

Technical Sessions

Tuesday, 27 October

International Conference Room (5F)

9:00-10:45 Session F: Light Sources

Chairs: M. De Micheli, *CNRS*
T. Suhara, *Osaka Univ.*

- F1** **Techniques for optoelectronic performance evaluation in InGaN-based light-emitting diodes (LEDs)** (Invited)
9:00 J.-I. Shim¹, and D.-S. Shin², ¹*Dept. of Electronics, Hanyang University ERICA Campus*, ²*Dept. of Appl. Phys., Hanyang University ERICA Campus*
- F2** **Graphene-covered microfiber for passive mode-locking at 1.55 μm and 2 μm**
9:30 W. Ni, Y. Wang, and S. Yamashita, *The University of Tokyo*
- F3** **Ultraviolet lasing from spherical ZnO microcrystal produced by laser ablation in air**
9:45 D. Nakamura, T. Tanaka, T. Ikebuchi, T. Ueyama, F. Nagasaki, M. Higashihata, H. Ikenoue, and T. Okada, *Kyushu University*
- F4** **Comparative study of five & three quantum wells AlGaInAs/InP mode-locked lasers**
10:00 J. Akbar¹, L. Hou², and A. E. Keely², ¹*Hazara University Mansehra*, ²*University of Glasgow*
- F5** **Large-scale garnet single crystal with high transparency in fiber laser operation wavelength**
10:15 A. Funaki¹, K. Kabayama¹, T. Kizaki¹, G. Villora², and K. Shimamura², ¹*Fujikura Ltd.*, ²*National Institute for Materials Science*
- F6** **DBR laser with over 20nm wavelength tuning range**
10:30 S. Liang, L. Han, L. Qiao, J. Xu, H. Zhu, and W. Wang, *Institute of Semiconductors, Chinese Academy of Sciences*

Break (10:45-11:00)

11:00-12:45 Session G: Waveguide Devices

Chairs: J.-I. Shim, *Hanyang Univ.*
K. Kato, *Kyushu Univ.*

- G1** **Nonlinear integrated optics in proton exchange waveguides on LiNbO₃** (Invited)
11:00 M. De Micheli, *CNRS*
- G2** **Silicon microring resonator-loaded Mach-Zehnder modulator with interleaved pn junction**
11:30 H. Homma, R. Gautam, T. Arakawa, and Y. Kokubun, *Yokohama National University*
- G3** **Novel adjustment structure and method for InP-based Mach-Zehnder interferometer polarization splitter**
11:45 K. Watanabe¹, Y. Nasu², Y. Ohiso¹, and R. Iga¹, ¹*NTT Corporation*
- G4** **Single-trench waveguide TE-TM mode converter for GaInAsP/InP waveguide optical isolator**
12:00 K. Masuyama¹, Y. Shoji², and T. Mizumoto¹, ¹*Graduate School of Science and Engineering, Tokyo Institute of Technology*, ²*Quantum Nanoelectronic Research Center, Tokyo Institute of Technology*

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G5 **GaAsP tunable distributed Bragg reflector laser with ITO thin-film heater**

12:15

M. Uemukai, and T. Suhara, *Osaka University*

G6 **Optical add-drop multiplexer integrating silicon waveguide optical circulators and Bragg reflector**

12:30

K. Kato¹, Y. Shoji², and T. Mizumoto¹, ¹*Dept. of Electrical and Electronic Engineering, Tokyo Institute of Technology*, ²*Quantum Nanoelectronics Research Center, Tokyo Institute of Technology*

Lunch (12:45-13:45)

Room 502/503 (5F) and 5F Lobby

13:45-16:15 **Session H: Poster Session**

Chairs:

K. Hamamoto, *Kyushu Univ.*

S. Iwamoto, *Univ. Tokyo*

(13:45-15:00) Odd numbers: 1st half

(15:00-16:15) Even numbers: 2nd half

H1 **Propagation characteristics for quantized Laguerre-Gauss beams using liquid crystal optical devices**

A. Saito¹, A. Tanabe², M. Kurihara², N. Hashimoto², and K. Ogawa¹, ¹*Japan Women's University*, ²*CITIZEN Holdings Co., Ltd*

