

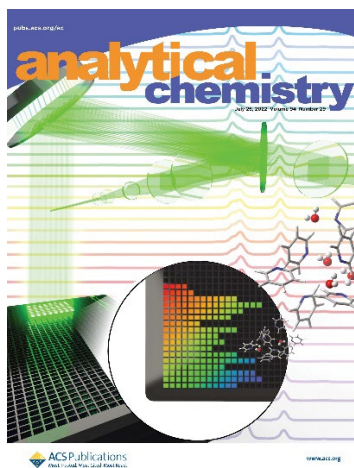


PhD Topic Pharmaceutical Spectroscopy

The Research Group Biophotonics-Biomedical Engineering currently has a PhD Topic on Pharmaceutical Spectroscopy.



The project focuses on new Raman spectroscopic techniques for pharmaceutical applications. We are interested, for example, in the molecular structure, composition and characterization of the properties of pharmaceutical active ingredients and formulations. One focus is on the development of new high-frequency-resolved and multifocal techniques for elucidating molecular mechanisms of action and drug-target interactions of active substances. Particularly important weak molecular interactions and binding assays will also be investigated.



Your knowledge and skills:

- Solid knowledge of optics, photonics, and optical spectroscopy
- Excellent experimental skills in the development and application of new instruments and setups
- Interest in Raman spectroscopy and drug-target interactions
- Interest in the quantum chemical calculation of vibrational spectra and data analysis
- Interest in interdisciplinary research
- Highly motivated and creative individuals with scientific ambition
- Excellent English communication skills, both written and spoken

We offer an attractive research environment with a friendly and active team, excellent instrumentation, and diverse interdisciplinary cooperation opportunities.



We expect the candidate to have a university degree (physics, photonics, engineering, physical chemistry, analytical chemistry or comparable) with very good academic results, to be self-motivated and to work independently on the research tasks.

Start is possible on mutual agreement. Please send your detailed application as a pdf file by e-mail to:

Prof. Torsten Frosch, E-Mail: torsten.frosch@tu-darmstadt.de

Literature:

Analytical Chemistry (2023); 95, 12719–12731; Analytical Chemistry (2023); 95, 7630–7639; Sensors and Actuators B: Chemical (2023); 375, 132949, 1-6; Analytical Chemistry (2022); 94, 10346–10354; Analyst (2023); 148, 3057 – 3064; Clinical Spectroscopy (2023); 5, 100026, 1-7; Nanophotonics (2020); 9, 19-37; Molecules (2019); 24, 3229, 1-14; Analytical Chemistry (2018); 90, 13243–13248