

Program 14th Terahertz Young Scientists Meeting

March 10th to 12th, 2024 at Fraunhofer ITWM,
Fraunhofer-Platz 1, Kaiserslautern, Germany

A joint event of

14th Terahertz Young Scientists Meeting

Welcome to the 14th Terahertz Young Scientists Meeting at the Fraunhofer ITWM in Kaiserslautern.

The 14th Terahertz Young Scientists Meeting takes place at the Fraunhofer ITWM in Kaiserslautern from March 10th to March 12th, 2024. The Young Scientists Meeting is an annual conference for young researchers in the Terahertz field. It gives PhD and master students the opportunity to present their work at a small conference in a welcoming atmosphere, learn more about other studies concerning Terahertz technology and exchange ideas, experiences, and thoughts with other young scientists.

Terahertz technology is well established as a valuable tool for applications in science as well as industrial applications, e. g. in diagnostics, measurement, and testing. Therefore, this exciting field is rapidly developing allowing for both fundamental and applied terahertz research.

The 14th Terahertz Young Scientists Meeting will address various topics including:

- Terahertz Applications
- Generation and Detection of Terahertz
- Spectroscopy
- Novel Materials

Chairmen

- Michael Kocybik, Fraunhofer Institute for Industrial Mathematics ITWM, DE
- Joshua Hennig, Fraunhofer Institute for Industrial Mathematics ITWM, DE

Preliminary Program

Sunday, March 10th, 2024

15:00 **Arrival, Refreshment, and Registration**

15:50 **Opening Remarks**

Michael Kocybik and Joshua Hennig, Fraunhofer ITWM, Kaiserslautern, DE

Session 1: Terahertz Applications

16:00 **A.01 Towards Terahertz Quantum Imaging**

Mirco Kutas, Fraunhofer ITWM, Kaiserslautern, DE

16:20 **A.02 Terahertz Tomography by Multi-Pixel Detection and A Priori Consideration**

Karl Henrik May, Fraunhofer ITWM, Kaiserslautern, DE

16:40 **A.03 Optical Damage Thresholds of Fiber-Tip Spintronic Terahertz Emitters**

Felix Paries, Fraunhofer ITWM Kaiserslautern, DE

17:00 Coffee Break

17:30 **Discussion and Get-Together With Cold Beverages and Pizza; Open End**

19:00 Free Evening

Monday, March 11th, 2024

9:00 Arrival

Session 2: Generation and Detection

9:10 **A.04 A Comparative Study on the Measurement of the Noise-Equivalent Power (Nep) of Resonant Terafets via a Blackbody Radiator or a CW Photomixer Emitter**

Jakob Holstein, Physikalisches Institut, Goethe University Frankfurt, DE

9:30 **A.05 Observation of Parasitic Frequency Components Emitted By CW Photomixers**

Michael Kocybik, Fraunhofer ITWM Kaiserslautern, DE

Monday, March 11th, 2024

10:00 Coffee Break

Session 3: Terahertz Spectroscopy

10:30 **A.06 A Compact Heterodyne Millimeter-Wave/Terahertz Spectrometer for Remote Sensing**

Lukas Jehna, Humboldt University of Berlin, German Aerospace Center (DLR), Cologne, DE

10:50 **A.07 A Compact CW THz Gas Sensing System Based On A Dual-Wavelength MOPA Laser**

Yinghui Hu, Photonics and Terahertz Technology, Ruhr University Bochum, DE

11:10 **A.08 Free-space Terahertz Measurements with a Photonic Spectrum Analyzer**

Alexander Theis, Fraunhofer ITWM, Kaiserslautern, DE

11:30 Lunch Break at Cafeteria RPTU on the Campus

Session 4: Novel Materials

13:00 **A.09 Enroute: Electric Field and Current Induced Second Harmonic Generation in Graphene**

Jonas Woeste, TU Berlin, DE

13:20 **A.10 Continuous-Wave Terahertz Difference-Frequency Generation From Intersubband Polaritonic Metasurface**

Jonas H. Krakofsky, Walter-Schottky Institute, TU Munich, DE

13:40 **A.11 Interdigitated Terahertz Metamaterial Sensor**

Yannik Loth, University of Siegen, DE

14:00 **Coffee Break**

14:30 **Poster Session: Terahertz Technology**

15:30 **Coffee Break**

16:00 Transit to Kaiserslautern City Center

17:00 City Tour

19:00 Dinner at "Brauhaus am Markt"

Preliminary Program

Tuesday, March 12th, 2024

9:00 Arrival

Session 5: Terahertz Applications II

9:10 **A.12 Towards Sub-Cycle Resolved Symmetry Modulations in Barium Titanate**
Dorothee Mader, Fritz-Haber-Institute of Max-Planck Society, Berlin, DE

9:30 **A.13 Characterization and Optimization of Laser-Generated THz Beam for THz Based Streaking**
Matthias Nabinger, Karlsruhe Institute of Technology, DE

9:50 **Closing Remarks and Awards**

10:00 **Lab Tour at Fraunhofer ITWM: Joint Event with Terahertz Workhop**

12:00 End of the 14th Terahertz Young Scientists Meeting

Poster Session: Terahertz Technology

P.01 Imaging of Structures Embedded in 3D-Printed Objects Using Terahertz Frequency-Domain Spectroscopy

Janis Kutz, TOPTICA Photonics AG,
Gräfelfing, DE

P.02 Fabrication and Calibration of Chromium-Based Filters for Applications in the Terahertz Range

Arne Hof, Physikalisches Institut,
Goethe University Frankfurt, DE

P.03 Metamaterial-Based Passive Phase Modulators for THz Frequencies

Larissa Rößler, Goethe University
Frankfurt, DE

P.04 Integrating High Frequency THz Source with Active Shot-To-Shot Jitter Correction for High Resolution Optical Probe – THz Pump Experiments

Clara Simons, Freie Universität Berlin,
DE

P.05 Room-Temperature Highly-Sensitive Terahertz Detectors Based on Graphene FETs

Rohit Kapoor, Goethe University
Frankfurt, DE

P.06 Time-Domain Spectroscopy for Space Exploration at Terahertz Energy Scales

Dominic Azih, Technical University of
Berlin, DE

P.07 Terahertz Upconversion With Nonlinear Organic Crystals

Maximilian Christ, Fraunhofer ITWM,
Kaiserslautern, DE

P.08 Characterization of Silicon With TDS Over a Wide Resistivity Range

Joshua Hennig, Fraunhofer ITWM,
Kaiserslautern, DE

Contact

Fraunhofer-Institut für Techno- und
Wirtschaftsmathematik ITWM

Fraunhofer-Platz 1
67663 Kaiserslautern
Germany

Phone +49(0)631/3 1600-0

E-Mail thzysm@itwm.fraunhofer.de

www.itwm.fraunhofer.de/thz-ysm-2024-en

