

2nd EuCheMS Chemistry Congress

September 16–20, Lingotto Conference Centre, Turin (Italy)

"Chemistry, The Global Science"

- 1. Scope and Objectives**
- 2. Committees**
- 3. Scientific Programme**
- 4. Registration**
- 5. Sponsors**
- 6. Official Events**
- 7. Social Events**



1. Scope and Objectives

Chemistry is widely acknowledged as crucial to underpinning economic growth and global sustainability. The concept with this EuCheMS series, starting 2006 in Budapest, is to make interdisciplinary science contacts that would broaden the scope of Chemistry. As the biennial forum of European chemists, seniors and juniors, university scientists and entrepreneurs, it is opened to the world at large and will focus on the major aspects of Chemistry and its central role in human knowledge and activities. The Torino Congress aimed to facilitate discussion that will further strengthen the case for Chemistry in Europe and stimulate a new flow of ideas, opportunities and solutions of benefit to chemistry and society worldwide.

It was of course unrealistic to cover all the facets of Chemistry within four days. Six main themes, with three more specialised symposia on each one were offered to the participants:

- Two of the main themes go to the very core of chemistry: "Advances in Synthesis" and "Advances in Understanding". The associated symposia covered organic catalysis, transition metal chemistry, process design, computational sciences, and two aspects of analytical sciences: metrology and food analysis.

- The four remaining themes pointed up the interrelation between chemistry and our environment in general terms: "Chemistry and Life Sciences" (Biomolecular Interactions and Mechanisms, Drug Targeting and Delivery, Bioinorganic Chemistry with special attention to Metal Homeostasis), "Energy and Industry" (Biorefinery and Biotechnology, Energy Production and Storage, New Trends for Agrochemicals), "The Environment" (Greening Chemistry, Green House Gases, Water Pollutants), and "Materials and Devices" (Branched Polymers – Smart Functional Materials, Nanomaterials, Porous Materials).

The scientific programme included plenary (60 minutes), keynote (45 minutes) and topics (30 minutes) lectures as well as contributed oral communications (15 minutes) and posters coupled with these eighteen symposia covering these six themes. Additional nine "jam sessions" allowed the coverage of general aspects of sub-disciplines treated in a focused way by the symposia.

Altogether there were 110 hours of science in symposia, 7 hours for plenary lectures and some 25 hours of poster sessions. The posters were displayed throughout the conference so as to allow plenty of time for interaction between senior and junior scientists, academia and industry, and scientists from different countries.

Finally, several events were linked with the 2nd EuCheMS Chemistry Congress:

- The 1st Silver Flask Trophy, A European Magic of Chemistry Contest opened to the general public and organised by Prof. Michele Antonio Floriano (September 15, Teatro Colosseo), This very popular contest got together competitors from France, Germany, Italy, Serbia and the United Kingdom. The winners were Filip Bihelović and Bojan Vulović from Serbia.



- Three lectures for high school students at the Congress Centre (300 Hall) of the Piedmont Region given by:
 - Prof. Alvin Young, Editor in Chief of "Environmental science and pollution research" (USA): "Challenges and opportunities in chemistry in today's society" (Wednesday, September 17, 11:00 -13:00),
 - Prof. Vincenzo Balzani, Università di Bologna (Italy): "Energia, povertà e ricchezza" (Thursday, September 18, 11:00 - 13:00),
 - Prof. Peter Courtland Agre, Chemistry Nobel Laureate 2003, John Hopkins University, Baltimore (USA): "The responsibility of scientists towards a beneficial future for all" (Friday, September 19, 11:00 - 13:00).
 - Three public lectures at Lingotto Conference Centre (Londra Hall) given by
 - Prof. Vincenzo Balzani, Università di Bologna (Italy): "The future of energy supply. Challenges and opportunities" (Wednesday, September 17, 18:00 -19:00),
 - Prof. Carsten Reinhardt, University of Bielefeld (Germany): "Machines and scientists in the laboratory" (Thursday, September 18, 18:00 - 19:00),
 - Prof. Alvin Young, Editor in Chief of "Environmental science and pollution research" (USA): "Globalisation of environmental research" (Friday, September 19, 18:00 - 19:00),
 - A symposium on "Tailored strategies for conservation of metallic artefacts in the Mediterranean Basin" organised by Prof. Emma Angelini at Politecnico di Torino at Lingotto (September 16, 9.00 - 14.00),
 - A colloquium on "Chemistry Funding in Europe: Where Do We Stand?" organised by Dr. Markus Behnke (DFG, Germany) at Lingotto Conference Centre (Tuesday, September 16, 9.00 - 14.30),
 - A lecture given by Prof. Terence Mitchell on "Educating tomorrow's Chemists: Eurobachelor and Euromaster" at Lingotto Conference Centre (Friday, September 19, 12:00-13:00),
 - The European Young Chemist Network Workshop organised by Prof. Janaky Csaba at Dei 200" Hall/Museo Carpano at Eataly (Tuesday, September 17, 14.00 – 18.00),
 - and finally, the second edition of the European Young Chemist Award organised by Prof. Bruno Pignataro and sponsored by Società Chimica Italiana. From September 17 to 19, 17.30 – 19.00, this contest gathered at Lingotto Conference Centre (Berlino Hall) 15 finalists who delivered each a talk in front of the final jury (Prof. Dave Garner, President of RSC, Prof. Angela Agostiano, SCI, Dr. Christian Remenyi, GDCh), which selected
 - at the post-doctoral level: Fabio Arnesano from Italy (First prize) and Leonard J. Prins from Italy and Ali Tavassoli from the United Kingdom (Second Prize divided),
 - at the PhD level: Guillermo Mínguez Espallargas from the United Kingdom (First Prize) and Gustavo Fernández from Spain and Viktoria H. Gessner from Germany (Second Prize divided).
- The Prizes were remitted during the Awards ceremony on September 20.

