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# LnMOF@PVA Nanofiber: Energy Transfer and Multicolor Light-Emitting Devices

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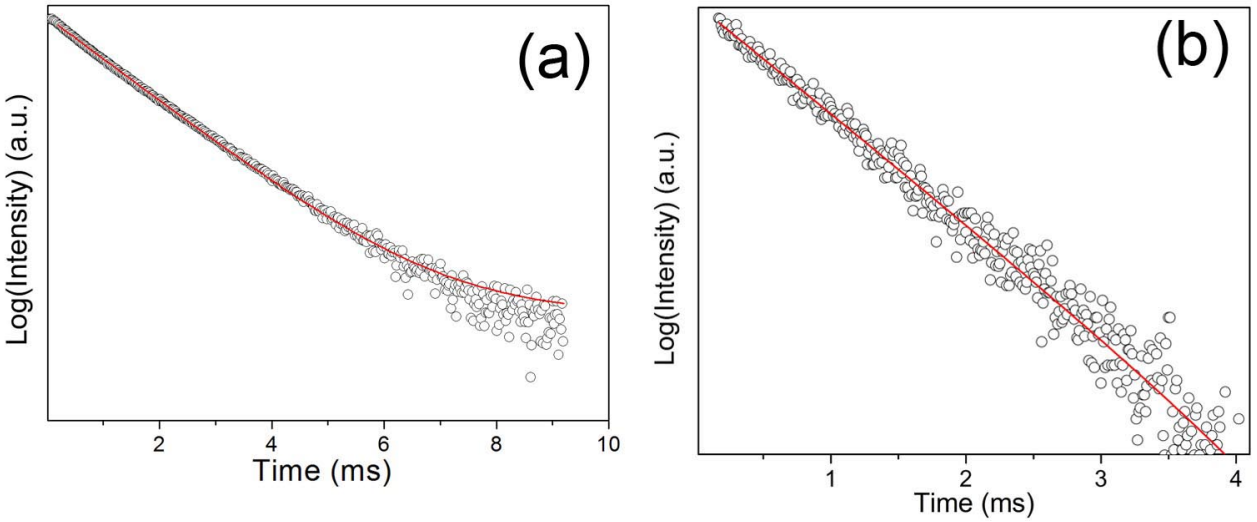


**Figure 1S**: Lifetimes decay curve of (a) as-prepared EuMOF and (b) EuMOF@PVA nanofibers, acquired at room temperature upon excitation at 310 and 280 nm respectively, while monitoring $^5D_0 \rightarrow {}^7F_2$ transition at 615 nm. The red solid lines correspond to the best fit, R> 0.99.

