



# EuCheMS

## NEWSLETTER

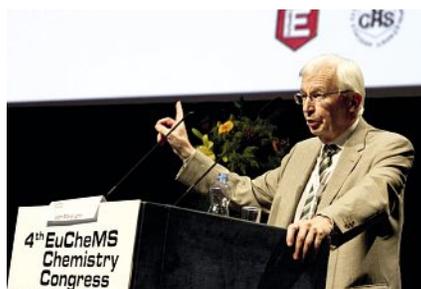
November 2012

## Successful 4th EuCheMS Chemistry Congress in Prague

Around 1800 chemists from 57 countries around the world congregated on Prague for the 4th EuCheMS Chemistry Congress from 26 to 30 August. The diverse and star-studded programme featured nine plenary speakers, among whom Nobel laureates held a narrow majority. In between there were 12 parallel sessions ranging from traditional disciplines like organic synthesis and inorganic materials to adjacent fields including life sciences and the history of chemistry.

In the opening lecture, Jean-Marie Lehn (Strasbourg, France) laid out his ideas regarding what he describes as the key question in chemistry, namely: "How does matter become complex?" Lehn's early work on supramolecular chemistry has created some amount of chemical complexity using non-covalent interactions and designed assembly mechanisms. With his more recent work, however, he has aimed to create chemical systems that can adapt to the environmental situation by selecting one out of several possible reactions. Lehn coined the term "Constitutional Dynamic Chemistry" (CDC) for this approach which could in principle lead to levels of complexity that rival biological systems.

Like Lehn, Roger Tsien (San Diego, US) is a Nobel laureate widely known for a specific body of work (variations and applications of fluorescent proteins similar to the Green Fluorescent Protein) and keen to move beyond the confines of this field. Tsien presented recent work from his lab on methods for imaging of nerve signals with the help of molecular wires and of cancer tissues during surgery. Tsien emphasized that guidance by fluorescence labelling can facilitate complete removal of an early-stage tumour, which is the most effective and cost-efficient way to treat cancer. While the use of the fluorescent proteins that made Tsien



Jean-Marie Lehn gave a plenary lecture in Prague. (photos: Jozo Rabara, EuCheMS/CCS)

famous would require gene transfer and are therefore unsuitable for human patients, his new fluorescent dyes can be specifically introduced into cancer tissues without genetic manipulation.

David Milstein (Rehovot, Israel) held this year's EuCheMS lecture, which chimed in with the theme of sustainability and green chemistry also well-represented in the parallel sessions. Using a new approach to bond activation with the help of pincer-type metal complexes, his group has developed a whole range of new catalytic reactions running under benign conditions and without harmful waste products, including some leading to industrially relevant products such as caprolactam, which is used in the production of nylon 6.

Participants who held out to the very end of the conference were rewarded with an inspiring talk from Robert Grubbs (Pasadena, US), who won the Nobel prize for his part in the development of olefin metathesis. Grubbs has recently expanded the range of this reaction to the production of complex polymers such as graft or brush polymers, which can be fine-tuned for their optical properties. Like Lehn, he uses relatively simple chemistry to create levels of complexity that we would otherwise only find in biological systems.

Michael Gross, [www.michaelgross.co.uk](http://www.michaelgross.co.uk)

### Solemn opening ceremony

The 4th EuCheMS Chemistry Congress was opened with a varied and entertaining ceremony on Sunday afternoon. After short remarks of the EuCheMS representatives Pavel Drasar (local chair), Jitka Ulrichova (president of the Czech Chemical Society), Josef Michl (chair of the scientific committee) and EuCheMS president Ulrich Schubert, Tatsumi Kazayuki and Hubert Mandery conveyed the greetings of IUPAC and Cefic to the audience in the well packed congress hall.

The next section of the opening ceremony was dedicated to recognizing scientific achievements. First, the European Sustainable Chemistry Award was presented to Marc Taillefer (Montpellier, France). Next the Gesellschaft Deutscher Chemiker awarded the August-Wilhelm-von-Hofmann-Denkmlünze to Sason Shaik (Jerusalem, Israel) and Martin Quack (Zurich, Switzerland). Jean-Marie Lehn honored five young Czech scientists with an award named after him and sponsored by the French company Rhodia. The Czech Chemical Society presented their highest scientific award, the Hanus Medal, to Juri Zolotov (Moscow, Russia) and Reiner Salzer (Dresden, Germany). Finally, the Royal Society of Chemistry presented its Supramolecular Award to Jerry Atwood (Columbia, Missouri, US). This part of the ceremony was concluded by an impressive performance of the choir "Prague Little Bell".

