Front Matter: Volume 10560
Metro and Data Center Optical Networks and Short-Reach Links

Atul K. Srivastava
Madeleine Glick
Youichi Akasaka
Editors

30–31 January 2018
San Francisco, California, United States

Sponsored by
SPIE

Cosponsored by
Corning Incorporated (United States)
NTT Electronics (Japan)

Published by
SPIE

Volume 10560
## Contents

<table>
<thead>
<tr>
<th>SESSION 1</th>
<th>SHORT REACH TRANSMISSION TECHNIQUES</th>
</tr>
</thead>
<tbody>
<tr>
<td>10560 02</td>
<td>The best modulation format for 100G short-reach and metro networks: DMT, PAM-4, CAP, or duobinary? (Invited Paper) [10560-1]</td>
</tr>
<tr>
<td>10560 03</td>
<td>Real-time system based on FPGA for optical communication system (Invited Paper) [10560-2]</td>
</tr>
<tr>
<td>10560 04</td>
<td>DSP technologies in the Stokes vector receivers for short-reach optical transmission systems (Invited Paper) [10560-3]</td>
</tr>
<tr>
<td>10560 06</td>
<td>Experimental investigation of auxiliary management and control channel superimposition for mobile fronthaul in DWDM-PON system (Invited Paper) [10560-5]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SESSION 2</th>
<th>SHORT REACH NETWORKS I</th>
</tr>
</thead>
<tbody>
<tr>
<td>10560 07</td>
<td>Design and optimization of photonic devices and optical fibers for space-division multiplexing (Invited Paper) [10560-6]</td>
</tr>
<tr>
<td>10560 08</td>
<td>An SOA-integrated EADFB laser for enhancement of modulated light output power and extension of transmission distances (Invited Paper) [10560-7]</td>
</tr>
<tr>
<td>10560 09</td>
<td>Network topology and node connectivity in OPS/OBS photonic switched optical networks [10560-8]</td>
</tr>
<tr>
<td>10560 0A</td>
<td>Impact of number of channels on signal transmission in elastic optical network [10560-9]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SESSION 3</th>
<th>SCALING DATA CENTER OPTICAL INTERCONNECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>10560 0B</td>
<td>Scaling optical interconnects to meet the bandwidth density crunch (Invited Paper) [10560-10]</td>
</tr>
<tr>
<td>10560 0C</td>
<td>Photonic switching platform for datacenters enabling rapid network reconfiguration (Invited Paper) [10560-11]</td>
</tr>
<tr>
<td>10560 0D</td>
<td>Scalable highly flexible WDM switch for ONoC architectures [10560-12]</td>
</tr>
<tr>
<td>10560 0E</td>
<td>High-bandwidth density optically interconnected terabit/s boards (Invited Paper) [10560-13]</td>
</tr>
<tr>
<td>Session</td>
<td>Title</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>4</td>
<td><strong>SHORT REACH NETWORKS II</strong></td>
</tr>
<tr>
<td>10560</td>
<td><strong>Consolidated optical flow switching in cloud data centers (Invited Paper)</strong> [10560-14]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Large-scale optical node architecture enabling spectral-efficiency maximization in ultra-dense WDM networks</strong> [10560-15]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>System and device technologies for coherent optical communications (Invited Paper)</strong> [10560-16]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Using system simulation to evaluate design choices for automotive ethernet over plastic optical fiber</strong> [10560-17]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>DMT visible light communication using commercial RGBA LEDs</strong> [10560-18]</td>
</tr>
<tr>
<td>5</td>
<td><strong>OPTICAL TRANSCEIVERS AND NOVEL TECHNIQUES I</strong></td>
</tr>
<tr>
