

Alessia Sorgi

Mid-IR and THz group at CNR-INO

Alessia Sorgi has been a researcher in experimental physics at the National Institute of Optics of the Italian National Research Council (CNR-INO) in Florence since 2022. She received her PhD in Atomic and Molecular Photonics from the European Laboratory for Non-Linear Spectroscopy (LENS) in Florence in 2021, after earning her master's degree in Physics from Sapienza University of Rome.

Her research background lies in frequency metrology, laser spectroscopy, and THz photonics. During her PhD, she worked on high-precision spectroscopy, frequency metrology and frequency-comb-based techniques, in particular on the transfer of frequency stability across different spectral regions.

Her research activity moved towards the THz spectral region, focusing on the development and implementation of THz sources and advanced detection schemes, as well as on the experimental characterization of THz sources and devices. Her work involves the design and development of experimental platforms for THz spectroscopy and imaging and the implementation of THz sources for applications ranging from sensing to free-space communications.

Her current research interests include THz quantum cascade lasers and frequency combs, THz sources based on nonlinear frequency conversion, advanced room-temperature detection techniques, and the development of novel experimental approaches for the characterization and exploitation of THz radiation. More recently, her research has extended to the investigation of the quantum properties of THz sources, with particular interest in the experimental detection of quantum correlations in THz quantum cascade laser frequency combs.

She has presented her research at major international conferences in photonics and terahertz science, including CLEO/Europe, SPIE Photonics West, and IRMMW-THz, contributing through oral and keynote presentations.