Supporting Information

Synthesis and luminescence properties of a broadband near-infrared emitting non-gallate long-lasting phosphorescence $Mg_{1.4}Zn_{0.6}SnO_4:Cr^{3+}$ phosphor

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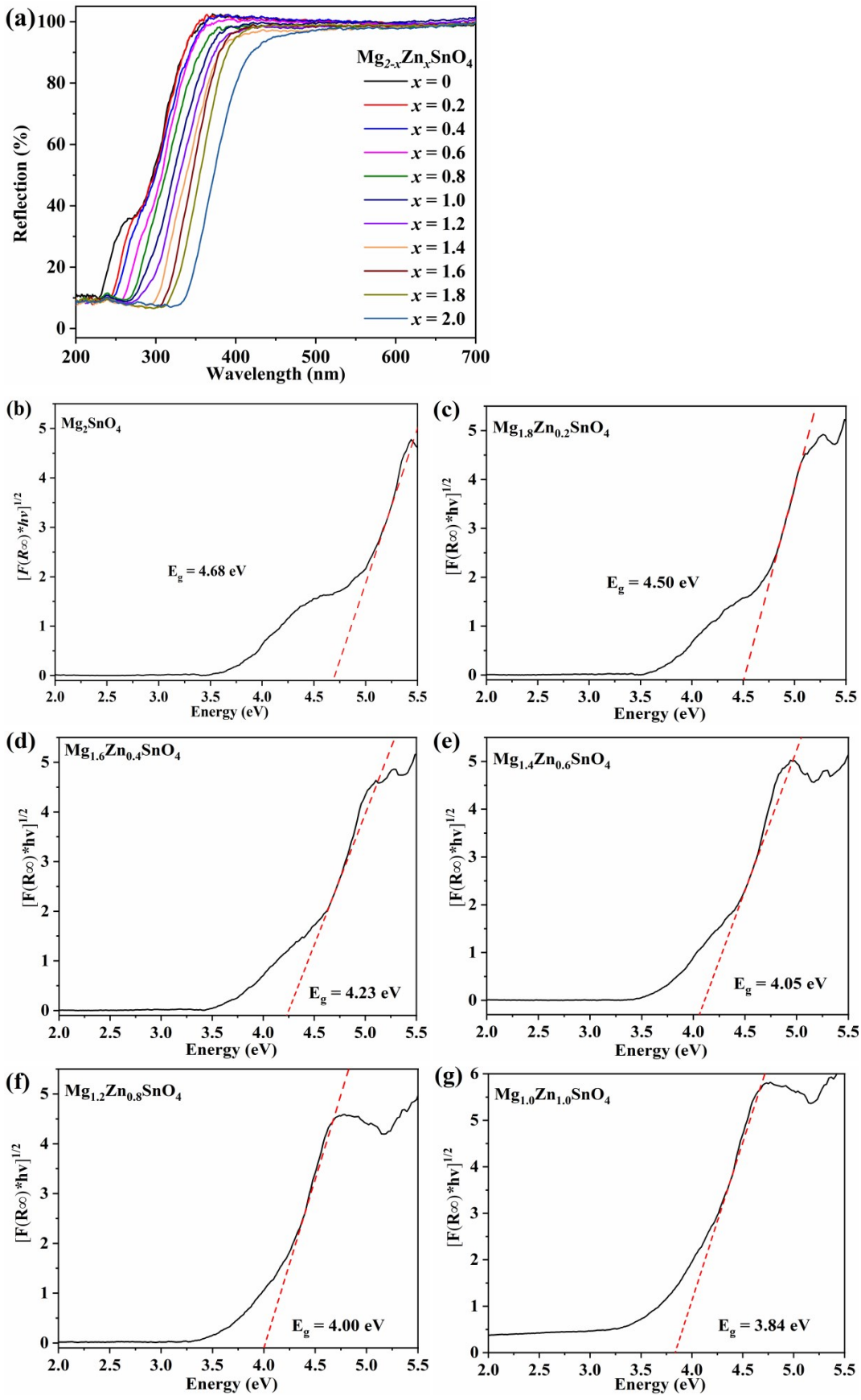
Figures


(a)
Reflection (%)
Wavelength (nm)
Mg2-xZnxSnO4
x = 0
x = 0.2
x = 0.4
x = 0.6
x = 0.8
x = 1.0
x = 1.2
x = 1.4
x = 1.6
x = 1.8
x = 2.0
(b)
Mg2SnO4
Eg = 4.68 eV
(c)
Mg1.8Zn0.2SnO4
Eg = 4.50 eV
(d)
Mg1.6Zn0.4SnO4
Eg = 4.23 eV
(e)
Mg1.4Zn0.6SnO4
Eg = 4.05 eV
(f)
Mg1.2Zn0.8SnO4
Eg = 4.00 eV
(g)
Mg1.0Zn1.0SnO4
Eg = 3.84 eV
[F(R∞)*hv]1/2
Energy (eV)

