Supporting Information:

Highly ordered 3D-silver nanoring arrays (3D-AgNRAs) for refractometric sensing

Xueyao Liu,[a] *Wendong Liu*[b] *and Bai Yang**[a]

[a] State Key Laboratory of Supramolecular Structure and Materials, College of Chemistry, Jilin University, Changchun 130012, P. R. China.

*E-mail: byangchem@jlu.edu.cn; Fax: +86-431-85193423; Tel: +86-431-851684789

[b] Max Planck Institute for Polymer Research, Ackermannweg 10, D-55128 Mainz, Rheinland-Pfalz, Germany

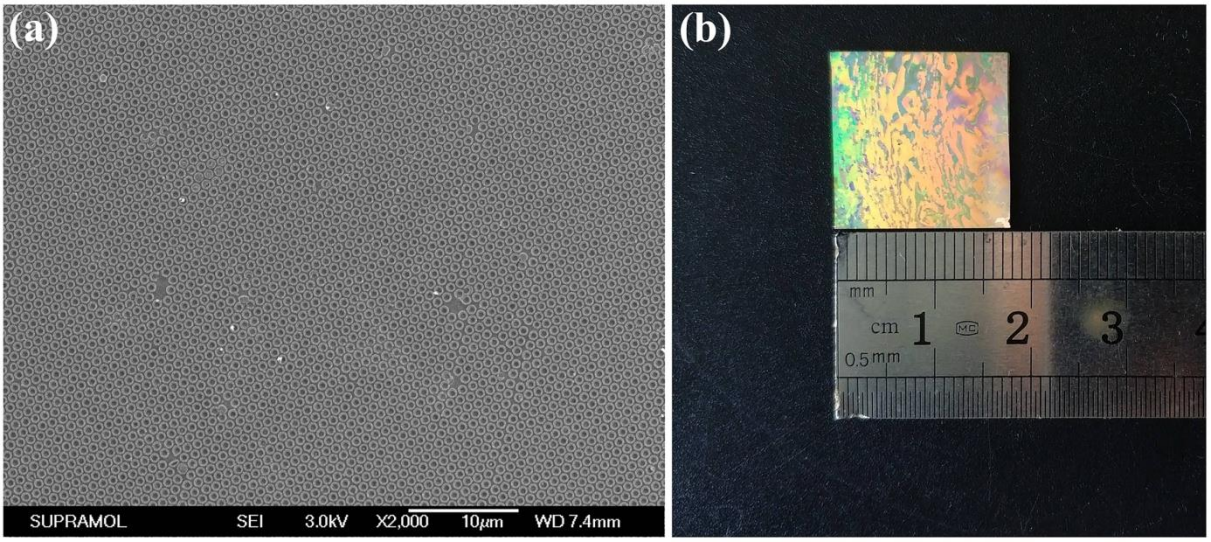

Figure S1. (a) Large area SEM image of 3D-AgNRAs; (b) Centimeter-size optical image of 3D-AgNRAs.

