

04-24-2019

08:00 - 08:30 **Breakfast/Coffee Break** Canyon Ballroom

WA

08:30 - 09:00 **Opening Remarks** Mesa Ballroom

Moderation: C. Sun, CA/US

WB

09:00 - 09:45 **RF/High-Speed Testing I** Mesa Ballroom

Moderation: J. Bovington, CA/US

09:00 - 09:45 **WB1 - Advancements and Challenges for Electrical Interfaces from 56 Gbps to 112 Gbps and Beyond**

M.P. Li, CA/US

09:45 - 10:15 **Coffee Break/Exhibits** Canyon Ballroom

WC

10:15 - 12:00 **RF/High-Speed Testing II** Mesa Ballroom

Moderation: P. Sun, CA/US

10:15 - 10:45 **WC1 - ULTRA-HIGH-SPEED OPTICAL TRANSMITTERS USING DIGITAL-PREPROCESSED ANALOG-MULTIPLEXED DAC**

H. Yamazaki<sup>1</sup>, M. Nagatani<sup>1</sup>, H. Wakita<sup>1</sup>, Y. Ogiso<sup>1</sup>, S. Kanazawa<sup>1</sup>, M. Nakamura<sup>1</sup>, F. Hamaoka<sup>2</sup>, M. Ida<sup>1</sup>, T. Hashimoto<sup>1</sup>, H. Nosaka<sup>1</sup>, Y. Miyamoto<sup>1</sup>; <sup>1</sup>Atsugi, JP, <sup>2</sup>Yokosuka, JP

10:45 - 11:00 **WC2 - A 112 GB/S PAM4 CMOS OPTICAL RECEIVER WITH SUB-PJ/BIT ENERGY EFFICIENCY**

G. Balamurugan<sup>1</sup>, H. Li<sup>1</sup>, M. Sakib<sup>2</sup>, O. Dosunmu<sup>2</sup>, A. Liu<sup>2</sup>, H. Rong<sup>2</sup>, J. Jaussi<sup>1</sup>, B. Casper<sup>1</sup>; <sup>1</sup>Hillsboro, OR/US, <sup>2</sup>Santa Clara, CA/US

11:00 - 11:15 **WC3 - LOW-VOLTAGE 60GB/S NRZ AND 100GB/S PAM4 O-BAND SILICON RING MODULATOR**

Y. Ban<sup>1</sup>, J. Verbist<sup>2</sup>, M. Vanhoecke<sup>2</sup>, J. Bauwelinck<sup>2</sup>, P. Verheyen<sup>1</sup>, S. Lardenois<sup>1</sup>, M. Pantouvaki<sup>1</sup>, J. Van Campenhout<sup>1</sup>; <sup>1</sup>Heverlee, BE, <sup>2</sup>Ghent, BE

11:15 - 11:30 **WC4 - A 50GBIT/S NET ERROR-FREE NRZ 850NM VCSEL BASED OPTICAL INTERCONNECT**

L. Chorchos<sup>1</sup>, N. Ledentsov Jr.<sup>2</sup>, M. Agustin<sup>2</sup>, J. Kropp<sup>2</sup>, V.A. Shchukin<sup>2</sup>, V..P. Kalosha<sup>2</sup>,  
J..P. Turkiewicz<sup>1</sup>, N..N. Ledentsov<sup>2</sup>; <sup>1</sup>Warsaw, PL, <sup>2</sup>Berlin, DE

11:30 - **WC5 - A 4X25-GBPS MONOLITHICALLY INTEGRATED SI PHOTONIC WDM**  
11:45 **TRANSMITTER WITH RING MODULATORS**

M. Kim<sup>1</sup>, K. Park<sup>2</sup>, W. Oh<sup>2</sup>, C. Mai<sup>3</sup>, S. Lischke<sup>3</sup>, L. Zimmermann<sup>3</sup>, W. Choi<sup>1</sup>; <sup>1</sup>Seoul,  
KR, <sup>2</sup>KR, <sup>3</sup>DE

