

**Delayed tunneling of charges to deep traps in ZnO impurity containing Cr³⁺
doped Zn₂TiO₄ inverse spinel[†]
(Supplementary information)**

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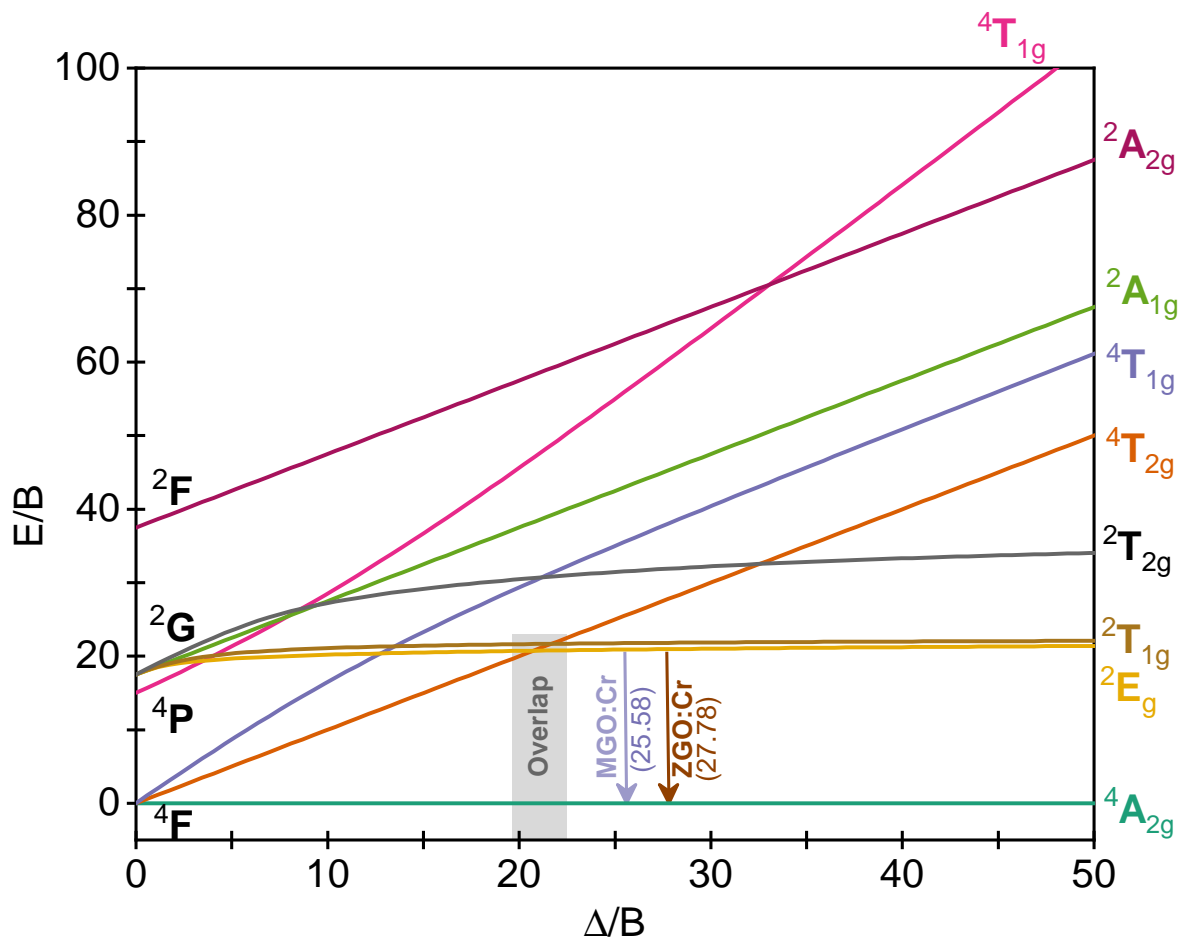


Fig. S1 Tanabe–Sugano diagram of an octahedral coordinated ion with d^3 electronic configuration.

