# 77th MSS-Seminar

Wednesday, October. 7th, 15:30

Nägelsbachstr. 49b

MSS

# Characterization of Working Fluids in Chemical and Energy Engineering by Using Dynamic Light Scattering (DLS)

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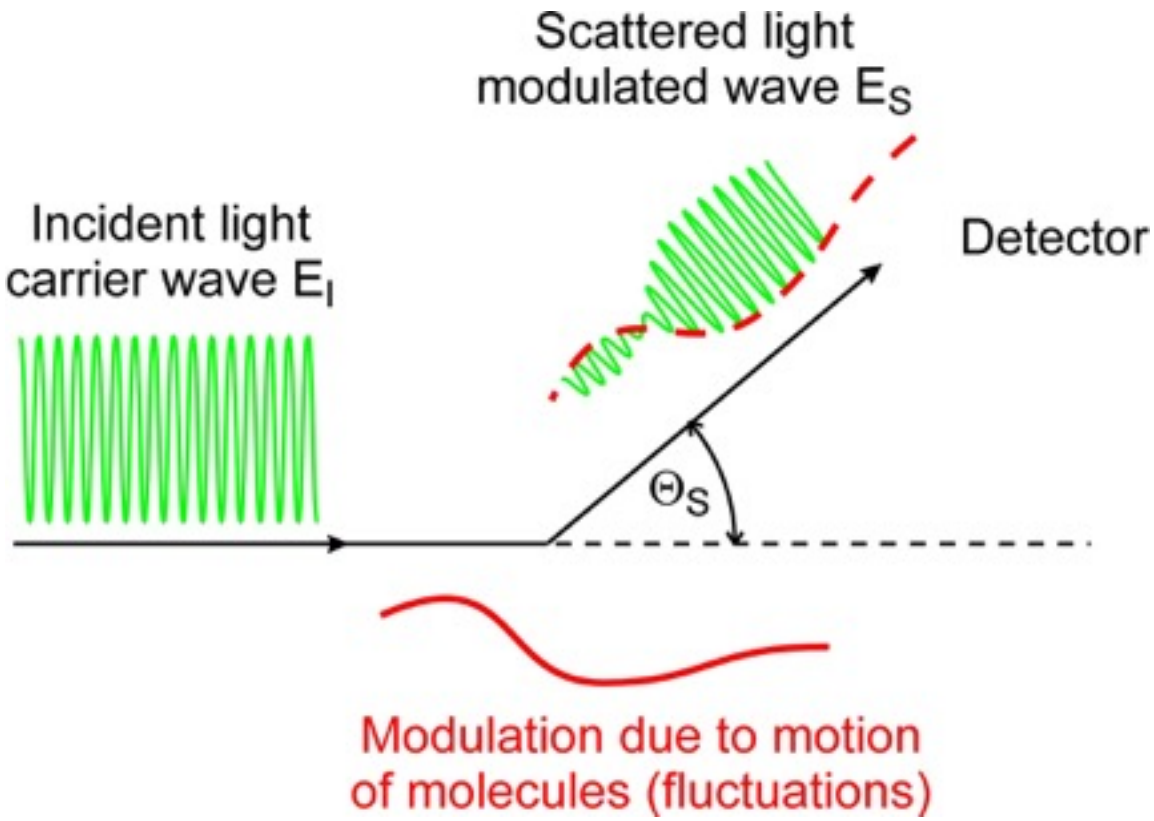


In the field of thermophysical property research for working fluids in chemical and energy engineering, molecular dynamics (MD) simulation and different experimental methods including dynamic light scattering (DLS) are developed and applied at the Erlangen Grauduate School in Advanced Optical Technologies (SAOT). While conventional methods for the determination of transport properties make use of macroscopic gradients, the application of DLS gives access to a large variety of thermophysical properties in macroscopic thermodynamic equilibrium. The present contribution represents the methodological principles of DLS and its experimental realization including light scattering from the bulk of fluids and the application of the method to fluid surfaces, also called surface light scattering (SLS). For working fluids in chemical and energy engineering, a compilation of thermophysical property data obtained until now at SAOT by DLS is given. The objects of investigation cover, e.g., industrial standard reference fluids, liquid organic hydrogen carriers, ionic liquids as well as systems of pharmaceutical technology and petroleum industry.