



IQCLSW2020
International Quantum Cascade Laser School and
Workshop
7-10 September, Online-ETH Zürich

Program

Monday 7 September (Time is Zürich time, GMT+2)

15:00 Opening (J. Faist, G. Scalari, D. Burghoff)

Day 1: QCL and detectors basics

Session 1

Chair: A. Tredicucci

15:15 Tutorial: G. Strasser, TU WIEN (AU)

Intersubband Detectors: QWIPs, QCDs, ICDs

16:00 Tutorial: E. Linfield, University of Leeds, (UK)

MBE growth of THz QCLs – the challenges and the rewards

16.45 Coffee Break

Session 2

Chair: G. Scalari

17:00 Keynote: R. Averitt, UCSD (CA, USA)

Dynamics and Control of Quantum Materials with Metamaterials

17.45 Tutorial, Q. Hu, MIT (MA, USA)

THz Quantum Cascade Lasers

18:30 Poster session

Tuesday 8 September

Day 2: Metamaterials and QCL applications

Session 3

Chair: J. Cao

15:00 Keynote: A. Burchianti, LENS (IT)

Quantum simulation with ultracold atoms: from ideal models to real systems

15:45 Tutorial: Y. Todorov, ENS, (FR)

THz metamaterials for ultra-strong light matter coupling and detection

16.30 Coffee Break

Session 4

Chair: J. Jagerska

16:45 Tutorial B. Williams, UCLA (CA, USA)

Metasurface external cavity THz QCLs — a flexible platform for tunable and broadband lasers

17:30 Invited W. Mäntele (Uni Frankfurt, DE)

MID-IR Quantum Cascade Lasers for Biomedical Applications: Towards a Non-Invasive Blood Glucose Measurement for Diabetes Patients

Session 5

Chair D. Burghoff

18:00 Invited L. Consolino (CNR-INO, IT)

QCL-comb based frequency metrology

18:30 Tutorial J. Meyer (NRL, DC, USA)

The Interband Cascade Laser

Wednesday 9 September
Day 3: THz QCLs and combs

Session 6

Chair M. S. Vitiello

14:00 Invited H. Li (SIMT, CN)

Terahertz quantum cascade laser dual-comb sources based on laser self-detection.

14:30 Tutorial M. Franckié (ETHZ, CH)

Transport modelling in quantum cascade lasers

15:15 Tutorial S. Barbieri (IEMN, FR)

Optical sampling of THz QCLs with fs-laser combs: mode-locking, frequency metrology and high resolution spectroscopy

16:00 Coffee Break

Session 7

Chair B. Schwarz

16:15 Keynote M. Lončar (Harvard Univ., MA, USA)

Lithium Niobate Frequency Combs

17:00 D. Burghoff (Notre Dame, USA)

Comb generation and characterization

17:45 Poster session

Thursday 10 September
Day 4: New Materials and photonics circuits

14:00 Poster session

Session 8
Chair R. Colombelli

15:00 Tutorial D. Marris-Morini

SiGe photonic circuits for mid IR spectroscopy

15.45 Invited M. De Seta (UNiRoma3, IT)

SiGe heterostructures for THz QCLs: issues, progress, perspectives

16:15 Coffee Break

Session 9
Chair J. Faist

16:30 Keynote D. Norris (ETHZ, CH)

Optical Fourier Surfaces

17:15 Tutorial M. Belkin (TUM, DE)

Emerging approaches to photonic integration in mid-infrared

18:00 Concluding remarks