Effect of the Dielectric Constant of the Surrounding Medium and the Substrate on the Surface Plasmon Resonance Spectrum and Sensitivity Factors of Highly Symmetric Systems; Silver Nanocubes

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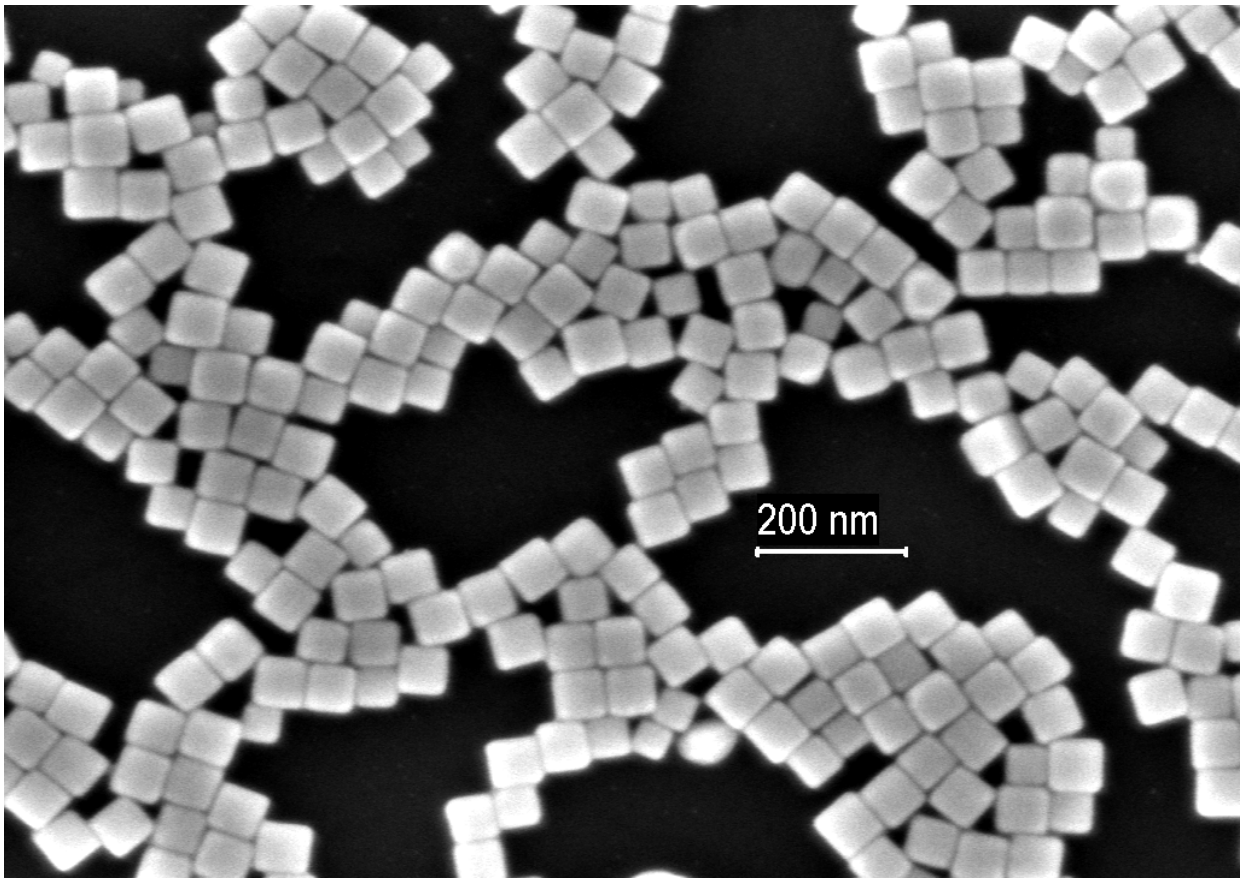

Figure S1 Scanning electron micrograph (SEM) of an ensemble of AgNCs.

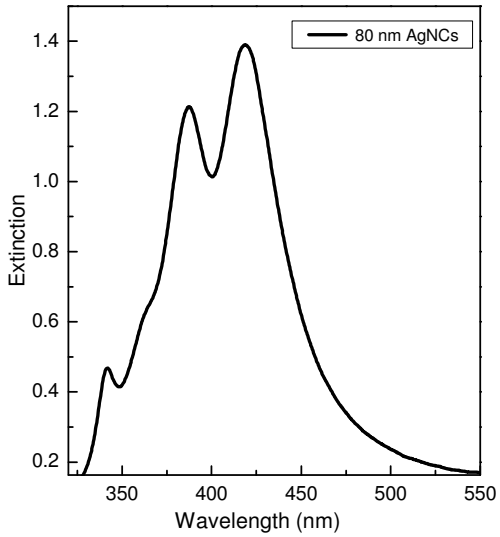

Figure S2. The SPR spectrum of 80nm AgNCs placed on a quartz substrate. It can be observed that there are three resolved peaks and also a profound shoulder peak.

