Photoluminescent bimetallic-3-hydroxypicolinate/graphene oxide nanocomposite

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Supplementary information

Table S1. Room-temperature $^5D_0$ lifetime values of $Na_5[EuW_2O_6(picOH)_8]$ (**1**) and **1**/GO monitored within the $^5D_0 \rightarrow ^7F_2$ excited at distinct excitation wavelengths (λ_{ex}, nm). The lifetime values acquired at 10 K are shown in parentheses.

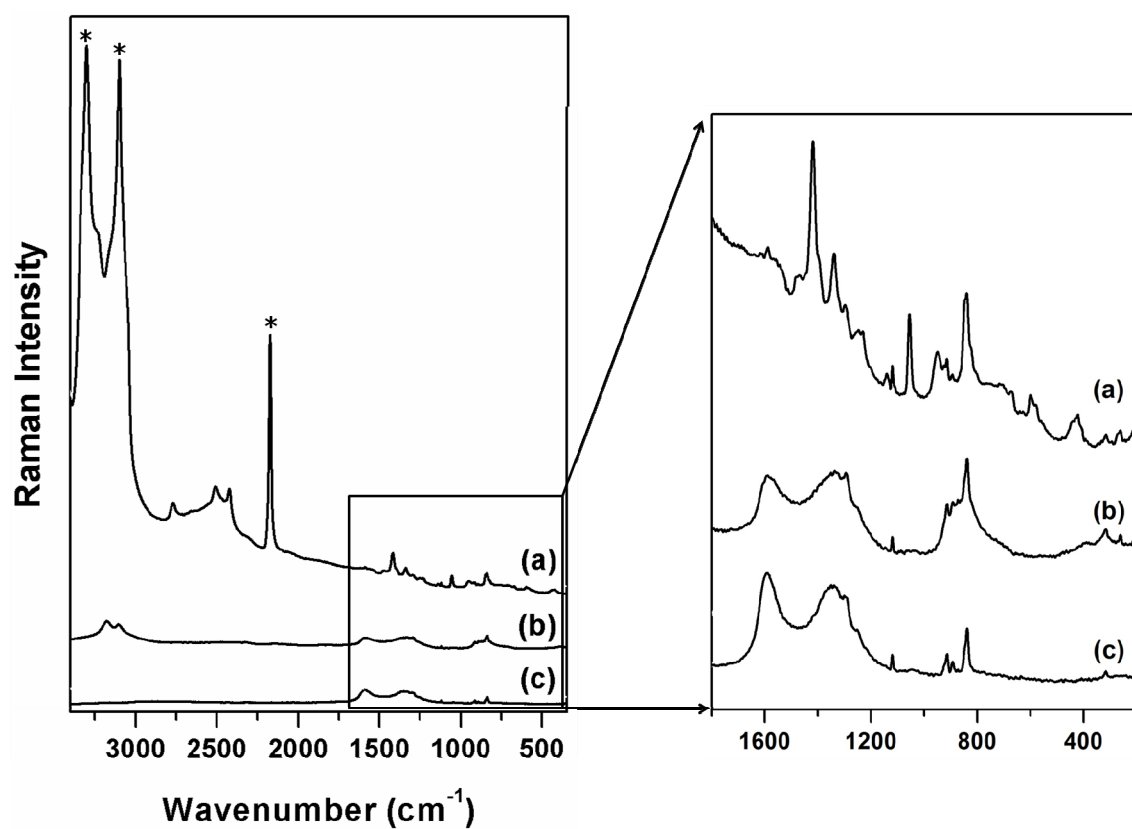|	λ_{ex}			
	254	305 (285)	355	464
1/GO	0.544±0.005 (0.796±0.006)	0.551±0.009 (0.853±0.005)	0.520±0.007 (0.793±0.008)	0.407±0.027 (0.648±0.018)
1	-	0.880± 0.004	0.834±0.005	0.771±0.009

Figure S1. Raman spectra (514 nm laser) of (a) $Na_5[EuW_2O_6(picOH)_8]$ (**1**), (b) **1**/GO composite and (c) graphene oxide.

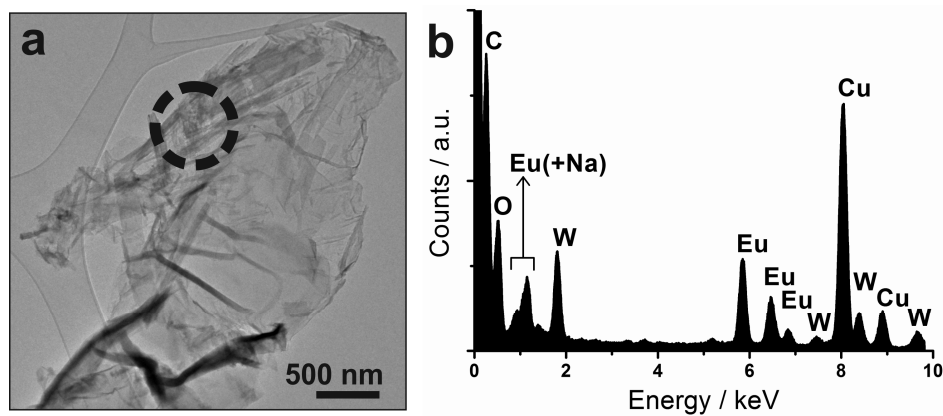* Indicates the signals from europium(III) emission.

