

PREDOCTORAL POSITION AVAILABLE at Micropore Technologies Ltd,
www.micropore.co.uk whilst registered for a PhD at Loughborough University, UK,
www.Lboro.ac.uk.

CoWet ITN People action-Marie Curie Program of the VII Framework Program (UE). Starting date: January-March 2014, duration 36 months.

Dynamic interfacial tension and surfactant stabilisation during membrane emulsification: how to avoid drop coalescence and membrane wetting

Membrane emulsification is a newly emerging technique for the production of liquid droplets and emulsions, and the liquid/liquid interface plays a key role in stabilizing the complex fluid system. Static and dynamic wetting of solid surfaces by liquids in the presence of complex fluids, is a key aspect of the membrane emulsification process. This process holds great potential for industrial use, for the production of high value particles (e.g. controlled release drugs) as well as liquid dispersions, but it is slow to be adopted due to a lack of understanding and, therefore, reliable and reproducible operation. This is mainly due to a poor understanding of the interaction of complex liquid systems with the porous membrane used to create the emulsion, and the interfacial tension variation due to the growing emulsion droplet during formation at the membrane surface. The innovative aspect of this Work Package is the development of understanding of the interaction of complex liquids with the membrane surface.

During the Ph.D. project the candidate will perform experiments generating emulsions and dispersions under a variety of carefully controlled conditions, investigating the interaction of the liquid drops and the membrane surface using, amongst other techniques, image analysis and high speed video analysis.

The project will be done in close cooperation with the Department of Chemical Engineering, Loughborough University, UK, and the candidate will be registered as an External candidate for the degree of PhD at that institution.

The candidate should hold a Master Degree (Chemistry, Physics, Chemical Engineering), should be fluent in English, and preferably should have some background, or interest, in emulsions and interfaces.

Eligibility criteria

The master title at the time of recruitment should be not older than four years.

At the time of recruitment the researcher should not have resided or carried out his or her main activity in the UK for more than 12 months in the 3 years immediately prior to the reference date.

Contact:

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