

PREDOC POSITION AVAILABLE at the Complex Systems Group, Complutense University, Madrid, Spain, www.ucm.es/info/gsc . CoWet ITN People action-Marie Curie Program of the VII Framework Program (UE). Starting date: January 2014, duration 36 months.

INTERFACIAL RHEOLOGY OF POLYMERS AND SURFACTANT SOLUTIONS AND NANOPARTICLE SUSPENSIONS.

Monolayers at liquid/air and liquid/liquid interfaces play a key role in stabilizing complex fluid systems, such as emulsions and foams, as well as in controlling the mass transfer through the interface, e.g. multiphase reactors. Besides interfacial tension, interfacial rheology (both dilational and shear) is known to determine the behavior of systems in which interfaces play an important role.

During the Ph.D. project the candidate will set-up an equipment for measuring the high-frequency dilational rheology (elasticity and viscosity), and will perform studies of dilational and shear rheology studies of polyelectrolyte + surfactant mixtures of cosmetic interest, and of polyelectrolyte + particle systems. Different experimental techniques already existing in the laboratory will be combined to cover a broad frequency range (0.01 Hz – 2 MHz). Special attention will be paid to the description of the interfacial rheology at low frequencies in the low-frequency range.

The project will be done in close cooperation with the laboratory of Dr. Reinhard Miller at Max Planck Institute for Colloids and Interfaces (Potsdam-Golm, Germany), where the student will perform some of the experiments. The economic conditions will be those established for Spain by the People Action – Marie Curie Program of the European Union.

The candidate should hold a Master Degree (Chemistry, Physics, Chemical Engineering), should be fluent in English, and preferably should have some background on Colloids and Interfaces.

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