



Preface

The 2nd International Symposium on New Catalytic Materials was held in Cancun, Mexico in August 16–20, 2009, within the framework of the XVIII International Materials Research Congress, which is organized annually by the “Sociedad Mexicana de Materiales A.C.” (SMM). About 108 papers were accepted and presented during this meeting, i.e., 38 oral talks and 70 posters. The scope of this symposium focused on both fundamental and applied aspects of catalysis, including the synthesis, characterization and new catalysts applications, always highlighting the most recent advances in this matter and promoting the exchange of ideas and discussion on recent developments of catalytic materials science and its interrelationships with catalytic processes. The most outstanding research papers were invited for publication in *Catalysis Today* based upon quality criteria with further emphasis on relevant topics of research on the actual challenges of the chemical, refining and petrochemical industries, as well as those related with environmental issues and renewable fuels and chemicals production.

The character of this symposium is driven by the interest of the scientific community on new materials for improving the catalysts performance and for obtaining newer catalytic systems. Nowadays, the exploding diversity of new materials has opened a new technological perspective in general and it is an exciting subject of research and discovery for catalysis. Also, newer sophisticated methods and techniques are usually involved in the characterization and discovery of new properties of materials and they are important driving factors by themselves for developing new insights for new catalytic materials. In this issue there are some examples of novel characterization techniques used for assessing the most significant aspects of the catalysts performance, such as structural (surface/bulk), textural (surface area/porosity, etc.), compositional (surface/bulk), molecular and electronic (bonding) aspects of catalytic materials altogether.

This special issue presents new catalysts for carrying out chemical transformations of renewable resources, i.e., bio-fuels and hydrogen production, as well as other important fields like photocatalysis and Fischer-Tropsch for liquid fuels from synthesis gas, the synthesis and properties of nano-structured materials (metals, oxides, carbon fibers, zeolites, etc.) and catalysts for clean fuels (hydrogen production, low sulphur gasoline and diesel, HDS, methane reforming, etc.) and environmental issues (de-NO_x, de-SO_x, 3-way catalysts, photodegradation, VO_x control), biofuels

(biomass, biodiesel, etc.), petroleum refining and hydrotreating (FCC, isomerization, HDS, etc.), C1 chemistry (GTL, methanol synthesis, F-T synthesis, etc.).

A total number of 83 full-length manuscripts were received for evaluation in view of publication and after a strict peer-reviewing process, 30 papers were selected for publication in *Advanced Materials Research* Vol. 132 (2010) and 30 papers were selected for publication in the special issue of *Catalysis Today*, both involving about 200 international referees, to whom the guest editors want to acknowledge for contributing to these accomplishments. In particular, we want to express our thanks to Professor James Spivey, who was constantly guiding the revision process, as well as to Mary Harty from Elsevier's staff, who managed the complex communication aspects. Also we want to add our special acknowledgement to Dr. José Antonio de la Peña from the National Council of Sciences and Technology of Mexico (CONACyT) for his valuable support. Our thanks also go to the National University of Mexico (UNAM), the National Polytechnic Institute (IPN), The Mexican Petroleum Institute (IMP), The Academia de Catálisis A.C. and the Sociedad Mexicana de Materiales, A.C., as well as to the companies who supported us in many ways, in particular “Anton Paar de Mexico” and “Tecnolab”.

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