

Supporting Information

Polarized SERS substrate with directionality, repeatability and orderability: Anisotropic Ag nanocavity array

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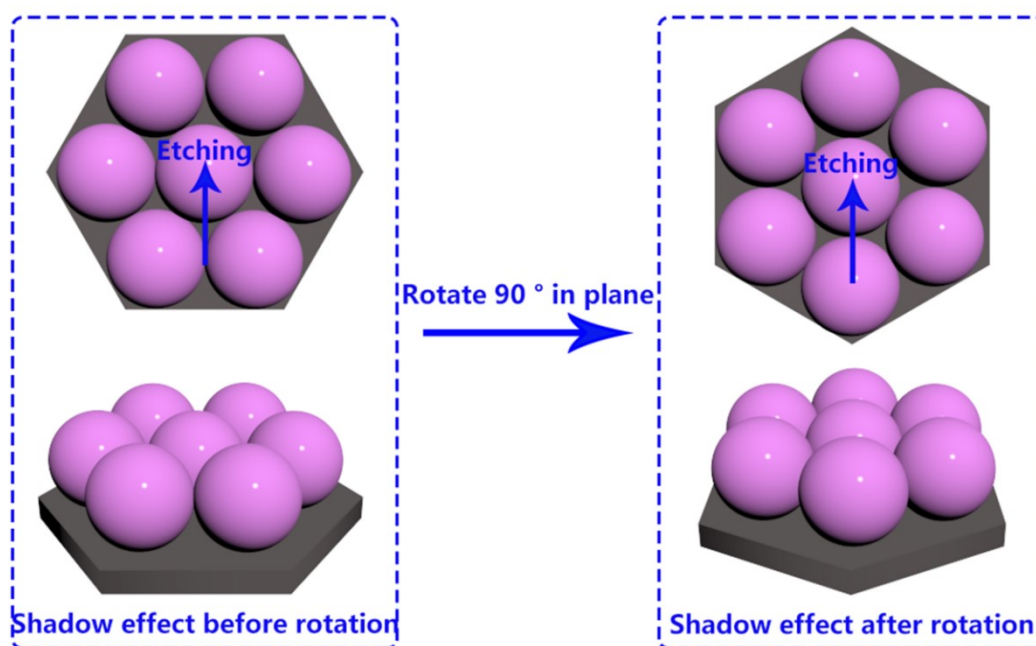


Fig.S1 Schematic diagram of shadow effect of Ag nanospheres array rotated 90° in the plane.

