**550d Size and Shape-Controlled Synthesis of Metal Nanostructures Templated by Amphiphilic Block Copolymers**

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Amphiphilic block copolymers of the poly(ethylene oxide)-poly(propylene oxide) (PEO-PPO) type can act in tandem as both reductants and efficient stabilizers for the preparation of metal (e.g., gold, silver) nanoparticle dispersions from metal ions in air-saturated aqueous solutions or polar organic solvents [Sakai & Alexandridis: Langmuir 2004, 20, 8426; J. Phys. Chem. B 2005, 109, 7766; Nanotechnology 2005, 16, S344; Langmuir 2005, 21, LA050756h]. A balance of the polymer amphiphilic character, PEO blocks acting as the main metal ion reduction cite and PPO blocks facilitating polymer adsorption on particles and ion reduction at that location, can lead to control of the particle size (10-100 nm), shape (sphere, polyhedron, rod, plate) and structure (core-shell or ball-stick bimetalic colloids). This synthesis procedure is economic and environmentally benign as it involves the minimum possible number of components, water as the main solvent, commercially available polymers, proceeds fast to completion, and results in a "ready to use" product. Moreover, the judicious combination of amphiphilic polymers and nanoparticles presents a range of possibilities for further development on the basis of templating and self-assembly effects.