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## FOREWORD

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### Special Section on Recent Advances in Simulation Techniques and Their Applications for Electronics

Computer simulation technology plays a wide variety of roles in modern society. It has become commonplace to conduct virtual experiments using numerical simulations as a preliminary step in manufacturing. In addition to manufacturing, numerical simulations combined with artificial intelligence are actively used to predict social phenomena, such as the recent prediction of the number of people infected with coronavirus. Recently, the concept of “digital twin,” a simulation technology that reproduces a real space in a virtual space and enables various virtual experiments, is also often discussed. In any case, the advancement of computer performance has made it possible, and the future progress will continue unabated.

Planned by the technical committee on Electronics Simulation Technology (EST), this special section is published every other year, and this will be the fifth publication. In addition to one invited paper, five papers and three brief papers were accepted for publication through a rigorous peer review process. The invited paper is about topology optimal design of optical waveguide devices, and the topics of regular and brief papers are as follows: design of a dielectric resonator filter, secondary ripple suppression of a rectifier, stability issue of a DC bus, serial link optimization using machine learning, equivalent circuit parameters for bonding wires, hybrid implicit-explicit single-field FDTD method, and acoustic field analysis using the fast inverse Laplace transform. I hope you enjoy the actual papers in this special section.

Finally, I would like to thank all the authors for their contributions, the reviewers for their appropriate opinions, the editorial board members for their detailed work, the editorial secretary for promoting the hard work of editing, and the secretariat for their support.

#### Special Section Editorial Committee Members

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Jun Shibayama (Hosei Univ.), Guest Editor-in-Chief

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**Jun Shibayama** (*Senior Member*) received his B.E., M.E., and Dr.E. degrees from Hosei University, Tokyo, Japan, in 1993, 1995, and 2001, respectively. In 1995, he joined Opto-Technology Laboratory, Furukawa Electric Co., Ltd., Ichihara, Japan. He became an assistant of Hosei University in 1999, where he has been a professor since 2015. His research interests include the numerical analysis of electromagnetic problems, particularly on optical and terahertz devices, and plasmonics. He received the IEEE Ulrich L. Rohde Innovative Conference Paper Award on Computational Techniques in Electromagnetics in 2017, the Best Paper Award during the International Symposium on Microwave and Optical Technology in 2017, the IEICE Electronics Society Award in 2018, and Session Organizer Award from Photonics and Electromagnetics Research Symposium in 2022. Dr. Shibayama is a senior member of Optica, and a member of IEEE, and ACES.

