

More than 50 years have passed since the great discoveries of olefin polymerization catalysts by Karl Ziegler and Giulio Natta. Thereafter, the successive developments of process technologies accompanied by catalyst innovations have made polyolefins the most attractive and important polymeric materials for human beings. In spite of the remarkable developments of homogeneous metallocene and post-metallocene catalysts in the recent decades, heterogeneous catalysts including traditional Ziegler-Natta and Phillips catalysts have been keeping or increasing their importance from the view-point of industrial application.

The 5th International Workshop on Heterogeneous Ziegler-Natta Catalysts was successfully held at Japan Advanced Institute of Science and Technology, Ishikawa, from March 18 to 21, 2007 in order to promote more profound understanding on many long standing basic problems as well as further developments in this important field. This workshop has provided a platform for scientists from all over the world, who engage in polyolefin technologies, to meet together and exchange new ideas with their most recent results. The workshop covered the following topics.

- 1) Traditional heterogeneous Ziegler-Natta and Phillips catalysts
- 2) Heterogenized Metallocene and Post-metallocene catalysts

- 3) Structure and properties of polyolefins
- 4) Engineering aspects of olefin polymerization and polyolefin processing

More than 200 scientists and young researchers from academic and industrial institutions of 23 countries attended the Workshop. 49 invited and oral contributions together with 60 posters were presented on the topics mentioned above. This volume is a collection of the most important and excellent contributions for the workshop, which will guide you to the wonderful world of the latest polyolefin technologies.

We would like to thank all those who have contributed to the success of this scientific meeting through their excellent presentations or active participation. Finally, we would like to thank all our sponsors for their generous financial supports.

Another purpose of this workshop was to celebrate the 88 years anniversary of Professor Tominaga Keii's birthday. We just got the sad news of his passed-away on September 20, 2007. The publication of this volume might be the best way to memorize him as a great scientist who had devoted his whole life to the field of polyolefin catalysis.

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Professor Tominaga Keii