

Foreword

The first meeting in the new millennium of the North American Catalysis Society (17th NACS 2001: Horizons of Catalysis) was held in July 2001 at the Harbour Castle Westin Hotel, located on the scenic shores of Lake Ontario in Canada's most vibrant city, Toronto, Ontario. Attendance was at an all-time high of 1113, of which more than 700 were full registrants and about 150 were students.

For the first time in the history of the NACS Meetings, Membrane Reactors and Catalysis for Fuel Cells were included in the technical program as separate sessions. Their inclusion strongly indicates that these emerging and enabling technologies must be combined with catalysis to achieve commercial realization.

The keynotes of the session on Membrane Reactors highlighted the use of zeolite membranes for integration of reaction and separation (Santamaria, University of Zaragoza, Spain) and ionic oxygen transport membrane (OTM) for syngas production (Mazanec, BP, USA). OTM membranes have gained very substantial industrial interest and funding, and these membranes appear to be close to commercialization. The expected economic advantage of the OTM syngas process might be greater than 35% compared with the best conventional process. Fifteen papers including posters were presented of which four are included in this volume covering a small sample of topics discussed in the session. Reactors with hydrogen permselective membranes applied to various catalytic processes dominated the program.

The Catalysis for Fuel Cells session attracted 26 presentations including posters. Oral presentations were grouped into low temperature and high temperature fuel cells systems.

The keynotes introduced catalysis for low temperature fuel cells (Ralph, Johnson Matthey, Berkshire, UK), catalytic generation of hydrogen for the solid polymer membrane fuel cell (Farrauto, Engelhard, NJ) and development of anodes for direct oxidation of hydrocarbon fuels (Gorte, University of Pennsylvania, USA). This volume includes six papers from that session giving again rather small sample of all the topics discussed.

Hopefully after the debut during the 17th NACS the Catalysis in Membrane Reactors and the Catalysis For Fuel Cells will become important topical sessions at the 18th NACS Meeting in Cancun, Mexico, 2003.

We wish to thank the authors for their contributions and the reviewers for their efforts which have made this special issue possible.

Jan Galuszka
*CANMET Energy Technology Centre
Natural Resources Canada, 1 Haanel Drive
Ottawa, Ont., Canada K1A 1M1*
Tel.: +1-613-995-1585; fax: +1-613-996-9400
E-mail address: galuszka@nrcan.gc.ca
(J. Galuszka)

Brant Peppley
*Department of Chemistry and Chemical Engineering
Royal Military College of Canada P.O. Box 17000
Station Forces Kingston, ON K7K 7B4 Canada*
Tel.: +1-613-541-6000; fax: +1-613-542-9489
E-mail address: peppley-b@rmc.ca