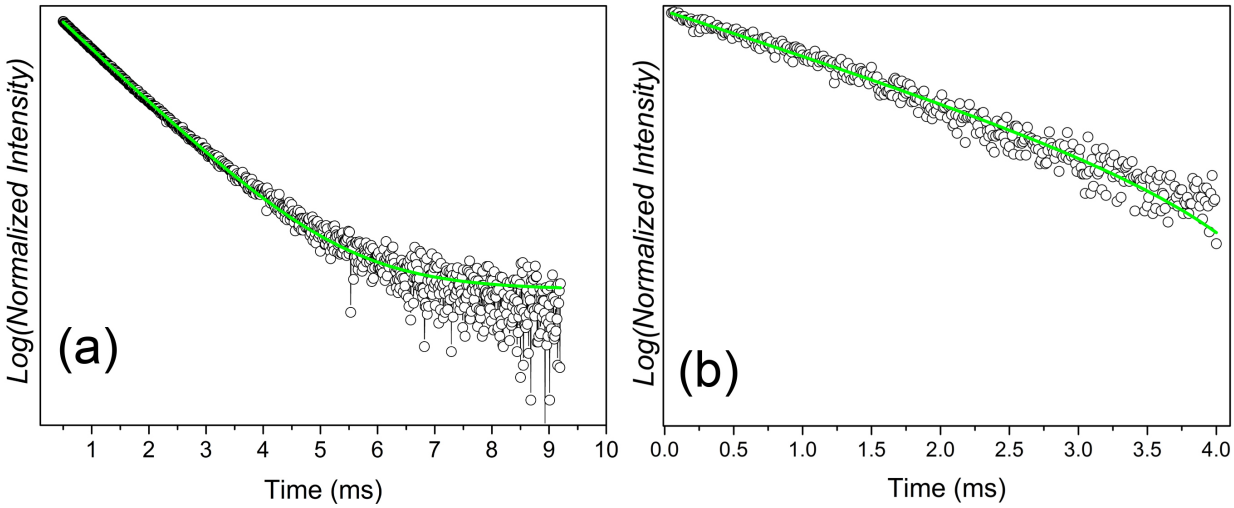


**Figure 2S:** Lifetimes decay curve of (a) as-prepared TbMOF and (b) TbMOF@PVA nanofibers acquired at room temperature upon excitation at 310 and 280 nm respectively, while monitoring $^5D_4 \rightarrow {}^7F_5$ transition at 543 nm. The green solid lines correspond to the best fit, R> 0.99.

