**Supplementary Materials**

**Exploring Ln(III) Ion-Based Luminescent Species as Down-Shifters for Photovoltaic Solar Cells**

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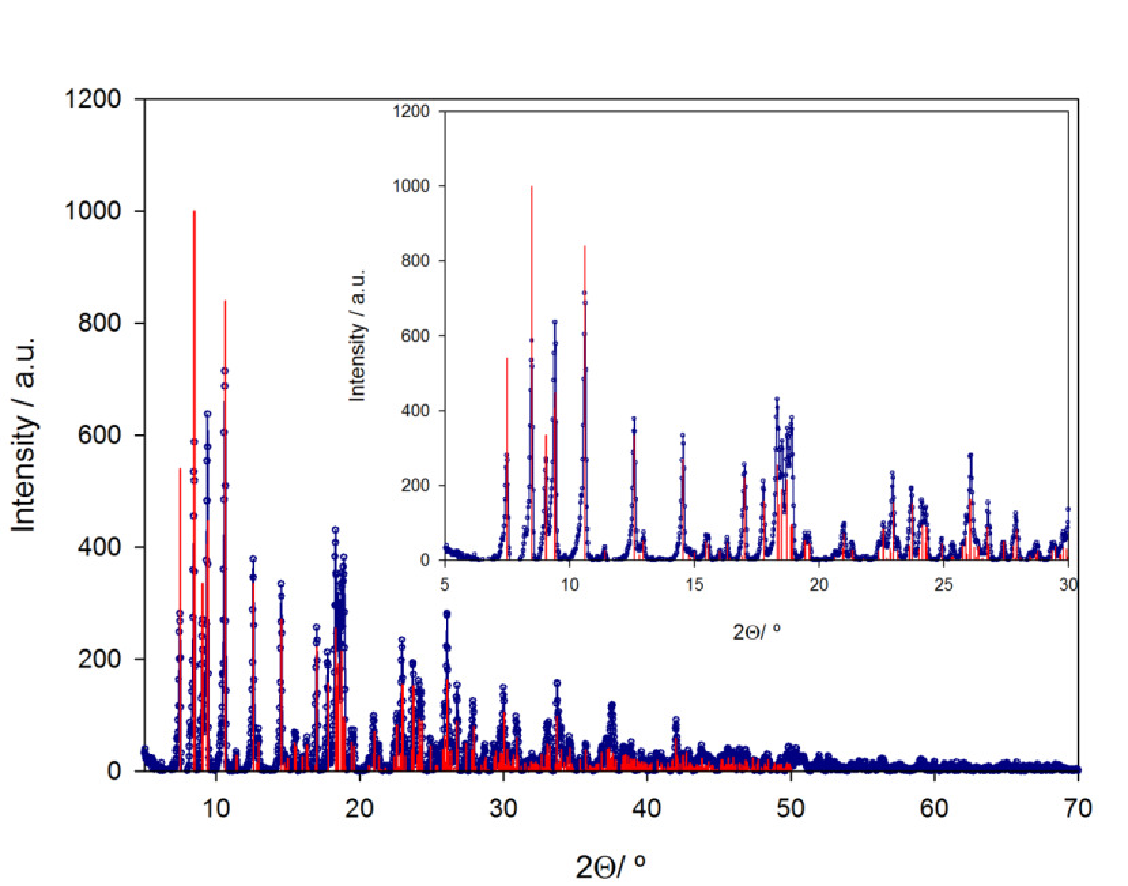
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