

Symposium Program

26th November (Tuesday)

Welcome Address (10:00-10:05)

Tatsuo Saitoh (*PETRA*)

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

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

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)

High capacity, low power, short reach integrated silicon photonic interconnects
John E. Bowers (*UCSB*)

11:05 A-3 (Plenary)

Mathematical and Information Technologies for the Realization of Cyber-Physical Systems and Their Industrial Applications

Katsuki Fujisawa (*Institute of Science Tokyo*)

11:45-13:00 Lunch break

Session B: Hybrid Integration (13:00-14:30)

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

13:00 B-1 (Invited)

Hybrid Integration of Thin-film Lithium Niobate and Silicon Photonics
Shayan Mookherjea (*UCSD*)

13:35 B-2 (Invited)

Hybrid integrated photonics accelerated by transfer printing
Yasutomo Ota (*Keio University*)

14:10 B-3

InP/Si Heterogeneously Integrated Optical Devices using Chip on Wafer Bonding Process
Hideki Yagi, Naoki Fujiwara, Naoko Inoue, and Masaki Yanagisawa (*PETRA, SEI*)

14:30-15:00 Coffee Break

Session C: Computing Architecture and Middleware (15:00-16:15)

Session Chair: Jun Miyazaki (*Institute of Science Tokyo*) / Yuta Namiki (*NEC*)

15:00 C-1

A High-Performance Database Management System in Ultra-Low Latency Networks: An Overview and Use Cases
Yuta Namiki (*NEC*)

15:20 C-2

Read-Safe Snapshots for Mixed OLTP/OLAP Database Workloads
Jun Miyazaki (*Institute of Science Tokyo*)

15:40 C-3

Join query optimization using cardinality estimation and views
Makoto Onizuka (*Osaka University*)

Poster Session (16:00-18:00)

Reception (18:00-20:00) @Tsubame Terrace

27th November (Wednesday)

Session D: Computing and Optical Networks (10:00-11:50)

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

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

Navigating the Future of Service Providers: A Journey Through Converged Transport Architecture

Rob Piasecki (*Cisco*)

10:35 **D-2 (Invited)**

Programmable Radio Spectrum Space towards Next IoT Era

Shunsuke Saruwatari (*Osaka University*)

11:10 **D-3**

Developing a platform for control and management of multi-degree elastic optical path networks

Kiyo Ishii (*AIST*)

11:30 **D-4**

Low-latency optical communication with microresonator frequency comb as a light source

Takasumi Tanabe (*Keio University*)

11:50-13:00 Lunch break

Session E: Optical Transceivers (13:00-14:50)

Session Chair: Takuo Tanemura (*The University of Tokyo*)

13:00 **E-1 (Invited)**

Ultra-high-density CPO transceivers and its integration technology

Masaki Kato (*Marvell Technology*)

13:35 **E-2 (Invited)**

Electrical and Optical Multiplexing Technique for High Symbol Rate Signal Generation (tentative)

Hiroshi Yamazaki (*NTT*)

14:10 **E-3**

Development of key building blocks for energy-efficient multi-carrier coherent transceiver

Shinsuke Tanaka, Yohei Sobu, Tomoyuki Akiyama, Jun Matsui, Yutaro Enomoto (*PETRA, Fujitsu*)

14:30 **E-4**

Development of 1.5- μm InAs Quantum Dots on InP for On-Chip Light Sources and Design of Photonic Crystal Waveguides with a Large Negative Group Delay Dispersion

Satoshi Iwamoto (*The University of Tokyo*)

Closing Address (14:50-15:00)

Shu Namiki (*AIST*)

Poster session (Tuesday)

