

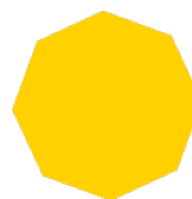


THE 2022 INORGANIC CHEMISTRY FRONTIERS LECTURE



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The Faults in our Nanostars?

Abstract: Anisotropic gold nanoparticles exhibit shape-dependent optical properties beneficial for optical sensing, biomedical imaging, and photocatalysis. Although different synthetic approaches can result in anisotropic nanoparticles, usually a desired shape requires the use of seed particles, where nucleation is followed by selective faceted growth. In contrast, Good's buffers can act both as nucleating and shape-directing agents for the synthesis of a new class of biocompatible anisotropic nanoparticles: gold nanostars (AuNS). This talk will discuss the fundamentals and applications of AuNS that support positive, negative, and neutral curvature. First, we will describe details of AuNS growth and mechanistic insight gained from unconventional analytical tools. Second, we will discuss the functionalization with biological ligands that can facilitate both nanoparticle assembly and single-particle imaging of their interactions with live cells. Finally, we will show how targeting nanoconstructs based on AuNS show distinct properties from their spherical counterparts when interacting with cancer cells, which opens prospects for a novel type of assay based on real-time dynamics.

Wednesday, May 25th 2022

4:00 p.m. | 3440 Mol Sci