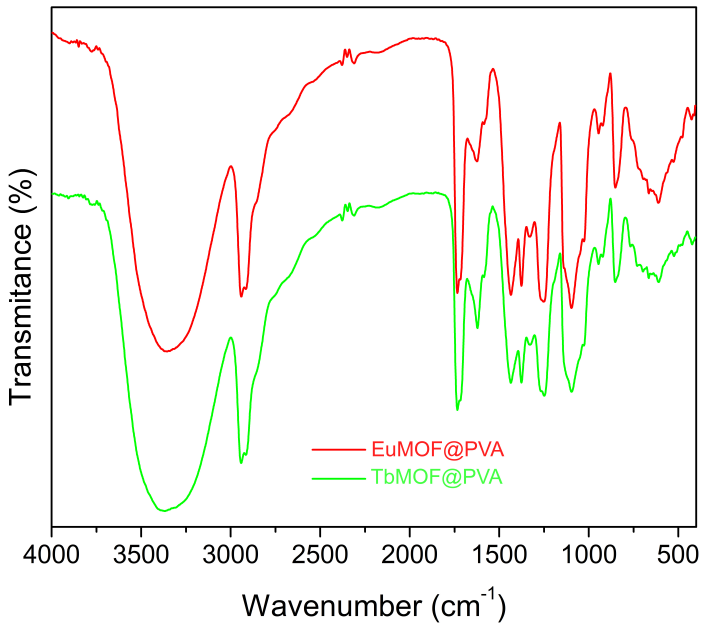


**Figure 3S**: Infrared spectra of LnMOF@PVA nanofibers

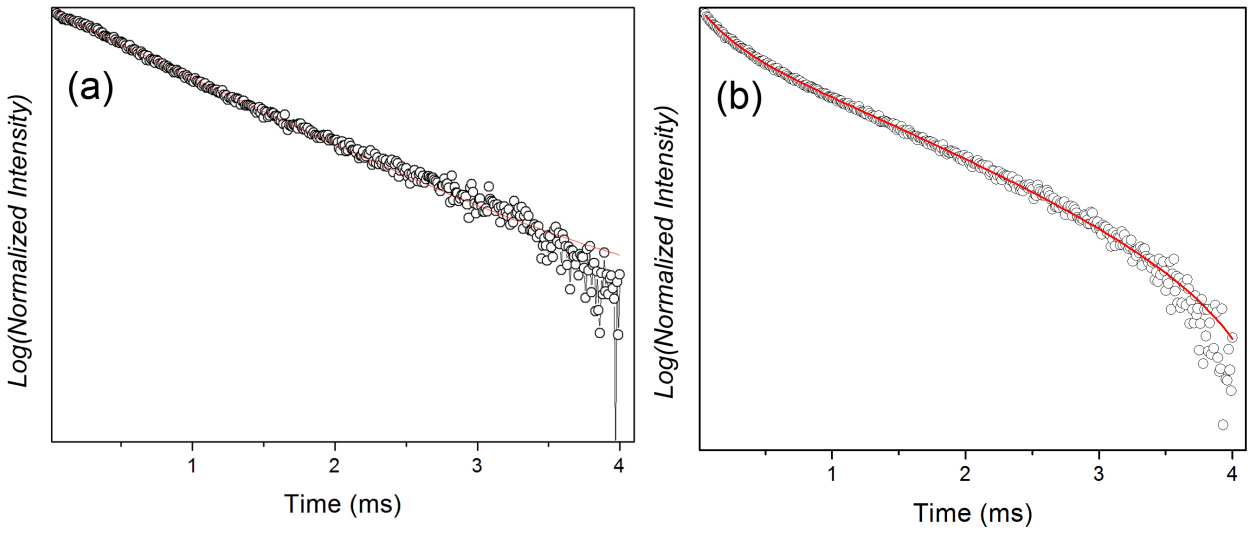


**Figure 4S**: Lifetimes decay curve of $Tb_{0.95}Eu_{0.05}$MOF@PVA acquired at room temperature upon excitation at 280 nm while monitoring (a) the $Eu^{3+}$ $^5D_0 \rightarrow {}^7F_2$ and (b) the $Tb^{3+}$ $^5D_4 \rightarrow {}^7F_5$ transitions. The red solid lines correspond to the best fit, R> 0.99.

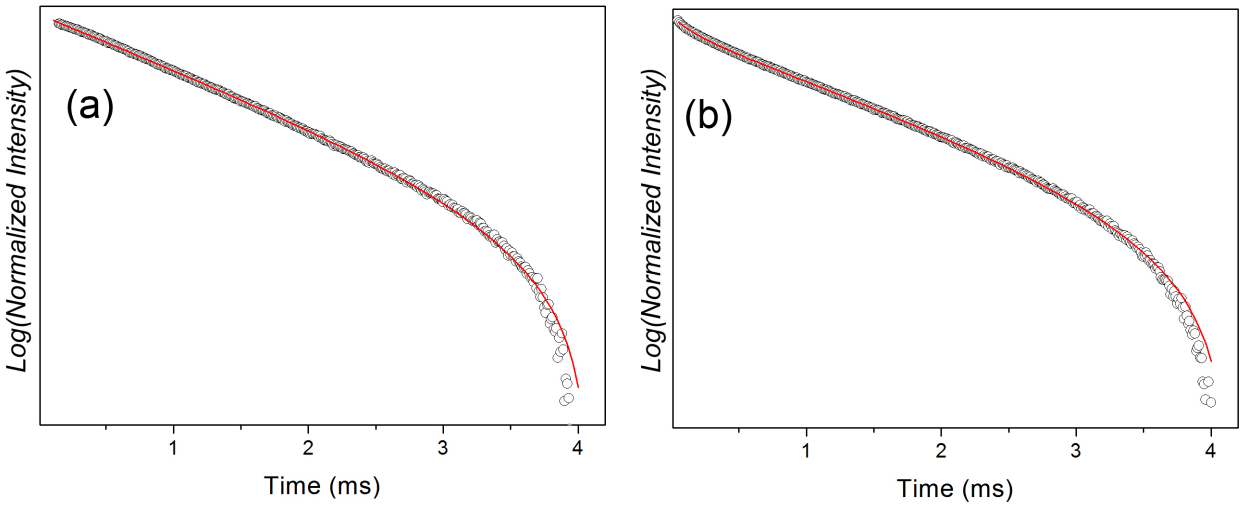


**Figure 5S**: Lifetimes decay curve of $Tb_{0.8}Eu_{0.2}$MOF@PVA acquired at room temperature upon excitation at 280 nm while monitoring (a) the $Eu^{3+}$ $^5D_0 \rightarrow {}^7F_2$ and (b) the $Tb^{3+}$ $^5D_4 \rightarrow {}^7F_5$ transitions. The red solid lines correspond to the best fit, R> 0.99.