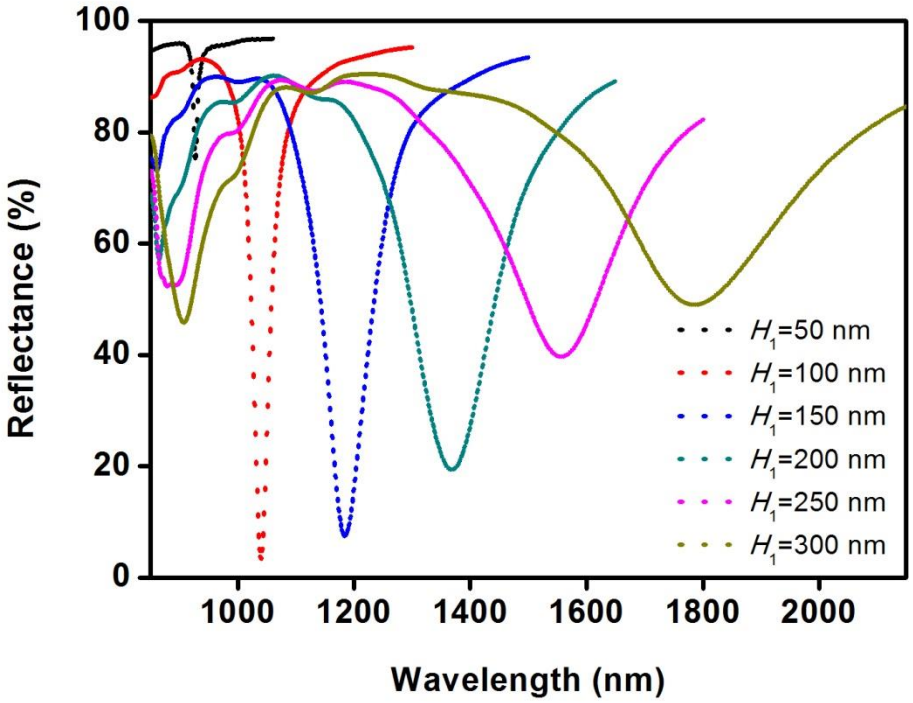

Figure S2. FDTD simulated reflectance spectra of 3D-AgNRAs with P=1 μm, D_1=530 nm, D_2=870 nm, and various H_1 (H_2-H_1=100 nm).

