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Effect of nanoparticle geometry on photon statistics

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A non-perturbative quantum plasmonics study of the geometry-dependent light scattering by a metamolecule weakly-driven by a plane-polarized electric field is presented. The metamolecule consists of a CdSe semiconductor quantum dot coupled to a gold nanoparticle. We show that at the Fano-dip, the delay time where scattered photons are antibunched diminishes as the nanoparticle geometry is tuned from prolate to oblate to spheric at constant particle volume. This is due to the geometry-dependent localized surface plasmon resonance and quantum dot-nanoparticle coupling.

Apply to be considered for a student ; award (Yes / No)?

No

Level for award;(Hons, MSc, PhD, N/A)?

N/A

Consent on use of personal information: Abstract Submission

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