

Ultrafast optical switching based on mutually enhanced resonance modes in gold nanowire gratings

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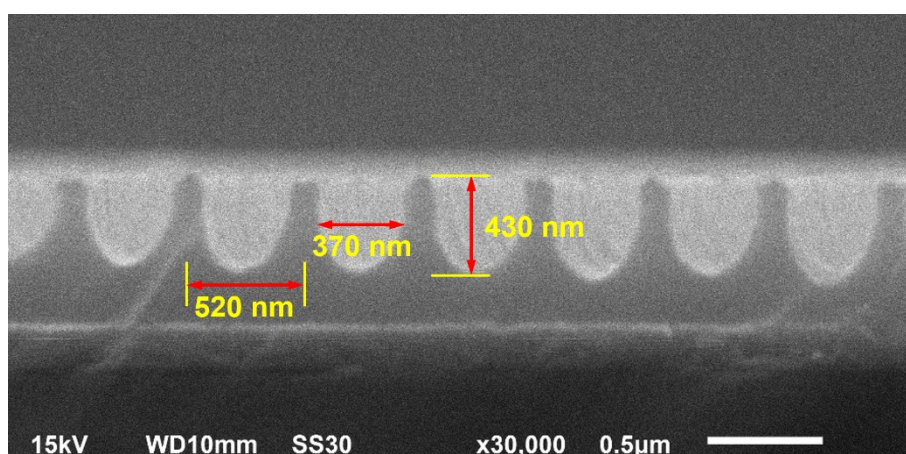


Fig. S1 Cross-sectional SEM image of the template PR grating.

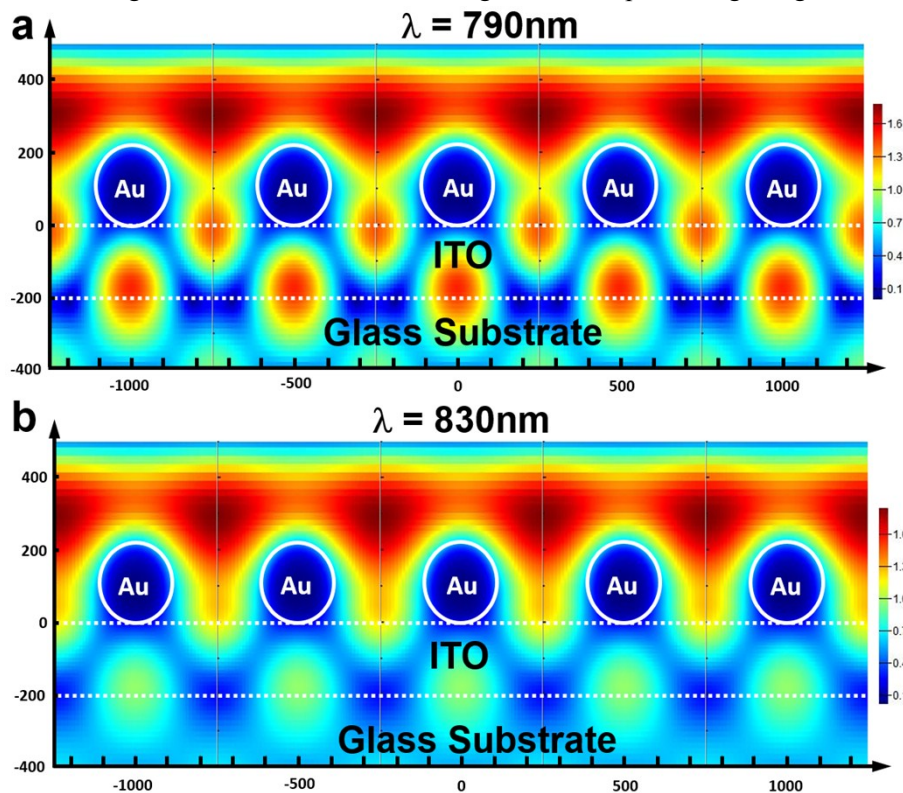


Fig. S2 Calculated optical electric field distribution at a wavelength of (a) 790 nm and 830 nm, which is within and outside the resonance spectrum, respectively.