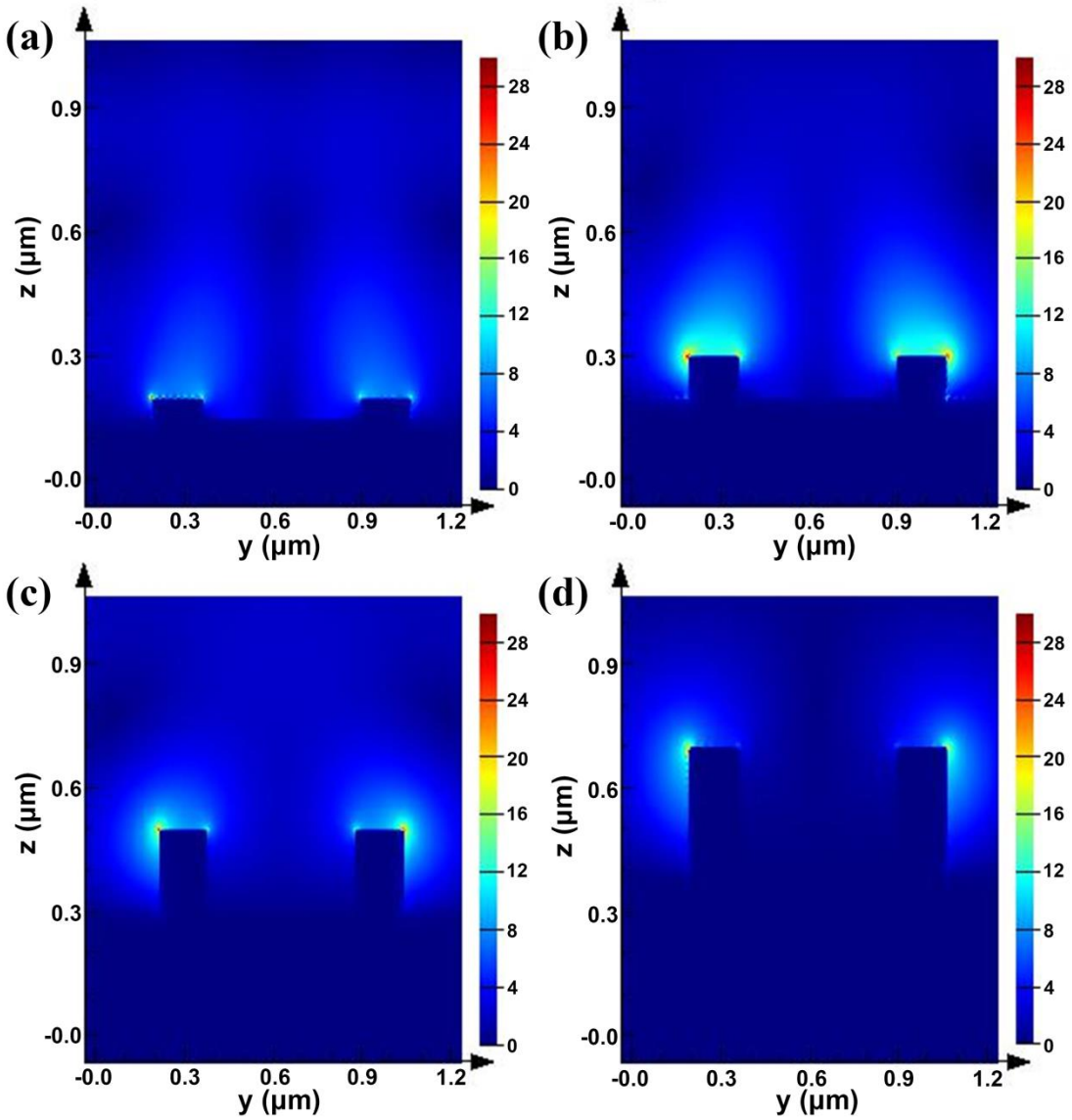

Figure S3. The reflectance main dip position's cross-section electromagnetic field distribution for 3D-AgNRAs with 50 (a), 100 (b), 200 (c), and 300 nm (d) H_1.

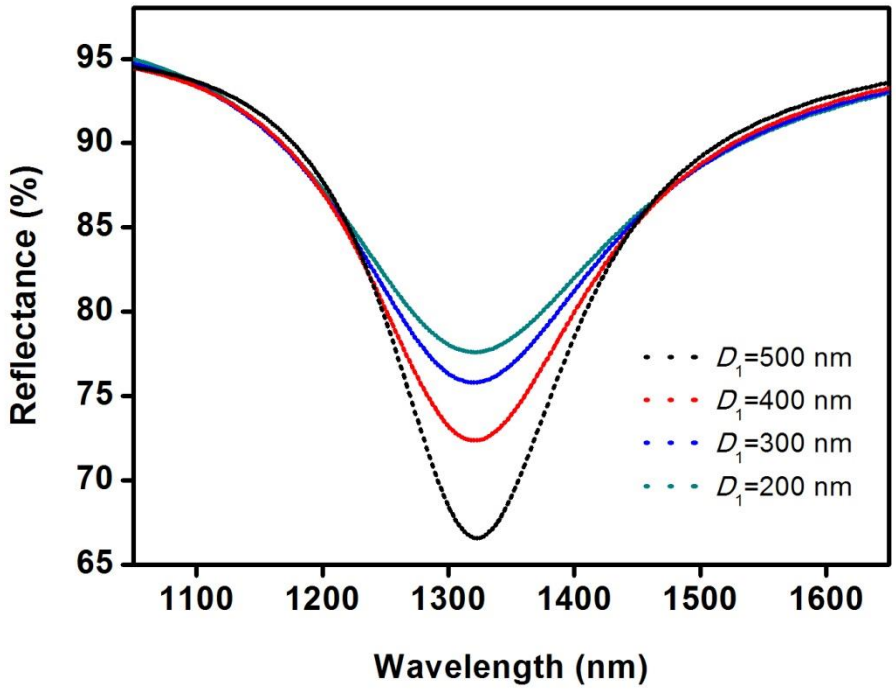

Figure S4. FDTD simulated reflectance spectra of 3D-AgNRAs with P=1 μm, H_1=200 nm, H_2=300 nm, and D_2=830 nm , but varied D_1 from 200 nm to 500 nm

