

Preface

This issue of *Catalysis Today* contains selected Proceedings of the Eighth International Conference on Carbon Dioxide Utilization (ICCDU-VIII), which was held 20–23 June, 2005, at the University of Oslo, Oslo, Norway. The 2005 edition of the only international event dedicated to the *chemistry* of carbon dioxide attracted 95 participants from 24 different countries. The program included 4 Plenary Lectures, 14 Invited Lectures, 28 Oral Contributions, and 53 Poster Presentations, and included the topics photo- and electro-catalysis, biomass and biology of CO₂, separation and storage, chemistry in supercritical CO₂ and other alternative media, and homogeneous and heterogeneous catalysis. The scientific breadth of this conference is unique, and the interactions between scientists from the various branches of chemistry lead to new insights.

The need for and importance of this conference seems to grow by the day. Because of the position of CO₂ as the primary Greenhouse Gas and the implications of its emissions on the problem of climate change, a forum for the presentation and discussion of the state-of-the-art in CO₂ chemistry is essential. Advances in the chemistry of CO₂ will be a necessary part of any new, more cost-effective technologies for the separation and disposal of the large amounts generated CO₂. Additionally, and at least as important, CO₂ is a “green” feedstock and solvent in its own right. Thus, a large portion of the conference addressed the production of value-added chemicals from CO₂, as a “green” replacement for more environmentally hazardous substances such as phosgene, or the use of CO₂ as a solvent, whether as supercritical-CO₂ or as an additive (CO₂-expanded solvents) to facilitate for example separations in process chemistry. While these “green” aspects of CO₂ will provide minor, yet significant, contributions to the greater goal of CO₂ sequestration, CO₂ is and will continue to be a very important molecule for the development of sustainable chemistry.

Since CO₂ is a very stable molecule, catalysts are in general required to overcome the kinetic barriers which face the utilization of CO₂ as a feedstock, which brings us to the focus of this issue of *Catalysis Today*. The 39 papers contained herein are a sampling of the current state-of-the-art of catalysis in CO₂ utilization. While the majority of papers regard the synthesis of carbonates and the dry reforming of alkanes, there are quality contributions on a number of other

exciting areas. Because of this focus on catalysis, the other, non-catalytic topics covered at ICCDU-VIII unfortunately could not be included in this issue. This includes contributions on the enhancement of CO₂ uptake by bacteria, the thermodynamics of CO₂, and modelling studies of CO₂ absorption, among others.

This issue of *Catalysis Today* is dedicated to Professor Michele Aresta, of the University of Bari, Italy, on the occasion of his 65th birthday, which he celebrated shortly before the opening of the conference. For more than 30 years, since his discovery of a Ni complex of CO₂ (J. Chem. Soc. Chem. Commun. 1975, 636), Professor Aresta has been a passionate proponent of the importance of CO₂ chemistry. He is both the founder and the Permanent Secretary of the International Scientific Committee of the ICCDU conferences. The state-of-the-art chemistry reflected in these pages is a direct result of his tireless energy, boundless enthusiasm, and endless perseverance.

Finally, I would like to acknowledge the Norwegian Research Council and the companies Alstom, Hydro, and Statoil for their financial contributions to the conference. I would also like to thank the other members of the Organizing Committee for their hard work before and during the conference. Ultimately, a conference is judged on the quality of the science presented by the attendees. In this aspect I feel ICCDU-VIII was extremely successful, and I would like to thank all the participants, not only for their excellent contributions during the conference, but also their work in submitting papers to these Proceedings and during the peer review of the manuscripts. I would also like to thank my colleagues, especially Drs. Michael Stöcker and Richard Blom, for their encouragement and support in the preparation of this issue of *Catalysis Today*. I hope that the readers find this issue both informative and inspirational.

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