

Stamping Ordered Molecular Monolayers Using Liquid Crystal Inks

Goal: to investigate nematic liquid crystal (LC) inks combined with patterned anchoring alignment stamps to create new methods for preparing multi-component molecular thin films with controlled organization and composition.

LC solvents influence and guide the formation of mixed alkylthiolate SAMs by coupling molecular order and composition in the SAM to a pattern on a stamp through an elastic strain field produced by competitive LC anchoring at the stamp- and SAM surfaces

Concept resembles heteroepitaxial growth in the presence of elastic surface strain, however the strain field is provided by a nematic LC, rather than the substrate, and results from anchoring and elastic forces, rather than an epitaxial mismatch

