**Electronic Supplementary Information (ESI)**

# Optimized synthesis of luminescent silica nanoparticles by a direct micelles-assisted method

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**Experimental Part**

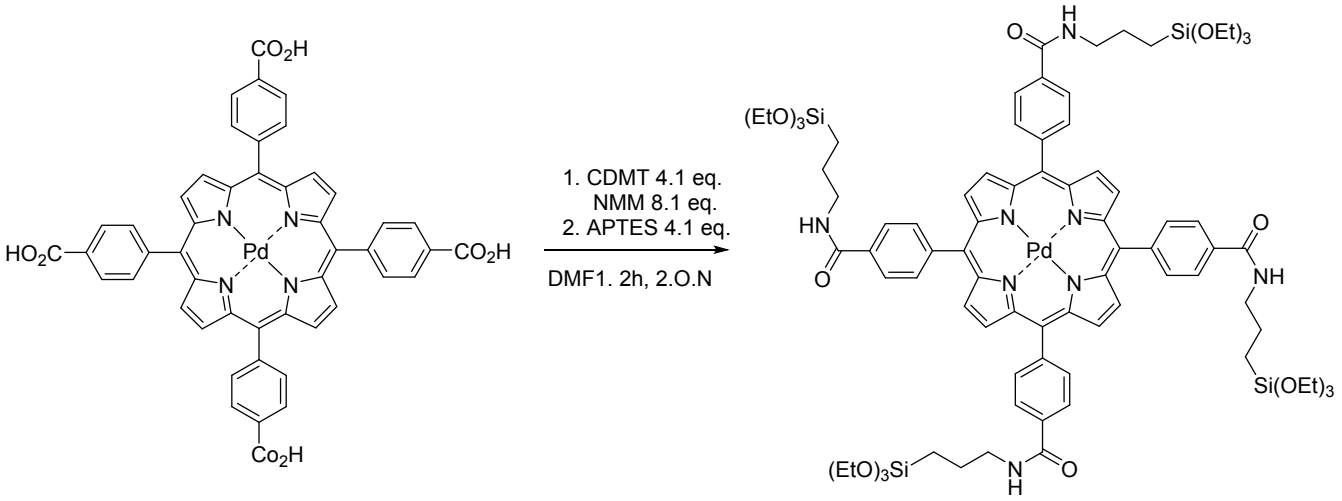


**Figure S1** Scheme for the coupling reaction between porphyrin **Pd-1-COOH** and APTES for the synthesis of **Pd-1-APTES**.

