Oral presentation

Workshop - Laser integration with Silicon Photonics

Session Chair:Leif Johansson(Freedom Photonics)

Sun. Oct 16, 2022 1:00 PM - 2:30 PM International Conference Hall (3F)

[WS1-01(Workshop)] Hybrid Lasers with Monolithic Integration of InP-based Active Regions and Si Waveguides Using Direct Bonding Technology

*Hideki Yagi[1] （1. Sumitomo Electric Industries (Japan)）

1:00 PM - 1:10 PM

[WS1-02(Workshop)] III-V augmented Silicon photonic integrated circuit technology by bonding and patterning III-V material on the backside of silicon photonic base wafers

*Sylvie Menezo[1] （1. SCINTIL Photonics (France)）

1:10 PM - 1:20 PM

[WS1-03(Workshop)] Prospects on Lasers on Silicon Integration by Heteroepitaxy

*Bei Shi[1] （1. University of California Santa Barbara (United States of America)）

1:20 PM - 1:30 PM

[WS1-04(Workshop)] Laser technology for monolithic CMOS and Silicon Photonics

*Matt Sysak[1] （1. Ayar Labs (United States of America)）

1:30 PM - 1:40 PM

[WS1-05(Workshop)] Extending the wavelength range of lasers on silicon

*Tin Komljenovic[1] （1. Nexus Photonics (United States of America)）

1:40 PM - 1:50 PM

[WS1-06(Workshop)] Development of silicon photonics LiDAR integrated with hybrid tunable laser diode

*Tomohiro Kita[1] （1. Waseda University (Japan)）

1:50 PM - 2:00 PM

[WS1-07] Panel Discussion

2:00 PM - 2:30 PM

Oral presentation

40 Years Anniversary

Session Chair:Yuichi Tohmori(Tsurugi-Photonics Foundation)

Sun. Oct 16, 2022 2:45 PM - 5:30 PM International Conference Hall (3F)

[WS2-02(40 Years)] The First Japan Long Haul Fiber Network was completed in 1985

*Kazuo Hagimoto[1] （1. NICT (Japan)）

2:50 PM - 3:15 PM

[WS2-03(40 Years)] Birth of Single-Mode Diode Laser at Minimal Loss Band

*Yasuharu Suematsu[1] （1. Tokyo Tech (Japan)）

3:15 PM - 3:40 PM

[WS2-04(40 Years)] DFB lasers: From research to development, and further

*Katsuyuki Utaka[1] （1. Waseda University (Japan)）

3:40 PM - 4:05 PM

[WS2-05(40 Years)] Faster and Longer

*Yuzo Yoshikuni[1] （1. Kitasato University (Japan)）

4:15 PM - 4:40 PM

[WS2-06(40 Years)] From coupled cavities to photonic ICs— It didn’ t begin with lasers

*Larry A. Coldren[1] （1. UC-Santa Barbara (United States of America)）

4:40 PM - 5:05 PM

[WS2-07(40 Years)] Tunable lasers from research to volume production – a personal view

*Björn Broberg[1] （1. Altitun and Syntune (Sweden)）

5:05 PM - 5:30 PM

Oral presentation

Optical Communication

Session Chairs: Jonathan Klamkin(UC Santa Barbara), Keita Mochizuki(Mitsubishi Electric Corporation)
Mon. Oct 17, 2022 8:40 AM - 10:20 AM International Conference Hall (3F)

[MA-01(Invited)] Monolithic tunable lasers for digital coherent communications

*Hiroyuki Ishii[1] （1. Furukawa Electric Co., Ltd. (Japan)）

8:40 AM - 9:05 AM

[MA-02] High-Power Single-Mode Operation of 1.3 μm Wavelength Double-Lattice Photonic-Crystal Surface-Emitting Lasers using InP-based Regrowth Process

*Yuhki Itoh[1,2], Naoya Kono [1,2], Kosuke Fujii [1,2], Hiroyuki Yoshinaga [1,2], Naoki Fujiwara [1,2], Makoto Ogasawara [1], Rei Tanaka [1], Hideki Yagi [1], Masaki Yanagisawa [1], Masahiro Yoshida [2], Takuya Inoue [2], Menaka De Zoysa [2], Kenji Ishizaki [2], Susumu Noda [2] （1. Sumitomo Electric Industries (Japan), 2. Kyoto Univ. (Japan)）

9:05 AM - 9:20 AM

[MA-03] Semi-cooled 128-Gbit/s NRZ operation of directly modulated membrane lasers on SiC substrate

*Suguru Yamaoka[1], Nikolaos-Panteleimon Diamantopoulos[1], Hidetaka Nishi[1], Takuro Fujii[1], Koji Takeda[1], Tatsurou Hiraki[1], Shigeru Kanazawa[2], Takaaki Kakitsuka[1], Shinji Matsuo[1] （1. NTT Device Technology Labs (Japan), 2. NTT Device Innovation Center (Japan)）

9:20 AM - 9:35 AM

[MA-04] 128-Gb/s PAM-4 Uncooled (25° C-70° C) Direct Modulation of 1.3-μm DFB BH Lasers

*Kazuki Suga[1], Kouji Nakahara[1], Shigenori Hayakawa[1], Masatoshi Arasawa[1], Ryu Washino[1], Takeshi Kitatani[1], Masatoshi Mitaki[1], Hironori Sakamoto[1], Shigehisa Tanaka[1] （1. Lumentum Japan, Inc. (Japan)）

9:35 AM - 9:50 AM

[MA-05] 56 GBd High Power InP EAM Chip for Hybrid Integration

*Jan Gregor Gatzmann[1], Martin Moehrle[1], Ute Troppenz[1], Ariane Sigmund[1], Martin Schell[1] （1. Fraunhofer Heinrich-Hertz-Instit. (Germany)）

9:50 AM - 10:05 AM

[MA-06] Telecom micro-lasers grown on SOI by lateral epitaxy

*Ying XUE[1], Jie Li[1], Liying Lin[1], Zengshan Xing[1], Kam Sing Wong[1], Kei May Lau[1] （1. HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (Hong Kong)）

10:05 AM - 10:20 AM

Oral presentation

PCSELs and Topological Lasers

Session Chairs: Noriyuki Yokouchi(Furukawa Electric Co., Ltd.), Matthew Dummer(Vixar ams-OSRAM)
Mon. Oct 17, 2022 10:45 AM - 12:50 PM International Conference Hall (3F)

[MB-01(Invited)] Progress of photonic-crystal surface-emitting lasers and their scalability for single-mode operation

*Susumu Noda[1], Takuya Inoue[1], Masahiro Yoshida[1], John Gelleta[1], Kenji Ishizaki[1], Menaka De Zoysa[1] (1. Kyoto University (Japan))

10:45 AM - 11:10 AM

[MB-02] Generation of Various Beam Patterns based on Dually Modulated Photonic-crystal Surface-emitting Lasers

*Ryoichi Sakata[1], Kenji Ishizaki[1], Menaka De Zoysa[1], Takuya Inoue[1], Akira Imamura[2], Hairu Zhao[2], Susumu Noda[1,2] (1. Photonics and Electronics Science and Engineering Center, Kyoto University (Japan), 2. Department of Electronic Science and Engineering, Kyoto University (Japan))

11:10 AM - 11:25 AM

[MB-03] Self-*Q*-switched photonic-crystal lasers with band-edge frequency gradation

*Takuya Inoue[1], Ryohei Morita[1], Kazuki Nigo[1], Masahiro Yoshida[1], Kenji Ishizaki[1], Menaka De Zoysa[1], Susumu Noda[1] (1. Kyoto Univ. (Japan))

