea.ac.uk
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	Victor Chechik	2010-11 vc4@york.ac.uk
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RSC	Fiona Macmillan	2010-11

The 45th Annual International Meeting of the ESR Spectroscopy Group of the Royal Society of Chemistry will be held at the University of Manchester, from Sunday 25th to Thursday 29th March 2012. Information about the 2012 meeting, previous meetings and the RSC ESR group can be found at <http://esr-group.org/>.

Membership

The Membership of the ESR Spectroscopy Group currently stands at about 100. All scientists who are members of the Royal Society of Chemistry, and have an interest in ESR/EPR spectroscopy, are invited to join by ticking the ESR Spectroscopy Group box on their RSC membership renewal forms. The individual subscription fee of £5 is directly included in the annual RSC membership/Group fee.

Website: <http://www.esr-group.org>

Web Editor: Ilya Kuprov

Newsletter Editor: Mark Newton
