12th International Workshop on Terahertz Technology and Applications
Fraunhofer Institute for Industrial Mathematics ITWM, Kaiserslautern, Germany

Program
Tuesday, March 3rd, 2026

10:00	**Registration and laboratory visit at Fraunhofer ITWM** All open laboratories can be visited freely until official opening of the workshop – without registration or guided tours.
12:00	Snack
12:50	**Welcome and opening remarks** Georg von Freymann, RPTU Kaiserslautern-Landau, DE
	Session 1: Sources and detectors
13:00	**Dirac plasmons in graphene-based 2D materials for Terahertz lasers and detectors** (invited) Taiichi Otsuji, ENSEMBLE3 Center of Excellence Ltd., Warszawa, PL
13:30	**Novel Continuous-wave 1-11 THz radiation in the µW regime** Jonas H. Krakofsky, TU Munich, DE
13:50	**Narrowband Terahertz pulses centered at 1 THz with high average power emission (> 0.6 mW) using thick quarter-wavelength cavity-based photoconductive antennas** Sukhdeep Dhillon, Ecole Normale Supérieure, Paris, FR
14:10	**Terahertz-wave up-conversion detection using SU(1,1) interferometer for integrated device** Yuto Yoneda, RIKEN, Sendai, JP
	Session 2: Spectroscopy
14:30	**Direct and difference-frequency-generation techniques for terahertz-frequency spectroscopy of gasphase deuterium exchange reactions** Alexander Valavanis, The University of Leeds, UK
14:50	**Terahertz excitation spectroscopy for thin bismuth and tellurium layer characterization** Ricardas Norkus, Center for Physical Sciences and Technology (FTMC), Vilnius, LT
15:10	**Nonlinear photoconductivity in pump-probe spectroscopy experiments** Leya Lopez Lovely, Simon Fraser University, Burnaby, CA
15:30	Coffee break
	Session 3: Metrology
15:50	**Enabling 6G and precision metrology with a comb locked ultra broadband terahertz source** Timo Noack, Rohde & Schwarz GmbH & Co. KG, Munich, DE
16:10	**Detecting terahertz spectra of pulsed and continuous-wave signals with the photonic spectrum analyzer** Sascha Preu, TU Darmstadt, DE
16:30	**Broadband terahertz frequency synthesis using cascaded beat-locked cw lasers and four-wave mixing for vector network analysis** Michael Kocybik, Fraunhofer ITWM, Kaiserslautern, DE
17:00	**Poster session**
19:00	Bus transfer to hotels
19:30	Welcome drink at the "Fruchthalle"
20:00	Evening reception at the "Fruchthalle"

12th International Workshop on Terahertz Technology and Applications
Fraunhofer Institute for Industrial Mathematics ITWM, Kaiserslautern, Germany

Program
Wednesday, March 4th, 2026

8:30	Bus transfer to Fraunhofer ITWM
	Session 4: Near-field Applications
9:00	**Terahertz-SNOM conductivity measurements on the nanoscale** (invited) Peter Uhd Jepsen, Technical University of Denmark, Kgs. Lyngby, DK
9:30	**Non-destructive quality control of laser-assisted vertically integrated MEMS using photoconductive terahertz near-field microprobes** Jan Meyne, Protemics GmbH, Aachen, DE
9:50	**High-repetition rate terahertz source for ion-field emission driving** Alexandre Fahy, INSA Université de Rouen Normandie, Saint Etienne du Rouvray, FR
	Session 5: Communication
10:10	**Unleashing the terahertz band: from near-field communications to space networks** (invited) Josep Miquel Jornet, Northeastern University, Boston, US
10:40	**Experimental testbed of a fully electronic and network integrated 300 GHz, 100 meter point-to-point Radio Link** Ingmar Kallfass, University of Stuttgart, DE
11:00	**Multi-gigabit optical wireless communication with a directly modulated terahertz laser** Jayaprasath Elumalai, University of Leeds, UK
11:20	Coffee break
	Session 6: Various Applications I
11:40	**In vivo THz imaging: developing the Picobot** (invited) Emma MacPherson, Warwick University, Coventry, UK
12:10	**Homodyne Systems for terahertz non-destructive testing** (invited) Harrison Noel Lees, University of Adelaide, AU
12:40	**Photonic integration technology for terahertz frequency-domain spectrometers** Robert Kohlhaas, Fraunhofer HHI, Berlin, DE
13:00	Lunch break
	Session 7: Various Applications II
13:30	**Advandes in aerospace thickness inspection: accurate measurement for wet and dry coatings** (invited) Israel Arnedo, das-Nano S.L., Tajonar, SP
13:50	**Adaptive regularization methods for near real-time terahertz deconvolution in sub-wavelength coatings** (invited) Jyotirmayee Dash, TeraLumen Solutions Private Limited, Chennai, IN
14:10	**A highly efficient and accurate terahertz 3D tomographic imaging system for complex curved-surface composites** Kun Meng, Qingdao Quenda Terahertz Technology Co., Ltd., Qingdao, CN
14:30	**Detection of sub-resolution delamination in anti-corrosion coatings using terahertz pulsed imaging** Vincent Wallace, University of Western Australia, Perth, AU
14:50	**Traversing thickness gauging in foil web processing using fast terahertz time-domain-spectroscopy** Daniel Stock, University of Siegen, DE
15:10	**Closing Remarks** Georg von Freymann, RPTU Kaiserslautern-Landau, DE

Poster Session

P1 Terahertz investigations of superconducting nitride films
Yayi Lin, University Stuttgart, DE