2. Committees

2.1. Honorary Committee

Mercedes Bresso (President of the Piedmont Region)

Antonio Saitta (President of Provincia of Torino)

Sergio Chiamparino (Mayor of the City of Torino)

Ezio Pelizzetti (Rector of Università di Torino)

Paolo Garbarino (Rector of Università del Piemonte Orientale)

Francesco Profumo (President of Politecnico di Torino)

2.2. Local Organising Committee

Chair: Lorenza Operti (Università di Torino)



Co-chair: Salvatore Coluccia (Università di Torino)

Members:

Silvia Bodoardo (Politecnico di Torino)

Roberta Fruttero (Università di Torino)

Edoardo Garrone (Politecnico di Torino)

Giuseppe Geda (Ordine dei Chimici del Piemonte e Valle d'Aosta)

Leonardo Marchese (Università del Piemonte Orientale)

Pierluigi Stanghellini (Università del Piemonte Orientale)

Marco Vincenti (Università di Torino)

2.3. Scientific Committee

Chair: Hartmut Michel (Germany) Nobel Laureate



Co-chair: Igor Tkatchenko (France)

Members:

Ivano Bertini (Italy)

Norman Billingham (United Kingdom)
Tore Brinck (Sweden)
Luigi Campanella (Italy)
Eric Carreira (Switzerland)
Philippe Garrigues (France)
Gernot Klotz (Belgium)
Bo Karlberg (Sweden)
Riitta Keiski (Finland)
Rosangela Marchelli (Italy)
Luis A. Oro (Spain)
Clément Sanchez (France)
Thomas Scheper (Germany)
Tony Ware (United Kingdom)
Jens Weitkamp (Germany)

EuCheMS General Secretary: Evelyn McEwan (United Kingdom)

2.4. Organising Committee

Chair: Giovanni Natile (President of EuCheMS), President of the Congress

Co-chair: Francesco De Angelis (Past-President SCI, Italy)



Members:

Reto Battaglia (Switzerland)
Pavel Drasar (Czech Republic)
José A. Empis (Portugal)
Sergio Facchetti (Italy)
Roger Fenwick (United Kingdom)
Selahattin Gultekin (Turkey)
Tor Hemmingsen (Norway)
Wolfram Koch (Germany)
Minos Leontidis (Cyprus)
Evelyn McEwan (EuCheMS General Secretary, United Kingdom)

Gábor Náray-Szabó (EuCheMS Past-President, Hungary)
Lorenza Operti (Local Organising Committee Chair, Italy)
Luis Oro (EuCheMS President Elect, Spain)
Richard Pike (United Kingdom)
Igor Tkatchenko (Scientific Committee, France)

2.5. Conveners

With respect to the six themes already mentioned, attention was paid to invite distinguished conveners from a broad array of European countries. In addition to the selection of the speakers, the conveners were in charge of running the evaluation of the abstracts submitted and selecting the oral communications. Moreover, they were asked by the organisers of the European Young Chemist Award to select the finalists of this contest.

Prof. Jay Siegel (Switzerland): **I.1**, Organic Catalysis
Prof. Rinaldo Poli (France): **I.2**, Radical Reactivity in Transition Metal Chemistry
Prof. Volker Hessel (Germany and The Netherlands): **I.3**, Reactions under Novel Conditions
Dr. Bertil Magnusson (Sweden): **II.1**, Chemical Measurement Quality: Societal Impacts
Dr. Enzo Ferrara (Italy): **II.1**, Chemical Measurement Quality: Societal Impacts
Prof. Tore Brinck (Sweden): **II.2**, Cutting Edge Chemistry with Computers
Prof. Manuel Yáñez Montero (Spain): **II.2**, Cutting Edge Chemistry with Computers
Dr. Retto Battaglia (Switzerland): **II.3**, Food Analysis: Pushing Detection Limits down to Nothing
Prof. Rosangela Marchelli (Italy): **II.3**, Food Analysis: Pushing Detection Limits down to Nothing
Dr. Jesús J. Jiménez-Barbero (Spain): **III.1**, Biomolecular Interactions & Mechanisms
Prof. Kenneth Dawson (Ireland): **III.2**, Drug Targeting & Delivery
Prof. Henryk Kozłowski (Poland): **III.3**, Metal Homeostasis & Bioinorganic Chemistry
Prof. Merja Penttilä (Finland): **IV.1**, Biorefineries & Biotechnologies
Prof. Claudine Buess-Herman (Belgium): **IV.2**, Energy Production & Storage
Dr. Clemens Lamberth (Switzerland): **IV.3**, New Trends in Agrochemicals
Prof. Gabriele Centi (Italy): **V.1**, Greening Chemistry
Dr. Allan A. Jensen (Denmark): **V.2**, Green House Gases
Prof. Sergio Facchetti (Italy): **V.3**, Water Pollutants
Dr. Sirpa Herve (Finland): **V.3**, Water Pollutants
Prof. David K. Smith (United Kingdom): **VI.1**, Branched Polymers - Smart Functional Materials
Prof. Neil Champness (United Kingdom): **VI.2**, Nanomaterials
Dr. Ulrich Müller (Germany): **VI.3**, Porous Materials

2.6. Scientific Committee (European Young Chemists Network)

Members:

Jens Breffke (Germany)
Juan Luis Delgado (Spain)
Csaba Janáky (Hungary)
Helena Laavi (Finland)