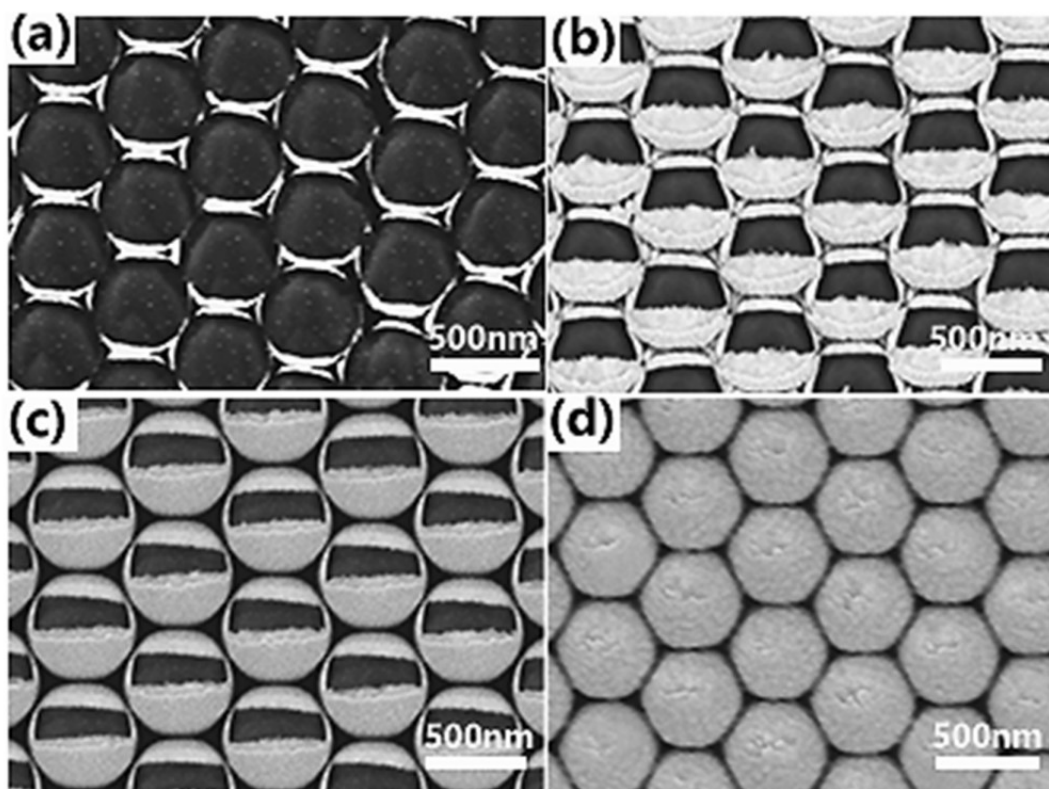


Fig. S2 After the sample was rotated 90 ° in the plane, SEM diagram formed by sub-beam etching of samples, the etching angles were 30 °, 45 °, 60 ° and 75 °.

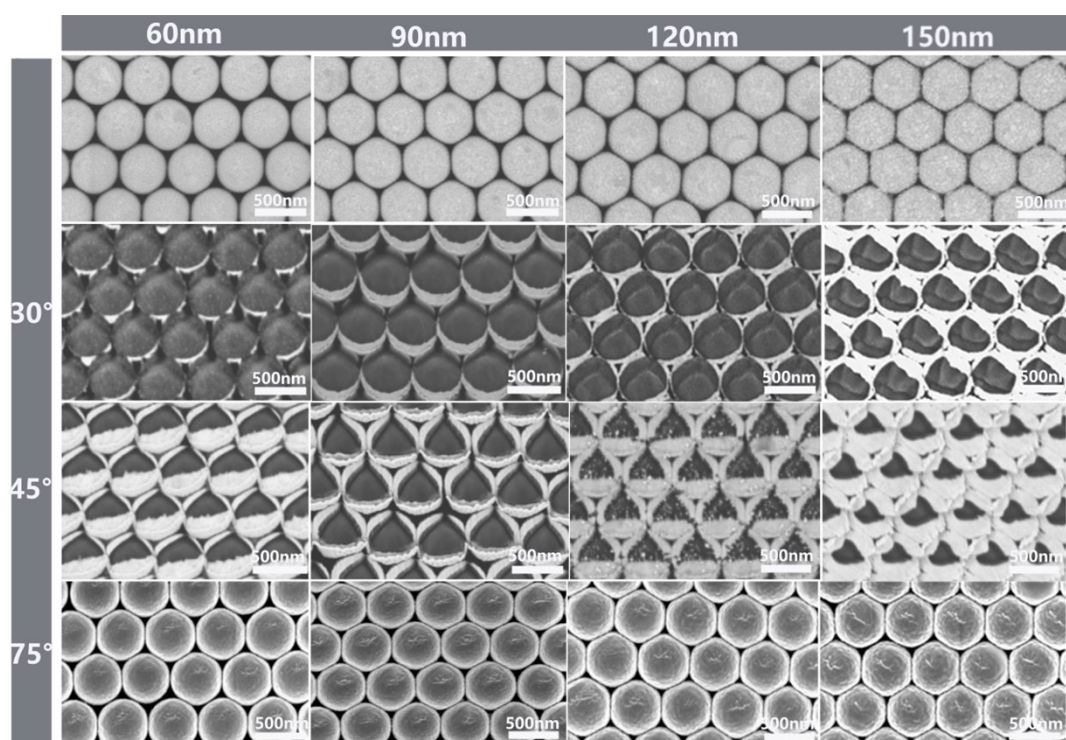


Fig. S3 The SEM diagrams were obtained by depositing of 60nm,90nm,120nm,150nm silver film on PS, and then etched at an etching angle of 30 °, 45 ° and 75 °, respectively.

