Supporting Information

Aerosol synthesized CeO$_2$:Eu$^{3+}$/Na$^+$ red nanophosphor with enhanced photoluminescence

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**Fig. S1.** Schematic diagram of the spray pyrolysis system

**Fig. S2.** Lattice constants and crystallite size as a function of Eu$^{3+}$ content for CeO$_2$:Eu particles prepared by spray pyrolysis.

**Fig. S3.** Comparison of (a) lattice constants and (b) R/O ratio

**Fig. S4.** PL spectra (a) and relative emission intensity of CeO$_2$:Eu$^{3+}$ particles prepared with changing the ethylene glycol.

**Fig. S5.** SEM photos of CeO$_2$:Eu$^{3+}$ particles prepared from the solution containing 0.1 M EG

**Fig. S6.** Emission (a) and excitation (b) spectra of CeO$_2$:Eu$^{3+}$ particles prepared from the solution containing 0.1 M EG.

**Fig. S7.** Excitation (a) and emission (b) spectra of CeO$_2$:Eu$^{3+}$/Na$^+$ particles prepared from the solution containing 0.1 M EG.
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