

## Supporting Information

### Anomalous Spectral Shift of Localized Surface Plasmon Resonance

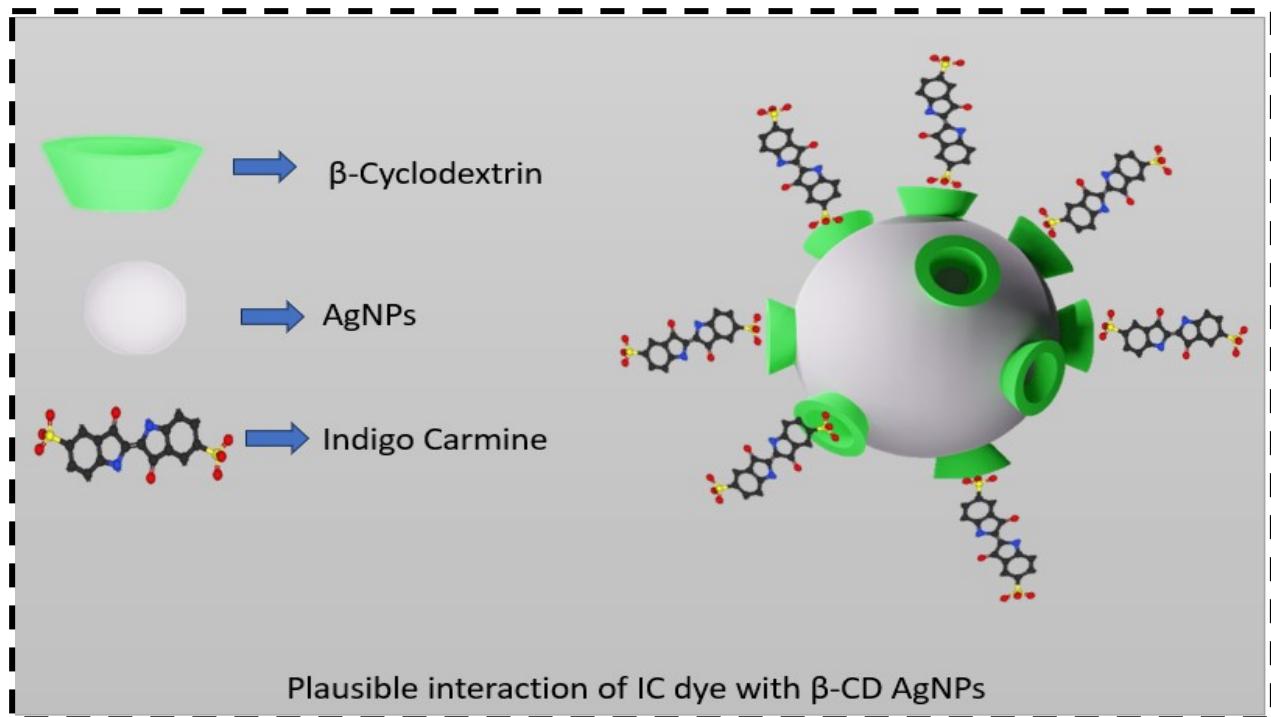
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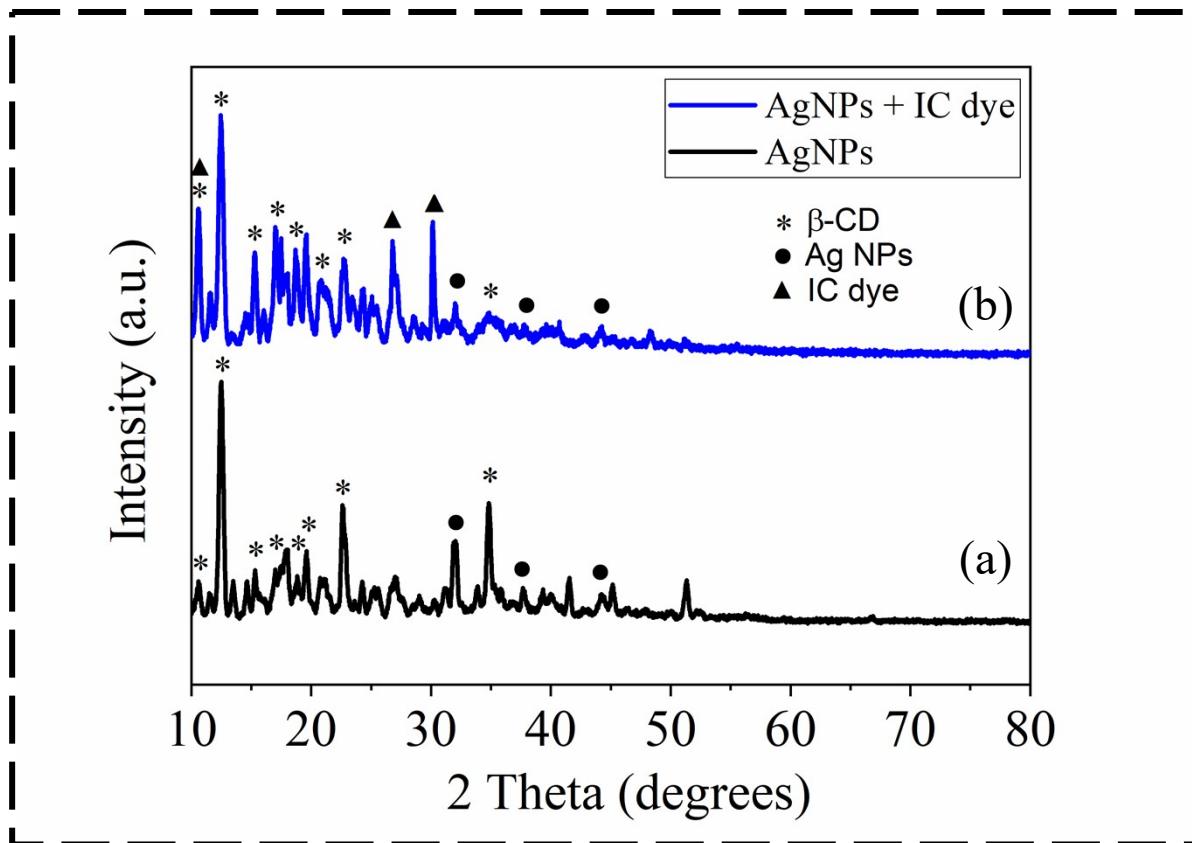
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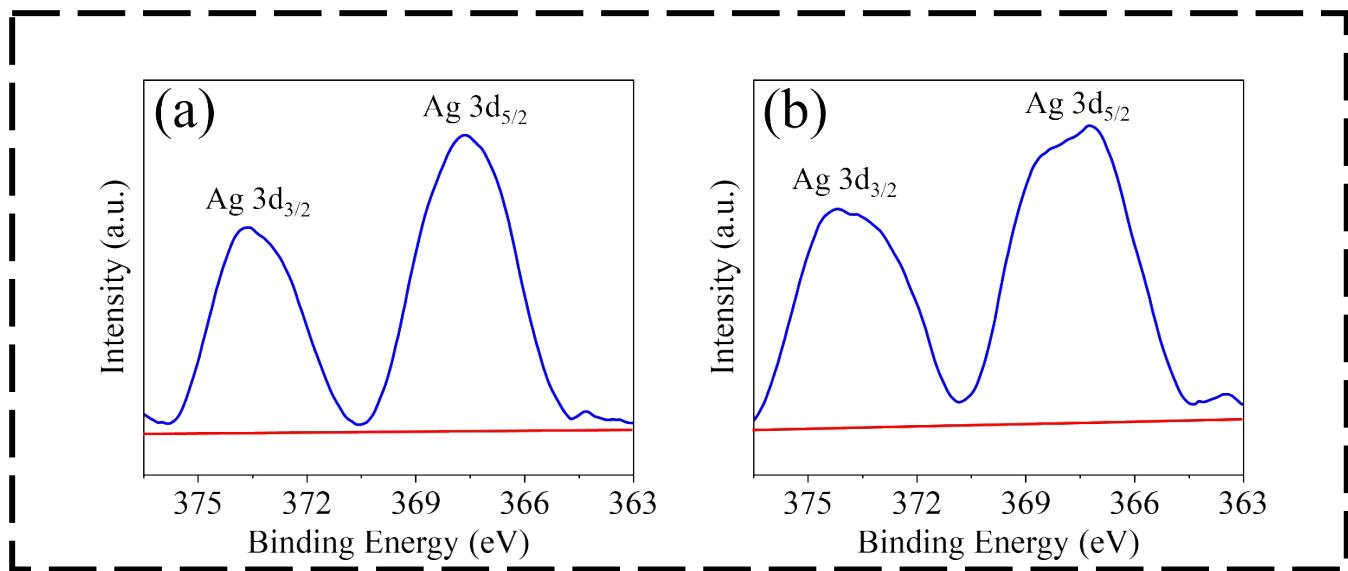
