Optical Near Field Characterization of Plasmonic and Magnetoplasmonic Nanostructures: A First Approach

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Objective: Characterization of the EM Near field distribution of Magnetoplasmonic Nanostructures to correlate it with their MO Activity

From Localized/Surface Plasmon-Polariton Resonance ...

Principle
Near Field Enhancement
Various Resonance Modes

Extinction Log(ISubstrate/ISubstrate+Structures) (a.u.)

SNOM Images of Au Nanostructures on 2nm of Ti on a Glass Substrate:

USB 2000+

633nm Laser

TOF SPM

Laser

633nm Laser

Laser

633nm Laser

600 700 800 900 1000 1100

Wavelength (nm)

Extinction Spectra of rectangles:

Au – Co Combination: Plasmonic Structures with Magnetooptical Activity

Optical Response [1,2]

Extinction spectra of gold rods

Effect of LSPR:

MO Activity increased by the Field enhancement at the Co layer [1,2]

Tuning Fork

Multimodal Fiber: No Polarized Light!

Perspectives

References