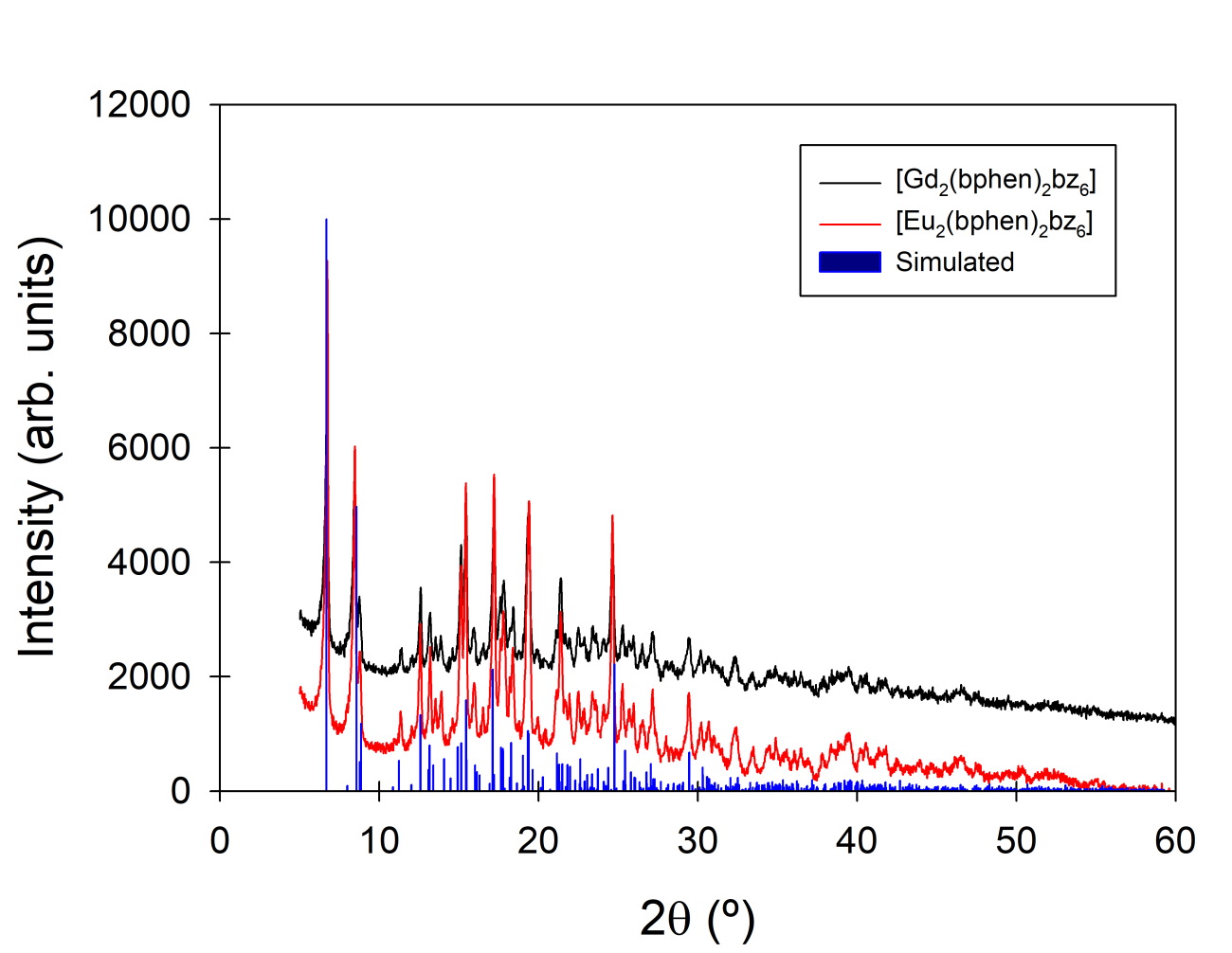
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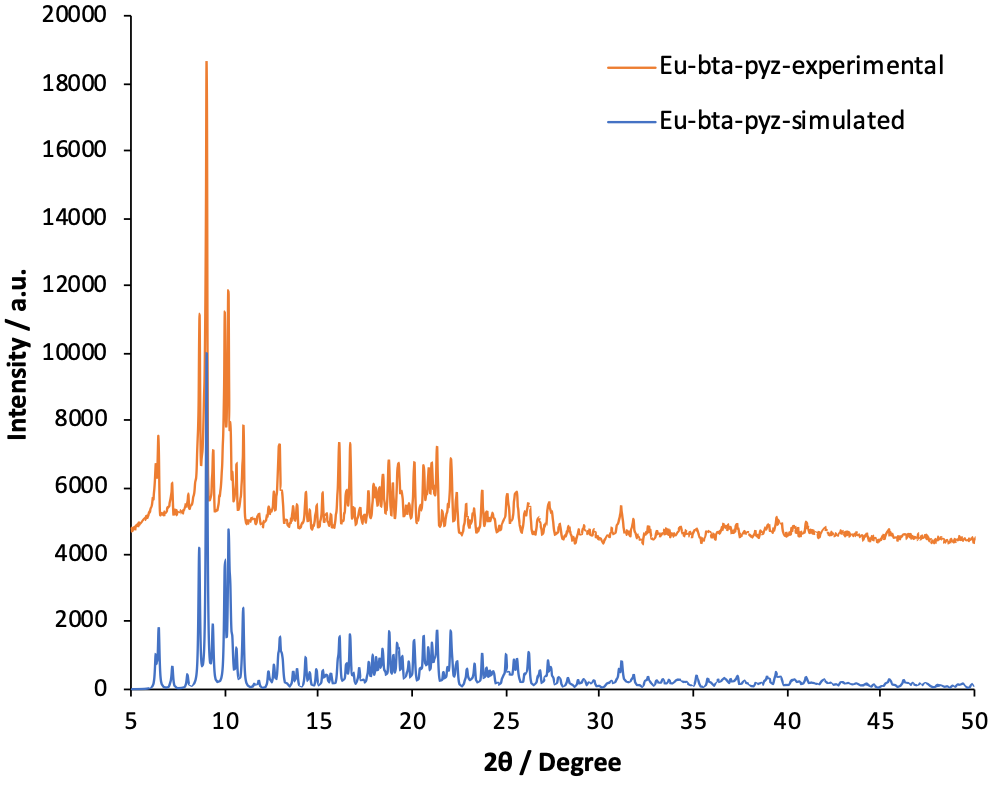


**Figure S1**. Simulated (red bars) and experimental (blue dots) X-Ray powder diffraction patterns for [Eu2(phen)2(bz)6].

