

講題: Electric-field driven assembly of colloids at a surface: the emergence of complex structure and behavior from simple constituents

演講摘要:

Colloids have been a rich system for exploring and understanding the emergent behavior of large collections of simple particles due to our ability to tune, manipulate and visualize the particles and their interactions. With the application of electric fields and confinement at a surface, colloids develop competing interactions that lead to rich and unexpected collective structure and dynamics. In this talk, I present our studies combining experiments and modeling of several types of self-assembled structures, including 1) the spontaneous formation of “colloidal molecules” and their reactions, 2) formation of regular and frustrated arrays of spheres and of dimers, 3) spontaneous assembly and propulsion of chiral clusters.