

## Sunday 19 June

12:00 Start of registration

### Session: Tutorials I

Session Chair: Hou-Tong Chen

13:30 Lei Zhou TL01: Metasurfaces: Physics and applications

14:30 Tobias Kampfrath TL02: Terahertz emission spectroscopy: Insights into spintronic materials and applications

15:30 Coffee break

### Session: Tutorials II

Session Chair: Emma MacPherson

16:00 Jens Neu TL03: Terahertz spectroscopy of emerging materials for solar applications

17:00 Junichiro Kono TL04: Terahertz Cavity Quantum Electrodynamics in Condensed Matter

20:30 End of presentations

18:30 Welcome reception

## Monday 20 June

8:45 Chairs Opening

### Session: THz spectroscopy I

Session Chair: Peter Kužel

9:15 David Cooke KN01: Terahertz observation of large polarons in lead halide perovskites

10:00 Jake Hutchinson O-01: Ultrafast terahertz dynamics in 2D/3D lead-tin perovskites with enhanced emissivity and phase purity

10:15 Poonam Singh O-02: Coherent underdamped polaron oscillations in liquid alcohols

10:30 Wentao Zhang O-03: Rigorous modeling of the THz emission spectrometer

10:45 Coffee break

### Session: Metamaterials and plasmonics

Session Chair: Igal Brener

11:15 Abul K. Azad I-01: Control electromagnetic waves with space-time modulated metasurfaces

11:45 Jeong Woo Han O-04: Experimental verification of plasmonic THz nonlinearities on graphene disks

12:00 Dibakar Roy Chowdhury O-05: Magnetically reconfigurable terahertz superlattice metasurfaces

12:15 Ilya Shadrivov O-06: THz topological meta-devices for on-chip photonics

12:30 Abdullah M. Zaman O-07: Towards ultrahigh modulation speed of THz optoelectronic devices based on metamaterial/graphene split-ring resonators

12:45 Lunch break

### Session: Optical THz generation and detection I – Currents

Session Chair: Peter Uhd Jepsen

14:15 Joachim Buldt O-08: High-power gas-plasma based THz generation driven by a fiber-laser

14:30 Mark D. Thomson O-09: Recovery of the absolute temporal fields of THz-infrared continuum pulses using field-induced second-harmonic detection

14:45	Guo-Qian Liao	O-10: Extreme THz radiation from relativistic laser plasmas
15:00	Xavier Ropagnol	O-11: Generation of intense THz pulses with tunable elliptical polarization
15:15	Justas Deveikis	O-12: Controllable generation of azimuthal and radial THz beams using multi-pixel photoconductive emitters
15:30	Igal Brener	O-13: Ultra-low noise THz photoconductive metasurface detectors
15:45	Coffee break	
16:15	Shaojie Liu	O-14: Enhanced spintronic THz emission by plasmonic nanostructures
16:30	Peiyan Li	O-15: Magnetic-field free THz emission from two-dimensional ferromagnet and antiferromagnet heterostructures at room temperature
16:45	Benedikt Limbacher	O-16: Terahertz single-pixel & single-shot object recognition
Session: Applications in nanomaterial characterization		Session Chair: Michael Först
17:00	Petr Kužel	O-17: Band bending in GaAs nanobars revealed by near- and far-field terahertz photoconductivity measurements
17:15	Alexej Pashkin	O-18: High electron mobility in strained core/shell nanowires revealed by optical pump – THz probe spectroscopy
17:30	Jacob A. Spies	O-19: Time-resolved THz spectroelectrochemistry and complementary techniques provide insight into electron transfer processes
17:45	End of presentations	

