Special Issue

Supramolecular Gold Chemistry: From Atomically Precise Thiolate-Protected Gold Nanoclusters to Gold-Thiolate Nanostructures

Message from the Guest Editor

The chemistry of the sulfur–gold bond is extremely rich and leads to hybrid materials. Such materials encompass gold thiolate coordination oligomers, for instance [Au(I)(SR)]n, where SR stands for a chemical group containing a sulfur atom and atomically well-defined clusters [AunSRm], or supramolecular assemblies like Au(I)(SR). While the majority of gold atoms in the nanoparticles are in the Au(0) state under strong reducing conditions, gold atoms in supramolecular assemblies like Au(I)(SR) NPs are in the gold(I) state. In atomically well-defined clusters of [AunSRm] stoichiometry, a subtle balance between the Au(0) core and the Au(I)–SR shell leads to fascinating material properties and in particular to highly tunable optical properties.

This Special Issue is intended to provide a unique international forum aimed at covering a broad description of results involving the chemistry of the sulfur–gold interface leading to hybrid materials, ranging from gold thiolate coordination polymers, to thiolate protected gold nanoclusters and gold–thiolate supramolecular assemblies. Scientists working both experimentally and theoretically are welcome.

Guest Editor

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Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

Editor-in-Chief

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