

Symposium Program

17th November (Monday)

Welcome Address (10:00-10:05)

Tatsuo Saitoh (*PETRA*)

Session A: Opening (10:05-11:45)

Session Chair: Shinsuke Tanaka (*PETRA, IFINITY*)

10:05 **A-1 (Keynote)**

Progress in Photonic Electronic Convergence Technologies through National Projects in Japan

Nobuhiko Nishiyama (*Institute of Science Tokyo, PETRA*)

10:25 **A-2 (Plenary)**

Silicon Photonic Integrated Circuits with Integrated Lasers

John E. Bowers (*UCSB*)

11:05 **A-3 (Plenary)**

Membrane III-V photonic devices for short distance interconnect applications

Shinji Matsuo (*NTT*)

Lunch break (11:45-13:00)

Session B: Heterogeneous Integration I (13:15-14:30)

Session Chair: Satoshi Iwamoto (*The University of Tokyo*)

13:15 **B-1 (Invited)**

Open Market Heterogeneous III-V/Si PDK for High-Speed Optical Interconnects and LiDAR

Molly Piels (*OpenLight Photonics*)

13:50 **B-2**

Heterogeneously Integrated Platform using InP Chip on SOI Wafer Bonding Technology

Hideki Yagi, Naoki Fujiwara, Naoko Inoue, and Masaki Yanagisawa (*PETRA, SEI*)

14:10 **B-3**

Passive Silicon Building Blocks for III-V/Si Hybrid Coherent Transceivers: Broadband All-Rib PSR and Resonant-Peak-Monitorable Wavelength Filter

Kunimasa Saitoh¹, Takanori Sato¹, Yusuke Sawada², Takuya Mitarai², Takuo Hiratani², Takuya Okimoto², Tsutomu Ishikawa², Naoki Fujiwara², and Hideki Yagi² (¹*Hokkaido University*, ²*PETRA, SEI*)

Coffee Break (14:30-14:45)

Session C: Optical Transceivers and Light Sources (14:45-16:00)

Session Chair: Kunimasa Saitoh (*Hokkaido University*)

14:45 **C-1**

Making WDM colorless: comb-based coherent transmission without demultiplexers

Di Che (*Nokia Bell labs.*)

15:20 **C-2**

Demonstration of novel analog frontend prototypes and outlook for next generation coherent transceiver

Shinsuke Tanaka, Yohei Sobu, Chen Hanwei, Tomoyuki Akiyama, Jun Matsui (*PETRA, IFINITY*)

15:40 **C-3**

Recent Progress on 1.5- μ m InAs Quantum Dots on InP for On-Chip Light Sources and Dispersion-Engineered Photonic Crystal Waveguides

Satoshi Iwamoto, Jinkwan Kwoen, Yasuhiko Arakawa (*The University of Tokyo*)

Coffee Break (16:00-16:15)

Poster Session (16:15-18:15) @Media Hall

Reception (18:30-20:30) @Tsubame Terrace

18th November (Tuesday)

Session D: Computing Architecture and Middleware (10:00-12:30)

Session Chair: Kiyo Ishii (*AIST*) / Takamitsu Shioi (*NEC*)

10:00 **D-1 (Invited)**

Data Management in Edge Computing Environments

Masato Oguchi (*Ochanomizu University*)

10:35 **D-2**

Rethinking Database Architectures in the Era of Ultra-low Latency Networks

Takamitsu Shioi (*NEC*)

10:55 **D-3**

GPU-accelerated Dependency Graph Construction and Conflict Analysis for High-Performance Transaction Processing

Reo Chiyomaru and Jun Miyazaki (*Institute of Science Tokyo*)

Coffee Break (11:15-11:30)

11:30 **D-4**

Immediate Leader Election

Masahiro Tanaka (*Keio University*)

11:50 **D-5**

Developing Distributed and Replicated Indexes over RDMA-Capable Networks

Kento Sugiura and Yoshiharu Ishikawa (*Nagoya University*)

12:10 **D-6**

Adaptive Skew-Aware Distributed Joins leveraging Heavy Hitter Prediction

Makoto Onizuka (*Osaka University*)

Lunch break (12:30-14:00)

Session E: Heterogeneous Integration II (14:00-15:00)

Session Chair: Hideki Yagi (*PETRA, SEI*)

14:00 **E-1**

Heterogeneous integration of III-V membrane on Si platform for modulators and photodetectors

Mitsuru Takenaka (*The University of Tokyo*)

14:20 **E-2**

Low-loss Si waveguide-based magneto-optical isolators

Yuya Shoji (*Institute of Science Tokyo*)

14:40 **E-3**

Signal processing with microresonator frequency comb

Takasumi Tanabe (*Keio University*)

Coffee Break (15:00-15:20)

Session F: Wavelength-Division Multiplexing Networks and Devices (15:20-16:35)

Session Chair: Mitsuru Takenaka (*The University of Tokyo*)

15:20 **F-1**

TBD

Kiyo Ishii (*AIST*)

15:40 **F-2**

Silicon photonic multi-wavelength coherent transmitter using micro-ring modulators

Takuo Tanemura, Shuntaro Maeda (*The University of Tokyo*)

16:00 **F-3 (Invited) Online**

TBD

Nicola Calabretta (*TU/e*)

Closing Address (16:35-16:45)

Kazuhiro Ikeda (*AIST*)