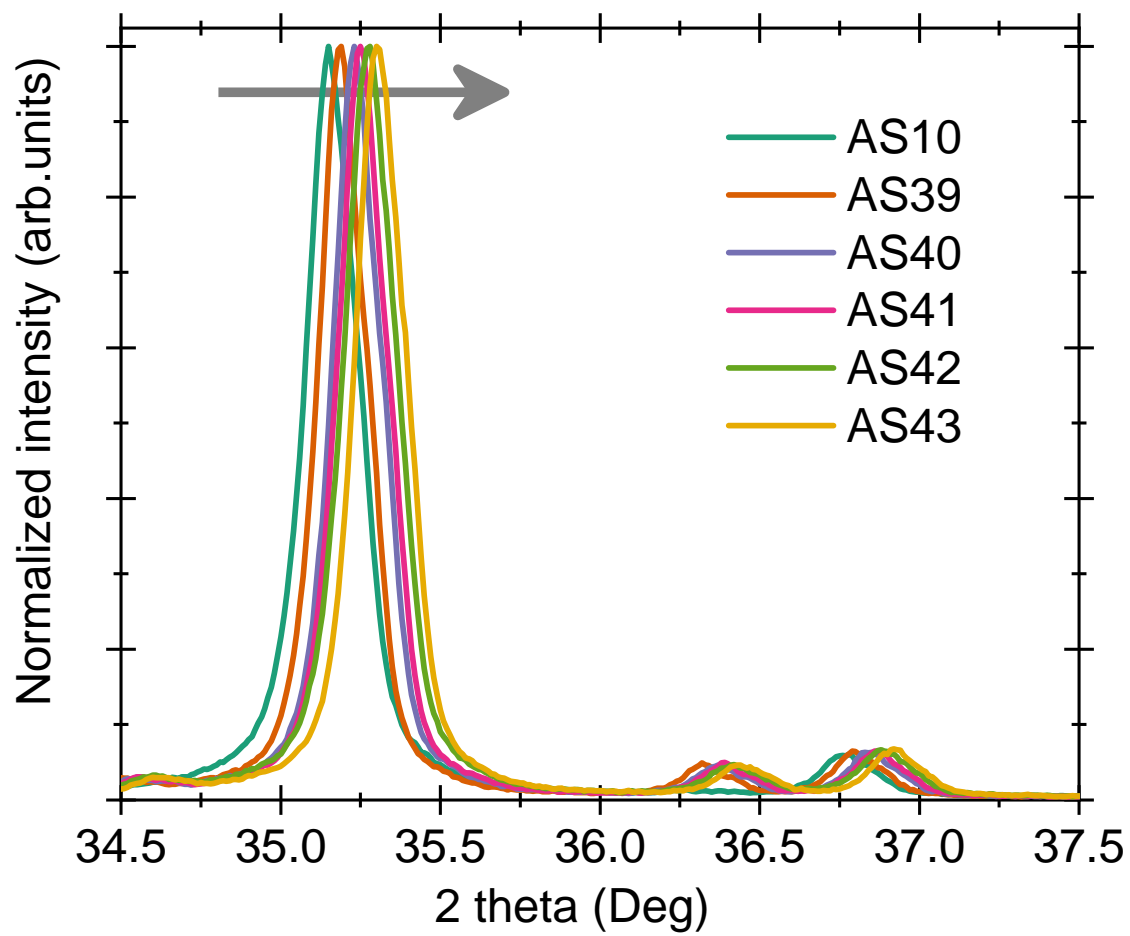


Fig. S2 A shift in the prominent reflection in powder X-ray diffraction pattern of Cr doped Zn_2TiO_4 samples.

