This special issue on Advanced Manufacturing Technology contains 29 papers presented at the 5th International Conference on Leading Edge Manufacturing in the 21st Century (LEM21_Osaka) which was held in Osaka University from December 2nd to 4th, 2009. These excellent papers were selected based on the review results among 168 accepted papers from 15 countries.

The objective of the conference of LEM21 is to provide an interdisciplinary forum for the exchange of information in academia and industry on the latest cutting-edge developments in manufacturing. These papers will present a variety of new concepts and innovative developments. We believe that the manufacturing technology plays an important role for supporting the sustainable growth and contributing the human society. In order to enhance our lives and to care the environment, we should challenge in realizing advanced manufacturing technology without interruption.

Finally we would like to express our sincere gratitude to the authors and the anonymous reviewers for their contributions to this special issue.

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