3. Scientific Programme

The programme of the congress was divided into six sessions corresponding to the themes already introduced:

- Session I: Advances in Synthesis
- Session II: Advances in Understanding
- Session III: Chemistry and Life Sciences
- Session IV: Energy and Industry
- Session V: The Environment
- Session VI: Materials and Devices

The cross-disciplinary nature of the congress was attested by plenary lectures and many keynote lectures embracing more than one theme. Each session comprised three symposia, each of them included in addition to an eventual keynote lecture 3 to 6 topic contributions on specific subjects and an appropriate number of oral communications. In all the documents given to the participants, keynote lectures, oral communications and posters were labelled according to the number of the session and symposium and indicated by a colour code. The scientific programme also included the plenary lecture of the recipient of the 2008 August Wilhelm von Hofmann memorial Medal of the German Chemical Society (August-Wilhelm-von-Hofmann-Denkmünze), Prof. K.C. Nicolaou (USA).

All the oral communications were presented in parallel in two amphitheatres (Auditorium and 500 Hall), one large (Giulla Hall) and five medium-size (Berlino, Londra, Madrid, Parigi and Roma) lecture rooms. The symposia of each session were located in the same lecture room, but the late afternoon "jam sessions" were distributed according to the rooms available between 17:30 and 19:00. The posters arranged thematically were presented in the corridors of the Lingotto Conference Centre from Tuesday 16 to Saturday 20. The posters linked to the "jam sessions" were exhibited in the areas corresponding to the main sessions.

The detailed scientific programme of the oral communications was provided in end of June. The abstracts of all presentations were available on the web site of the congress on August 15, and the corresponding CD-ROM was provided in the participants' handbag.

3.1. Timetable

All these aspects are summarised in the following timetable:

	TUESDAY 09/16	WEDNESDAY 09/17	THURSDAY 09/18	FRIDAY 09/19	SATURDAY 09/20
8.00		REGISTRATION	REGISTRATION	REGISTRATION	REGISTRATION
8.15					
8.30		PLENARY LECTURE AUDITORIUM	PLENARY LECTURE AUDITORIUM	PLENARY LECTURE AUDITORIUM	PLENARY LECTURE AUDITORIUM
8.45					
9.00		coffee break	coffee break	coffee break	coffee break
9.15					
9.30					
9.45					
10.00					
10.15					
10.30					
10.45					
11.00					
11.15					
11.30					
11.45					
12.00	REGISTRATION				
12.15					
12.30		lunch break & POSTER SESSION	lunch break & POSTER SESSION	lunch break & POSTER SESSION	AWARDS & CONCLUDING REMARKS AUDITORIUM
12.45					
13.00					
13.15					
13.30					
13.45					
14.00					
14.15					
14.30					
14.45					
15.00					
15.15					
15.30					
15.45					
16.00	OPENING CEREMONY AUDITORIUM				
16.15					
16.30					
16.45					
17.00		POSTER SESSION	PLENARY LECTURE AUDITORIUM	POSTER SESSION	
17.15					
17.30					
17.45					
18.00					
18.15					
18.30					
18.45					
19.00					
19.15					
19.30					
19.45					
20.00	WELCOME RECEPTION				
20.15					
20.30					
20.45					

Legenda Symposia

I	ADVANCED IN SYNTHESIS
I.1	Cyclic Synthesis
I.2	Catalytic Asymmetric Reactions
I.3	Transition Metal Chemistry
I.4	Cyclic Carbene
I.5	Synthetic Reactivity in Transition Metal Chemistry
I.6	Reaction under Non-standard Conditions
II	ADVANCED IN UNDERSTANDING
II.1	Chemical Measurement Quality
II.2	Cutting Edge Chemistry with Computers
II.3	Food Analysis
III	CHEMISTRY & LIFE SCIENCES
III.0-EM	Biomolecules
III.0-SD	Synthesis of Bioactive Molecules
III.1	Biomolecular Interactions & Mechanisms
III.2	Drug Targeting & Delivery
III.3	Metal Homeostasis & Biogeochemical Chemistry
IV	ENERGY & INDUSTRY
IV.1	Bioethanol & Biotechnology
IV.2	Energy Production & Storage
IV.3	New Trends for Agrochemicals
V	ENVIRONMENT
V.1	Green Fine Chemistry
V.2	Green Process Design
V.3	Water Pollution
VI	MATERIALS & DEVICE
VI.0-EM	Sensors
VI.0-EM	Supramolecular Chemistry & Applications
VI.1	Controlled Polymerization - Smart Functional Materials
VI.2	Nanomaterials
VI.3	Polymers Materials

Kyriacos C. Nicolaou, University of California San Diego, San Diego & The Scripps Research Institute, La Jolla, CA (USA): *Molecules that Changed the World (Tuesday, September 16)*

Martyn Poliakoff, The University of Nottingham, Nottingham (United Kingdom): *Multi-Phase Catalysis: Maximizing the Opportunities for Supercritical Fluids in Green Chemistry (Tuesday, September 16)*

K. Barry Sharpless, The Scripps Research Institute La Jolla, CA (USA): *The Power of Orthogonal Reactivity (Wednesday, September 17)*

Avelino Corma, Polytechnic University of Valencia-ITQ, Valencia (Spain): *Catalysts Design for Green and Sustainable Chemistry (Thursday, September 18)*

Peter Agre, Johns Hopkins University, Baltimore, MD, (USA): *Aquaporin Water Channels: From Atomic Structure to Clinical Medicine (Thursday, September 18)*

