

Supporting Information

**Silver Nanocube Aggregation Gradient Materials in
Search for Total Internal Reflection
with High Phase Sensitivity**

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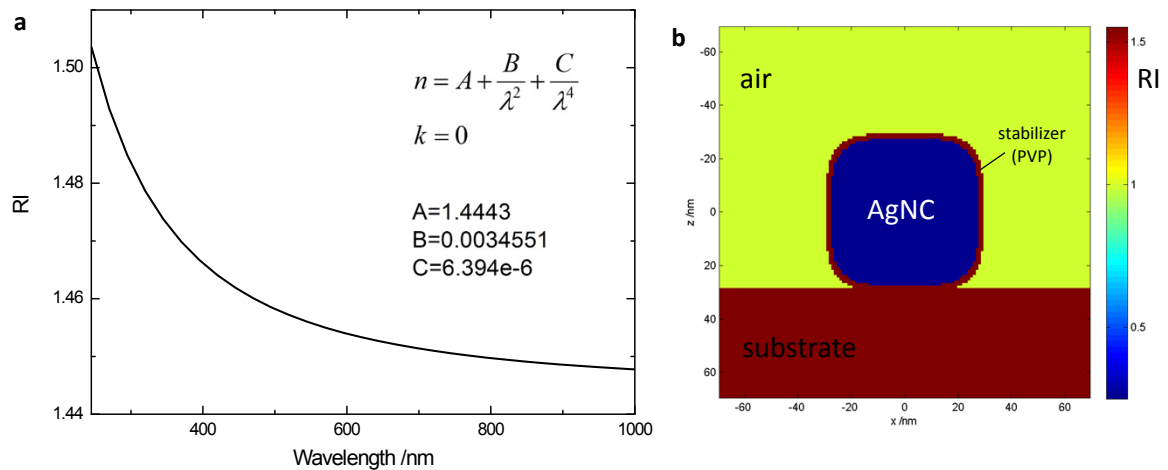


Figure S1: (a) Refractive index (n) of quartz glass (purchased from ChemGlass) as determined from ellipsometry data by Cauchy model (units for λ in μm). (b) Measured substrate refractive index inside the simulation setup shown with a silver nanocube coated with 2 nm stabilizers and 25% edge/corner rounding. Refractive index cross-section image at 400 nm wavelength and 1 nm mesh size (image resolution).

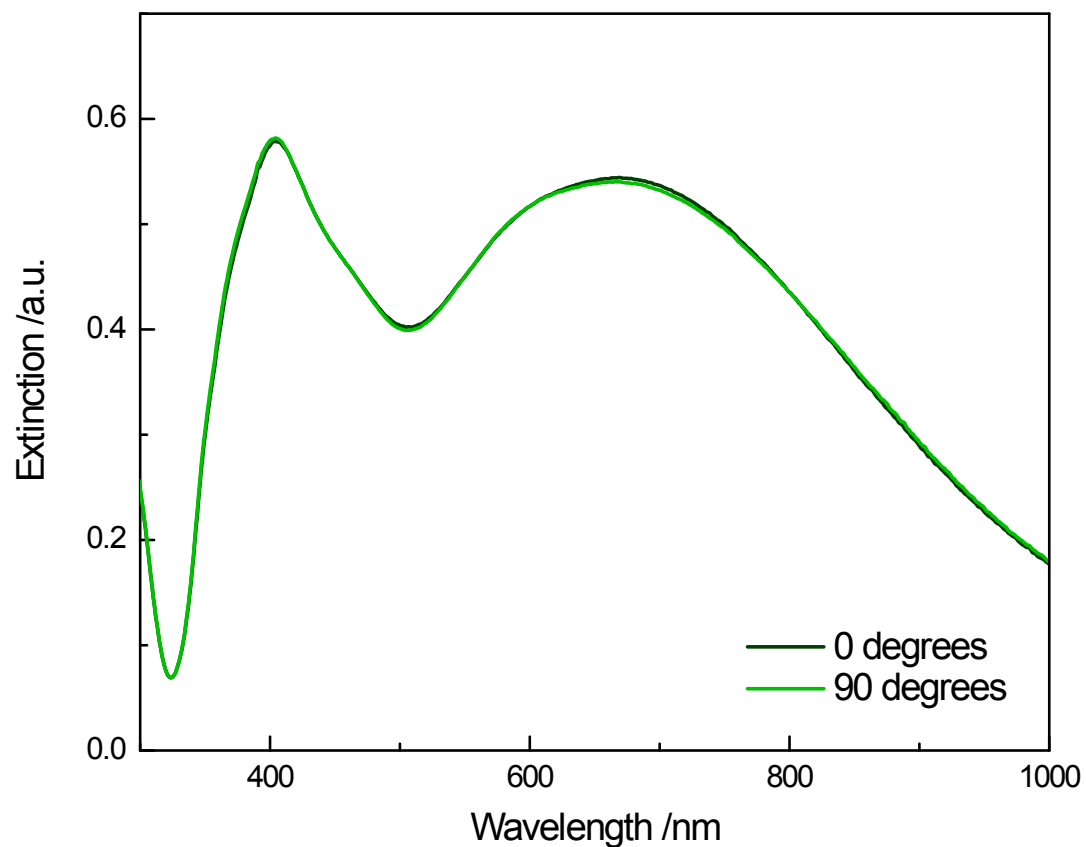


Figure S2: UV-Vis measurement of the 12 mN/m sample in two different mounting condition relative to the incoming light (rotation axis).