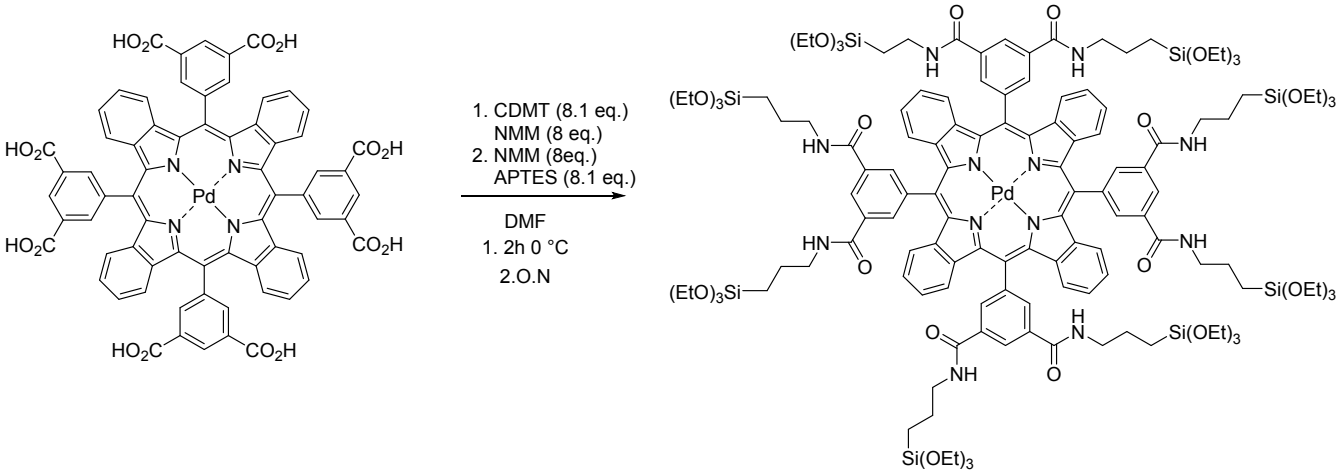


**Figure S2** Scheme for the coupling reaction between porphyrin **Pd-3-COOH** and APTES for the synthesis of **Pd-3-APTES**.