H2 **Optical duplicate system for satellite-ground laser communication: reduction of the effects of atmospheric turbulence and simplification of the optical ground station**

T. Nakayama¹, Y. Takayama², C. Fujikawa¹, and K. Kodate³, ¹*Sch. of Eng., Tokai University*, ²*Sch. of Inf. and Telecommunication Eng., Tokai University*, ³*The University of Electro-Communications*

H3 **Influence of slow-light feedback on noise properties of VCSEL with a transverse coupled cavity**

H. Ibrahim^{1,2}, M. Ahmed², and F. Koyama¹, ¹*Tokyo Institute of Technology*, ²*Minia University*

H4 **Coupled-mode analysis of grating-position-shifted cavity-resonator-integrated guided-mode resonance filter**

K. Asai¹, K. Kintaka², J. Inoue¹, and S. Ura¹, ¹*Kyoto Institute of Technology*, ²*National Institute of Advanced Industrial Science and Technology*

H5 **Complex response of cavity resonator integrated guided mode resonance filter**

H. Okuda, J. Inoue, and S. Ura, *Kyoto Institute of Technology*

H6 **Design of efficient photo-elastic modulator using quasi-1D phononic crystal cavity**

I. Kim¹, S. Iwamoto^{1,2}, and Y. Arakawa^{1,2}, ¹*Institute of Industrial Science, University of Tokyo*, ²*Institute for Nano Quantum Information Electronics, University of Tokyo*

H7 **Orbital angular momentum and polarization multiplexing in microholographic recording**

R. Katayama, *Fukuoka Institute of Technology*

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- H8 Numerical simulations on 3D shift multiplexed self-referential holographic data storage: shift multiplexing properties along z-axis**
T. Eto¹, M. Takabayashi¹, A. Okamoto², M. Bunsen³, and T. Okamoto¹, ¹*Kyushu Institute of Technology*, ²*Hokkaido University*, ³*Fukuoka University*
- H9 Plasmonic energy nanofocusing for high-efficiency laser fusion ignition**
K. Tanabe, *Kyoto University*
- H10 Design and characterization of reading glasses with extended-depth-of-field**
S. Furukawa, and S. Komatsu, *Waseda University*
- H11 Femtosecond soliton formation by higher-order soliton compression in linear dispersion decreasing fiber**
S. Md. Salimullah¹, and M. Faisal², ¹*Bangladesh Army International University of Science and Technology*, ²*Bangladesh University of Engineering and Technology*
- H12 Microscopic Raman spectroscopy of graphene enhanced by gold nanoparticles and micro glass bead**
H. Matsumura, S. Yanagiya, H. Kishikawa, and N. Goto, *Tokushima University*
- H13 Electro-optic side-chain polymers containing adamantyl groups and high-hyperpolar chromophores via the Huisgen reaction and their optical properties**
S. Takeuchi¹, A. M. Spring², K. Yamamoto², and S. Yokoyama², ¹*Kyushu University*, ²*Institute for Materials Chemistry and Engineering, Kyushu University*
- H14 Synthesis and characterization of Sb doped ZnO microspheres by pulsed laser ablation**
F. Nagasaki, T. Shimogaki, T. Tanaka, T. Ikebuchi, T. Ueyama, Y. Fujiwara, M. Higashihata, D. Nakamura, and T. Okada, *Kyushu University*
- H15 Detection of high-refractive index media by a surface plasmon sensor using a one-dimensional metal diffraction grating**
S. Mito¹, A. Motogaito^{1,3}, H. Miyake^{2,3}, and K. Hiramatsu^{1,3}, ¹*Graduate School of Engineering, Mie University*, ²*Graduate School of Regional Innovation Studies, Mie University*, ³*The Center of Ultimate Technology on nano-Electronics, Mie University*
- H16 Pulsed oscillation of organic dye VCSEL excited by blue LD**
M. Tanizawa, R. Takahashi, T. Maruyama, and K. Iiyama, *Kanazawa University*
- H17 Novel polymers for polymer light-emitting diodes**
B. Somchob¹, N. Wongsang¹, S. Sahasithiwat², and R. Jitchati¹, ¹*Ubon Ratchathani University*, ²*National Metal and Materials Technology Center*
- H18 Temperature dependent luminescent characteristics of Eu²⁺-doped CaAl₂Si₂O₈ blue phosphor**
J. H. Lee, W. T. Hong, J. Y. Mun, and H. K. Yang, *Pukyong National University*