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Figure S2. (a) TEM image of **1**/GO composite. (b) EDX spectrum of the composite taken from the region circled in (a) and showing the presence of the various elements that make up the compound $Na_5[EuW_2O_6(picOH)_8]$ (**1**) and the GO. The presence of C, O, W and Eu was identified, and the Na signal was also present but it was masked by the set of Eu(M) peaks (see 0.5-1.5 keV region).
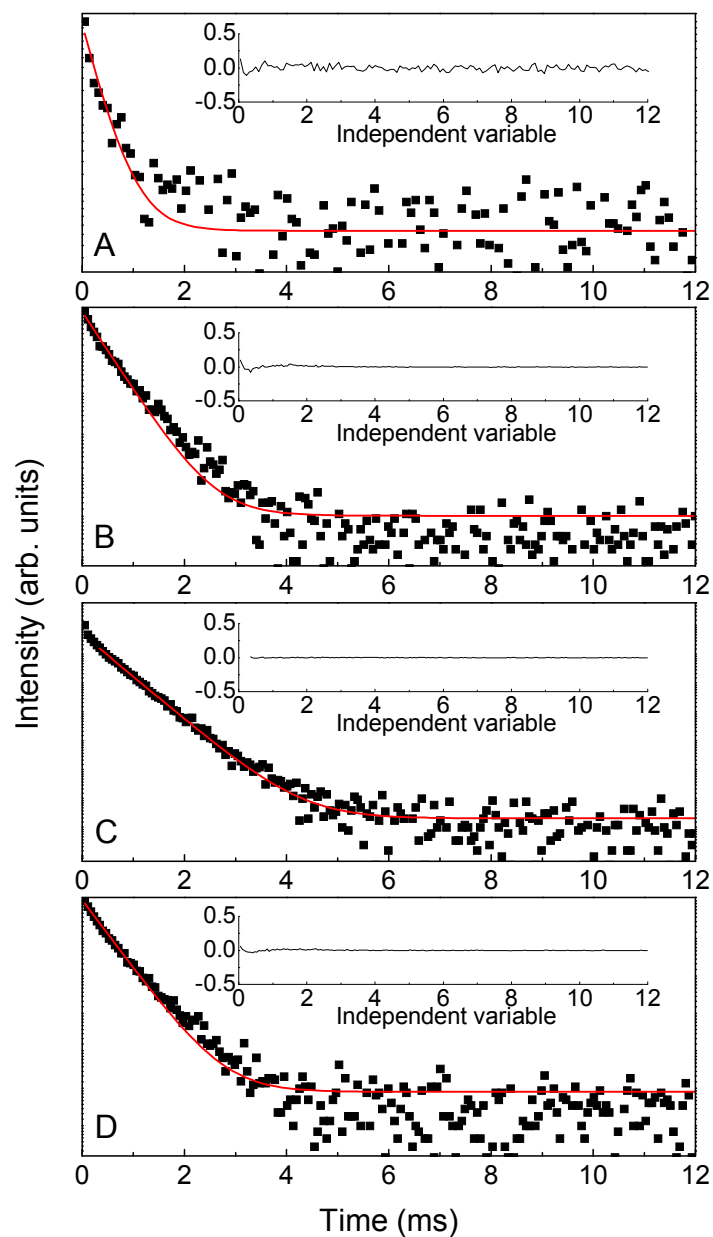
Figure S3. Emission decay curves acquired at room-temperature monitored within the $^5D_0 \rightarrow {}^7F_2$ transition of **1**/GO composite excited at (A) 465 nm, (B) 355 nm, (C) 305 nm and (D) 254 nm. The solid lines represent data best fit using a single exponential function. The insets show the respective regular residual plots for a better judgment of the fit quality.