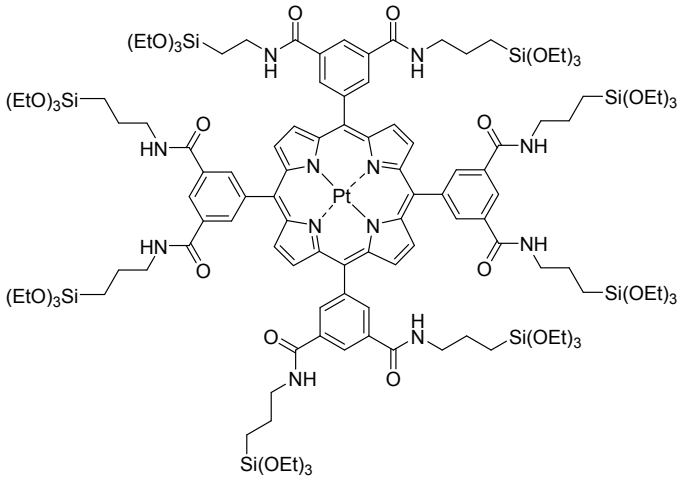


**Figure S3** Chemical structure of **Pt-2-APTES**.

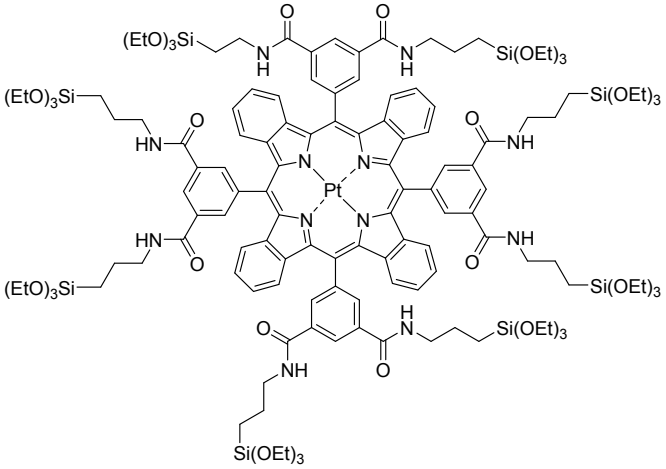


**Figure S4** Chemical structure of **Pt-3-APTES**.

**Dynamic Light Scattering**:

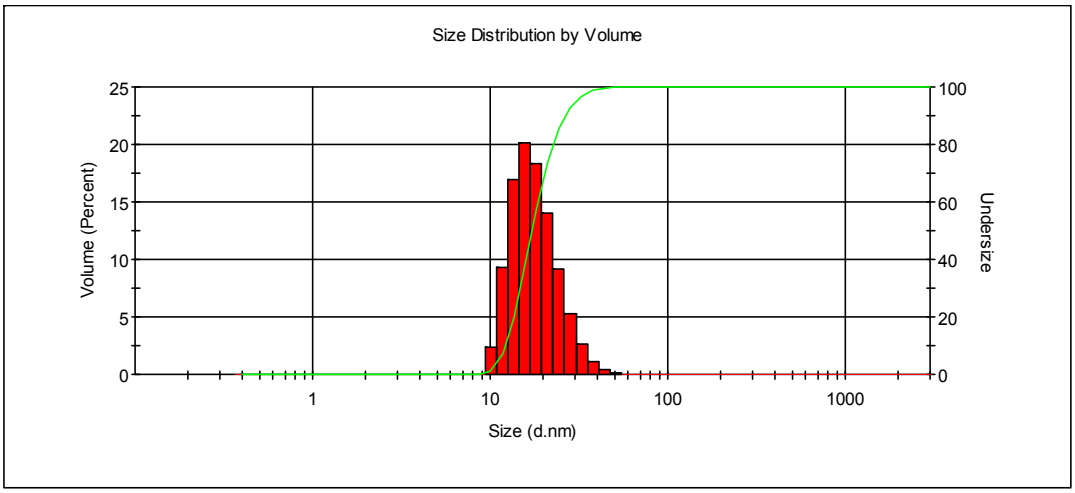


**Figure S5** Dynamic light scattering diameter distribution by volume of core-shell silica-PEG nanoparticles doped with metal-porphyrin **Pd-2-APTES** ($d_H$ = 19 nm, PdI = 0.18).

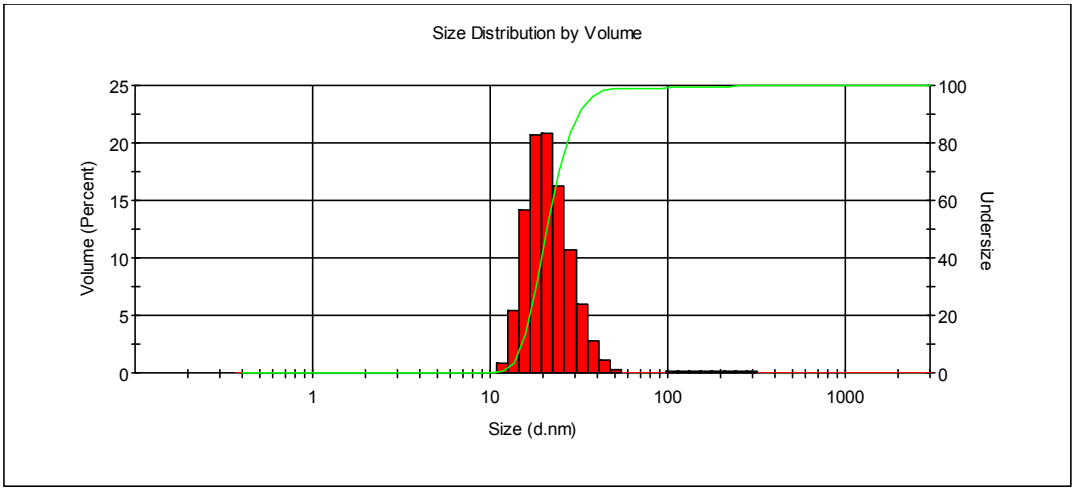


**Figure S6** Dynamic light scattering diameter distribution by volume of core-shell silica-PEG nanoparticles doped with metal-porphyrin **Pt-3-APTES** ($d_H$= 24 nm, PdI = 0.46).