Jean M.J. Fréchet, University of California Berkeley, Berkeley, CA (USA): *Designing Nanomaterials for the Life Sciences: From Imaging to Immunotherapy (Friday, September 19)*

Robert H. Grubbs, California Institute of Technology, Pasadena, CA (USA): *Metathesis Catalysts for the Synthesis of Large and Small Molecules (Saturday, September 20)*

3.3. Symposia

I. Advances in Synthesis

I.1: Organic Catalysis

I.2: Radical Reactivity in Transition Metal Chemistry

I.3: Reactions under Novel Conditions

II. Advances in Understanding

II.1: Chemical Measurement Quality: Societal Impacts

II.2: Cutting Edge Chemistry with Computers

II.3: Food Analysis: Pushing Detection Limits down to Nothing

III. Chemistry and Life Sciences

III.1: Biomolecular Interactions & Mechanisms

III.2: Drug Targeting & Delivery

III.3: Metal Homeostasis and Bioinorganic Chemistry

IV. Energy and Industry

IV.1: Biorefineries & Biotechnologies

IV.2: Energy Production & Storage

IV.3: New Trends for Agrochemicals

V. The Environment

V.1: Greening Chemistry

V.2: Greenhouse Gases

V.3: Water Pollutants

VI. Materials and Devices

VI.1: Branched Polymers – Smart Materials

VI.2: Nanomaterials

VI.3: Porous Materials

3.4. "Jam Sessions"

I.0-C: Catalysis and Metal-mediated Reactions

I.0-M: Transition Metal Chemistry

I.0-S: Organic Synthesis

III.0-BM: Biomolecules

III.0-SD: Synthesis of Bioactive Molecules

VI.0-SM: Supramolecular Chemistry and Auto-Assembly

VI.0-SR: Sensors

3.4. Keynote lectures

Varinder K. Aggarwal, University of Bristol, Bristol, United Kingdom, *Chiral Carbenoids for Asymmetric Synthesis*, **I.1**

Lucia Banci, University of Florence, Sesto Fiorentino, Italy, *Pathways of Copper Homeostasis in Molecular Systems Biology Perspective*, **III.3**

Xinhe Bao, The Chinese Academy of Science, Dalian, P.R. China, *Monodispersion of Nanoparticles in Channel of Porous Structures and the Related Applications in Catalysis*, **VI.3**

Matthias Beller, Leibniz-Institute of Organic Catalysis, Rostock, Germany, *Molecular-defined Catalysts for Environmentally Benign Processes*, **V.1**

C. Richard A. Catlow, University College, London, United Kingdom, *Computer Modelling as a Tool in the Chemistry of Materials*, **II.2**

Kenneth G. Caulton, Indiana University, Bloomington, IN, USA, *Odd-Electron Complexes: Not so Odd After All?*, **I.2**

Fritz Frimmel, Karlsruhe Technical University, Karlsruhe, Germany, *Reading the Footprints of Chemicals in the Aquatic Environment. Where Can this Lead to?* **V.3**

Dante Gatteschi, University of Florence, Sesto Fiorentino, Italy, *Magnetic Nanoparticles and Molecular Nanomagnets: Parallel Lives*, **VI.2**

Jana Hajšlová, Institute of Chemical Technology, Prague, Czech Republic, *Challenging Analytical Strategies to Reduce Detection Limits and to Improve Other Performance Characteristics in Trace Analysis of Food Contaminants / Toxicants*, **II.3**

Dino Moras, IGBMC, Illkirch, France, *Design of Function Modulators for Nuclear Hormone Receptors*, **III.I**

Ulrich Stimming, Technical University Munich, Garching, Germany, *Electrochemical Processes in Energy Conversion and Storage*, **IV.2**

Philip Taylor, Institute for Reference Materials and Measurements, Geel, Belgium, *New Perspectives on Metrology in Chemistry to Support EU Directives*, **II.1**

Marcel Wubbolts, DSM Innovation Center, Delft, The Netherlands, *Assimilation of Chemistry and Biotechnology: a Prerequisite for Integrated Biorefineries*, **IV.1**

Jun-ichi Yoshida, Kyoto University, Kyoto, Japan, *Flash Chemistry: Fast Chemical Synthesis in Micro Flow Systems*, **I.3**

3.4. Topic lectures

Alexandre Alexakis, University of Geneva, Geneva, Switzerland, *Bis-Pyrrolidine and its Derivatives: New Efficient Organocatalysts*, **I.1**

Michele Aresta, CNR & University of Bari, Bari, Italy, *Developing Innovative Synthetic Methodologies Based on Carbon Dioxide: a Push Towards a Sustainable Chemical Industry*, **V.1**

Massimiliano Aschi, University of L'Aquila, L'Aquila (Italy): *Modelling Electronic Properties in Complex Molecular Systems*, **II.2**

Anne Bassères, Total-GRL, Lacq, France, *Water Quality Assessment through Biomarkers*, **V.3**

Anna Bernardi, University of Milan, Milan, Italy, *Interfering with the Sugar Code: Design and Synthesis of Oligosaccharides*, **III.1**

Sabine Berteina-Raboin, University of Orléans, Orléans, France, *Synthesis of Various Aza-Heterocycles for Crop Protection*, **IV.3**

Christina Bertler, National Laboratory of Forensic Science, Linköping, Sweden, *Forensic – Standardisation and Traceability to Support Crime Investigation*, **II.1**

Cédric Boissière, Pierre & Marie Curie University, Paris, France, *Evaporation Induced Mesostucturation of Inorganic and Hybrid Nanostructured Patterns, Films and Nano-Spheres*, **VI.2**

