

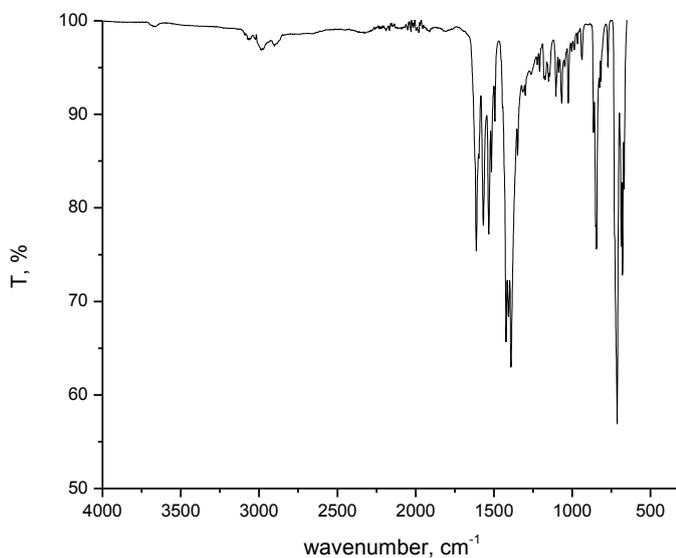
**Mixed-ligand terbium hydroxyaromatic carboxylates with *o*-phenanthroline:  
luminescence quenching at 300 and 77K**

**Nikolay N. Solodukhin, Valentina V. Utochnikova, Leonid S. Lepnev  
and Natalia P. Kuzmina**

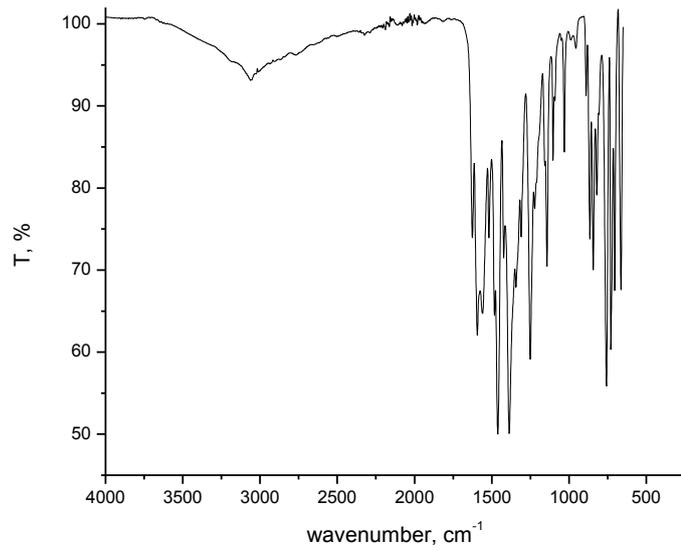
*Experimental*

IR spectra were recorded with a FTIR Spectrum One spectrometer (Perkin Elmer, USA) in the range of 400–4000  $\text{cm}^{-1}$  with a resolution of 0.5  $\text{cm}^{-1}$ .

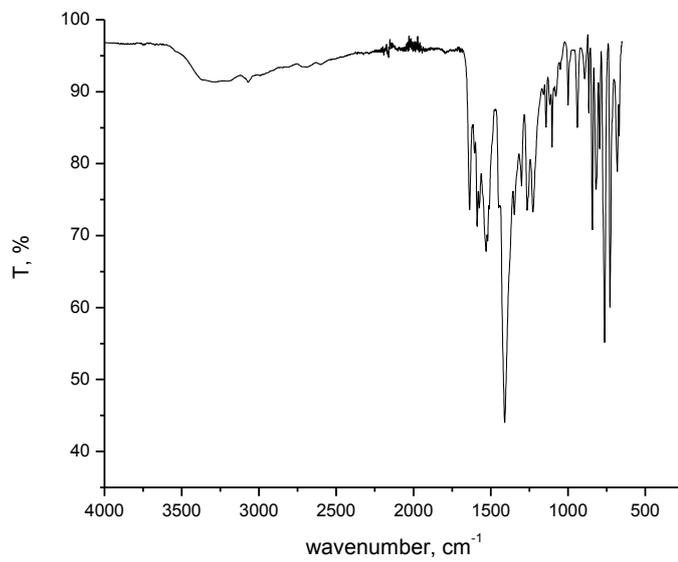
Thermal analyses were performed on an STA 409 series thermoanalyzer (NETZSCH, Germany) in the temperature range of 20–1000  $^{\circ}\text{C}$  in a flow of argon (heating rate of 10  $\text{K min}^{-1}$ , initial weight  $\sim 5$  mg).



