

Abstract Submitted  
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**Electrospray of Solution Processed Nanomaterials** NICHOLAS BROWN, PAUL CHIAROT, State University of New York at Binghamton — Electro-spray is a technique that uses large electric fields to generate a spray of highly-charged, monodispersed droplets from a liquid solvent. Colloidal inks, consisting of nanoparticles dispersed in a volatile solvent, can be atomized using electro-spray. In this study, we investigate the deposit structure of nanoparticle inks printed onto three different substrates: bare glass, silanized-patterned glass, and glass coated with a liquid film. The deposition morphology of colloidal inks printed onto these surfaces is predicted using mathematical modeling and statistical analysis. The goal of intervening at the substrate with surface patterns and liquid films is to exert control over the microstructure of the printed deposit. The advantage of electro-spray is that it is an additive process which drastically reduces material waste that is inherent in other thin-film material processes.

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