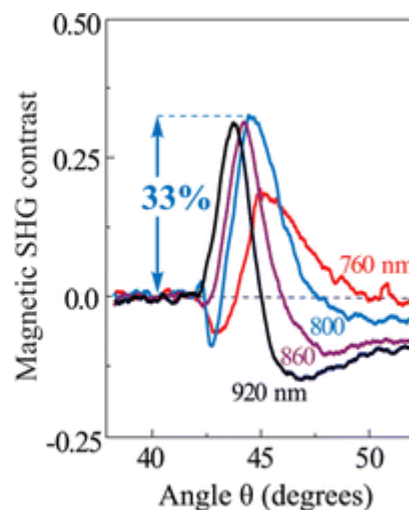
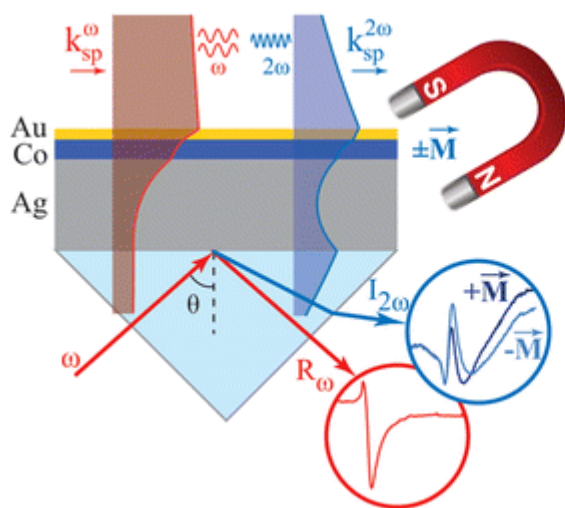


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Nonlinear Surface Magnetoplasmonics in Kretschmann Multilayers



Nonlinear magnetoplasmonics aims to utilize plasmonic excitations to control the mechanisms and tailor the efficiencies of

nonlinear light frequency conversion at the nanoscale.

Razdolski et al. investigate the mechanisms of magnetic second-harmonic generation in hybrid gold-cobalt-silver multilayer structures, which support propagating surface plasmon polaritons at both fundamental and second-harmonic frequencies. Using magneto-optical spectroscopy in Kretschmann geometry, they show that the huge magneto-optical modulation of the second-harmonic intensity is dominated by the excitation of surface plasmon polaritons at the second-harmonic frequency, as shown by tuning the optical wavelength over the spectral region of strong plasmonic dispersion. Their proof-of-principle experiment highlights bright prospects of nonlinear magnetoplasmonics and contributes to the general understanding of the nonlinear optics of magnetic surfaces and interfaces.

News

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