## **Supporting Information**

## Novel Ce<sup>3+</sup> activated Lu<sub>3</sub>MgAl<sub>3</sub>SiO<sub>12</sub> garnet phosphor for blue chip light-emitting diodes with excellent performance

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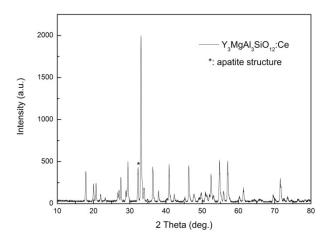
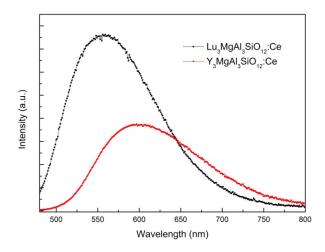
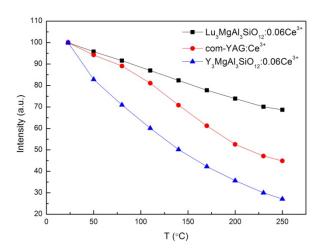


Figure S1 XRD pattern of synthesized Y<sub>3</sub>MgAl<sub>3</sub>SiO<sub>12</sub>:Ce phosphor.



 $Figure~S2~PL~spectra~of~Lu_3MgAl_3SiO_{12}: Ce~and~Y_3MgAl_3SiO_{12}: Ce~phosphors. \\$ 



 $Figure~S3~The~brightness~\textit{vs}~temperature~for~Lu_3MgAl_3SiO_{12}:Ce,~Y_3MgAl_3SiO_{12}:Ce~and~com-YAG:Ce~phosphors.$