

Preface

The first *International Symposium on Niobium Compounds* was held from November 19 to 20 in Tokyo, Japan. The proceedings were published in *Catalysis Today* (Vol. 16, Nos. 3–4, 1993). The title of the issue was “Preparation, Physico-Chemical Properties and Catalytic Activities of Niobium Materials”.

In this issue of *Catalysis Today* the proceedings of the *Second International Symposium on Niobium Compounds*, held in Tokyo (July 24–25, 1995), are published. The symposium was held under the auspices of the Catalysis Society of Japan, the Surface Science Society of Japan, the Japan Petroleum Institute, and the Chemical Society of Japan, and with financial support of the Nissho Iwai Co. and CBMM. The Organizing Committee and International Advisory Board were made up as follows.

Organizing Committee: Prof. K. Tanabe, Hokkaido University (Chairman); Prof. A. Morikawa, Tokyo Institute of Technology (Secretary); Prof. K. Domen, Tokyo Institute of Technology; Prof. Y. Iwasawa, University of Tokyo; Prof. E. Kikuchi, Waseda University; Prof. S. Okazaki, Ibaraki University; Dr. Y. Sugi, National Institute of Materials and Chemical Research; Prof. T. Uchijima, Tsukuba University; Prof. S. Yoshida, Kyoto University.

International Advisory Board: Prof. E.I. Ko, Carnegie Mellon University; Prof. J.R.H. Ross, University of Limerick; Prof. M. Schmal, Federal University, Rio de Janeiro; Prof. I.E. Wachs, Lehigh University.

During the symposium, research results on pronounced promotor effects and support effects

of niobium materials and the application of hydrated niobium oxide (niobic acid) and niobium phosphate as solid acid catalysts were presented. Several interesting and important papers dealing with new preparation and new characterization methods of niobium compounds were presented. Some papers which have elucidated the active species advance our fundamental knowledge of catalysis by niobium materials.

The use of more than 30 types of niobium containing catalysts is described: oxides, hydrated oxides, mixed oxides, phosphates, sulfides, layer compounds, metals or other oxides supported on niobium oxide, niobium oxide supported on other oxides or a metal, etc. The catalytic reactions employed are dehydration, alkylation, dehydrogenation, hydrogenation, hydrogenolysis, hydrotreating reactions (HDS, HDN), hydroformylation, oxidation, oxidative dehydrogenation, decomposition, denitration, MIBK synthesis, gas sensing reactions, and redox reactions. Four plenary lectures were presented by Prof. Y. Iwasawa, Prof. M. Schmal, Prof. T. Uchijima, and Dr. J.C. Vedrine. Three invited lectures from the industry were delivered by Dr. Y. Higashio, Dr. T. Ushikubo, and Dr. J.G. Weissman.

I would like to thank all the contributors to this special issue of *Catalysis Today*, and I hope that the material presented in this issue will stimulate the further development of niobium catalysis science and its industrial applications.

Kozo Tanabe