Abstract Submitted
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Dependence of the transmission of sub-wavelength hole arrays in silver films on incident angle and light polarization[1] KWANGJE WOO, SINAN SELCUK, ARTHUR F. HEBARD, DAVID B. TANNER, Department of Physics, University of Florida, Gainesville, FL 32611 — It is known that the intensity of light transmitted through an array of holes that are of sub-wavelength scale can be surprisingly high at certain wavelengths. The enhanced transmission is attributed to a coupling of surface plasmons on the two sides of the film or to diffracted evanescent waves. We have studied the systematics of this transmission using a variety of hole arrays in silver films. We have studied the transmittance as a function of the angle of incidence of the light and the polarization and found a very strong dependence of the transmission on this angle and a rather strong polarization dependence.

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