The first scientific highlight followed, the plenary lecture by Nobel Laureate Jean-Marie Lehn (see left). A welcome reception, generously sponsored by BASF, and a concert by the Czech Collegium marked the end of this remarkable opening of the congress.

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Opening remarks by local chair Pavel Drasar (right).



The European Association  
for Chemical and Molecular  
Sciences

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## Young investigators in Vienna

The 4th Young Investigators Workshop took place on 23 to 25 August in Vienna, Austria, as a parallel event to the 4th EuCheMS Chemistry Congress in Prague. It was sponsored by the Organic Division of EuCheMS and organised by Marko Mihovilovic and Michael Schnürch from Vienna University of Technology.

The workshop brought together young investigators selected by their member society to be among the rising stars. The lectures were of high quality and spanned broad aspects of fundamental and applied chemistry.

In all, 34 young investigators from 23 countries participated. The core is focused on Europe but representatives from North and South America as well as Asia attend by special invitation. An African representative is expected in the future. The next workshops should be in France associated to the European Symposium on Organic Chemistry (ESOC) 2013 and then in 2014 on Cyprus just before the 5th EuCheMS Chemistry Congress in Istanbul.

Additional sponsors of the workshop included Anton Paar, Apollo Scientific, Boehringer Ingelheim, Büchi Labortechnik, FCIO, Thieme Verlag, Austrian Chemical Society (GÖCH), Gilson, Illmvac, Shimadzu, Sigma-Aldrich, Springer, Thermo-Scientific and VWR.

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<http://investigator.ias.tuwien.ac.at>

## Green chemistry in Venezia

A workshop on green and sustainable chemistry was held at the Università Ca' Foscari Venezia, Italy, on 8 June. The outcome of the workshop, entitled "The Recommendation for Future Actions in Research and Developments", summarises the discussions and is available at [www.unive.it/nqcontent.cfm?a\\_id=134047](http://www.unive.it/nqcontent.cfm?a_id=134047). nm

## More about the 4th EuCheMS Chemistry Congress



## Career Days in Prague

The European Young Chemists Network (EYCN) represents the needs of the young members of EuCheMS all across Europe. In August, EYCN was given the opportunity to build on its success seen at previous congresses and to hold its own satellite event at the 4th EuCheMS Congress in Prague: "EYCN Career Days: Making chemistry work for you". The programme, aimed at furthering the careers of young chemists, was kicked off with a Science Speed Date session, organised by the GDCh Careers Service. Over 300 young chemists talked to representatives from companies BASF, Bayer and Evonik about jobs or job vacancies and to managers from the American Chemical Society and the Royal Society of Chemistry about careers in event management, networking or publishing. They also got advice from the German Research Foundation DFG and Contact Singapore about ways to find funding and employment in Europe and Asia.



Building soft skills: talk on scientific writing at the Career Days in Prague. (photos: EYCN)



At the Science Speed Date session.

The programme also involved a series of talks aimed at building the soft skills of young chemists – talks on ethics in science, scientific writing and using social media – and two CV clinics with human resources and recruitment specialists from Evonik giving advice on job applications, cover letters, interviews and correcting CVs. These CV clinics filled up very quickly and ran over time to accommodate each of the participants.

The reception of the EYCN programme was overwhelmingly positive, both from participants and from the congress organisers. The EYCN programme for the 5th EuCheMS Congress in Istanbul hopes to be even bigger and better! For more information check our website or follow us on Facebook to see photos from Prague.

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## SCF awarded bi-national prizes

In June the Société Chimique de France (SCF) awarded its bi-national awards to chemists from Germany and Spain. The prizes are awarded on biennial basis in conjunction with other national societies.

The French-German Prize Georg Wittig-Victor Grignard (with the Gesellschaft Deutscher Chemiker) was awarded to Klaus Müllen, Director of the Max-Planck-Institute for Polymer Research in Mainz, for his

outstanding contribution to various fields of chemistry, including molecular and polymeric materials.

