Supporting Information

Visible light sensitized attapulgite-based lanthanide composites: microstructure, photophysical behaviour and biological application

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Table S1 Elemental Analysis of Matrix-APTES and Matrix-APMDES Samples

Materials	C (%)	H (%)	N (%)
Atta-APTES	7.36	2.06	2.02
Atta-APMDES	6.28	2.04	1.33
SiO_2-APTES	6.4	1.65	1.94
SiO_2-APMDES	5.02	1.38	1.18

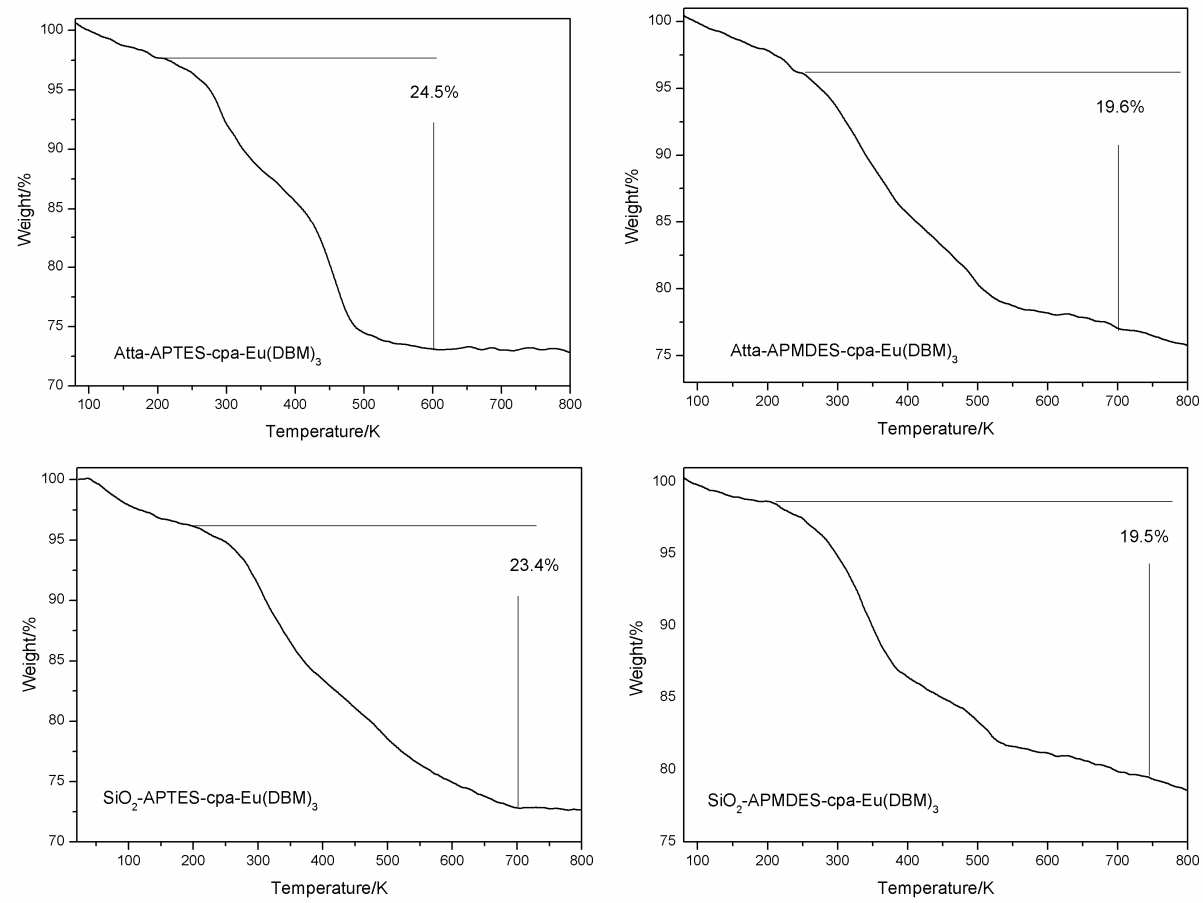

Fig. S1 TG curves of Matrix-cpa-Eu(DBM)$_3$ samples.

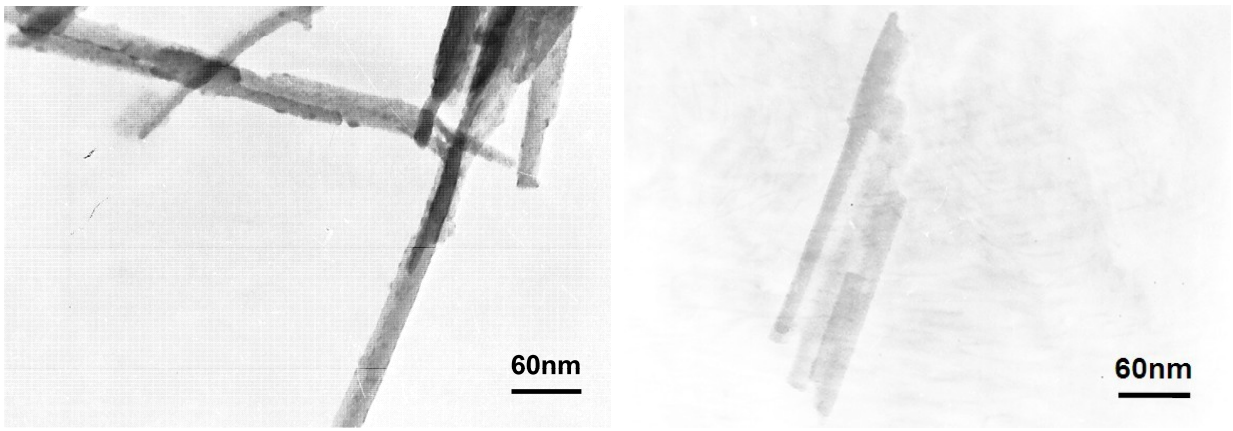

Fig. S2 TEM images of Atta-APTES-cpa-Eu(DBM)$_3$.