David Brown, University of Bath, Bath, United Kingdom, *Affinity and Redox Activity of Metals Binding to Amyloidogenic Proteins*, **III.3**

Gion Calzaferri, University of Bern, Bern, Switzerland, *Dye Modified Nanochannel Materials for Photoelectronic and Optical Devices*, **VI.3**

Anne-Marie Caminade, CNRS-LCC, Toulouse, France, *Dendrimers as Tools in Nanosciences. Examples for the Elaboration of Functional Materials*, **VI.1**

Teresa Carlomagno, MPI for Biophysical Chemistry, Goettingen, Germany, *Intermolecular Interactions in Large Complexes Studied by NMR*, **III.1**

Luigi Cavallo, University of Salerno, Fisciano, Italy, *Insights on the Mechanism of Reactions Catalyzed by Transition Metal Complexes Containing NHC-Ligands*, **II.2**

Eugenio Coronado, University of Valencia, Valencia, Spain, *Magnetic Nanomaterials Based on Molecules*, **VI.2**

Lee Cronin, University of Glasgow, Glasgow, United Kingdom, *Unravelling the Complexities of Cluster Self Assembly in Solution: Towards Designer Functional Nanomaterials*, **VI.2**

Thomas Bligaard, Technical University of Denmark, Lyngby, Denmark, *Towards Computational Design of Solid Catalysts*, **II.2**

Bas de Bruin, University of Amsterdam, Amsterdam, The Netherlands, *Metallo-Radicals in C–O, C–H and C–C Bond Making and Breaking*, **I.2**

Dirk De Vos, KU Leuven, Heverlee, Belgium, *Fluorescence Microscopic Studies of Fine Chemicals Reactions on Heterogeneous Catalysts: towards Spatially Resolved Structure-Activity Relationships*, **VI.3**

Hendrik Emons, Institute for Reference Materials and Measurements, Geel, Belgium, *Reliable Quantification in Genomics and Proteomics - Scientific Challenges and Societal Impacts*, **II.1**

Pierre Gallezot, IRCELyon, Villeurbanne, France, *Renewable Raw Materials for Chemical Production*, **V.1**

Pedro Gomez-Romero, CIN2 (ICN-CSIC), Bellaterra (Spain): *Polymer and Hybrid Materials for Energy Storage and Conversion*, **IV.2**

Manfred Grasserbauer, Vienna University of Technology, Vienna, Austria, *The Environmental Challenge for Analytical Sciences*, **II.1**

Michael Grätzel, Federal Polytechnic Institute Lausanne – EPFL, Lausanne (Switzerland): *Molecular Photovoltaics*, **IV.2**

Dirk Guldi, University Erlangen-Nuernberg, Erlangen, Germany, *Carbon Nanomaterials - From Small Reorganisation Energies to Photovoltaics*, **VI.2**

Peter Haglund, Umea University, Umea, Sweden, *Anthropogenic and Natural Halogenated Compounds in Marine Water*, **V.3**

Sarah Hart, The University of Manchester, Manchester, United Kingdom, *Advances in Ion Activation Techniques Enabling the Mass Spectrometric Analysis of the Human Plasma Proteome*, **III.1**

Andrea Hartwig, Technical University Berlin, Berlin, Germany, *Zinc Binding Proteins and Genomic Stability: Biological Functions, Redox Control and Modulation by Toxic Metal Compounds*, **III.3**

Henk Hiemstra, University of Amsterdam, Amsterdam, The Netherlands, *Synthetic Studies towards Solanoeclepin A, a Hatching Agent of Potato Cyst Nematodes*, **IV.3**

Anne Imberty, CNRS-CERMAV, Saint-Martin d'Hères, France, *Thermodynamical and Structural Basis of High Affinity Glycan Recognition by Bacterial Lectins*, **III.1**

Peter Jeschke, Bayer CropScience, Monheim, Germany, *The Unique Role of Halogen Substituents in the Design of Modern Agrochemicals*, **IV.3**

Norbert Kockmann, Lonza AG, Visp, Switzerland, *Application of Micro-Structured Devices in Pharmaceutical Process Design and Production*, **I.3**

Dana Kralisch, Friedrich-Schiller-University, Jena, Germany, *Coupling of Novel Process Windows in Microreactors and Ecological/Economic Analyses for Sustainable Process Design*, **I.3**

Jean-Paul Lange, Shell Chemicals, Amsterdam, The Netherlands, *"Greening" the Chemical Industry*, **V.1**

Jack Legrand, University of Nantes, Saint Nazaire (France): *Microalgae Culture Engineering for Energy Application*, **IV.1**

Hansjoerg Lehmann, Novartis Pharma AG, Basel, Switzerland, *Microwave Accelerated Organic Synthesis in Pharmaceutical Industry*, **I.3**

Jonathan Lewis, Rolls-Royce Fuel Cell Systems (United Kingdom): *New Energy World JTI - The European Fuel Cell and Hydrogen Joint Technology Initiative*, **V.2**

Benjamin List, MPI für Kohlenforschung, Muelheim/Ruhr, Germany, *New Strategies and Concepts for Catalysis*, **I.1**

Philip Llewellyn, Université de Provence - CNRS, Marseille, France, *Probing the Flexibility of MOF's in the Presence of C1-C4 Hydrocarbons and Carbon Dioxide* **VI.3**,

Lionel Magna, Institut Français du Pétrole, Vernaison, France, *Ionic Liquids Processing in Refining and Petrochemistry: Examples of Applications*, **I.3**

Eva Malmström, Royal Institute of Technology – KTH, Stockholm, Sweden, *Dendritic Polymers Based on bis-MPA*, **VI.1**