The French-Spanish Prize Miguel Catalán-Paul Sabatier (with The Real Sociedad Española de Química) was awarded to Santiago Alvarez Reverter, University of Barcelona, for his remarkable work in theoretical chemistry and the introduction of new concepts in coordination chemistry. SCF/ks

## New chair of the Working Party on Chemistry for Cultural Heritage

Rocco Mazzeo follows Kim Simonsen as chair of the Working Party on Chemistry for Cultural Heritage.

Rocco Mazzeo is professor of chemistry for cultural heritage at the University of Bologna and director of the two year international master degree programme in science for the conservation-restoration of cultural heritage at the same university. He is also head of the Microchemistry and Microscopy Art Diagnostic Laboratory located at the Ravenna Campus of the University of Bologna.

After graduating in chemistry he became a staff member of the Italian Ministry of cultural heritage and was then responsible for the science for conservation programme at ICCROM, the intergovernmental organisation devoted to the study and preservation of cultural properties worldwide.

Some of his most important international projects were the establishment of the Xian Centre for the Restoration of Cultural Relics in China in 1998, the research study coordinated by Unesco on the North Korean Koguryo dynasty (37 B.C. to 668 A.D.) mural paintings and the coordination of the first European Ph.D. in science for conservation funded by the Marie Curie VI Framework Programme.

Mazzeo is the author of numerous scientific papers published within both national and international peer reviewed scientific journals. His main research interest and expertise deal with the application of infrared spectroscopy to the study of painted artworks and archaeological and artistic metal alloys.

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## New chair of the Division of Chemistry in Life Sciences

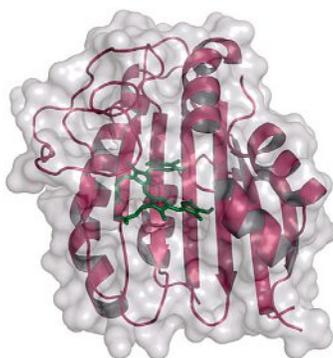
Paola Turano follows Henryk Kozlowski as chair of the EuCheMS Division of Chemistry in Life Sciences.

Paola Turano received her Ph.D. in chemical sciences at the University of Florence in 1993. She became a researcher in chemistry at the faculty of sciences at the same university in 1997, and associate professor of general and inorganic chemistry in 2002.

The main topics of her research activity are: development and application of solution and solid state NMR approaches for the characterization of biomolecules, mainly focusing on paramagnetic metalloproteins and high molecular weight systems; characterization of protein-protein functional interactions and protein-small molecules interactions in drug design; structural biology of proteins involved in iron metabolism; NMR-based metabolomics and biobanks.

Turano is a member of the Scientific Committee of the Da Vinci European Biobank, author of about 80 publications in peer reviewed journals plus numerous book chapters. She has received the Raffaello Nisini Medal 2003 of the Inorganic Chemistry Division of the Italian Chemical Society.

www.cerm.unifi.it/people/paola-turano



Enzyme model: Solving protein structures is one aspect of chemistry in life sciences. (figure: RUB)

## Obituary Ivano Bertini

Ivano Bertini died on 7 July 2012 at the age of 71. Born in Pisa, Italy, he obtained his Ph.D. in chemistry from the University of Florence in 1964 and further degrees honoris causa from the Universities of Stockholm, Ioannina and Siena. He was full professor at the University of Florence from 1975 until he retired in November 2011.



As a member of the Academia Europaea and the Italian Accademia dei Lincei, he served the Italian Chemical Society as president of the Division of Inorganic Chemistry from 1987 to 1990, and then as vice president (1990 to 1992), president elect (1992), president (1993 to 1995) and past president (1996 to 1999) of the society. He was chair of the EuCheMS Working Party of Chemistry in Life Sciences and then chair of the Division of Chemistry in Life Sciences. He has contributed to the establishment of bioinorganic chemistry through the foundation of the Society of Biological Inorganic Chemistry and of the *Journal of Biological Inorganic Chemistry*.

After first studies on theoretical and physical inorganic chemistry mainly by paramagnetic NMR, his interests turned towards bioinorganic chemistry, studying the structure-function relationship of metalloproteins through biophysical methods. In 1990 he transformed his lab in an NMR lab for structural biology for metalloproteins. A few years ago he established a metabolomic group with a dedicated NMR instrumentation. He is author of about 700 research articles and solved more than 150 structures of proteins.