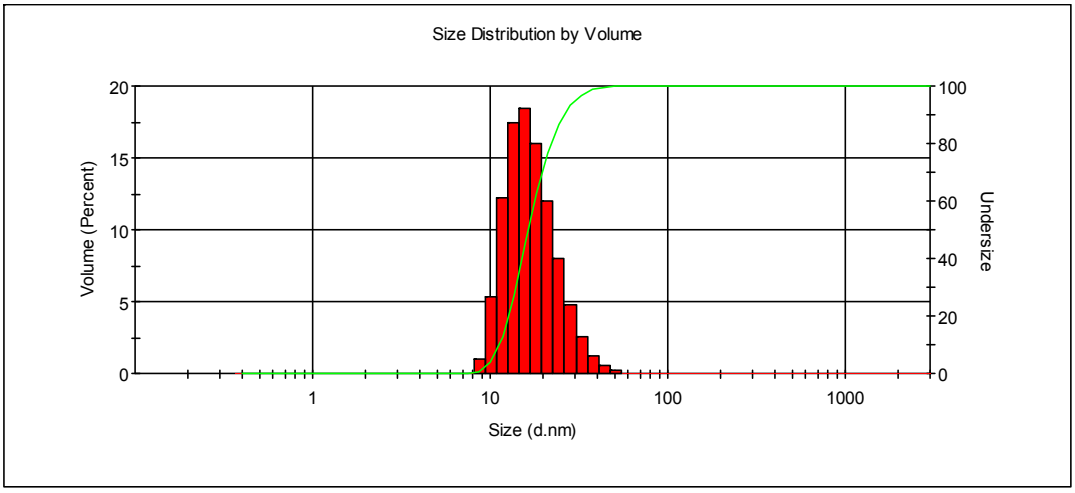


**Figure S7** Dynamic light scattering diameter distribution by volume of core-shell silica-PEG nanoparticles doped with metal-porphyrin **Pd-3-APTES** ($d_H$ = 23 nm, PdI = 0.19).

**TEM Experiments**:

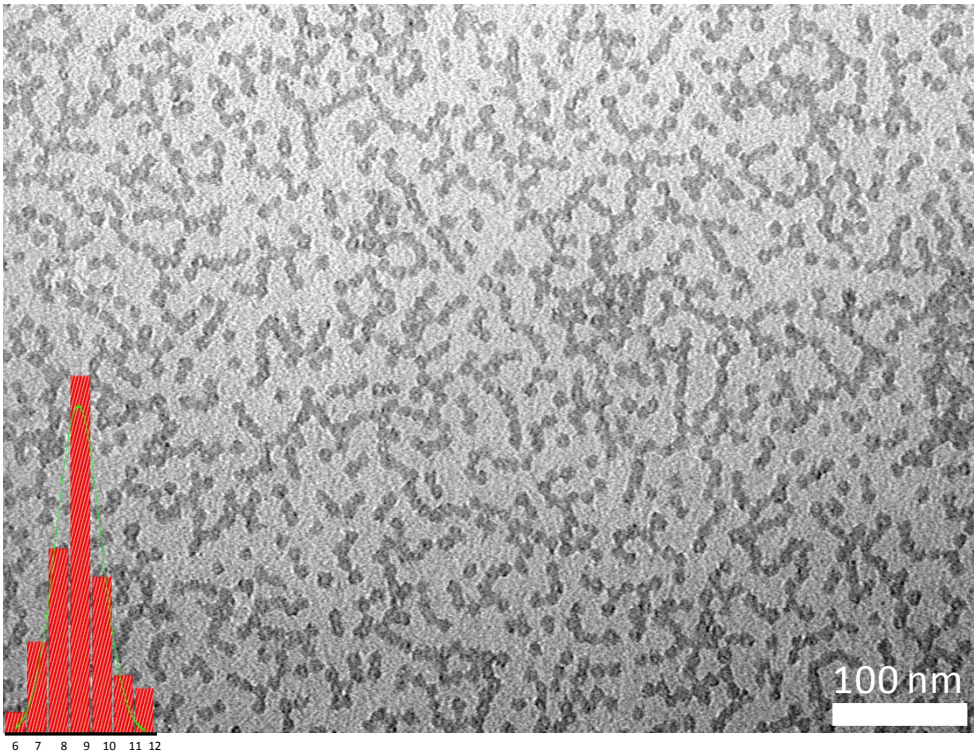


**Figure S8** TEM images and silica core size distribution (d = (10 ± 2) nm) of core-shell silica-PEG nanoparticles doped with metallo-porphyrin **Pt-2-APTES**.

