

## Preface

### Catalytic combustion

The papers published in this issue are selected from those presented at the Fourth International Workshop on Catalytic Combustion, which was held in San Diego, CA, April 14–16, 1999. Co-organizers of the Workshop included Jon McCarty of Catalytica Combustion Systems, James J. Spivey of Research Triangle Institute, Jacques St. Just of Gaz de France, and Koichi Eguchi of Kyushu University. Earlier Workshops were held in Amsterdam (1996), Tokyo (1994) and Menlo Park, CA (1992), with the most recent two of these being the subjects of *Catalysis Today* issues (J.W. Geus (Ed.), Vol. 47, January 1, 1999; H. Arai (Ed.), Vol. 45, 1995).

The Workshop, and the papers presented here, focus on the use of catalytic combustion as a means of reducing NO<sub>x</sub> emissions. The principle target for application of this technology has been gas turbine burners in power generation systems. The driving force for the development of this technology is based on two strategic factors: (1) the economic incentive to add incremental generation capacity with gas turbines

(as opposed to other alternatives), and (2) the need to meet increasingly stringent NO<sub>x</sub> regulations in densely populated areas where new capacity is most often needed. Despite recent advances in non-catalytic approaches to meet NO<sub>x</sub> emission limits, development of catalytic combustion systems for gas turbines is proceeding from laboratory and bench-scale exploration to pilot and commercial-scale testing.

Papers published here include fundamental research, applied research with new materials and design concepts, verification of combustor modeling, and extended testing at industrially relevant conditions. It is our hope that the information presented in this issue of *Catalysis Today* will be helpful in overcoming the remaining challenges that must be met before full-scale catalytic combustion systems become commercially accepted.

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