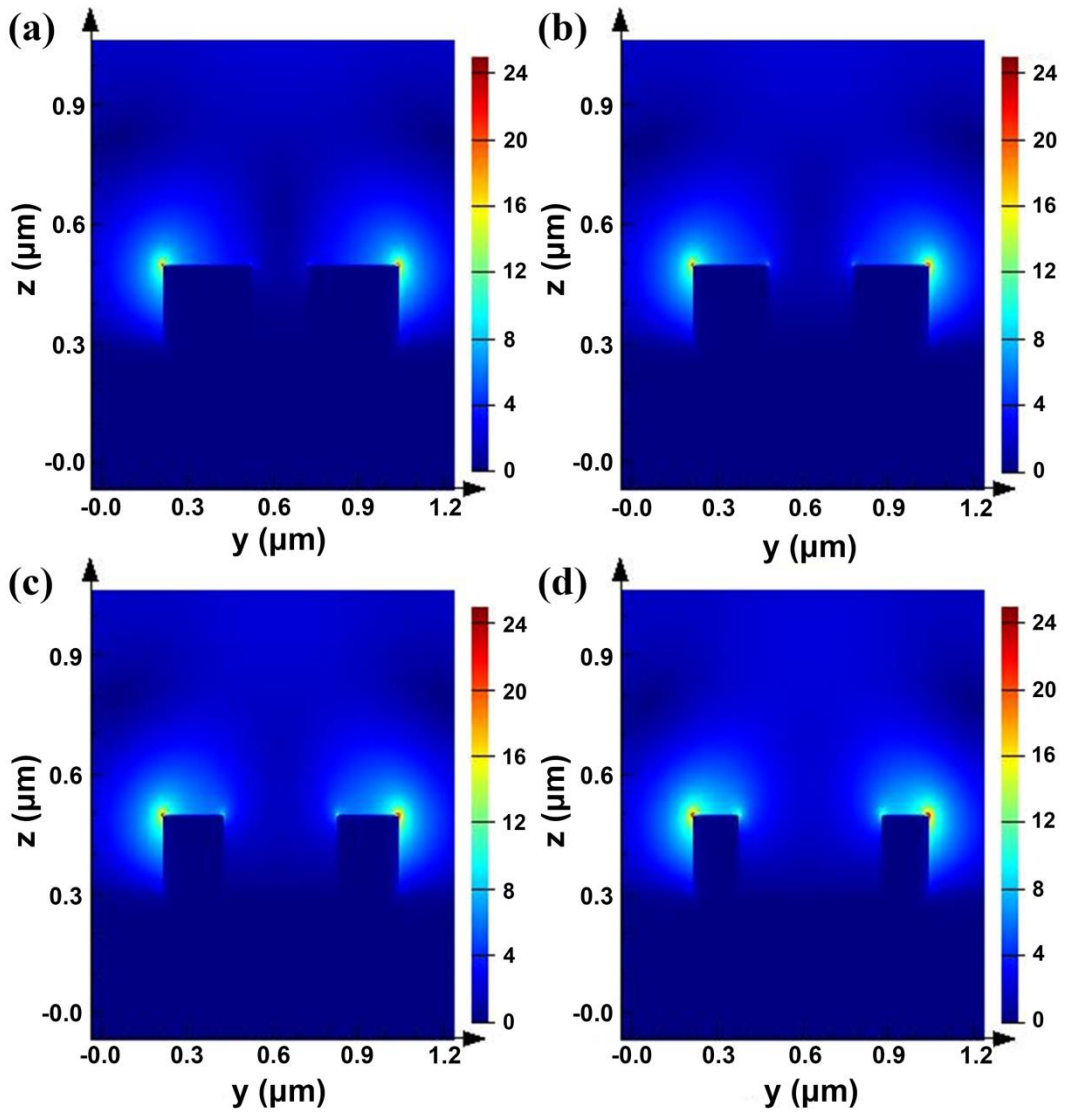

Figure S5. The reflectance main dip position's cross-section electromagnetic field distribution for 3D-AgNRAs with 200 (a), 300 (b), 400 (c), and 500 nm (d) D_1.

