

Supplementary Information

Surface lattice resonance in an asymmetric air environment of 2D Au near-spherical nanoparticle arrays: impact of nanoparticle size and its sensitivity

Dandan Men^a, Hong Wang^{a*}, Qianqian Ding^c, Yingyi Wu^d, Ting Wu^d, Wenshan Qu^a, Liang Ma^d, Honghua Zhang^d, Guihua Jiang^b, Lifeng Hang^{b*}

^a Shanxi Province Key Laboratory of Microstructure Functional Materials Institute of Solid State Physics, Shanxi Datong University, Datong, 037009, China.

^b Department of Medical Imaging, Guangdong Second Provincial General Hospital, Guangzhou Key Laboratory of Molecular Functional Imaging and Artificial Intelligence for Major Brain Diseases, Guangzhou 518037, People's Republic of China.

^c Suzhou Vocational Institute of Industrial Technology, Suzhou, Jiangsu, 215104, China.

^d Jiangxi Key Laboratory of Surface Engineering, Jiangxi Science and Technology Normal University, Nanchang 330013, P. R. China.

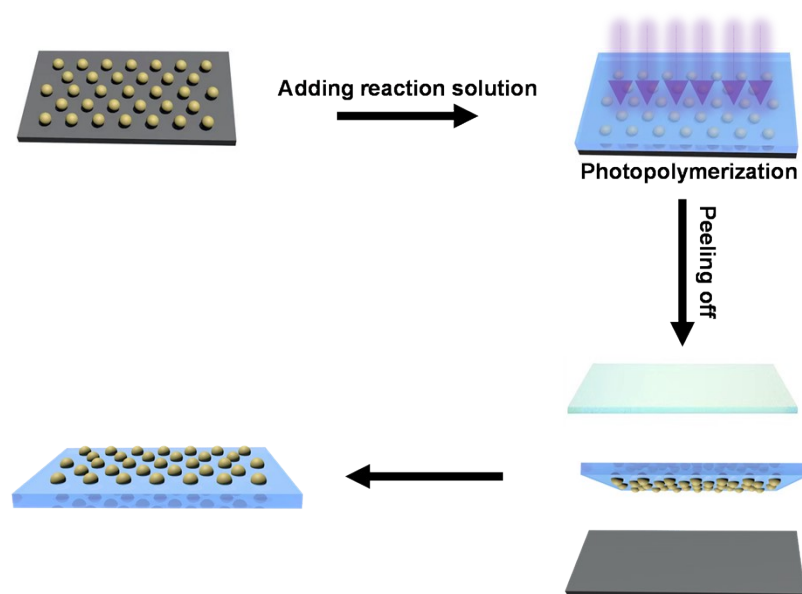


Fig. S1 Transfer process of the 2D Au NP arrays to flexible film.

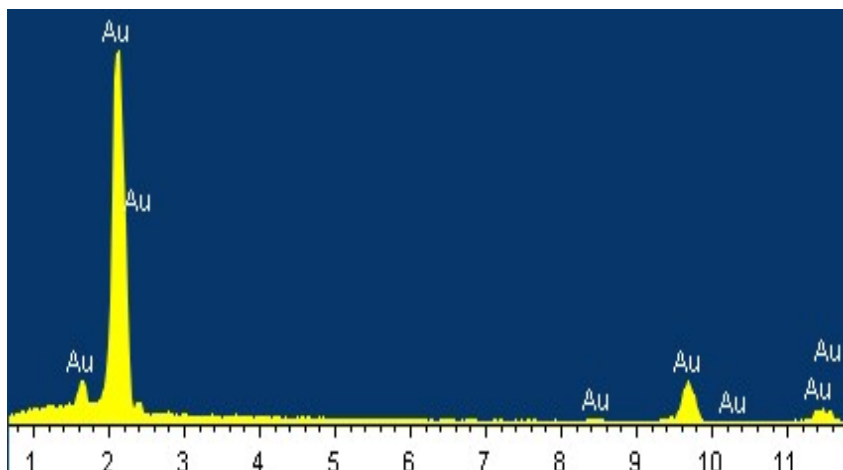


Fig. S2 EDS image of 2D Au NP arrays.

