# Biophysical techniques for the structural and functional characterization of biomolecules

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In addition to the key methods in structural biology, other experimental biophysical techniques can provide valuable information about the structure, stability and interaction of biomolecules. Interplay between all advanced techniques allows to extract the maximum amount of information and to relate the structural results to the function of the biological system.
The biophysical research facility as a part of the Centre of molecular structure (CMS) of Institute of Biotechnology provides shared resource of state-of-the-art instruments. CMS is a member of Instruct-ERIC, Czech Infrastructure for Integrative Structural Biology (CIISB) and Molecular-Scale Biophysics Research Infrastructure (MOSBRI).
The biophysical techniques allow determining of binding constants, reaction stoichiometry, thermodynamic parameters of melting transition, real-time affinities and kinetics of the interaction, mass, size, structure, conformation and stability of biomolecules.
Following instruments are currently available in biophysical research facility: mass photometry (TwoMP mass photometer) circular dichroism spectroscopy (Chirascan Plus CD spectrometer), spectrophotometry (Specord 50 Plus UV/Vis spectrophotometer), Fourier-transform infrared spectrometry (Vertex 70v spectrometer), fluorescence spectrometry (photoluminescence spectrometer FLS1000), differential scanning fluorescence (Prometheus NT.48), multiangle dynamic light scattering (Zetasizer Ultra), microplate reader (Tecan), differential scanning calorimetry (Microcal VP-DSC), isothermal titration calorimetry (Microcal iTC200 and PEAQ-ITC), microscale thermophoresis (Monolith NT.115 and NT.LabelFree), surface plasmon resonance (ProteOn XPR36) and bio-layer Interferometry (OCTET R8).
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