



# Defining Rules for the Shape Evolution of Gold Nanoparticles



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Gold nanoparticles have been the focus of a vast amount of research as a result of their shape- and size- dependent physical and chemical properties. These properties have potential applications in a variety of areas, including catalysis, optics, spectroscopic enhancement, and biology. Recent work has shown that through a detailed understanding of the chemistry of nanoparticle growth, in particular reaction rate (kinetics) and selective blocking (passivation) of surfaces by silver, it is possible to develop design parameters for the synthesis of gold nanoparticles with controlled shapes. Some shapes produced using this method include: octahedra, cubes, trisoctahedra, bipyramids, rhombic dodecahedra, and concave cubes.