## Tuesday 21 June

Session: THz spectroscopy II - Novel methods		Session Chair: Jens Neu
9:00	Leonardo Viti	I-02: THz detection with 2D materials
9:30	Sharly Fleischer	O-20: Direct, spatially localized detection of THz-induced orientation dynamics of gas phase molecular rotors
9:45	Diyar Talbayev	O-21: Time-domain THz superoscillations for superspectroscopy
10:00	Edward Butler-Caddle	O-22: THz photoconductivity dynamics of semiconductors from sub-nanosecond to millisecond timescales
10:15	Mathias Hedegaard Kristensen	O-23: Classification of THz reflection spectra using machine learning algorithms
10:30	Lucy Hale	O-24: The role of surface nonlinearity in THz generation from GaAs metasurfaces
10:45	Coffee break	
Session: Communication		Session Chair: Abdul K. Azad
11:15	Daniel Mittleman	O-25: Conformal leaky-wave antennas for THz wireless communications
11:30	David Rohrbach	O-26: A broadband dispersion-free THz waveguide platform featuring field-enhancement

11:45	Fatima Taleb	O-27: The effect of the complex geometries of building materials on scattering properties for the design of THz communication channels
12:00	Joel Edouard Nkeck	O-28: Parallel generation and modulation of THz pulse trains
12:15	Hichem Guerboukha	O-29: Jamming vulnerabilities in THz wireless communications
12:30	Lunch break	

**Session: High-field THz physics and nonlinear optics I** **Session Chair: Koichiro Tanaka**

14:00	Hynek Němec	I-03: Nonlinear terahertz conductivity in semiconductor nanobars: Semiclassical calculations
14:30	Martin J. Cross	O-30: Discriminating THz-frequency nonlinear optical processes in ZnTe with two-dimensional spectroscopy
14:45	Seamus O'Hara	O-31: Reconstruction of effective Hamiltonian of holes in bulk GaAs
15:00	Josef Riepl	O-32: Field-resolved high-order nonlinearities in a free-running terahertz semiconductor laser (semiconductors)
15:15	Rokas Jutas	O-33: Direct sub-ps electro-absorption modulation in colloidal quantum dots driven by THz field
15:30	Stephan Winnerl	O-34: Pump-induced terahertz anisotropy in graphene
15:45	Coffee break	

**Session: Applications in biology and medicine** **Session Chair: Martina Havenith**

16:15	Emma MacPherson	I-04: In vivo THz ellipsometry of human skin: Breakthroughs and next steps
16:45	Enrique Castro-Camus	O-35: THz imaging of the feet reveals evidence of the underlying neurological mechanism of hydration depletion in diabetics
17:00	Jochen Taiber	O-36: Analysing the influence of the stomatal activity on the drying process of Arabidopsis thaliana using THz spectroscopy
17:15	Poster session I	
19:15	End of presentations	

## Wednesday 22 June

### Session: Quantum phenomena and particle acceleration

Session Chair: Tobias Kampfrath

9:00	Matthias Hoffmann	I-05: Characterization and manipulation of relativistic electron bunches using THz pulses
9:30	Steven Jamison	O-37: THz driven acceleration and dechirping of 35 MeV electron beams
9:45	Malte L. Welsch	O-38: Light emission from gases and liquids excited by THz-driven field-emitted electrons
10:00	Sándor Kollarics	O-39: Masing of nitrogen-vacancy centers in the THz regime
10:15	Michael Horbury	O-40: Liquid-crystal-based optics for use at THz-QCL frequencies
10:30	Coffee break	
10:45	Poster session II	
12:45	Lunch break	

### Session: THz spectroscopy III

Session Chair: Daniel Mittleman

14:15	Kirill Vasin	O-41: Microscopic theory of the THz modes and their nonreciprocal directional dichroism in the antiferromagnet Fe <sub>2</sub> Mo <sub>3</sub> O <sub>8</sub>
14:30	Konstantin Warawa	O-42: Combined analysis of amplitude and phase modes in a quasi-one-dimensional charge density wave system up to 7 THz
14:45	Megan Nielson	O-43: Pump-pulse activation of anharmonic coupling in CdWO <sub>4</sub>
15:00	Matthias Runge	O-44: Few-cycle THz pulses from intersubband shift currents in asymmetric AlGaAs quantum wells
15:15	Tinkara Troha	O-45: Ultrafast long-distance electron-hole plasma expansion in GaAs mediated by stimulated emission and reabsorption of photons
15:30	Coffee break	

