Preface to the Special Issue for Multiscale Multiphase Process Engineering (MMPE) 2011

Intrinsic to the production and design of equipment in the field of Chemical Process Engineering is the understanding of multiphase flows. Multiphase flow phenomena such as transport phenomena at material interfaces and the dynamics of material interfaces can be studied either through novel experimental techniques or novel computational fluid dynamics (CFD) algorithms. State-of-the-art multi-scale, hierarchical approaches for understanding multi-phase flow in Chemical Process Engineering have been developed which enable researchers to better understand the interaction of individual scales in multiphase flows.

The 1st International Symposium on Multiscale Multiphase Process Engineering (MMPE) was held in Kanazawa, Japan on 4–7 October, 2011 in order to discuss modern problems related to multiphase process engineering. An important purpose of the MMPE conference was to foster international collaborations amongst the participants. We were delighted to see that over 115 participants from many countries attended the MMPE symposium.

After the MMPE symposium, a call for papers to be submitted to a special issue of *JCEJ*, with the MMPE theme, was made to both conference participants and the readers of *JCEJ*. Thirty-three papers were submitted to this issue for review, and twenty-eight papers were accepted through an iterative peer-review process. We hope that this special issue will provide a great opportunity to discuss issues related to multiscale multiphase process engineering and will be of help in disseminating to researchers the latest knowledge of multiscale multiphase process engineering.

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