

## Electronic Supplementary Information:

# Hydrothermal Synthesis and Upconversion Photoluminescence Properties of Lanthanide Doped $\text{YF}_3$ Sub-microflowers

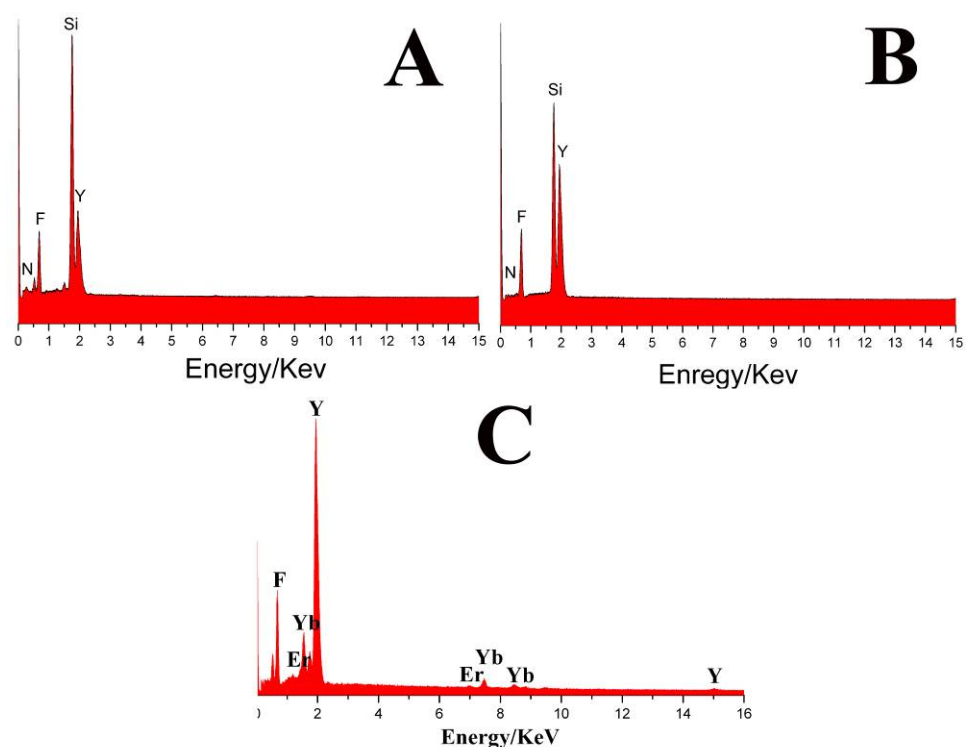
Song Wang, Shuyan Song, Ruiping Deng, Hailing Guo, Yongqian Lei, Feng Cao,  
Xiyan Li, Shengqun Su, and Hongjie Zhang\*

State Key Laboratory of Rare Earth Resource Utilizations,  
Changchun Institute of Applied Chemistry, Chinese Academy of Sciences,  
Changchun, 130022, Jilin, China.

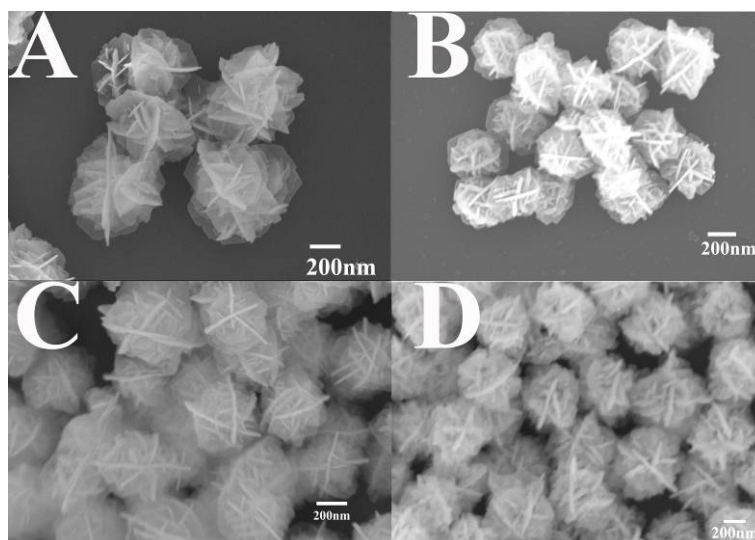
E-mail: hongjie@ciac.jl.cn; Fax: +86 431 8569 8041;

Tel: +86 431 8526 2127

Graduate School of the Chinese Academy of Sciences, Beijing, 100039,  
P. R. China



**Fig. S1** X-ray Energy-dispersive spectroscopy of (A) as-prepared precursors before calcinations, (B)  $\text{YF}_3$  sub-microflowers, and (C)  $\text{YF}_3:10\% \text{Yb}^{3+}/2\% \text{Er}^{3+}$  sub-microflowers.



**Fig. S2** SEM images of YF<sub>3</sub> sub-microflowers obtained at different amount of NH<sub>4</sub>OH added to initial solution , and SEM images of the YF<sub>3</sub> sub-microflowers obtained at different hydrothermal temperature.