

Layer-by-layer Self-assembly and Disassembly of Single Charged Inorganic Small Molecules: towards Surface Patterning

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1. UV-visible spectra of KAuCl_4 aqueous solution

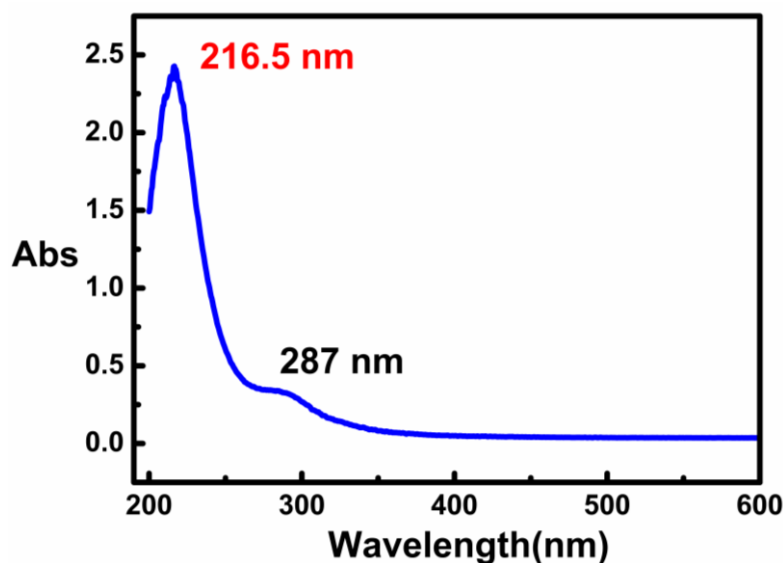


Fig. S1. UV-visible spectrum of KAuCl_4 aqueous solution

The aqueous solution of KAuCl_4 (1 mg/mL) used in the layer-by-layer self-assembly is characterized with UV-visible spectrum, which shows a featured peak at 216.5 nm accompanied by a broad absorption at around 287 nm.

2. UV-visible spectra of KAuCl_4 aqueous solution and PDDA/ KAuCl_4 mixed solution

UV-visible spectra were compared for KAuCl_4 aqueous solution and that mixed with PDDA aqueous solution with a mixing mole ratio of 1:1. As Fig. S2 displays, after mixing the PDDA/ $[\text{AuCl}_4]^-$ solution with a mole ratio of 1:1, the absorption at 287 nm disappears and the absorption at 216.5 nm shifts by 1 nm to 217.5 nm. This phenomenon assisted to prove the ligand-to-metal charge transfer occurred between PDDA and $[\text{AuCl}_4]^-$. Note that PDDA aqueous solution showed on featured absorption peaks in the UV-visible range.

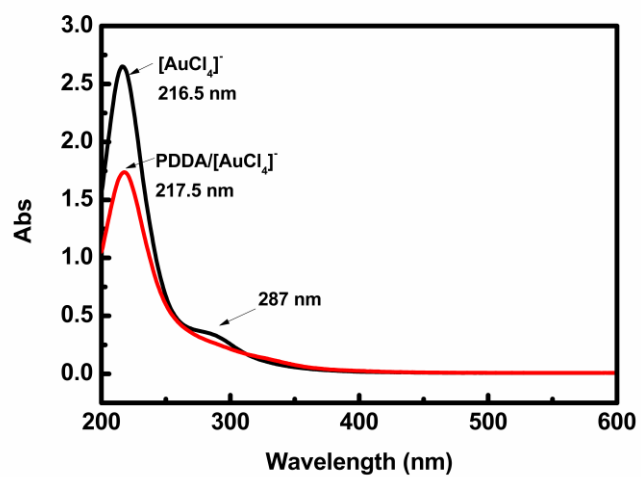


Fig. S2. UV-visible spectra of KAuCl_4 aqueous solution (black line) and PDDA/ KAuCl_4 mixed solution (red line).