

Chemistry—The Creative Force: Reflections on the 3rd EuCheMS Chemistry Congress in Nürnberg



Anne C. Deveson

With around 2500 attendees from over 60 countries, the 3rd EuCheMS Chemistry Congress in Nürnberg proved to be a great success, continuing in the footsteps of the first

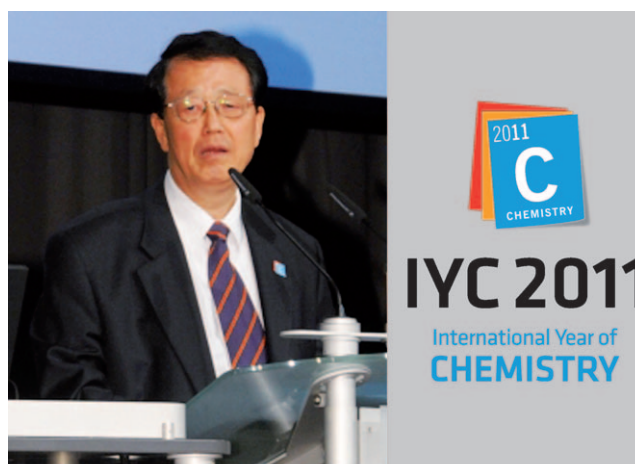


two congresses in Torino (2008) and Budapest (2006). Taking place in the spacious Nürnberg Messe Congress Center, this year there were 7 plenary lectures, around 180 invited talks, 370 oral presentations, and more than 1400 posters on display, on a wide range of topics from all fields of chemistry. In the words of Andreas Hirsch (Co-chair of the Scientific Committee) “Both speakers and audiences reflect not only the great diversity among scientific communities but also the cultures of the various European countries. Different countries have different strengths in chemistry, too. Assembling them all in a single showcase allows an outstanding overview of European science.”

The conference opened with addresses from EuCheMS past-president, Giovanni Natile (Italy), European Parliament member, Angelika Niebler (Germany), and the Mayor of Nürnberg, Horst Förther, along with a video address from the current EuCheMS president, Luis Oro (Spain). Other welcome addresses were from Hubert Mandery (Brussels), director of the European Chemical Industry

Council, and Michael Dröschner (Germany), the President of the GDCh (German Chemical Society). Each welcomed the attendees to Nürnberg and expressed their belief in the quality of science to be presented over the next few days and emphasized the important role science, and chemistry in particular, play in today's society.

Jung-Il Jin (Korea), past-president of IUPAC, presented his vision for the IUPAC International Year of Chemistry



Jung-Il Jin © Fotostudio Nürnberg (www.fotostudio-nuernberg.de)

(IYC) 2011. The motto of IYC 2011 is “Chemistry—our life, our future” and the main goals of the IYC 2011 are

- to increase the public appreciation of chemistry in meeting world needs
- to encourage an interest in chemistry among young people
- to generate enthusiasm for the creative future of chemistry
- to celebrate the achievements of Marie Curie (100th anniversary of her Nobel Prize) and the contributions of women to chemistry

As part of the international year of chemistry, Wiley-VCH will be publishing a book entitled “European Women in

Chemistry”, which will highlight the contribution of various women to chemistry throughout history, from Cleopatra to Marie Curie and Lise Meitner, right up to the present day, including Ada Yonath, Nobel Prize winner and board member of *ChemBioChem*, and Katharina Landfester, one of the directors of the Max Planck Institute for Polymer Research who contributed a review article on functional hybrid materials with polymer nanoparticles as templates for the special issue of *Chemistry—A European Journal* that was available at the conference (*Chem. Eur. J.* **2010**, *16*, 9398–9412).

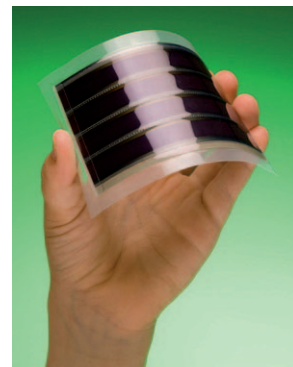
In this respect, it was also very fitting that the Heinrich Emanuel Merck Award for Analytical Science went to Professor Luisa Torsi; this is the first time that this prestigious award has been given to a woman. She has been recognised for her work on the development of semiconducting chemical sensors based on organic thin-film transistors (*Nature Mater.* **2008**, *7*, 412–417). The transistors consist of a flexible silicon base covered with a dielectric layer and an organic semiconductor. Professor Torsi has demonstrated that the organic semiconductor can be substituted with chiral moieties to allow detection of enantiomers of citronellol; the field-effect amplified sensitivity enables differential detection of optical isomers in the tens-of-parts-per-million concentration range.