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- H19 Orange-red light emitting europium doped calcium molybdate phosphor prepared by high energy ball milling method**
W. T. Hong, J. H. Lee, H. I. Jang, S. J. Park, J. S. Joo, and H. K. Yang, *Pukyong National University*
- H20 Foldable and electrically switchable polymer dispersed liquid crystal materials for holographic recording**
W.-C. Su, and K.-T. Kuo, *National Changhua University of Education*
- H21 Effects of deposition temperature on the structural, optical, and electrical properties of hydrogenated of Ga-doped ZnO film**
J.-R. Tsai¹, N.-F. Shih², and R.-H. Yeh¹, ¹*Asia University*, ²*Hsiuping University of Science and Technology*
- H22 EQE response and photovoltaic performance of plasmonic silicon solar cells based on depositing with aluminum, indium, and silver nanoparticles**
C.-H. Hu¹, W.-J. Ho¹, C.-W. Yeh¹, Y.-Y. Lee¹, H.-J. Syu², and C.-F. Lin², ¹*National Taipei University of Technology*, ²*National Taiwan University*
- H23 Dry etching for germanium waveguides by using CHF₃ inductively coupled plasma**
A. S. Idris, H. Jiang, and K. Hamamoto, *Kyushu University*
- H24 Effect of laser exposure condition on formation of holographic memory by angle-multiplexing recording using liquid crystal composites**
A. Ogiwara¹, and M. Watanabe², ¹*Kobe City College of Technology*, ²*Shizuoka University*
- H25 Periodic 3D nanostructuring of optical surfaces by holographic two-photon polymerization**
Y.-H. Lee¹, C.-L. Lin², Y.-J. Liu³, and P. L. Baldeck⁴, ¹*Electrical and Communications Engineering, Feng Chia University*, ²*Central Taiwan University of Science*, ³*Department of Automatic Control Engineering, Feng Chia University*, and ⁴*University Grenoble*
- H26 Effect of polymer concentration on selective reflection spectra in cholesteric liquid crystals**
A. Ogiwara¹, and H. Kakiuchida², ¹*Kobe City College of Technology*, ²*National Institute of Advanced Industrial Science and Technology (AIST)*
- H27 Emission wavelength selection for InGaAs quantum dots by anodic-aluminum-oxide membrane**
T. S. Lay, J. Y. Hsing, K. Y. Chuang, T. E. Tzeng, and K. L. Yang, ¹*National Chung Hsing University*
- H28 Metrology techniques for refractive microlenses and microlens array manufacturing**
M.-S. Kim, L. Allegre, J. Sunarjo, W. Noell, and R. Voelkel, *SUSS MicroOptics SA*
- H29 Improved extension of DOF performance by apodized wavefront coding**
T. Tsukasaki, and S. Komatsu, *Waseda University*
- H30 Development of optical biosensor based on photonic crystal made of TiO₂ using liquid phase deposition**
K. Aono, S. Aki, K. Sueyoshi, H. Hisamoto, and T. Endo, *Osaka Prefecture University*

