

## Preface

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Metal oxides, which are the main building blocks of many industrial catalysts continue to attract attention as a field of research. On one hand, there is renewed emphasis in waste minimization through better selectivity control in chemical reactions and replacement of reactions that use hazardous solvents and acids by environmentally-friendly catalytic reactions. The need for new catalytic materials and the new range of flexibility in manipulating the properties of the catalysts in these new applications have opened up new avenues of research on oxide catalysis. On the other hand, removal of pollutants presents a whole new class of catalytic reactions for which metal oxides are or can be used.

This special issue of Catalysis Today is based on a Symposium entitled “Catalysis and Photocatalysis on Metal Oxides,” which was sponsored by the Colloid and Surface Chemistry Division of the American Chemical Society in August 1995. The goal of the symposium was to facilitate exchange of ideas and new information relevant to the understanding and application of oxide catalysis. We hope this special issue will provide an overview of some of the new developments in the area of oxide catalysis and help formulate new directions for research.

Based on the scientific content of the contributions, the papers are divided into three sections according to the reactions catalyzed by the oxides. Transcending these sections, and for that matter, individual papers, are results and concepts that deal with preparations and characterization. Seeking the structure-property relationship emerges as an underlying theme throughout the volume. The first section deals with partial oxidation of hydrocarbons, which continues to be one of the most important application areas of oxide catalysis. Current interest on selective oxidation of alkanes is clearly reflected by the number of papers that address this issue. The second section is on photocatalysis and environmental catalysis.  $\text{NO}_x$  abatement continues to be a topic of strong interest. The third section includes papers that deal with the surface chemistry related to oxide catalysis and other applications. One topic which has not been emphasized in the symposium and hence, in this issue is the acid/base catalysis by oxides because of other recent forums which have addressed this area.

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sure the quality and novelty of the contributions. We also express our gratitude to the Division of Colloid and Surface Chemistry of the American Chemical Society for sponsoring the Symposium on which this issue is based.

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