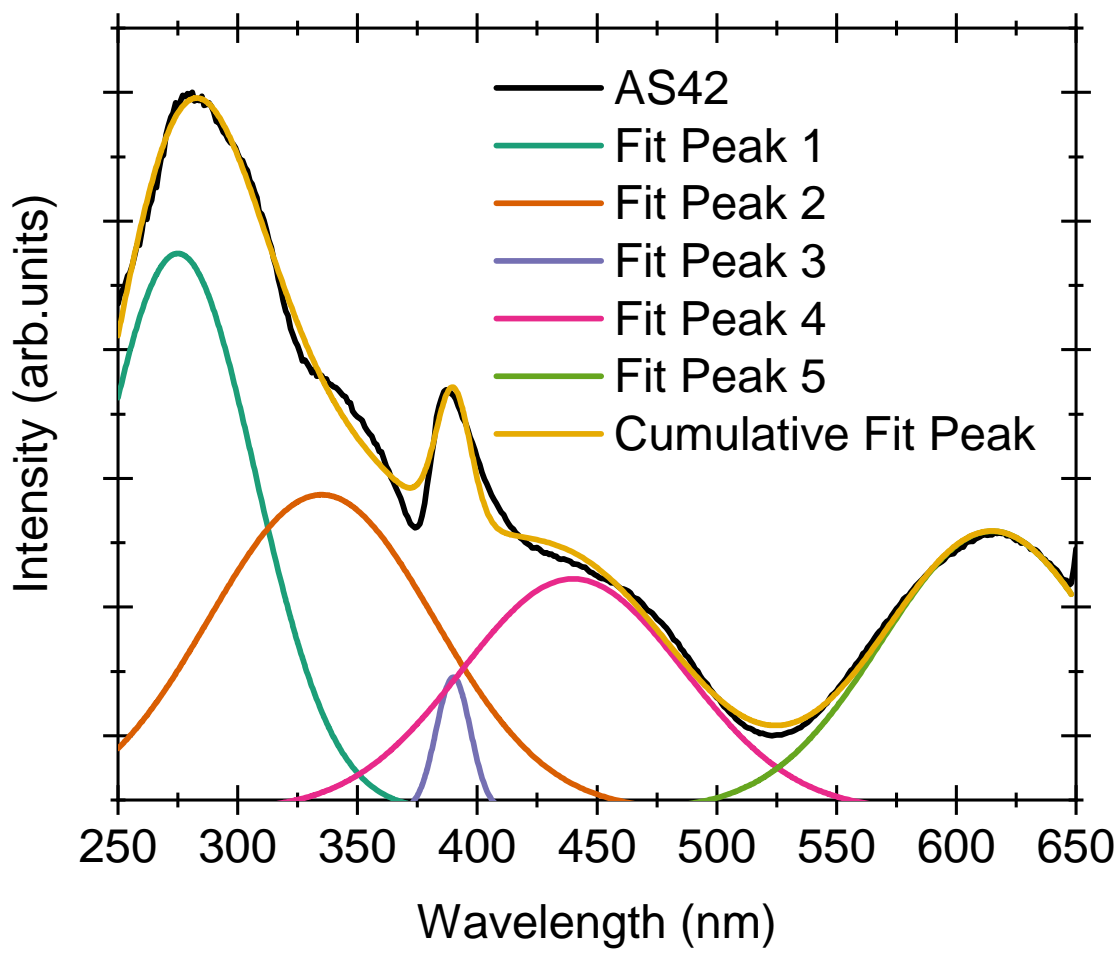


Fig. S3 The deconvolution of photoluminescence excitation spectrum of sample AS42.

