

# Supporting Information

## **A novel one-dimensional $Y_2(\text{Zr}_{0.6}\text{Ti}_{0.4})_2\text{O}_7:\text{Eu}$ tube-in-tube nanostructure fabricated by a single-nozzle electrospinning technique and its low color drift property at high temperature**

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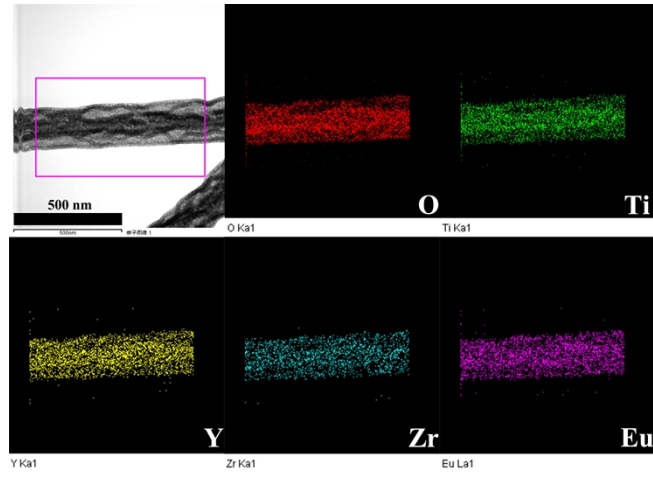


Fig. S1 EDS mapping images of  $Y_2(Zr_{0.6}Ti_{0.4})_2O_7:30\%Eu$  tube-in-tube nanostructures.

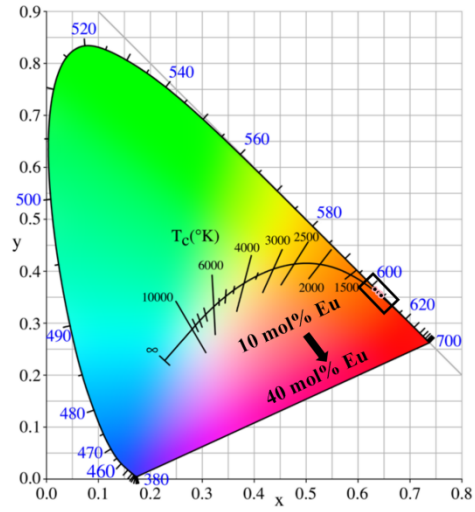


Fig. S2 Color coordinates of  $Y_2(Zr_{0.6}Ti_{0.4})_2O_7:x \text{ mol\% Eu}^{3+}$  ( $x = 10, 20, 30, 40$ ) tube-in-tube nanostructures.

(a) Formula	$Y_2$ $(Ti_{0.6}Zr_{0.4})_2:30\%Eu^{3+}$	(b) Formula	$Y_2$ $(Ti_{0.6}Zr_{0.4})_2:40\%Eu^{3+}$
Spacegroup	Fd-3m	Spacegroup	Fd-3m
Cellparameters	a=10.28774 A	Cellparameters	a=10.294447A
	b=10.28774 A		b=10.294447 A
	c=10.28774 A		c=10.294447A
	$\alpha=\gamma=\beta=90^\circ$		$\alpha=\gamma=\beta=90^\circ$
Cell volume	1088.829A	Cell volume	1090.961A
Rwp	3.07%	Rwp	3.07%
Rp	2.48%	Rp	2.46%
X <sup>2</sup>	1.693	X <sup>2</sup>	1.552

**Table S1** Crystallographic and structural refinement data of  $Y_2(Zr_{0.6}Ti_{0.4})_2O_7:30\%Eu$  and  $Y_2(Zr_{0.6}Ti_{0.4})_2O_7:40\%Eu$  tube-in-tube nanostructures.

Eu <sup>3+</sup> concentrations (mol%)	Color coordinates (x,y)
10	(0.6403,0.3593)
20	(0.6443,0.3554)
30	(0.6459,0.3554)
40	(0.6338,0.3658)

**Table S2** Color coordinates of  $Y_2(Zr_{0.6}Ti_{0.4})_2O_7$ : x mol%  $Eu^{3+}$  (x = 10, 20, 30, 40) tube-in-tube nanostructures.

Temperature (K)	Color coordinates (x, y)	
	$\text{Y}_2(\text{Zr}_{0.6}\text{Ti}_{0.4})_2\text{O}_7:30\%$ Eu tube-in-tube nanostructures	$\text{Y}_2(\text{Zr}_{0.6}\text{Ti}_{0.4})_2\text{O}_7:30\%$ Eu nanoparticles
303	(0.6429, 0.3567)	(0.6392, 0.3588)
333	(0.6412, 0.3584)	(0.6342, 0.3633)
363	(0.6394, 0.3602)	(0.6290, 0.3680)
393	(0.6378, 0.3618)	(0.6225, 0.3740)
423	(0.6357, 0.3640)	(0.6150, 0.3809)
453	(0.6340, 0.3656)	(0.6055, 0.3895)
483	(0.6320, 0.3676)	(0.5930, 0.4009)
513	(0.6299, 0.3697)	(0.5767, 0.4158)
543	(0.6292, 0.3704)	(0.5591, 0.4318)
573	(0.6275, 0.3721)	(0.5426, 0.4468)
603	(0.6265, 0.3730)	(0.5292, 0.4591)
633	(0.6251, 0.3745)	(0.5211, 0.4667)

**Table S3** Color coordinates of  $\text{Y}_2(\text{Zr}_{0.6}\text{Ti}_{0.4})_2\text{O}_7: 30 \text{ mol\%}$  Eu tube-in-tube nanostructures and  $\text{Y}_2(\text{Zr}_{0.6}\text{Ti}_{0.4})_2\text{O}_7:30\%$ Eu with 0D nanoparticles at different temperatures.