

Physics Colloquium

Tuesday, April 3rd, at 3:30 pm in SC 234

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Finding Nano-blocks to Control Light

Metasurfaces have emerged in recent years as a platform for designing subwavelength-thick optical components. Such designer optical interfaces introduce spatially-varying optical responses which can mold the wavefronts of light. The reduced dimensionality of optical metasurfaces opens new physics and leads to novel functionalities distinctly different from those in 3D optical materials. In this talk I will introduce the basic concept of metasurfaces and describe our experimental works on using metasurfaces to control light propagation in free space and in optical waveguides. Furthermore, I will present our recent experimental demonstration of a new metasurface platform with hyperbolic materials to control light localized on the surface. These metasurfaces can be the main building blocks in mid-/far infrared flat optics and integrated nanophotonics.

Refreshments at 3:00 pm in SC 103