Luisa Torsi, Reinhard Nießner
© Fotostudio Nürnberg (www.fotostudio-nuernberg.de)

Professor Michael Grätzel (member of the editorial board of *ChemSusChem*) delivered the EuCheMS Lecture on “Molecular Photovoltaics and Mesoscopic Solar Cells”; a very important topic in this day and age when considering the search for renewable energy sources. His lecture focused on dye-sensitized solar cells (DSSCs) that imitate natural photosynthesis. Phenomenal progress has been made in the field of DSSCs, with present efficiencies for solar energy conversion to electricity being over 12%. He was able to

give the good news that “Commercial mass production of flexible DSSC modules has started in 2009 on the megawatt scale. These solar cells have become viable contenders for large-scale future solar energy conversion systems on the bases of cost, efficiency, stability, and availability as well as environmental compatibility.”



Flexible DSSC module

A summary of the plenary lectures is given here by Luis Oro (EuCheMS president): “The two plenary lectures of the opening ceremony were given by Barbara Imperiali (Cambridge, MA) that introduced molecular probes to improve our understanding of biological systems and Klaus Müllen (Mainz) that presented chemistry at the interface to materials and emphasized the need for new compounds with controlled functions. The remaining five plenary lecturers formed the cornerstones of the remaining four congress days. EuCheMS lecturer Michael Grätzel (Lausanne) presented his vision of a photochemistry driven energy supply. Bert Meijer (Eindhoven) spoke on fundamental questions on chirality, while introducing his polymeric and dendritic molecular architectures. Hans-Joachim Freund (Berlin) showed how catalysts can be visualized. Lechoslaw Latos-Grażyński (Wrocław) impressed organic and inorganic chemists alike bringing metallocenes into play, while dealing with new concepts on aromaticity. For Joshua Jortner (Tel Aviv) nuclear fusion is the ultimate energy source and well worth investigating.”

Another subject close to many people’s hearts is that of “green” or sustainable chemistry. Matthias Beller (one of the Chairmen of the Editorial Board of *ChemSusChem* and winner of the inaugural European Sustainable Chemistry Award) explained the importance of sustainable chemistry for society in the future in the following way: “In science, catalysis deals with the acceleration of reactions starting from simple raw materials to form complex molecules with many different valuable applications. Catalysis enables the manufacture of a large palette of products and preliminary products for other industrial branches as well as products that are directly applied in the fields of health, environment and nutrition. That is why catalysts are indispensable for the needs of today’s society—during the course of their synthesis, more than 80% of all chemical products come into contact with these so-called ‘chemical mediators’. Already today, high-performance catalysts ensure that chemical reactions run at higher yields but protect our natural resources by preventing the formation of byproducts and by reducing the specific demand for energy. Thus, they are the key to an economically as well as ecologically optimized value creation and serve as a central instrument for increasing the sustainability and economy of chemical production processes.

In this regard, my research group is dealing with important aspects of homogeneous catalysis, in particular, transition-metal catalysts. Essential strategic targets of our research are to develop new, environmentally benign synthesis methods and their applications. An important aspect here is the transfer of results of model and mechanistic studies to develop specific chemical products or processes.” Beller’s pioneering work on the selective iron-catalyzed oxidation of phenols and arenes with hydrogen peroxide (*Chem. Eur. J.* **2010**, *16*, 10300–10303) was highlighted recently on the cover of the journal. On the one hand iron is an ideal candidate for catalysis, because of its abundant availability and its relative non-toxicity compared with precious metals and on the other H_2O_2 is the most “green”, and waste-avoiding oxidant.

Other highlights include the lively poster sessions—over 1400 posters were on display that provoked good discussions—and the Careers Days, giving potential employers and employees the chance to meet at a JobFair. The football-themed conference dinner, the “ C_{60} party”, at the easy-Credit Stadium, home of the Nürnberg football team 1. FCN will remain at the forefront of many memories. There were plenty of opportunities to try out your football and coordination skills, either on tabletop football (normal or “life-size” version) or taking a shot at goal; alternatively you could just relax, enjoy the local food, beer and wine, and watch the stunning firework display.