- P-01 Self-holding magneto-optical switch integrated on silicon photonic platforms**
Jianping Wang, *Institute of Science Tokyo*
- P-02 All-arsenide InAs Quantum Dots Grown on InP Substrate for Telecommunication Wavelengths**
Jinkwan Kwoen, *The University of Tokyo*
- P-03 High offset tolerance optical fiber to waveguide solution for 3D printed waveguide housing with connector mount**
Titinai Chinggunval, *Shibaura Institute of Technology*
- P-04 Scalable intensity-based photonic matrix-vector multiplication processor**
Rui Tang, *The University of Tokyo*
- P-05 Impacts of top surface roughness of silicon waveguides on TM mode propagation loss**
Tsuyoshi Horikawa, *Institute of Science Tokyo*
- P-06 III-V/Si Hybrid Lasers with Heat Dissipation Structure and Output Facet Formed by Si/SiO₂ Dry Etching Processes**
Hidenari Fujikata, *Photonics Electronics Technology Research Association (PETRA)*
- P-07 TIA-less Optical Power Monitor Using InGaAs/Si Hybrid Phototransistor and On-chip Si Resistor**
Tomohiro Akazawa, *The University of Tokyo*
- P-08 High-Speed and Low-Power Optical DAC Transmitter for Coherent Operation**
Yohei Sobu, *PETRA/Fujitsu*
- P-09 30 W class 1.55 μm wavelength InP-based photonic-crystal surface-emitting lasers**
Shun Kimura, *Transmission Devices Laboratory, Sumitomo Electric Industries, Ltd.*
- P-10 Silicon-Based Multiport All-Optical Mach-Zehnder Interferometer Thermo-Optic Switch**
Zhu Liang, *Institute of Science Tokyo*
- P-11 InP-Si Interlayer Optimization Using GPU-Accelerated CMA-ES**
Hiroya Sakumoto, *The University of Tokyo*
- P-12 Characteristics of Si ring resonator modulator for massive transmittance with SiN microcomb source**
Ryo Sugano, *Keio University*
- P-13 InGaAs-based Plasmonic Photodetector using Ni-InGaAs Alloy**
Kentaro Komatsu, *The University of Tokyo*
- P-14 Effective Evaluation of Si Photonics Components using OFDR**
Shota Nawa, *Yokohama National University*
- P-15 Fabrication of hafnium zirconium oxide waveguides toward nonvolatile optical phase shifter**
Satoshi Fujiya, *The University of Electro-Communications*
- P-16 Non-Volatile Ge₂Sb₂Te₃S₂ Driven Si Microring Resonator Switch for Photonic Matrix Multiplication**
Kenji Kobayashi, *The University of Tokyo*
- P-17 A Consideration on SLG Beam Scanners Insensitive to Ambient Temperature**
Yuki Ozawa, *Yokohama National University*
- P-18 Investigation of unintended phase shift in the routing Si waveguides for 90° optical hybrid**
Takanori Sato, *Hokkaido University*
- P-19 Large Minimum Feature Size High Efficiency Fiber Coupler for Si Photonics**
Naoki Tahara, *Yokohama National University*
- P-20 Direct bonding of various-type InP chips on Si-photonic circuit towards heterogeneously integrated multifunctional devices**
Takehiko Kikuchi, *Photonics Electronics Technology Research Association (PETRA)*
- P-21 Si photonics two-stage mosaic-based 4- λ multiplexer designed by Bayesian direct binary search method**

Yusuke Sawada, *Photonics Electronics Technology Research Association (PETRA)*

P-22 Investigation of stacked one-dimensional moiré photonic crystal cavities

Takahiro Ito, *Keio university*

P-23 Investigation of unidirectional radiation from one-dimensional moire bilayer gratings

Taiyu Okajima, *Keio University*

P-24 Analysis of the Nonlinearity Impairments in SOA-Amplified Coherent Systems

Takuya Okimoto, *The University of Tokyo*

P-25 Numerical Analysis of Multi-Wavelength IQ Optical Modulator with Micro Ring Resonators

Shuntaro Maeda, *The University of Tokyo*

P-26 SiN Wavelength-Selective Optical Switch for High-Power Input

Yoshiki Komatsu, *Yokohama National University*

P-27 Penalty Free and High Spectral Efficiency Silicon Photonics WDM Multiplexer with Wide Frequency Offset Tolerance

Jun Matsui, *Photonics Electronics Technology Research Association*

P-28 Demonstration of a Four-Channel Silicon Photonics-based Phased Array Wavelength-Selective Switch

Yisheng Ni, *Institute of Science Tokyo*

P-29 SiN/Si interlayer coupler for hybrid III-V/Si laser external cavity

Moataz Eissa, *Institute of Science Tokyo*

P-30 Design and evaluation of SiON/Si interlayer coupler toward high efficiency fiber coupler

Yao Kaibin, *Institute of Science Tokyo*

P-31 Improving Wavelength Stability under Long-Time Operation Conditions by Introducing an Athermal One-Chip Wavelength Locker

Junichi Suzuki, *Mitsubishi Electric Corporation*

P-32 Observation of frequency synthetic-dimension band structures in silicon coupled two-ring resonator

Toi Nakama, *Yokohama National University*