Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary data

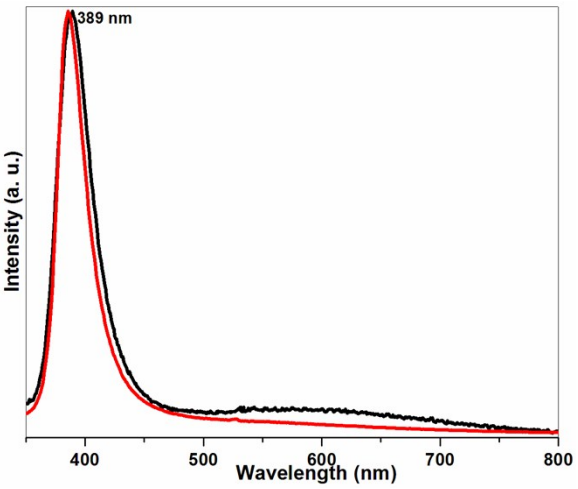

Fig. 1: Normalised photoluminescence spectra of ZnO and $Zn_{0.96}Mg_{0.04}O$ nanoparticles.

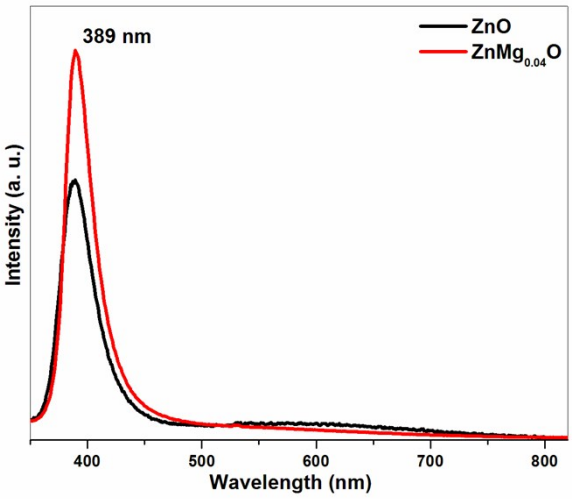

Fig. 2: Photoluminescence spectra of ZnO and $Zn_{0.96}Mg_{0.04}O$ nanoparticles without normalising.

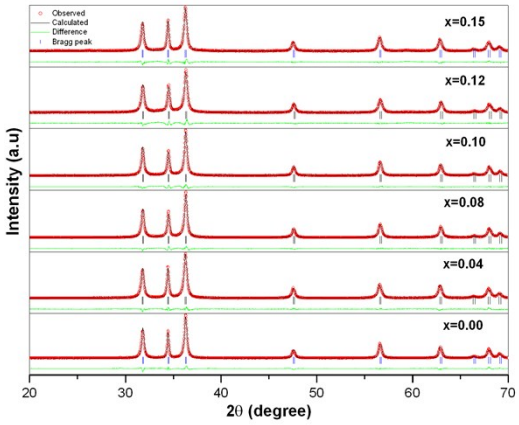

Fig. 3: Le Bail refinements of X-ray diffraction pattern for $Zn_{1-x}Mg_xO$ (x = 0, 0.04, 0.08, 0.12, 0.10 and 0.15) nanoparticles.

Table: Refined paprameters from Le Bail refinements of X-ray diffraction pattern for $Zn_{1-x}Mg_xO$ (x = 0, 0.04, 0.08, 0.12, 0.10 and 0.15) nanoparticles.

Sample name (P 63 m c)	Cell Parameters				
	a=b	c	Volume	c/a	χ^2
089-1397	3.253	5.213	47.77	1.6025	-------
ZnO	3.2491	5.2056	47.5908	1.6022	2.17
$Zn_{0.96}Mg_{0.04}O$	3.2514	5.2076	47.6761	1.6017	3.11
$Zn_{0.92}Mg_{0.08}O$	3.2483	5.2006	47.5236	1.6010	3.12
$Zn_{0.90}Mg_{0.10}O$	3.2487	5.2010	47.5382	1.6009	3.59
$Zn_{0.88}Mg_{0.12}O$	3.2478	5.1981	47.4839	1.6005	3.69
$Zn_{0.85}Mg_{0.15}O$	3.2511	5.2076	47.6685	1.6018	3.43
a, b, and c are in A^o, α= β=90^o and γ=120^o, (D is in nm)					

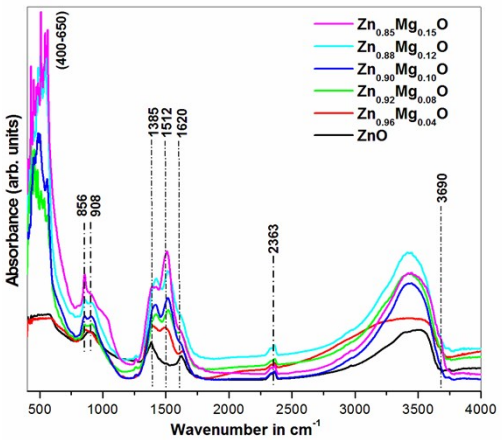

Fig. 4: FT-IR absorbance spectrum of $Zn_{1-x}Mg_xO$ (x = 0, 0.04, 0.08, 0.12, 0.10 and 0.15) nanoparticles.