

**Supporting Information on**

**Ca<sub>2</sub>B<sub>2</sub>O<sub>5</sub>·H<sub>2</sub>O:Tb<sup>3+</sup> hierarchical micro-nanostructures: Formation  
and the Optical Properties**

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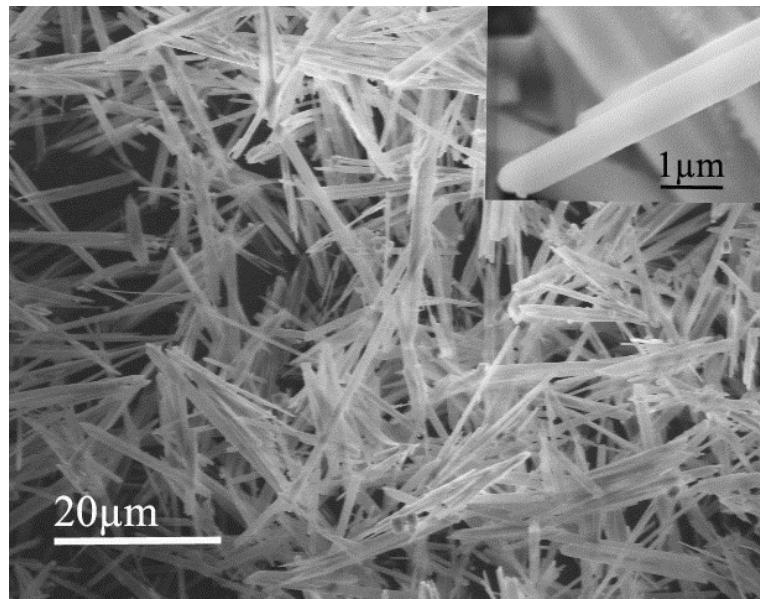


Figure SI-1 SEM of undoped  $\text{Ca}_2\text{B}_2\text{O}_5 \cdot \text{H}_2\text{O}$  sample

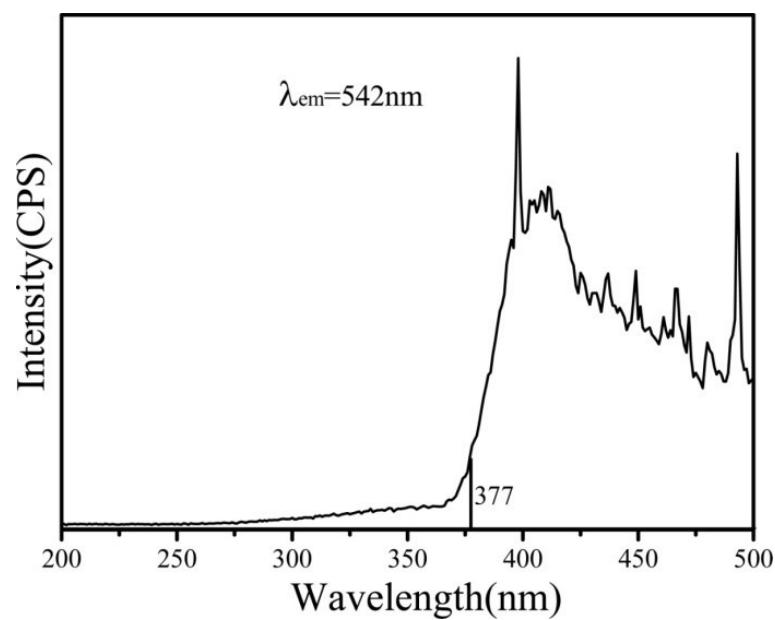


Figure SI-2 Excitation spectra of undoped  $\text{Ca}_2\text{B}_2\text{O}_5 \cdot \text{H}_2\text{O}$  sample

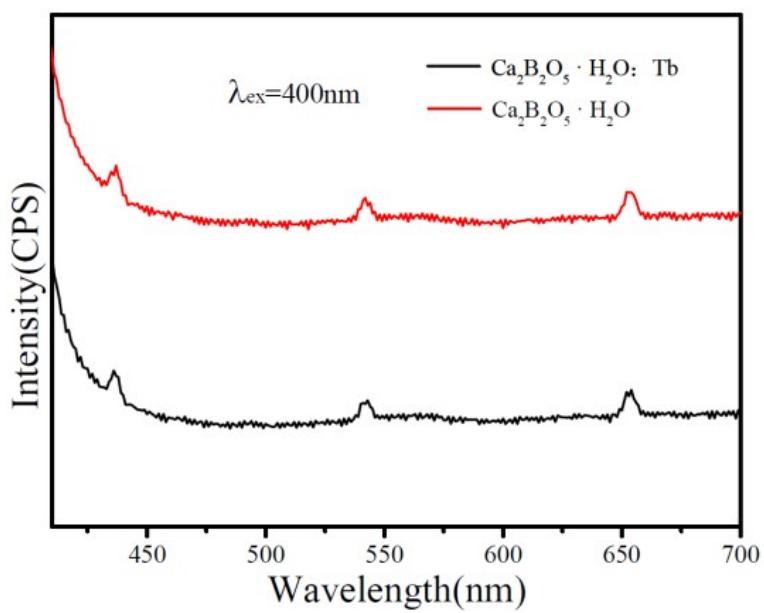


Figure SI-3  $\lambda_{\text{ex}}=400$  nm Emission spectra of with/without  $\text{Tb}^{3+}$  doped  $\text{Ca}_2\text{B}_2\text{O}_5 \cdot \text{H}_2\text{O}$

