Plasmonic Rainbow Trapping Structures for Light Localization and Spectrum Splitting

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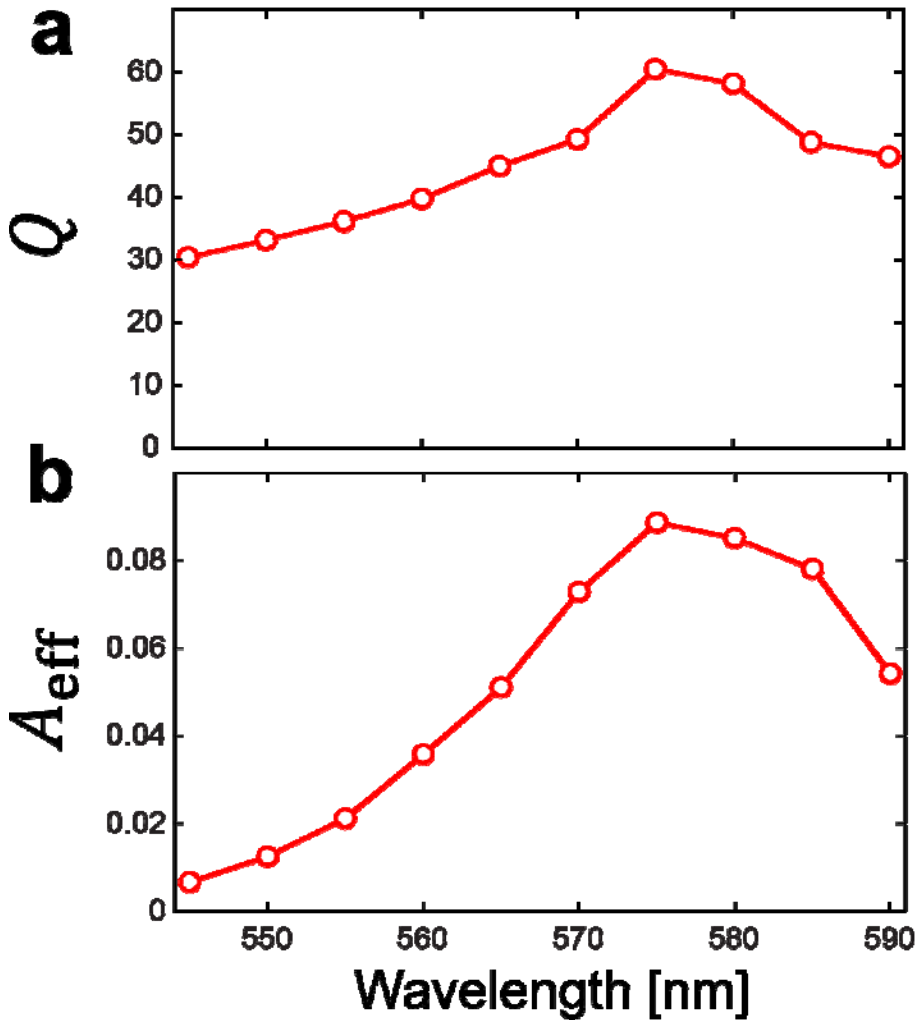

Figure S1. (a) Q and (b) A_{eff} of TM_1 modes in a Ag/GaP/Ag rainbow trapping structure as functions of free space wavelength. For $\alpha_0 = 50\,\text{nm}$ and $\theta = 5^\circ$, we obtain Q~30-60 and A_{eff}~0.01-0.1 throughout the target wavelength range. As the excitation wavelength approaches the surface plasmon resonance wavelength (~540nm), the mode becomes highly lossy and more confined near Ag/GaP interfaces. In this regime, the system is dominated by propagation loss rather than the effect of rainbow trapping. Therefore, small A_{eff} near the surface plasmon resonance wavelength is not the direct consequence of the rainbow trapping effect. A_{eff} is normalized by $\left(\lambda_0 / n_1\right)^2$.