

Abstract Submitted  
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**Quantification of metallic nanoparticle morphology  
with tilt series imaging by transmission electron microscopy<sup>1</sup>**

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— We report on the quantitative analysis of electrolessly deposited Au and Ag nanoparticles (NPs) on SU8 polymer with the help of High-Angle Annular Dark-Field Scanning Transmission Electron Microscopy (HAADF-STEM) in tilt series. Au NPs act as nucleating agents for the electroless deposition of silver. Au NPs were prepared by attaching Au<sup>3+</sup> cations to amine functionalized SU8 polymeric surfaces and then reducing it with aqueous NaBH<sub>4</sub>. The nanoscale morphology of the deposited NPs on the surface of polymer has been studied from the dark field TEM cross sectional images. Ag NPs were deposited on the cross-linked polymeric surface from a silver citrate solution reduced by hydroquinone. HAADF-STEM enables us to determine the distances between the NPs and their exact locations at and near the surface. The particle distribution, sizes and densities provide us with the data necessary to control the parameters for the development of the electroless deposition technique for emerging nanoscale technologies.

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