
FOREWORD

Special Section on Progress towards System Nanotechnology

Nanotechnology was born in the late 20th century as nanofabrication technology for a driving engine of Moore's law in miniaturization of semiconductor integrated circuits. In 2001, the U.S. National Nanotechnology Initiative (NNI) was launched. Since then, nanotechnology has been considered as common bases of science and technology. New concept or functions of devices have emerged by fusing nanotechnology to other technologies such as electronics, photonics, biotechnology and mechatronics etc. in this decade.

Center for Research and Development Strategy (CRDS), Japan Science and Technology Agency (JST) has reported the future strategy of nanotechnology in Panoramic View of the Nanotechnology/Materials Field in 2013 and 2015. These reports point out that nanotechnology is now transitioning to the next phase, i.e. systematization phase "Systems Nano" from initial progress phase in 2001 "Progress Nano" through fusion phase "Fusion Nano" for the past 10 years.

What is systematization phase? It is a phase to create innovative prototypes, commercial products and industries based on nanotechnology. Nowadays, nanotechnology is considered to be a foundation of innovations to solve wide range of global problems. Here we organize this special section in order to overview this fields and hope to contribute progress of nanotechnology towards innovations.

Finally, I would like to express my sincere thanks to all the authors, reviewers, and the editorial committee members.

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Junichi Takahara (*Member*) received the B.E., M.S. and D.E. degrees in Electrical Engineering from Osaka University, Japan, in 1990, 1992 and 1995, respectively. Since 1995 he has been with department of School of Engineering Science, Osaka University. He is now a professor in Photonics Advanced Research Center (PARC) and Graduate School of Engineering, Osaka University. He is a founder and a representative partner of metalumina LLC since 2014. He is now the chair of the Technical Committee on System Nanotechnology (SNT) in Electronics Society of the IEICE. He is also a member of OSA, JSAP, JPS, IEIJ and the Laser Society of Japan. His current research interests are plasmonics, metamaterials and thermal radiation light source.

