Università degli Studi di Udine

Dottorato di Ricerca in Scienze dell'Ingegneria Energetica e Ambientale

Seminari del Corso di Dottorato

# Particles at fluid interfaces


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**Abstract** Solid particles can behave as surfactants and adsorb to fluid interfaces in multiphase flows. Transport of particles to fluid interfaces is central to froth floatation, enhanced oil recovery, and wastewater treatment, to name just a few. In this talk I will first introduce the fundamentals on transport of particles to fluid-fluid interfaces, focusing on the conditions that promote adsorption. I will then present our experimental results on the effect of nanoparticles on surface tension. I will also describe our recent discovery of a mechanism of particle removal from interfaces that enables recovery of catalytic nanoparticles for sustainable processes.



V. Garbin, Colloidal particles: Surfactants with a difference, Physics Today 66(10), 68-69 (2013)


**CV** Dr Valeria Garbin is a Lecturer in the Department of Chemical Engineering at Imperial College London, where she leads the laboratory for Flow and Dynamics of Soft Matter. She has previously held postdoctoral researcher appointments in Chemical Engineering at the University of Pennsylvania, and in Applied Physics at the University of Twente where she was funded by a fellowship of the Netherlands Organisation for Scientific Research. She holds a PhD from Università di Trieste and a first degree in Physics from Università di Padova. Dr Garbin's expertise is in experimental fluid dynamics, transport and interfacial phenomena, self-assembly and soft materials.