Supplemental information

Luminescence, energy transfer and tunable color of Ce^{3+}, Dy^{3+}/Tb^{3+} doped $BaZn_2(PO_4)_2$ phosphors

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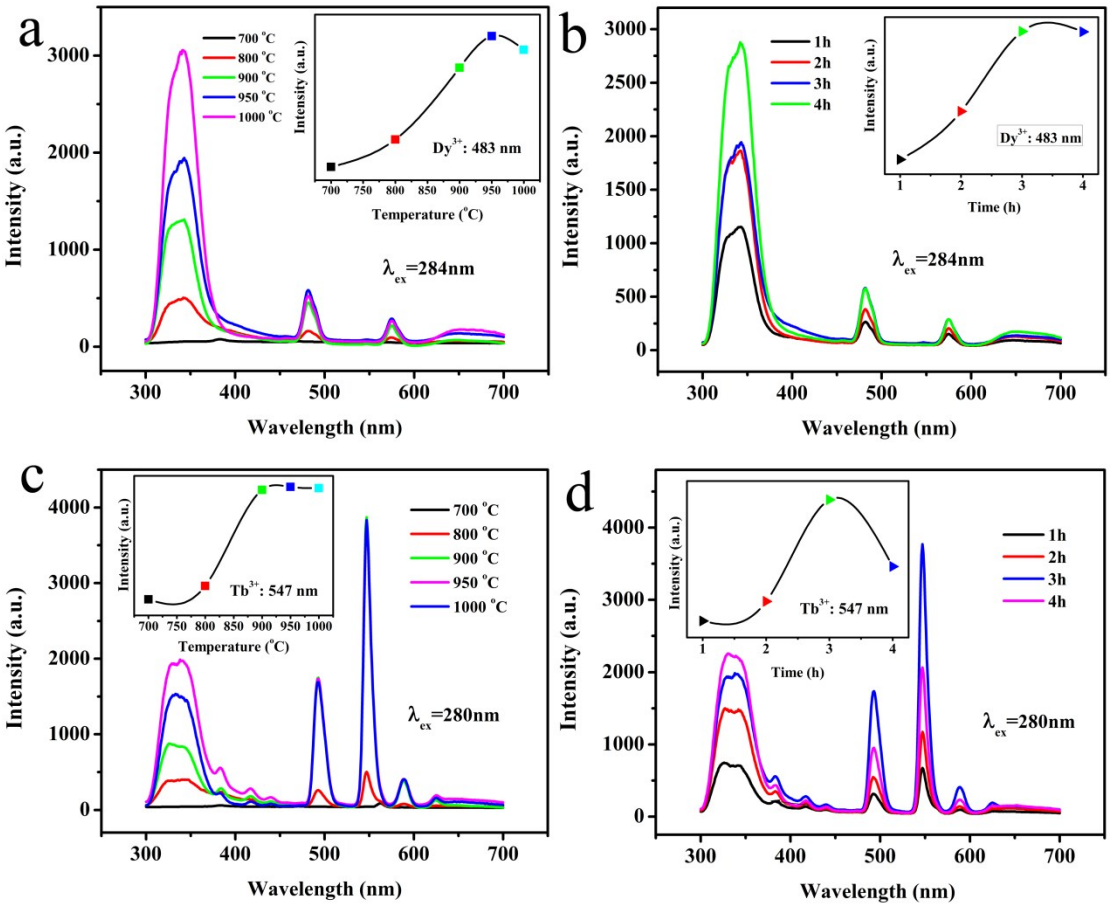

Fig. S1 Emission spectra of (a) BZPO: $0.04Ce^{3+}$, $0.0025Dy^{3+}$; (c) BZPO: $0.04Ce^{3+}$, $0.02Tb^{3+}$ phosphor obtained at different calcination temperature; Emission spectra of (b) BZPO: $0.04Ce^{3+}$,

0.0025Dy^{3+}; (d) BZPO: 0.04Ce^{3+}, 0.02Tb^{3+} phosphor obtained at different holding time when the calcination temperature fixed at 950℃.

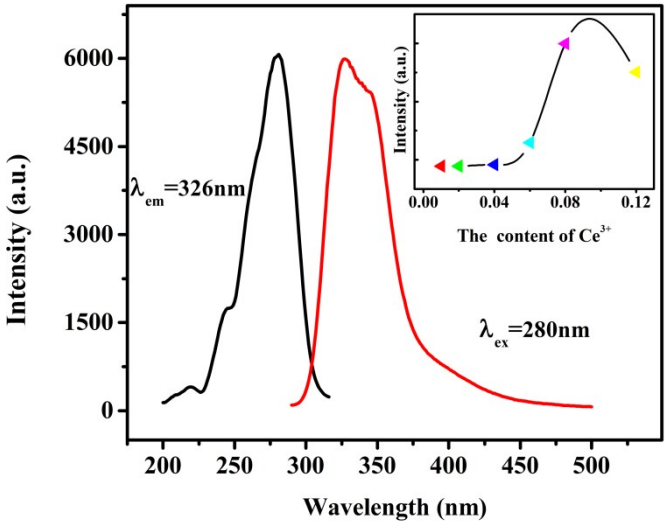

Fig. S2.Excitation and emission spectra of BZPO: 0.04Ce^{3+} phosphor, Inset: photoluminescence intensities of BZPO: xCe^{3+} (x=0.01~0.12) as a function of Ce^{3+} contents.

Table S1 Ionic radii (r) for a given coordination number (CN) of Ba^{2+}, Zn^{2+}, P^{5+}, Ce^{3+}, Dy^{3+}, and Tb^{3+} ions.

Ions	Sites	Symmetry	Coordination numbers (CN)	Ionic radius(Å)
Ba^{2+}	4e	$P2_1/c$	7	1.38
Zn^{2+}	4e	$P2_1/c$	4	0.60
P^{5+}	4e	$P2_1/c$	4	0.17
Ce^{3+}	4e	$P2_1/c$	7	1.07
Dy^{3+}	4e	$P2_1/c$	7	0.97
Tb^{3+}	4e	$P2_1/c$	7	0.98