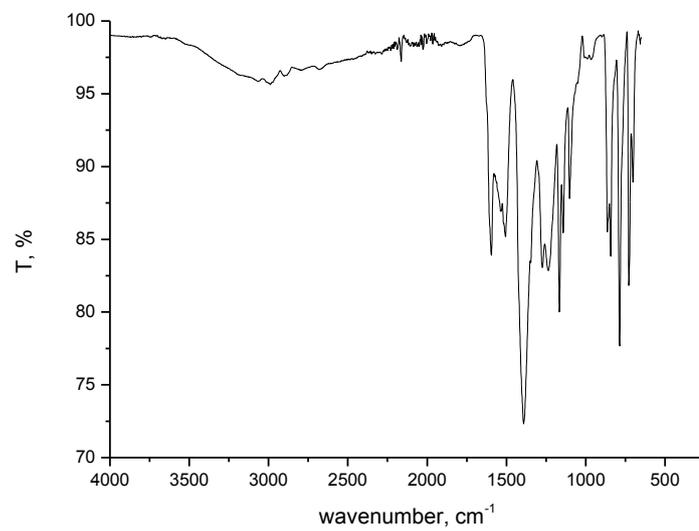
a)



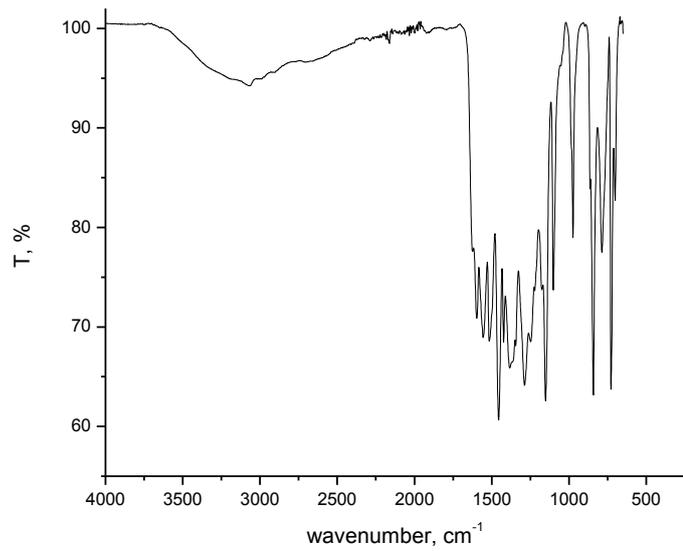
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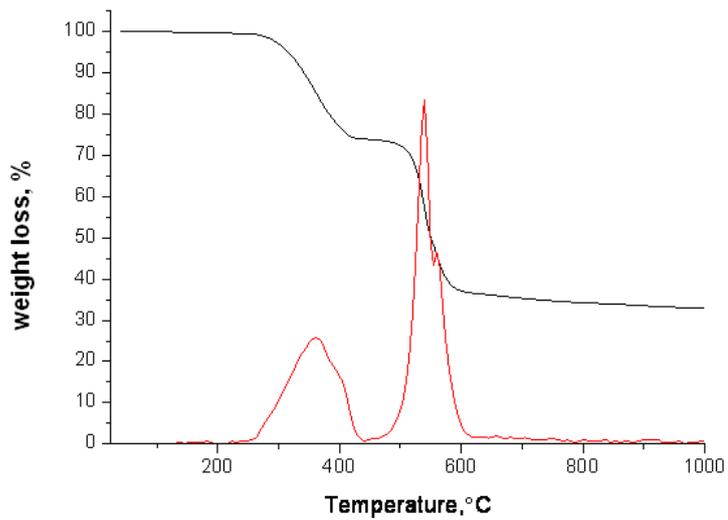
c)



