

330d Caged Polymers within Metallic Nanoshells as Novel Hybrid Nanomaterials

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Colloidal nanoparticles of materials such as gold have been of the subject of significant interest due to their unique optical and electronic properties. Properties such as visible absorption due to a surface plasmon resonance have been explored extensively for applications such as sensors, optical filters, and photonics. Recently, more innovative nanostructures such as hollow gold nanoshells and metallo-dielectric core-shell nanostructures have been prepared to enhance tenability of optical properties and sensitivity to local environmental changes. In this paper, we will discuss our research on preparing gold nanoshells that can be used to cage stimuli-sensitive polymers. The optical responses of these novel hybrid materials to stimuli changes will be presented and will form the basis of innovative schemes for sensors, drug delivery, and optical materials.