Electronic Supplementary Material (ESI) for Dalton Transactions.

Supporting Information file

$La_6Si_4S_{17}:Ce^{3+}$: Luminescence and Lighting Application of a Novel Green-Emitting Phosphor

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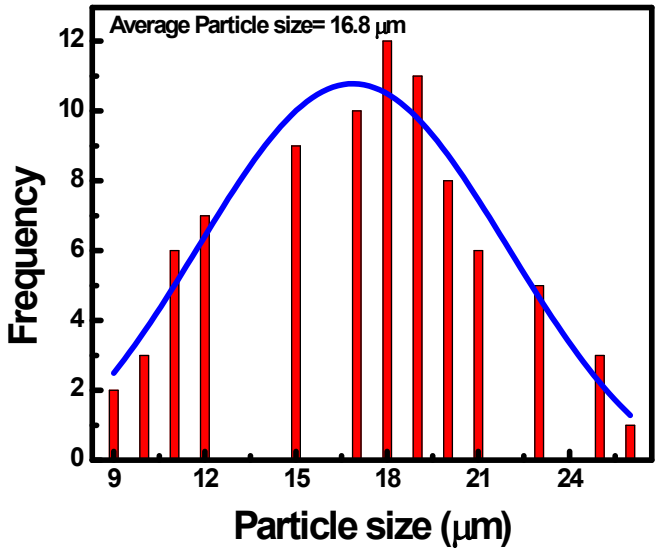

Figure S1: Particle size distribution of $(La_{0.95}Ce_{0.05})_6Si_4S_{17}$ phosphor.

Fig. S1 displays the particle size distribution of the $(La_{0.95}Ce_{0.05})_6Si_4S_{17}$ phosphor. The particle size distribution was carried out via LS- 235 particle size analyzer. From the figure it is clear that the size distribution is narrow with average particle size being 16.8μm.

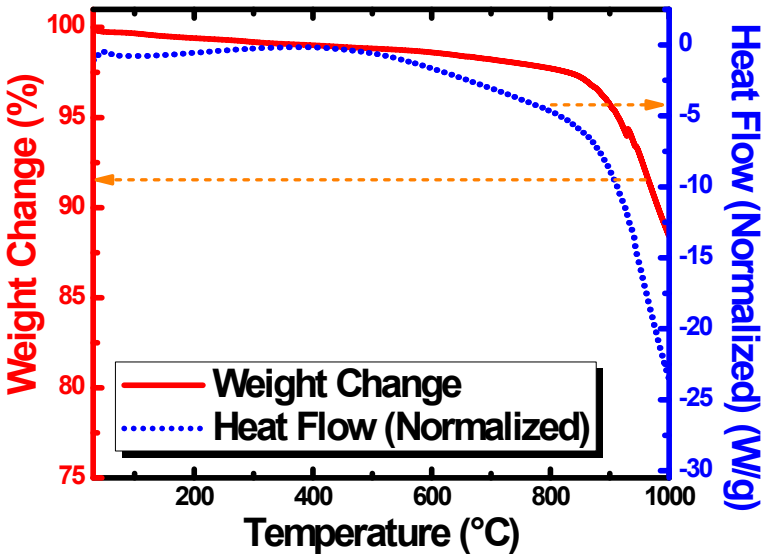

Figure S2: TG-DSC thermal analysis curves of $(La_{0.95}Ce_{0.05})_6Si_4S_{17}$ phosphor.

Figure S2 show the TG- DSC curves of the Ce^{3+} doped $La_6Si_4S_{17}$ phosphor. The thermal analysis was carried out via the heat-treatment in N_2atmosphere up to 1000°C. The heating rate was fixed at 10 °C/ min. One shallow band at ~100 °C in the DSC curve was observed owing to the evaporation of water. For the TG curve, there also existed one stage of weight loss of nearly 0.25% in the lower temperature range due to the evaporation of water. Upto 800 °C, the negligible weight loss was found. It indicated the thermal stability of the $La_6Si_4S_{17}$ phosphor.