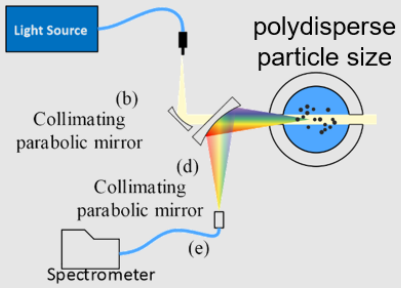
Lehrstuhl für Technische Thermodynamik
Friedrich-Alexander-Universität Erlangen-Nürnberg
Prof. Dr.-Ing. Stefan Will

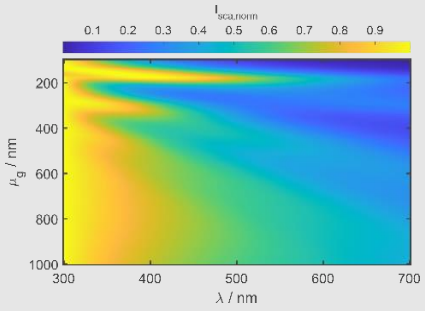
Master-thesis
Project-thesis
Bachelor-thesis

Development of a setup for characterization of nano-emulsions using broadband light scattering

Supervisor:	Dr.-Ing. Franz Huber
Start:	Immediately
Topics:	Optical Metrology, Light Scattering
	Emulsions, Nanoparticles



Scheme of set-up



Simulated scattering data

The central topic of the working group "Particle Measurement" at the Institute of Engineering Thermodynamics is the investigation and characterization of processes for nanoparticle production. In addition to a better understanding of the process, a major focus of the work is on the development of new optical measurement techniques.

Emulsions in the micro- and nanometer range play an essential role in many processes, for example in the food or pharmaceutical industry. Here, the size of the particles produced has a significant influence on the subsequent product properties, such as the flow behavior or the release rate of drugs.

In this work, a new optical measurement method based on broadband light scattering shall be developed, which allows to determine the size of particles in an emulsion process. The focus of the work is on the design of the experimental setup as well as first measurements on reference emulsions.

Students should be interested in optical metrology and particle technology and work self-initiated. Basic knowledge in the above mentioned topics is advantageous, but not mandatory.

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