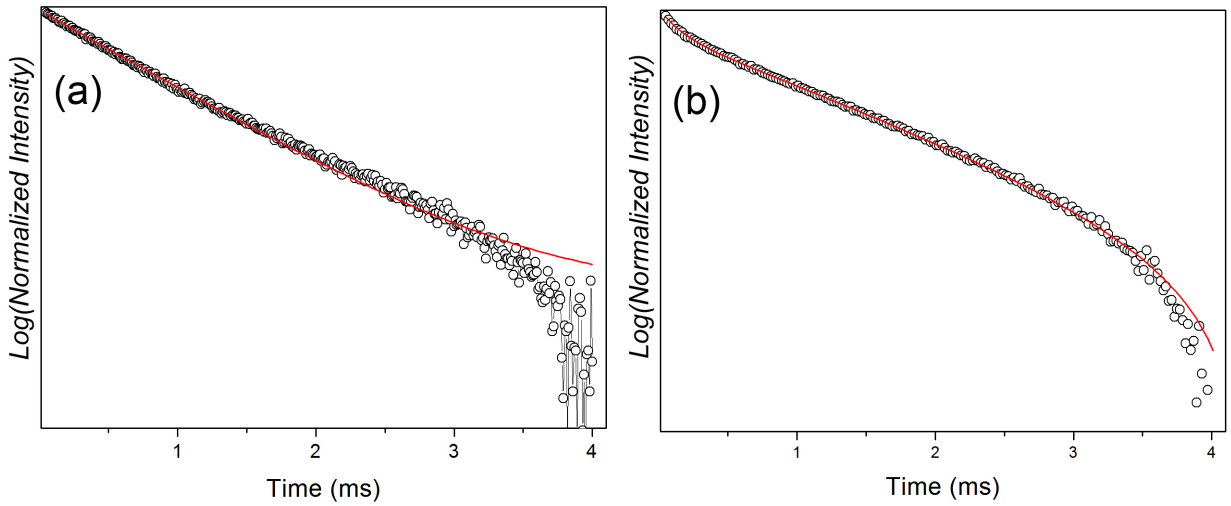


**Figure 6S**: Lifetimes decay curve of $Tb_{0.5}Eu_{0.5}$MOF@PVA acquired at room temperature upon excitation at 280 nm while monitoring (a) the $Eu^{3+}$ $^5D_0 \rightarrow {}^7F_2$ and (b) the $Tb^{3+}$ $^5D_4 \rightarrow {}^7F_5$ transitions. The red solid lines correspond to the best fit, R> 0.99.