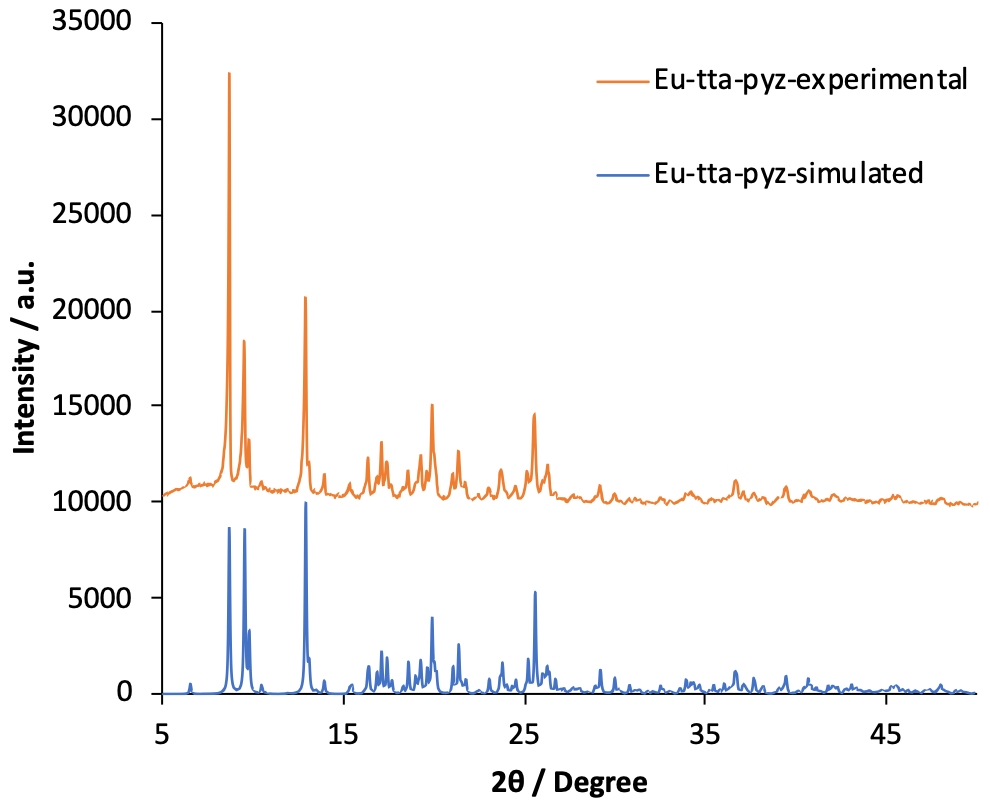
Niu, S. Y.; Yang, B.; Cao, J. Q.; Yang, G. D.; Bu, W. M., Synthesis, characterization and structure of tetrabenzoyloxy bridged binuclear Eu( III ) complex. Kao Teng Hsueh Hsiao Hua Heush Hsueh Pao/ *Chemical Journal of Chinese Universities* **1997**; *18*, 1917-1920.



**Figure S2**. ExperimentalX-Ray powder diffraction patterns for compounds[Eu2(bphen)2(bz)6] (red) and [Gd2(bphen)2(bz)6] (black). There is an almost perfect overlap between both patterns which means both compounds display the same structure. The simulated spectrum from the single-crystal structure of [Eu2(bphen)2(bz)6] is also showed (blue).



**Figure S3**.Simulated and experimental PXRD patterns (blue and orange lines, respectively for [Eu(bta)3pyz-phen] complex.



**Figure S4**.Simulated and experimental PXRD patterns (blue and orange lines, respectively for [Eu(tta)3pyz-phen] complex.

Gráfico, Histograma

Descripción generada automáticamente

**Figure S5**.Simulated and experimental PXRD patterns (black and red lines, respectively for [Eu(bta)3me-phen] complex.

Gráfico, Histograma

Descripción generada automáticamente

**Figure S6**. Experimental PXRD patterns of [Yb(bta)3me-phen], [Er(bta)3me-phen] and [Gd(bta)3me-phen].

Gráfico

Descripción generada automáticamente

**Figure S7**. Experimental PXRD patterns of [M1M2(bz)4(tta)2(phen)2].