Andreas Hirsch in action
© Fotostudio Nürnberg (www.fotostudio-nuernberg.de)

Meanwhile, at the Wiley-VCH stand in the exhibition hall the special issue of *Chemistry—A European Journal*, with

peer-reviewed contributions from a selection of speakers, disappeared like hot cakes! We had a lot of good feedback about it including these comments from Bert Weckhuysen (speaker and contributor to the issue) “Congratulations with assembling this issue because it really looks very nice, scientifically very interesting and professional” and Heindirk tom Dieck (former Executive Director of the GDCh) “The special issue of *Chemistry—A European Journal* is a real treasure trove, with all the qualities that we have come to expect from this journal.” Thank you once again to all those who contributed to this special issue and again to Triltsch, our typesetters and printers, who managed to squeeze several papers in long after the deadlines had been and gone. One paper, however, that did not quite make the deadline is the minireview by Rasmus P. Clausen (who gave a lecture in the Molecular Life Sciences symposium) on partial agonists and subunit selectivity at *N*-methyl-D-aspartic acid receptors, which is published in this issue of *Chemistry—A European Journal* (page 13910 ff.).

We asked Francois Diederich (Chairman of the Scientific Committee) what his personal highlights of the conference were: “The level of scientific presentations and discussions at the 3rd EuCheMS Congress in Nürnberg was outstanding and presented a true showcase of the strength of European Chemistry. An experienced industrial attendant told me that he had not attended in the past a specialized catalysis conference which offered more high-level reports and research disclosures than the Symposia on catalysis at the Nürnberg meeting. The concept of offering the scientists programs in catalysis, organic and inorganic synthesis, materials, or supramolecular systems, that span over the entire days fully worked out: it made the entire meeting most rewarding and, as a consequence, attendance stayed high until the last lecture. The atmosphere of the proceedings was most enjoyable, thanks to superb organization at all levels: an accommodating modern setting in the Nürnberg Congress Center, no waiting lines, generous coffee breaks and facile contacts between attendees, in particular the younger ones, and company representatives, many of whom posted new research hirings. The Nürnberg event has greatly added to establishing the EuCheMS Congresses as the major venue in Chemistry on the Continent and it became clear in the discussions that the attendants are already looking forward to the 4th Congress in Prague in 2012.”

Wolfram Koch (Executive Director of the GDCh, the host Chemical Society) had this to say in reflection on the conference: “The 3rd EuCheMS Chemistry Congress in Nürnberg



was a unique event which presented the latest research in the many topic areas of chemistry, featured multidisciplinary programming, and highlighted chemistry's impact on society. I was in particular impressed by the large number of young participants from all over Europe which gave a vivid proof of the dynamic development of the chemical sciences in Europe. I am convinced that the EuCheMS Chemistry Congresses will continue its success story and that the Nürnberg Congress was another milestone towards a sustainable, central chemistry event of European spirit."



Nicolai Cramer



Gold Medal



Pavel Drašar © Fotostudio Nürnberg (www.fotostudio-nuernberg.de)



The winners of the European Young Chemists Award 2010, sponsored by the Italian Chemical Society, were announced at the closing ceremony of the congress. The Gold medal winner was Nicolai Cramer, who gave a talk on enantioselective rhodium-catalyzed C–C bond activations (see also his recently published article on rhodium(I)-catalyzed enantioselective activation of cyclobutanols, *Chem. Eur. J.* **2010**, *16*, 3383–3391). The gold medal in the Ph.D. category was awarded to Sophie Carenco, who reported a versatile route to metal phosphide nanoparticles. For more details about this competition and the silver medalists, see the following Guest Editorial by Bruno Pignataro, one of the chief organizers of the event. Luis Oro, the EuCheMS president, also gave a short farewell address and Pavel Drašar (Czech Chemical Society representative for ChemPubSoc Europe) issued an invitation to the 4th EuCheMS Chemistry Congress in Prague in 2012. We asked him what his personal hopes and expectations were for the next congress. "What are my personal expectations? It is simple, I would like to see a greater visible presence of EuCheMS, together with all its divisions and working groups. I will do my best to bring more people from the former Eastern Block. On the recommendation of GDCh, I would like to invite many retired prominent European chemists. We plan to show off top-quality chemistry from all corners of the world and the most of the excellent and good chemistry from Europe. My personal expectation is that we shall continue to foster the bridges between chemical industry and academia. Finally, I would like to see a section devoted to education, professional chemists and connected matters. It will be real success to meet the attendance numbers of previous congresses."

On this note we wish Pavel Drašar and his team every success for the 4th EuCheMS Chemistry Congress in Prague in 2012 and look forward to taking part in the next exciting chapter in the history of European Chemistry.

Anne Deveson

Anne Deveson
Deputy Editor