

**POSTER Session - Tuesday 8th, 2015**

**MIR QCLs**

M.C. Zheng, Y.M. Zhang, P.Q. Liu, X. Wang, J.-Y. Fan, M. Troccoli and C. Gmachl (27) - <i>High power spiral cavity quantum cascade superluminescent emitter with a loop back facet</i>
A. Harrer, R. Szedlak, B. Schwarz, H. Moser, T. Zederbauer, D. MacFarland, H. Detz, A.M. Andrews, W. Schrenk and G. Strasser (69) - <i>Towards a monolithic integrated surface emitting and detecting mid-infrared gas sensor</i>
M. Holzbauer, R. Szedlak, D. MacFarland, T. Zederbauer, H. Detz, A.M. Andrews, W. Schrenk and G. Strasser (74) - <i>Thermal management in ring quantum cascade lasers</i>
A. Word-Daniels, Y. Song, P. Bouzi, D. Sivco and C. Gmachl (80) - <i>Quantum Cascade Laser Design Capitalizing on Interface Roughness Scattering</i>
Johanna Wolf, Mattias Beck, Emilio Gini and Jerome Faist (85) - <i>3 <math>\mu\text{m}</math> Quantum Cascade Laser with a Dissipation below 500 mW</i>
F. Demmerle, J. Bissinger, W. Oberhausen, H. Schmeiduch, G. Böhm and M.C. Amann (86) - <i>THz Emission by Difference-Frequency Generation in Single-Active Region Quantum Cascade Lasers</i>

**THz QCLs**

Tsung-Tse Lin and Hideki Hirayama (4) - <i>Modulation barrier design Al<sub>x</sub>Ga<sub>1-x</sub>As/GaAs terahertz quantum cascade lasers</i>
G. Rozas, M. Wienold, B. Röben, L. Schrottke, K. Biermann and H.T. Grahn (8) - <i>THz quantum-cascade lasers for high-resolution semiconductor spectroscopy</i>
B. Mirzaei, N. van Marrewijk, D. Hayton, J.R Gao, T.Y Kao, Q. Hu and J.L Reno (29) - <i>Frequency locking and monitoring based on bi-directional terahertz radiation of a 3<sup>rd</sup>-order distributed feedback QCL</i>
P. Dean, J. Keeley, A. Valavanis, K. Bertling, Y.L. Lim, T. Taimre, R. Alhathool, L. Li, D. Indjin, A. Rakic, E. Linfield and Giles Davies (31) - <i>Active phase-nulling of the self-mixing phase in a terahertz frequency quantum cascade laser</i>
J. Darmo, D. Bachmann and K. Unterrainer (59) - <i>Temporal and spectral aspects of quantum cascade heterostructures with a broadband gain</i>
S. Khanal, L. Zhao, C. Wu and S. Kumar (60) - <i>Design of a THz refractive-index sensor using quantum-cascade laser arrays</i>
Y.J. Han, L.H. Li, L. Chen, A.Valavanis, A. Grier, J. Zhu, J.R. Freeman, P. Dean, N. Isac, R. Colombelli, A.G. Davies and E.H. Linfield (66) - <i>Three-well terahertz frequency quantum cascade lasers with a common LO-phonon extraction and injection stage</i>
S.S. Kurlov, Y.V. Flores, M.P. Semtsiv and W. Ted Masselink (78) - <i>Simulation of InGaAs/InGaAs strain-compensated terahertz quantum cascade lasers</i>
Ileana-Cristina Benea-Chelmus, Giacomo Scalari, Mattias Beck and Jerome Faist (87) - <i>Intensity correlations of a THz Quantum Cascade Laser around its threshold</i>
B.A. Burnett, B.S. Williams (98) - <i>Density matrix modeling of terahertz difference frequency generation in dual active-region quantum cascade lasers</i>

**Modeling**

Q. Yang, H.D. Tholl, R. Aidam, R. Driad, R. Ostendorf, J. Wagner, J. Wolf and J. Faist (5) - <i>Modelling of the Power-versus-Current Characteristics of High Power Mid-Infrared Quantum Cascade Lasers based on Rate Equations</i>
L. Schrottke, X. Lü and H.T. Grahn (7) - <i>Fourier transform-based self-consistent model for carrier transport and optical gain in intersubband emitters</i>
A. Valavanis, A. Grier, J. Cooper, C. Evans and P. Harrison (20) - <i>Quantum Wells, Wires and Dots (QWWAD): Free and open-source simulation tools for semiconductor nanostructures</i>
C. Ndebeka-Bandou, F. Carosella and G. Bastard (13) <i>"Role of Coulombic donors in terahertz cascade structures"</i>