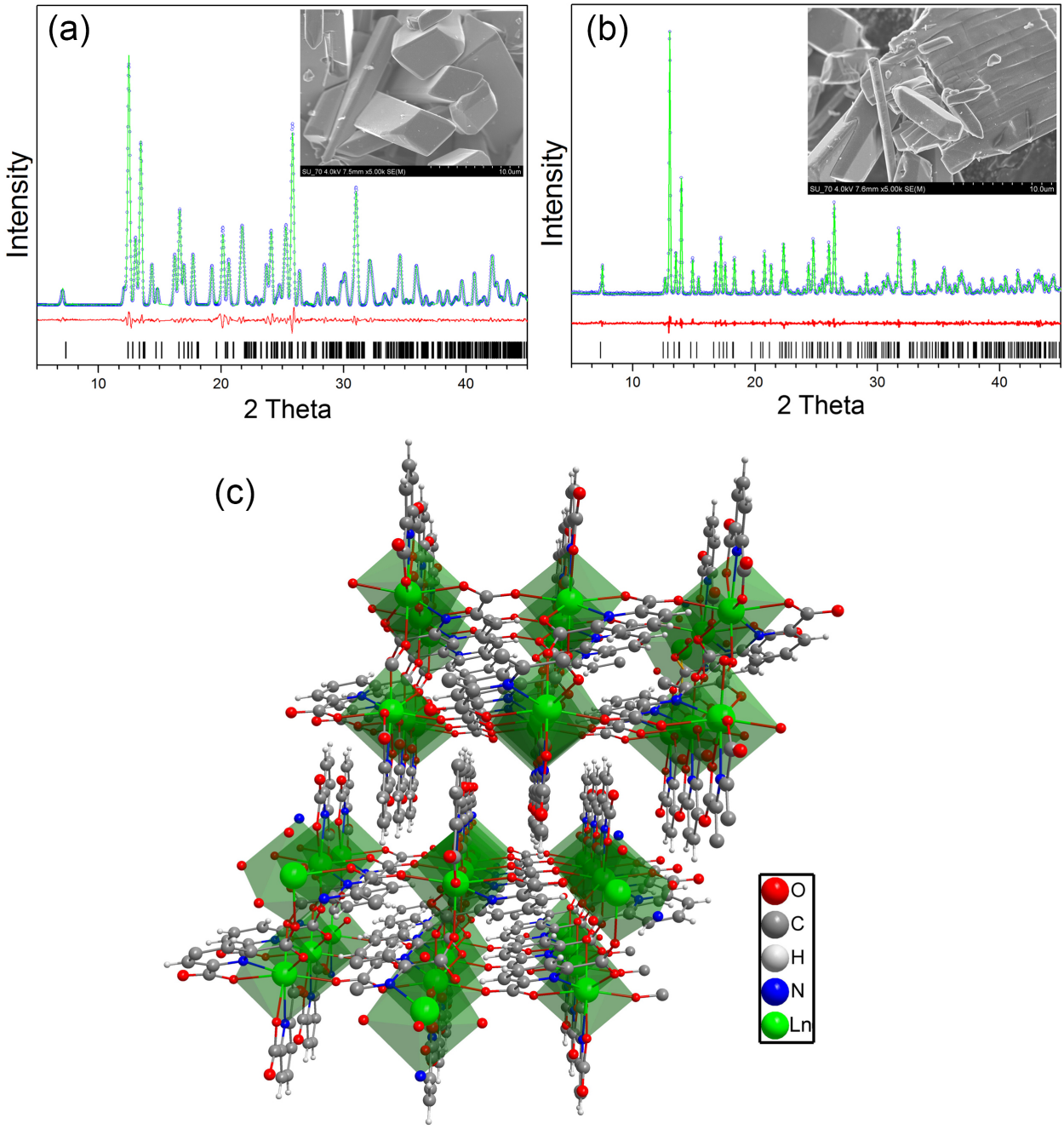


**Figure 6S**: Final Rietveld refinement. (a): [Eu(DPA)(HDPA)] and (b): [Tb(DPA)(HDPA)]. Observed data points are indicated as blue circles, the best-fit profile (upper trace) and the difference pattern (lower trace) are drawn as green and red lines, respectively. Black vertical bars indicate the angular positions of the allowed Bragg reflections. Reliability Factors for refinements are Rp: 9.22; Rwp: 12.51; $\chi^2$: 2.10; $RF^2$: 5.25 and Rp: 7.77; Rwp: 11.54; $\chi^2$: 1.56; $RF^2$: 3.05. (c): Illustration of the crystallographic structure of the [Ln(DPA)(HDPA)].

Rietveld refinement[1] for the LnMOFs were performed with the software GSAS/EXPGUI,[2] using as starting premise the atomic coordinates of the structural model previously reported.[3] The preferential orientation was corrected using spherical harmonic model (sixth order) proposed by Jarvinen,[4] the peak profile was adjusted by Thompson-Cox-Hastings function[5] modified by Young and Desai (pV-TCHZ),[6] surface roughness correction was refined by Pitschke function[7] and background was fitted by an eighth-degree shifted Chebyshev polynomial function. In the final runs, the following parameters were refined: scale factor, background and absorption coefficients, spherical harmonic, unit-cell parameters and pV-TCHZ correction for asymmetric parameters.

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(2) Larson, A. C., Von Dreele, R.B. *General Structure Analysis System (GSAS)*, Los Alamos National Laboratory, 2004; Toby, B. H. *J. Appl. Cryst.* **2001**, *34*, 210-213.
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(8) Nolze, G.; Kraus, W. "PowderCell 2.0 for Windows."Powder Diffr. 1998, 13, 256-259.