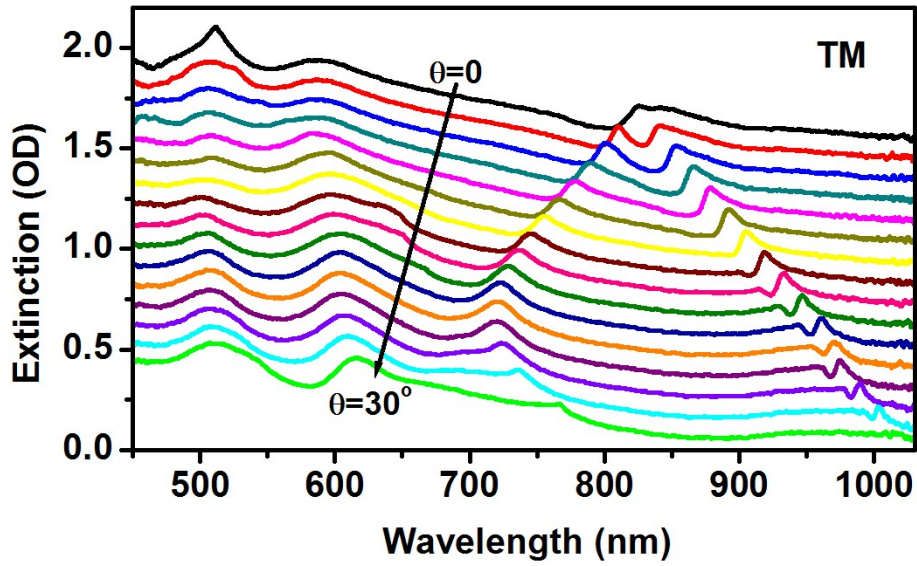


Fig. S3 Angle-resolved tunability of the optical extinction spectroscopic measurements on the sample demonstrated in Fig. 1(b) for TM polarization.

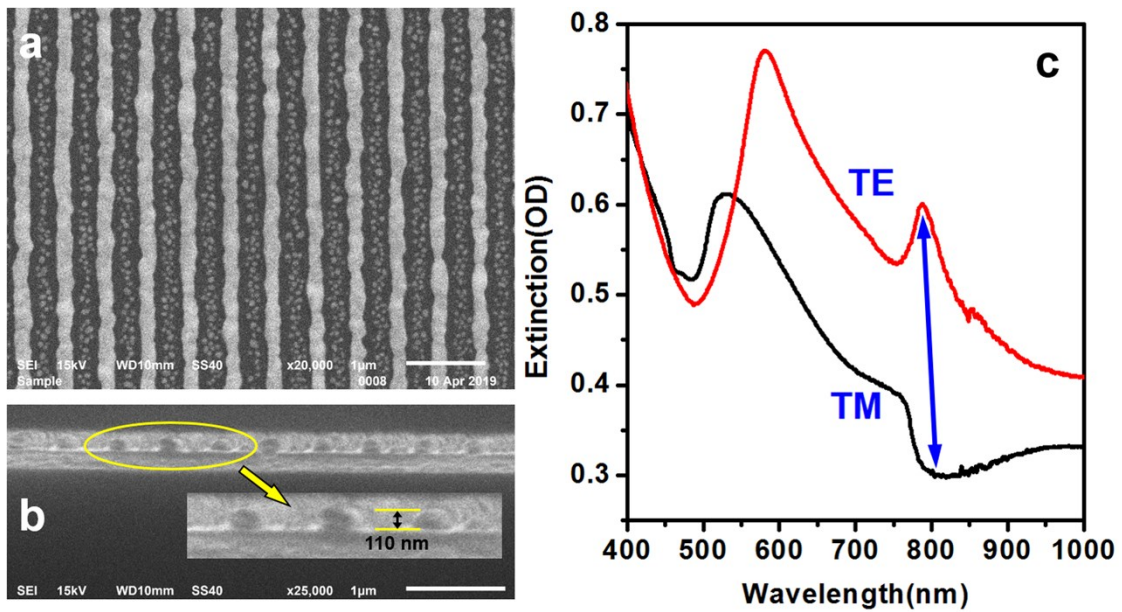


Fig. S4 (a) and (b): top-view and cross-sectional view SEM images of the gold nanowires with a thickness of about 110 nm, respectively, as indicated in the inset of (b). (c) Measured optical extinction spectra on the gold nanowire gratings in (a) and (b) for TE and TM polarization light beam of incidence.