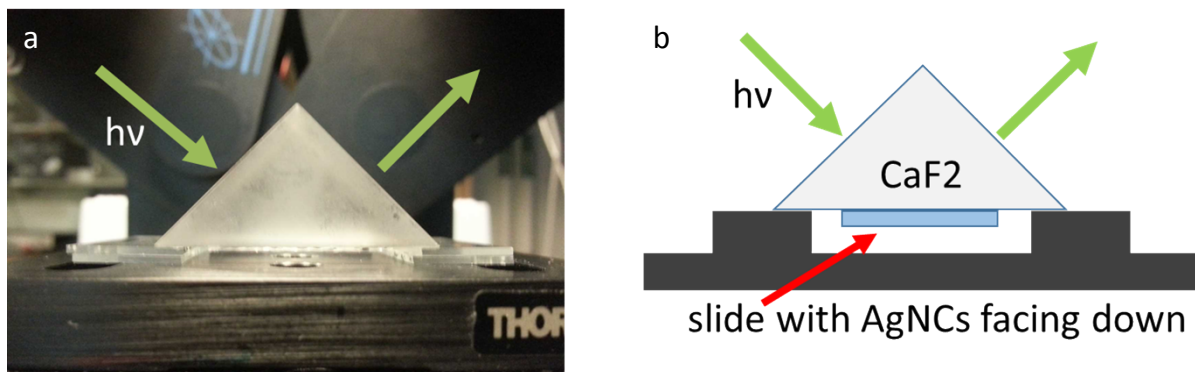


Figure S3: (a) photograph of total internal reflection measurement on spectral ellipsometer and (b) schematic of experimental apparatus.

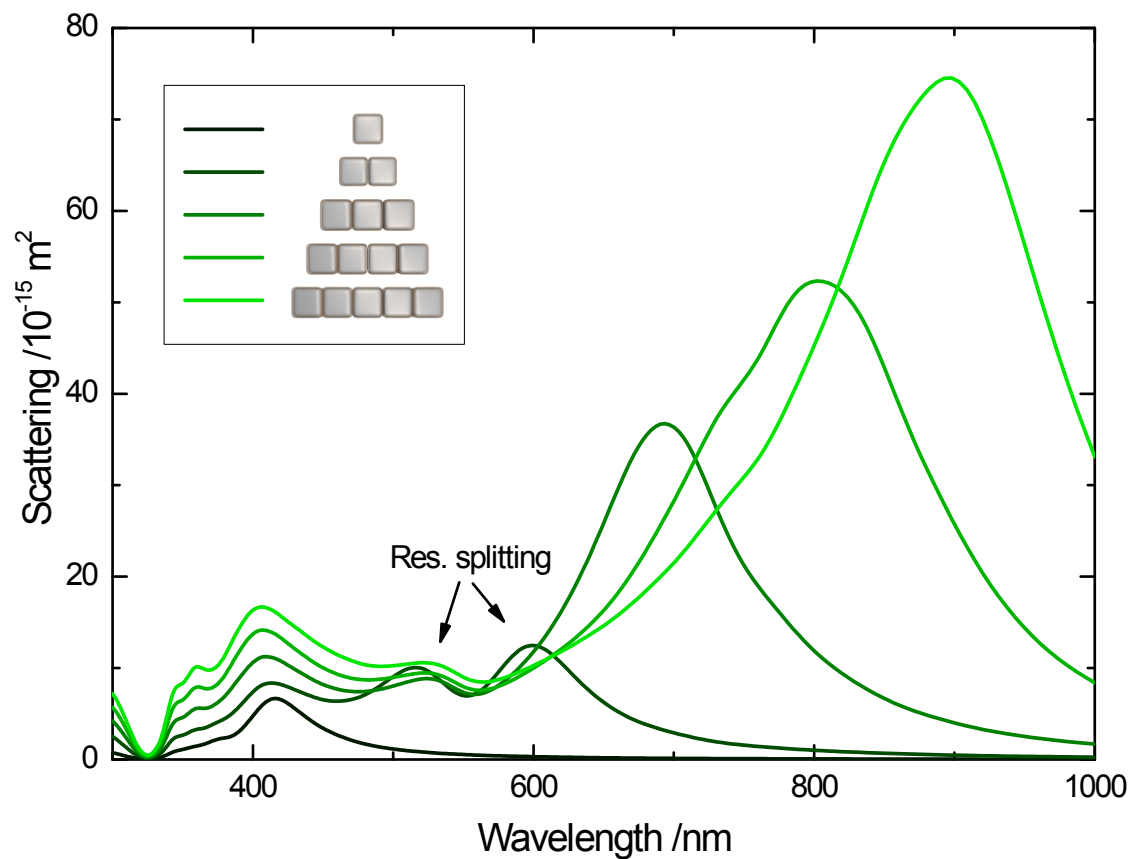


Figure S4: Simulated scattering cross-sections of different aggregation types at an inter-particle spacing of 2 nm.