## **Supplementary Information**

## Realizing Emission Color Tuning, Ratiometric Optical Thermometry

## and Temperature-induced Redshift Investigation in Novel Eu<sup>3+</sup>

## Doped Ba<sub>3</sub>La(VO<sub>4</sub>)<sub>3</sub> Phosphors

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Figure S1. The emission spectra ( $\lambda_{ex}$ =319 nm) of Ba<sub>3</sub>La<sub>1-x</sub>(VO<sub>4</sub>)<sub>3</sub>: xSm<sup>3+</sup> phosphors Figure S2. The temperature-dependent emission spectra of Ba<sub>3</sub>La<sub>0.95</sub>(VO<sub>4</sub>)<sub>3</sub>: 0.05Sm<sup>3+</sup> under 313 nm excitation.

Figure S3. The emission spectra ( $\lambda_{ex}$ =326nm) of Ba<sub>3</sub>La<sub>1-x</sub>(VO<sub>4</sub>)<sub>3</sub>: xDy<sup>3+</sup> phosphors Figure S4. The temperature-dependent emission spectra of Ba<sub>3</sub>La<sub>0.97</sub>(VO<sub>4</sub>)<sub>3</sub>: 0.03Dy<sup>3+</sup> under 326 nm excitation.

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Figure S1. The emission spectra ( $\lambda_{ex}$ =319 nm) of Ba<sub>3</sub>La<sub>1-x</sub>(VO<sub>4</sub>)<sub>3</sub>: xSm<sup>3+</sup> phosphors.



**Figure S2**. The temperature-dependent emission spectra of  $Ba_3La_{0.95}(VO_4)_3$ : 0.05Sm<sup>3+</sup> under 313 nm excitation.



Figure S3. The emission spectra ( $\lambda_{ex}$ =326nm) of Ba<sub>3</sub>La<sub>1-x</sub>(VO<sub>4</sub>)<sub>3</sub>: xDy<sup>3+</sup> phosphors.



**Figure S4**. The temperature-dependent emission spectra of  $Ba_3La_{0.97}(VO_4)_3$ : 0.03Dy<sup>3+</sup> under 326 nm excitation.