

Energy transfer properties of a single-phase $\text{Na}_3\text{Gd}(\text{PO}_4)_2: \text{Eu}^{2+}$, Mn^{2+} phosphor with excellent thermal stability for w- LEDs

Supplementary Information

Meiling Xie, Meihua Wu, Minghao Fang*, Zhaohui Huang, Yan'gai Liu, Xiaowen Wu, Xin Min*
Beijing Key Laboratory of Materials Utilization of Nonmetallic Minerals and Solid Wastes,
National Laboratory of Mineral Materials, School of Materials Science and Technology, China
University of Geosciences (Beijing), Beijing 100083, P.R. China

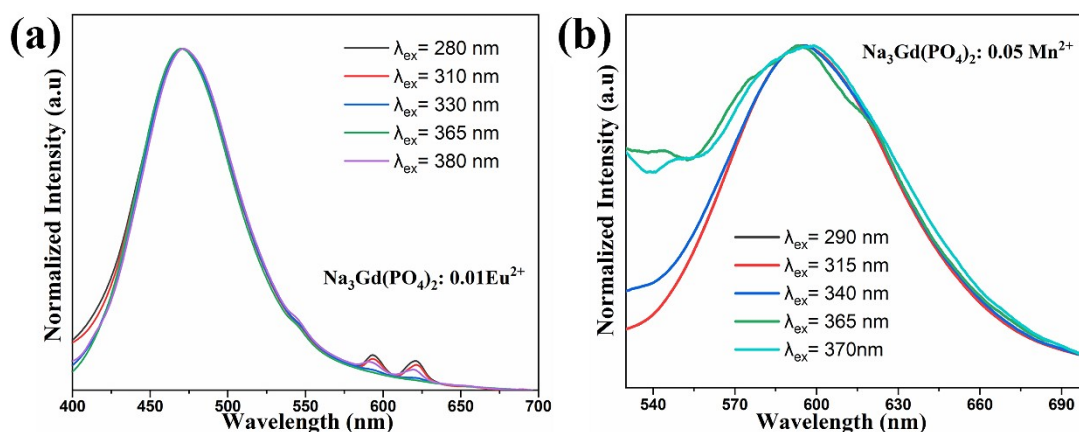


Fig. S1. The normalized emission spectra of the $\text{Na}_3\text{Gd}(\text{PO}_4)_2: 0.01 \text{Eu}^{2+}$ phosphor (a) and $\text{Na}_3\text{Gd}(\text{PO}_4)_2: 0.05 \text{Mn}^{2+}$ phosphor (b)

* Corresponding author. Tel./Fax: +86-10-82322186.

E-mail: minx@cugb.edu.cn (Xin Min), fmh@cugb.edu.cn (Minghao Fang)

