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Catalysis Today 43 (1998) 159

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Preface

Advances in catalysis and processes for heavy oil conversion: an introduction

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It has become clear that the crude oils processed at the refineries in the United States, Japan, Europe and China continue to get heavier and higher in sulfur content. For example, the API gravity and the sulfur content of crudes input into the US refineries have declined every year in the past decade. On the other hand, the demand for light distillates and clean transportation fuels is growing worldwide. As a consequence, there is a growing interest in research and development for converting petroleum resids and heavy oils into lower boiling products with lower sulfur content, or into chemical feedstocks and value-added materials.

In order to promote research and development in catalytic upgrading of heavy oils and resids, we organized an International Symposium on Advances in Catalysis and Processes for Heavy Oil Conversion as part of the 213th American Chemical Society (ACS) National Meeting in San Francisco, California, during 13–17 April 1997. This symposium was co-sponsored by the ACS Divisions of Petroleum Chemistry and Fuel Chemistry. It brought together scientists and engineers in many countries who are engaged in research and development in this area. This symposium

covered both fundamental and processing aspects of new developments in catalysis and process technology in the field of heavy oil conversion and resid upgrading including hydrocracking, hydrotreating, catalytic cracking, thermal cracking and other catalytic and thermal conversion schemes.

This special issue of *Catalysis Today* consists of selected papers presented in the seven sessions of the symposium. The papers cover a variety of interesting topics on conversion of heavy oils and resids, including catalysis, reaction chemistry, new analytical methods, new and improved catalytic materials, new concepts, new approaches, process developments, kinetics and thermodynamics, computer modeling, coprocessing of resids with coal, conversion of heavy oils into chemicals and heavy oil stability. All of these papers have been reviewed by two or more referees.

We wish to thank all the people who contributed to the ACS symposium and to this special issue, especially the authors and peer reviewers of the papers. We are also grateful to ACS Divisions of Petroleum Chemistry and Fuel Chemistry for co-sponsoring this symposium and to Elsevier for publishing this special issue.

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