## Supporting information

## **Tuning Luminescence Properties of Lanthanide Coordination**

Polymers by Ag@SiO2 Nanoparticles

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Fig. S1 UV-vis absorption spectra of silver particles with diameters about (a) 30nm, (b) 50nm and (c) 80nm.



Fig. S2 Fluorescent emission spectra of the composites of complex and Ag@SiO<sub>2</sub> nanoparticles of different silica shell thickness with the magnified spectra as insets. (a)  $[Eu_2(p-PTA)_3(H_2O)_2]_n$ ; (b)  $[Tb_2(o-PTA)_3(H_2O)_2]_n$ . The core sizes are about 30 nm and the volumes of the Ag@SiO<sub>2</sub> nanoparticle solutions are 300 µL.



Fig.S3 Fluorescent emission spectra of the composites of the lanthanide complexes and Ag@SiO<sub>2</sub> nanoparticles of different core size (30 nm, 50 nm and 80 nm) with the magnified spectra as insets. The silica shells are about 20 nm and the volumes of the Ag@SiO<sub>2</sub> nanoparticle solutions are 300  $\mu$ L. (a) [Tb<sub>2</sub>(*p*-PTA)<sub>3</sub>(H<sub>2</sub>O)<sub>2</sub>]<sub>n</sub>, (b) [Eu<sub>2</sub>(*p*-PTA)<sub>3</sub>(H<sub>2</sub>O)<sub>2</sub>]<sub>n</sub>, (c) [Eu<sub>2</sub>(*o*-PTA)<sub>3</sub>(H<sub>2</sub>O)<sub>2</sub>]<sub>n</sub>.



Fig.S4 Fluorescent emission spectra of the composites of lanthanide complexes and Ag@SiO<sub>2</sub> nanoparticle after adding different volumes of Ag@SiO<sub>2</sub> nanoparticle solution with the magnified spectra as insets. The sizes of silver core are about 30 nm and silica shell thicknesses are about 20 nm. (a)  $[Tb_2(o-PTA)_3(H_2O)_2]_n$ , (b)  $[Eu_2(p-PTA)_3(H_2O)_2]_n$ , (c)  $[Eu_2(o-PTA)_3(H_2O)_2]_n$ .



Fig. S5 Fluorescence decay curve (a) and fit curve (b) of  $[Tb_2(p-PTA)_3(H_2O)_2]_n$ . Fluorescence decay curve (c) and fit curve (d) of  $[Tb_2(p-PTA)_3(H_2O)_2]_n$  after adding 300 µL of Ag@SiO<sub>2</sub> nanoparticle solution.



Fig. S6 Fluorescence decay curve (a) and fit curve (b) of  $[Tb_2(o-PTA)_3(H_2O)_2]_n$ . Fluorescence decay curve (c) and fit curve (d) of  $[Tb_2(o-PTA)_3(H_2O)_2]_n$  after adding 300 µL of Ag@SiO<sub>2</sub> nanoparticle solution.



Fig.S7. Luminescence excitation spectra of  $[Eu(p-PTA)_3(H_2O)_2]_n$  before (a) and after (b) the addition of 200  $\mu$ L Ag@SiO<sub>2</sub> nanoparticle solution.