
FOREWORD

Special Section on Microwave and Millimeter-Wave Technology

Human beings can no longer live without radio waves. After J.C. Maxwell predicted the existence of radio waves and H. Hertz conducted an experiment to verify the existence of these waves, we discovered a radio wave that did not initially exist in the universe, except considerably weak waves in space plasmas, and subsequently developed various radio-wave applications, e.g., wireless communication, broadcasting, remote sensing, material heating, and material processing. Recently, our demand for better use of radio waves has increased to live a more convenient life. In response, a new generation of radio-wave applications, e.g., fifth-generation mobile communication system (5G), Internet of Things (IoT), intelligent transport systems (ITSs), and wireless power transfer (WPT), has emerged. In particular, utilization of microwaves/millimeter waves/terahertz waves is expected. We often hear that the Internet has changed the society. Similarly, new radio-wave applications may change the way how people become as “evolved human beings.”

It is my great honor to announce the publication of the Special Section on Microwave and Millimeter-wave Technology. After careful reviews by the Editorial Committee, ten full papers and one brief paper have been accepted for publication. The topics covered include active and passive devices, antenna beam formation, microwave measurements, and system applications. The Editorial Committee has invited two papers authored by Prof. Takashi Ohira and Dr. Yo Yamaguchi on the microwave and millimeter-wave technologies related to WPT and IoT systems. On behalf of the Editorial Committee, I would like to thank all authors for submitting their manuscripts. I would also like to express my gratitude to the Editorial Committee members who have extensively contributed in editing this Special Section and to all anonymous reviewers for their devoted services. Furthermore, I would specially like to thank the members of the IEICE publication department.

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Naoki Shinohara (*Member*) received the B.E. degree in electronic engineering, the M.E. and Ph.D (Eng.) degrees in electrical engineering from Kyoto University, Japan, in 1991, 1993 and 1996, respectively. He was a research associate in Kyoto University from 1996. From 2010, he has been a professor in Kyoto University. He has been engaged in research on Solar Power Satellite and Microwave Power Transmission system. He is IEEE MTT-S Technical Committee 26 (Wireless Power Transfer and Conversion) chair, IEEE MTT-S Distinguish Microwave Lecturer (DML), IEEE Wireless Power Transfer Conference advisory committee member, URSI Commission D vice chair, international journal of Wireless Power Transfer (Cambridge Press) executive editor, first chair and technical committee member on IEICE Wireless Power Transfer, Japan Society of Electromagnetic Wave Energy Applications (JEMEA) president, Space Solar Power Systems Society board member, Wireless Power Transfer Consortium for Practical Applications (WiPoT) chair, and Wireless Power Management Consortium (WPMc) chair.

