## Intercalation of organic sensitisers into layered europium hydroxide and enhanced luminescence property

Nankai Chu,<sup>*a*</sup> Yahong Sun,<sup>*a*</sup> Yushuang Zhao,<sup>*a*</sup> Xinxin Li,<sup>*b*</sup> Genban Sun,<sup>*a*</sup> Shulan Ma <sup>*a*,\*</sup> and Xiaojing Yang <sup>*a*,\*</sup>

<sup>a</sup> College of Chemistry, Beijing Normal University, Beijing 100875, China.

<sup>b</sup> Analysis and Test Center, Beijing Normal University, Beijing 100875, China.



**Fig. S1** Powder XRD patterns of the NO<sub>3</sub>–LEuH precursors at different drying conditions: dried in air at ambient humidity (a), vacuum–dried at 70 °C (b), and vacuum–dried at 40 °C.



**Fig. S2** Powder XRD patterns of the composite BPC–LEuH at different drying conditions: air-dried at ambient humidity (a), vacuum–dried at 40 °C (b), and vacuum–dried at 70 °C (c).



**Fig. S3** Powder XRD patterns of the composite TA–LEuH at different drying conditions: dried in air at ambient humidity (a), vacuum–dried at 40 °C (b), and vacuum–dried at 70 °C.



**Fig. S4** Powder XRD patterns of the composite BPC–LEuH reacted at 120 °C using different NaOH amount: the NaOH/BPC molar ratios were 1 (a), 1.2 (b), 1.5 (c), 2 (d) and 3 (e), respectively.



**Fig. S5** Room-temperature emission spectra of composite BPC–LEuH at excited wavelengths of 318 (a) and 395 nm (b), respectively.



**Fig. S6** Room-temperature emission spectra of the composite TA–LEuH at different excited wavelengths: 300 nm (a), 395 nm (b).