

## Supporting Information Materials

### Low –Temperature Growth of Nanocrystalline Mn Doped ZnS Thin Films Prepared by **Chemical Bath Deposition** and Optical Properties

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Table S-1.Experimental condition of the F-4500 FL Spectrophotometer.

	Measurement type	Data mode:	EX Slit (nm)	EM Slit (nm)	PMT Voltage (V)	EX WL (nm)	EM WL (nm)	Scan speed nm/min
Fluorescence detection	Wavelength scan	Fluorescence	5.0	5.0	700	320-340	590	1200

Table S-2.EDX data for uncoated polycrystalline Si substrate.

Element	Atomic%
C	8.93
O	1.75
Si	88.72
In	0.15
Sn	0.45
Totals	100.00

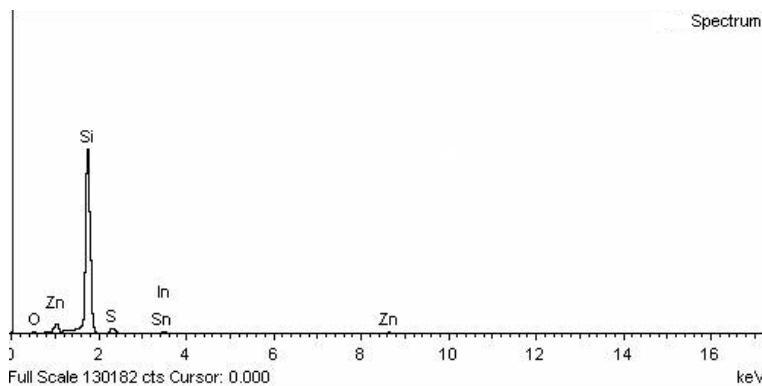


Figure S-1. The EDX spectrum of ZnS:Mn thin films deposited on Si substrate and prepared from the precursor solution with Mn/Zn molar ratio of 4 at 80°C.

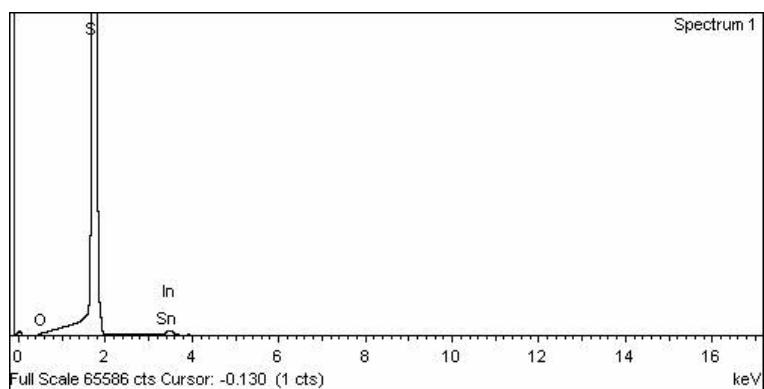


Figure S-2. EDX spectrum of uncoated polycrystalline Si substrate.

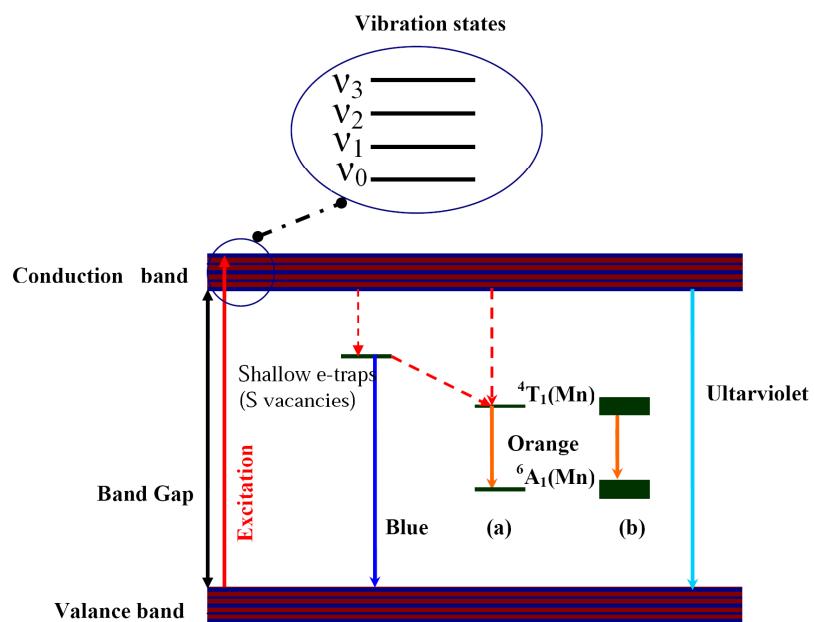


Figure S-3. The energy-level diagram of ZnS:Mn nanoparticles.(a)Low concentration of Mn<sup>2+</sup>(at low deposition time) (b)High concentration of Mn<sup>2+</sup> in ZnS crystal lattice (at high deposition time).