

Scientific program

Thursday 29 January

08:45 – 09:15 **Registrations**

09:15 – 09:30 **Welcome (INF and Department Director)**

I Section: THz Technologies

Chair G. Galzerano

09:30 – 10:00 **Martin Kock (Invited):** *Devices to guide and manipulate THz waves*

10:00 – 10:20 **Andrea Perucchi:** *Advanced Nonlinear THz Spectroscopies at the TeraFERMI Beamline*

10:20 – 10:40 **Lorenzo Mosesso:** *Design and Optimization of the THz/IR Beamline SISSI 2.0 at the Elettra Synchrotron Facility*

10:40 – 11:00 **Ilaria Balossino:** *Advancing SABINA: Installation, Commissioning Plan, and Early THz Diagnostics*

11:00 – 11:20

Coffee Break

II Section: THz Spectroscopy

Chair: E. Cinquanta

11:20 – 11:40 **Zahra Mazaheri:** *Terahertz ATR Spectroscopy to Sense Acetone in Water: Toward Biomarker and Contaminant Monitoring*

11:40 – 12:00 **Walter Fuscaldo:** *Electromagnetic Modeling for Material and Metasurface Characterization through Terahertz Time-Domain*

12:00 – 12:20 **Camilla Merola:** *More than meets the eye: depth-resolved THz chemical mapping of multilayered samples*

12:20 – 12:40 **Riccardo Piccoli:** *Self-Referenced THz Time-Domain Spectroscopy for Reflection Measurements*

12:40 – 13:00 **Gian Paolo Papari:** *Enhanced THz Permeability in Non-Magnetic Drude Conductors*

13:00 – 14:30

Lunch

III Section: THz Generation

Chair: S. Lupi

14:30 – 15:00

Giacomo Scalari (Invited): *On-chip Coherent THz photonics with frequency combs*

15:00 – 15:20

Domenico Paparo: *Production and Modulation of Fully Circular Ultrabroadband THz Radiation Using Two-Color Plasma Generation*

15:20 – 15:40

Luca Carletti: *THz Generation via LSPPh-Enhanced Optical Rectification in LiNbO₃ Metasurfaces*

15:40 – 16:00

Dario Giannotti: *Generation of Few-Cycle THz Pulses in DSTMS Driven by an 8.3-MHz Amplified Mamyshev Oscillator*

16:00 – 16:20

Coffee Break

IV Section: THz Materials

Chair: F. Canella

16:20 – 16:40

Michele Celebrano: *THz Field Induced Second Harmonic Generation in Epsilon Near Zero Indium Tin Oxide Thin Films*

16:40 – 17:00

Paola Di Pietro: *Terahertz driven nanosecond dynamics of oxygen defect state in anatase TiO*

17:00 – 17:20

Luciana Di Gaspare: *SiGe on Si material platform for THz applications*

17:20 – 17:40

Can Koral: *Dielectric Relaxation Dynamics in Silver Nanoparticle-Doped Chitosan Films*

17:40 – 18:00

Giulia Folpini: *Doping density and carrier-phonon coupling in tin based perovskites*

18:00 – 18:30

Sponsor Talk by Bruker Italia

19:30

Social Dinner (*La Dogana del Buongusto*)

Friday 30 January

V Section: THz Imaging Chair A. Andreone

- 09:00 – 09:30 **Romain Peretti (Invited)**: *Λ -photonic for Terahertz Light - Matter interactions enhancement: from broadband concentration to near-field imaging*
- 09:30 – 09:50 **Fulvia Gennari**: *Crack Detection in Pompeii wall paintings using Terahertz Imaging*
- 09:50 – 10:10 **Alessandra Toncelli**: *Probing Ozone Exposure Effects on Different plant species with THz Imaging*
- 10:10 – 10:30 **Valentina Di Sarno**: *Terahertz Spectroscopic Imaging and Unsupervised Analysis for Multidomain Non-Destructive Diagnostics*
- 10:30 – 10:50 **Mauro Missori**: *Recent Advances in Terahertz Spectroscopy and Imaging for Materials and Cultural Heritage Studies*

10:50 – 11:20

Coffee break

VI Section: THz for ICT Chair D. Giannotti

- 11:20 – 11:40 **Alessia Sorgi**: *Demonstration of a Transportable QCL-Based Free-Space link for Reliable THz Communications*
- 11:40 – 12:00 **Junaid Yaseen**: *Tailoring sub-THz Beams by Liquid Crystal Assisted Reconfigurable Intelligent Surfaces*
- 12:00 – 12:20 **Alessandra Contestabile**: *Photonics at Space-Time Interfaces for Advanced THz-Wave Manipulations*
- 12:20 – 12:40 **Guido Gentili**: *Modeling of electromagnetic wave propagation in semimetals*
- 12:40 – 13:00 **Unai Arregui-Leon**: *Nonlinear phonon-polaritonic flat-optics for temporal edge detection in the THz*

13:00 – 14:20

Lunch

VII Section: THz Spectroscopy

Chair: G. Galzerano

- 14:20 – 14:40 Umar Farooq: *Temperature-dependent birefringence behavior of NdGaO probed by terahertz spectroscopy*
- 14:40 – 15:10 Marco Ballabio: *Unveiling the Semiconducting Properties in Four Different Metal Triphenylenehexathiol-based Metal-Organic Frameworks* 0
- 15:10 – 15:30 Salvatore Macis: *Transient Terahertz Polaron Conductivity of Magnetite*
- 15:20 – 15:40 Candida Moffa: *Advancing atmospheric pollution monitoring with airborne THz spectrometer*
- 15:40 – 16:00 Federico Grandi: *Lattice dynamics and carrier transport in HgPSe*

16:00 – 17:00

Closing Remarks and Visit to the Polytechnic and INF-CNR laboratories