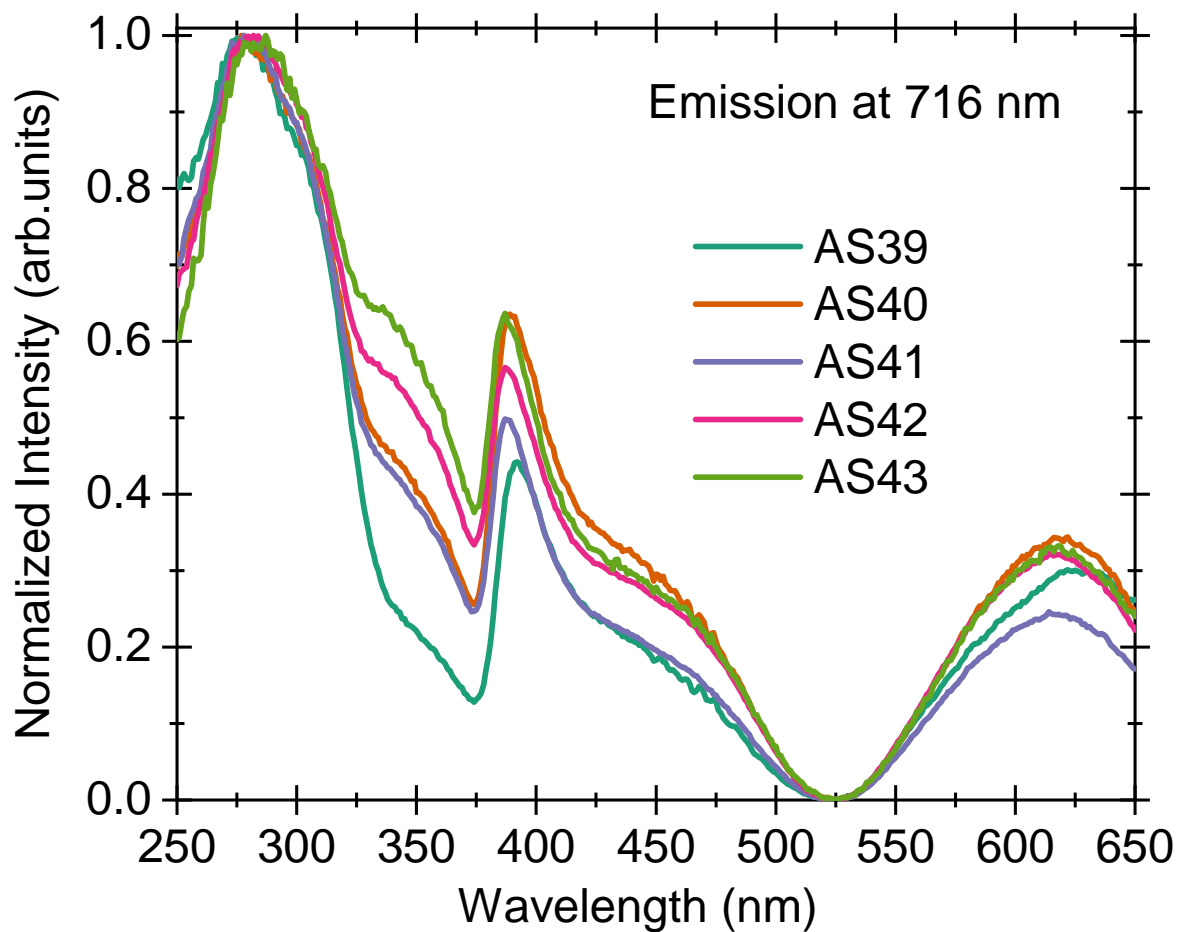


Fig. S4 The photoluminescence excitation spectra for different Cr doped samples measured upon monitoring 716 nm emission band.

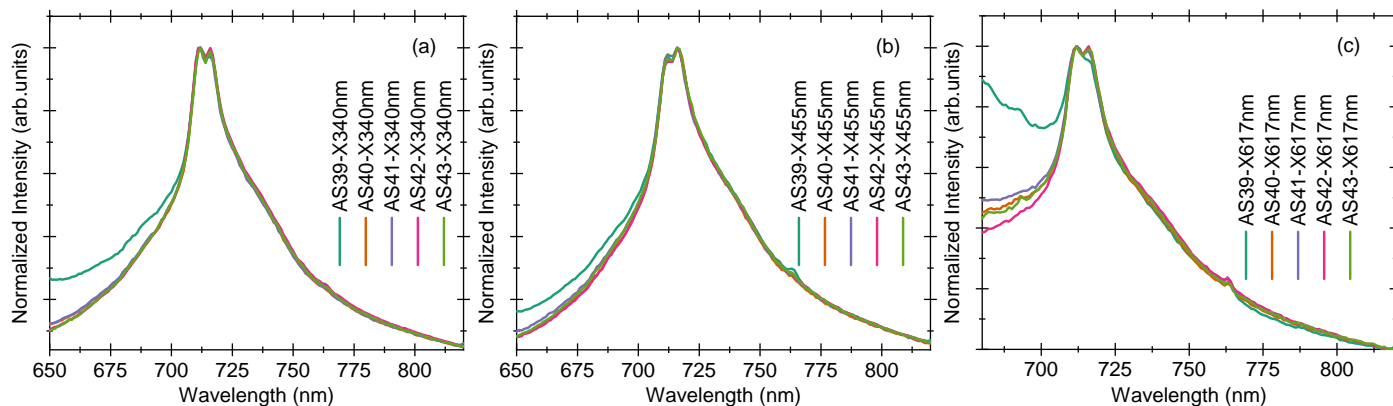


Fig. S5 The photoluminescence emission spectra measured for different Cr doped samples upon excitation with wavelength, (a) 340 nm, (b) 455 nm, and (c) 617 nm. X is used as a symbol for excitation.