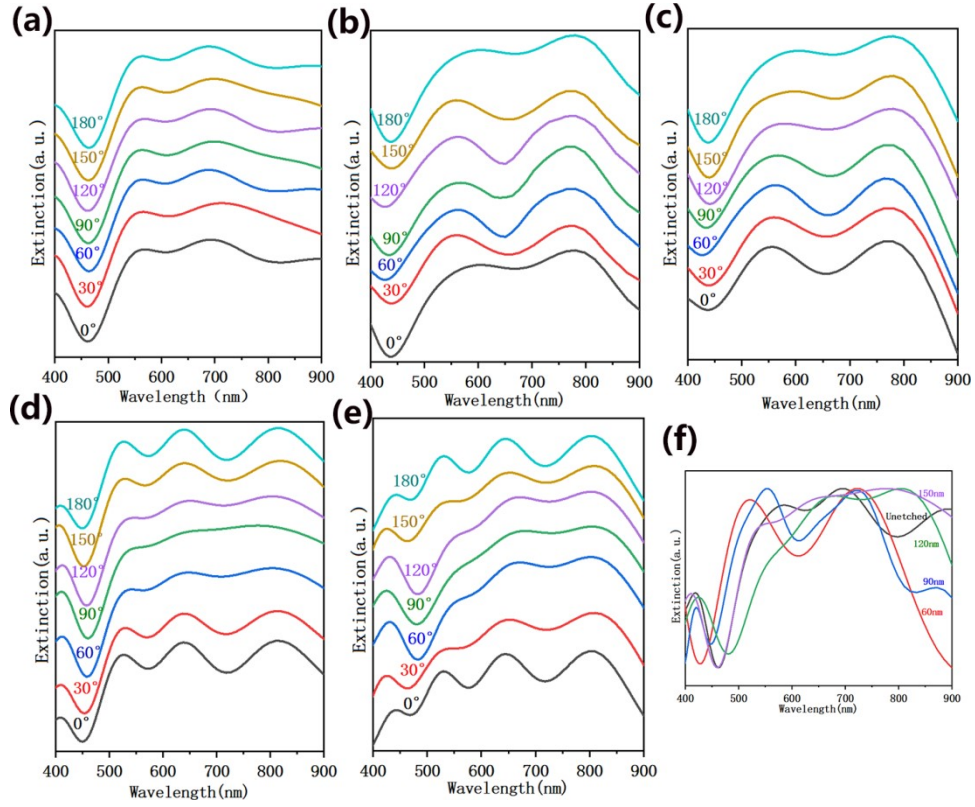


Fig. S4 (a) Polarization extinction spectra of nanospheres arrays with silver. (b-e) Polarization extinction spectra of anisotropic nanocavity arrays with different structures. (f) The extinction spectra of E in (a-e) with the direction of 90°.

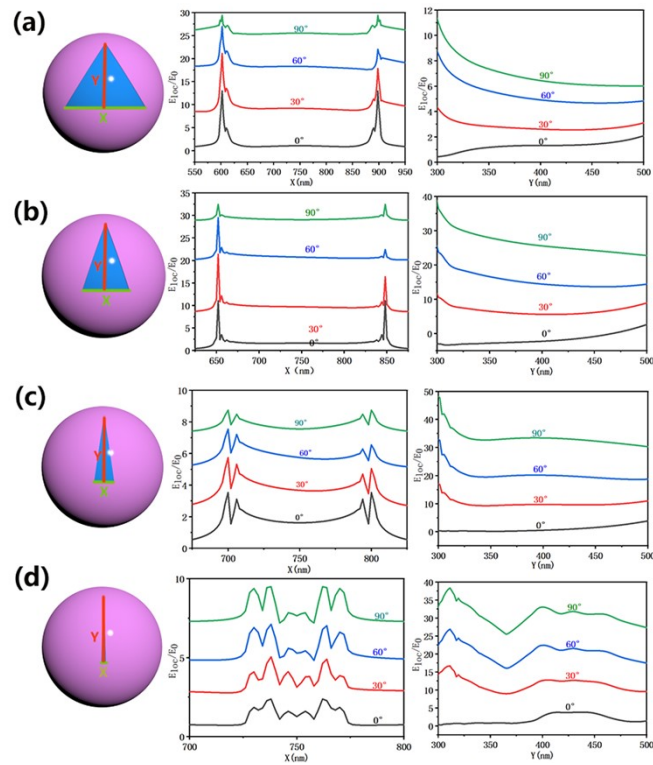


Fig. S5 The linear diagram of electric field intensity variation for different Ag nanocavity, the X-line and Y-line in the left model diagram are respectively the position of the linear monitor, and the broken line graph on the right is the electric field intensity change trend chart in different electric field directions at the corresponding monitor. (b-d) The linear diagram of electric field intensity changes of the samples which etched at 60° and the thickness of the silver film is 60nm, 90nm, 120nm and 150nm respectively.