Symposium Program
28th November

9:00–9:50  Registration
9:50–10:00  Welcome Address  
S. Tahara (PETRA)

Session A: Opening (10:00–12:00)
10:00–10:30  A–1 (Keynote)
Advances in Photonics and Electronics Convergence System Technology  
Y. Arakawa (Univ. Tokyo)

10:30–11:20  A–2 (Plenary)
Grand Challenges and Timelines for Electronic–Photonic Integration  
L. C. Kimerling (MIT)

11:20–12:00  A–3 (Plenary)
Short Reach Data Link Transmitter Figures of Merit and a Monolithic CMOS Compatible Photonic/Electronic Platform  
D. Gill (IBM)

12:00–13:30  Lunch

13:30–14:10  B–1 (Invited)
InAs Quantum Dot Laser Diodes Grown on on-axis Silicon  
D. Jung (UCSB)

14:10–14:35  B–2
A Chip scale silicon photonics transceiver “Optical I/O core” toward on photonics electronics convergence system  
K. Kurata (PETRA)

14:35–15:00  B–3
Silicon photonics technologies toward WDM-based optical interconnection between CPUs  
Y. Tanaka (PETRA)

15:00–15:25  B–4
Review of a 300mm SOI silicon photonics platform for advanced optical integrated circuits  
T. Mogami (PETRA)

15:25–15:45  Coffee Break

Session C: Silicon Nanophotonics Devices & Systems II (15:45–17:05)
15:45–16:15  C–1 (invited)
Fabrication of Membrane Buried Heterostructure Lasers using InP–based Semiconductor on Insulator Substrate  
S. Matsuo (NTT)

16:15–16:40  C–2
Ge–on–insulator platform for near and mid–infrared integrated photonics  
M. Takenaka (Univ. Tokyo)

16:40–17:05  C–3
Si optical switch for high–speed and polarization–independent operation and QD integration  
K. Utaka (Waseda Univ.)

17:15–19:00  Banquet at ape cucina naturale
## Symposium Program
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### Session D: Silicon Nanophotonics Devices & Systems III (9:30–12:00)

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<tr>
<td>9:30–10:10</td>
<td>D-1</td>
<td>Recent Advances in Silicon Photonics at the University of Southampton</td>
<td>D. Thomson (Univ. of Southampton)</td>
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<tr>
<td>10:10–10:40</td>
<td>D-2</td>
<td>Multimode/single-mode polymer optical waveguide enabling 3-D optical wiring</td>
<td>T. Ishigure (Keio Univ.)</td>
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<tr>
<td>10:40–11:10</td>
<td>D-3</td>
<td>Structure of Cost-effective VCSEL-based Optical Engine using Flexible Printed Circuit</td>
<td>T. Yagisawa (Fujitsu Component)</td>
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### Poster Session (11:10–14:00)

11:10–12:00 
Poster Preview

12:00–14:00 
Poster session with Lunch

### Session E: Silicon Nanophotonics Devices & Systems IV (14:00–15:55)

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<td>14:00–14:40</td>
<td>E-1</td>
<td>Technology trade-offs for integrated silicon photonics based products</td>
<td>P. Dobbelaere (Lunxtera.)</td>
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<tr>
<td>14:40–15:05</td>
<td>E-2</td>
<td>Si waveguide polarization rotator Bragg gratings incorporating resonator cavity section</td>
<td>H. Okayama (OKI)</td>
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<tr>
<td>15:05–15:30</td>
<td>E-3</td>
<td>Low-loss characteristics of a multimode polymer optical circuitat 1.3 μm wavelength on a printed circuit board</td>
<td>T. Amano (AIST)</td>
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<td>15:55–16:05</td>
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<td>Closing address</td>
<td>T. Mori (AIST)</td>
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Poster Session

P-1 Optimization of Optical Coupling to Silica–Cladded Photonic Crystal Waveguides
K. Miyasaka (Yokohama Nat’l Univ.)

P-2 Si Photonic Crystal Slow Light Modulator with Wavy p-n Junction
Y. Terada (Yokohama Nat’l Univ.)

P-3 Design and Characterization of Ge Passive Waveguide Components at 2-μm Band for Mid-Infrared Integrated Photonics
J. Kang (Univ. Tokyo)

P-4 Electro-Optic Phase Matching in Si Photonic Crystal Slow-Light Modulator
Y. Hinakura (Yokohama Nat’l Univ.)

P-5 High Efficiency Lasing Characteristics of Membrane Distributed-Reflector Lasers
T. Hiratani (Tokyo Inst. Tech.)

P-6 On-Chip Optical Correlator using Continuous Delay Scanning in Microring Tunable Delay Line
K. Itagaki (Yokohama Nat’l Univ.)

P-7 High Speed and Highly Efficient Si Optical Modulator with In-Situ B Doped Strained SiGe Layer
J. Fujikata (PETRA)

P-8 Evaluation of Fabrication Variation for Silicon Optical Waveguide Devices
T. Horikawa (AIST)

P-9 Mirror Based Surface Optical I/O Technology for Silicon Photonics with Precise Coupling Angle Controllability
A. Noriki (PETRA)

P-10 Silicon photonics polarization splitting grating coupler for single mode fiber connection
Y. Sobu (PETRA)

P-11 Impact of lateral profile of implanted dopants in interleaved PN junctions on modulation efficiency of Si optical modulator
K. Takeuchi (Univ. Tokyo)

P-12 Fabrication of 16QAM modulator using photonic crystal slow-light phase shifters
K. Hojo (Yokohama Nat’l Univ.)