11:25 AM - 11:40 AM

[MB-04(Invited)] Semiconductor nanolasers

*Jesper Mørk[1,2], Evangelos Dimopoulos[1,2], Yi Yu[1,2], Meng Xiong[1,2], Aurimas Sakanas[1,2], Andrey Marchevsky[1,2], Marco Saldutti[1,2], Elizaveta Semenova[1,2], Kresten Yvind[1,2] (1. Dept. of Electrical and Photonics Engineering, Technical University of Denmark (Denmark), 2. NanoPhoton – Center for Nanophotonics, Technical University of Denmark (Denmark))

11:40 AM - 12:05 PM

[MB-05] Infinitely scalable single mode Berkeley Surface Emitting Laser (BerkSELs)

*Boubacar Kante[1], Rushin Contractor[1], Wanwoo Noh[1], Walid Redjem[1] (1. UC Berkeley (United States of America))

12:05 PM - 12:20 PM

[MB-06] Resonator Embedded Photonic Crystal Surface Emitting Lasers

*Zijun Bian[1], Xingyu Zhao[1], Katherine J. Rae[1], Aye S. M. Kyaw[1], Daehyun Kim[1], Adam F. McKenzie[1], Ben C. King[1], Jingzhao Liu[1], Stephen Thoms[1], Paul Reynolds[1], Neil D. Gerrard[1], James Grant[1], Jonathan R. Orchard[2], Calum H. Hill[2], Connor W. Munro[2], Pavlo Invanov[2], David T. D. Childs[2], Richard J. E. Taylor[2], Richard A. Hogg[1,2] (1. Univ. of Glasgow (UK), 2. Vector Photonics Ltd. (UK))

12:20 PM - 12:35 PM

[MB-07] High order vortex beams generated directly from photonic-crystal surface-emitting laser with honeycomb lattice

*Chia-Jui Chang[1], Lih-Ren Chen[1], Bing-Hong Chuang[1], Wei-Chih Weng[1], Yao-Wei Huang[1], Tien-Chang Lu[1] (1. National Yang Ming Chiao Tung University (Taiwan))

12:35 PM - 12:50 PM

Oral presentation

Plenary and Legend 1

Session Chairs: Akihiko Kasukawa(Furukawa Electric Co., Ltd.), Paul Leisher(Luminar Technologies Inc. and Freedom Photonics LLC)

Mon. Oct 17, 2022 1:50 PM - 2:50 PM International Conference Hall (3F)

[PL1-01(Plenary)] Gallium Nitride Diode Lasers Fueling the Fusion of Illumination, Sensing, and Communication

*James W Raring[1], Paul Rudy[1], Eric Goutain[1], Thiago Melo[1], Nathan Young[1], Changmin Lee[1] （1. Kyocera SLD Laser, Inc. (United States of America)）

1:50 PM - 2:20 PM

[PL1-02(Legend)] Recent Advances in VCSELs for Datacom and Sensing Applications

*Constance J. Chang-Hasnain[1], Jiaxing Wang[1], ChihChiang Shen[1], Yipeng Ji[1], Jonas Kapraun[1] （1. Berxel Photonics Co., Ltd. (China)）

2:20 PM - 2:50 PM

Oral presentation

Session 3 -Laser Cavities and Mode Control

Session Chairs: Erwin Bente(Eindhoven University of Technology), Shinji Matsuo(NTT Corporation)
Mon. Oct 17, 2022 3:15 PM - 5:25 PM International Conference Hall (3F)

[MC-01(Invited)] High Wavelength Count Laser Sources for WDM CMOS Optical Interconnects

*Matthew Sysak[1], Radek Roucka[1], Manan Raval[1], Fernando Luna[1], Sally El-Henawy[1], Johnathon Frey[1], Chen Li[1], Chong Zhang[1], Sriharsha Kota Pavan[1], Asif Anwar Baig Mirza[1], Li-fan Yang[1], Mark Wade[1], Chen Sun[1] （1. Ayar Labs (United States of America)）

3:15 PM - 3:40 PM

[MC-02] Monolithic DBR/Ring Tunable Laser Employing 1×2 MMI-coupled Ring Resonator

*Yosuke Terada[1], Yuuki Isobe[1], Hiroshi Abe[1], Tatsuhiro Sakai[1], Masayoshi Nishita[1], Hiroyuki Ishii[2], Tatsuro Kurobe[2] （1. Communications Solutions Division, Furukawa Electric. Co., Ltd (Japan), 2. Telecommunications &Energy Labs., Furukawa Electric. Co., Ltd (Japan)）

3:40 PM - 3:55 PM

[MC-03] GaSb/Si_3N_4 Widely Tunable Hybrid Vernier Laser Emitting Around 2.55 µm

*Samu-Pekka Ojanen[1], Jukka Viheriälä[1], Nouman Zia[1], Eero Koivusalo[1], Joonas Hilska[1], Heidi Tuorila[1], Mircea Guina[1] （1. Optoelectronics Res. Centre, Physics Unit, Tampere Univ. (Finland)）

3:55 PM - 4:10 PM

[MC-04] Lineshape Anomaly in Lasers Operating Close to Fundamental Limit: Theory and Experiment

Aris Koulas-Simos[1], Jeol Buchgeister[2], Monty Drechsler[2], Taiping Zhang[3], Kaisa Laiho[1], Georgios Sinatkas[1], Jialu Xu[3], Frederik Lohof[2], Qiang Kan[4], Ruikang Zhang[4], Frank Jahnke[2], Christopher Gies[2], *Weng Chow[5], Cun-Zheng Ning[3], Stephan Reitzenstein[1] （1. Institut für Festkörperphysik, Technische Universität Berlin (Germany), 2. Institut für Theoretische Physik, Universität Bremen (Germany), 3. Department of Electronic Engineering, Tsinghua University (China), 4. Institute of Semiconductors, Chinese Academy of Sciences (China), 5. Sandia National Laboratories (United States of America)）

4:10 PM - 4:25 PM

[MC-05] Monolithically integrated InP 2.5 GHz Fourier Domain Mode-Locked Laser at 1530nm

*Joel Hazan Hazan[1], Aser Nassar[1], Kevin Williams[1], Erwin Bente[1] （1. EINDHOVEN UNIVERSITY OF TECHNOLOGY (Netherlands)）

4:25 PM - 4:40 PM

[MC-06] Synchronized two-color semiconductor mode-locked laser system for imaging and ranging applications

*Srinivas Varma Pericherla[1,2], Lawrence Robert Trask[1], Chinmay Deepak Shirpurkar[1], Peter J Delfyett[1,2,3] （1. CREOL, The College of Optics and Photonics, University of

Central Florida (United States of America), 2. Department of Electrical and Computer Engineering, University of Central Florida, Orlando, USA (United States of America), 3. Department of Physics, University of Central Florida, Orlando, Florida 32816, USA (United States of America))

4:40 PM - 4:55 PM

[MC-07] RF-Injection Control of Quantum Cascade Lasers in the Time-Domain

*Barbara Schneider[1], Philipp Täschler[1], Mathieu Bertrand[1], Filippos Kapsalidis[1], Mattias Beck[1], Jérôme Faist[1] (1. ETH Zurich (Switzerland))

4:55 PM - 5:10 PM

[MC-08] Mode Selection and Switching in Ring Quantum Cascade Lasers

*Sara Kacmoli[1], Deborah L. Sivco[2], Claire F. Gmachl[1] (1. Princeton Univ. (United States of America), 2. Trumpf Photonics Inc. (United States of America))

