

SOFT2HARD

Année : AO 2012

Porteur : Wiebke Drenckhan

Laboratoire : LPS

Laboratoires participants : FAST PMC

Thème : 2 OutEq

Budget alloué : 180 000 €

Durée : 36 mois

Début : 01/10/2012

Rapport Scientifique

Résumé :

Many soft matter systems undergo transition from a liquid-like to a solid-like state upon the concentration of nano- or microscopic objects dispersed in a carrier fluid. It is of particular interest to understand how exactly the systems “jam” towards the solid-like state, and how the organisation of the objects leads to emerging mechanical properties of the ensemble. Four research teams at the LPS, FAST and the LPMC propose to put their scientific and technical expertise together to investigate these questions for a range of systems which include drying or sedimenting nano- or microparticle dispersions, creaming emulsions and film-forming bacteria dispersions. Common to all systems is the fact that the concentration of the objects occurs at a “soft wall” imposed by the presence of a gas/liquid interface. In some cases, the presence of two gas/liquid interfaces leads to a “soft confinement”. Understanding how soft systems become hard in the presence of such soft walls is a new research direction, which is hoped to shed some new light on jamming systems. To follow the spatial and temporal evolution of the dispersed systems in 3D and at high resolution we need to acquire a confocal microscope, which we aim to install in the LPS with access to other PALM members. The proposed research naturally links important scientific and applied questions of fundamental interest to Theme 2 of the Labex PALM.

Etat du projet : terminé

Après quelques années de préparations, l'équipe a finalement pu installer un microscope confocal grâce aux soutiens de PALM, SESAME et des actions spécifiques du LPS.

Indicateurs

Nombre de financements ERC :	Nombre d'IUF junior et sénior :	Nombre de distinctions scientifiques (uniquement Prix Nobel ; Médaille Fields ; Prix Crafoord ; Prix Turing ; Prix Albert Lasker ; Prix Wolf ; Médaille d'or du CNRS ; Médaille d'argent du CNRS ; Lauriers de l'INRA ; Grand Prix de l'INSERM ; Prix Balzan ; Prix Abel ; Les prix scientifiques attribués par l'Institut de France et ses académies ; Japan Prize ; Prix Gairdner ; Prix Claude Lévi-Strauss)
1	0	0
Nb de doctorants impliqués :	Nb de post-doctorant impliqués :	Nb d'étudiants en master impliqués :
0	0	0

Effet levier

Cofinancements :

L'achat du microscope a été financé par :

- LabEx PALM (180 k€)
- SESAME (135 k€)
- ERC POMCAPS (30 k€)
- LPS (28 k€)

Dépe

l'état