

Fundamentals of Ultrafast Spectroscopy

This module will give an introduction into femtosecond laser pulses. Working with a femtosecond oscillator system provides the possibility to learn about the generation of pulsed laser beams as well as about their basic properties like the associated spectrum and pulse duration. The basic question “how does one know how long a pulse is in time” will be answered by measuring an intensity autocorrelation for which the non-linear process of second-harmonic generation is exploited. The module ends with a spectroscopic approach to measuring the excited-state dynamics of a molecule in solution in a time-resolved way, also with regard to the influence of the solvent environment .

