Photonics West 2019

2019/02/05 - 2019/02/07
San Francisco CA, USA

Booth No.:
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CONFERENCE 10939

WEDNESDAY 6 FEBRUARY

SESSION 8
LOCATION: ROOM 74 (SOUTH LOWER MEZZANINE) . WED 8:10 AM TO 10:00 AM

Tunable Lasers

Session Chair: **Luke J. Mawst,** Univ. of Wisconsin-Madison (USA)

8:10 am: **Hybrid integrated single-frequency diode laser with wide tunability around 1.5µm wavelength and sub-100 Hz intrinsic linewidth** *(Invited Paper)*, Klaus-Jochen Boller, Univ. Twente (Netherlands) . . .[10939-34]

8:40 am: **Mode-hop free operation throughout lifetime confirmed in a 2µm distributed Bragg reflector laser for gas sensing**, Makoto Shimokozono, Takuya Kanai, Naoki Fujiwara, Hiroyuki Ishii, Yoshitaka Ohiso, NTT Corp. (Japan); Yuta Ueda, Nippon Telegraph and Telephone Corp. (Japan); Hideaki Matsuzaki, NTT Corp. (Japan) . . .[10939-35]

9:00 am: **Tunable external-cavity laser diode based on self-assembled InAs quantum dots for swept-source optical coherence tomography applications at 1100 nm**, Nobuhiko Ozaki, Wakayama Univ. (Japan) and Univ. of Glasgow (United Kingdom); David T. D. Childs, Aleksandr Boldin, Univ. of Glasgow (United Kingdom); Daigo Ikuno, Katsuya Onoue, Wakayama Univ. (Japan); Hirotaka Ohsato, Eiichiro Watanabe, Naoki Ikeda, Yoshimasa Sugimoto, National Institute for Materials Science (Japan); Richard A. Hogg, Univ. of Glasgow (United Kingdom) . . . . . .[10939-36]

9:20 am: **Tuning of a widely tunable monolithically integrated InP laser for optical coherence tomography**, Rastko Pajković, Sylwester Latkowski, Kevin A. Williams, Erwin A.J. M. Bente, Technische Univ. Eindhoven (Netherlands). . . . . .[10939-37]

9:40 am: **Tunable Y-branch dual-wavelength diode lasers in the VIS and NIR range for sensor applications**, Bernd Sumpf, Jörg Fricke, Arnim Ginolas, André Maassdorf, Martin Maiwald, Ferdinand-Braun-Institut (Germany); Andre Müller, Ferdinand-Braun-Institut, Leibniz-Institut für Höchstfrequenztechnik (Germany); Mahmoud Tawfieq, Lara Sophie Theurer, Ferdinand-Braun-Institut (Germany); Nghiem T. Vu, Vietnam Academy of Science and Technology (Viet Nam); Hans Wenzel, Ferdinand-Braun-Institut (Germany) . . . . . .[10939-38]

Coffee Break. . . . . .Wed 10:00 am to 10:30 am

SESSION 9
LOCATION: ROOM 74 (SOUTH LOWER MEZZANINE) WED 10:30 AM TO 12:10 PM

QCL Frequency Combs

Session Chair: **Sukhdeep Dhillon,** Lab. Pierre Aigrain (France)

10:30 am: **Quantum cascade laser optical frequency combs: broadband operation and emission control** *(Invited Paper)*, Jérôme Faist, ETH Zurich (Switzerland) . . . . . .[10939-39]

11:00 am: **Compressed pulses from a mid-infrared QCL frequency comb**, Matthew Singleton, Pierre Jouy, Mattias Beck, Jerome Faist, ETH Zurich (Switzerland) . . . . . .[10939-40]

11:20 am: **Self-locked quantum cascade lasers solve a global optimization problem** *(Invited Paper)*, Marco Piccardo, Paul Chevalier, Harvard Univ. (USA); Benedikt Schwarz, Technische Univ. Wien (Austria); Dmitry Kazakov, Harvard Univ. (USA); Yongrui Wang, Alexey Belyanin, Texas A&M Univ. (USA); Federico Capasso, Harvard Univ. (USA) . . . . . .[10939-41]

11:50 am: **Physics and applications of harmonic frequency combs in quantum cascade lasers**, Yongrui Wang, Alexey Belyanin, Texas A&M Univ. (USA) . . . . . .[10939-42]