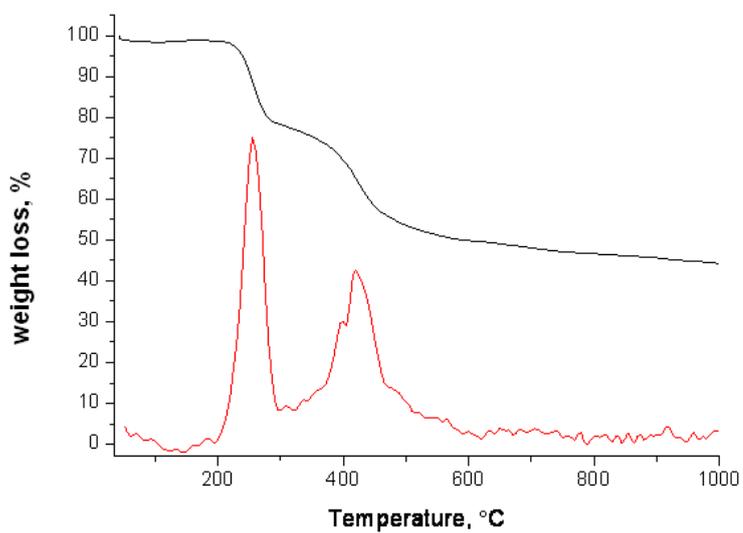
d)



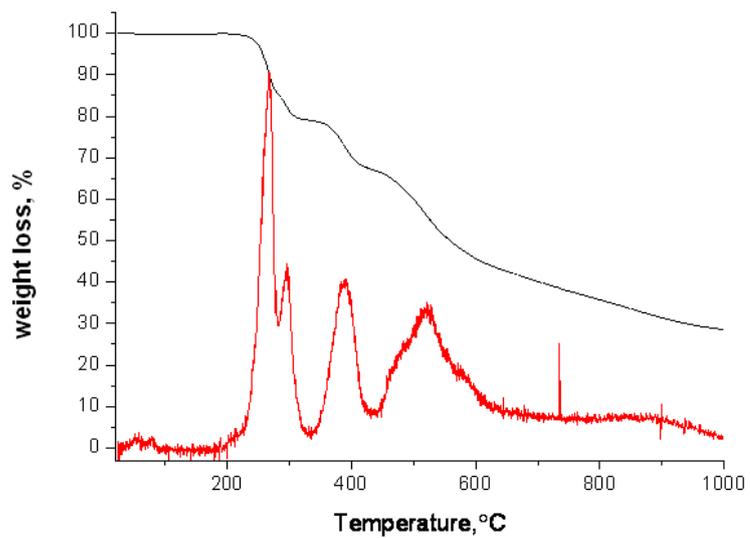
e)  
**Figure S1** IR spectra of Tb(carb)<sub>3</sub>(Phen): a) **1**, b) **2**, c) **3**, d) **4**, e) **5**.



