Preface

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The Seventh Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT7) was held from June 1 to 6, 2014 in Kyoto, Japan. This is the most recent in a series of international conferences organized by the Catalysis Society of Japan as a continuation of TOCAT (1990), TOCAT2 (1994), TOCAT3 (1998), TOCAT4 (2002), TOCAT5 (2006) and TOCAT6/APCAT5 (2010). The past six TOCAT conferences have earned a good reputation as international conferences on catalysis that significantly filled the gap between research and technology in catalysis. The conference was organized by Prof. Koichi Eguchi as a chairman, Prof. Hiromi Yamashita as a secretary, Prof. Tsunehiro Tanaka as a treasurer, Prof. Masato Machida as a chair of program & publication, and other professors mainly in Kyoto University and Osaka University. The number of submitted abstracts was 827 from 40 countries; 36 % from Japan, 38 % from Asia, 17 % from Europe, with the other 9 % from Russia, Latin America, Australia, North America, and Africa. Although 508 papers were submitted as candidates for oral presentation, because of the limited time available only 198 papers (39 %) were accepted as oral presentations after peer review. There were 859 poster presentations presented during 3 days (June 2–4). The total number of 979

participants, including 315 students, is the biggest among the series of TOCAT conferences. The detailed results of the conference can be found by following this URL: <http://www.shokubai.org/tocat7/index.html>.

The conference was opened on June 1 with the plenary lecture entitled “Role of Catalysis in Sustainable Petrochemical Production” by Prof. Takashi Tatsumi (Tokyo Institute of Technology), and the following plenary lectures were presented: “Catalysis - Enabler for Sustainability” by Dr. Ulrich Muller (BASF SE), “Amine-Modified Silicates as Sorbents, Supports and Catalysts” by Prof. Christopher Jones (Georgia Institute of Technology), “Catalysts’ Contribution for the Realization of Green Sustainable Society in 21st Century” by Dr. Tohru Setoyama (Mitsubishi Chemical Corporation), “Nanocarbons for the Development of Advanced Catalysts” by Prof. Gabriele Centi (University of Messina), “Simulation of Catalyzed Urethane Polymerization—An Approach to Expedite Commercialization of Bio-Based Materials” by Prof. Galen J. Suppes (Missouri-Columbia University), “Fundamental Understanding of Photocatalysis for Solar Fuels Production” by Prof. Can Li (Dalian Institute Chemical Physics), and “Recent Progress on Automotive Catalysts” by Dr. Hirohito Hirata (Toyota Motor Corporation). The 24 invited lectures were given by Prof. Wha-Seung Ahn (Inha University), Prof. Robert J. Davis (University of Virginia), Prof. Maria Flytzani-Stephanopoulos (Tufts University), Dr. Yuuichirou Fujiyama (JX Nippon Oil & Energy Corporation), Prof. Atsushi Fukuoka (Hokkaido University), Dr. Philip Gibson (Sasol), Prof. Michikazu Hara (Tokyo Institute of Technology), Dr. Matthew Humphrys (Johnson Matthey), Prof. Graham Hutchings (Cardiff University), Prof. Masami Kamigaito (Nagoya University), Dr. Hong-Xin Li (Zeolyst International), Prof. Zhongmin Liu (Dalian Institute of Chemical Physics), Prof. Kazuhiko Maeda

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(Tokyo Institute of Technology), Prof. Manos Mavrikakis (University of Wisconsin - Madison), Prof. Chung-Yuan Mou (National Taiwan University), Dr. Mark Newton (ESRF), Prof. Yong-Ki Park (Korea Research Institute of Chemical Technology (KRICT)), Dr. Charles H. F. Peden (Pacific Northwest National Laboratory), Prof. Javier Pérez-Ramírez (ETH Zurich), Dr. Heinz Robota (Velocys), Dr. Ken Suzuki (Asahi Kasei Chemicals Corporation), Dr. Hiroshi Toshima (Albemarle), Prof. Tatsuya Tsukuda (The University of Tokyo), and Prof. Ning Yan (National University of Singapore).

The aim of this conference was to exchange new ideas and technologies and promote development of outstanding new catalysts and systems as urgently demanded in industry and for a sustainable society. Since one of the unique feature of this conference is to foster closer ties between academia and industry, there were industrial sessions and general sessions on the following topics: Emission control, Green and sustainable processes, Petroleum refining and petrochemicals, Fine and chiral synthesis, and Polymerization as industrial sessions; and New concepts for catalysis, Advanced materials for catalysis, Fundamentals and characterization, Green and sustainable catalysis, Environmental catalysis, Catalysis in energy conversion, Biocatalysis, Photocatalysis, Solid acids and

bases, Selective oxidation, Organometallic catalysis, and Reactor engineering as general sessions. To encourage young researchers in the field of catalysis, the 30 best poster presenters were commended by a Best Poster Award from ACS Catalysis.

These symposia either preceded or followed TOCAT7: the “International Symposium on Catalysis for Renewable Chemicals” (May 29–31, 2014) was organized by Prof. Atsushi Fukuoka in Shiretoko, Hokkaido; the “International Symposium on Recent Advances in Environmental Catalysis “ (May 29–31, 2014) was organized by Prof. Yoshitake Teraoka in Fukuoka and “Catalysis Symposium on Green and Sustainable Chemistry” (June 7–8, 2014) was organized by Prof. Masahiko Matsukata in Tokyo.

Some of the speakers of plenary lecturers and invited lecturers from TOCAT7 contributed review articles to *Catalysis Surveys from Asia*. They are original reviews – not conference proceedings - though a part of these reviews are based on matters discussed in TOCAT7. These review articles on surveys of recent progress and activities in catalytic science and technology in the world are published in this and the next issues. I want to take this opportunity to extend my appreciation to the authors for submitting such excellent articles.