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“Plasmonic Nanoparticles as
sensor for single molecules”

11 June 2013, 11:00 (*s.t.*)

Venue: 2nd Floor Seminar Room
Institute of Molecular Biology (IMB)
Johannes Gutenberg University Campus Mainz

All are welcome to attend

Abstract:

Plasmonic Nanoparticles as sensor for single molecules

We have developed an alternative to dye labeling for single molecule experiments: we utilize plasmonic gold nanoparticles to detect single unlabeled proteins with high temporal resolution (ms to μ s). This allows for monitoring the dynamic evolution of DNA hybridization or protein binding. The technique resolves equilibrium coverage fluctuations, opening a window into Brownian dynamics of unlabeled macromolecules. Therefore, our method enables the study of DNA or protein folding dynamics, protein adsorption processes, and kinetics as well as non-equilibrium soft matter dynamics on the single molecule level without need for labeling.