**Master Thesis in Physical Chemistry, group of J. Hauer:**

# "Transient absorption from femto- to microseconds"

We are seeking an interested student for a Master's project in physical chemistry, in the sub-field of time-resolved spectroscopy.

*Brief description*: In transient absorption of pump-probe spectroscopy, an excitation pulse with femtosecond duration (pump) initiates a photochemical or photophysical event in an absorbing species such as a molecule or a solid. The dynamics of this initiated event is monitored by the transmission of a delayed probe-pulse. In the spectroscopic setup to-be-constructed in this Master thesis, we address the fact that photochemical events occur on a multitude of time-scales: from intramolecular relaxation (fs) over vibrational cooling (fs-picoseconds) to diffusion-limited steps (up to microseconds, depending on the environment). We want to construct a spectrometer capable of addressing all relevant timescales of such reactions, from femtosec-onds to microseconds. This will be achieved by employing a modern dual-amplifier laser system recently acquired in the group.

*Requirements*: an interest in physical chemistry, willingness to be involved in construction of the experimental setup and solving technological challenges, ability (or willingness to learn) to pro-gram in LabView, ability to work in a team and under the supervision of experienced research-ers.

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