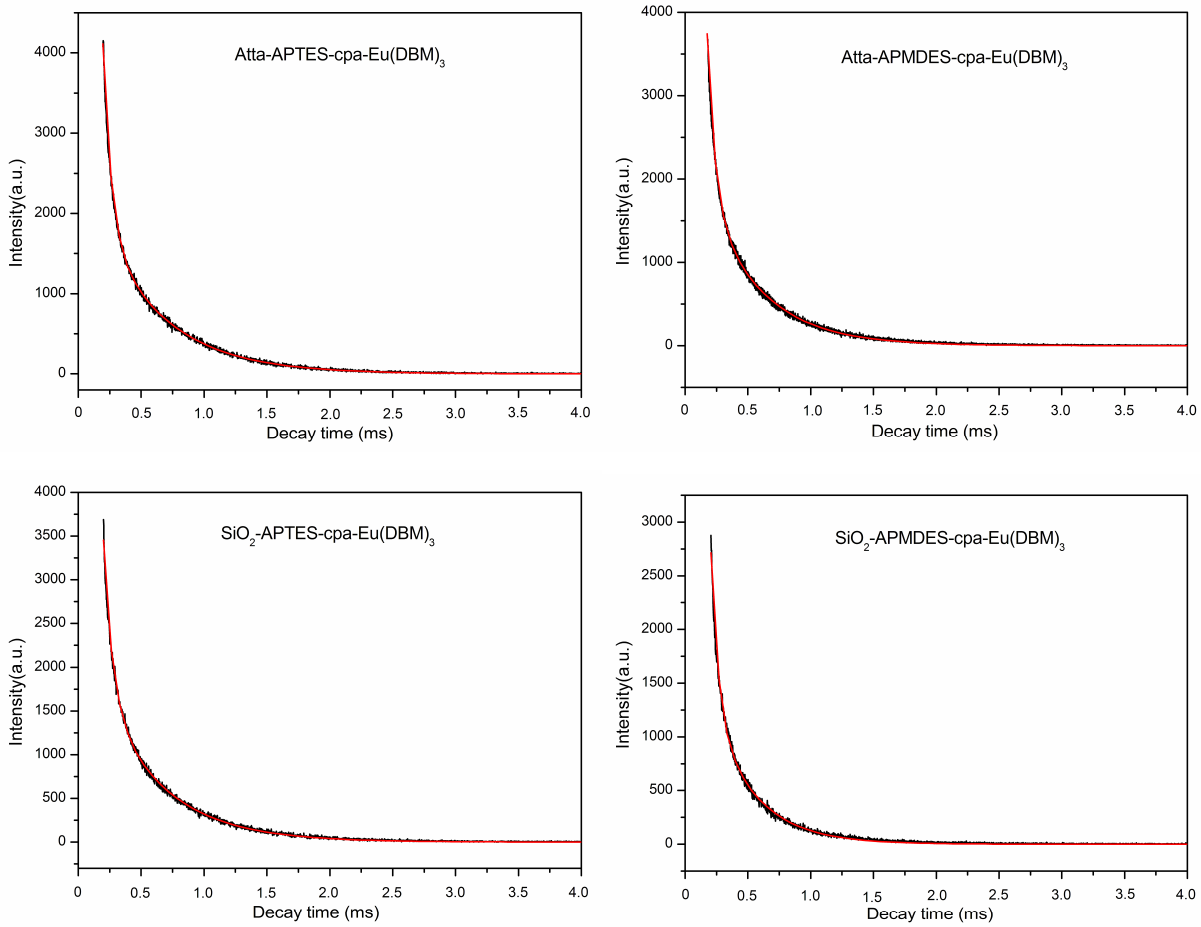

Fig. S3 Luminescence decay curves of Matrix-cpa-Eu(DBM)$_3$ samples.

Cell incubation and imaging

Cell culture:

HeLa cells (5×10^5 cells/mL) were maintained in Dulbecco's minimum Essential medium (DMEM Hyclone) supplemented with 10% fetal bovine serum (FBS, Gibco) and incubated in 5% CO_2 at 37 °C humidified atmosphere.

Cell bioimaging:

HeLa cells were plated in a flat-bottom 6-well plate (Costar) in 2mL culture medium and incubated in 5% CO_2 at 37 °C. After overnight incubation, the cells were treated with atta-based and silica-based composites with the end concentration 100 μg/mL for 1h and washed three times with phosphate buffered saline (PBS). Then the fluorescence imaging of cell membrane was observed under excitation at 340-380 nm (Zeiss Leica DM 4000B microscope).

Cell viability:

This was determined by (3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyl-tetra-zolium bromide (MTT, Amresco 0793) assays on HeLa cells under normal physiological conditions (i.e., at pH 7.2−7.4). HeLa cells (1×10^4 cells/well) were plated in a flat-bottom 96-well plate (Costar) in 200μL culture medium and incubated overnight. Then the composites were added, with final concentrations of 25, 50, 75, 100, 125, 200 and 300 μg/mL. The plate was further incubated for 24 h and then the cells were washed with PBS three times. The MTT reagent (5 mg/mL) was then added to each well (20 μL/well) and incubated for 4h .Then the medium was removed and the absorbance was measured using a Perkin Elmer VICTOR^3 1420 Multilabel Plate Reader at 490 nm. The relative cell viability (mean% ± SD, n = 3) was expressed as Abs composites/Abs control ×100%.