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Nanoscale Optics and Plasmonics: Light, Electron, Plasmon! (Parshant Nagpal) *Plasmonic Nano Structures For Optical* In plasmonic data storage, a very short (~ few femtoseconds) laser pulse is focused to a diffraction-limited spot over a small region of an optical disk containing metallic nano-structures. The digital data stored in each bit-cell, comprising multiple bits of information, modifies the spectrum of the incident light pulse.

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Optical Second Harmonic Generation in Plasmonic ... Chiral plasmonic nanomaterials can have circular dichroism and optical rotatory dispersion effects orders of magnitude larger than those observed in ordinary chiral molecules. Understanding this fascinating class of materials has proved challenging and has motivated several research groups to develop entirely new experimental techniques for characterizing chirality driven optical properties.

Optical characterization of chiral

plasmonic nanostructures

The ability of metallic nanostructures to confine light at the sub-wavelength scale enables new perspectives and opportunities in the field of nanotechnology. Making use of this unique advantage, nano-optical trapping techniques have been developed to tackle new challenges in a wide range of areas from biology to quantum optics.

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Optical fiber-Raman devices integrated with plasmonic nanostructures have promising potentials for in situ probing remote liquid samples and biological samples. In this system, the fiber probe is required to simultaneously demonstrate stable surface enhanced Raman scattering (SERS) signals and high sensitivity toward the target species.

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Abstract: This paper reviews fundamentals of optical affinity biosensors based on plasmonic nanostructures and discusses recent advances in the development of this technology, including plasmonic nanostructures and surface plasmon phenomena, advances in sensor

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fabrication of plasmonic nanostructures. Using the presented method, strategies can be conceived to create materials of negative refractive index, which in turn would allow for applications such as cloaking^{10 11} or the construction of perfect lenses. Metamaterials obtain their unique optical

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A plasmonic metamaterial is a metamaterial that uses surface plasmons to achieve optical properties not seen in nature. Plasmons are produced from the interaction of light with metal- dielectric materials.

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