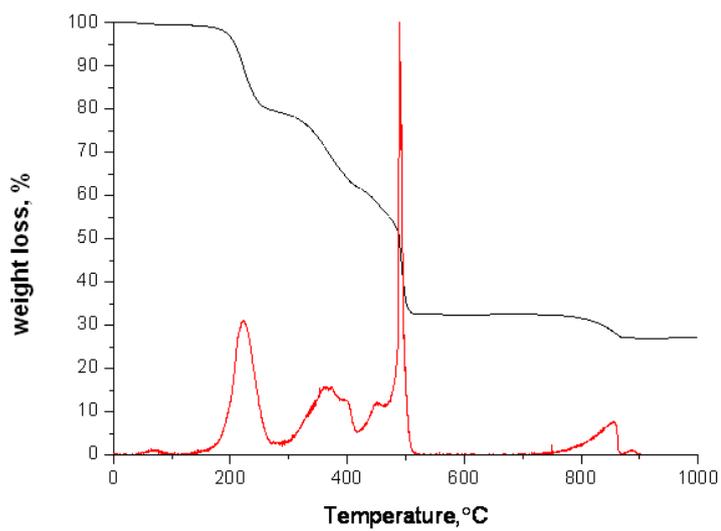
a)



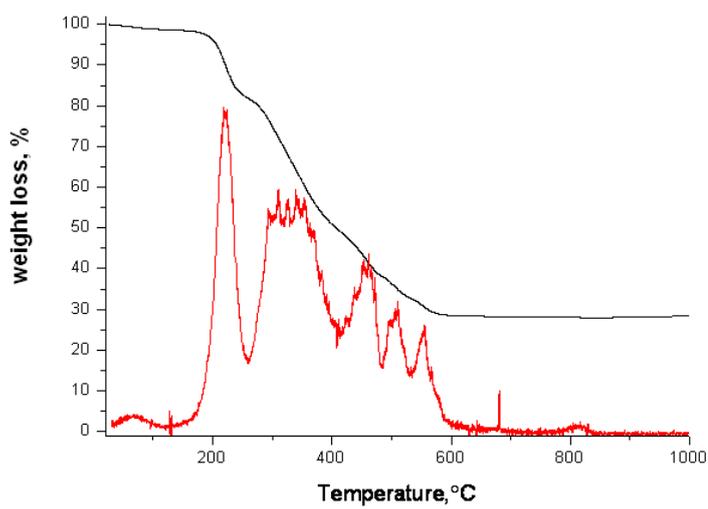
b)



c)

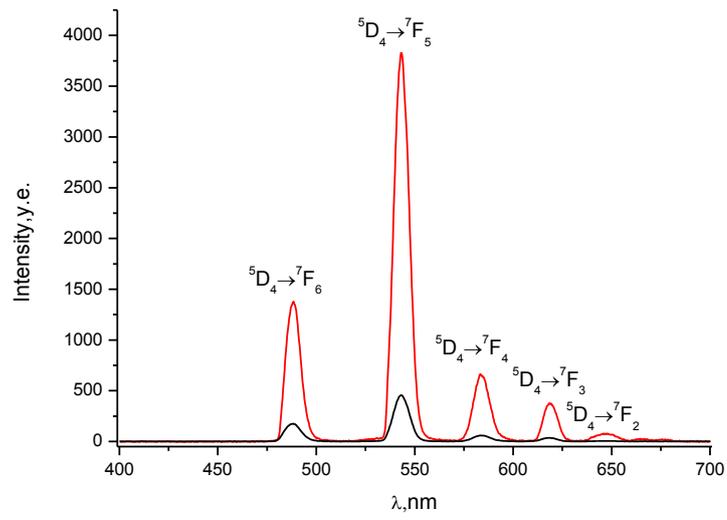


d)

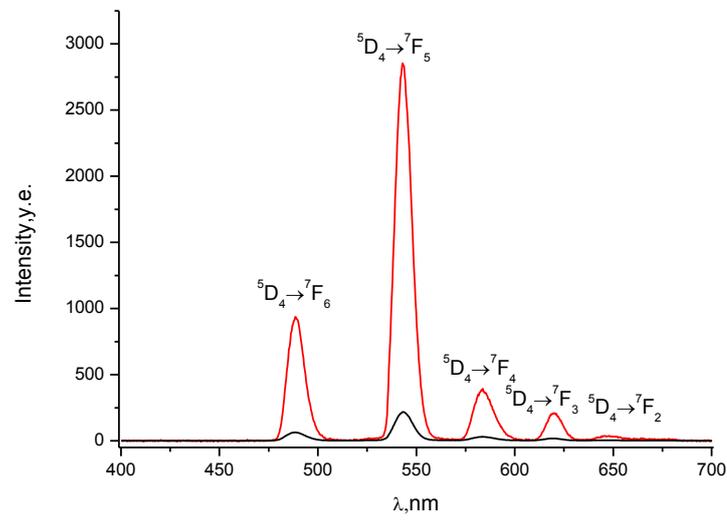


e)