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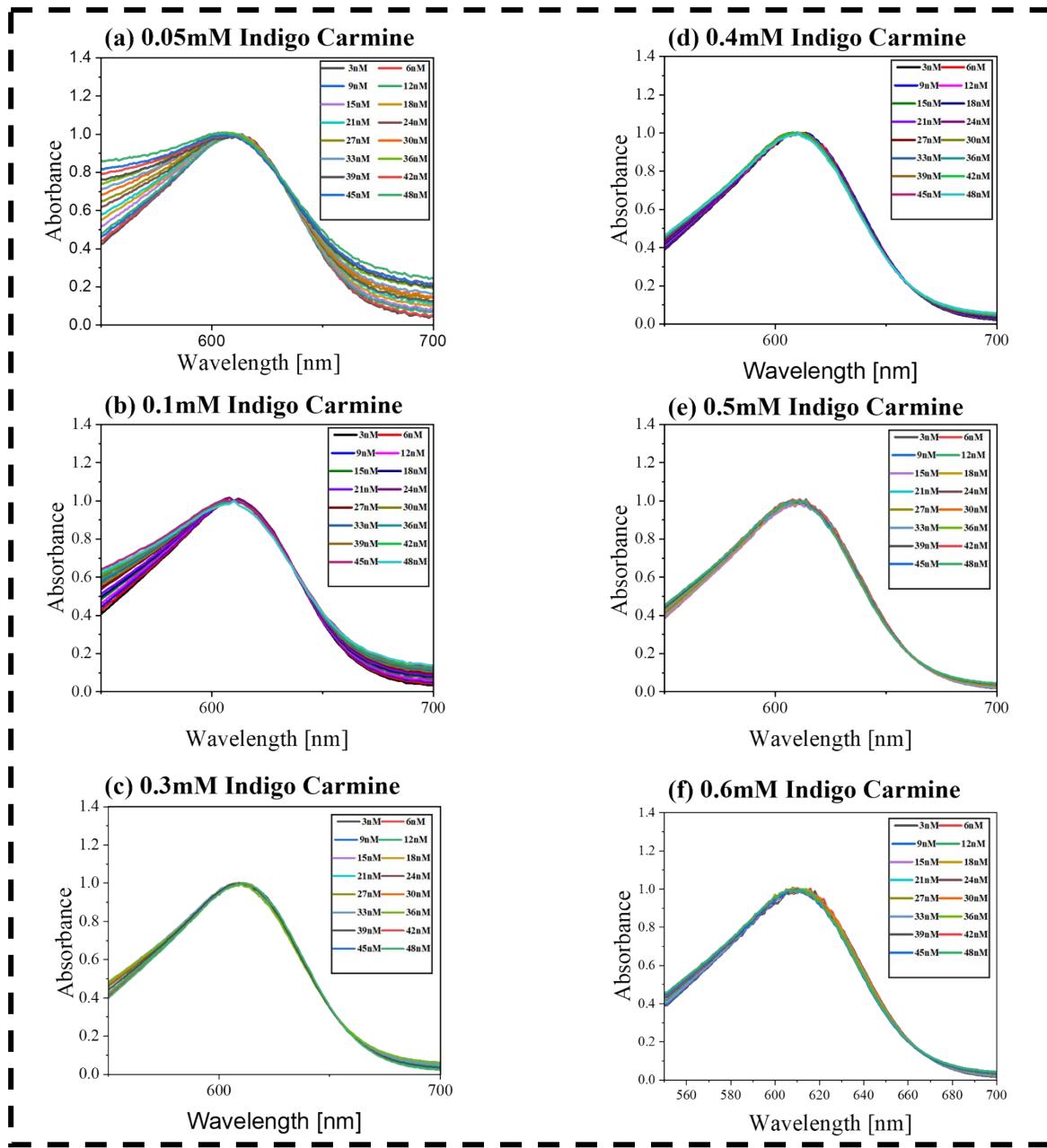
**Figure S1.** Plausible interaction of IC dye with  $\beta$ -CD capped AgNPs



**Figure S2.** XRD analysis of (a) AgNPs (b) AgNPs post addition of IC dye



**Figure S3.** XPS high-resolution spectrum of (a) AgNPs (b) AgNPs post addition of IC dye.



**Figure S4.** The normalized absorbance spectra of colloidal AgNPs where IC solution was used as colloidal solvent. For IC concentration of 0.05 mM (a), 0.1 mM (b), 0.3 mM (c), 0.4 mM (d), 0.5 mM (e), and 0.6 mM (f), AgNPs concentration was varied.