



INTERDISCIPLINARY CENTRE FOR
ADVANCED MATERIALS SIMULATION

ICAMS Seminar

Dr. habil. rer. nat. Thomas Franke, Microfluidics and Biophysics, University of
Augsburg, Germany

Monday, January 23, 4:30 p.m. ICAMS Seminar room UHW 11/1102

Soft matter in microfluidics : droplets, vesicles and cells in acoustic
and magnetic fields

Soft objects such as droplets, vesicles and biological cells display a rich dynamic behavior in a microfluidic environment. The complex interplay of the elasticity of these soft objects and the hydrodynamic flow field gives rise to various regimes of motion as well as deformations which critically depend on the material properties. The balance of the deformability and shear flow determines the shape of these objects.

Drops and vesicles can also serve as ideal containers in Lab-on-a-chip applications. They can be used to encapsulate drugs for medical purposes or chemical reactants. Using surface acoustic waves and magnetic forces they can be directed in microfluidic devices which is useful for cell sorting and characterization. Production of these objects can be accomplished either in microcapillary devices or in microfluidic channels using soft-lithography.

For more information contact STKS secretary: Hildegard.Wawrzik@rub.de

ICAMS/ Uni-Hochhaus-West/ Stiepel Str. 129/ 44801 Bochum