

# PREFACE

Materials science is a discipline dealing with key fields in science and technology that are indispensable for establishing the next generation in our technological society. A synergy effect is expected to be induced by materials integration to develop and produce non-conventional new functions and materials.

Tohoku University has been a leading research and education institution for materials science in the world, and has been awarded Global COE program “Materials Integration” since 2007. The principal research fields of the Global COE are (i) Infrastructural and Bio- materials, (ii) Electronics materials, (iii) Energy and Environmental materials, and (iv) Basic materials science. By integrating these four research fields, the Global COE program intends to develop new materials and new scientific research fields, and to nurture young material researchers for the future. This International Symposium is held to demonstrate the achievement of the Global COE program, in conjunction with the 2nd International Symposium on Advanced Synthesis and Processing Technology for Materials (ASPT2011) and the 8th Materials Science School for Young Scientists (KINKEN-WAKATE 2011).

The 1st International Symposium on Advanced Synthesis and Processing Technology for Materials (ASPT08) was held in Wuhan, China, November 14 to 17, 2008 as the 2nd International Symposium of the Global COE program. KINKEN-WAKATE has been continuously convened annually since 2005 during the periods of the 21st Century COE and the Global COE programs.

Conducting the cutting edge research and nurturing young researchers are inseparable and essential for the Global COE program, and thus this symposium is mainly managed by and for young researchers. The symposium comprises of four keynote lectures by distinguished scholars from the world, and 81 oral and 68 poster presentations by young researchers including 5 from Australia, 20 from China, 5 from Russia and 5 presentations from Singapore. This volume contains 66 papers accepted by a peer review process. The editors would like to express their heartfelt gratitude to all the members of the Local Committee, and to Professor Yibing Cheng, Monash University, Australia, Professor Sam Zhang Shanyong, Nanyang Technological University, Singapore and Professor Marina Kosinova, Nikolaev Institute of Inorganic Chemistry, Siberian Branch of Russian Academy of Sciences, Russia, for their great contributions and assistance in the organization of the symposium.

We hope that this symposium will continue to provide an open forum for the discussion on interdisciplinary aspects of various fields of materials science among young researchers to promote further the “Materials Integration”.

Takashi Goto, Zhengyi Fu and Lianmeng Zhang  
Sendai, 2011

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