5:10 PM - 5:25 PM

Oral presentation

Plenary and Legend 2

Session Chairs: Akihiko Kasukawa(Furukawa Electric Co., Ltd.), Paul Leisher(Luminar Technologies Inc. and Freedom Photonics LLC)

Mon. Oct 17, 2022 5:50 PM - 6:50 PM International Conference Hall (3F)

[PL2-01(Plenary)] Unipolar quantum optoelectronics for free space optics in the thermal-infrared atmospheric window

*Carlo Sirtori[1] （1. Laboratoire de Physique de l’ Ecole Normale Supérieure, ENS, Université PSL, CNRS, Sorbonne Université, Université de Paris (France)）

5:50 PM - 6:20 PM

[PL2-02(Legend)] Band structure engineering and its impact on semiconductor laser design and optimisation

*Eoin P. O'Reilly[1,2] （1. Tyndall National Institute, University College Cork (Ireland), 2. Department of Physics, University College Cork (Ireland)）

6:20 PM - 6:50 PM

Oral presentation

High Power

Session Chairs: Jenna Campbell(Freedom Photonics), Andrea Knigge(Ferdinand-Braun-Institut gGmbH)
Tue. Oct 18, 2022 8:15 AM - 9:55 AM International Conference Hall (3F)

[TuA-01(Upgraded Invited)] Progress in efforts to increase power in GaAs-based high-power diode lasers

*Paul Crump[1], Mohamed Elattar[1], Mohamed Jarez. Miah[1], Jörg Fricke[1], Olaf Brox[1], Dominik Martin[1], Pietro Della Casa[1], Andre Maaßdorf[1], Hans Wenzel[1], Andrea Knigge[1], Günther Tränkle[1] （1. Ferdinand-Braun-Institut gGmbH, Leibniz-Institut fuer Hoechstfrequenztechnik (Germany)）

8:15 AM - 8:40 AM

[TuA-02] High-Brightness Broad-Area Diode Lasers with a Novel Enhanced Self-Aligned Lateral Structure

*Mohamed Elattar[1], Olaf Brox[1], Pietro Della Casa[1], Anna Mogilatenko[1], Andre Maaßdorf[1], Dominik Martin[1], Hans Wenzel[1], Andrea Knigge[1], Paul Crump[1] （1. Ferdinand-Braun-Institut (FBH) (Germany)）

8:40 AM - 8:55 AM

[TuA-03] 760 nm: Jenoptik’ s New Color for Aesthetic Applications

*Agnieszka Pietrzak[1], Martin Zorn[1], Ralf Huelsewede[1], Jens Meusel[1], Sebastian Seidel[1], Marco Koschorreck[1] （1. JENOPTIK Optical Systems GmbH (Germany)）

8:55 AM - 9:10 AM

[TuA-04] Operation of wide emitter 976 nm fiber laser pump chips with high reliability and temperature stability

*Stewart Duncan McDougall[1] （1. TRUMPF Photonics Inc (United States of America)）

9:10 AM - 9:25 AM

[TuA-05] High-power, High-brightness Shortwave Infrared Lasers

*Tawee Tanbun-Ek[1], Zuntu Xu[1], Dennis Tishinin[1], Marc Kelemen[1], Juergen Gilly[1] （1. Coherent, Inc. (United States of America)）

9:25 AM - 9:40 AM

[TuA-06] High Power 14xx-nm Raman Pump Using GaInAsP/InP Electric-Field-Control Layers

*Junji Yoshida[1], Masaki Wakaba[1], Naoya Hojo[2], Masayoshi Seki[2], Hirokazu Itoh[1] （1. Furukawa Electric Co., Ltd. (Japan), 2. Furukawa FITEL OPTICAL DEVICE (Japan)）

9:40 AM - 9:55 AM

Oral presentation

LiDAR

Session Chairs: Paul Crump(Ferdinand-Braun-Institut gGmbH, Leibniz-Institut fuer Hoechstfrequenztechnik), Tomohiro Kita(Waseda University)

Tue. Oct 18, 2022 10:20 AM - 12:15 PM International Conference Hall (3F)

[TuB-01(Upgraded Invited)] 30 dBm Single Mode Fiber-Coupled Semiconductor Optical Amplifier at 1550 nm

*Jenna Campbell[1], Kevin McClune[1], Michelle Labrecque[1], Fedor Talantov[1], Henry Garrett[1], Tom Liu[1], Juan Campero[1], Leticia Krambeck[1], Gordon Morrison[1], Leif Johansson[1], Milan Mashanovitch[1], Joe LaChapelle[2], Jason Eichenholz[2], Paul O Leisher[1,2] (1. Freedom Photonics (United States of America), 2. Luminar Technologies (United States of America))

10:20 AM - 10:45 AM

[TuB-02] 2 kW Pulse Power from Internal Wavelength Stabilized Diode Laser Bar for LiDAR Applications

*Andrea Knigge[1], Nor Ammouri[1], Heike Christopher[1], Johannes Glaab[1], Armin Liero[1], Joerg Fricke[1], Hans Wenzel[1] (1. Ferdinand-Braun-Institut gGmbH (Germany))

10:45 AM - 11:00 AM

[TuB-03] FMCW Measurement by the Hybrid Tunable Laser Diode

*Tomohiro Kita[1], Shu Irie[1], Rio Kawana[1] (1. Waseda Univ. (Japan))

11:00 AM - 11:15 AM

[TuB-04] Expanding Field of View of Solid-state VCSEL Beam Scanner with Multi-wavelength Seed VCSELs

*Shunsuke Kanja[1], Shanting Hu[1], Xiaodong Gu[1], Fumio Koyama[1] (1. Inst. of Innovative Res., Tokyo Inst. of Tech. (Japan))

11:15 AM - 11:30 AM

[TuB-05] Characteristics of Self-scanning Addressable VCSEL array for Time of Flight

*Takashi Kondo[1], Junichiro Hayakawa[1], Michiaki Murata[1], Daisuke Iguchi[1], Tomoaki Sakita[1], Takafumi Higuchi[1], Kei Takeyama[1], Seiji Ohno[1], Hiroyuki Usami[1] (1. FUJIFILM Business Innovation Corp. (Japan))

11:30 AM - 11:45 AM

[TuB-06] Beam-curvature-compensation of Solid-state VCSEL Beam Scanner using Curved Prism Mirror

*Yikai Song[1], Ruixiao Li[1], Gu Xiodong[1,2], Fumio KOYAMA[1] (1. Tokyo Institute of Technology (Japan), 2. Ambition Photonics Inc. (Japan))

11:45 AM - 12:00 PM

[TuB-07] Non-mechanical 3D LiDAR system based on flash and beam-scanning dually-modulated photonic-crystal

lasers

*Menaka De Zoysa[1], Ryoichi Sakata[1], Kenji Ishizaki[1], Takuya Inoue[1], Masahiro Yoshida[1], John Gelleta[1], Yoshiyuki Mineyama[2], Tomoyuki Akahori[3], Satoshi Aoyama[3], Susumu Noda[1] （1. Kyoto Univ. (Japan), 2. SpaceView inc. (Japan), 3. Brookman Technology Co. Ltd. (Japan)）

12:00 PM - 12:15 PM

Oral presentation

Plenary and Legend 3

Session Chairs: Akihiko Kasukawa(Furukawa Electric Co., Ltd.), Paul Leisher(Luminar Technologies Inc. and Freedom Photonics LLC)

Tue. Oct 18, 2022 1:15 PM - 2:15 PM International Conference Hall (3F)

