

Nanoplasmonics and surface enhanced spectroscopy

Surface Enhanced Raman Scattering of Quantum Dots on Liposome encapsulation

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Semiconductor quantum dots (QDs) have been extensively used for biomedical applications as efficient biomarkers [1, 2]. At the same time liposome encapsulation may open other applications: the possibility of liposome labelling with different antibodies to stimulation of the pathway to specific organs as efficient and specific biomarkers [3, 4].

Raman scattering spectra of commercial acquired CdSe/ZnS core/shell quantum dots of two different emission wavelengths (530 and 640nm) after the liposomal encapsulation reveals Surface Enhanced Raman Scattering (SERS) effect. The surface electric fields of QDs/liposome hybrids nanoparticles oscillate with the same frequency as the incident light, but under resonance conditions their intensities are several orders of magnitude higher and this effect can be used for bio imaging and diagnostics.

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