
FOREWORD

Special Section on Recent Progress in Superconductor Sensors and Detectors for Cutting-Edge Technologies

It is a great pleasure to have a Special Section entitled “Recent Progress in Superconductor Sensors and Detectors for Cutting-Edge Technologies” in IEICE Transactions on Electronics.

Superconductor sensors and detectors show superior performance in sensitivity, resolution, timing jitter, bandwidth, and so on. They are strongly expected to contribute to cutting-edge technologies, such as quantum information, radio astronomy, medical applications, and material analysis.

In this Special Section, two invited papers and one brief paper, which describe superconducting neutron detectors, niobium-based kinetic inductance detectors, and superconducting nanowire single photon detectors, explained the current status and future prospects in their fields. In particular, the invited papers are related to imaging detectors for neutrons and radio-active materials. The brief paper is related to the optical quantum information science.

Finally, I would like to express my great appreciation to all the authors for their submission of interesting papers and thank the editorial committee for their remarkable contribution to this special section. I hope that this special section will provide an opportunity to raise interest in superconductor electronics among many readers.

Editorial Committee of the Special Section on Recent Progress in Superconductor Sensors and Detectors for Cutting-Edge Technologies

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Hiroaki Myoren (*Member*) received the B. E. degree in physical electronics and the M. E. and the D. E. degrees in advanced materials engineering from Hiroshima University in 1985, 1987, and 1992, respectively. In 1989, he joined the Faculty of Engineering, Hiroshima University, as a Research Associate. In 1992, he joined the Research Institute of Electrical Communication, Tohoku University as a Research Associate. He also joined the Low Temperature Division, Faculty of Applied Physics, University of Twente in The Netherlands, in 1996 and 1997, as a Research Fellow. Since 1998, he has been with Department of Electrical and Electronic System, Faculty of Engineering, Saitama University, where he is currently a Professor. His research interests include superconductor devices and their application in digital and analog circuits. Dr. Myoren is a member of the Japan Society of Applied Physics, the Institute of Electronics, Information and Communication Engineers of Japan, the Institute of Electrical Engineering of Japan, and Cryogenics and Superconductivity Society of Japan.

