

Preface

Process chemistry will be one of the most important sciences in the twenty-first century. It passes the baton in a relay race from discovery of useful new materials to their industrial production. Economic and environmentally benign procedures are essential. Because the stagnation of process chemistry is estimated to cause industrial depression and excessive loss, chemists focus on process chemistry consistently to provide a stimulus by the development of novel and efficient new methods, reactions, and technologies applicable to scalable production.

In December 2015, the International Chemical Congress of Pacific Basin Societies 2015 (Pacifichem 2015) was held in Hawaii, and the symposium “New Horizon of Process Chemistry by Scalable Reactions and Technologies” was convened as one of the technical programs, supported by the Japanese Society for Process Chemistry. A series of interesting lectures by 35 speakers was delivered, and 33 topics were presented at the poster session. Topics of these lectures and presentations included new catalysts, reactions, and methods for the synthesis of functional materials including pharmaceuticals, agrochemicals, chemical raw materials, and other materials oriented toward process chemistry, with green and sustainable chemistry as one of the major topics. Furthermore, various isolation methods including crystallization, development of reactors and equipment, direct observational methods of the progress in reactions, and process design to increase scale were also important topics.

This book is a selection of the above-mentioned presentations; however, it is not a proceedings of the symposium but rather a collection of mini-reviews based on the presentations. Readers will be able to enjoy reading about the latest developments in the field of process chemistry, new methodology intended for process chemistry, and medicinal chemistry.

We hope process chemistry will be more productive and will flourish in the near future.

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New Horizons of Process Chemistry

Scalable Reactions and Technologies

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2017, IX, 285 p. 238 illus., 88 illus. in color., Hardcover

ISBN: 978-981-10-3420-6