M.F. Pereira, D. Winge, V. Anfertev, V. Vaks and A. Wacker (47) - <i>Nonequilibrium Green's Functions Approach to THz Generation by Frequency Multiplication in Superlattices</i>
I. Ezhov, A. Matyas and C. Jirauschek (65) <i>"Influence of screening on longitudinal-optical phonon scattering in quantum cascade lasers"</i>

<b>Cavities</b>
R. Degl'Innocenti, A.Klimont, Y. Shah, R. Wallis, Y. Ren, D. Jessop, H. Beere and D. Ritchie (26) <i>"A hybrid plasmonic waveguide for improved beam profile from terahertz quantum cascade lasers"</i>
M. Süess, P. Jouy, C. Bonzon, J., M., E. Gini and J. Faist (34) <i>"Multi-color QCL array emitting from a single facet"</i>
R. Szedlak, M. Holzbauer, D. MacFarland, T. Zederbauer, H. Detz, A.M. Andrews, W. Schrenk and G. Strasser (38) <i>"How whispering gallery modes can influence the far field of ring lasers"</i>
F. Castellano, L. Li, E. Linfield, G. Davies and M.S. Vitiello (51) <i>"THz waveguide adapters for efficient radiation out-coupling from double metal THz QCLs"</i>
C. Belacel, Y. Todorov, S. Barbieri, I. Favero and C. Sirtori (72) <i>"THz to visible optomechanical transducer"</i>

<b>Physics</b>
M. Zaluzny and V. Bondarenko (16) - <i>Nonlinear optical response of intersubband polaritons in planar microcavities</i>
T. Goldzak, L. Gantz, I. Gilary, G. Bahir and N. Moiseyev (19) - <i>Interatomic Coulombic Decay in two coupled Quantum Wells</i>
B. Dailly, G. Pegolotti, S. Huppert, B. Askenazi, A. Vasanelli, Y. Todorov, C. Sirtori, I. Sagnes and G. Beaudoin (24) - <i>Quantum engineering of collective states in semiconductor quantum wells</i>
B. Askenazi, A. Vasanelli, Y. Todorov, M. Amanti, G. Beaudoin, I. Sagnes and C. Sirtori (33) - <i>Room temperature THz emission by ultra-strong coupling down conversion</i>
G. Frucci, S. Huppert, A. Vasanelli, T. Laurent, Y. Todorov, I. Sagnes, G. Beaudoin and C. Sirtori (37) - <i>Cooperative thermal emission from a semiconductor multi-quantum well system</i>
D. Gacemi, R. Steed, Y. Todorov, A. Vasanelli, G. Biasiol and C. Sirtori (76) - <i>Intersubband Polaritons in the sub-THz region</i>

<b>Detectors</b>
N. Hatefi-Kargan and S. Kiavar (28) - <i>Effect of illumination power intensity on the responsivity of a quantum cascade photodetector</i>

<b>Applications</b>
G. Villares, J. Wolf, M. Süess, D. Kazakov, A. Hugi, M. Beck and J. Faist (45) <i>Dual QCL frequency comb on a chip</i>
J. Waclawek (82) - <i>Quartz-enhanced photoacoustic spectroscopy sensor system for industrial application</i>
M. Yoshida, H. Amrania, N.P. Hylton, A. Pusch and C.C. Phillips (97) - <i>Quantum Ratchet" designs for Ultra-Efficient Solar Cells using Semiconductor Nanostructures</i>

<b>Materials</b>
H. Yasuda and I. Hosako (1) <i>"Non-equilibrium Green's function calculation of GaSb-based terahertz quantum cascade laser structures"</i>
D. MacFarland, M. Krall, H. Detz, O. Bethge, T. Zederbauer, A. Andrews, W. Schrenk, M. Brandstetter, K. Unterrainer and G. Strasser (70) <i>"Growth and Characterization of AlGaInAs for use as the Barrier Material in Terahertz Quantum Cascade Lasers"</i>