[PL3-01(Plenary)] Advances in Quantum Dot Lasers - 40 Years of History

*Yasuhiko Arakawa[1] （1. The University of Tokyo (Japan)）

1:15 PM - 1:45 PM

[PL3-02(Legend)] A recap of high performance AlGaInAs/InP laser development history

*Chung-en Zah[1] （1. Focuslight Technologies Inc. (China)）

1:45 PM - 2:15 PM

Oral presentation

VCSELs

Session Chairs: Jack Jewell(GreenVCSEL), Susumu Noda(Kyoto University)
Tue. Oct 18, 2022 2:40 PM - 4:35 PM International Conference Hall (3F)

[TuC-01(Upgraded Invited)] 5-km Single-mode Fiber Data Transmission with 1060nm Single-mode Intra-cavity Surface Relief Transverse Coupled Cavity VCSELs

*SHANTING HU[1,2], XIAODONG GU[1,3], Hameeda R Ibrahim[1], Fumio Koyama[1] （1. Tokyo Insititue of Technology (Japan), 2. Beijing Insitutue of Technology (China), 3. Ambition Photonics Inc. (Japan)）

2:40 PM - 3:05 PM

[TuC-02] High-Power Single-Mode Multijunction VCSEL

*Matthew Michael Dummer[1], Amirhossein Ghods[1], Karim Tatah[1], Klein Johnson[1] （1. Vixar ams-OSRAM (United States of America)）

3:05 PM - 3:20 PM

[TuC-03] Coherent Antiguided HCG VCSEL Array

*Yipeng Ji[1], Jonas Kapraun[1], Jianqiang Chen[1], Zhenglai Zhang[1], Shasha Li[1], Fangzhou Li[1], Haolin Li[1], Jiaxing Wang[1], ChihChiang Shen[1], Connie Chang-Hasnain[1] （1. Berxel Photonics Co., Ltd. (China)）

3:20 PM - 3:35 PM

[TuC-04] Circularly-Polarized Emission from Electrically-Pumped VCSELs with Chiral-Metasurface Reflectors

*Xiangli Jia[1], Jonas Kapraun[2], Jipeng Qi[2], Jiaxing Wang[2], Connie Chang-Hasnain[2] （1. University of California, Berkeley (United States of America), 2. Berxel Photonics Co. Ltd. (China)）

3:35 PM - 3:50 PM

[TuC-05] Longitudinal mode control in 20-30 µm long cavity GaN-based VCSELs with a curved mirror

Jared A Kearns[1], *Tatsushi Hamaguchi[1], Kentaro Hayashi[1], Maho Ohara[1], Tomohiro Makino[1], Maiko Ito[1], Noriko Kobayashi[1], Tatsurou Jyokawa[1], Eiji Nakayama[1], Shoetsu Nagane[1], Koichi Sato[1], Yuki Nakamura[1], Yukio Hoshina[1], Rintaro Koda[1], Noriyuki Futagawa[1] （1. Sony Group Corp. (Japan)）

3:50 PM - 4:05 PM

[TuC-06] Polarization-Stable VCSEL-Arrays

Sven Bader[1], Markus Herper[1], Alexander Weigl[1], Alexander van der Lee[1], Ulrich Weichmann[1], Holger Moench[1], Armand Pruijmboom[1], *Roman Koerner[1] （1. TRUMPF Photonic Components GmbH (Germany)）

4:05 PM - 4:20 PM

[TuC-07] Low Divergence Triangular Coupled VCSEL Array

*Nusrat Jahan[1], William North[1], Kent D. Choquette[1] （1. University of Illinois, Urbana-Champaign (United States of America)）

4:20 PM - 4:35 PM

Oral presentation

IEEE Edison Medal Award Talk

Session Chair: Fumio Koyama(Tokyo Institute of Technology)

Tue. Oct 18, 2022 5:00 PM - 5:30 PM International Conference Hall (3F)

[SP-01] VCSEL:How was it born and grown since one-century after Edison?

*Kenichi Iga[1] （1. Tokyo Institute of Technology (Japan)）

5:00 PM - 5:30 PM

Poster presentation

Poster

Tue. Oct 18, 2022 5:30 PM - 7:00 PM Large Exhibition Hall (1F)

[TuP-01] Highly stacked InAs quantum dots on InP/InGaAlAs distributed Bragg reflector for VCSEL

*Kouichi Akahane[1], Atsushi Matsumoto[1], Toshimasa Umezawa[1], Naokatsu Yamamoto[1], Atsushi Kanno[1] (1. National Institute of Information and Communications Technology (Japan))

[TuP-02] Operation Characteristics on Short Pulse below 100 ps Based on Transverse Mode Control with Free Carrier Effect in an Oxide-Confined VCSEL

*Ryoichiro Suzuki[1], Kazuhiro Harasaka[1], Yutaka Maita[1], Naofumi Ueno[1], Naoto Jikutani[1] (1. RICOH Company, Ltd. (Japan))

[TuP-03] Temperature Characteristics of Self-scanning Addressable VCSEL array for Time of Flight

*Takafumi Higuchi[1], Takashi Kondo[1], Junichiro Hayakawa[1], Michiaki Murata[1], Daisuke Iguchi[1], Tomoaki Sakita[1], Kei Takeyama[1], Seiji Ohno[1], Hiroyuki Usami[1] (1. FUJIFILM Business Innovation Corp. (Japan))

[TuP-04] Polarization Switching in VCSELs Subject to Current Modulation for Quantum Random Number Generation

Marcos Valle-Miñon[1], Ana Quirce[1], *Angel Valle[1], Jaime Gutierrez[2] (1. Universidad de Cantabria-CSIC (Spain), 2. Universidad de Cantabria (Spain))

[TuP-05] Characteristics of Photonic Crystal Laser With Low *Q*-factor Suitable for High-speed Operation

*Hanqiao Ye[1], Rubing Zuo[1], Kenta Kaichi[1], Yu Obikane[1], Akihiro maruta[1], Hirotake Kajii[1], Masato Morifuji[1], Masahiko Kondow[1] (1. Osaka Univ. (Japan))

[TuP-06] Power Scaling of InP based Photonic Crystal Surface Emitting Lasers for CWDM Optical Interconnects in Hyperscale Datacenters

Calum H. Hill[1], Connor W. Munro[1], Jonathan R. Orchard[1], Ibrahim Javed[1], Pavlo Ivanov[1], Neil D. Gerrard[2], Adam F McKenzie[2], Richard A. Hogg[2], *Richard J. E. Taylor[1], David T. D. Childs[1] (1. Vector Photonics Ltd. (UK), 2. Univ. of Glasgow (UK))

[TuP-07] Spectral Linewidth of Photonic Crystal Surface Emitting Lasers

Bruce Saleeb-Mousa[1], Duncan Spence[1], Mohsin Haji[1], Jingzhao Liu[2], Scott Watson[2], Richard A Hogg[2,3], Anna O'Dowd[2,3], Calum H Hill[3], David T. D Childs[3], *Richard J. E Taylor[3] (1. National Physical Lab. (UK), 2. Univ. of Glasgow (UK), 3. Vector Photonics Ltd. (UK))

[TuP-08] Metasurfaces integrated photonic-crystal surface-emitting lasers with variational emission angles

LihRen Chen[1], *Chia-Jui Chang[1], Wei-Chi Weng[1], Yao-Wei Huang[1], Tien-Chang Lu[1] (1. National Yang Ming Chiao Tung Univ (Taiwan))

[TuP-09] Laser characteristics of Circular Defect in 2D photonic crystal (CirD) laser with semicircular output port