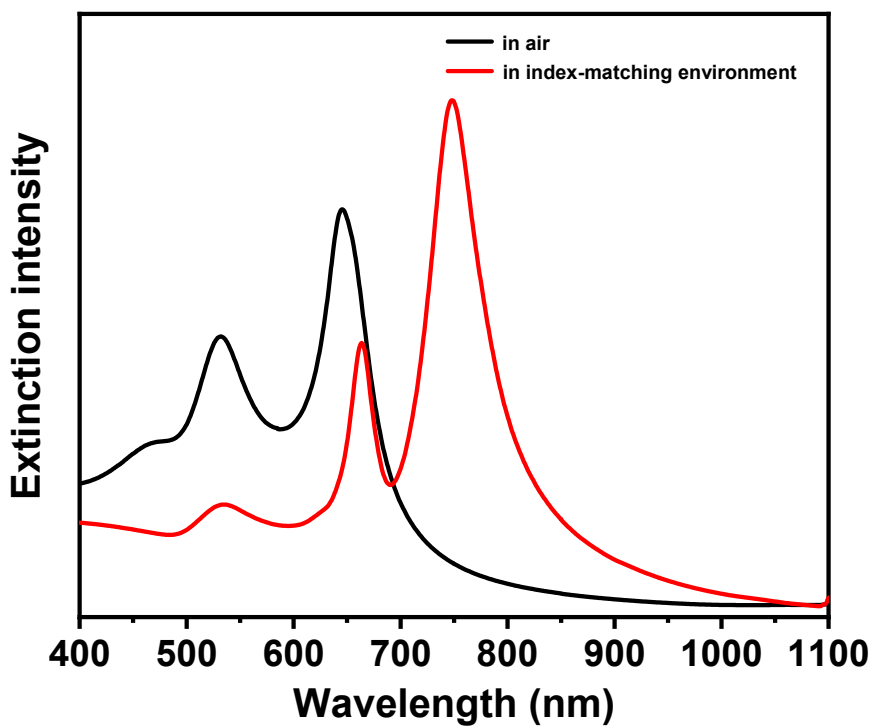


Fig. S3 Extinction spectra of the 2D Au NP arrays in air and in index-matching environment.

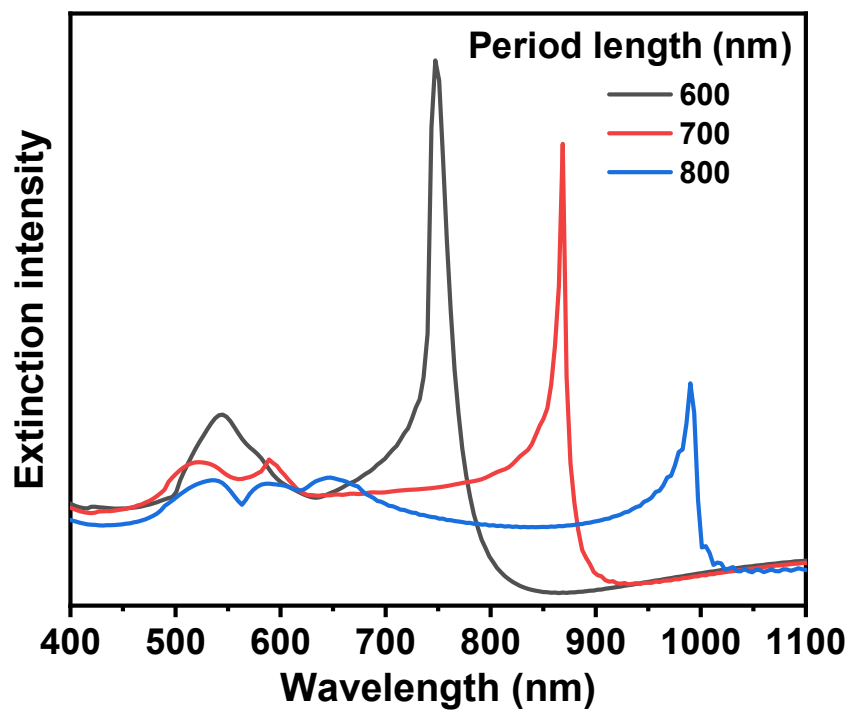


Fig. S4 Theoretical extinction spectra of 2D Au NP arrays with different period length.