### Session: Near-field microscopy and nanoscopy I

Session Chair: David Cooke

16:00	Melanie Müller	I-06: Phase-resolved THz bias sampling and its application for ultrafast scanning tunneling microscopy
16:30	Valentino Pistore	O-46: Hyperspectral near-field nanoscopy with THz frequency combs
16:45	Carmen Roelcke	O-47: Quantitative sampling of THz waveforms on atomic scales
17:00	Angela Pizzuto	O-48: Nonlocal laser THz emission microscopy
17:15	Andrei Luferau	O-49: Time-resolved nanospectroscopy on Si-doped GaAs-InGaAs core-shell nanowires
17:30	Eva Arianna Aurelia Pogna	O-50: THz near-field nanoscopy of hyperbolic phonon-polaritons hybridized with Dirac plasmons in topological insulators
17:45	End of presentations	
19:30	Conference dinner	

## Thursday 23 June

### Session: High-field THz physics and nonlinear optics II

Session Chair: Dmitry Turchinovich

9:00	Michael Först	KN-02: Controlling functionality by terahertz nonlinear phononics
09:45	Sebastian F. Maehrlein	O-51: Nonlinear phonon excitation in lead halide perovskites traced via THz Kerr effect
10:00	Manuel Meierhofer	O-52: Tunable non-integer high-harmonic generation from a topological insulator surface
10:15	Joshua Mornhinweg	O-53: Subcycle nonlinearities of ultrastrong light-matter coupling
10:30	Coffee break	

### Session: Optical THz generation and detection II - Optical rectification

Session Chair: Matthias Hoffmann

11:00	Clara Saraceno	I-07: High power, high repetition rate THz sources
11:30	Niloufar Nilforoushan	O-54: Generation of ultra-broadband THz pulses at a 200 kHz repetition rate with peak electric field above 100 kV/cm
11:45	Claire Rader	O-55: High-field THz generation from a new organic crystal: PNPA
12:00	Leo Guiramand	O-56: Development of an efficient intense THz source and its application for super-resolution imaging
12:15	Baolong Zhang	O-57: Efficient multicycle THz generation based on tilted-pulse-front technique
12:30	Dong-Wen Zhang	O-58: Strong THz generation and characterization from lithium niobate wafer pumped by SILEX-II petawatt laser facility

12:45 Lunch break

### Session: Quantum cascade lasers

Session Chair: Hynek Nemeč

14:15	Michael Jaidl	O-59: Silicon integrated terahertz quantum cascade ring laser frequency comb
14:30	Alexander Valavanis	O-60: Power-locking of a 3.5-THz quantum-cascade laser using an integrated photonic circuit
14:45	Benedikt Limbacher	O-61: Deep learning powered adaptive tuning of quantum cascade random lasers
15:00	Valentino Pistore	O-62: Metrological-grade frequency combs engineering from terahertz quantum cascade lasers

15:15 Coffee break

### Session: Near-field microscopy and nanoscopy II

Session Chair: Karl Unterrainer

15:45	Mengkun Liu	I-08: THz near-field imaging of 2D materials and subwavelength metal structures
16:15	Adrian Gozar	O-63: Surface Cooper-pair plasma waves in a high-T <sub>c</sub> cuprate superconductor
16:30	Tom Siday	O-64: Ultrafast nanoscopy of an exciton Mott transition in bilayer WSe <sub>2</sub>
16:45	Jaime Gomez Rivas	O-65: Broadband THz near-field microscopy of resonant metasurfaces: Making bound states in the continuum visible
17:00	Hou-Tong Chen	O-66: Ultrafast directional photocurrents and terahertz emission from plasmonic nanoantennas on graphene

17:15 PC member or chairs Closing remarks

17:30 End of presentations