*Kenta Kaichi[1], Shota Aomori[1], Issei Sada[1], Rubing Zuo[1], Masato Morifuji[1], Hirotake Kajii[1], Akihiro Maruta[1], Masahiko Kondow[1] (1. Osaka Univ. (Japan))

[TuP-10] In-situ reflectivity spectra measurements of GaN-Based VCSELs

*Tsuyoshi Nagasawa[1], Kana Shibata[1], Keita Kobayashi[1], Ruka Watanabe[1], Tetsuya Takeuchi[1],

Motoaki Iwaya[1], Satoshi Kamiyama[1] （1. Meijo univ. (Japan)）

[TuP-11] Hydrogen cleaning for high-quality conductive AlInN/GaN DBRs

*Kana Shibata[1], Tsuyoshi Nagasawa[1], Tetsuya Takeuchi[1], Satoshi Kamiyama[1], Motoaki Iwaya[1] （1. Meijo Univ. (Japan)）

[TuP-12] Interference effect in deep-ultraviolet light emitting diodes with p-AlGaN contact layers and ITO/Al electrodes

*Rie Iwatsuki[1], Hisanori Ishiguro[1], Maho Fujita[1], Satoshi Kamiyama[1], Motoaki Iwaya[1], Tetsuya Takeuchi[1], Kengo Nagata[2], Koji Okuno[2], Yoshiki Saito[2] （1. Meijo univ. (Japan), 2. TOYODA GOSEI Co. Ltd (Japan)）

[TuP-13] Analyzing the Bottleneck AlGaN-based UV-B Laser Diode With a 2D Electro-optical Numerical Model

Yun-Hsiu Cheng[1], *Yu-Tai Lin[1], Yuh-Renn Wu[1] （1. National Taiwan University (Taiwan)）

[TuP-14] Passive Waveguide Loss Measurements in an InGaN-based Laser Diode Structure

*Atsushi A. Yamaguchi[1], Kenta Ogasawara[1], Shigeta Sakai[2], Tadashi Okumura[2], Koichi Naniwae[2] （1. Kanazawa Inst. Tech. (Japan), 2. Ushio Inc. (Japan)）

[TuP-15] Full-scale exfoliation of InGaN-based light-emitting diodes via microcavity-assisted crack propagation by using tensile-stressed Ni layers

Jung-Hong Min[1], Tae-Hoon Jeong[2], Kwang Jae Lee[3], Jung-Wook Min[4], *Tae-Yong Park[1], Tien Khee Ng[1], Boon S. Ooi[1] （1. King Abdullah University of Science and Technology (Saudi Arabia), 2. Korea Photonics Technology Institute (Korea), 3. Stanford University (United States of America), 4. University of Michigan (United States of America)）

[TuP-16] Room-temperature optical gain in terahertz quantum cascade lasers based on GaAs/AlGaAs, GaN/AlGaN, ZnO/ZnMgO

*LI WANG[1], Tsung-Tse Lin[1], Thomas Grange[2], Ke Wang[3], Hideki Hirayama[1] （1. RIKEN (Japan), 2. nextnano (Germany), 3. nanjing Univ. (China)）

[TuP-17] Enhanced Beam Quality of Overlapped Angled Cavity Quantum Cascade Lasers with Integrated Notches

*Matthew Suttinger[1], Chi Yang[1], Ron Kapsi[1], Rowel Go[1], Chunte Andy Lu[1] （1. Air Force Research Laboratory (United States of America)）

[TuP-18] Pilot-Lightwave-based Terahertz Wave Phase Stabilization

*Amalina Athira Ibrahim[1], Takashi Shiramizu[1], Shenghong Ye[1], Yuya Mikami[1], Kazutoshi Kato[1] （1. Kyushu University (Japan)）

[TuP-19] Surface-emitting Broadband THz Quantum Cascade Laser with Inverse-designed Waveguide Facets

*Urban Senica[1], Sebastian Gloor[1], Paolo Micheletti[1], Mattias Beck[1], Jérôme Faist[1], Giacomo Scalari[1] （1. ETH Zurich (Switzerland)）

[TuP-20] Low Threshold 1.55 um-Band Quantum Dot Laser Diode with InP(311)B Substrate

*Atsushi Matsumoto[1], Kouichi Akahane[1], Toshimasa Umezawa[1], Shinya Nakajima[1], Naokatsu Yamamoto[1], Atsushi Kanno[1] （1. National Inst. of Info. and Communications Tech. (NICT) (Japan)）

[TuP-21] Multi-mode Interference Reflector based InAs-QD Laser

*F. T. Albeladi[1,2], S. Gillgrass[1], J. Nabialek[1], P. Mishra[1], R. Forrest[1], T. R. Albiladi[1,3], S. Shutts[1], M.

Tang[4], H-Y. Liu[4], P. M. Smowton[1] （1. School of Physics and Astronomy, Cardiff University, The Parade, Cardiff. CF24 3AA. (UK), 2. Physics Department, Faculty of Science,University of Jeddah, Jeddah 21589 (Saudi Arabia), 3. Physics And Astronomy Department, Faculty of Science, King Saud University, Riyadh 11451 (Saudi Arabia), 4. Department of Electrical Engineering, University Colleg London, Gower Street, London (UK)）

[TuP-22] Waterproof perovskite quantum dot laser

*Chiao Chih Lin[1], Shih-Cheng Wan[1], Chung-Wei Kung[2], Yu-Hsun Chou[1] （1. Department of Photonics, National Cheng Kung Univ. (Taiwan)
1. Department of Chemical Engineering, National Cheng Kung Univ. (Taiwan)）

[TuP-23] Design of a Quantum-Dot Single-Photon Source on a Silicon Nitride Waveguide for Efficient Photon Generation by Resonant Excitation

*Natthajuks Pholsen[1,2], Yasutomo Ota[3], Satoshi Iwamoto[1,2] （1. Res. Center for Advanced Sci. and Tech., The Univ. of Tokyo (Japan), 2. Inst. of Indus. Sci., The Univ. of Tokyo (Japan), 3. Department of Applied Physics and Physio-Informatics, Keio Univ. (Japan)）

[TuP-24] Stability Evaluation of Quantum-Dot External-Cavity Multi-Wavelength Laser for Grid-Free WDM System

*Kei Masuyama[1,2], Mizuki Shirao[1], Nobuhiko Nishiyama[2], Nobuhiko Ohata[1] （1. Mitsubishi Electric Corp. (Japan), 2. Tokyo Inst. of Tech. (Japan)）

[TuP-25] Well layer thickness dependence on threshold current of SCH-MQW laser diode grown on InP/Si substrate

*Ryosuke Yada[1], Kouji Agata[1], Liang Zhao[1], Shigo Ito[1], Sae Aoki[1], Kazuhiko Shimomura[1] （1. Sophia Univ. (Japan)）

[TuP-26] Heterogeneously Integrated III/V-on-Si Injection Seeding Laser Neuron

*Bassem Tossoun[1], Di Liang[1], Raymond G. Beausoleil[1] （1. Hewlett Packard Enterprise (United States of America)）

[TuP-27] GaSb-based Angled Cavity Semiconductor Lasers

Chi Yang[1], Matthew Suttinger[1], Chunte A Lu[1], *Rowel Go[1] （1. Air Force Research Laboratory (United States of America)）

[TuP-28] Wide Wavelength Range Emission from InAs/GaSb Type-II Superlattice Grown by MOVPE

