

Abstract Submitted
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Simulation studies of electroless metal deposition using gold nano-clusters on polymeric surfaces¹ MIKE LIVELY, ANIKET BHATTACHARYA, Department of Physics, University of Central Florida, CHRIS GRABILL, Department of Chemistry, University of Central Florida, STEPHEN M. KUEBLER, Department of Chemistry and The College of Optics and Photonics, University of Central Florida, ANIRUDDHA DUTTA, Department of Physics, University of Central Florida, HELGE HEINRICH, Department of Physics and Advanced Materials Processing and Analysis Center, University of Central Florida — We report lattice Monte Carlo (MC) simulation studies of deposition of metallic silver on randomly distributed gold nano clusters on a polymeric surface. The gold nano-clusters act as seeds for further deposition of silver atoms. We assume ballistic growth for the growth of metallic silver on gold clusters but treat the lateral growth (which eventually form bridges among original clusters) with different rules and study the evolving morphologies of the deposited silver atoms as a function of the surface density and the size distribution of gold nano-clusters and compare simulation results with those obtained from TEM studies of the prepared samples.

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