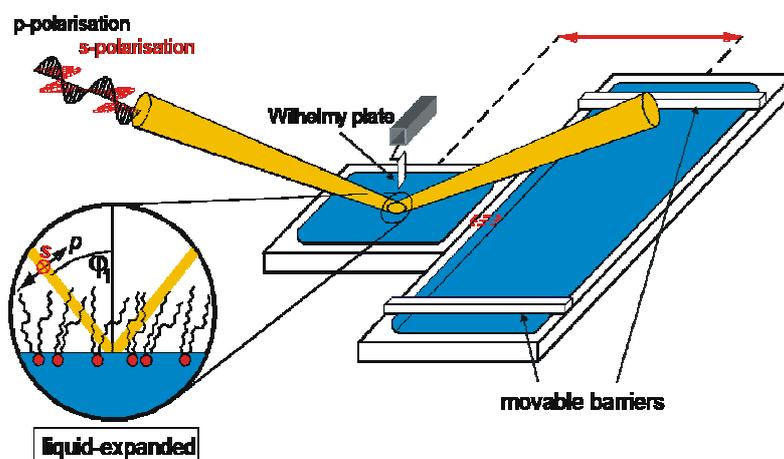


# Infrared Reflection Absorption Spectroscopy (IRRAS) of Proteins Interacting with Lipid Monolayers



Infrared reflection absorption spectroscopy (IRRAS) is a powerful tool to investigate the conformation and orientation of lipid acyl chains as well as the interactions of lipid head groups. More importantly, the secondary structure of proteins and their orientation at the air/water or lipid interface can be determined. In the IRRA spectra, the bands can be directly correlated with molecular structures and conformations. Furthermore, the simultaneous recording of IRRA spectra and the corresponding surface pressure / time ( $\pi/t$ ) isotherm allows following the combined effects of orientational and structural changes of proteins that are inserted into lipid monolayers, including changes in the strength of interaction.

This practical course will provide an insight into the handling of IRRAS-measurements and data analysis. First, surface pressure / area ( $\pi/A$ ) isotherms of lipid monolayers consisting of a model raft lipid mixture will be conducted. Second, the membrane interaction of proteins will be explored by subsequent injection of proteins beneath the lipid monolayer and measurement of surface pressure profiles and IRRA spectra. You will get familiar with the analysis of the IRRA spectra as well as the interpretation of surface pressure profiles.

Please register via email to [irene.perov@tu-dortmund.de](mailto:irene.perov@tu-dortmund.de) until 15.09.2012!

Time frame: 01.10.2012 – 30.11.2012 (exact date after consultation)

Duration: 3 days (10:00 am – 4:00 pm)

Max. participants: 5

Venue: Physical Chemistry I, TU Dortmund, Otto-Hahn-Str. 6, 44227 Dortmund

Room: C1-06-103

Contact: Irene Perov, Room: C1-06-429, Tel: 0231 755 3919