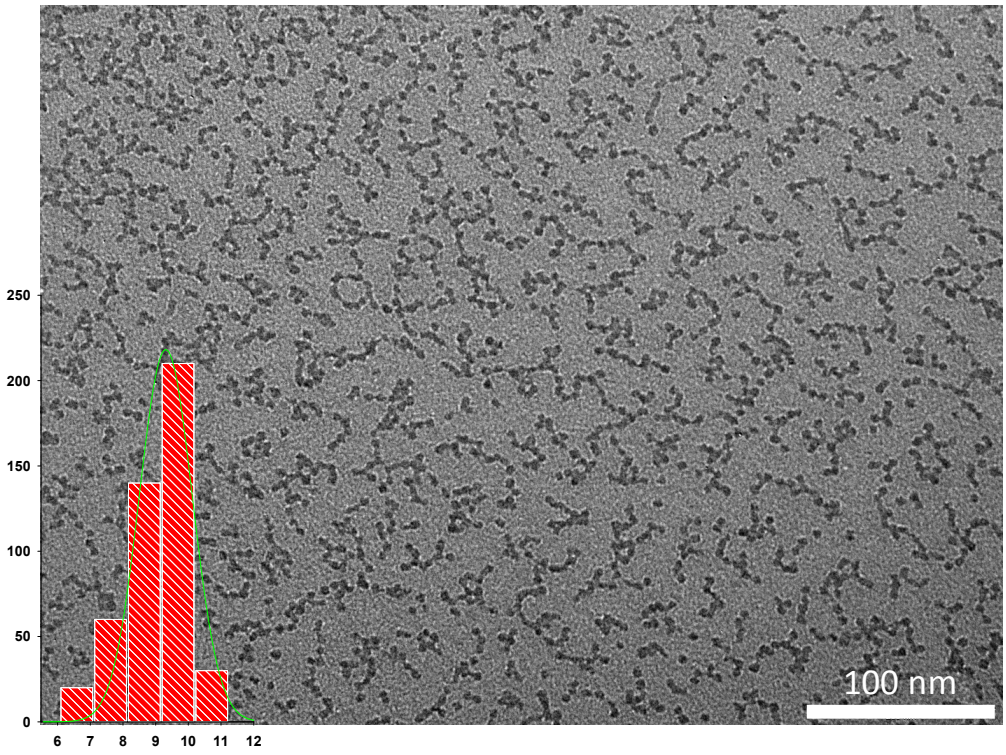


**Figure S9** TEM images and silica core size distribution (d = (10 ± 2) nm) of core-shell silica-PEG nanoparticles doped with metallo-porphyrin **Pt-3-APTES**

