Abstract Submitted
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Electric filed induced self-assembly of monolayers of sub-micron sized particles on flexible thin films K. SHAH, M. HOSSAIN, NJIT, M. JANJUA, American University in Dubai, N. AUBRY, Northeastern, I.S. FISCHER, P. SINGH, NJIT — We present a technique that uses an electric field in the direction normal to the interface for self-assembling particle monolayers of sub-micron sized particles on fluid-liquid interfaces and freezing these monolayers onto the surface of a flexible thin film. The electric field gives rise to dipole-dipole and capillary forces which cause the particles to arrange in a triangular pattern. The technique involves assembling the monolayer on the interface between a UV-curable resin and another fluid by applying an electric field, and then curing the resin by applying UV light. The monolayer becomes embedded on the surface of the solidified resin film.

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