Ilan Marek, Technion – Israel Institute of Technology, Haifa, Israel, *A Shift in Retrosynthetic Paradigm*, **I.1**

Marina Mastragostino, University of Bologna, Bologna, Italy, *New Trends in Supercapacitors*, **IV.2**

Manuela Merchán, University of Valencia, Valencia, Spain, *Understanding Key Molecular Processes in Photobiology from High-Level Computational Quantum-Chemistry Research*, **II.2**

Hans P. Merkle, ETH-Hönggerberg, Zurich, Switzerland, *The Surface Makes the Difference: Microparticles as Vaccine Delivery Systems to Target Antigen-Presenting Cells*, **III.2**

Michel Muehlebach, Syngenta, Stein, Switzerland, *Pinoxaden: Chemistry and Biology of a new Graminicide for Use in Cereal Crops*, **IV.3**

Michel W.F. Nielen, University of Wageningen, Wageningen, The Netherlands, *Nanoscale SPR biosensing and SPR/MS coupling in food analysis*, **II.3**

James Orr, IAEA Marine Environmental Laboratory, Monaco, Monaco, *Ocean Acidification: the other CO₂ Problem*, **V.2**

Danilo Porro, University of Milano-Bicocca, Milano, Italy, *Fine Chemicals Production with Metabolically Engineered Yeast*, **IV.1**

Joachim Rädler, Ludwig-Maximilian University, Munich (Germany): *Synthetic Delivery Systems and Predictive Modeling: Challenges in Nanomedicine*, **II^L.1.2**

Barry P. Rand, IMEC, Leuven (Belgium): *The Design and Fabrication of Organic Photovoltaic Cells*, **IV.2**

Thomas Reichenauer, Austrian Research Centers GmbH – ARCS, Seibersdorf, Austria, *Innovative soil and groundwater remediation technologies*, **V.1**

Stefan Reimann, EMPA, Dübendorf, Switzerland, *Top-down Assessment of European Emissions of non-CO₂ Greenhouse Gases by Continuous Measurements at Background Sites*, **V.2**

Jean-Yves Sanchez, National Polytechnic Institute of Grenoble, Saint Martin d'Hères (France): *From Lithium-Ion to Lithium Polymer Batteries: Molecular and Macromolecular Challenges*

Josef Schlatter, Swiss Federal Office of Public Health, Zurich, Switzerland, *Pushing Detection Limits down to Nothing: Toxicological Considerations for Substances in Food*, **II.3**

A. Dieter Schlüter, ETH-Hönggerberg, Zurich, Switzerland, *Responsive Dendronized Polymers*, **VI.1**

Tanja Schuck, Max Planck Institute for Chemistry, Mainz, Germany, *CARIBIC, a European Project to Monitor Greenhouse Gases in the Global Atmosphere Using a Lufthansa Airbus 340-600 Aircraft*, **V.2**

Kay Severin, Federal Polytechnic Institute-EPFL, Lausanne, Switzerland, *Novel Ruthenium Catalysts for Atom Transfer Radical Reactions*, **I.2**

Stefano Sforza, University of Parma, Parma, Italy, *New Methods for Improving the Sensitivity of Specific DNA Detection in Foods: the*

PNA Approach, II.3

Lothar Siekmann, University of Bonn, Bonn, Germany, *Improvement of Laboratory Diagnostics by Introducing the Concept of Measurement Traceability in External Quality Assessment, II.1*

Martin Stillman, University of Western Ontario, London, Ontario, Canada, *Metal Binding Mechanisms in Metallothioneins, III.3*

William (Bill) T. Sturges, University of East Anglia, Norwich, United Kingdom, *The Importance of Long-Lived Fluorinated Gases to Global Warming, V.2*

Jaakko Pere, VTT – Technical Research Centre of Finland, Espoo (Finland): *Biotechnical Tools for Product Design and Process Aid, IV.1*

Ferruccio Trifirò, University of Bologna, Bologna, Italy, *Sustainable Chemistry and REACH, V.1*

Valentin Valtchev, University of Haute Alsace - ENSCMu, Mulhouse, France, *Zeolite Crystal Engineering, VI.3*

Wim Verboom, Twente University, Twente, The Netherlands, *Microreactors as a Promising Tool for High Pressure Reactions, I.3*

Yuri Volkov, Trinity College Dublin (Ireland): *Visualisation of Nanoparticle Uptake and Sub-Cellular Localisation by Cells, III.2*

Helma Wennemers, University of Basel, Basel, Switzerland, *Peptides as Asymmetric Catalysts and Organocatalysis Inspired by Polyketide Synthases, I.1*

Karl Wiegardt, MPI for Bioinorganic Chemistry, Muelheim/Ruhr, Germany, *Where are the Valence Electrons in Coordination Compounds with π Radical Ligands? I.2*

Matthias Witschel, BASF, Ludwigshafen, Germany, *Design, Synthesis and Herbicidal Activity of New Iron-Chelating Motifs for HPPD-Inhibitors, IV.3*

Uri Zoller, University of Haifa, Oranim, Israel, *Endocrine Disruptor in Surface and Ground Water, V.3*

4. Registration

At the closing date of early registration (March 31, 2008), the number of registrations was 375. At that point, it was noticed that the number of registered persons from some countries was much less than the corresponding number of communications submitted. This gap was traced back to local situations, so that it was decided to extend the early registration fare until mid-May, where 1 043 registrations were recorded. Nevertheless, there was still a steady increase since that time. A further increase was achieved thanks to targeted boosting undertaken under the initiative of the President of EuCheMS and the member Societies. On July 8, there were 1 213 registrations, and finally, at the start of the congress, over 2 045 participants.