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- H31 Nanoimprinted two-dimensional photonic crystal for detection of fibrinogen using antigen-antibody reaction**
T. Endo, K. Sueyoshi, and H. Hisamoto, *Osaka Prefecture University*
- H32 Densely multiplexed refractive index biosensors using lateral Bragg gratings on SOI**
M. M. Astudillo¹, H. Takahisa¹, H. Okayama^{1,2}, and H. Nakajima¹, ¹Waseda University, ²Oki Electric Industry Co., Ltd.
- H33 Fabrication of gold-deposited plasmonic crystal based on nanoimprint lithography for label-free biosensing application**
K. Nishiguchi, K. Sueyoshi, H. Hisamoto, and T. Endo, *Osaka Prefecture University*
- H34 Non-overlapping lensless synthetic aperture digital holography**
H. Yoshino, R. Suyama, T. Wakasugi, and S. Komatsu, *Waseda University*
- H35 A novel approach for the high speed 3D measurement using a linescan-based chromatic confocal microscopy**
K. S. Kim, T. Kim, C. Choi, and B. H. Jeon, *Samsung Electronics*
- H36 Reflection-type fiber-optic multimode interference structure with rounded end-face: a temperature-sensing study**
S. Taue, T. Takahashi, and H. Fukano, *Okayama University*
- H37 Virtual interferogram-generation algorithm for phase-shifting digital holography**
J. Nozawa¹, A. Okamoto¹, M. Toda², Y. Kuno², and A. Tomita¹, ¹Hokkaido University, ²Second Production Engineering Development Dept., Aisin Seiki Co., Ltd.
- H38 A fiber Bragg grating temperature sensor using a vertical-cavity surface-emitting laser with temperature stabilization**
T. Yamada, S. Tsuchiya, and T. Mizunami, *Kyushu Institute of Technology*
- H39 One port ring refractive index sensor with attached sub-ring**
H. Takahisa¹, M. Tsutsui¹, M. M. Astudillo¹, H. Okayama^{1,2}, and H. Nakajima¹, ¹Waseda University, ²Oki Electric Industry Co., Ltd.
- H40 Phase distribution measurement based on wavefront correction using tabu search**
N. Yoda, and S. Komatsu, *Waseda University*
- H41 Measurements of fine-particle-size using the image processing of laser diffraction image**
K. Tsubaki, *Toyo University*
- H42 Spectral domain optical coherence tomography with a white light developed for optical device fabrications**
T. Nishi¹, N. Ozaki¹, H. Ohsato², E. Watanabe², N. Ikeda², and Y. Sugimoto², ¹Wakayama University, ²National Institute for Materials Science

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- H43 Liquid analytes filling process in suspended-core silica fibers**
T. Nemecek, M. Komanec, and S. Zvanovec, *Czech Technical University in Prague*
- H44 Low-cost strategy for time delay adjustment of STED microscopy using digital oscilloscope**
G.-J. Choi¹, W.-S. Lee¹, G. Lim¹, H. Moon², Y.-P. Park², and N.-C. Park¹, ¹*Yonsei University*, ²*Center for Information Storage Device, Yonsei University*
- H45 Charged iridium complexes for organic amine sensor application**
W. Sombat, K. Wongkhan, and R. Jitchati, *Ubon Ratchathani University*
- H46 Light field microscope for 3D profile measurement of micro-structured array**
Y. Hu, H. Gao, S. Yuan, and R. Shi, *Beijing Institute of Technology*
- H47 Optimization of diffraction efficiency and coupling efficiency in spatial mode conversion for photonic cross connector**
Y. Zhao¹, A. Okamoto¹, T. Oda¹, A. Tomita¹, M. Bunsen², and S. Honma³, ¹*Hokkaido University*, ²*Fukuoka University*, ³*Yamanashi University*
- H48 Mach-Zehnder interferometer Si structures with weighted sampled grating waveguides featuring FLC cladding**
K. Sakakibara¹, Y. Hayama¹, M. Takeda¹, A. Kato², and K. Nakatsuhara¹, ¹*Kanagawa Institute of Technology*, ²*The National Institute of Advanced Industrial Science and Technology (AIST)*
- H49 Proposal of novel optical mode demultiplexer based on angled-multimode interference (a-MMI) waveguide**
H. Jiang, T. Oiwane, and K. Hamamoto, *Kyushu University*
- H50 Design of optical isolator with strip-loaded waveguide employing nonreciprocal guided-radiation mode conversion**
Y. Okada¹, K. Kobayashi¹, Y. Shoji², T. Mizumoto², and H. Yokoi^{1,3}, ¹*Shibaura Institute of Technology*, ²*Tokyo Institute of Technology*, ³*SIT Research Center for Green Innovation*
- H51 Design criteria for wavelength independent mmi mode converter**
K. Tanabe, Y. Chaen, R. Sakata, R. Tanaka, H. Jiang, and K. Hamamoto, *Kyushu University*
- H52 Preliminarily propagation loss evaluation of core-top etched waveguide for step-core LP₂₁ mode converter**
R. Sakata, K. Tanabe, R. Tanaka, H. Jiang, and K. Hamamoto, *Kyushu University*
- H53 The study of effects of hydrogen loading time to the photosensitivity in optical fiber in term of writing time**
P. Rutthongjan¹, P. Sudwilai¹, and O.-a. Tangmettakitkul², ¹*Thai-Nichi Institute of Technology*, ²*Furukawa FITEL (Thailand) Co., Ltd.*
- H54 Mechanical characteristics of MU-type MCF connector**
K. Sakaime¹, R. Nagase¹, K. Watanabe², and T. Saito², ¹*Chiba Institute of Technology*, ²*Furukawa Electric Co. Ltd*

