

Can seeds help? Toward improved anisotropic nanoparticle homogeneity for room-temperature reactions

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This talk will discuss the growth mechanisms of anisotropic gold nanoparticles at room temperature. We will focus on a simple synthetic system starting from a gold salt and Good's buffers as reducing and stabilizing agents. Using correlative microscopy and spectroscopy tools, we will analyze the formation of anisotropic gold nanoparticles as a function of reaction time. We will describe differences in anisotropic features as a function of pH and buffer concentration and how large nanoparticle seeds can guide the growth process toward increased homogeneity. Implications for exploiting nanoparticle heterogeneity in applications will be discussed.