11:45 - **WC6 - NON-LINEAR SYSTEM IDENTIFICATION SCHEME FOR THE DESIGN**  
12:00 **OF EFFICIENT COMPENSATORS AND CALIBRATIONS**

H. Faig<sup>1</sup>, S. Cohen<sup>1</sup>, D. Sadot<sup>1</sup>, L. Gantz<sup>2</sup>; <sup>1</sup>IL, <sup>2</sup>Yokneam, IL

12:00 - 13:30 **Lunch Break (ON OWN)**

WD

13:30 - **RF/High-Speed Testing III** **Mesa Ballroom**  
15:00

Moderation: D. Kuchta, US

13:30 - **WD1 - A 112 Gb/s Optical Link Based on Silicon Photonics and CMOS Electronics**  
14:00

H. Rong<sup>1</sup>, H. Li<sup>2</sup>, G. Balamurugan<sup>2</sup>, M. Sakib<sup>1</sup>, R. Kumar<sup>1</sup>, H. Jayatilleka<sup>1</sup>, O. Dosunmu<sup>1</sup>, A.  
Liu<sup>1</sup>, J. Jaussi<sup>2</sup>, B. Casper<sup>2</sup>; <sup>1</sup>Santa Clara, CA/US, <sup>2</sup>Hillsboro, OR/US

14:00 - **WD2 - SELF-HOMODYNE 16-QAM SCHEME FOR LOW COMPLEXITY 200**  
14:15 **GBPS DATA CENTER INTERCONNECTS**

R. Kamran, S. Naaz, S. Manikandan, S. Goyal, R. Ashok, S. Gupta; Mumbai, IN

14:15 - **WD3 - REAL-TIME DIGITAL SUBCARRIER CROSS-CONNECT BASED ON**  
14:30 **DISTRIBUTED ARITHMETIC DSP ALGORITHM**

T. XU<sup>1</sup>, R. Hui<sup>2</sup>; <sup>1</sup>KS/US, <sup>2</sup>Lawrence, AL/US

14:30 - **WD4 - HIGH-SPEED ATTO-JOULE PER BIT PHOTONIC CRYSTAL**  
15:00 **NANOCAVITY MODULATOR**

E. Li, A. Wang; Corvallis, OR/US

15:00 - 15:30 **Coffee Break/Exhibits**

WE

15:30 - 17:30 **Workshop on 5G** **Mesa Ballroom**

Moderation: S. Lessard, SE  
17:30 - 18:30 **Welcome Reception** **Canyon Ballroom**

04-25-2019

08:00 - **Breakfast/Coffee Break** **Canyon Ballroom**  
08:30

ThA

08:30 - **Novel Developments/Experiments I** **Mesa Ballroom**  
09:15

Moderation: L. Gantz, IL

08:30 - **ThA1 - SCALING SILICON PHOTONICS TRANSCEIVERS FROM 400GBPS TO**  
09:15 **BEYOND 1TBPS ON A 300MM WAFER PLATFORM**

E. Timurdogan, MA/US

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ThB

09:15 - **Novel Developments/Experiments II** **Mesa Ballroom**  
09:45

09:15 - **ThB1 - HIGH-PERFORMANCE SINGLE-MODE POLYMER WAVEGUIDE**  
09:30 **DEVICES FOR CHIP-SCALE OPTICAL INTERCONNECTS**

H. Zuo<sup>1</sup>, S. Yu<sup>1</sup>, X. Wang<sup>2</sup>, J. Liu<sup>2</sup>, X. Sun<sup>3</sup>, T. Gu<sup>4</sup>, J. Hu<sup>1</sup>; <sup>1</sup>Cambridge, MA/US, <sup>2</sup>NH/US, <sup>3</sup>CA/US, <sup>4</sup>MA/US

