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## FOREWORD

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### Special Section on Progress in Optical Device Technology for Increasing Data Transmission Capacity

With a steady increase in data traffic, research and development for larger transmission capacity have been continuously proceeded and 400-Gb/s optical transceivers are commercialized nowadays. In old days, increasing transmission capacity of an optical transceiver meant increasing operation speed of optical and electrical devices. However, now operation speed of devices is approaching their physical limit so that different approaches such as digital coherent technology, multi-level modulation, and multi-channel integration are actively investigated. The aim of this special section is discovering state-of-the-art optical device and related technologies for increasing data transmission capacity in both short and long distance communication.

After careful reviewing process, this special section consists of 8 full papers (invited papers), which cover various technologies such as silicon photonics, InP-based monolithic integration, multi-level modulation, and module packaging as well as new approaches.

I would like to express my sincere thanks to all the authors for their valuable contributions. I also sincerely appreciate the reviewers and the editorial committee members for their great efforts to publish this special section. I hope that this special section will provide wide information and will contribute to the further progress of optical communication technology in future.

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**Tsuyoshi Yamamoto** (*Member*) received the B.E. and M.E. degrees from Tokyo Institute of Technology, Tokyo, Japan, in 1988 and 1990, respectively. In 1990, he joined Fujitsu Laboratories Ltd., Atsugi, Japan, where he has been engaging in research and development of optical semiconductor devices for optical communication. From October 2000 to October 2001, he was a Guest Scientist at the Heinrich-Herz-Institut für Nachrichtentechnik, Berlin, Germany. He received the Young Researcher's Award from the IEICE in 1997. He was the Chair of Technical Committee on Lasers and Quantum Electronics and the Vice Chair of Photonics Related Technologies Committee Group in IEICE-ES in 2017.

