

Plasmonic enhancements in gold nanostars and gold nanoparticle resonators

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In my talk I will present our recent work on enhancing optical processes with plasmonic nanoparticles. Among individual plasmonic nanoparticles, star-shaped gold nanoparticles, i.e. gold nanostars, are particularly interesting since their sharp tips provide large field enhancements without particle aggregation. Individual nanostars are used to enhance Raman signals of adsorbed molecules [1] and to demonstrate selective switching of the hotspots at their tips. The controlled assembly of gold nanoparticles into dimers, i.e. nanoresonators, is an alternative way to achieve large field enhancements [2,3]. Nanoresonators from two spherical nanoparticles can enhance fluorescence energy transfer more effectively than individual particles.

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