

Preface

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The Tokyo Conference on Advanced Catalytic Science and Technology (TOCAT) has been held every 4 years in Japan from 1990 to 2014. As a continuation of the past six TOCAT conferences [TOCAT (1990), TOCAT2 (1994), TOCAT3 (1998), TOCAT4 (2002), TOCAT5 (2006), and TOCAT6/APCAT5 (2010)], the 7th TOCAT (TOCAT7) was held from June 1 to 6, 2014 in Kyoto, Japan. So far, TOCAT conferences, organized by the Catalysis Society of Japan, have earned a good reputation as a new series of international conferences on catalysis that has significantly filled the gap between research and technology in catalysis. The main concepts of TOCAT7 are to stimulate closer ties between academia and industry and encourage young researchers in the field of catalysis. The TOCAT7 conference provided a platform where researchers and scientists were able to exchange innovative ideas on the most advanced and novel scientific findings and technological developments in the field of catalysis. The general session of the conference included 12 key topics: (1) new concepts for catalysis, (2) advanced materials for catalysis, (3) fundamentals and characterization, (4) green and sustainable catalysis, (5) environmental catalysis, (6) catalysis in energy conversion, (7) biocatalysis, (8) photocatalysis, (9) solid acids and bases, (10) selective oxidation, (11) organometallic catalysis, and (12) reactor engineering, while the industrial session included six key topics: (1) introduction of recently developed and/or commercialized industrial catalysts and processes, (2) emission control, (3)

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green and sustainable processes, (4) petroleum refining and petrochemicals, (5) fine and chiral synthesis, and (6) polymerization.

Among the 508 papers submitted as candidates for oral presentation, only 198 papers were accepted by peer review due to the limited time schedule of the conference. The number of poster presentations was 859, and the total number of participants was 979. This special issue of *Research on Chemical Intermediates* consists of manuscripts which were presented as oral presentations at TOCAT7. Here, among the papers accepted as oral presentations, 17 selected and extended papers were accepted and revised, being published in this special issue.

TOCAT7 provided a good chance for scientists not only to communicate new ideas of science and technology in the field of catalysis but also to develop new outstanding catalysts and systems under the scope that catalysis is a highly and eagerly demanded technology in industry and for sustainable society. We would like to express our sincere appreciation to all of the members of the international advisory boards, the national advisory boards, the organizing committee, and the speakers. We are also very grateful to all of the authors who submitted their manuscripts and revisions. Finally, thanks also go to the reviewers, who spent a lot of time reviewing and commenting on all of the manuscripts. We hope that this special issue will be accepted as an original and valuable contribution in the field of catalysis.