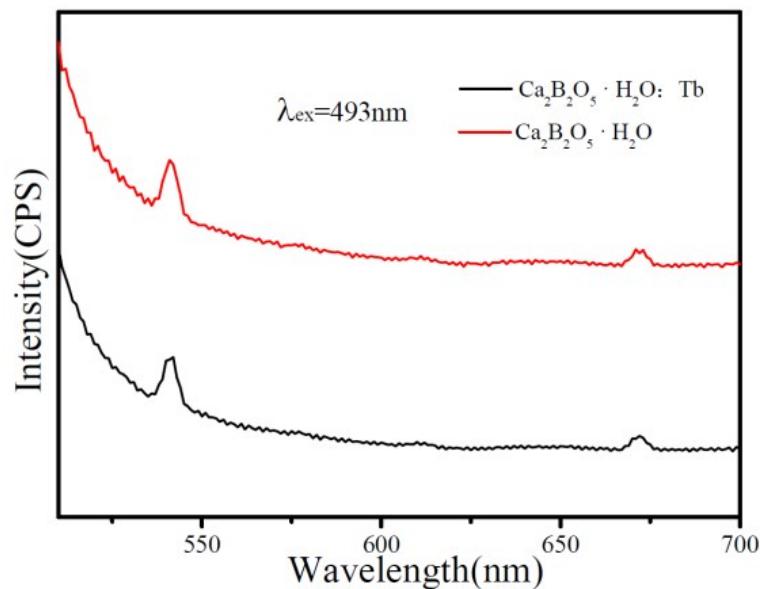


Figure SI-4  $\lambda_{\text{ex}}=493$  nm Emission spectra of with/without  $\text{Tb}^{3+}$  doped  $\text{Ca}_2\text{B}_2\text{O}_5 \cdot \text{H}_2\text{O}$ .

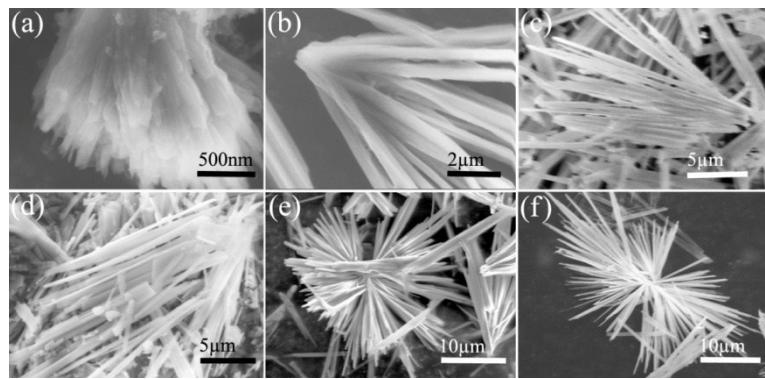


Figure SI-5 the influence of reaction time (a) 30 s, (b) 10 min, (c) 6 h, (d) 12 h, (e) 18 h, (f) 24 h.

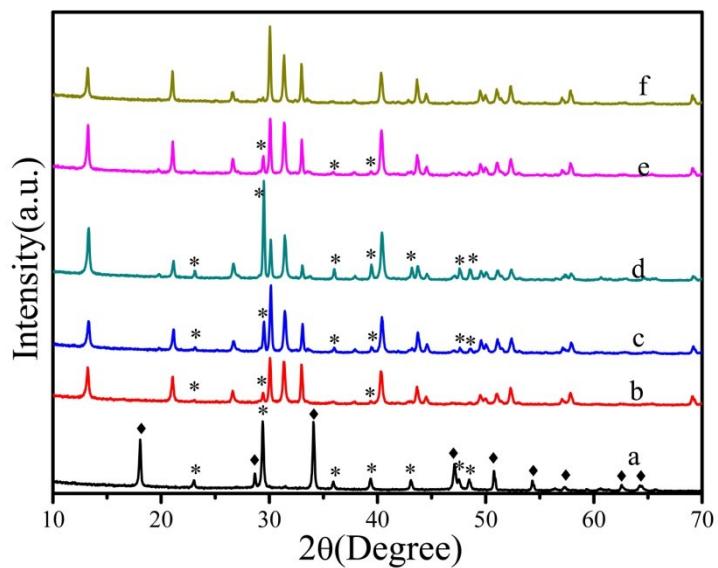


Figure SI-6 the influence of reaction time (a) 30s, (b) 10 min, (c) 6h, (d) 12h, (e) 18h, (f) 24h.♦the crystalline phase of  $\text{Ca}(\text{OH})_2$ , \* the crystalline phase of  $\text{CaCO}_3$ .