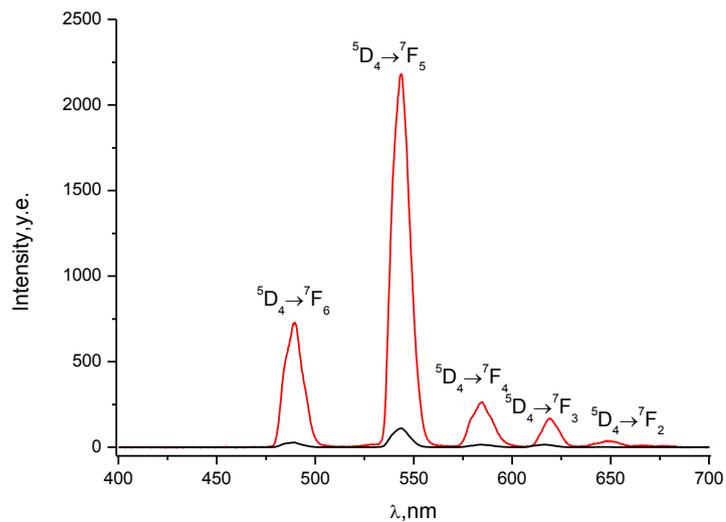
**Figure S2** TG (black line) and DTG (red line) curves of Tb(carb)<sub>3</sub>(Phen): a) **1**, b) **2**, c) **3**, d) **4**, e) **5**.



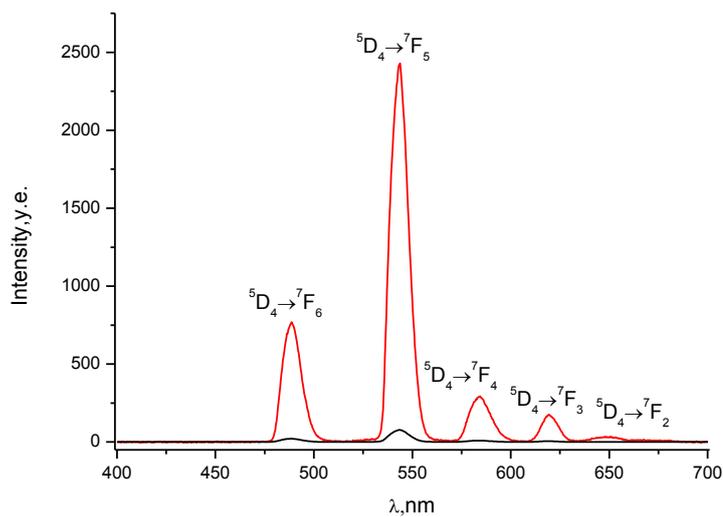
a)



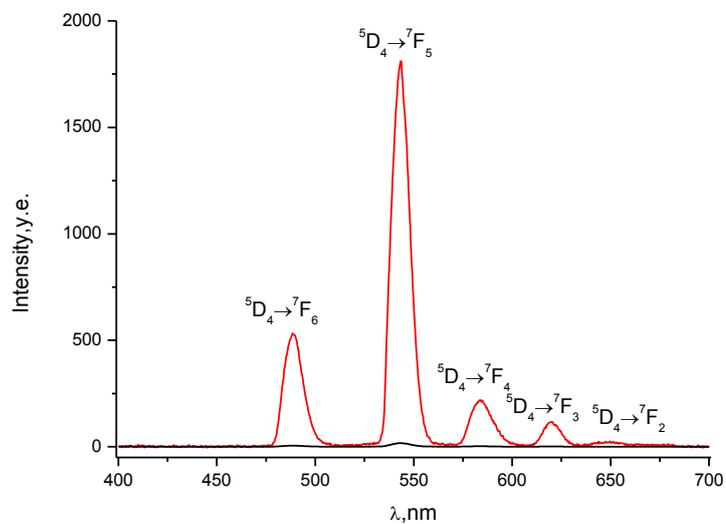
b)



c)