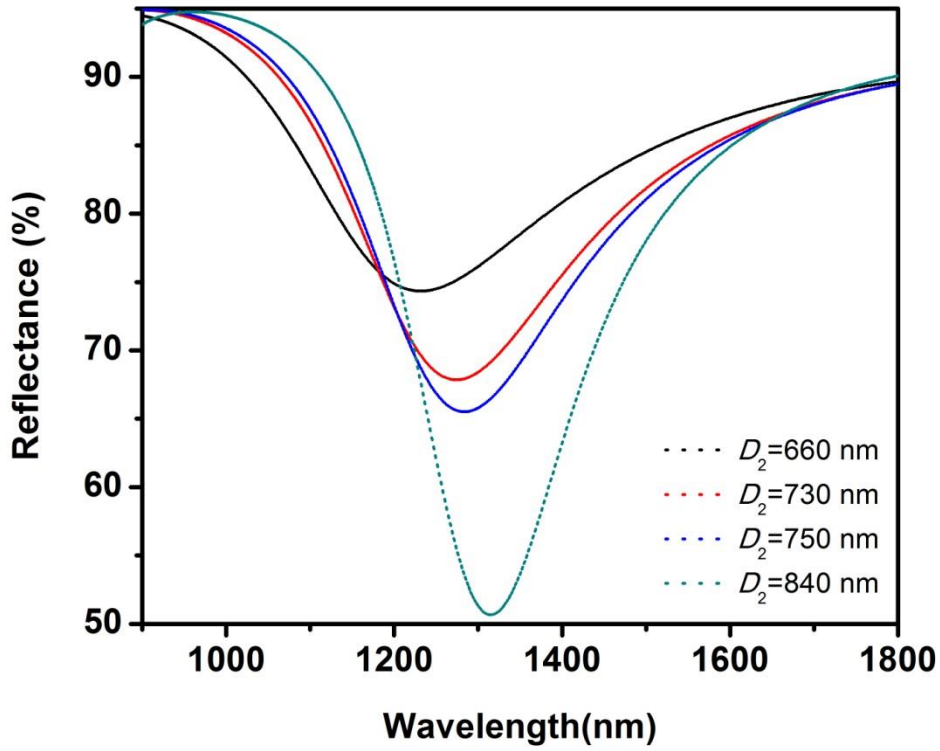

Figure S6. FDTD simulated reflectance spectra of 3D-AgNRAs with P=1 μm, H_1=200 nm, H_2=300 nm, T=250 nm , but varied D_2 from 660 nm to 840 nm

