
FOREWORD

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

Recent progress of high speed mobile devices, such as smart phones and tablet PCs, and cloud services through data centers are the driving factors of the continuing traffic growth by 30–50% annually and optical communication technologies are contributing to support the traffic growth in the various areas of network, e.g. access networks for mobile backhaul, core network to transport/switch 100 G/400 Gbps/ch large capacity signals, software defined optical networks for more flexible networks and server to server high speed interconnections in data center networks.

On the basis of this background, the 18th Optoelectronics and Communications Conference (OECC 2013) was held in Kyoto, Japan from June 30 to July 4, 2013, co-located with Conference on Laser and Electro-Optics Pacific Rim (CLEO-PR) and Photonics in Switching (PS). The following five categories were covered a wide range of topic to discuss next generation optical communication systems: 1). Access Network, 2) Core Network, 3). Transmission Systems and Their Subsystems, 4) Optical Fibers, Cables and Fiber Devices, and 5). Optical Switching Systems and Related Technologies.

This joint special section with IEICE Transaction on Electronics, is organized to provide an overview of the key topics which were discussed at the CLEO-PR & OECC/PS 2013 from the cutting edge devices, which are covered by IEICE Transaction on Electronics, to Peta-bit scale transmission systems. The special section on communication consists of 5 excellent invited papers which correspond to the above 5 categories, and 8 contributed papers. I would like to appreciate all of the authors for submitting the excellent papers and to reviewers and editorial committee members for their effort on organizing this special section.

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Hiroshi Onaka (Fujitsu), Guest Editor-in-Chief

Hiroshi Onaka (*Fellow*) is a senior director of network product business unit at Fujitsu Limited. He received the B.S. degree in electrical engineering from Kanagawa Institute of Technology, Kanagawa, Japan, in 1982. From 1982 to 1984, he was with the same university as a Research Associate. Since 1985, he has been with Fujitsu Laboratories Ltd., Kawasaki, where he has been engaged in research and development on coherent lightwave transmission, optical wavelength division multiplexing (WDM) transmission systems, and 40 Gbps transmission systems. In 2007, he joined Fujitsu Limited, where he has been engaged in development of digital coherent transmission systems. He received Ph.D. from Osaka University in 2008. In 2013, he received the Sakurai-Kenjiro memorial award from the Optoelectronic Industry and Technology Development Association (OITDA), and the MIC Minister's Award from the Telecommunication Technology Committee (TTC) of Japan. He served as the technical program co-chair of the 18th OptoElectronics and Communications Conference (OECC 2013).

