



ESPCI
Laboratoire PMMH
10 rue Vauquelin, 75231 Paris Cedex 05



Séminaire PMMH

Bureau d'Études, Bâtiment L, 2^{ème} étage

Vendredi 20 novembre 2015, 11h00-12h00

Sushant Anand

MIT

Nanoemulsions via condensation

Colloidal solutions comprising of liquid droplets dispersed in another immiscible liquid are used in a wide variety of applications such as drug delivery, food, cosmetics, pesticides, nanoparticle synthesis etc. Typical methods of nanoemulsion preparation (e.g. high-pressure homogenization, ultrasound for droplet breakup) are expensive and energy intensive. In this talk, I will discuss a new technique for formulating stable nanoemulsions : direct condensation of water vapor on a subcooled mixture of immiscible oil and surfactant. This approach is simple, fast, inexpensive, scalable and energy efficient. I will discuss the complex interplay between nucleation dynamics, oil-water interactions, surfactant diffusion mechanics that control the formation of such nanoemulsions, their size and polydispersity. Finally, I will discuss the potential applications and new challenges that remain to be understood.

Prochain séminaire : vendredi 27 novembre, Oliver Bäumchen (Max Planck Institute, Göttingen)

Programme des séminaires : www.pmmh.espci.fr, onglet *Séminaires PMMH*

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