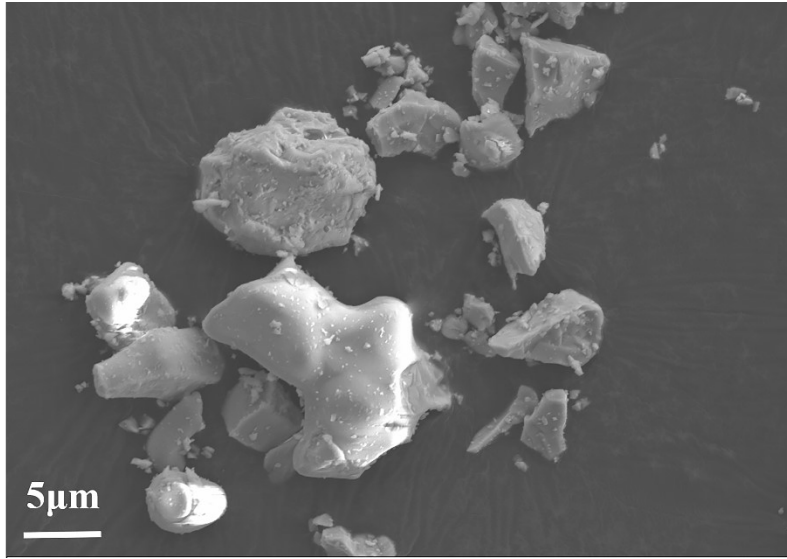


Fig. S2. The SEM micrograph of Na₃Gd(PO₄)₂: 0.01 Eu²⁺, 0.05Mn²⁺ phosphor

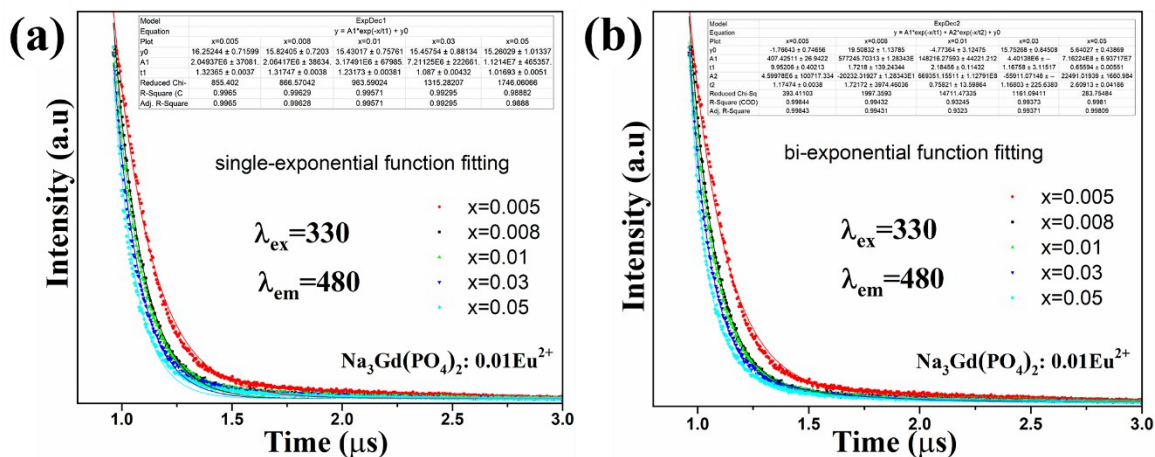


Fig. S3. Single-exponential function fitting (a) and bi-exponential function fitting of decay curve of the $\text{Na}_3\text{Gd}(\text{PO}_4)_2: 0.01\text{Eu}^{2+}$ phosphor

As shown Fig. S3, we performed single-exponential function fitting and bi-exponential function fitting, respectively. As can be seen from the value of R-Square in the tables, the results show that the single exponential fitting equation is more suitable.

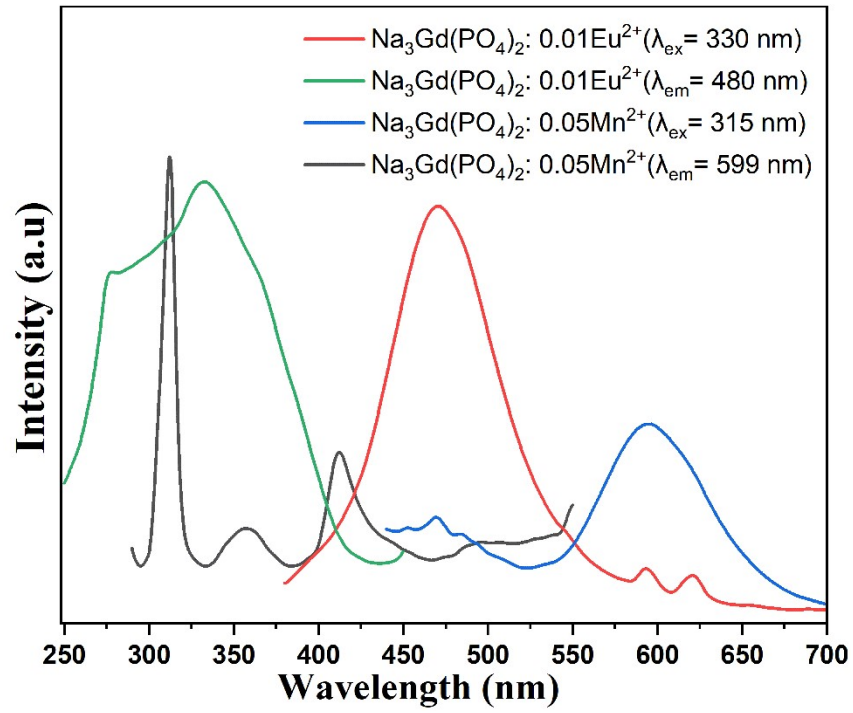


Fig. S4. PLE and PL spectra of $\text{Na}_3\text{Gd}(\text{PO}_4)_2: 0.01 \text{Eu}^{2+}$ and $\text{Na}_3\text{Gd}(\text{PO}_4)_2: 0.05 \text{Mn}^{2+}$ phosphor