Nonlinear, Active, and Dynamically Tunable Chiral Metamaterials

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This presentation explores the potential of plasmonic metamaterials as a versatile platform for the generation, detection, and control of chiroptical signals in a nonlinear, active, and ultrafast manner. Topics covered include optical metamaterials with enhanced chiroptical responses; chiral-selective nonlinear imaging and spectroscopy; topologically continuous chiral structures with integrated electrical functionality; nonlinear metamaterials enabling intensity-induced chiral modulation; enantiomer-selective chiral sensing via upconversion metamaterials; and photon-enabled, handedness-selectable transient chiral media driven by the generation and transport of plasmonically induced hot carriers.