# Time-resolved spectroscopy:

# from semiconductors to confined materials

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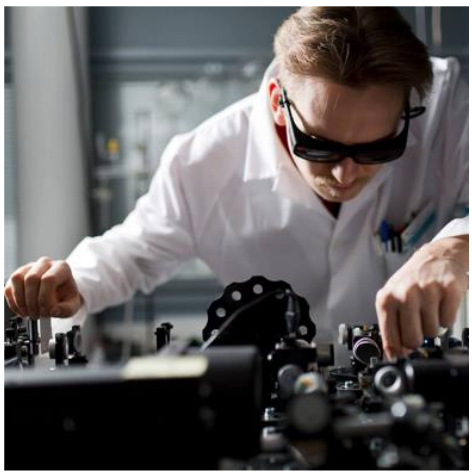
Time-resolved optical spectroscopy has been used to study the dynamics of optically active systems in the entire femtoseconds to seconds range of timescales, indicating that the evolution of photoinduced charge carriers can be probed all the way from excitation to eventual photoreactions. Utilizing both transient absorption spectroscopy and time-resolved photoluminescence measurements further allows to distinguish between radiative and non-radiative processes, with fluorescence lifetime microscopy enabling the gathering of spatial information on the emission dynamics. In this talk, I will introduce the optical spectroscopy research done by my team, ranging from organic, metal oxide, and perovskite semiconductors to supramolecularly confined organic dyes.



Assistant Professor Tero-Petri Ruoko leads the Spectroscopy and Light-Active Materials team at Tampere University, Finland, where he focuses on advanced time-resolved optical spectroscopy, spectroelectrochemistry of organic electronic devices, and supramolecular confinement of light-emitting materials. Before starting this position, he worked as a combined MSCA and Research Council of Finland postdoctoral fellow at Tampere University and as a postdoc at the Laboratory of Organic Electronics (LOE) at Linköping University, Sweden. He obtained his doctoral degree in Physical Chemistry in 2017 from Tampere University of Technology.