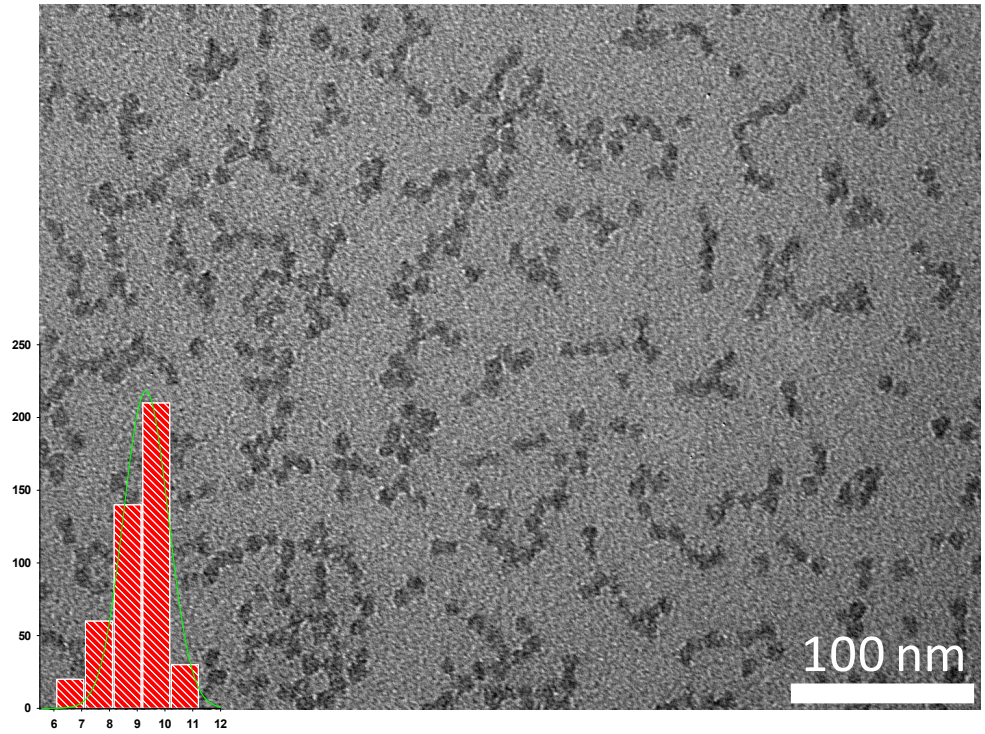


**Figure S10** TEM images and silica core size distribution (d = (10 ± 2) nm) of core-shell silica-PEG nanoparticles doped with metallo-porphyrin **Pd-3-APTES**.

**Photophysical measurements:**

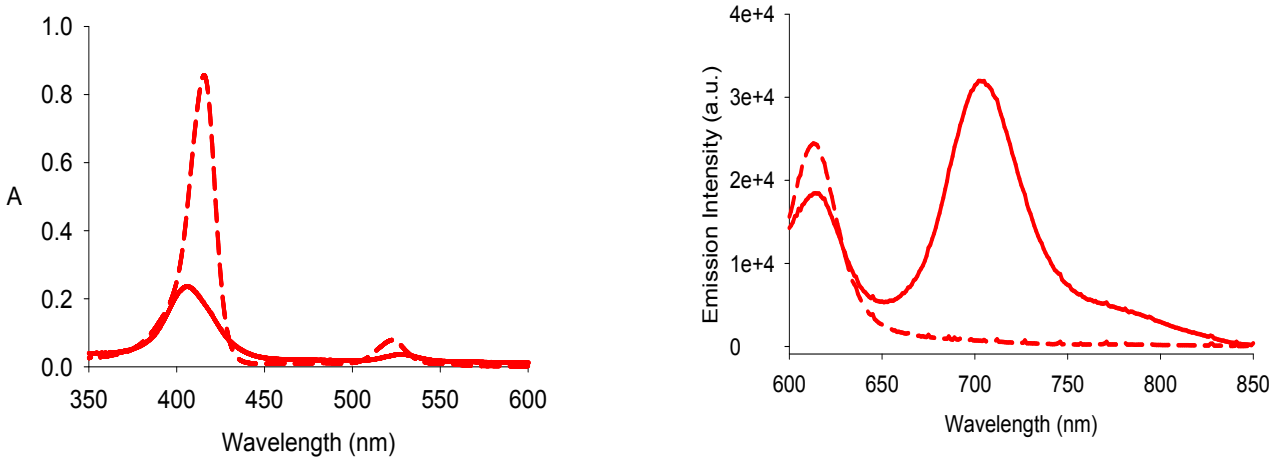


**Figure S9.** Absorption (left) and emission (right, $\lambda_{ex}$ = 425 nm) spectra in aerated solutions of **Pd-1-COOH** in THF (----) and nanoparticles doped with **Pd-1-APTES** (——) in water.