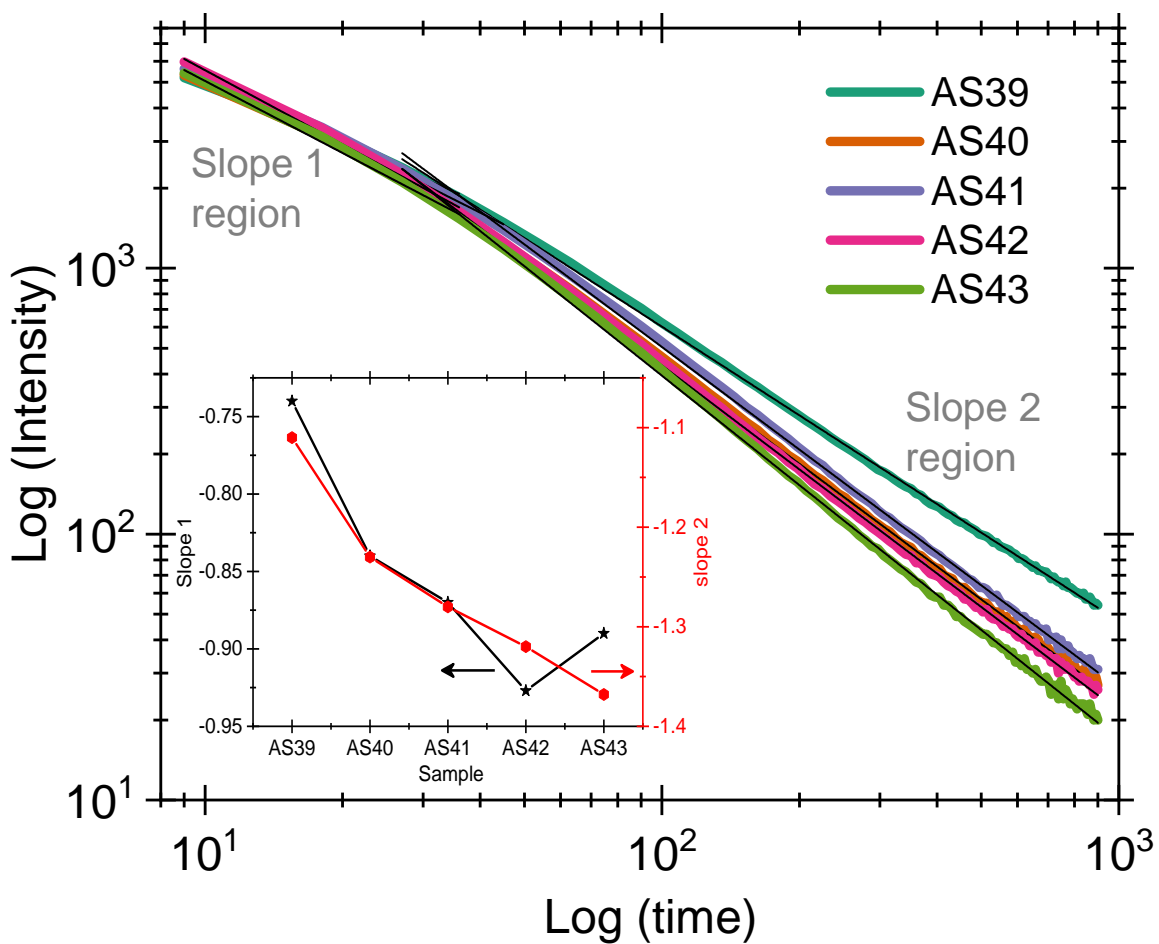


Fig. S6 Fitting of PersL decay curves as shown in Figure 5 of the manuscript using two linear curves to understand the influence of Cr concentration upon the decay curves. The variation of two slopes is shown in inset. An almost linear decrease in slope 1 is observed until sample AS42 which follows an increase in the slope for sample AS43. The slope 2 for all the samples showed a decrease in the values as a function of increasing Cr concentration.