09:30 - **ThB2 - STATISTICAL BEHAVIORAL MODELS OF SILICON RING**  
09:45 **RESONATORS AT A COMMERCIAL CMOS FOUNDRY**

P. Sun<sup>1</sup>, J. Hulme<sup>1</sup>, T. Van Vaerenbergh<sup>1</sup>, J. Rhim<sup>1</sup>, D. Kielpinski<sup>1</sup>, A. Seyedi<sup>1</sup>, M. Fiorentino<sup>1</sup>, R. Beausoleil<sup>1</sup>, C. Baudot<sup>2</sup>, F. Boeuf<sup>2</sup>, N. Vulliet<sup>2</sup>; <sup>1</sup>Palo Alto, CA/US, <sup>2</sup>Crolles, FR

09:45 - **Coffee Break/Exhibits** **Canyon Ballroom**  
10:15

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ThC

10:15 - **Novel Developments/Experiments III** **Mesa Ballroom**  
12:00

10:15 - **ThC1 - Frequency Stabilized Lasers for Coherent Fiber Interconnects in the Datacenter**  
10:45

D. Blumenthal<sup>1</sup>, H. Ballani<sup>2</sup>, R. Behunin<sup>3</sup>, J.E. Bowers<sup>1</sup>, P. Costa<sup>2</sup>, D. Lenoski<sup>1</sup>, N. McKeown<sup>4</sup>, P. Morton<sup>5</sup>, S.B. Papp<sup>6</sup>, P.T. Rakich<sup>7</sup>; <sup>1</sup>CA/US, <sup>2</sup>GB, <sup>3</sup>AL/US, <sup>4</sup>Stanford, AL/US, <sup>5</sup>West Friendship, MD/US, <sup>6</sup>CO/US, <sup>7</sup>CT/US

10:45 - **ThC2 - SILICON-PLASMONIC ELECTRO-ABSORPTION MODULATOR GATED**  
11:00 **BY HIGH MOBILITY INDIUM OXIDE**

Q. Gao, E. Li, A. Wang; Corvallis, OR/US

11:00 - **ThC3 - A DESIGN STUDY OF EFFICIENCY ENHANCEMENT IN SILICON**  
11:15 **PHOTONIC THERMO-OPTIC PHASE SHIFTERS**

F. Smith<sup>1</sup>, W. Wang<sup>1</sup>, X. Wang<sup>2</sup>, Y. Li<sup>3</sup>, X. Cheng<sup>3</sup>, H. Wu<sup>1</sup>; <sup>1</sup>Rochester,  
NY/US, <sup>2</sup>CN, <sup>3</sup>Shanghai, CN

11:15 - **ThC4 - SILICON MICRORING MODULATOR WITH TRANSPARENT**  
11:30 **CONDUCTIVE OXIDE GATE**

E. Li, B. Ashrafi nia, B. Zhou, A. Wang; Corvallis, OR/US

11:30 - **ThC5 - NOVEL DESIGN FOR SUBTERAHERTZ BANDWIDTH ULTRACOMPACT**  
11:45 **LITHIUM NIOBATE ELECTROOPTIC MODULATORS ON SILICON**

A. Honardoost<sup>1</sup>, F. Arab Juneghani<sup>2</sup>, R. Safian<sup>3</sup>, S. Fathpour<sup>2</sup>; <sup>1</sup>FL/US, <sup>2</sup>Orlando,  
FL/US, <sup>3</sup>Kissimmee, FL/US

11:45 - **ThC6 - A HETEROGENEOUSLY INTEGRATED SILICON PHOTONIC/LINBO3**  
12:00 **ELECTRO-OPTIC MODULATOR**

N. Boynton, H. Cai, M. Gehl, S. Arterburn, C. Dallo, A. Pomerene, A. Starbuck, D. Hood, D.  
Trotter, T. Friedmann, A. Lentine, C. DeRose; NM/US

12:00 - 13:30

**Lunch Break (ON OWN)**

ThD

13:30 - **Hyperscale DC Requirements**  
15:00

**Mesa Ballroom**

Moderation: J. Stewart, US

13:30 - **ThD1 - PARADIGM SHIFT IN INTRA-DCI SIGNALING**  
14:00

R. Motaghian, CA/US

14:00 - **ThD2 - BOARD-LEVEL TRANSCEIVER AND ROUTING TECHNOLOGIES FOR**  
14:30 **CHIP-TO-CHIP OPTICAL INTERCONNECT ARCHITECTURES**

