Electronic Supplementary Information

Luminescent $CePO_4$:Tb colloids for H_2O_2 and glucose sensing

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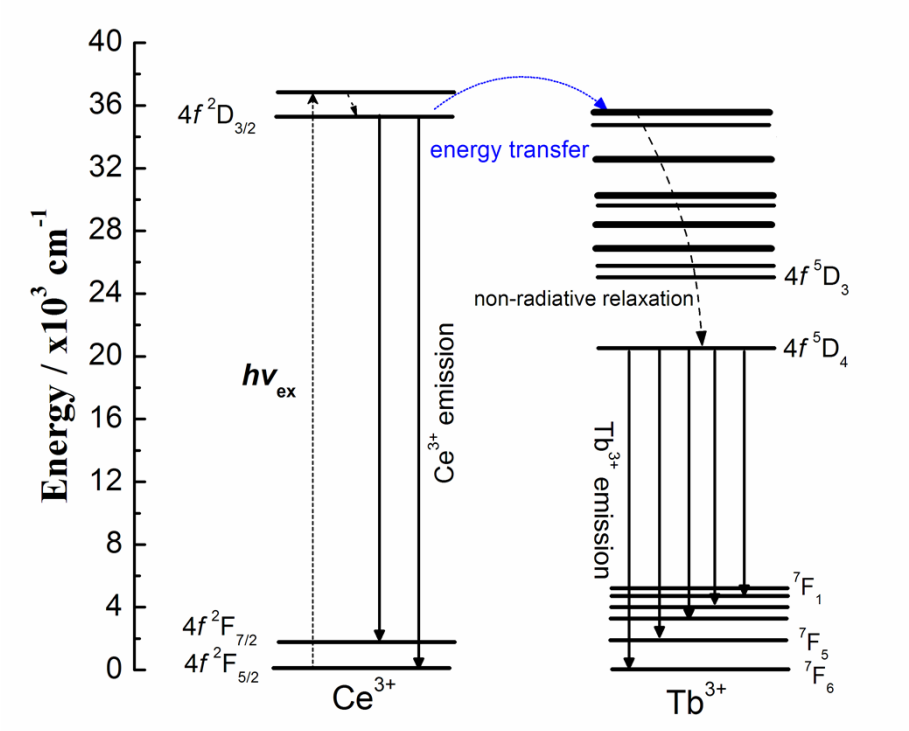

Fig. S1 schematic image for the energy level of Ce^{3+} and Tb^{3+} with optical transitions, and the energy transfer processes Ce^{3+} to Tb^{3+}.

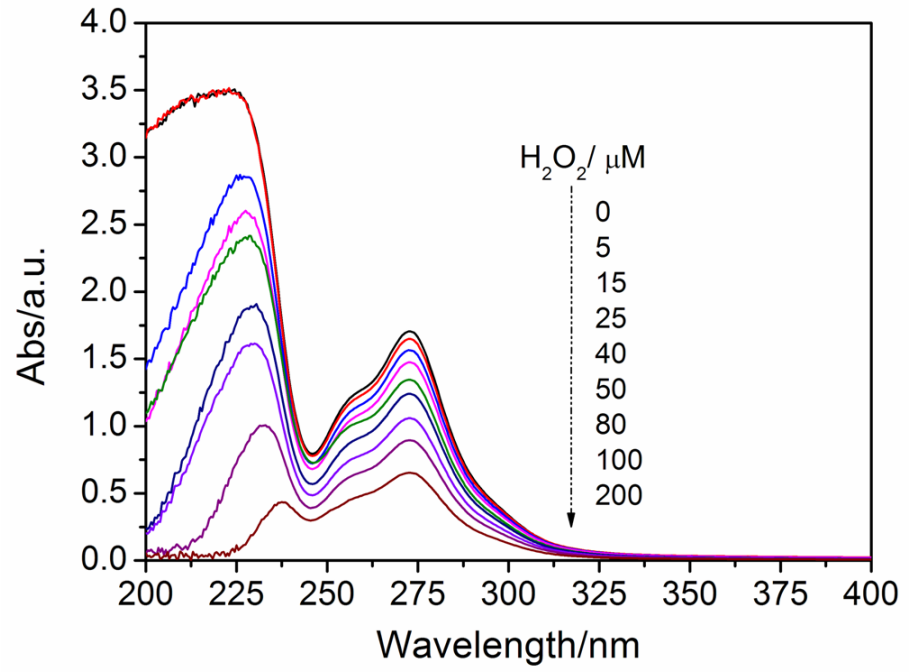

Fig. S2 UV-vis absorption spectra recorded for the as-synthesized $CePO_4$:Tb and for $CePO_4$:Tb samples with treatment of various concentrations of H_2O_2.

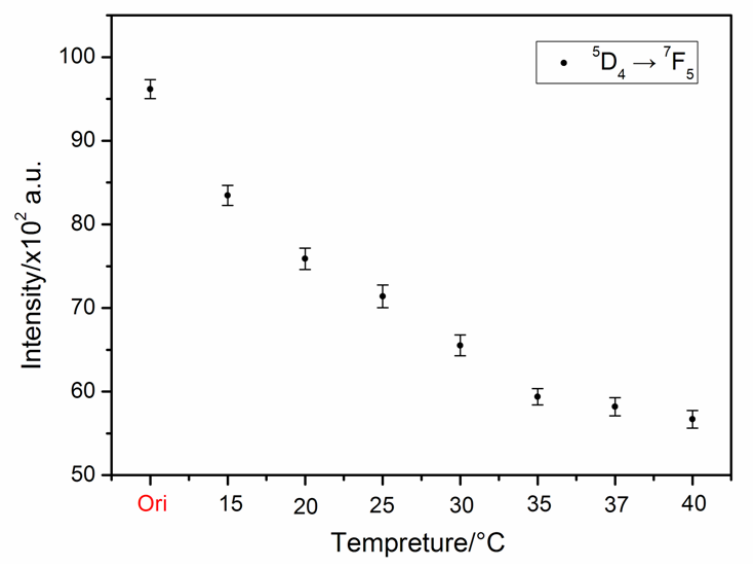

Fig. S3 The temperature-dependent catalytic activity of GOx was examined by recording the emission spectra of $CePO_4$:Tb as a function of temperature in the presence of glucose and GOx. We choose the Tb^{3+} $^5D_4$–$^7F_5$ emission for comparison.

We can see that the emission intensity of $^5D_4$–$^7F_5$ decreases with the increase of temperature up to 37 °C, and keep almost constant while temperature was further increased. Thus, 37 °C was taken as the optimal reaction temperature.