Electronic Supplementary Material (ESI) for Nanoscale.

Supplementary information

Nanoscale plasmonic TM-pass polarizer integrated on silicon photonics

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Influence of the size parameters of the metallic nanoparticles on the transmission spectra

To show the influence of the parameters of the metallic nanoparticles on the transmission spectra, we plotted simulated transmission spectra under TE_0 mode illumination with different d_1 and d_2 (Fig. A). As shown in Fig. A (b), the transmission spectra present nearly linear red-shift with the increase of nanorod length d_1. Indeed, d_1 controls the position of plasmonic resonance. In Fig. A (a), higher extinction ratio is obtained with narrower nano-rod.

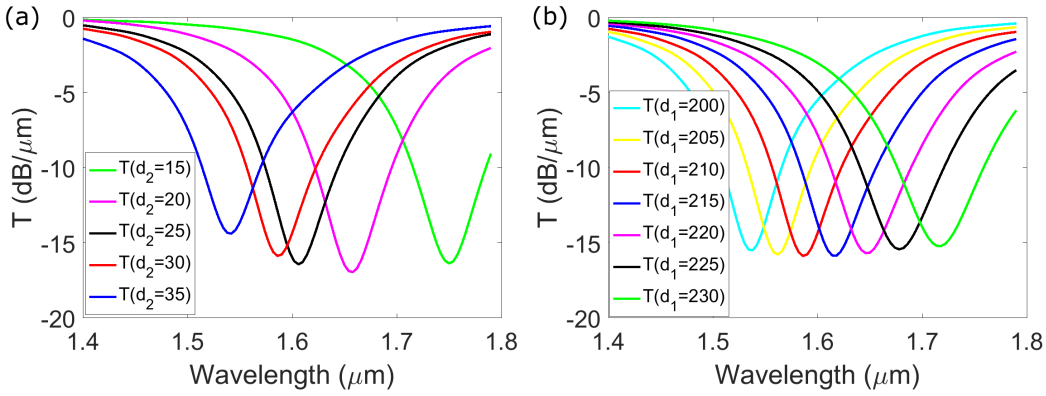

Fig. A Transmission spectra of proposed polarizer under TE_0 mode illumination with different d_2 (a) and different d_1 (b). $d_1 = 210$ nm in (a) and $d_2 = 30$ nm in (b).