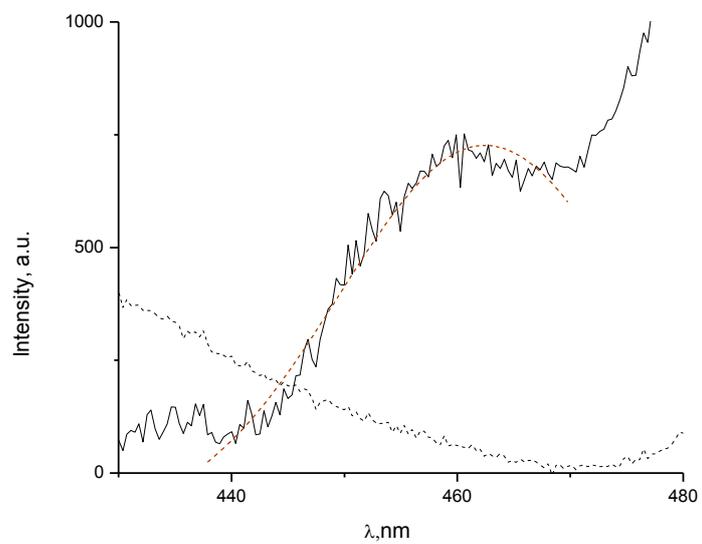
d)



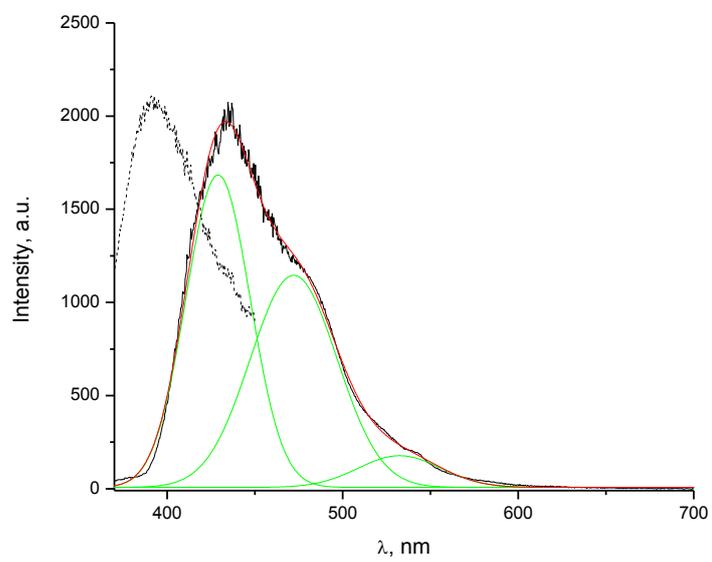
e)

**Figure S3** Luminescence spectra at 77 K (red line) and 300 K (black line) of  $\text{Tb}(\text{carb})_3(\text{Phen})$ : a) **1**, b) **2**, c) **3**, d) **4**, e) **5**.

