

Preface

This special issue of Catalysis Today includes a selection of the works presented to the 2nd European Hydrogen Energy Conference, held at Zaragoza (Spain) on 22–25 November 2005. This conference has been organized by the Spanish Hydrogen Association and the European Hydrogen Association, and is the second edition of a conference that seeks to be the reference meeting in Europe around the Science and Technology of the Hydrogen and the Fuel Cells. After the first edition held at Grenoble (France) on 2003, the conference has moved ahead reaching 628 delegates, with 14 plenary lectures, 106 oral contributions and 151 posters. As a novelty, the conference was held together with the Second Professional Meeting on Hydrogen and Fuel Cells, where 25 companies made presentations of their activities in this field, and was complemented with a commercial exhibition of 20 companies participating in different exhibition stands and a fuel cell powered vehicle display.

As the scope of the conference was rather broad, only those presentations related to catalysis research were selected for this issue. Few of them are connected with the catalytic technologies for hydrogen production, specially the decomposition of methane that allows the reduction of the CO_x emissions. But other ones related to the reforming of methane, alcohols, and higher hydrocarbons, mainly gasoline and diesel fractions, in which some basic advances were disclosed, have been also considered. The reader will also find in this journal volume papers on the catalytic processes for the hydrogen purification, since its use in low temperature fuel cells requires a CO concentration no higher than 100 ppm. In this sense, the development of selective catalysts for the preferential oxidation of CO under very mild conditions will be a clear demand in the near future. Catalysts are also essential components of fuel cells, and in this journal issue, papers on the development and structural behaviour of CO tolerant electrocatalysts for PEMFC are also included. Finally, two papers related with hydrogen storage have been also included in this volume. This is a topic that is not usual in catalysis journals, but this technology is

crucial for the development of the hydrogen economy, and some of the concepts and materials used are closely related with catalysis.

There is no doubt that the development of the Hydrogen and Fuel Cells technology goes beyond catalysis, and requires the contribution of a large number of experts from different fields. During the 2nd European Hydrogen Energy Conference, we had the opportunity to attend presentations dealing with the difficulties for the transition to the hydrogen economy, such as the development of hydrogen production and distribution infrastructure, political and social support, standardization of the procedures, and safety issues. Other presentations went around the technological difficulties in the production processes and in the hydrogen storage systems, as well as their integration with renewable energy sources, and the application to fuel cell systems. Therefore, every aspect of the hydrogen and fuel cell technology, from the basic science to its integration into the global economy, were considered in the conference, and a selection of the papers from these fields will be also published in a special issue of the International Journal of Hydrogen Energy.

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*Guest Editor**

J.L.G. Fierro

M.A. Peña

*Institute of Catalysis and Petrochemistry,
CSIC, Madrid, Spain*

**Corresponding author*

E-mail address: mapena@icp.csic.es

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