

Programme

Faraday Discussion 164: Electroanalysis at the nanoscale 1-3 July, 2013 Durham, UK

Monday 1 July

11:00	Registration, Tea and Coffee
12:45	Welcome and Introductions Richard Compton
13:00 Paper 1	Introductory Lecture: Nanoscale Propulsion of Electrochemically Fabricated Devices Joseph Wang <i>University of California at San Diego, US</i>
Session 1	Bioelectroanalysis Session chair: Ritu Katakya
14:00 Paper 17	Microelectrochemical visualization of oxygen consumption of single living cells Michaela Nebel, Stefanie Grutzke, Nizam Diab, Albert Schulte and Wolfgang Schuhmann* <i>Ruhr-Universität Bochum, Germany, The Arab American University, Palestine, Suranaree University of Technology, Thailand.</i>
Paper 18	Vesicular release of neurotransmitters: converting amperometric measurements into size, dynamics and energetics of initial fusion pores Alexander Oleinick, Frederic Lemaitre, Manon Guille Collignon, Irina Svire and Christian Amatore* <i>UMR-ENS-CNRS-UPMC 8640 'Pasteur', France</i>
15:00	Afternoon Tea
15:30 Paper 19	Potential-dependent single molecule blinking dynamics for flavin adenine dinucleotide covalently immobilized in zero-mode waveguide array of working electrodes Jing Zhao, Lawrence P. Zaino and Paul W. Bohn* <i>University of Notre Dame, USA</i>
Paper 20	Networks of DNA-templated palladium nanowires: structural and electrical characterisation and their use as hydrogen gas sensors Mariam N. Al-Hinai, Reda Hassanien, Nicholas G. Wright, Alton B. Horsfall, Andrew Houlton and Benjamin R. Horrocks* <i>Newcastle University, UK, Assiut University, Egypt</i>
16:30-18:00	Poster Session and Wine Reception

Tuesday 2 July

Session 2	Nanomaterial platforms Session Chair: Jay Wadhawan
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09:00 Paper 6	Anodic TiO₂ nanotubes: double walled vs. single walled Ning Liu, Hamed Mirabolghasemi, Kiyoungh Lee, Sergiu P. Albu, Alexei Tighineanu, Marco Altomare and Patrik Schmuki* <i>University of Erlangen (FAU), Germany</i>
Paper 22	The simplest model of charge storage in single file metallic nanopores Alexei A. Kornyshev* <i>Imperial College London, UK</i>
Paper 7	Carbon nanotube based electrochemical sensor for the sensitive detection of valacyclovir Badal Shah, Todd Lafleur and Aicheng Chen* <i>Lakehead University, Canada</i>
10:30	Morning Coffee
11:00 Paper 8	Electroanalysis using modified hierarchical nanoporous carbon materials Rusbel Coneo Rodriguez, Angelica Baena Moncada, Diego F. Acevedo, Gabriel A. Planes, Maria C. Miras and Cesar A. Barbero* <i>National University of Rio Cuarto, Argentina</i>
Paper 9	Pd@Au core-shell nanocrystals with concave cubic shapes: kinetically controlled synthesis and electrocatalytic properties Ling Zhang, Wenxin Niu, Jianming Zhao, Shuyun Zhu, Yali Yuan, Tao Yuan, Lianzhe Hu and Guobao Xu* <i>Chinese Academy of Sciences, China</i>
Paper 10	Electrochemical mechanical micromachining based on confined etchant layer technique Ye Yuan, Lianhuan Han, Jie Zhang, Jingchun Jia, Xuesen Zhao, Yongzhi Cao, Zhenjiang Hu, Yongda Yan, Shen Dong, Zhong-Qun Tian, Zhao-Wu Tian and Dongping Zhan* <i>Chinese Academy of Sciences, China</i>
Paper 11	Decoration of active sites to create bimetallic surfaces and its implication for electrochemical processes Blake J. Plowman, Ilija Najdovski, Andrew Pearson and Anthony P. O'Mullane* <i>RMIT University, Australia</i>
12:30	Close of Session & Lunch

Session 3	Chemical detection Session Chair: Richard Compton
14:00 Paper 12	Mapping fluxes of radicals from the combination of electrochemical activation and optical microscopy Sorin Munteanu, Jean Paul Roger, Yasmina Fedala, Fabien Amiot, Catherine Combellas, Gilles Tessier and Frédéric Kanoufi* <i>ESPCI ParisTech, France, cFEMTO-ST Institute, France</i>
Paper 13	Electrochemically assisted self-assembly of functionalized mesoporous silica films: impact of the electrode geometry and size on film formation and properties Gregoire Herzog, Emilie Sibottier, Mathieu Etienne and Alain Walcarius* <i>Universite de Lorraine, France</i>
Paper 14	Metallic Impurities Availability in Reduced Graphene is Greatly Enhanced by its Ultrasonication Rou Jun Toh and Martin Pumera* <i>Nanyang Technological University, Singapore</i>
15:30	Afternoon Tea
16:00 Paper 15	Highly Sensitive Detection of nitroaromatic explosives at discrete nanowire arrays Sean Barry, Karen Dawson, Elon Correa, Royston Goodacre and Alan O'Riordan* <i>University College Cork, Ireland</i>
Paper 16	A systematic study of the influence of nanoelectrode dimensions on electrode performance and the implications for electroanalysis and sensing Neville J. Freeman, Helena L. Woodvine, Ilka Schmöser, Jonathan G. Terry, Anthony J. Walton and Andrew R. Mount* <i>University of Edinburgh, UK, Manchester University, UK</i>
17:00	Close of sessions
19:00	Pre-Dinner Drinks
19:30	Conference Dinner

Wednesday 3 July

Session 4	Charge transfer at the nanoscale Session chair:
09:00 Paper 5	Double layer effects at nanosized electrodes Clemens Kubeil and Andreas Bund* <i>Technische Universität Ilmenau, Germany</i>
Paper 2	Pulse electroanalysis at gold-gold micro-trench electrodes: Chemical signal filtering Sara E. C. Dale and Frank Marken* <i>University of Bath, UK</i>

Paper 3	Effects of adsorption and confinement on nanoporous electrochemistry Je Hyun Bae, Ji-Hyung Han, Donghyeop Han and Taek Dong Chung*
10:30	Morning Coffee
11:00 Paper 4	Gold nanowire electrodes in array: simulation study and experiments Karen Dawson, John MacHale, Sean Barry, Aidan J. Quinn, Alan O'Riordan and Amelie Wahl* <i>University College Cork, Ireland</i>
Paper 21	Nanoscale control interfacial processes for latent fingerprint enhancement Rachel M. Brown, Karl S. Ryder, Calire Fullarton, Maximilian Skoda, Robert M. Dalgliesh, Erik Watkins, Charlotte Beebee, Robert Barker, Andrew Glidle and A. Robert Hillman* <i>Institut Laue Langevin, France, University of Leicester, UK, Glasgow University, UK</i>
	Close of session
12:00	Concluding remarks lecture David Williams <i>The University of Auckland, NZ</i>
12:45	Acknowledgements
13:00	Close of Meeting