

CALL FOR PAPERS

X European Workshop on Selective Oxidation (ISO 2011)

Silver Jubilee Meeting

" **Selectivity: the Key to Sustainability** "

hosted by

EUROPACAT X CONFERENCE, 28 August – 2 September 2011, Glasgow, U.K.

Scope

Selectivity is the key issue in all catalytic reactions and the ultimate goal of catalytic applications in general. But this issue becomes even more relevant for selective oxidation reactions, where the most thermodynamically stable product is carbon dioxide, the most critical greenhouse effect gas. Therefore, improvement of selectivity becomes doubly critical: on one side, to improve the efficiency of use of raw materials and energy; on the other, to reduce the emissions of greenhouse gases and hence improving the eco-efficiency of the process.

Catalysts used in selective oxidation reactions are characterized by their complexity and dynamic character. The role of the nature and structure of the active sites at the nano-scale on the mechanisms and reaction kinetics are nowadays crucial to understand the real state of catalytic sites "at work" and to explain catalytic behaviours of catalysts under reaction conditions. This is the reason why conventional approaches of catalysis and characterization techniques have globally not succeeded to go further than a static view of catalytic sites. Furthermore, the performance of oxidation catalysts and the global efficiency of the processes that use them are highly dependent on the reaction conditions and the reactor design. Innovation can come along with new reactions, non conventional oxidants, new reactor concepts, new nano-structured or nano-sized catalytic materials, etc.

Understanding of these aspects is the only way to progress in catalyst preparation, catalyst characterization, and modelling of catalyst, reaction kinetics and catalytic process, all of them needed to get a breakthrough advance in the improvement of existing processes or in the implementation of new ones.

Focus and objectives

At a variance of the other symposia in Europacat, devoted to general topics, this is a highly focused Workshop to discuss the specific issues of selective oxidation, **to emphasize innovative and advanced approaches, new discoveries, new trends and new concepts able to improve selectivity in catalytic oxidations**. Innovation can come along with new reactions, non conventional oxidants, new reactor concepts, new nano-structured or nano-sized catalytic materials, innovative aspects on theory and modelling, preparation and characterization, etc. This new knowledge is needed to allow a breakthrough advance in the improvement of existing processes or in the implementation of new ones.

Workshop will focus on critical aspects of the design of sustainable processes of selective oxidation catalysts, such as the application of:

- *advances in nanoscience and nanotechnology to develop the next generation of nano-structured catalysts to advance towards achieving 100% selectivity, by controlling the surface reactivity.*
- *advances in surface and reactor modeling, and in reactor and process design, to tailor the process operation conditions to reach the best performance of the catalyst.*

This **workshop** aims to discuss new advances in:

- 1) the molecular design of selective sites and in their reactivity to form selective products,
- 2) the synthesis of catalytic materials with adequate architecture, a controlled size distribution and reactivity, which can allow to improve selectivity, and
- 3) the chemical reaction engineering approach to develop adequate reactors to take advantage of the results obtained in 1) and 2).

Only papers which present new advances and new perspectives to improve selectivity in reactions as partial oxidation, ammoxidation, oxidative dehydrogenation, preferential oxidation (Prox), etc. will be considered.

History

This symposium continues the series of European Workshop Meetings on Selective Oxidation initiated in 1986 in Louvain-la-Neuve, Belgium. Since then, the workshops have been held about every 2 years, except when they coincide with the World Congress on Catalytic Oxidation, as it happened in 1997 (USA), 2001 (Germany) and 2005 (Japan).

Thus, the successive Workshops were held in Rimini, Italy (II, jointly with the I World Congress, 1989), Louvain-la-Neuve, Belgium (III, 1991), Benalmadena, Spain (IV, jointly with the II World Congress, 1993), Berlin, Germany (V, 1995).