P-13 Bandwidth Analysis of Lateral–current–injection Membrane DFB Laser by Impedance Measurements
T. Uryu (Tokyo inst. Tech.)

P-14 Polarization Rotating Optical Isolator with TM Mode Nonreciprocal Phase Shift
R. Yamaguchi (Tokyo Inst. Tech.)

P-15 Estimation of modulation efficiency enhancement using an InGaAsP/Si hybrid MOS optical modulator
J. Han (Univ. Tokyo)

P-16 Fabrication and characterization of GaAs pin photodetector array on Si
S. H. Kim (KIST)

P-17 An Investigation on the Waveguide Loss Reduction of Membrane Lasers
T. Tomiyasu (Tokyo Inst. Tech.)

P-18 Monolithically integrated 10 Gbit/s optical link on Si using membrane DFB laser and PIN-photodiode
D. Inoue (Tokyo Inst. Tech.)
P-19
Investigation of Ge thermo-optic switch on the Ge CMOS Photonics platform
T. Fujigaki (Univ. Tokyo)

P-20
Control of Liquid Crystal Orientation by Introducing Groove Array toward Liquid Crystal Hybrid Si Photonic Devices
Y. Atsumi (AIST)

P-21
Room-temperature Continuous-wave Operation of GaInAsP/SOI Hybrid Laser Fabricated by N2 Plasma Activated Bonding
Y. Hayashi (Tokyo Inst. Tech.)

P-22
Silicon-Waveguide Multi-Wavelength Modulator Applying Michelson Interferometer Structure
K. Sekine (Tokyo Inst. Tech.)

P-23
Interlayer Transition Couplers for 3D Optical Circuit
K. Itoh (Tokyo Inst. Tech.)

P-24
Proposal of Non-volatile Optical Memory using Magneto-Optical Effect
T. Murai (Tokyo Inst. Tech.)

P-25
Loss Reduction of Silicon Waveguide Optical Isolator
T. Kobayashi (Tokyo Inst. Tech.)

P-26
Demonstration of a III-V/Si Taper Mode Coupler towards High Efficiency Operation of III-V/Si Active Devices
S. Inoue (Tokyo Inst. Tech.)

P-27
Dynamic Redshift through Free-Carrier Depletion Using pn-Diode-Embedded Photonic Crystal Waveguides
K. Kondo (Yokohama Nat'l Univ.)

P-28
Lasing Operation of GaInAsP/SOI Hybrid Laser with AlInAs-oxide Confinement Structure
J. Suzuki (Tokyo Inst. Tech.)

P-29
Design of a III-V/Si Multi-section Taper Mode Coupler towards High Efficiency Operation of III-V/Si Active Devices
S. Inoue (Tokyo Inst. Tech.)

P-30
Double-slotted high Q photonic crystal nanocavity embedded with low refractive index material
M. Nakadai (Kyoto Univ.)

P-31
Measurement of Carrier Lifetime in a Microcrystalline Silicon Wire Waveguide
Y. Maekawa (Tokyo Inst. Tech.)

P-32
Large Spontaneous Emission Coupling Factor in a Quantum Dot Nanolaser Driven by Cavity Resonant Excitation
Y. Ota (Univ. Tokyo)

P-33
Path-entangled N00N state generation with quantum dots in coupled nanocavities
K. Kamide (Univ. Tokyo)

P-34
Analysis of evanescent-Bloch mode in photonic band gap of 3D photonic crystal
K. Gondaira (Kyoto Univ.)

P-35
High-temperature Operation of a Hybrid Silicon Evanescent Quantum Dot Laser
B. Jang (Univ. Tokyo)

P-36
Optical Properties of GaN Interface-Fluctuation Quantum Dots in Free-Standing AlGaN Membranes
M. Arita (Univ. Tokyo)

P-37
Direct Modulation of Wafer-Bonded Quantum Dot Lasers on Silicon
Y.-H. Jhang (Univ. Tokyo)

P-38
InAs/GaAs Quantum Dots Grown Directly on Unpatterned Si(100) On-Axis Substrates
J. Kwoen (Univ. Tokyo)

P-39
Lasing oscillation in a plasmonic microring resonator embedding self-assembled quantum dots
A. Tamada (Univ. Tokyo)
Improving optical properties of low density InAs/GaAs quantum dots by controlling partial capping temperature
M. Kakuda (Univ. Tokyo)

Nanowire-quantum dot lasers grown on AlGaAs/GaAs distributed Bragg reflectors
J. Tatebayashi (Univ. Tokyo)

Enhancement of Modulation Bandwidth in a Quantum Dot Laser by Thinning Active Layer Thickness
T. Kageyama (Univ. Tokyo)

Packaging of 16ch (4ch x 4) Integrated Light Sources with Laser Diode Arrays on Silicon Platform
M. Nishizawa (PETRA)

A Multi-Channel Light Source on Silicon Substrate by Flip-chip Bonding
N. Hatori (PETRA)

High-speed operation of butt-joint waveguide-type Ge-PD with Lateral PIN Configuration
T. Simoyama (PETRA)

Enhancement and control of biaxial tensile strain of suspended germanium cross-shaped microstructures under low temperature
S. Ishida (Univ. Tokyo)