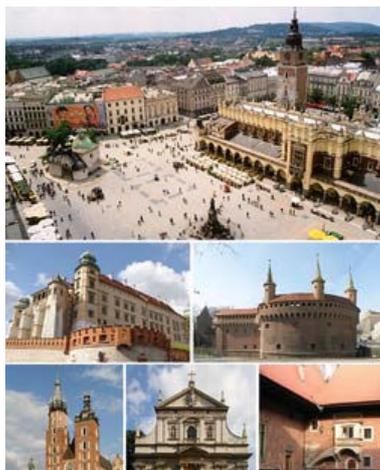


Meeting Report

SMCBS'2009: 4th International Workshop on Surface Modification for Chemical and Biochemical Sensing

November 6-10, 2009, Przegozaly (near Cracow), Poland



Images of Cracow, Poland.

Having thoroughly enjoyed the last edition of this meeting in 2007, I joined 125 others in converging on Cracow in early November to attend the fourth meeting convened by Professors Kutner and Opallo from the Institute of Physical Chemistry on surface modification for chemical and biochemical sensing.

As in previous years, this conference was located far away from any distractions, and took the unusual format of starting on a Friday afternoon, ending on Tuesday morning, allowing for the exciting, value-for-money opportunity to have whole days devoted to lectures, scientific discovery and educative enhancement explorations, interrupted only by the excursion to the salt mines at Wieliczka on the Monday morning. As in previous years, the conference was well-attended by delegates based within the United Kingdom (just over 11% of the attendees, and with over 50% of this number originating from Dr. Marken's group based in Bath Spa).

The first session on SECM and SEPM included talks by Professor Wittstock and Professor Schuhmann's group. This was followed by an exquisite lecture by Professor Boukherroub on diamond nanowires, with two subsequent and high quality and lucid talks by Dr. Anne Vuorema and Mr. John Watkins, both from Bath University, who discussed the electrochemistry of carbonised cellulose nanofibrils, and the functionalisation of carbon surfaces for the electrostatic binding of electroactive species, respectively. Watkins' impressive performance on stage was compounded during the discussion afterwards. The afternoon sitting commenced with an excellent tutorial lecture by Professor Haupt on nanostructured molecularly-imprinted polymers, and included an interesting lecture by Professor Mussini – one of the current Vice-Chairs of the ISE Molecular Electrochemistry Division. The session concluded with instructive lectures by Professor Gorton (on electronic communication between bacterial cells), Professor Bilewicz (on liquid crystalline phases for enzymic entrapment with application to biofuel cells), and a hugely enjoyable talk by Dr. Jönsson-Niedziółka on pyrene-functionalised carbon nanotubes.

The second session commenced with a talk by Professor Schuhmann on nanoscale SECM, followed by an excellent talk by the recently habilitated Professor Bron regarding the electrodeposition of metalloporphyrins. After a captivating lecture by Professor Walcarius on the interests and limitations of silica-based mesoporous materials in electroanalysis, Dr. Marken energised the audience by delivering a superb lecture on the electronic conduction *within* mesoporous films and nanoparticle assemblies, introducing elegant Faradaic coupling processes therein, and was followed by an enjoyable lecture by Ms. Sara Shariki of Bath University regarding ion association processes observed in acetonitrile of cellulose-poly(diallyldimethylammonium) membranes. In an exhilarating lecture after lunch, Professor Haga expounded, during a tutorial lecture, his recent research on multi-electron transfers within supramolecular nano-objects immobilised on electrode surfaces, followed by an enjoyable lecture by Professor Ferapontova on DNA and RNA in electroanalysis. This action-packed day continued with a breathtakingly-exquisite lecture by Professor Limoges on electrochemical enzyme biosensors, an enjoyable lecture by Professor Vagin on biomolecular detection at soft interfaces and a confident presentation by Mr. Andrew Collins from Bath University on photoelectrochemistry at the triple-phase boundary. The theme of biphasic electron transfer continued with an excellent and solid performance by Dr. Niedziółka- Jönsson on the electrosynthesis of an ionic liquid covalently bound to a mesoporous silicate material, followed by an elegant exploration into CO₂ sensing at the three-phase junction by Mr. Norahim Ibrahim of Bath University.

The third session commenced with an overview of protein immobilisation for biosensing by Leeds University's Professor Millner, and was followed by an outstanding lecture by Mr. Nikolaos Daskalakis from Professor Jeuken's group at Leeds University. Daskalakis, a former student from the Warwick Electrochemistry Group, enthralled the audience with his research on electron and proton transfer within the biological membranes of vesicles immobilised on electrode surfaces. Professor Szunerits followed with a wonderfully enjoyable and pedagogically-delivered lecture on short and long range sensing on plasmonic interfaces. The excitement continued with Professor D'Souza's talk on bioinspired supramolecular nano-self assemblies for light energy conversion, and enjoyable, well-presented and enlightening talks by Mr. Charles Cummings and Mr. Richard Webster, both from Bath University, on MoSe₂ substrates for the electrodeposition of copper indium diselenide semiconductor films, and silver nanoparticle-catalysed nitrate reduction respectively.



A salt lake within the salt mine near Cracow.

The last session commenced with an excellent tutorial by Professor Brand on surface spectroscopy for structural studies of biologically-relevant films, followed by an excellent lecture by Professor Oyama on the tuning of nanostructured electrode interfaces. Mr. Sho Fuji of Chuo University, Japan "wowed" the audience with his work on the surface manipulation and immobilisation of single DNA wires on gold surfaces, followed by an elegantly-exquisite lecture on the translocation diffusion of phospholipids on surfaces by Professor Blanchard.

Fully exhilarated, better educated, and absolutely exhausted (as well as being worried that the flight back would be disrupted due to fog), we all left the conference venue, having enjoyed the opportunity to re-meet old friends and forge new collaborations, based on buzzing new ideas, and (at least for me) hoping not to bump into the wild boars roaming around the surrounding forest!

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