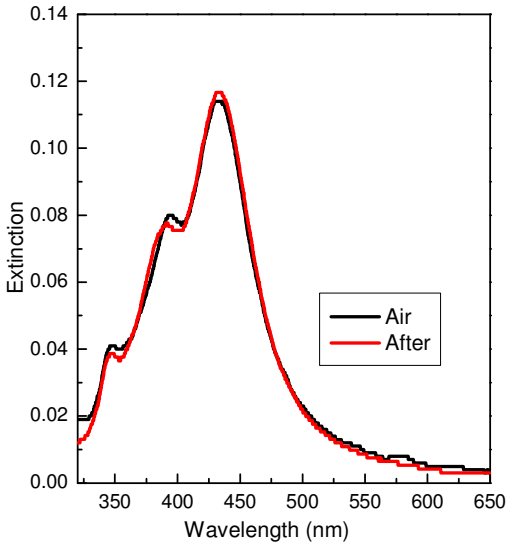

Figure S3. The SPR spectrum of AgNCs placed on a quartz substrate after and before the optical measurements in the solvents. The peak positions after and before the exposing to the solvents are superimposable, which means that the measurement is reversible.

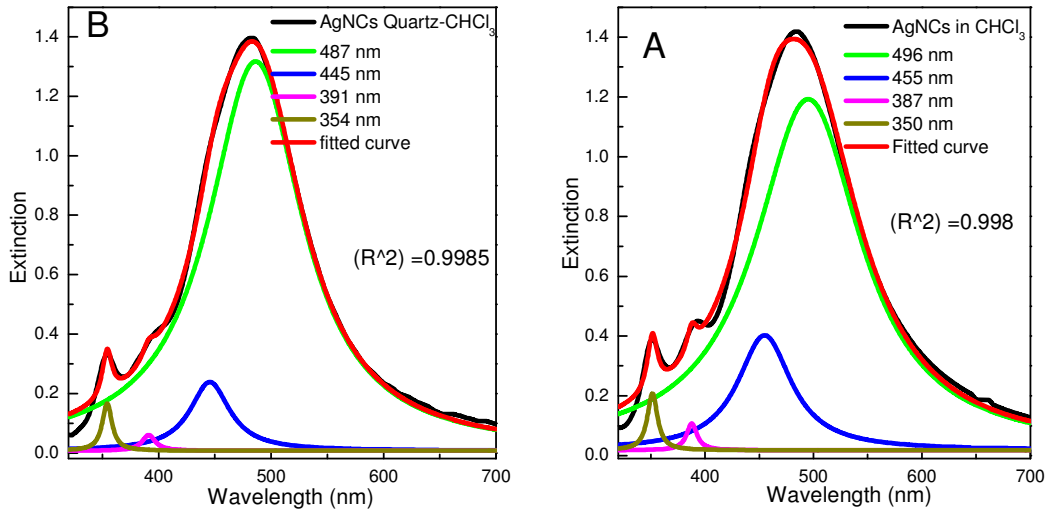

Figure S4: The deconvolution of the SPR spectra of AgNCs in different madia: A) The SPR spectra of AgNCs assembled into monolayer on the surface of quartz substrate immersed in chloroform solvent. B) The SPR spectra of colloidal AgNCs nanoparticles in chloroform solvent. The black color spectrum is the original SPR of AgNCs, which deconvoluted into four peaks and the fitted curve is in red color.

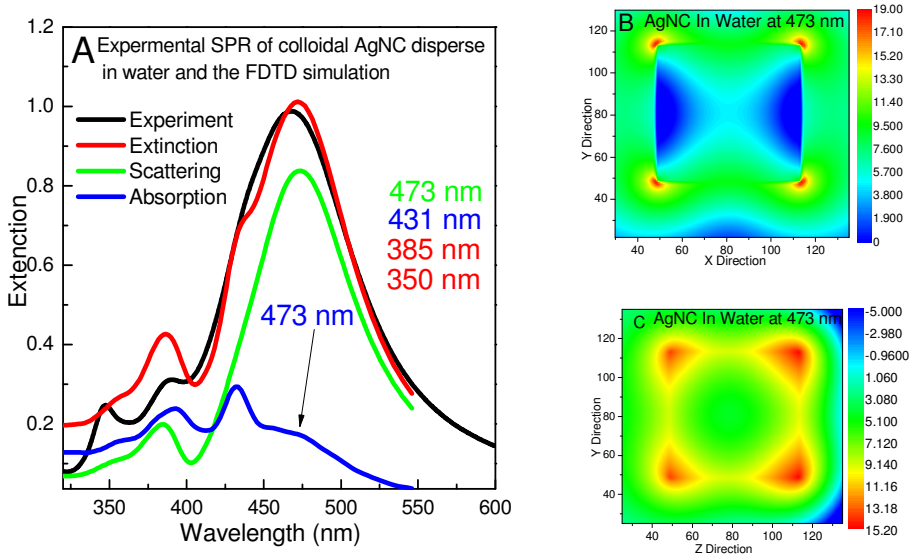

Figure S5 Results of the FDTD calculation of the SPR extinction cross section (red curve), scattering (green curve), and absorption (blue curve) for 65 nm colloidal AgNC nanoparticles dispersed in water solution. The black curve is the experimental SPR spectrum. (B) The field intensity distribution of AgNC in water at 473 nm mode B) in Y direction C) Z direction.