RESOLV iGSS Summer School 2023. Advanced Hands-On Module:

A Practical Introduction to AFM-IR Nanospectroscopy

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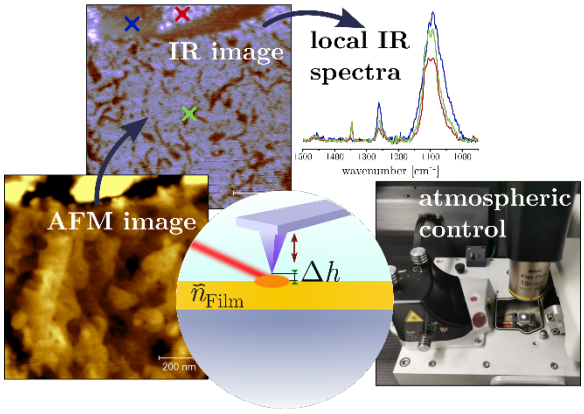

Conventional vibrational microspectroscopies (Raman and IR) typically are diffraction limited to resolutions in the µm range. This limitation is circumvented in novel nearfield methods, which allow to measure IR nanospectroscopy with resolutions of a few tens of nm. The chemical structural information obtained from this, together with the topographic information obtained by the coupled atomic force microscopy (AFM) allows for unprecedented insights into the nanostructure of materials and surfaces. In this advanced hands-on module we welcome a group of 2-3 students which will get an introduction into the photothermal AFM-IR method that is used in our lab.

First, participants will be introduced to the theoretical background as well as the technical implementation of photothermal AFM-IR. In the subsequent practical session, example measurements on polymer samples will be performed, analyzed and discussed. Participants will learn practical aspects of AFM measurements as well as of several AFM IR modes such as resonance enhancement, tapping AFM-IR, local nanospectroscopy and IR imaging. Participants may also suggest and bring their own samples which however requires prior consultation with the supervisors.

Please note that the lab is located in Düsseldorf and participants should travel to and from the location on their own behalf.