
FOREWORD

Special Section on Innovative Superconducting Devices Based on New Physical Phenomena

It is our great pleasure to have a Special Section entitled “Innovative Superconducting Devices Based on New Physical Phenomena” in IEICE Transactions on Electronics. Recent discovery of new physical phenomena in superconductivity and successive inventions of novel superconducting devices, which include ferromagnetic/superconducting junctions, coherent phase slip devices, reversible logic circuits, nanocryotrons and quantum annealing computers, attract attention of many researchers in the world. Further expansion of the academic field and the creation of new applications are expected by adding the recent innovative results to traditional superconducting electronics. This Special Section is dedicated to review principles of recent new physical phenomena and devices, and also collects the latest results concerning “Innovative Superconducting Devices Based on New Physical Phenomena.” We hope the Special Section enhances the progress of related research fields and opens a new academic research area. Finally, I would like to appreciate this opportunity to the secretary and the guest associate editors for their dedicated activities to complete the Special Section.

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Nobuyuki Yoshikawa (*Member*) received the B.E., M.E., and Ph.D. degrees in electrical and computer engineering from Yokohama National University, Yokohama, Japan, in 1984, 1986, and 1989, respectively. Since 1989, he has been with the Department of Electrical and Computer Engineering, Yokohama National University, where he is currently a Professor. His research interests include superconductive devices and their application in digital and analog circuits. He is also interested in single-electron-tunneling devices, quantum computing devices, and cryo-CMOS devices. Dr. Yoshikawa is a member of the Institute of Electronics, Information and Communication Engineers of Japan, the Japan Society of Applied Physics, the Institute of Electrical Engineering of Japan, and Cryogenics and Superconductivity Society of Japan.