*Masakazu Arai[1], Yuto Iwakiri[1], Takeshi Fujisawa[2], Koji Maeda[1] （1. Univ. of Miyazaki (Japan), 2. Hokkaido Univ. (Japan)）

[TuP-30] Integrated-Photonic Device Serving as both External Laser Mirror and Input Grating Coupler

*Keisuke Ozawa[1], Ryohei Ueda[1], Aika Taniguchi[1], Akari Watanabe[1], Shunsuke Teranishi[1], Junichi Inoue[1], Kenji Kintaka[2], Shogo Ura[1] （1. Kyoto Inst. of Tech. (Japan), 2. National Inst. of Advanced Indus. Sci. and Tech. (Japan)）

[TuP-31] Heater-tuned DBR laser diode for high thermal efficiency

*Su-Ik Park[1,4], Jae hyun Jin[1], Chul Wook Lee[2], Ki Soo Kim[2], Oh Kee Kwon[2], Kyoung Su Park[3], Jong In Shim[4] （1. Essence photonics Inc. (Korea), 2. Photonics Convergence Components Res. Group, Electronics and Telecommunications Res. Inst. (Korea), 3. Department of electronics engineering, Kangwon National Univ. (Korea), 4. Department of Photonics and Nanoelectronics, Hanyang Univ. ERICA (Korea)）

[TuP-32] Temperature-insensitive InP-based Quantum Well Lasers Operating in the O-band for Datacom Applications.

Igor Marko[1], Alfred R. Adams[1], *Stephen J. Sweeney[1] （1. Advanced Technology Institute, University of Surrey (UK)）

[TuP-33] On the Mode and Wavelength Stability of Ultra-high-speed Directly-modulated Passive Feedback DFB Lasers

*Siti Sulikhah[1], San-Liang Lee[1], Hen-Wai Tsao[2] （1. National Taiwan University of Science and Technology (Taiwan), 2. National Taiwan University (Taiwan)）

[TuP-34] High power 1.55 μ m DFB laser with GHz modulation capability for low-orbit optical communication system

*Te-Hua Liu[1], Hao-Tien Cheng[2], Hsiang-Chun Yen[3], Chee-Keong Yee[3], Yun-Cheng Yang[2], Guei-Ting Hsu[3], Chao-Hsin Wu[1,2,3] （1. Graduate School of Advanced Technology, National Taiwan University, (Taiwan), 2. Graduate Institute of Electronics Engineering, National Taiwan University, (Taiwan), 3. Graduate Institute of Photonics and Optoelectronics, National Taiwan University, (Taiwan)）

[TuP-35] Theoretical analysis of dispersion-tolerant single-drive mixed amplitude–frequency modulation lasers

*Takaaki Kakitsuka[1], Kiyoto Takahata[1] （1. Waseda Univ. (Japan)）

[TuP-36] Influence of External Cavity Configuration on the Failure Mode of High Power Wavelength Stabilized Laser Diode

*Rintaro Morohashi[1], Yohei Kasai[1], Masahiro Uchiyama[1], Toshiyuki Kawakami[2], Yuji Yamagata[1] （1. Fujikura Ltd. (Japan), 2. Optoenergy Inc. (Japan)）

[TuP-37] Hybrid Modeling Technique for On-Chip Extended Cavity Semiconductor Mode-Locked Lasers

*Maxim Torreele[1], Stijn Cuyvers[1], Tom Reep[1], Kasper Van Gasse[1], Erwin Bente[2], Bart Kuyken[1] （1. Ghent Univ. (Belgium), 2. Eindhoven Univ. of Tech. (Netherlands)）

[TuP-38] Magnetically switchable semiconductor microring laser with TE mode waveguide optical isolator

*Reo Oshkiri[1], Yuka Kobayashi[1], Hiromasa Shimizu[1] （1. Tokyo University of Agriculture and Technology (Japan)）

[TuP-40] Numerical Investigation of High-Speed Surface-Normal Modulator Using InP High-Contrast Grating

*Taichiro Fukui[1], Kei Sumita[1], Mitsuru Takenaka[1], Shinichi Takagi[1], Yoshiaki Nakano[1], Takuo Tanemura[1] （1. The University of Tokyo (Japan)）

[TuP-42] Strong Coupling, Rabi Oscillations, and Quantum Properties of Femtosecond Superradiant Emission from Semiconductor Laser Heterostructures

*Peter Vasil'ev[1,2], Richard V Penty[1] （1. Univ. of Cambridge (UK), 2. PN Lebedev Physical Inst. (Russia)）

[TuP-43] Testing a Generalized Siegert Relation for Characterizing Semiconductor Nanolaser Emission

Monty Drechsler[1], *Frederik Lohof[1], Christopher Gies[1] （1. Univ. of Bremen (Germany)）

[TuP-44] Quantum Optical Investigation of Metallic Nanocavity Multiple Quantum Well Nanolasers

*Joel Buchgeister[1], Monty Leon Drechsler[1], Frederik Lohof[1], Christopher Gies[1], Aris Koulas-Simos[2], Kaisa Laiho[2], Georgios Sinatkas[2], Taiping Zhang[4], Jialu Xu[4], Qiang Kan[6], Ruikang K. Zhang[6], Cun-Zheng Ning[4,5], Stephan Reitzenstein[2], Weng W. Chow[3], Frank Jahnke[1] （1. Univ. of Bremen

(Germany), 2. Technical Univ. of Berlin (Germany), 3. Sandia National Labs. (United States of America), 4. Tsinghua Univ. (China), 5. Arizona State Univ. (United States of America), 6. Inst. of Semiconductors (China))

Oral presentation

Quantum Wells, Wires, and Dots

Session Chairs: Larry Coldren(UC Santa Barbara), Yasutomo Ota(Keio University)
Wed. Oct 19, 2022 8:30 AM - 10:40 AM International Conference Hall (3F)

[WA-01(Invited)] III-V Quantum Dot Lasers on Silicon by Selective Area Heteroepitaxy

*Bei Shi[1], Si Zhu[1], Bowen Song[1], Jonathan Klamkin[1] （1. Univ. California Santa Barbara (United States of America)）

8:30 AM - 8:55 AM

[WA-02] 1.3-µm InAs Quantum Dot Lasers with P-type modulation and direct N-type co-doping

Lydia Jarvis[1], Benjamin Maglio[1], Craig P. Allford[1], Sara Gillgrass[1], Abigail Enderson[1], Samuel Shutts[1], Huiwen Deng[2], Mingchu Tang[2], Huiyun Liu[2], *Peter M. Smowton[1] （1. Cardiff University (UK), 2. University College London (UK)）

8:55 AM - 9:10 AM

[WA-03] InP-Based 1.3 μ m Quantum Dot Laser

Vinayakrishna Joshi[1], Sven Bauer[1], Vitalii Sichkovskyi[1], Florian Schnabel[1], *Johann Peter Reithmaier[1] （1. INA, CINSaT, Univ of Kassel (Germany)）

9:10 AM - 9:25 AM

[WA-04] High Power, Optical Feedback-Tolerant 1310 nm Quantum Dot DFB Lasers

*Yutaka Onishi[1], Satoshi Abe[1], Kazuki Fujisawa[1], Tamami Naruke[1], Kenichi Nishi[1], Keizo Takemasa[1] （1. QD Laser, Inc. (Japan)）

