

Abstract Submitted
for the DFD11 Meeting of
The American Physical Society

Electric field induced self-assembly of particles at liquid-liquid interfaces M. HOSSAIN, B. DALAL, S. GURUPATHAM, I. FISCHER, P. SINGH, New Jersey Institute of Technology, N. AUBRY, Carnegie Mellon University — We have recently shown that virtually defect-free monolayers of particles can be assembled at air-liquid interfaces by applying an electric field normal to the interface. Particles rearrange themselves under the influence of interfacial and electrostatic forces to form hexagonal monolayers with long-range order. The lattice spacing can be varied by changing the electric field intensity and frequency. In this talk we present similar results for the self-assembly of particles on the interfaces between two liquids. It is shown that the monolayer arrangement depends on the radii of the particles, the dielectric properties of the fluids and particles, and the applied electric-field intensity.

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Date submitted: 20 Jul 2011

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