

Fluorescent Probes of Ligand Delivery from Monolayer-Protected Gold Nanoparticles Induced by Radicals

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We designed a ligand for monolayer formation that contains the highly fluorescent (it emits light) BODIPY group (**1**) that allow us to visualize the photogenerated radical induced release of the monolayers from a gold nanoparticle. Because the metal nanoparticle acts to quench (turn off) the fluorescence of this ligand when it is bound and as it is released it fluoresces (turns on) it is a very sensitive probe for ligand release. In this work we show that photogenerated radicals, generated in solution, react with and release the ligands from the monolayer (detected by its fluorescence) and form particles of much larger core-size. The controlled release of ligands from MPGNs has potential applications in sensor technology and for drug delivery.