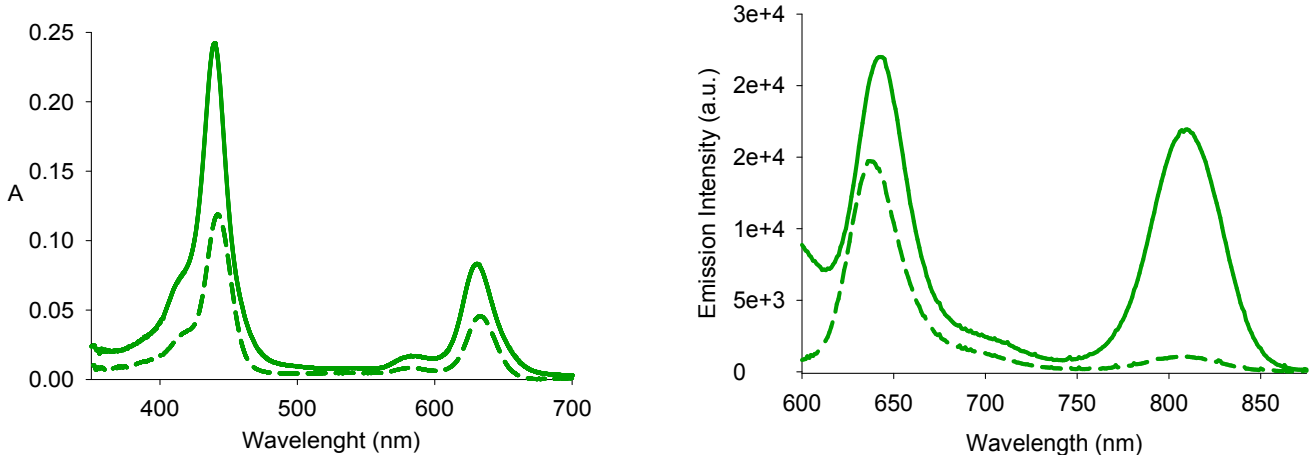


**Figure S10**. Absorption (left) and emission (right, $\lambda_{ex}$ = 450 nm) spectra in aerated solutions of **Pd-3-COOH** in THF (----) and nanoparticles doped with **Pd-3-APTES** (——) in water.

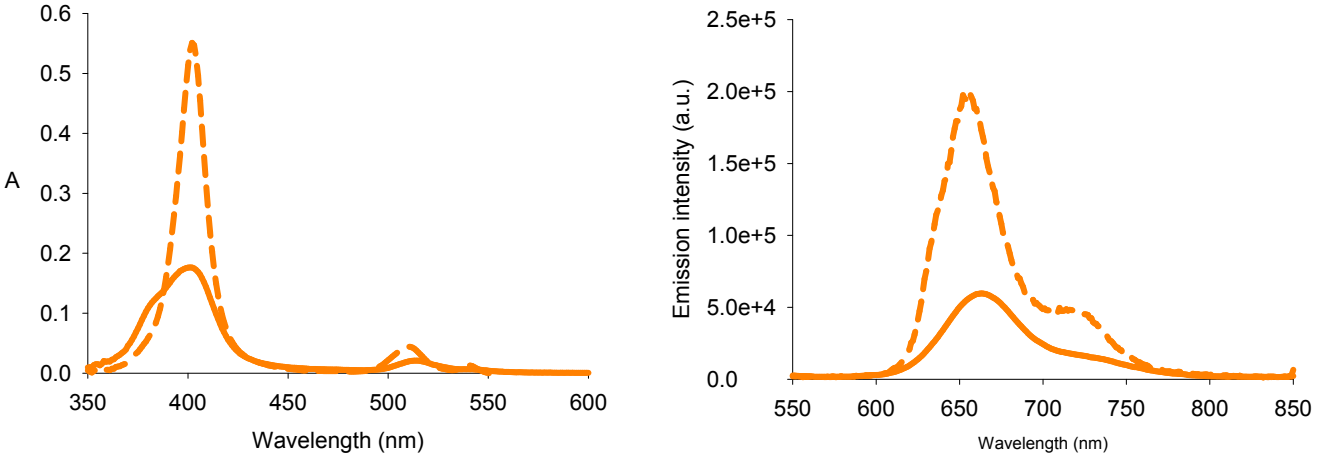


**Figure S11.** Absorption (left) and emission (right, $\lambda_{ex}$ = 378 nm) spectra in aerated solutions of **Pt-2-COOH** in THF (----) and nanoparticles doped with **Pt-2-APTES** (——) in water.