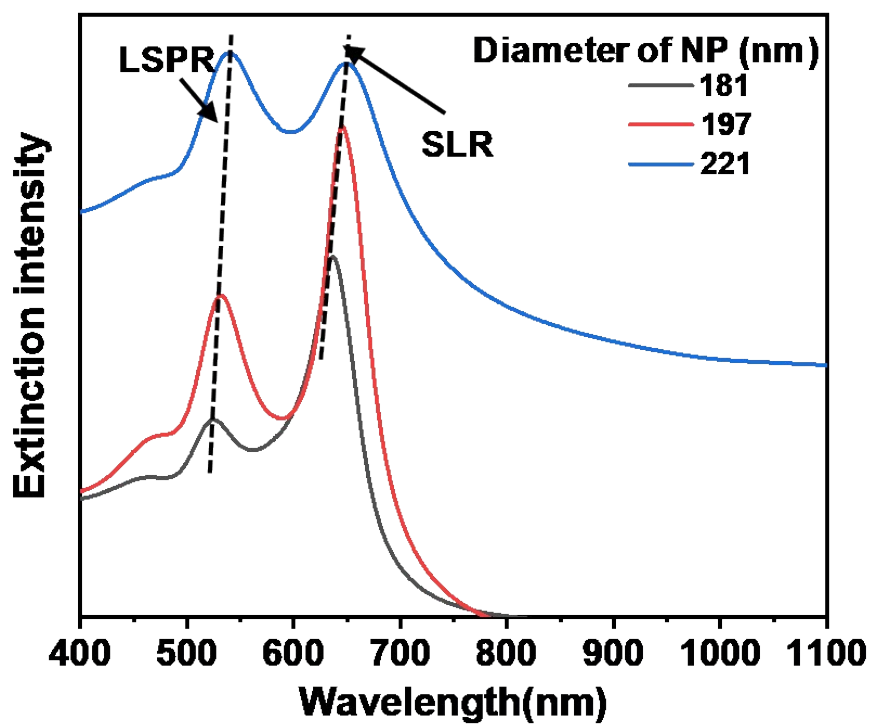


Fig. S5 Experimental extinction spectra of 2D Au NP arrays with different diameter.

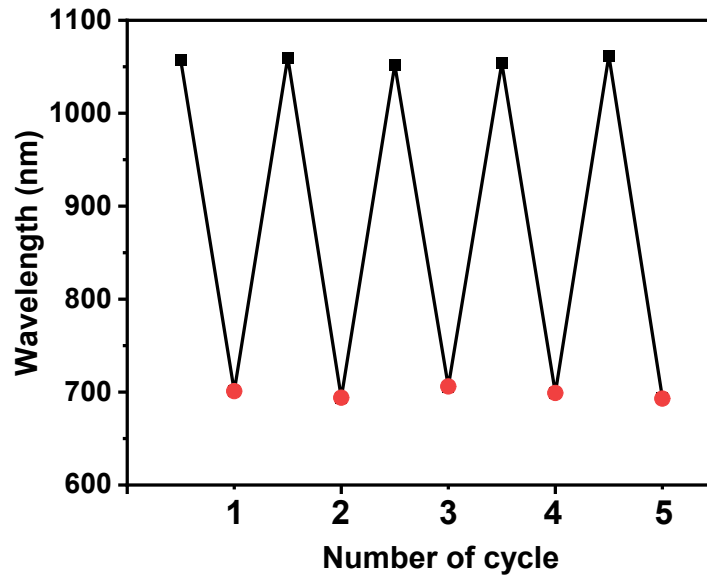


Fig. S6 Reversibility of the composite film with the water contents of 100% and 50%.

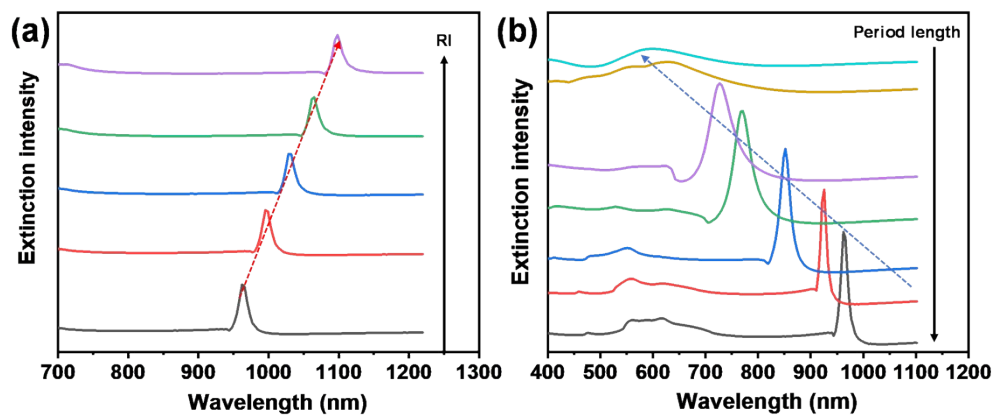


Fig. S7 FDTD simulated extinction spectra: (a) 2D Au NP arrays with varying RI and fixed period length (820 nm), (b) 2D Au NP arrays with varying period length and fixed RI (1.33).