**Pickering emulsion stability and rheology**

Emulsions are of great importance for the oil, food and cosmetic industry. Most frequently, emulsions are stabilized with surfactants; however, such emulsions are not always stable under shear, and alternative stabilization mechanisms have therefore been intensively explored in recent years. Amongst these, particle-stabilized emulsions have attracted much attention, notably for their high stability and possible role in food applications, in the design of more environmentally friendly formulations and for the realization of high internal phase emulsions. This type of emulsion is called a Pickering emulsion [1]; particles are adsorbed at the oil/water interface with a high stabilization energy and are believed to form a continuous layer around the dispersed drops impeding coalescence and hence stabilizing the emulsion. Commonly, the stabilization is a combined effect of particle adsorption at the fluid interface and a particle network in the continuous phase; the contribution of each to the overall stability is difficult to assess [2]. We will investigate the role of particles on high internal phase emulsion stability by comparing emulsion stabilization by surfactant only, by surfactant plus particles, and finally by particles only.

The key question is how general rules can be obtained for Pickering emulsions that allow formulating stable emulsions with a desired rheology, or inversely, how flow can be used to destabilize emulsions loaded with particles.

[1] B.P. Binks and S.O. Lumsdon, *Langmuir* **17**, 4540 (2001)

[2] M. Dinkgreve *et al.*, *Physical Chemistry Chemical Physics* **18**, 22973 (2016)