FOREWORD

Joint Special Section on Opto-electronics and Communications for Future Optical Network

As the pandemic subsides and life returns to normal, telework and video conferencing are still on the rise. At present, we find ourselves in a stage of exploration, seeking enhanced methods to blend face-to-face interactions with online communication, aiming to achieve optimal efficiency. Compared to pre-pandemic times, information and communication networks play an even bigger role now. This special section is a collection of papers based on presentations from the international conference "Optoelectronics and Communications Conference (OECC)" and the co-located "Photonics in Switching and Computing 2022," which covers the following categories:

O1: Core/Access/Data Center Networks and Subsystems
O2: Transmission Systems and Subsystems
O3: Optical Fibers, Cables and Fiber Devices
O4: Optical Active Devices and Modules
O5: Optical Passive Devices and Modules
P1: Photonic Switching Devices, Systems, and Networks
P2 Photonics for Computing and Deep Learning Applications

This special section includes a total of 5 papers, including 2 excellent invited papers covering the O4, O5, and P1 technical categories. The papers cover topics related to silicon photonics-driven optical interconnects, optical beam steering, wavelength conversion, and holograms.

We would like to express our gratitude to all of the authors who contributed to writing the papers. We would also like to thank the members of the editorial committee and the reviewers for their contributions to the review and editing process. We hope that this special issue will provide readers with insights into the latest trends and future trends in optoelectronics and communication.

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Tetsuya Kawanishi *(Fellow)* received the B.E., M.E., and Ph.D. degrees in electronics from Kyoto University, Kyoto, Japan, in 1992, 1994, and 1997, respectively. From 1994 to 1995, he was with the Production Engineering Laboratory of Panasonic. In 1997, he was with the Venture Business Laboratory, Kyoto University, Kyoto, Japan, where he was engaged in research on electromagnetic scattering and near-field optics. In 1998, he joined the Communications Research Laboratory, Ministry of Posts and Telecommunications (now the National Institute of Information and Communications Technology), Tokyo, Japan. In 2004, he was a Visiting Scholar with the Department of Electrical and Computer Engineering, University of California San Diego, San Diego, CA, USA. Since April 2015, he has been a Professor with Waseda University, Tokyo, Japan. His research interests include high-speed optical modulators and RF photonics.

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