P2 Schottky-diode based waveguide switches
Oleg Cojocari, ACST GmbH, Hanau, DE

P3 Synthetic aperture time-domain spectroscopy for terahertz waveguide characterizations
Georges Humbert, XLIM research institute, Limoges, FR

P4 A compact coherent detection method for portable terahertz sensing
Chen Gong, Eindhoven University of Technology, NL

P5 Terahertz power scaling for fiber-coupled terahertz TDS enabled by a 1 GHz dual-comb laser
Alexander, Dohms, Fraunhofer HHI, Berlin, DE

P6 Sparse terahertz sensing and thickness determination at kilohertz measurement rates with a photonic integrated frequency-domain spectrometer
Lauri Schwenson, Fraunhofer HHI, Berlin, DE

P7 Ultra-broadband photonic heterodyne terahertz receiver for communication and radar applications
Milan Deumer, Fraunhofer HHI, Berlin, DE

P8 Ultra-broadband photonic VNA with quasi-optical waveguide coupling from 75 to 750 GHz demonstrating calibrated Y-band measurements
Garrit Schwanke, Fraunhofer HHI, Berlin, DE

P9 Flexible high-speed and high-resolution terahertz frequency-domain spectrometer with FPGA-based real-time processing
Florian Walter, Fraunhofer HHI, Berlin, DE

P10 Spectral sensing by self-injection-locked terahertz oscillator arrays
Jonas Watermann, University of Duisburg-Essen, DE

P11 The OSAS-B terahertz heterodyne spectrometer for measuring atomic oxygen in the atmosphere
Martin Wienold, German Aerospace Center (DLR), Berlin, DE

P12 A compact heterodyne millimeter-wave/terahertz spectrometer for remote sensing
Lukas Jehna, German Aerospace Center (DLR), Berlin, DE

P13 Terahertz InGaAs-based Schottky diode receivers for atmospheric research
Divya Jayasankar, German Aerospace Center (DLR), Berlin, DE

P14 Electric-field induced terahertz second harmonic generation in graphene
Jonas Woeste, Technische Universität Berlin, DE

P15 Micro-optical bench terahertz quantum-cascade laser system
Robert Voigt, Humboldt-Universität zu Berlin, DE

P16 High-power coherent emission from arrays of resonant-tunneling-diode (RTD) oscillators
Fanqi Meng, Goethe University Frankfurt, DE

P17 Photoconductive antennas based on Ge, Ge-on-Si, and GeSn-on-Si for terahertz generation without Reststrahlenband restrictions
Stephan Winnerl, Helmholtz-Zentrum Dresden-Rossendorf, DE

P18 Efficient bio-sensor based on terahertz metasurface
Maciej Sakowicz, Institute of High Pressure Physics PAS, Warsaw, PL

P19 Revealing side-to-side nonuniformity in lithium-ion battery electrodes using dual-head terahertz sensor
Phil Tadays, TeraView LTD, Cambridge, UK

Poster Session

P20 A Fiber-Based Integrated electro-optical scheme for coherent synchrotron radiation detection at the Karlsruhe research accelerator
Stefan Funkner, KIT, Karlsruhe, DE

P21 Low-loss optical elements for integration into advanced terahertz systems
Elena Mavrona, Lepto GmbH, Dübeldorf, CH

P22 Development status of novel and robust power combined high power LO source at terahertz frequencies
Maxime Missoum, LIRA - Observatoire de Paris, FR

P23 Terahertz metasurface structures for detecting acoustic vibrations of nanoparticles with terahertz waves
Hakan Altan, Middle East Technical University, Cankaya, TR

P24 Terahertz-TDS and terahertz-imaging of 3D-printed PLA and ABS with varying infill density
Krishna Kumar, MULTITEL, Mons, BE

P25 A non-destructive terahertz method for discrimination of hydration tates of hydrated salts
Muhammad Mumtaz, National Institute of Lasers and Optronics, Islamabad, PK

P26 Radiant-power detection for 6G communications and the long-wave infrared
Benjamin Röben, Physikalisch-Technische Bundesanstalt (PTB), Berlin, DE

P27 Improved terahertz reflection sensor optimized for industrial TDS applications
Andreas Steiger, Physikalisch-Technische Bundesanstalt (PTB), Berlin, DE

P28 Additively manufactured and dip-coated terahertz axicon lenses
Annamarija Starsaja, Technical University of Darmstadt, DE

P29 Integrated SiGe MMICs for frequencies above 100 GHz and their applications
Dirk Nüßler, Fraunhofer FHR, Wachtberg, DE

P30 Overcoming material and process challenges in 3D-printed terahertz components
Abhijeet Shrotri, Technische Hochschule Ostwestfalen-Lippe, Lemgo, DE

P31 Towards Compact additively manufactured biosensors
Suraj Joshi, TU Darmstadt, DE

P32 Microbridge-based reconfigurable Intelligent surface for beamforming in the Sub-terahertz band
Steffen Klingel, RPTU Kaiserslautern-Landau, DE

P33 Quantitative evaluation and comparison of terahertz and ultrasonic testing of glass fiber reinforced plastics
Jens Schuster, University of Applied Sciences Kaiserslautern, DE

P34 Characterization of doped semiconductors with THz-TDS: potential and limitations
Joshua Hennig, Fraunhofer ITWM, Kaiserslautern, DE

P35 Sub-THz CPW optoelectronic mixer up to 500 GHz: design and conversion loss measurements
Sakat Islam, IEMN, Lille, FR

P36 PIC-based CW-terahertz f-theta scanner for fast imaging of 3D-printed samples
Janis Kutz, TOPTICA Photonics SE, Gräfeling, DE

P37 Time axis reconstruction for advanced terahertz-TDS systems
Tobias Murawski, Ruhr University Bochum, DE