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## FOREWORD

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### Special Section on Photonic Network Technology for Beyond 5G/6G Era

In the Beyond 5G/6G era, photonic network technology is expected to play a major role as the technological foundation of the advanced information and communication society; it requires ultra-high speed, large capacity, low power consumption, ultra-low latency, high elasticity, and autonomy. In addition, photonic networks are becoming more important in various areas such as core-metro networks, mobile and access networks, submarine cable communications, edge computing, intra-/inter-datacenter networks, and high-performance computing. Innovation in the Beyond 5G/6G era requires accelerating the evolution of technology across photonic networks, including devices, systems, architectures, control/management, and applications. In recent years, research and development of fundamental network technologies have been extensively carried out, e.g., space division multiplexing, open/disaggregated photonic networks, network control and management using machine learning, sensing/power transmission utilizing photonic networks, and high-density optical interconnection.

For this section, we received 5 high-quality papers, and 4 papers were accepted. This includes two invited papers, discussing a recent progress in optical network design/control and optical path routing architecture for beyond 5G/6G era.

The editorial committee members sincerely appreciate all authors and reviewers for their contributions to this special section. We hope that the published studies will promote further advancement of photonic network technologies.

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Hideaki Furukawa (NICT), Guest Editor-in-Chief

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**Hideaki Furukawa** (*Member*) is a Director of Photonic Network Laboratory, Photonic ICT Research Center, National Institute of Information and Communications Technology (NICT). He received Dr. Eng. degree in material and life science from Osaka University and joined NICT in 2005. From 2013 to 2014, He was a Deputy Director of the Ministry of Internal Affairs and Communications, Japan. His research interests include photonic information technology and photonic networks. He was the recipient of the 2013 Young Researcher Award from the Ministry of Education, Culture, Sports, Science and Technology, and the 2015 Ichimura Prize in Science for Excellent Achievement from the New Technology Development Foundation. He is a Member of the Institute of Electrical and Electronics Engineers Communications Society (IEEE ComSoc), the Institute of Electronics, Information and Communication Engineers (IEICE), and the Japan Society of Applied Physics (JSAP).