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- H55 Robust waveguide beam splitter using shortcuts to adiabaticity**
H.-C. Chung¹, R.-D. Wen², X. Chen², and S.-Y. Tseng¹,
¹National Cheng Kung University, ²Shanghai University
- H56 An air-gap wire-grid polarizer with high optical performance in the visible region**
M. Shinkawa, Y. Satoh, and A. Sakai, *Ricoh Company, Ltd.*
- H57 Absorbance-meter constructed by PDMS**
H. Higuchi¹, H. Nomada¹, H. Yoshioka¹, K. Morita², and Y. Oki¹,
¹Kyushu University, ²USHIO Inc.
- H58 Light propagation characteristics in photonic crystal fiber with graded air hole diameters**
H. Yokota, K. Yoneya, K. Higuchi, and Y. Imai, *Ibaraki University*
- H59 A low loss butt-joint connection by using a graded-index photonic crystal fiber**
K. Higuchi, H. Yokota, K. Yoneya, and Y. Imai, *Ibaraki University*
- H60 A stable packaged high-Q microfiber coil resonator**
X.-Y. Lu, and L. A. Wang, *National Taiwan University*
- H61 Fabrication of domain inverted ridge waveguide in ion-sliced LiNbO₃ for wavelength conversion devices**
K. Tanaka, and T. Suhara, *Osaka University*
- H62 Numerical analyses of all-optical retiming switches using quasi-phase matched devices**
Y. Fukuchi, A. Enda, and M. Yamamoto, *Tokyo University of Science*
- H63 Memristive switching in planar devices based on vanadium dioxide thin films using near IR laser pulses**
J. Kim¹, K. Park², S. Jo², B.-J. Kim³, and Y. W. Lee^{1,2},
¹Pukyong National University, ²Interdisciplinary Program of Biomedical Mechanical & Electrical Engineering, Pukyong National University, ³Mobrik Co. Ltd.
- H64 Fast wavelength stabilization of tunable lasers with the internal wavelength locker**
R. Kimura¹, Y. Tatsumoto¹, K. Sakuma¹, H. Onji¹, M. Shimokozono², H. Ishii², and K. Kato¹,
¹Kyushu University, ²NTT Device Technology Laboratories, NTT Corporation
- H65 Dynamic characteristics of all-optical feedforward fast automatic gain control scheme for multicore erbium-doped fiber amplifiers**
K. Kitamura, K. Udagawa, and H. Masuda, *Shimane University*
- H66 Theoretical modelling of photon-photon resonance on active multimode interferometer laser diode toward 40Gbps**
B. Hong¹, M. N. Uddin¹, T. Kitano¹, A. Tajima², H. Jiang¹, and K. Hamamoto¹,
¹Kyushu University, ²NEC corporation
- H67 Wavelength stabilization within 0.05 GHz with photo-mixing technique and laser current controlling**
J. Tsuboi, T. Kuboki, and K. Kato, *Kyushu University*

