



# CMET SEMINAR

Wednesday, May 23, 2007

11:00 a.m.

366 Colburn Lab

*abstract*

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### **“Structure, Rheology and Applications of Aggregating Suspensions in Two Dimensions”**

Two-dimensional suspensions can be readily generated by trapping micrometer sized particles at a gas/liquid or liquid/liquid interface. For such particle monolayers, structural information in a single plane suffices to provide a complete description of the interparticle structure. Such systems can hence be used as model systems to study the dynamics, structure and rheology of aggregating suspensions. Here, we will discuss the behaviour of particles pinned down at liquid-liquid interfaces. First, it will be addressed how the 'rules of the game' change, when trying to control the colloidal interactions. Issues related to packing, buckling and particle flipping as well as the role of the electrostatic and capillary interactions will be discussed. It will be demonstrated how careful experiments on 2D suspensions can provide mechanistic insight into phenomena such as yielding and flow-structuring. The thermodynamic and rheological properties will be reported, aiming at a micromechanical description of aggregate particle networks. Finally, the relevance of controlling the structure and interfacial mechanics of aggregated particulate monolayers to some practical applications will be discussed.