9:25 AM - 9:40 AM

[WA-05] Epitaxially Regrown Quantum Dot Photonic Crystal Surface Emitting Laser

*Aye S. M. Kyaw[1], Ben C. King[1], Adam F. McKenzie[1,2], Neil D. Gerrad[1], Zijun Bian[1], Daehyun Kim[1], Jingzhao Liu[1], Xingyu Zhao[1], Kenichi Nishi[3], Keizo Takemasa[3], Mitsuru Sugawara[3], David T. D. Childs[4], Calum H. Hill[4], Richard J. E. Taylor[4], Richard A. Hogg[1,4] （1. Univ. of Glasgow (UK), 2. Sivers Photonics Ltd. (UK), 3. QD Laser Inc. (Japan), 4. Vector Photonics Ltd. (UK)）

9:40 AM - 9:55 AM

[WA-06] 125℃ CW Operation of 1.2–1.3 µm Wavelength GaAs-based Lasers with Type-II (GaIn)As/Ga(AsSb)/(GaIn)As-“W”-Quantum Well

*Takashi Go[1], Takuma Fuyuki[1], Daisuke Inoue[1], Hiroyuki Yoshinaga[1], Mitsuru Ekawa[1], Takashi Ishizuka[1], Susumu Yoshimoto[1], Peter Ludewig[2], Ada Bäumner[2], Antje Ruiz Perez[2], Wolfgang Stolz[2] （1. Sumitomo Electric Industries, Ltd. (Japan), 2. NAsP III/V GmbH (Germany)）

9:55 AM - 10:10 AM

[WA-07] Reduced Temperature-Dependence of Optical Gain in Type-II GaAs-based "W"-Laser Structures

*Dominic Andrew Duffy[1], Igor P. Marko[1], Christian Fuchs[2], Thilo Hepp[2], Jannik Lehr[2], Kerstin Volz[2], Wolfgang Stolz[2], Stephen J. Sweeney[1] （1. Univ. of Surrey (UK), 2.

Philipps-Univ. Marburg (Germany))

10:10 AM - 10:25 AM

[WA-08] 0.57% EQE and 4.2 mW Power of 232 nm AlGaN Far-UVC LED with Modulation Mg doped p-interlayer and Polarization Doped Transparent p-Contact Layer

*Noritoshi Maeda[1], Yukio Kashima[1], Eriko Matsuura[1], Yasushi Iwaisako[2], Hideki Hirayama[1] (1. RIKEN (Japan), 2. Nippon Tungsten (Japan))

10:25 AM - 10:40 AM

Oral presentation

Silicon Integration 1

Session Chairs: Peter Smowton(Cardiff University), Ying Xue(Hong Kong University of Science and Technology)

Wed. Oct 19, 2022 11:05 AM - 12:45 PM International Conference Hall (3F)

[WB-01(Invited)] GaSb/Si laser spectrometer-on-chip technology for sensing applications

*Augustinas Vizbaras[1], Kristijonas Vizbaras[1], Andreas De Groote[2] (1. Brolis Sensor Technology (Lithuania), 2. Brolis Sensor Technology (Belgium))

11:05 AM - 11:30 AM

[WB-02] Direct Modulation of 16-ch Two-Dimensionally Arrayed Membrane Lasers on Si

*Takuro Fujii[1], Koji Takeda[1], Yoshiho Maeda[1], Tomonari Sato[1], Tai Tsuchizawa[1], Toru Segawa[1], Shinji Matsuo[1] (1. NTT Corporation (Japan))

11:30 AM - 11:45 AM

[WB-03] High Temperature Operation of Membrane Photonic Integrated Circuits with Buried-Ridge-Waveguide on Si

Weicheng Fang[1], Naoki Takahashi[1], Tsuyoshi Horikawa[1], Yoshitaka Ohiso[1], Ruihao Xue[1], Shunto Katsumi[1], Tomohiro Amemiya[1,2], *Nobuhiko Nishiyama[1,2] (1. Tokyo Inst. of Tech. (Japan), 2. Inst. of Innovative Res. (Japan))

11:45 AM - 12:00 PM

[WB-04] High-temperature Operation of Membrane DR Lasers Integrated with Si Waveguide by Micro-transfer Printing Method

*Yoshiho Maeda[1], Takuma Aihara[1], Takuro Fujii[1], Tatsurou Hiraki[1], Koji Takeda[1], Tai Tsuchizawa[1], Hiroki Sugiyama[1], Tomonari Sato[1], Toru Segawa[1], Yasutomo Ota[2,3], Satoshi Iwamoto[2,4], Yasuhiko Arakawa[2], Shinji Matsuo[1] (1. NTT Device Technol. Labs., NTT Corp. (Japan), 2. Inst. for Nano Quant. Info. Electron., The Univ. of Tokyo (Japan), 3. Dept. of Appl. Phys. and Physico-Info., Keio Univ. (Japan), 4. Inst. of Indus. Sci., The Univ. of Tokyo (Japan))

12:00 PM - 12:15 PM

[WB-05] Quantum Dot SiPh Hybrid Wavelength Tunable Laser Diode with 100 nm Tunable Range

*Kissho Iwanaga[1], Wataru Masuda[1], Atsushi Matsumoto[2], Naokatsu Yamamoto[2], Tomohiro Kita[1] (1. Waseda University (Japan), 2. NICT (Japan))

12:15 PM - 12:30 PM

[WB-06] Low threshold current operation of membrane DR laser on Si with buried-ridge waveguide and ACPM grating for On-chip Optical Interconnection

*Naoki Takahashi[1], Weicheng Fang[1], Ruihao Xue[1], Shunto Katsumi[1], Yoshitaka Ohiso[1], Tomohiro Amemiya[1,2], Nobuhiko Nishiyama[1,2] (1. Tokyo Tech. (Japan), 2. Inst. of Innovative Research (Japan))

12:30 PM - 12:45 PM

Oral presentation

Silicon Integration 2

Session Chairs: Di Liang(Alibaba Group US), Nobuhiko Nishiyama(Tokyo Institute of Technology)
Wed. Oct 19, 2022 1:45 PM - 3:10 PM International Conference Hall (3F)

[WC-01(Upgraded Invited)] Electrically Pumped Quantum-Dot Lasers Grown on CMOS-Compatible 300 mm Si Wafers

*Kaiyin Feng[1], Chen Shang[2], Eamonn Hughes[2], Rosalyn Koscica[2], Andrew Clark[3], Mukul Debnath[3], Gerald Leake[4], David Harame[4], Peter Ludewig[5], John Bowers[1,2] （1. Dept. of Electrical and Computer Engineering, Univ. of California, Santa Barbara (United States of America), 2. Materials Dept., Univ. of California, Santa Barbara (United States of America), 3. IQE, Inc. (United States of America), 4. RF SUNY Polytechnic Inst. (United States of America), 5. NAsP_III/V GmbH (Germany)）

1:45 PM - 2:10 PM

[WC-02] Stability of spiking effect in membrane laser neurons on Si utilizing optical feedback

*Nikolaos Panteleimon Diamantopoulos[1], Suguru Yamaoka[1], Takuro Fujii[1], Hidetaka Nishi[1], Toru Segawa[1], Shinji Matsuo[1] （1. NTT Device Technology Labs, NTT Corporation (Japan)）

2:10 PM - 2:25 PM

[WC-03] 80 GHz compact photonic microwave generation from a solitary distributed feedback laser on silicon F

*FREDERIC GRILLOT[1,6], Gabriel Callado[1,2], Shihao Ding[1], Theo Verolet[3], Jean Decobert[4], Christophe Jany[5], Karim Hassan[5], Stephane Malhouitre[5], Daniel Make[4], A Coquiard[5], Sylvain Combrié[2], Alexandre Shen[4], Alfredo de Rossi[2] （1. TELECOM PARIS (France), 2. Thales Research and Technolog (France), 3. Nokia (United States of America), 4. III-V Lab (France), 5. CEA LETI (France), 6. Center for High Technology Materials (United States of America)）

