

Title : Single Crystal Structure and Photophysical Property of $[\text{Eu}(\text{bdc-SO}_3)(\text{DMF})(\text{H}_2\text{O})_4]\cdot\text{DMF}\cdot\text{H}_2\text{O}$

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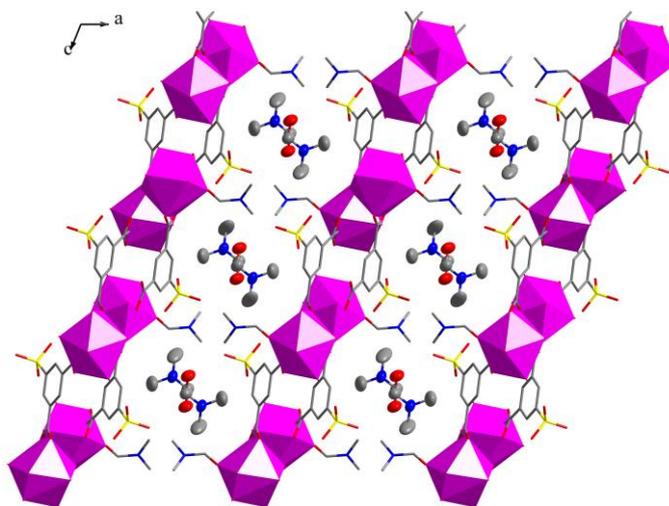
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ABSTRACT

A new lanthanide coordination polymers, *i.e.* $[\text{Eu}(\text{bdc-SO}_3)(\text{DMF})(\text{H}_2\text{O})_4]\cdot\text{DMF}\cdot\text{H}_2\text{O}$ (I), where $\text{H}_2\text{bdc-SO}_3\text{Na}$ = 5-sulfoisophthalic acid sodium salt and DMF = dimethylformamide, has been synthesized and characterized. The crystal structure of $[\text{Eu}(\text{bdc-SO}_3)(\text{DMF})(\text{H}_2\text{O})_4]\cdot\text{DMF}\cdot\text{H}_2\text{O}$ was elucidated in the monoclinic space group $P2_1/c$ with refined cell parameters $a = 13.47 \text{ \AA}$, $b = 10.75 \text{ \AA}$, $c = 17.94 \text{ \AA}$, $\beta = 111.5^\circ$, $V = 2417 \text{ \AA}^3$, and $Z = 4$. The structure features a hydrogen-bond driven supramolecular assembly of the one-dimensional $[\text{Eu}(\text{bdc-SO}_3)(\text{DMF})(\text{H}_2\text{O})_4]_n$ polymeric chain. The other characterizations were also carried out to evaluate its purity: elemental analysis, powder X-ray diffraction and Fourier transform-infrared spectroscopy. Its thermogravimetric behavior and the room-temperature solid-state photoluminescence were also examined.



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