In 1999 he founded the present Center of Magnetic Resonance (CERM) of the University of Florence. The Center constitutes a major NMR infrastructure in life sciences. Flanking institutions and spin off laboratories have flourished around CERM in the fields of biotechnology and drug discovery thanks to his inspiring action.

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## BioNMR at its best in Italy



The 12th Chianti/Instruct Workshop on BioNMR took place in Montecatini Terme, Italy, from 17 to 22 June. The Chianti Workshop series was initiated in 1984 within the new framework of the activities of Instruct (Integrated Structural Biology Infrastructure, [www.structuralbiology.eu](http://www.structuralbiology.eu)). The tradition of the Chianti Workshop is based on electron and nuclear relaxation: this is what has made it so distinctive among the many existing magnetic resonance conferences. Magnetic resonance of systems with unpaired electrons plays a key role in structural biology.

Trying to combine the new spirit with the old tradition, the two co-chairs Ivano Bertini (University of Florence) and David Fushman (University of Maryland) designed a scientific programme including sessions on dynamic nuclear polarization (DNP), solid state NMR, advancements in solution NMR relaxation and in-cell NMR. A special session was held on bio-imaging techniques, covering approaches synergic to NMR such as cryo-EM, cryo-electron tomography, correlated light and electron microscopy and soft X-ray tomography.

About 120 scientists attended the workshop, where 44 lectures and 63 posters were presented. The workshop was an ideal stage for advertising the opportunities offered nowadays by the hyperpolarization techniques. The increasing impact of solid state MAS-NMR in structural biology was apparent from the many outstanding talks. The novel approach of sedimented protein NMR was presented together with some initial case applications.

The workshop was sponsored by EuCheMS and organised by the Magnetic Resonance Center (CERM) of the University of Florence, Fondazione Sacconi and Instruct, also in collaboration with the EC project BioNMR and the COST Action EuroHyperPol.

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## Events 2012

**14 – 16 November 2012, Prague, Czech Republic**  
EuCheMS 7th International Conference on Chemical Reactions in Foods, [www.crf2012.eu](http://www.crf2012.eu)

## Events 2013

**9 – 11 May 2013, Karlsruhe, Germany**  
112th Bunsentagung (Annual German Conference on Physical Chemistry)  
[www.bunsen.de/bunsentagung2013.html](http://www.bunsen.de/bunsentagung2013.html)

**10 – 12 June 2013, Barcelona, Spain**  
5th European Conference on Chemistry for Life Sciences, <http://5ecclsbaselona.com>

**3 – 5 July 2013, Limerick, Ireland**  
5th Eurovariety in Chemistry Education Conference  
[www.eurovariety2013.ul.ie](http://www.eurovariety2013.ul.ie)

**25 – 29 August 2013, Warsaw, Poland**  
Euroanalysis, the European Conference on Analytical Chemistry  
[www.euroanalysis2013.pl](http://www.euroanalysis2013.pl)

**1 – 5 September 2013, Sopron, Hungary**  
9th European Conference of Computational Chemistry  
[www.euco-cc9.mke.org.hu](http://www.euco-cc9.mke.org.hu)

**11 – 13 September 2013, Leipzig, Germany**  
EuCheMS conference Flavors & Fragrances 2013  
[www.gdch.de/flavorsfragrances2013](http://www.gdch.de/flavorsfragrances2013)

## Events 2014

**31 August – 4 September 2014, Istanbul, Turkey**  
5th EuCheMS Chemistry Congress  
[www.euchems-istanbul2014.org](http://www.euchems-istanbul2014.org)

## 9th European Conference of Computational Chemistry

The 9th edition of the European Conference of Computational Chemistry (EuCo-CC) is ahead of us and will take place on 1 to 5 September 2013. It is the second time that this series is taking place in Hungary: after Budapest in 2000 it will be Sopron, right at the Austrian border. Sopron is an old town with significant wine production. Thus, it is not only the excellent science which will make this trip worth considering.

The EuCo-CC series is organised by the Division of Computational Chemistry (DCC) of EuCheMS. Here computational chemistry should be understood in a broad sense. Our goal is to represent all fields in chemistry

where heavy computation is required. Therefore the topics of this conference are diverse but the computational technology gives a common background. We hope that contributions from each different field will have impact on others, i.e. we will learn from each others results. The local organisers and the members of the DCC hope to welcome you in Sopron.

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