

Foreword

Fundamentals and applications to environmental problems

The Sixth Italian Seminar on Catalysis was organized by Gruppo Interdivisionale di Catalisi (GIC) of the Italian Chemical Society (SCI) and it was focused on fundamental topics in catalysis and their application to the solution of environmental issues. GIC decided to dedicate the Italian Seminar to *Giacomo Fauser*, a prominent scientist who developed the Fauser–Montecatini ammonia process and contributed to the development of several other processes for production of ammonium sulfate, nitric acid, urea, methanol and acetylene.

The present issue collects some papers derived from the lectures given at the seminar. The first paper illustrates the concept of green chemistry, by giving specific applications of heterogeneous and homogeneous catalysis connected with the topic. The following papers constitute a section which deals with fundamental concepts of catalysis: catalyst synthesis and application to mesoporous materials; mass and heat transfer phenomena; chemical kinetics applied to catalytic combustion and experimental methods applied to environmental catalysis. Catalyst characterization is addressed in the following section, with contributions on various spectroscopies, electron microscopy and temperature-programmed methods. The last papers deal with some of the main applications of environmental catalysis, such as pollution abatement from auto-engine exhausts, lean deNO_x and catalytic wet oxidation. It also addresses the topics related to the impact of catalysis on fuel reformulation.

Although far from being exhaustive, we hope that this issue can give an overview of some basics of catalysis and their relationships to some environmental

issues, and that it will stimulate a thorough examination of the topics presented.

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