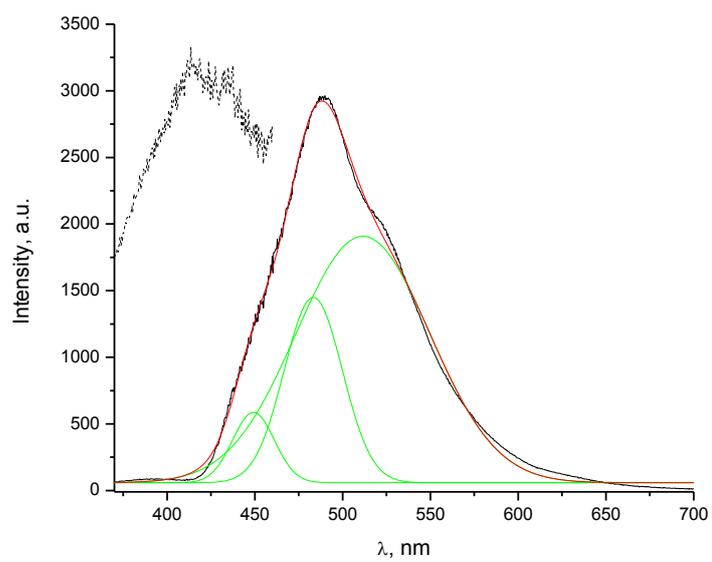
a)  $\text{Gd}(\text{carb}^1)_3$



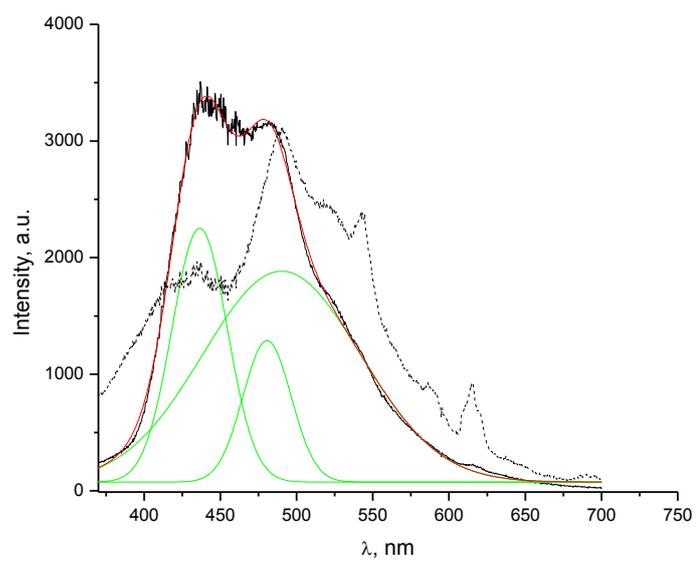
b)  $\text{Gd}(\text{carb}^2)_3$



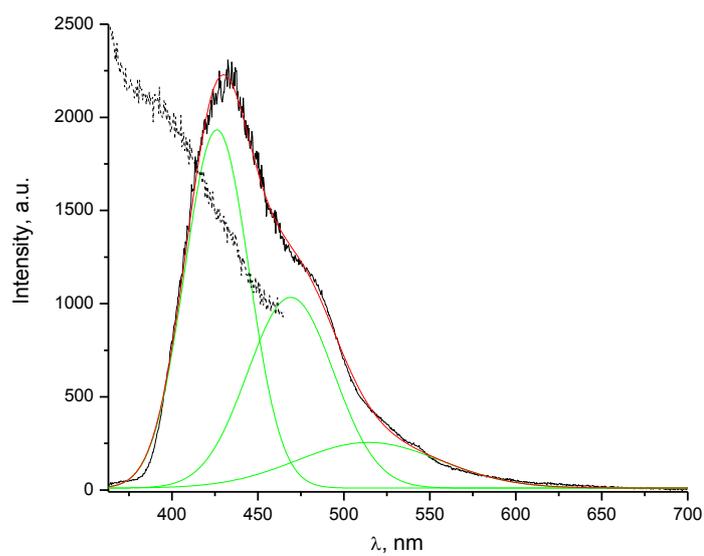
c)  $\text{Gd}(\text{carb}^3)_3$



d)  $\text{Gd}(\text{carb}^4)_3$



e)  $\text{Gd}(\text{carb}^5)_3$



**Figure S4** Luminescence spectra of  $\text{Gd}(\text{carb}^5)_3$ : luminescence at 300K (dashed line), luminescence at 77K (straight line, black), phosphorescence band deconvolution (straight line, red) onto Gaussians (straight line, green).