

# Luminescence Properties of $\text{Gd}_2(\text{MoO}_4)_3$ Modified with Sm(III) and Tb(III) for Potential LED Applications

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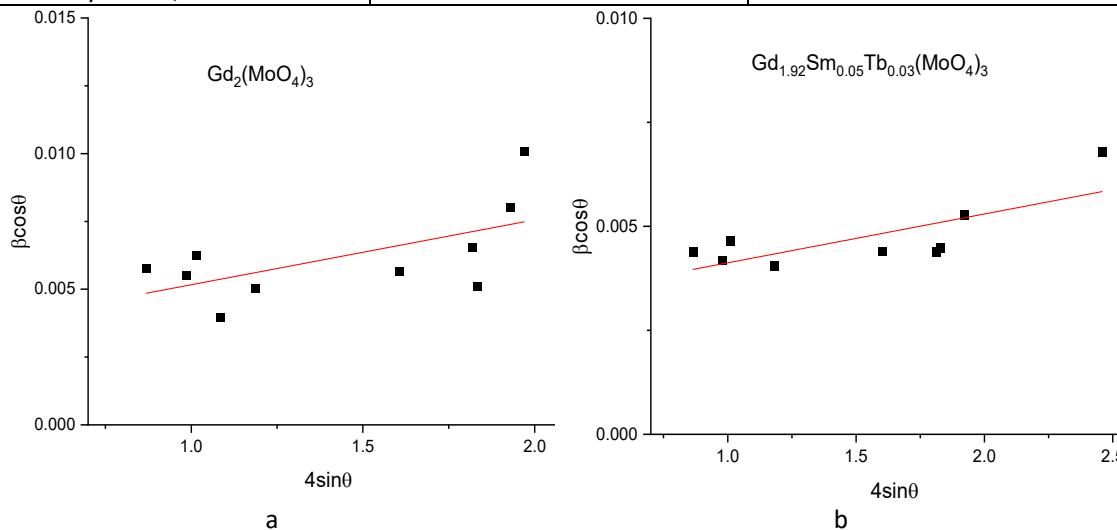
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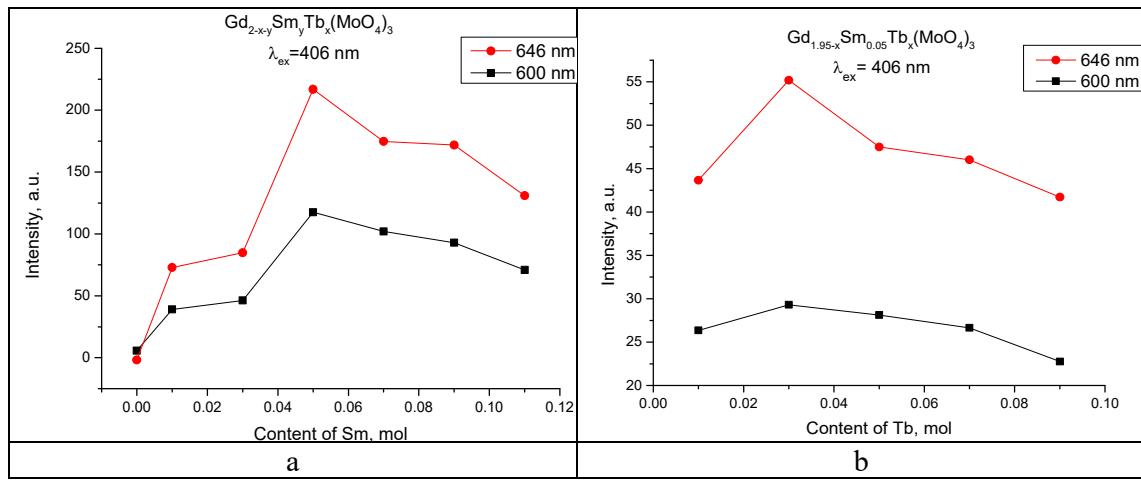
## Supplementary information

**Table S1.** Crystallites size and microstrain of the samples based on Williamson-Hall plot

Sample	Crystallites size, nm (W-H plot)	Microstrains (W-H plot)
$\text{Gd}_2(\text{MoO}_4)_3$	$60.5 \pm 1.3$	$0.0069 \pm 0.00013$
$\text{Gd}_{2-x-y}\text{Sm}_y\text{Tb}_x(\text{MoO}_4)_3$		
$y = 0.01, x = 0.03$	$56.1 \pm 0.6$	$0.00087 \pm 0.00008$
$y = 0.03, x = 0.03$	$54.0 \pm 0.3$	$0.00096 \pm 0.00006$
$y = 0.05, x = 0.03$	$47.0 \pm 1.1$	$0.00103 \pm 0.00007$
$y = 0.07, x = 0.03$	$45.2 \pm 0.5$	$0.00117 \pm 0.00006$
$y = 0.09, x = 0.03$	$43.1 \pm 0.8$	$0.00143 \pm 0.00008$
$y = 0.11, x = 0.03$	$42.6 \pm 0.9$	$0.00159 \pm 0.00009$
$y = 0.05, x = 0.01$	$49.0 \pm 1.2$	$0.00101 \pm 0.00015$
$y = 0.05, x = 0.05$	$48.1 \pm 0.5$	$0.00107 \pm 0.00012$
$y = 0.05, x = 0.07$	$47.3 \pm 0.8$	$0.00110 \pm 0.00011$
$y = 0.05, x = 0.09$	$46.1 \pm 0.6$	$0.00123 \pm 0.00010$



**Figure S1.** Williamson-Hall (W-H) plot for some of the samples, **(a)**  $\text{Gd}_2(\text{MoO}_4)_3$  and **(b)**  $\text{Gd}_{1.92}\text{Sm}_{0.05}\text{Tb}_{0.03}(\text{MoO}_4)_3$ . Available for all the samples, but not included.



**Figure S2.** Emission band intensity variation for Sm(III) with the doping content of (a)  $\text{Sm}^{3+}$  ion and (b)  $\text{Tb}^{3+}$  ion; where **(a)**  $\text{Gd}_{1.97-y}\text{Sm}_y\text{Tb}_{0.03}(\text{MoO}_4)_3$  and **(b)**  $\text{Gd}_{1.95-x}\text{Sm}_{0.05}\text{Tb}_x(\text{MoO}_4)_3$ .