

### Supporting Information

BaCaLu<sub>2</sub>F<sub>10</sub>:Ln<sup>3+</sup> (Ln = Eu, Dy, Tb, Sm, Yb/Er, Yb/Ho) Spheres: Ionic Liquid-based  
Synthesis and Luminescence Properties

Wei Liu<sup>a,b</sup>, Qi Sun<sup>a</sup>, Ming Yan<sup>b</sup>, Yanhua Song<sup>a\*</sup>, Xiuqing Zhou<sup>a</sup>, Ye Sheng<sup>a</sup>, Keyan  
Zheng<sup>a</sup>, Haifeng Zou<sup>a\*</sup>

<sup>a</sup> College of Chemistry, Jilin University, 130012, P. R. China.

<sup>b</sup> Department of Spinal Surgery, First Hospital, Jilin University, Changchun, Jilin,  
130021, P. R. China.

\*To whom correspondence should be addressed. E-mail: yhsong@jlu.edu.cn (Y. S.);  
zouhf@jlu.edu.cn (H. Z.)

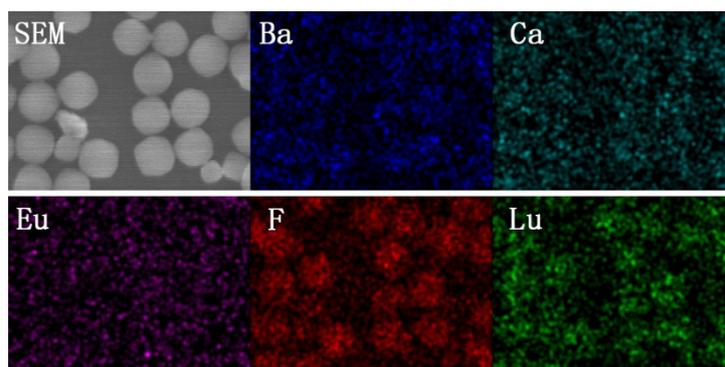


Figure S1 SEM image and EDS mapping for each element in BaCaLu<sub>2</sub>F<sub>10</sub>:6%Eu<sup>3+</sup>

Table S1 Quantum yields of BaCaLu<sub>2</sub>F<sub>10</sub>:RE<sup>3+</sup> (RE = Eu, Dy, Tb, Sm)

Sample	Quantum yield (%)									
	x=0.01	x=0.02	x=0.03	x=0.04	x=0.05	x=0.06	x=0.07	x=0.08	x=0.09	x=0.10
BaCaLu <sub>2</sub> F <sub>10</sub> :xEu <sup>3+</sup>	15.15	18.46	34.35	35.07	51.94	80	72.15	60	22.69	22.16
BaCaLu <sub>2</sub> F <sub>10</sub> :xDy <sup>3+</sup>	2.32	13.85	7.29	4.79	4.11					
BaCaLu <sub>2</sub> F <sub>10</sub> :0.05Tb <sup>3+</sup>	45.04									
BaCaLu <sub>2</sub> F <sub>10</sub> :0.05Sm <sup>3+</sup>	40.18									