

## Preface

The Seventh European Workshop Meeting on Selective Oxidation, under the title “Innovative Selective Oxidation: Nanoscale and Dynamics Aspects (ISO 2003)”, was organized as a 2-day meeting within the general program of EUROPACAT VI held in Innsbruck (Austria), on August 31–September 4, 2003.

This symposium continues the series of *European Workshop Meetings on Selective Oxidation* initiated in 1986 in Louvain-la-Neuve, Belgium. The workshops have been held about every 2 years, except when they coincide with the World Congress on Catalytic Oxidation held outside Europe. The previous one, 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) 1).

The aim of the Workshop was to answer some urgent needs: (i) to define this specific area of catalysis where important progress has to be done; (ii) to attract the interest of many people in Europe working in catalysis and, in particular, of promising young researchers; (iii) to be a practical expression of the objectives for a sustainable development of the thematic area of the European Commission Sixth Framework Program.

The complexity and dynamic character of catalysts used in oxidation reactions, 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 explain catalyst behaviors under reaction conditions. This is the reason why traditional approaches of catalysis and catalyst characterization techniques have globally not succeeded in going further than a static view of catalytic sites. Understanding these aspects is the only way to progress in catalyst preparation, catalyst characterization, modeling of catalysts, reaction kinetics and catalytic processes; and this is also the reason why the workshop was at the frontier of the science of selective oxidation reactions in a broad sense. The objectives of the workshop were to emphasize selected and advanced approaches, new discoveries, new trends and new concepts in these aspects. The workshop covered topics like: (1) new concepts and insights into the reaction mechanism, kinetics and nano-scale description of active sites; (2) dynamic aspects in the control of the selective sites during catalytic reaction; (3) new methods of preparation, new materials and characterization of nanostructured catalysts; (4) new applications of nanos-

tructured catalysts; (5) structured catalysts and reactors; (6) new reactions and alternative oxidants in selective oxidations; (7) theoretical aspects concerning the modeling of active sites; (8) high throughput screening applications using nano-scale concept.

Considerable advances have been observed in comparison with previous Workshops and other meetings covering the same aspects, in particular in: new materials used as catalysts (mesoporous materials, gold, etc.), advances in alternative oxidants as nitrous oxide or supercritical carbon dioxide, new applications of nanostructured and nanotubes catalysts, new supports, new applications in selective oxidation of hydrocarbons, in the conversion of alkanes, in total combustion and syngas formation, transient and dynamic studies, new probing reactions to characterize sites, characterization of sites under reaction conditions, theoretical modeling of active sites, the use of gas promoters to control active sites, new applications in liquid phase with various oxidants, etc., showing that selective oxidation still has a great interest for scientists and industry. Selective oxidation is probably one of the subjects in which more advances have been observed in the last years.

Seventy-six abstracts were received. Seventy-two were accepted. The program consisted of 25 oral presentations and 47 posters. For these proceedings, manuscripts were evaluated (two to four times) by more than 60 referees, to whom we express our gratitude. After the standard reviewing procedure, 56 manuscripts were accepted for publication. Manuscripts are presented in four groups: novel concepts in selective oxidation; insight into reaction and theoretical/modeling approaches; new aspects in liquid phase selective oxidations; advances in the conversion of alkanes.

The organizing committee would like to thank Professor Gabriele Centi for his availability, friendly help and precious advice during the organization and the realization of this Workshop.

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