

6th Flash Conference of ERA-Chemistry

“ EXTREME CHEMICAL EFFICIENCY: DRIVING TO THE LIMITS “ 28 February - 4 March 2010, Roscoff – France

Chairmen:

Prof. Reko Leino (Åbo Akademi University, Finland)
Prof. Jean-Claude Charpentier (LRGP/CNRS/ENSIC/Nancy, France)

Goal: To bring together experienced and young researchers to discuss frontier chemical research on utmost selective, compact, flexible, non pollutant and energy efficient chemical reactions and reaction technologies.

Chemical manufacturing systems involve the implementation of synthesis schemes to transform one composition of matter to another on scales from micrograms to billions of tons each year. Such materials and processes, designed by chemists and chemical engineers, enable modern life. They involve an integrated system approach of complex multidisciplinary, non-linear, non-equilibrium processes and phenomena occurring on different length and time scales of the supply chain, that is a good understanding of how chemical, biochemical and physical phenomena at a smaller length-scale relates to properties and behaviour at a longer length-scale (from the molecular scale to the production macro-and mega scales).

The way biologically, pharmaceutically and functionally relevant molecules and materials are produced has pervasive effects on the cost of biomedical research, healthcare and development of new technologies. In spite of impressive progress achieved in the past several decades, the state of the art of chemical synthesis and manufacturing remain at an early stage of development. Several grand challenges remain to be solved by synthetic chemists and chemical engineers. There is great need for new reactions, reaction sequences and synthetic methods to permit any substance or material, of any complexity to be synthesized with highest possible efficiency, in the smallest number of steps, and with minimal cogeneration of any waste products. New reactions, methods and manufacturing processes must be designed in a safe, compact, flexible and energy efficient manner. Of great importance here is the implementation of environmentally benign catalytic processes for meeting the human needs with the production of crucial chemicals by methods that are harmless to the earth and its inhabitants.

In order to maximize efficiency, minimize waste and increase profitability, the close early-design-state combination of green chemistry and green engineering stands out as the major means for overall synthetic design, feedstock and reagent selection and pollution prevention. Here, the acceleration of chemical reactions with substoichiometric quantities of highly chemo-, regio- and stereoselective catalysts will play a central role. Currently, a paradigm shift is taking place in chemical synthesis technology with unprecedented opportunities for combining and incorporating such catalytic systems into various one-pot sequences, tandem and cascade-type reactions, and process intensification either in using operation hybridation, or new operating modes of production, or in using microengineering and microtechnology, i.e. microstructured reactors. Such processes will in the future permit more efficient production of industrial and biomedical products.

This conference will bring together chemists and chemical engineers to discuss and further develop the current state in driving chemical manufacturing methods towards extreme chemical efficiencies in terms of reactivity, selectivity, reaction and reactor design, energy and waste management.

Possible topics: Reaction design, stereoselective homogeneous and heterogeneous catalysis, cascade reactions, combined bio/metal catalysts, process intensification.

Invited Speakers

“Karlheinz Schmidt lecture”

Prof. Andrzej Stankiewicz, Delft University of Technology, The Netherlands

Prof. Amir H. Hoveyda, Boston College, USA

Prof. Krishna D.P. Nigam, Indian Institute of Chemical Engineers, India

Prof. Shu Kobayashi, The University of Tokyo, Japan

Prof. David Milstein, The Weizmann Institute of Science, Israel

Prof. Carlos M. Afonso, Instituto Superior Tecnico Lisboa, Lisbon, Portugal

Prof. David Agar, Technische Universität Dortmund, Dortmund, Germany

Prof. Matthias Beller, Leibniz Institut für Katalyse, Rostock, Germany

Prof. Carsten Bolm, RWTH Aachen University, Aachen, Germany

Prof. Carmen Claver, University of Rovira i Virgili, Tarragona, Spain

Prof. Darren Dixon, University of Oxford, Oxford, United Kingdom

Prof. Karol Grela, University of Warsaw, Warsaw, Poland

Prof. Leon Lech Gradon, Warsaw University of Technology, Warsaw, Poland

Prof. Patrick Guiry, University College Dublin, Dublin, Ireland

Prof. Angel Irabien, University of Cantabria, Santander, Spain

Dr. Sophie Jullian, French Petroleum Institute (IFP), Solaize, France

Prof. Hans Kuipers, University of Twente, Enschede, The Netherlands

Prof. Marc Lemaire, University Claude Bernard – Lyon I / CPE-Lyon, Lyon, France

Prof. Mike Matlosz, Ecole nationale supérieure des industries chimiques, Nancy, France

Prof. Gilbert Rios, University of Montpellier (CNRS-UMR5635), Montpellier, France

Prof. Tapio Salmi, Åbo Akademi University, Turku, Finland

Prof. Michael C. Willis, University of Oxford, Oxford, United Kingdom

Some changes may occur during the conference

The location:

Built on a headland of the Bay of Morlaix, « a corsair town » !... An iodised climate, pure seawaters fulfil your wishes for freedom and excitement. Even if the marine research centre of Roscoff is built at the end of the town, the beaches of fine sand induce to rest of mind and body... Nevertheless, we expect you to enjoy it only after the scientific lectures.

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28 February - 4 March 2010, Roscoff – France

More information at www.erachemistry.net

There is no registration fee for the Flash conference. Attendees are asked to pay only for the full board and accommodation for 4 days. Participation will be limited to 100 people.

Deadline for submission : 5th February 2010



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Roscoff (France), 28 February - 4 March 2010



“EXTREME CHEMICAL EFFICIENCY: DRIVING TO THE LIMITS”

Conference Chairmen

Prof. Reko LEINO
Åbo Akademi University, Finland

Prof. Jean-Claude CHARPENTIER
LRGP/CNRS/ENSIC/Nancy, France

Conference organized by the CNRS, Institute of Chemistry

Invited speakers

Prof. Andrzej Stankiewicz (NL), Prof. Amir H. Hoveyda (USA), Prof. Krishna D.P. Nigam (IN), Prof. Shu Kobayashi (JP), Prof. David Milstein (IL), Prof. Carlos M. Afonso (PT), Prof. David Agar (DE), Prof. Matthias Beller (DE), Prof. Carsten Bolm (DE), Prof. Carmen Claver (ES), Prof. Darren Dixon (UK), Prof. Karol Grela (PL), Prof. Leon Lech Gradon (PL), Prof. Patrick Guiry (IE), Prof. Angel Irabien (ES), Dr. Sophie Jullian (FR), Prof. Hans Kuipers (NL), Prof. Marc Lemaire (FR), Prof. Mike Matlosz (FR), Prof. Gilbert Rios (FR), Prof. Tapio Salmi (FI), Prof. Michael C. Willis (UK)

Information and programmes at www.erachemistry.net