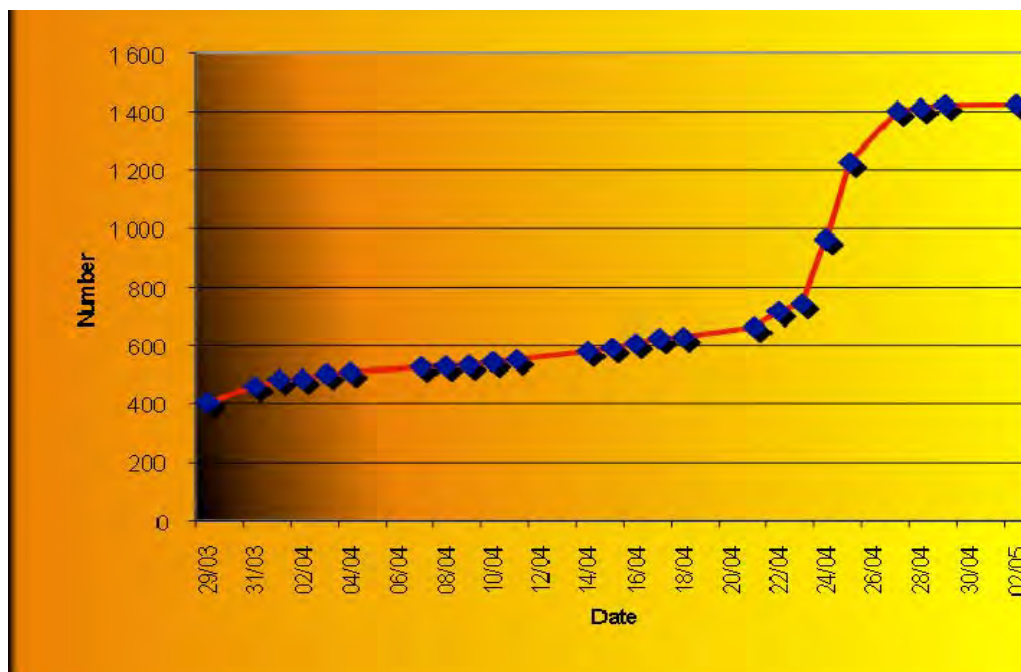
The participants were coming from 66 countries, from Algeria to Zuid (South) Africa, as shown on the following table:

Country	Number	Country	Number	Country	Number
Algeria	4	Iceland	1	Norway	10

Australia	8	India	3	Pakistan	1
Austria	32	Iran	36	Poland	33
Belgium	29	Iraq	1	Portugal	49
Bosnia	1	Ireland	29	Romania	94
Brazil	10	Israel	39	Russia	23
Canada	4	Italy	389	Serbia	17
Chile	4	Japan	29	Singapore	1
China	1	Jordan	1	Slovakia	3
Croatia	6	Korea	10	Slovenia	8
Cyprus	7	Kosova	1	South Africa	2
Czech Republic	33	Kuwait	1	Spain	114
Denmark	16	Latvia	3	Sweden	36
Egypt	12	Liechtenstein	1	Switzerland	100
Estonia	2	Lituania	2	Taiwan	4
Finland	21	Luxembourg	1	Thailand	4
France	149	Mexico	4	The Netherlands	27
Germany	406	Moldavia	3	Turkey	39
Greece	10	Monaco	1	Ukraine	3
Guatemala	2	Morocco	1	United Kingdom	123
Guinea	2	New Zeland	1	USA	21
Hungary	23	Nigeria	2	Venezuela	1

2 054

There was also a large burst in the submission of abstracts when the deadline was postponed from March 31 to April 28. Particularly, within four days before the deadline, the number of submissions doubled as indicated on this graph:



This was a hard job for many conveners who have i) to accept/reject an abstract or to shift it to a more appropriate symposium (*i.e.* more than 275 shifts), ii) to select from them the oral communications and iii) for those invited by the organisers of the European Young Chemist Award to recommend contributions among 90 submissions for this contest. The broad diversity of, finally 1 491 accepted submissions, led the organisers to introduce seven "jam sessions" dealing with additional aspects of the chemistry involved in each symposium. A summary of the communications distribution in the different symposia is given below:

Topic	Great total	Total	Oral	Poster	Remarks
I.0. Advances in Synthesis	265	65	6	59	I.0-C: Catalysis; Metal Mediated Synthesis
		63	7	56	I.0-M: Transition Metal Chemistry
		137	6	131	I.0-S: Organic Synthesis
I.1. Organic Catalysis	155	66	9	57	
I.2. Radical Reactivity in Transition Metal Chemistry		36	11	25	

I.3. Reactions under Novel Conditions		53	15	38	
II.0. Advances in Understanding	146	6		6	
II.1. Chemical Measurement Quality: Societal Impact		37	6	31	
II.2. Cutting Edge Chemistry with Computers		59	17	42	
II.3. Food Analysis: Pushing Detection Limits down to Nothing		44	3	41	
III.0. Chemistry and Life Sciences	78	27	6	21	III.0-BM: Biomolecules
		51	6	45	III.0-SD: Synthesis of Bioactive Molecules
III.1. Biomolecular Interactions & Mechanisms	221	103	17	86	
III.2. Drug Targeting and Delivery		73	14	59	
III.3. Metal Homeostasis & Bioinorganic Chemistry		15	5	10	III.3-MH: Metal Homeostasis
		30	6	24	III.3-BIN: Bioinorganic Chemistry
IV.0. Energy and Industry	83	5		5	
IV.1. Biorefineries and Biotechnologies		18	9	9	
IV.2. Energy Production & Storage		42	13	29	
IV.3. New Trends in Agrochemicals		18	10	8	
V.0. Environment	213	0			
V.1. Greening Chemistry		97	16	81	
V.2. Greenhouse Gases		23	9	14	Including an "Air Pollution" session (6 oral)
V.3. Water Pollutants		93	11	82	
VI.0. Materials and Devices	59	34	6	28	VI.1-SM: Supramolecular Chemistry
		25	6	19	VI.1-SR: Sensors
VI.1. Branched Polymers – Smart Functional Materials	271	86	14	72	
VI.2. Nanomaterials		145	17	128	
VI.3. Porous Materials		40	9	31	
		1 491	254	1 237	

