

Microgels at Interfaces: Pickering or not?

Walter Richtering

Institute of Physical Chemistry, RWTH Aachen University, Aachen, European Union

E-mail: richtering@rwth-aachen.de

Microgels are cross-linked polymer particles that are swollen by a solvent. Typically they have diameters less than a micrometer and thus are sometimes also called “nanogels”. In the last decade, the focus shifted more and more to stimuli-sensitive microgels with complex morphology. Such microgels enable compartmentalisation while still allowing for penetration and exchange with the surroundings.

These unique features make microgels interesting ingredients for “smart” formulations. Furthermore, soft, multi-sensitive thermo- and pH responsive microgels are able to stabilize oil-in-water emulsions, the stability of which can be controlled by pH and / or temperature. Thus microgels allow for emulsion stabilization “on demand” and even allow preparing stable emulsions with oppositely charged droplets.

We will discuss the influence of chemical composition as well as of the morphology on properties of microgels at oil-water interfaces. We will highlight differences compared to the behavior of rigid colloidal particles.