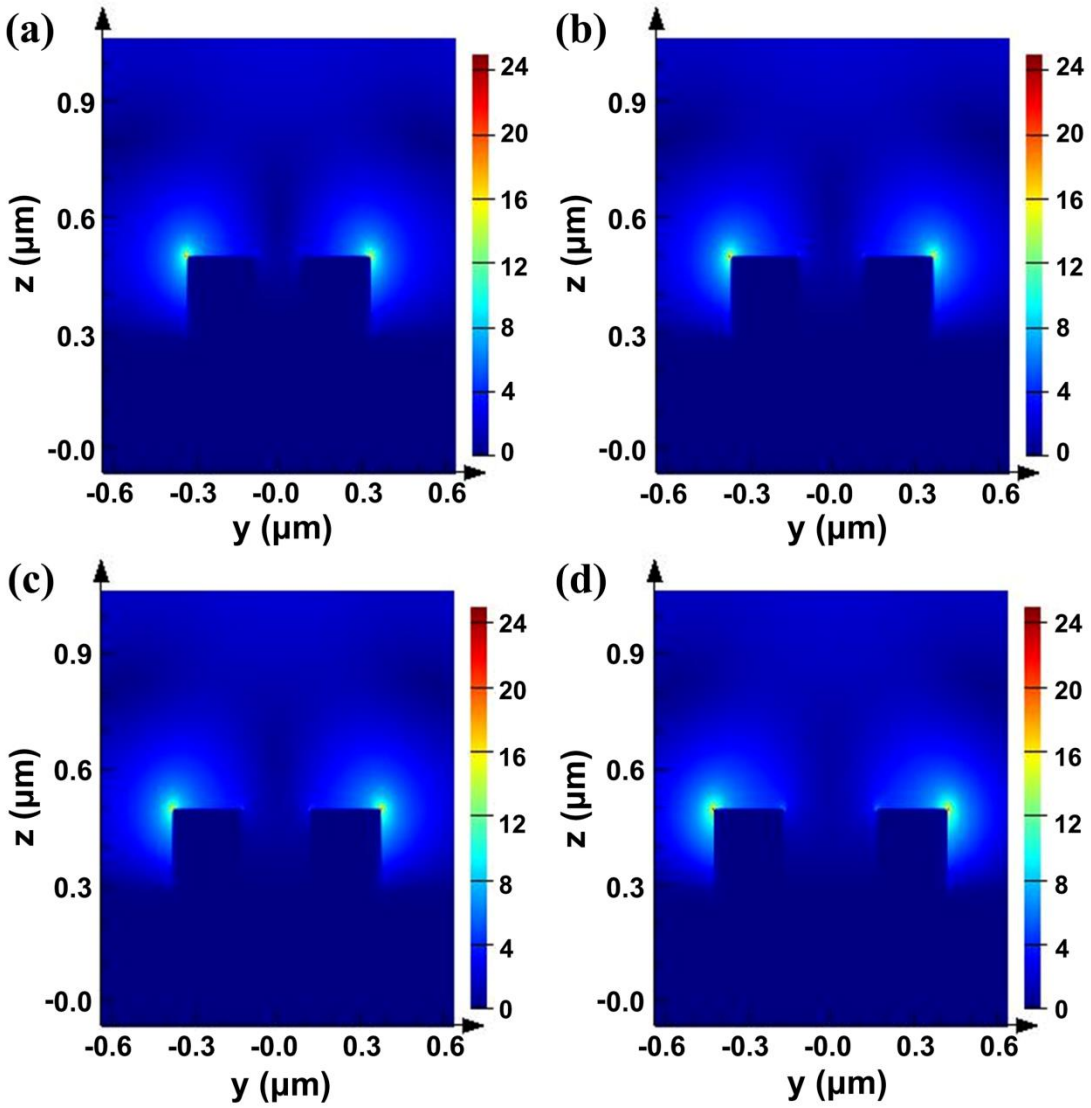

Figure S7. The reflectance main dip position's cross-section electromagnetic field distribution for 3D-AgNRAs with 660 (a), 730 (b), 750 (c), and 840 nm (d) D_2.

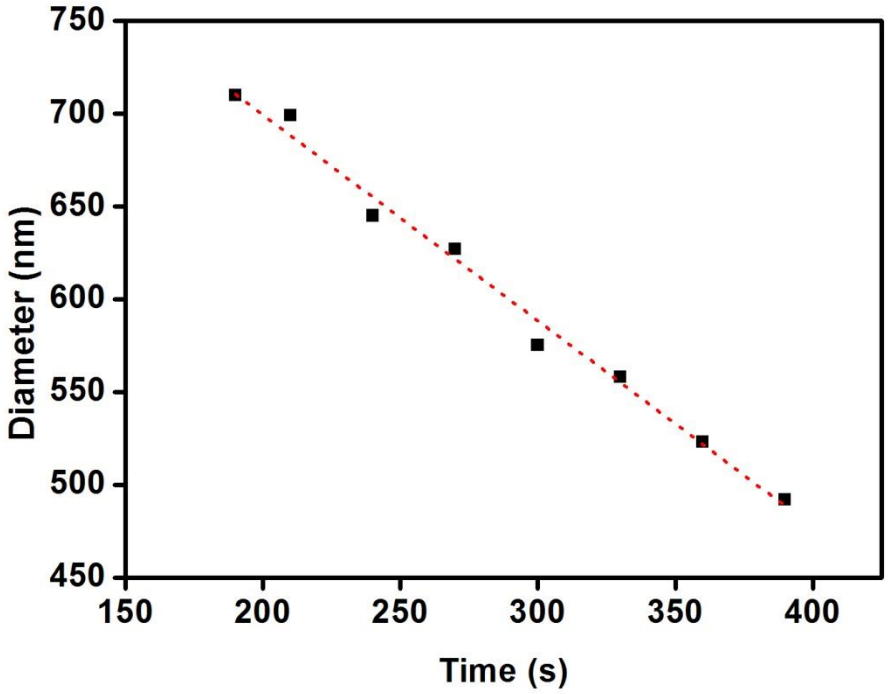

Figure S8. The temporal dependence of particle diameter during etching. The initial etched PS nanosphere mask taken as example was 780 nm in diameter.