

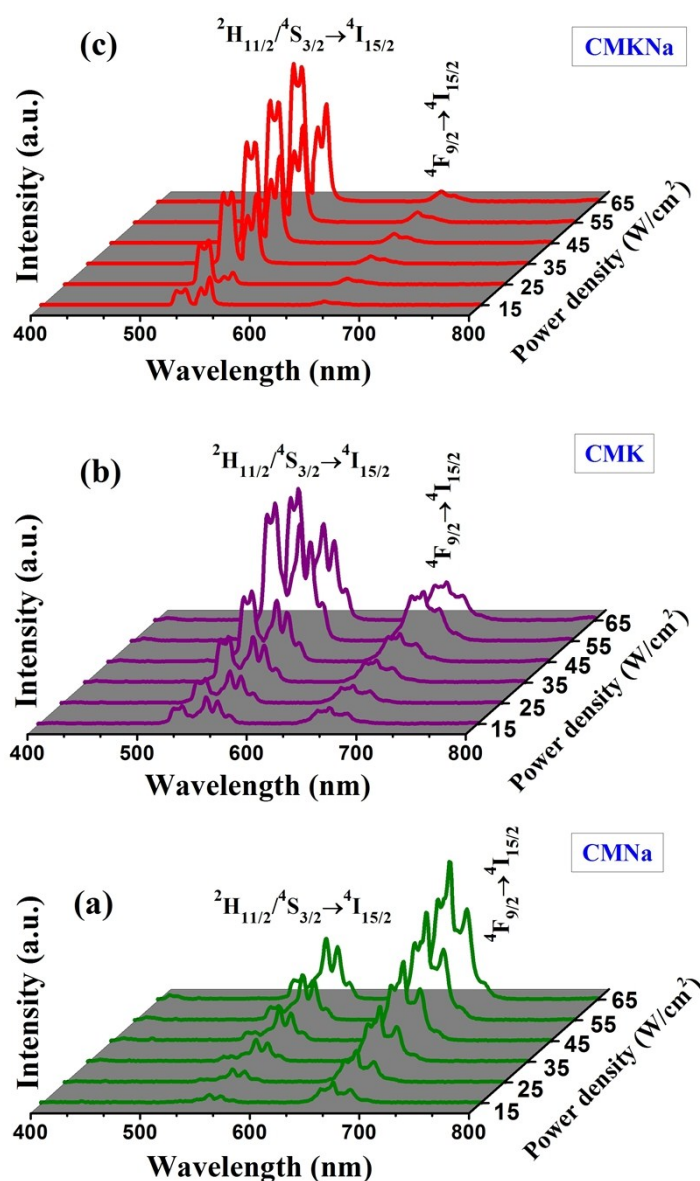
## Enhancement of upconversion, temperature sensing and cathodoluminescence in $K^+/Na^+$ compensated $CaMoO_4: Er^{3+}/Yb^{3+}$ nanophosphor

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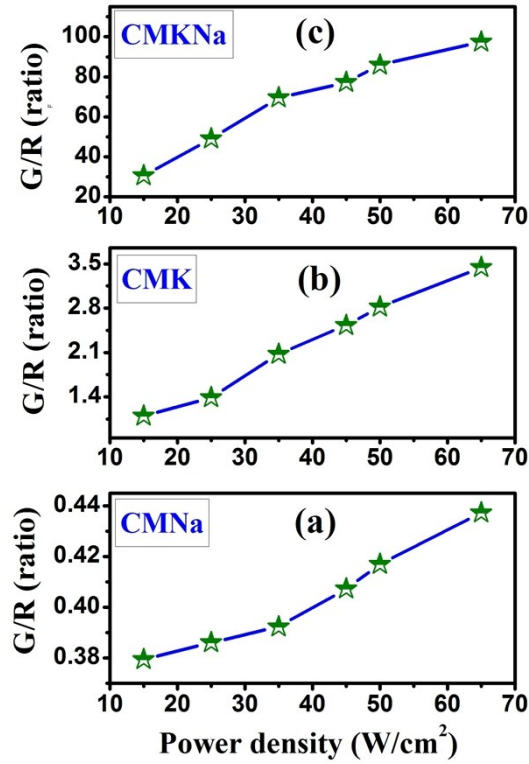
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**Supplementary Fig. 1.** Variation of UC emission intensity with different pump power for (a) CMNa (b) CMK (c) CMKNa samples.



**Supplementary Fig.2.** Variation of G/R ratio with pump power for (a) CMNa (b) CMK (c) CMKNa samples.

**Supplementary Table.1** The calculated CIE chromaticity coordinates (x,y) of CMNa, CMK and CMKNa samples with different power density.

Power density	CMNa	CMK	CMKNa
	(x , y)	(x , y)	(x , y)
15 W/cm <sup>2</sup>	(0.43 , 0.51)	(0.35 , 0.62)	(0.21 , 0.74)
25 W/cm <sup>2</sup>	(0.43 , 0.53)	(0.33 , 0.64)	(0.19 , 0.76)
35 W/cm <sup>2</sup>	(0.43 , 0.55)	(0.31 , 0.66)	(0.17 , 0.78)
45 W/cm <sup>2</sup>	(0.42 , 0.57)	(0.29 , 0.68)	(0.15 , 0.80)
65 W/cm <sup>2</sup>	(0.41 , 0.58)	(0.27 , 0.70)	(0.14 , 0.81)