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Report of WG3 - Diagnostics

37 members

Too little feedback from so many groups

1. New scientific results or breakthrough due to cooperation within COST (few lines only)

Thodoris Karapantsios: advancement in electrical resistance tomography for measuring gas/liquid fraction in emulsions, foams, two phase dispersed flows. Progress in thin film drainage apparatus for foam stability measurement

Reinhard Miller/ Kazimierz Malysa: Rising bubble experiments with mixed protein/surfactant solutions gave new insight into the formation and composition of dynamic surface layers, leading now to the elaboration of a new theoretical approach on the formation of rear stagnant caps for rising bubbles

Kazimierz Malysa: Cooperation between Krakow team (J. Zawala) with GRASP Liege team: New insights in the mechanism of the bubble bouncing at liquid/gas interfaces was found. It was showed that size of liquid film formed by the colliding bubble (related to degree of the bubble shape deformation) is of a crucial importance deciding if the colliding bubble bounces or ruptures. When the dissipated kinetic energy related to the bubble motion was supplied from external source (due to the interface vibrations applied) then the bubble bouncing was prolonged almost indefinitely - the bubble deformation degree (size of the liquid film formed) was kept constant.

2. New PhD/Master students in the topic of this COST action

in Thessaloniki

E. Georgiou (MS student: developments on thin film drainage)

in Potsdam

Jooyoung Won (PhD on drop/bubble coalescence)

Narges Moradi (MS on protein conformational changes at interfaces)

Marzieh Lotfi (PhD on simulations of rising bubbles in surfactant solutions)

Vamsee Ulaganathan (PhD on molecular foam fractionation)

Inga Retzlaff (MS on protein stabilized foam films)

in Barcelona

Anna Garcia-Sabaté PhD student

Oriol Castro, Erika Castruita, Anna Argelagos (Master students)

3. new submitted projects on the topic of this cost action

Several projects have been submitted to national funding agencies

4. examples of cooperation with teams of this COST action

Krakow team with Golm team (R. Miller)

Krakow team with Liege team (S. Dorbolo)

Krakow team with Sofia team (D. Exerova, E. Mileva)

Krakow team with IWRI Australia team (M. Krasowska)

Golm team with Genoa team (L.Liggieri, F.Ravera)

Jürgen Krägel was visiting Uni Marseille Mickael Antoni (STSM)

Diffusing wave spectroscopy for the detection of particles in turbid media (with U Rennes)

5. list of publications with acknowledgement to COST

E. Malysa, J. Zawala, K. Malysa, "A sensitive and simple method for controlling concentration of flotation reagents in waters of the coal processing plants" - manuscript submitted for presentation at 17th International Coal Preparation Congress-2013 (ICPC 2013) in Turkey

V.B. Fainerman, S.V. Lylyk, N.M. Kovalchuk, V.I. Kovalchuk, E.V. Aksenenko, J.T. Petkov and R. Miller, Effect of water hardness on surface tension and dilational visco-elasticity of sodium dodecyl sulphate solutions, *J. Colloid Interface Sci.*, 377 (2012) 1–6.

A. Javadi, J. Krägel, M. Karbaschi, J.Y. Won, A. Dan, A.V. Makievski, G. Loglio, L. Liggieri, F. Ravera, N.M. Kovalchuk, V.I. Kovalchuk and R. Miller, Capillary pressure experiments with single drops, in "Progress in Colloid Interface Science", Vol. 4, P. Kralchevsky, R. Miller and F. Ravera (Eds.), 2013, Chapter 13, p. 271-312.

E. Guzman, E. Santini, L. Liggieri, F. Ravera, G. Loglio J. Krägel, A. Maestro, R.G. Rubio, D. Grigoriev and R. Miller, Particle-surfactant interaction at liquid interfaces, in "Progress in Colloid Interface Science", Vol. 4, P. Kralchevsky, R. Miller and F. Ravera (Eds.), 2013, Chapter 4, p. 77-109.

6. joint STSM within this COST action

Mohsen Karbaschi Golm staying at Statoil with Robert Orr in Porsgrunn

Lucie Vobecka from Prague visiting MPI in Golm

Elena Mileva from Sofia visiting MPI in Golm

M. Krzan from Krakow GRASP Liege Univ. (H. Caps)