

Columbia University Department of Chemical Engineering Fall 2015 Seminar Series

Date: Tuesday, September 8th

Time: 4:00 pm

Location: 825 Mudd Building*

Inverse design of interactions for assembly

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Nanometer-scale, colloidally-stable particles suspended in a fluid can be driven to assemble into a wide variety of different structures depending on the control parameters of the system and the nature of the effective interparticle interactions. In many cases, the relevant interactions are tunable via external fields, physical or chemical modification of the particle surfaces, or changes in the composition of the suspending solvent. In this talk, we explore simple models for the 'inverse' design of such interactions for cluster or superlattice forming systems. We also touch upon practical aspects associated with realizing and characterizing the designed structures.

*There will be a reception from 3:30pm-4:00pm where light refreshments will be served in Mudd 801.