All the abstracts accepted were converted into pdf files and posted on the congress Web site in early August. Each participant received in his handbag the interactive CD containing these abstracts.

5. Sponsors

The 2nd EuCheMS Chemistry Congress was organized under the patronage of several Italian Institutions. The Organising Committee wish to thank:

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6. Official Events

6.1. Opening Ceremony

The opening ceremony started with an introduction by Prof. Lorenza Operti, Chair of the local Organising Committee. Welcome addresses from the Authorities were given by Mr. Umberto D'Ottavio, Councilor for the Culture and Instruction of the Province of Turin, and Prof. Ezio Pelizzetti, Rector of the University of Turin.



Prof. Lorenza Operti



Auditorium Giovanni Agnelli



Prof. Ezio Pelizzetti

Messages from the International Union of Pure and Applied Chemistry and the American Chemical Society were respectively delivered by Prof. Nicole Moreau, Vice-President of IUPAC and Prof. Carolyn Ribes, Chair ACS Committee on Science. Finally, in his address, Prof. Giovanni Natile, President of EuCheMS and of the Congress, ended the Opening Ceremony declaring the 2nd EuCheMS Chemistry Congress opened.



Prof. Nicole Moreau



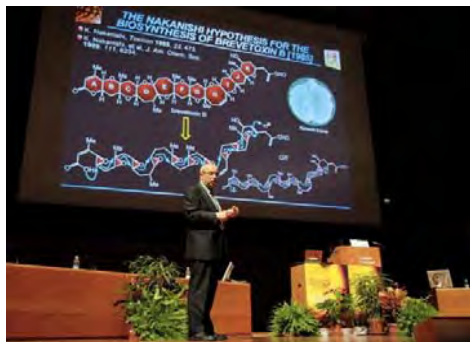
Prof. Carolyn Ribes



Prof. Giovanni Natile

6.2. Awards Ceremonies

The Opening Ceremony was followed by the presentation of the superb lectures of Prof. Kyriacos C. Nicolaou (University of California San Diego, San Diego & The Scripps Research Institute, La Jolla, USA) who received the August Wilhelm von Hofmann memorial Medal from the German Chemical Society, and Prof. Martin Poliakoff (University of Nottingham, UK) who was the recipient of the EuCheMS Lectureship 2008.



Prof. K.C. Nicolaou



Profs. K.C. Nicolaou, K. Müllen, W. Koch



Profs. M. Poliakoff, G. Natile



Prof. M. Poliakoff

On Saturday 20, the European Young Chemist Awards, sponsored by the Italian Chemical Society, were presented to the winners by Prof. Francesco de Angelis, past President of SCI.



From left to right: A. Tavassoli, L.J. Prins, F. Arnesano, G. Mínguez, V. Gessner, Prof. F. De Angelis, G. Fernández



Dr. A.A. Jensen, Prof. G. Natile, Ms. E. McEwan

Before the closing ceremony, Prof. G. Natile presented to Dr Allan Astrup Jensen (Danish Chemical Society) the 2008 EuCheMS Award for Service in recognition of his significant contribution to European cooperation in chemistry. In his introduction, the President of EuCheMS pointed out the vital role played by Dr. Jensen in developing EuCheMS activities in chemistry and the environment for over fifteen years.

6.3. Closing Ceremony

Prof. G. Natile then turned towards the organisers of these noteworthy days, namely Prof. Lorenza Operti ("Lilli"), chair of the local

Organising Committee, and Dr. Mariuccia Enria and Ms. Manuela Massocco from Centro Congressi Internazionale. With bunches of flowers, he thanks them for their full multi-year commitment for the achievement of this event. He also invited the "silent" organizer of the scientific programme, Dr. I. Tkatchenko to say some words. I. Tkatchenko thanked the most important ingredient for the success of a Congress: the participants, with their enthusiasm for science and their involvement in mutual exchanges.

In conclusion, Prof. G. Natile accepted that nothing was perfect but could be improved: next time one has the chance to do it better. By closing the 2nd EuCheMS Chemistry Congress, he wished that this would be the case at the 3rd EuCheMS Chemistry Congress to be held in Nurnberg in 2010.



Photos E. Guggolz

7. Social Events

The Concert at Palavela, the famous Venue of the Torino Olympic Winter Games 2006, was the vital break at the midpoint of a very dense meeting. The Olivier Messiaen concert (*Des canyons aux étoiles* directed by Susanna Mallki) attracted on Tuesday, September 18 evening several hundreds of the Congress participants, in addition to the EuCheMS President who really enjoyed to be there.



Photos E. Guggolz

The Gala dinner: An unforgettable evening at the Scuola di Applicazione e Istituto di Studi Militari dell'Esercito (Palazzo dell'Arsenale) with fine food and drinks, official speeches and the EuCheMS gâteau!