<td>10560</td>
<td><strong>Optical signal processing using coherent optical frequency combs (Invited Paper)</strong> [10560-19]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Dynamic optical networks based on digital subcarrier multiplexing (Invited Paper)</strong> [10560-22]</td>
</tr>
<tr>
<td>6</td>
<td><strong>OPTICAL TRANSCEIVERS AND NOVEL TECHNIQUES II</strong></td>
</tr>
<tr>
<td>10560</td>
<td><strong>Latest standardization trends for client and networking optical transceivers and its future directions (Invited Paper)</strong> [10560-23]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Demonstration of 153.6-Tbps throughput from 1,536×1,536 optical switch with uniform-loss and cyclic-frequency AWGs (Best Technical Paper Award)</strong> [10560-24]</td>
</tr>
<tr>
<td></td>
<td><strong>POSTER SESSION</strong></td>
</tr>
<tr>
<td>10560</td>
<td><strong>SDN based in-band adaptive coding by distributed pseudonoise preamble detection in optical networks</strong> [10560-28]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Automated design of add/drop equipment and effective wavelength assignment in complex DWDM networks</strong> [10560-29]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Design and fabrication of restricted mode launching device for high-speed multimode fiber link</strong> [10560-30]</td>
</tr>
<tr>
<td>10560</td>
<td><strong>Uplink LTE cascaded priority-based scheduler in IoT and smart grid applications: performance and comparison</strong> [10560-32]</td>
</tr>
</tbody>
</table>
Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Absil, Philippe, 0E
Aldaya, Ivan, 0A
Ali, M. A., 0X
Ban, Yoojin, 0E
Bauwelinck, Johan, 0E
Bianchi, Alberto, 0E
Bogaerts, Lieve, 0E
Calabretta, N., 0B
Cao, Y., 0K
Carpentier, J.-F., 0D
Charbonnier, B., 0D
Chen, Lin, 03
Chen, Ming, 03
Chen, Qinghui, 03
Chiaretti, Guido, 0E
Costa, André A., 0A
De Angelis, Gabriele, 0E
De Heyn, Peter, 0E
Deng, Rui, 03
Djordjevic, Ivan B., 0J, 0T
Fallahpour, A., 0K
Farina, J., 0U
Fujiwara, N., 0B
Fumagalli, Andrea, 0N
Galli, Paola, 0E
Ghilino, Enrico, 0I
Glick, Madeleine, 0F
Gonzalez, Ana Belen, 0E
Guelfenuz de Villota, G., 0B
Hasegawa, Hiroshi, 0G, 0P
Hashimoto, Ryoto, 0G
Hassebo, Ahmed, 0X
Hatai, Ryosuke, 0V
He, Jing, 03
Hirose, Yoshio, 06
Hoshida, Takeshi, 06
Hui, Rongqin, 0N
Hyuga, Satoshi, 0I
Ishigure, Takaaki, 0V
Ishii, H., 0B
Ishimura, Shota, 04
Isono, Hideki, 0D
Juvert Sandez, Joan, 0E
Kagami, Manabu, 0I
Khomchenko, D., 0U
Klamkin, Jonathan, 0H
Kobayashi, W., 0B
Kolike-Akino, Toshiaki, 0H
Kojima, Keisuke, 0H
Le Maître, P., 0D
Lee, Benjamin G., 0C
Leon-Garcia, Alberto, 0F
Li, C., 0B
Li, T., 0B
Lopes, Diogo P., 0E
Marciniak, Malgorzata, 0X
Martínez Vázquez, Rebeca, 0E
Martins, Indayara Bertoldi, 09, 0A
Martins, Yara, 09
Matsuzaki, H., 0B
Miliar, David S., 0H
Miller, Andy, 0E
Mishra, Jitendra K., 07
Mori, Yojiro, 0G, 0P
Nagai, Hiroki, 0P
Nakagawa, Goji, 06
Nakai, Makoto, 0I
Nishimura, Kosuke, 04
Oda, Shoichiro, 06
Ohiso, Y., 0B
Orabchouk, R., 0D
Osellame, Roberto, 0E
Pajovic, Milutin, 0H
Pan, Chao, 07
Pantouvaki, Marianna, 0E
Parsons, Kieran, 0H
Pérez-Sánchez, G., 0A
Peyghambarian, Nasser, 0F
Preve, Giovanni Battista, 0E
Rahman, B.M. A., 07
Rastegarfar, Houman, 0F
Raz, O., 0B
Richards, Dwight, 0I
Richter, A., 0U
Romagnoli, Marco, 0E
Rudge Barbosa, F., 09, 0A
Sano, K., 0B
Sato, Ken-ichi, 0G, 0P
Scarmozzino, Robert, 0I
Serrano Rodrigo, Aina A., 0E
Shi, Jianyang, 02
Shindo, T., 08
Snyder, Bradley, 0E
Sone, Kyosuke, 06
Song, Bowen, 0H
Conference Committee

