Electronic Supplementary Information

Observation of a nanoscale phase separation in blue-emitting Ce-doped $SiO_{1.5}$ thin films

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Figure S1 displays the room temperature steady state photoluminescence (PL) spectra of a 2% Ce-doped $SiO_{1.5}$ thin film measured prior to and after annealing at various temperatures between 500°C and 1100°C. All spectra are characterized by a rather broad band located between 330 and 550 nm. As already mentioned in the main text where only the evolution of the Ce-related PL intensity is discussed, the luminescence originates from the allowed electric dipolar 5*d*-4*f* transition of isolated Ce^{3+} ions. Interestingly, as the annealing temperature increases, the PL band shifts to higher wavelength. In the case of Ce, the 5*d* orbitals are highly sensitive to the ligand field. The observed shift can thus be related to a modification of the local environment of Ce^{3+} ions thereby supporting the structural evolution described in the main text.

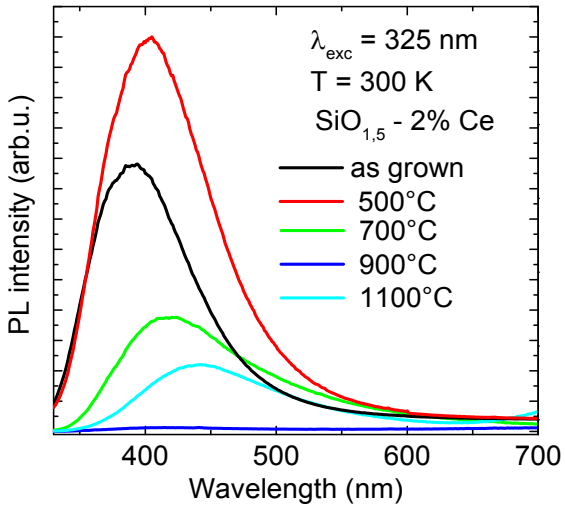

Figure S1. Steady state PL spectra of a 2 % Ce-doped $SiO_{1.5}$ thin film measured at room temperature prior to and after annealing at 500, 700, 900 and 1100°C.