Abstract of Presentation

Presentation Title:

Nanooptic with Plasmons –

Noble metal and Semiconductor Nanoparticles for Optical Devices

Abstract :

We produce size and shape controlled metal, semiconducting and hybrid nanocrystals by wet chemical synthesis,[1, 2] especially in microfluidic continuous flow.[3] Understanding their crystallization and the resulting properties is a large part of our research and some recent results are presented.[4, 5] The main direction of our effort is to create nanoparticles for optical applications, specifically for single molecule microscopy. We have developed novel single particle scattering spectroscopy techniques,[6, 7] which allow using plasmonic particles as label in biological environments. We present examples using plasmonic particles as sensor for nanoscopic orientation,[8] local viscosity,[9] binding events[10, 11] and atomic distance changes[12].

References

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5. *'Plasmonic Focusing Reduces Ensemble Linewidth of Silver Coated Gold Nanorods'*, **Nano Lett. 8, 1719 (2008).**
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8. *'Gold Nanorods as Novel Nonbleaching Plasmon-Based Orientation Sensors for Polarized Single-Particle Microscopy'*, **Nano Letters 5, 301 (2005).**
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