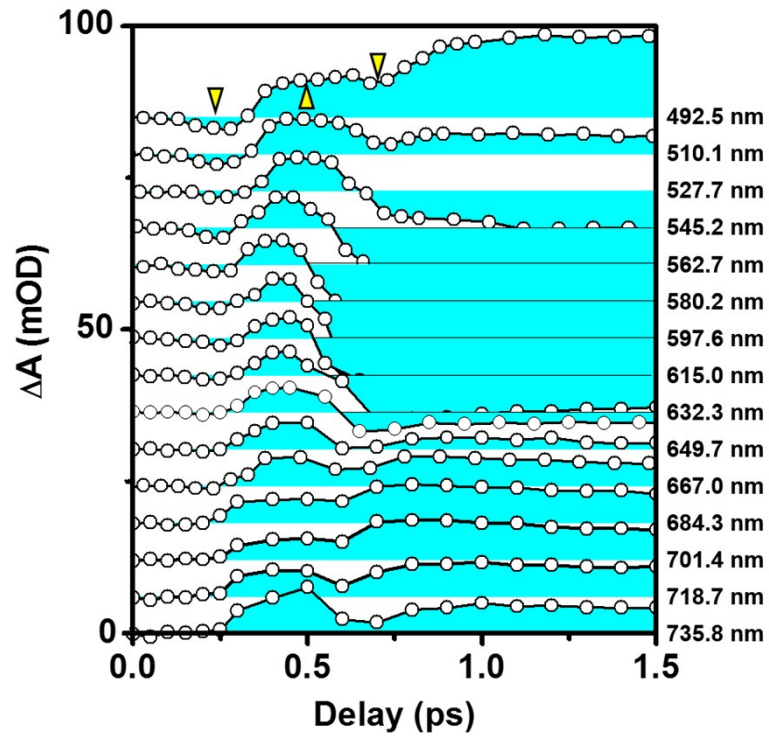


Fig. S5 TA dynamics at different probing wavelengths for the TE-pump-TE-probe scheme.

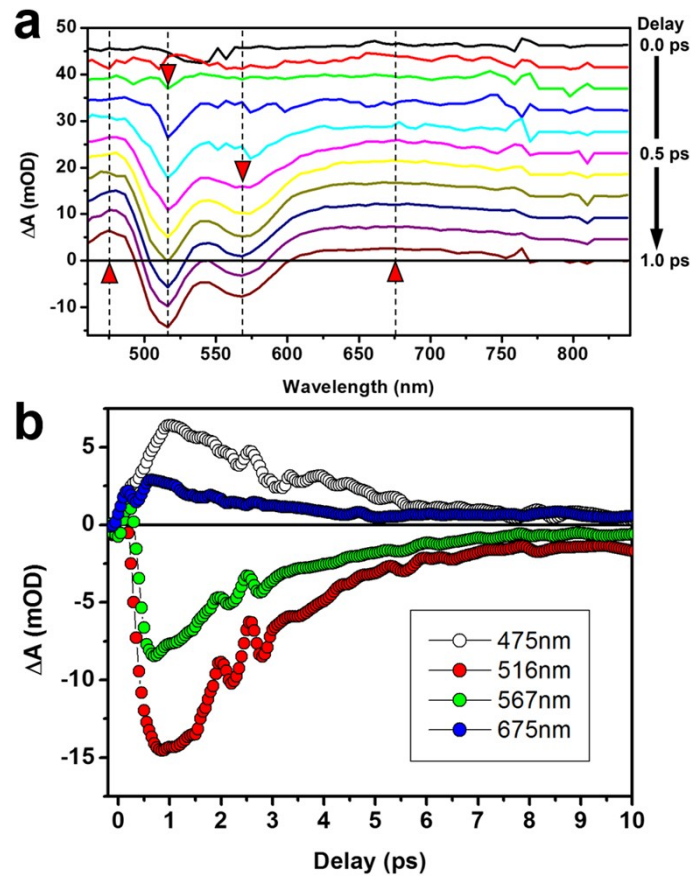


Fig. S6 TA spectra at a delay from 0 to 1 ps (a) and dynamics at 475, 516, 567, and 675 nm (b) for the TE-pump-TM-probe scheme.