To avoid overlapping with Europacat, the Sixth meeting “Innovation in Selective Oxidation (ISO’99)”, was held in Rimini (Italy) in 1999 as a post-congress symposium of Europacat IV (*Catalysis Today* 61 (2000)). Almost 300 participants paid an additional fee to attend it.

Since then, the Workshops, now with the acronym “ISO”, have been organized within Europacat meetings: the seventh, “Innovative Selective Oxidation: Nanoscale and Dynamics Aspects (ISO 2003)”, within Europacat VI held in Innsbruck (Austria), 2003 (*Catalysis Today*, 91-92 (2004)), and the 8th within Europacat VIII. (Turku, 2007). The 9th was held jointly with the 6th World Congress on Oxidation Catalysis (6WCOC) in Lille, 2009.

The Silver Jubilee Meeting

Since the first one, these Workshops have been the forum for the European researchers in the field of selective oxidation to gather and discuss the new needs and advances in the area, as well as the place to generate new contacts and collaborations, having created a feeling of community among them.

In this occasion, it will be the 25th anniversary of the first meeting, and since then some very distinguished scientists in this field have passed away. The meeting will include invited commemorative speeches, to review the advances reached during the period and to analyze the new challenges in this field.

Scientific Programme – Call for Papers

As in the previous Workshops, the scientific programme will be composed of a one-day session for oral presentations and a poster session, imbedded into the poster sessions in the overall Europacat scheme.

The oral presentations programme will consist principally of 2 key-note lectures (selected among the received proposals, 30 min presentation +10 min discussion) and about 20 oral presentations (15 min + 5 min). Acceptance will be restricted to a maximum of 60 communications (key-note + oral + posters).

Selection of the presentation mode will be based on the scientific evaluation of the submitted abstracts, which must follow the standard Europacat X format.

Registration

There is no additional registration for the registered attendees to Europacat X.

Preprints

The Preprints of the Symposium containing the two-page abstracts of all accepted contributions (keynote lectures, oral and poster presentations) will be presented to the participants on the *web site* of the Symposium.

Proceedings

A characteristic feature of these Workshops has been the publication of the contributions presented within its frame, selected after the standard peer-review process, either in books (Studies Surface Science and Catalysis series) or in special issues of internationally renowned Journals (Catalysis Today).

Following this practice, authors of accepted contributions will be invited to prepare an 8 page-manuscript for publication in the Proceedings of the Symposium in an international journal, based on standard peer-review procedures. Instructions for its preparation will be sent later. No difference will be made in the publication of oral and poster presentations.

Organizing Committee

The Organizing Committee will take care of and decide upon all aspects relevant to the scientific part of the event (programme, reception and selection of abstracts, etc.). It will be composed by:

Fabrizio Cavani, University of Bologna

Gabriele Centi, University of Messina, Coordinator of IDECAT

Vicente Cortés Corberán, CSIC, former Coordinator of CONCORDE

S. David Jackson, University of Glasgow

Gerhard Mestl, Südchemie AG

Siglinda Perathoner, University of Messina

Patricio Ruiz, Catholic University of Louvain

The organizers will be assisted by a Scientific Advisory Board composed by:

Prof. A. Brückner (Germany)

Prof. R.K. Grasselli (USA)

Prof. L. Lefferts (The Netherlands)

Prof. R. Sheldon (The Netherlands)

Prof. F. Trifiro (Italy)

Prof. M. Witko (Poland)

Prof. E. Bordes-Richard (France)

Prof. G. J. Hutchings (U.K.)

Prof. G. Panov (Russia)

Prof. R. Schlögl (Germany)

Prof. W. Ueda (Japan)

The Workshop is part of the activities of the European Network of Excellence IDECAT (Integrated Design of Catalytic Materials for a Sustainable Production) and a continuation of the activities of the European Coordinated Action CONCORDE (Co-Ordination of Nanostructured Catalytic Oxide Research and Development in Europe).

Deadlines for authors

As an additional symposium to be included in the overall programme of Europacat X, these deadlines should be those of the very Europacat itself.

Contact persons

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