Lunch/Exhibition Break . . . . . .Wed 12:10 pm to 1:40 pm

SESSION 10
LOCATION: ROOM 74 (SOUTH LOWER MEZZANINE) . . WED 1:40 PM TO 3:20 PM

MIR Lasers: Mode-Locking, Combs, and Frequency Noise

Session Chair: **Jerry R. Meyer,** U.S. Naval Research Lab. (USA)

1:40 pm: **Advances in development of the GaSb-based type-I quantum-well cascade-diode lasers: wavelength tuning and mode-locking** *(Invited Paper)*, Leon Shterengas, Takashi Hosoda, Tao Feng, Jiang Jiang, Stony Brook Univ. (USA); Alexey Belyanin, Texas A&M Univ. (USA); Gela Kipshidze, Gregory Belenky, Stony Brook Univ. (USA) . . . . . .[10939-43]

2:10 pm: **Passively mode-locked interband cascade lasers** *(Invited Paper)*, Mahmood Bagheri, Clifford Frez, Jet Propulsion Lab. (USA); Igor Vurgaftman, U.S. Naval Research Lab. (USA); Jonas Westberg, Lukasz A. Sterczewski, Princeton Univ. (USA); Mathieu Fradet, Ivan Grudinin, Jet Propulsion Lab. (USA); Chadwick L. Canedy, William W. Bewley, Chul Soo Kim, Charles D. Merritt, Jerry R. Meyer, U.S. Naval Research Lab. (USA); Gerard Wysocki, Princeton Univ. (USA). . . . . .[10939-44]

2:40 pm: **Repulsive intermode beat synchronization in interband cascade laser frequency combs**, Benedikt Schwarz, Johannes Hillbrand, Maximilian Beiser, Technische Univ. Wien (Austria); Anne Schade, Julius-Maximilians-Univ. Würzburg (Germany); Hermann Detz, Aaron M. Andrews, Technische Univ. Wien (Austria); Robert Weih, nanoplus Nanosystems and Technologies GmbH (Germany); Sven Höfling, Julius-Maximilians-Univ. Würzburg (Germany). . . . . .[10939-45]

3:00 pm: **Frequency noise characterization and stabilization of interband cascade lasers**, Simone Borri, Istituto Nazionale di Ottica (Italy); Mario Siciliani de Cumis, Agenzia Spaziale Italiana (Italy); Silvia Viciani, Francesco D'Amato, Istituto Nazionale di Ottica (Italy); Anatoliy Savchenkov, Andrey Matsko, OEwaves, Inc. (USA); Paolo De Natale, Istituto Nazionale di Ottica (Italy). . . . . .[10939-46]

Coffee Break. . . . . Wed 3:20 pm to 3:50 pm

SESSION 11
LOCATION: ROOM 74 (SOUTH LOWER MEZZANINE) . . WED 3:50 PM TO 4:50 PM

QCL Frequency Combs and Mode Locking

Session Chair: **Marco Piccardo,** Harvard Univ. (USA)

3:50 pm: **Phase control of a terahertz quantum cascade laser using an optical injection phase-lock loop**, Reshma Anamari Mohandas, Univ. of Leeds (United Kingdom); Lalitha Ponnampalam, Univ. College London (United Kingdom); Lianhe H. Li, Univ. of Leeds (United Kingdom); Cyril C. Renaud, Alwyn J. Seeds, Univ. College London (United Kingdom); Paul Dean, Edmund H. Linfield, Giles A. Davies, Joshua R. Freeman, Univ. of Leeds (United Kingdom). . . . . .[10939-48]

4:10 pm: **Fourier limit pulse train from an active mode-locked quantum-cascade laser**, Valentino Pistore, Hanond Nong, Lab. Pierre Aigrain - ENS Paris (France); Pierre-Baptiste Vigneron, Raffaele Colombelli, Ctr. de Nanosciences et de Nanotechnologies (France); Katia Garrasi, Miriam S. Vitiello, NEST, Istituto Nanoscienze CNR (Italy); Lianhe H. Li, Edmund H. Linfield, Giles A. Davies, Univ. of Leeds (United Kingdom); Juliette Mangeney, Jérome Tignon, Sukhdeep Dhillon, Lab. Pierre Aigrain - ENS Paris (France) . . . . . .[10939-49]

4:30 pm: **Optomechanical control of quantum cascade laser frequency combs**, David Burghoff, Univ. of Notre Dame (USA) . . . . . .[10939-50]