T. Alexoudi, M. Moralis-Pegios, S. Pitris, N. Terzenidis, C. Mitsolidou, N. Pleros; GR

14:30 - 15:00 **ThD3 - DATA CENTER SWITCHING: CHALLENGES AND OPPORTUNITIES**

H. Ballani, GB

15:00 - 15:30 **Coffee Break/Exhibits** **Canyon Ballroom**

ThE

15:30 - 17:30 **Workshop on Co-packaged Optics** **Mesa Ballroom**  
Moderation: K. Schmidtke, CA/US

04-26-2019

08:00 - 08:30 **Breakfast/Coffee Break** **Canyon Ballroom**

FA

08:30 - 09:45 **Topology Optimization Studies & Simulations I** **Mesa Ballroom**  
Moderation: R. McCormick, NM/US

08:30 - 09:15 **FA1 - INTEGRATED PHOTONICS AND THE EVOLUTION OF ELECTRONIC DESIGN AUTOMATION**

M. Youssef, OR/US

09:15 - 09:30 **FA2 - TIME-EFFICIENT PHOTONIC VARIABILITY SIMULATOR FOR UNCERTAINTY QUANTIFICATION OF PHOTONIC INTEGRATED CIRCUIT**

A. James, X. Meng, A. Gazman, N. Janosik, K. Bergman; New York, NY/US

09:30 - 09:45 **FA3 - BEHAVIORAL MODEL OF SILICON PHOTONICS MICRORING WITH UNEQUAL RING AND BUS WIDTHS**

Y. London<sup>1</sup>, T. Van Vaerenbergh<sup>2</sup>, M. Fiorentino<sup>2</sup>, A. Seyed<sup>2</sup>, P. Sun<sup>2</sup>, K. Bergman<sup>3</sup>; <sup>1</sup>NY/US, <sup>2</sup>Palo Alto, CA/US, <sup>3</sup>New York, NY/US

09:45 - 10:15 **Coffee Break/Exhibits** **Canyon Ballroom**

FB

10:15 - 12:00 **Topology Optimization Studies & Simulations II** **Mesa Ballroom**  
Moderation: A. Seyed, CA/US

10:15 - 10:45 **FB1 - The Promise and Perils of Optical Switching within Datacenters**

G. Papen, CA/US

10:45 -  
11:00

**FB2 - ENERGY EFFICIENCY ANALYSIS OF COHERENT LINKS FOR  
DATACENTERS**

T. Hirokawa<sup>1</sup>, S. Pinna<sup>2</sup>, J. Klamkin<sup>1</sup>, J. Buckwalter<sup>1</sup>, C. Schow<sup>3</sup>; <sup>1</sup>Santa Barbara,  
CA/US, <sup>2</sup>CA/US, <sup>3</sup>US

11:00 -  
11:15

**FB3 - ENERGY EFFICIENCY ANALYSIS OF FREQUENCY COMB SOURCES  
FOR SILICON PHOTONIC INTERCONNECTS**

A. Rizzo<sup>1</sup>, Y. London<sup>2</sup>, G. Kurczveil<sup>3</sup>, T. Van Vaerenbergh<sup>3</sup>, M. Fiorentino<sup>3</sup>, A. Seyedi<sup>3</sup>, D.  
Livshits<sup>4</sup>, R. Beausoleil<sup>3</sup>, K. Bergman<sup>2</sup>; <sup>1</sup>Bronx, NY/US, <sup>2</sup>New York, NY/US, <sup>3</sup>Palo Alto,  
CA/US, <sup>4</sup>Dortmund, DE

11:15 -  
11:30

**FB4 - PARAMETERS-INSENSITIVE MODULATOR FOR OPTICAL  
INTERCONNECT SYSTEMS BASED ON DOUBLE INJECTION**

R. Cohen, O. Amrani, S. Ruschin; Tel-Aviv, IL

11:30 -  
12:00

**FB5 - Requirements of Optical Interconnects for Next Generation Data Centers**

Z. Shen, CA/US