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- H68 Hybrid thin silicon nitride and electro-optic polymer waveguide modulators**
M. Ishino¹, and S. Yokoyama², ¹*Interdisciplinary Graduate School of Engineering Sciences, Kyushu University*, ²*Institute for Materials Chemistry and Engineering, Kyushu University*
- H69 Characterization of ion implantation quantum well intermixing for carrier confinement of VCSEL**
S. Moriwaki, M. Saitou, S. Kunisada, and T. Miyamoto, *Tokyo Institute of Technology*
- H70 Demonstration of photon-photon resonance peak enhancement by waveguide design modification on active multimode interferometer laser diode**
T. Kitano¹, M. N. Uddin¹, B. Hong¹, A. Tajima², H. Jiang¹, and K. Hamamoto¹, ¹*Kyushu University*, ²*NEC Corp.*
- H71 Emission properties of distributed-feedback plastic waveguide lasers fabricated with imprint lithography**
M. Nakazumi, and K. Yamashita, *Kyoto Institute of Technology*
- H72 Synchronous THz wave combiner consisting of arrayed photomixers**
J. Haruki, K. Sakuma, and K. Kato, *Kyushu University*
- H73 Compact and robust phase stabilization system for high-frequency carrier generation using an integrated lightwave circuit**
Y. Fujimura¹, K. Sakuma¹, S. Takeuchi¹, K. Kato¹, S. Hisatake², and T. Nagatsuma², ¹*Kyushu University*, ²*Osaka University*
- H74 A study of creative solar-light/solar-thermal separator and its energy storage system**
C.-W. Wang, C.-H. Chen, C.-J. Chiou, and T.-Y. Chiu, *National Chung Cheng University*
- H75 Silicon waveguide polarization rotating Bragg grating with chirp, phase shift section or super-structure scheme**
H. Okayama^{1,2}, Y. Onawa^{1,2}, D. Shimura^{1,2}, H. Yaegashi^{1,2}, and H. Sasaki^{1,2}, ¹*Oki Electric Industry Co., Ltd.*, ²*PETRA*
- H76 Reducing coupling loss between a silicon-cored fiber and a silica optical fiber**
J.-H. Chen, Y.-T. Sun, and L. A. Wang, *National Taiwan University*
- H77 Investigating the radiation tolerance of a laser array for an optically reconfigurable gate array**
K. Akagi, and M. Watanabe, *Shizuoka University*
- H78 Gap plasmon excitation into plasmonic waveguide using Si waveguide**
K. Okuda, T. Okamoto, and M. Haraguchi, *Tokushima University*
- H79 Degradation of signal quality due to pump-phase fluctuation on non-degenerated fiber parametric phase-sensitive amplifier repeaters**
Y. Okamura, and A. Takada, *Tokushima University*

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- H80 Influence of chromatic dispersion on optical transmission of 16QAM signals interleaved with reference light**
Y. Okamura¹, N. Ishimura¹, Y. Mitsui¹, M. Hanawa², and A. Takada¹, ¹*Tokushima University*, ²*University of Yamanashi*
- H81 ONU power saving considering sleep period limitation in QoS-aware cyclic sleep control with PI controller**
T. Kikuchi, and R. Kubo, *Keio University*
- H82 Dynamic wavelength allocation technique with multicast-capable AWG router for energy-efficient intra-datacenter networks**
T. Uesugi, and R. Kubo, *Keio University*
- H83 Single-shot detection of spatially quadrature amplitude modulated signals in holographic data storage**
T. Yamamoto, K. Yosidomi, K. Kanno, and M. Bunsen, *Fukuoka University*
- H84 Widening the angle of view in wavefront coding**
Y. Uemura, and S. Komatsu, *Waseda University*
- H85 Compound parabolic concentrator design for RGBW LEDs light mixing**
A.-C. Wei¹, S.-C. Lo¹, P.-F. Hung¹, J.-Y. Lee¹, C.-M. Li², H.-C. Huang², and H.-Y. Yeh², ¹*National Central University*, ²*Atomic Energy Council*
- H86 Wireless power transmission between a NIR VCSEL array and silicon solar cells**
M. Hirota¹, S. Iio¹, Y. Ohta¹, Y. Niwa¹, and T. Miyamoto², ¹*Nissan Motor Co., Ltd.*, ²*Tokyo Institute of Technology*
- H87 Extended depth of field for laser-scanning barcode reader with wavefront coding**
W. Hashimoto, H. Sugita, and S. Komatsu, *Waseda University*
- H88 Plenoptic cameras for imaging through aberrated systems**
H. Al-Ameryeen, J. Arines, and E. Acosta, *University of Santiago de Compostela*
- H89 Information processing by using mutually-coupled optoelectronic systems**
M. Tezuka¹, K. Kanno², and M. Bunsen², ¹*Fukuoka University*, ²*Department of Electronics Engineering and Computer Science, Fukuoka University*

Break (16:15-16:30)

===== **International Conference Room (5F)** =====

16:30-17:30 Micro Concert

===== **5F Lobby** =====

17:30-19:30 Conference Party