



Strong Network:

- 4 Universities
- 2 Research Institutes
- 3 SMEs
- 2 Large Enterprises

Global Partners:

15 divers associated partners in Europe, Asia and North America



~4M€ Funding by EU:

To train 15 innovative early stage researchers (ESRs)

Project Partners



THALES



Contact

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A European Training Network 
TERA OPTICS

*A European Training Network for
Terahertz Photonics for Communications,
Space, Security, Radio-Astronomy, and
Material Science*

The European Training Network **TERAOPTICS** provides high-level training in the field of THz Photonics to a new generation of high achieving early-stage researchers, to provide them an inspiring research program and intellectual, scientific, technical and transferable skills trainings to enhance their career opportunities in academia and industry and to create the new generation of excellent, creative and risk-taking researchers and engineers.

Research Objectives

- Optical generation and detection of THz signals
- Miniaturization by utilizing Photonic Integrated Circuits (PICs)
- Advanced functionalities including ultra-wide bandwidths, beam-steering, energy-efficient data transport and others

5 Key Research Challenges



Challenge 1:

Fundamental limits of optical-to-THz power conversion, frequency tunability, and phase stability

Challenge 2:

Scalable coherent arrays of photonics emitters/detectors to enable the synthesis of directional controlled high power multi-frequency THz signals

Challenge 3:

Fundamental limits of optically mediated THz mixing and detection

Challenge 4:

How can (meta-)materials be designed to approach the fundamental limits of THz component functionality?

Challenge 5:

Development of integrated THz photonic solutions and fundamental investigations on the processing in the optical and THz domain

THz Photonics Key Applications



Communication



Space



Security



Radio-Astronomy



Material Characterization