2:25 PM - 2:40 PM

[WC-04] GaAs Micro-disk Lasers on Membranes Grown by Lateral MOCVD on SOI Platform

*Qi LIN[1], Jie HUANG[1], Liying LIN[1], Ying XUE[1], Zengshan XING [2], Kam Sing WONG[2], Kei May LAU[1] （1. Department of Electronic and Computer Eng., Hong Kong Univ. of Sci. and Tech. (Hong Kong), 2. Department of Physics and William Mong Inst. of Nano Sci. and Tech., Hong Kong Univ. of Sci. and Tech. (Hong Kong)）

2:40 PM - 2:55 PM

[WC-05] InP/GaAsP DWELL Lasers Grown on (001) Si Emitting at 740 nm

WEI LUO[1], *QI LIN[1], JIE HUANG[1], KAMING WONG[1], LIYING LIN[1], KEIMAY LAU[1] （1. The Hong Kong University of Science and Technology (Hong Kong)）

2:55 PM - 3:10 PM

Oral presentation

Midwave IR and THz

Session Chairs: Carlo Sirtori(Laboratoire de Physique de lEcole Normale Superieure, ENS, Universite PSL, CNRS, Sorbonne Universite, Universite de Paris), Tim Newell(Univ. of New Mexico)
Wed. Oct 19, 2022 3:35 PM - 5:50 PM International Conference Hall (3F)

[WD-01] ~8.5 μ m InP-based quantum cascade lasers grown on GaAs by MOCVD

*Shining Xu[1], Shuqi Zhang[1], Jeremy Kirch[1], Suraj Suri[1], Nikhil Pokharel[1], Honghyuk Kim[1], Dan Botez[1], Luke Mawst[1] （1. UNIVERSITY OF WISCONSIN-MADISON (United States of America)）
3:35 PM - 3:50 PM

[WD-02] Fingertip Sized External Cavity Quantum Cascade Laser Based on MEMS Grating

*Atsushi Sugiyama[1], Takahide Ochiai[1], Kyosuke Nagasaka[1], Tatsuo Dougakiuchi[1], Tadataka Edamura[1], Naota Akikusa[1] （1. Hamamatsu photonics K.K. (Japan)）
3:50 PM - 4:05 PM

[WD-03] Beam Properties of High-Power Reliable Mid-IR Quantum Cascade Lasers after 1300 Hours of Aging

*Benjamin Knipfer[1], David Hoerr[1], Maryam Farzaneh[2], Jae Ha Ryu[3], Morgan Turville-Heitz[3], Luke Mawst[3], Dan Botez[3], Tom Earles[4], Steven Ruder[4], Chris Galstad[4], Michael Klaus[4], Kevin Oresick[4], Robert Marsland[1] （1. Intraband, LLC (United States of America), 2. Univ. of Wisconsin - Stevens Point (United States of America), 3. Univ. of Wisconsin - Madison (United States of America), 4. DRS Daylight Solutions (United States of America)）
4:05 PM - 4:20 PM

[WD-04] Towards Continuous Wave, Single Mode, Surface-Emitting Lasers at 24µm and 28µm

*Tudor Olariu[1], Mattias Beck[1], Giacomo Scalari[1], Jérôme Faist[1] （1. ETH Zurich (Switzerland)）
4:20 PM - 4:35 PM

[WD-05] Si lens-coupled, room-temperature quantum cascade laser sources operating in 0.4-3 THz range

*Shohei Hayashi[1], Akio Ito[1], Tatsuo Dougakiuchi[1], Masahiro Hitaka[1], Atsushi Nakanishi[1], Kazuue Fujita[1] （1. Hamamatsu Photonics K.K. (Japan)）
4:35 PM - 4:50 PM

[WD-06] 1.39-Watt Operation of THz Quantum Cascade Laser with Highly Doped Depopulation Layers

*Tsung-Tse Lin[1], Li Wang[1], Ke Wang[2,1], Thomas Grange[3], Stefan Birner[3], Hideki Hirayama[1] （1. RIKEN (Japan), 2. Nanjing Univ. (China), 3. Nextnano GmbH (Germany)）
4:50 PM - 5:05 PM

[WD-07] Bullseye antenna-coupled THz ring quantum cascade laser for frequency comb operation

*Paolo Micheletti[1], Urban Senica[1], Andres Forrer[1], Sara Cibella[2], Guido Torrioli[2], Mattias Beck[1], Jerome Faist[1], Giacomo Scalari[1] （1. Institute of Quantum Electronics, Physics Department, ETH Zurich, Zurich (Switzerland), 2. 2CNR-Istituto di Fotonica e Nanotecnologie, Rome (Italy)）
5:05 PM - 5:20 PM

[WD-08] Advances in Long Wavelength Interband Cascade Lasers

*Jeremy Alan Massengale[1,2], Yixuan Shen[1], Rui Q. Yang[1], Samuel D. Hawkins[3], John F. Klem[3] （1.

School of Electrical and Computer Eng., Univ. of Oklahoma (United States of America), 2. Homer L. Dodge Department of Physics and Astronomy, Univ. of Oklahoma (United States of America), 3. Sandia National Lab. (United States of America))

5:20 PM - 5:35 PM

[WD-09] Continuous-wave Operation of GaSb-based Interband Cascade Lasers beyond 6 μ m

*Josephine Nauschuetz[1], Hedwig Knötig[2], Robert Weih[1], Julian Scheuermann[1], Benedikt Schwarz[2], Sven Höfling[3] (1. nanoplus Nanosystems and Technologies GmbH (Germany), 2. Institute of Solid State Electronics, TU Wien (Austria), 3. Physikalisches Institut and Wilhelm Conrad Röntgen Research Center for Complex Material Systems, Universität Würzburg (Germany))

5:35 PM - 5:50 PM

Oral presentation

Post Deadline Papers, Awards and Closing

Session Chairs: Akihiko Kasukawa(Furukawa Electric Co., Ltd.), Paul Leisher(Luminar Technologies Inc. and Freedom Photonics LLC)

Wed. Oct 19, 2022 6:00 PM - 7:00 PM International Conference Hall (3F)

[PDP-01] High-speed and wide repetition rate tuning of dual-tone optically injected mode-locked quantum-dot lasers

*Ana Ribeiro[1], Tiago Gomes[1,2], Maria Ana Cataluna[1] （1. IPaQS, Heriot-Watt Univ. (UK), 2. IFIMUP and DFA, Univ. do Porto (Portugal)）

6:00 PM - 6:15 PM

[PDP-02] Low-thermal-resistance by Decoupled Ridge Insulation Structure for hybrid GaInAsP/SOI ridge-waveguide lasers

*Moataz Eissa[1],Takehiko Kikuchi[1,3],Yoshitaka Ohiso[1],Tomohiro Amemiya[1,2],Nobuhiko Nishiyama[1,2,3] （1. EEE Dept., Tokyo Inst. of Tech. (Japan), 2. IIR, Tokyo Inst. of Tech. (Japan), 3. Phot. Elect. Tech. Rec. Assoc. (Japan)）

6:15 PM - 6:30 PM

[MT1] Memorial Talk for Prof. I. Akasaki (Prof. H. Amano)

6:30 PM - 6:35 PM

[MT2] Memorial Talk for Prof. N. Holonyak Jr. (Prof. J. J. Coleman)

6:35 PM - 6:40 PM

[CL] Awards + Closing Remarks

6:40 PM - 7:00 PM