

Synthesis of magnetic nano gold shell

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Metal nano shell generated heat as it was influenced by tunable optical resonance. The heat was used to ablative cancer. Magnetic gold nano shell is gilding a silica core which is embedded magnetite in silica(SiO₂). Magnetite were prepared by co-precipitation method. The surface of the magnetite was treated with tetramethylammonium hydroxide(TMAOH). First, the magnetite was coated by sodium silicate solution. This process was helpful to make the mono-dispersed silica core-shell conveniently. The next processing was carried out as Stöber method in ethanol. The surface of a silica core, was functionalized by aminopropyl trimethoxysilane (APTMS). The colloidal gold nano-particle was attached to ligand-functionalized silica. This particle grew into a gold nano-shell. The structure of the core-supporter-shell was confirmed by transmission electron microscope and Thermo Gravimetry Analysis. The size distribution and the surface charge of the prepared nano-particles were determined by light scattering and scanning electron microscope.

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