



BSc/MSc thesis

at the University of Freiburg

in the field of **molecular dynamics studied with XUV radiation**

The project is aimed at experimentally studying molecular dynamics triggered with extreme ultraviolet radiation created by the FERMI free electron laser in Trieste. Free electron lasers provide a unique opportunity to observe femtosecond dynamics in molecules as they provide high photon flux at short wavelengths and ultra-short laser pulses. The exact scientific questions addressed vary for each project, but always involve ultrafast dynamics in molecules or clusters triggered or probed by XUV radiation. Also, experiments at other large-scale radiation facilities providing XUV and VUV radiation for the application in photoelectron and photoion spectroscopy are possible. Students joining the project will work as part of a research team on the following possible topics:

- Building and testing cluster sources for atomic and molecular cluster jets working in ultra-high vacuum.
- Preparation of and participation in experiments (“beamtimes”) in at large scale radiation facilities.
- Data analysis, processing and interpretation

We are looking for students with interest in Experimental Atomic, Molecular and Optical Physics. If you are interested in molecular dynamics, capable of independent scientific work, and have good problem-solving skills you are very welcome to join our group.

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