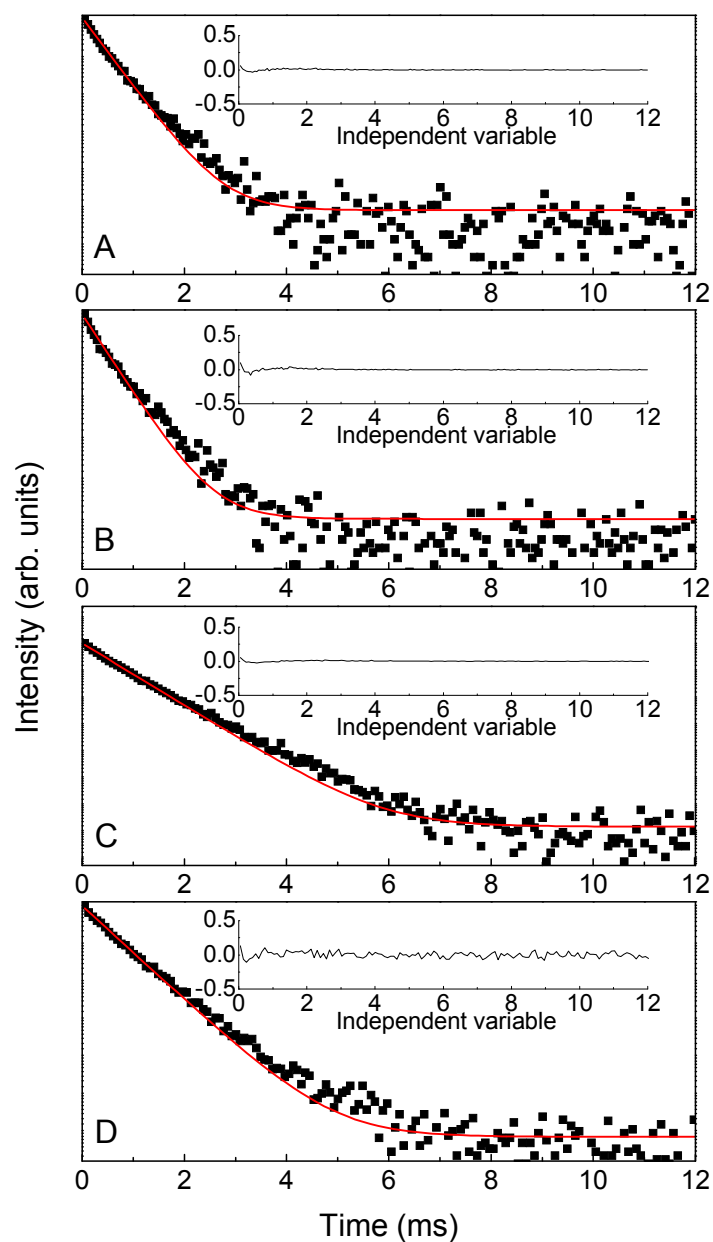
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Figure S4. Emission decay curves acquired at 10 K monitored within the $^5D_0 \to {}^7F_2$ transition of **1**/GO composite excited at (A) 465 nm, (B) 355 nm, (C) 285 nm and (D) 254 nm. The solid lines represent data best fit using a single exponential function. The insets show the respective regular residual plots for a better judgment of the fit quality.
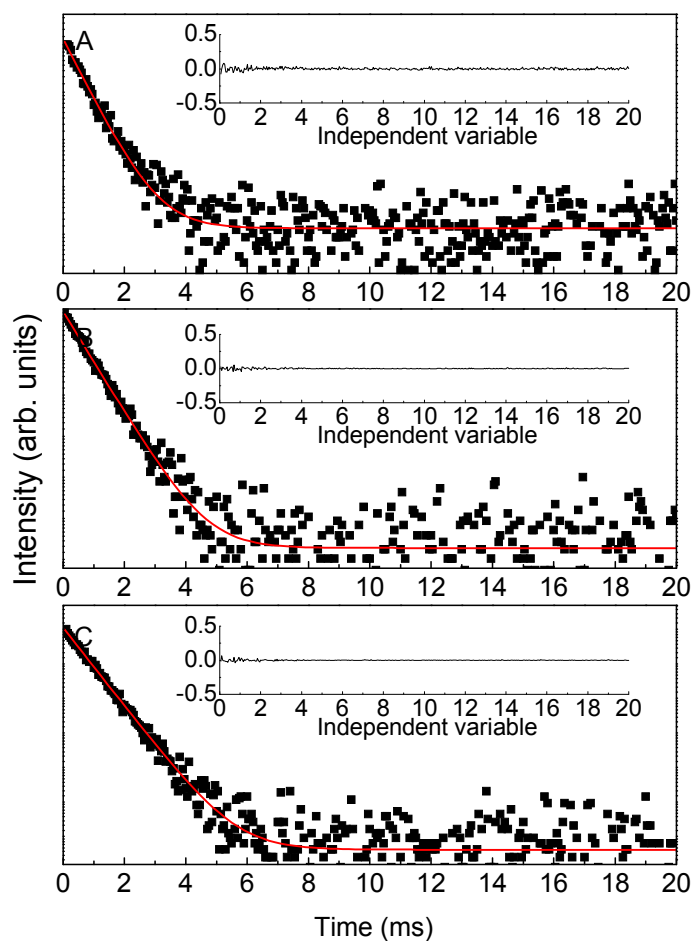
Figure S5. Emission decay curves acquired at room-temperature monitored within the $^5D_0 \rightarrow {}^7F_2$ transition of $Na_5[EuW_2O_6(picOH)_8]$ (**1**) excited at (A) 465 nm, (B) 355 nm and (C) 305 nm. The solid lines represent data best fit using a single exponential function. The insets show the respective regular residual plots for a better judgment of the fit quality.