Symposium Chairs

Connie J. Chang-Hasnain, University of California, Berkeley (United States)
Graham T. Reed, Optoelectronics Research Centre, University of Southampton (United Kingdom)

Symposium Co-chairs

Jean-Emmanuel Broquin, IMEP-LAHC (France)
Shibin Jiang, AdValue Photonics, Inc. (United States)

Program Track Chair

Benjamin B. Dingel, Nasfine Photonics, Inc. (United States)

Conference Chairs

Atul K. Srivastava, NEL America, Inc. (United States)
Madeleine Glick, Massachusetts Institute of Technology (United States)
Youichi Akasaka, Fujitsu Laboratories of America, Inc. (United States)

Conference Program Committee

Philippe P. Absil, IMEC (Belgium)
Shlomi Arnon, Ben-Gurion University of the Negev (Israel)
Kasyapa Balemthery, OFS Optics (India)
Carsten Behrens, University College London (United Kingdom)
Hacene Chaouach, Arista Networks Inc. (United States)
Benjamin B. Dingel, Nasfine Photonics, Inc. (United States)
Ivan B. Djordjevic, The University of Arizona (United States)
Achyut K. Dutta, Banpil Photonics, Inc. (United States)
Mitchell H. Fields, Broadcom Ltd. (United States)
Ronald Freund, Fraunhofer-Institut für Nachrichtentechnik Heinrich-Hertz-Institut (Germany)
Kiyo Ishii, National Institute of Advanced Industrial Science and Technology (Japan)
Hideki Isono, Fujitsu Optical Components Ltd. (Japan)
Hai-Feng Liu, Intel Corporation (United States)
B. Jonathan Luff, Mellanox Technologies, Inc. (United States)
Yojiro Mori, Nagoya University (Japan)
Takahiro Nakamura, Photonics Electronics Technology Research Association (Japan)
Wilfried Noell, SUSS MicroOptics SA (Switzerland)
Bishnu P. Pal, Bennett University (India)
Sebastian Randel, Karlsruhe Institut für Technologie (Germany)
Houman Rastegarfar, College of Optical Sciences, The University of Arizona (United States)
Jacklyn D. Reis, CPqD (Brazil)
Takashi Saida, NTT Photonics Laboratories (Japan)
Payman Samadi, Columbia University (United States)
Michela Svaluto Moreolo, Center Tecnològic de Telecomunicacions de Catalunya (Spain)
Krishna Swaminathan, Intel Corporation (United States)
Idelfonso Tafur Monroy, DTU Fotonik (Denmark)
Takashi Takemoto, Hitachi, Ltd. (Japan)
Werner Weiershausen, Deutsche Telekom AG (Germany)
Jianjun Yu, ZTE USA (United States)

Session Chairs

1  Short Reach Transmission Techniques
   Youichi Akasaka, Fujitsu Laboratories of America, Inc. (United States)
   Ivan B. Djordjevic, The University of Arizona (United States)

2  Short Reach Networks I
   Yu Kurata, NTT Electronics Corporation (United States)
   Benjamin B. Dingel, Nasfine Photonics, Inc. (United States)

3  Scaling Datacenter Optical Interconnects
   Madeleine Glick, Massachusetts Institute of Technology (United States)
   Hideki Isono, Fujitsu Optical Components Ltd. (Japan)

4  Short Reach Networks II
   Philippe P. Absil, IMEC (Belgium)
   Yojiro Mori, Nagoya University (Japan)

5  Optical Transceivers and Novel Techniques I
   Atul K. Srivastava, NEL America, Inc. (United States)
   Jianjun Yu, ZTE USA (United States)

6  Optical Transceivers and Novel Techniques II
   Atul K. Srivastava, NEL America, Inc. (United States)
   Jianjun Yu, ZTE USA (United States)