

Autonomous Emulsions

Imagine the millions of droplets of an emulsion were active entities, like little robots, and start to conspire doing something sensible collectively! The talk will explore possible ways of turning droplets into nonlinear electronic or chemically active devices, and to tune their mutual interaction such as to result in desirable collective behaviour. We show that droplets may as well be set in motion, and that their hydrodynamic interaction gives rise to characteristic patterns as they combine to form a dense swarm. Possible consequences for the swarming behaviour of bacteria are shortly discussed.