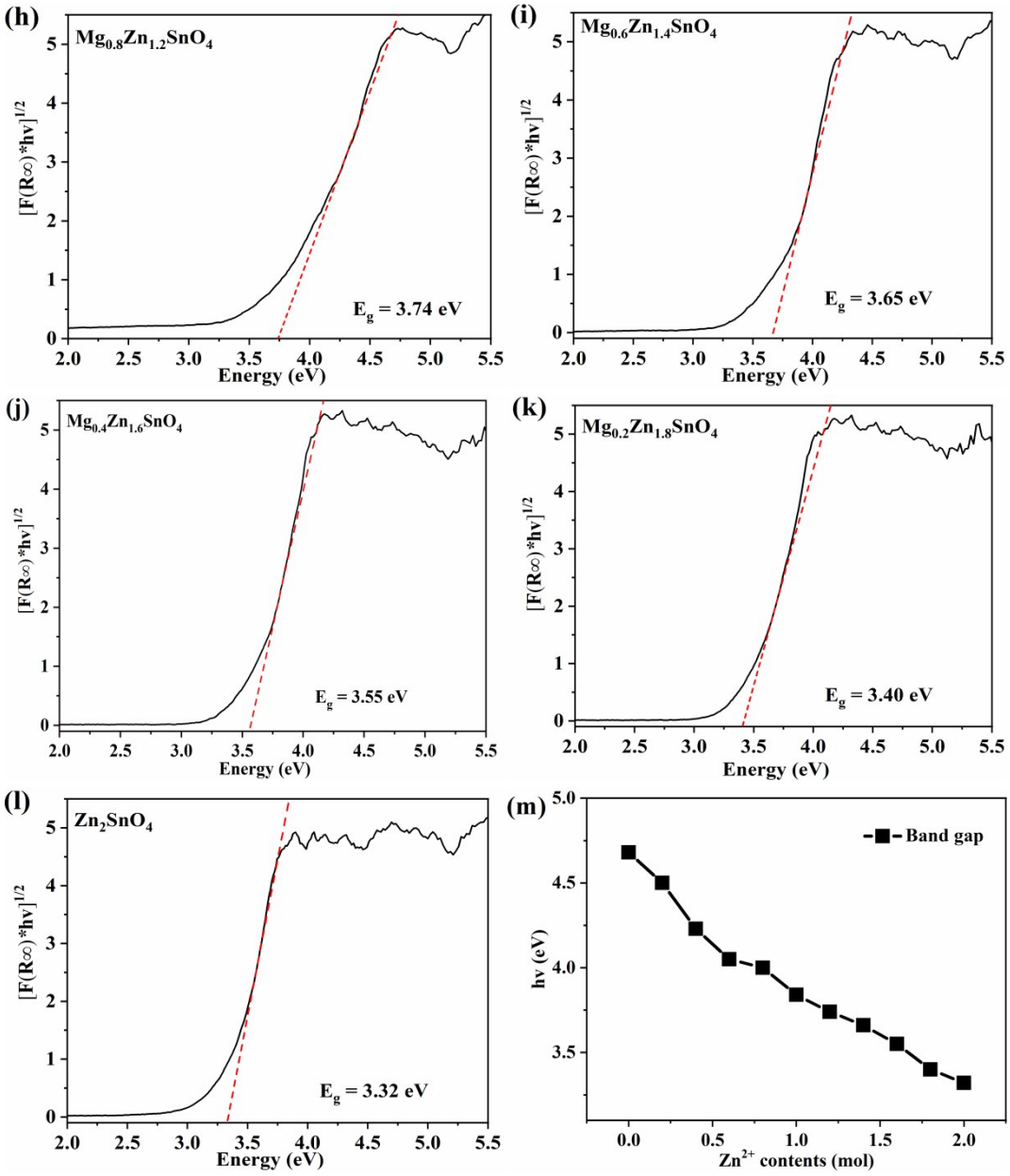


Fig. S1 The $Mg_{2-x}Zn_xSnO_4$ (x = 0, 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0) matrix absorption spectra (a), the results of calculated using the Kubelka-Munk theoretic equation (b-l) and the results of energy gap with the different contents of Zn^{2+} (m).

Table S1 the detail data of Rietveld refinement for structural refinement

Name	Type	Fractional coordinates			Mult	Occupancy	Uiso
Mg1	Mg	0.000	0.000	0.000	16	0.6645	0.05200
Mg2	Mg	0.625	0.625	0.625	8	0.3477	0.00407

Zn1	Zn	0.000	0.000	0.000	16	0.3355	0.04475
Zn2	Zn	0.625	0.625	0.625	8	0.1334	0.00430
Sn1	Sn	0.625	0.625	0.625	8	0.2523	0.01962
Sn2	Sn	0.625	0.625	0.625	8	0.2666	0.01995
O1	O	0.385	0.385	0.385	32	1.0000	0.00261