

# New Journal of Chemistry

## ELECTRONIC SUPPLEMENTARY INFORMATION

### **Size dependence of CdS nanoparticles on the precursor concentration and visible light driven photocatalytic degradation of methylene blue**

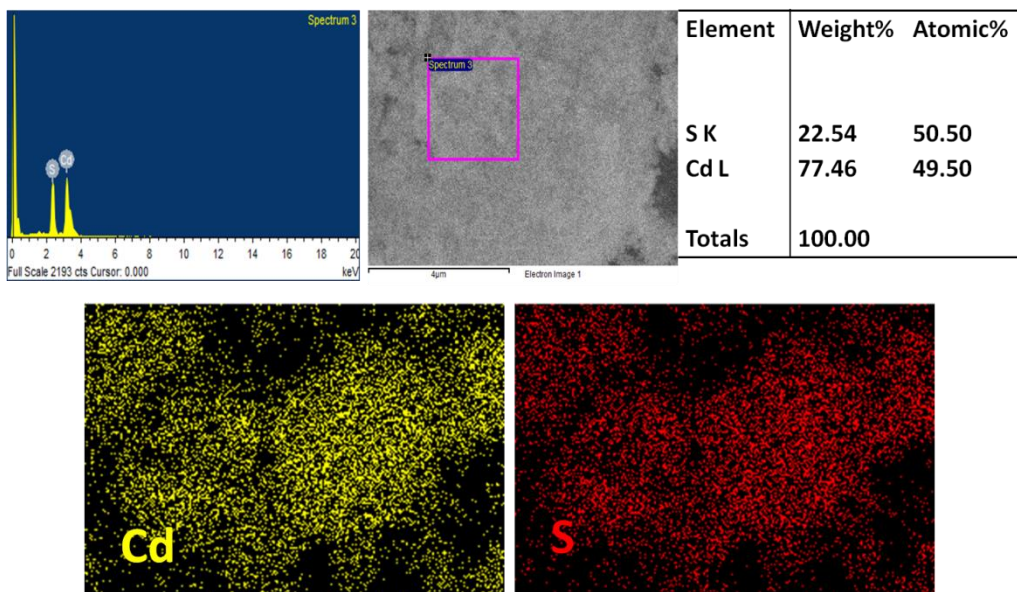
Smriti Thakur, Rupinder Kaur and Sanjay K Mandal\*

Department of Chemical Sciences, Indian Institute of Science Education and Research Mohali,  
Sector 81, Manauli PO, S.A.S. Nagar, Mohali, Punjab 140306, India,

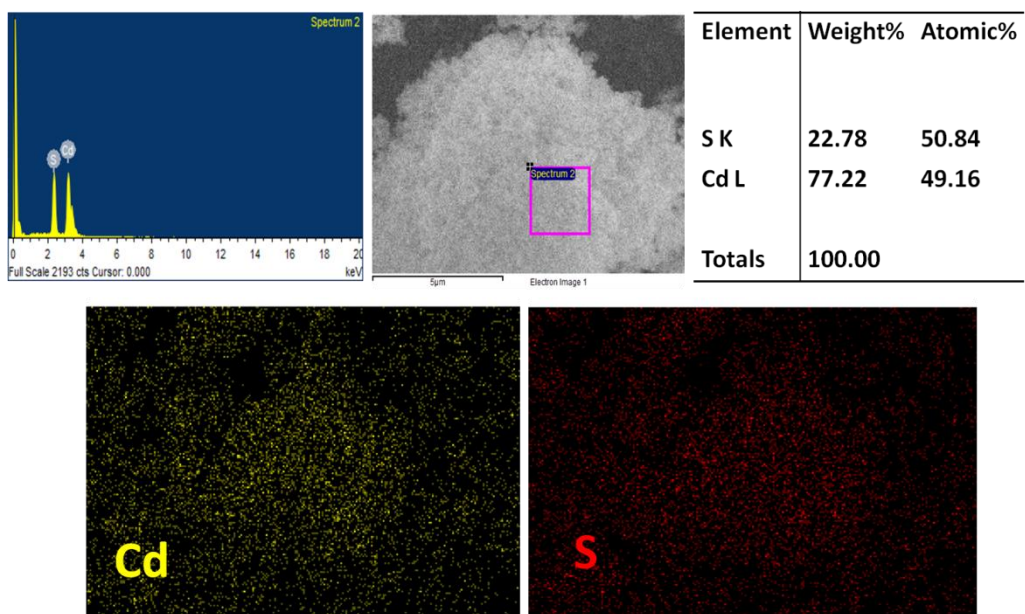
\*[sanjaymandal@iisermohali.ac.in](mailto:sanjaymandal@iisermohali.ac.in)

## Table of Contents

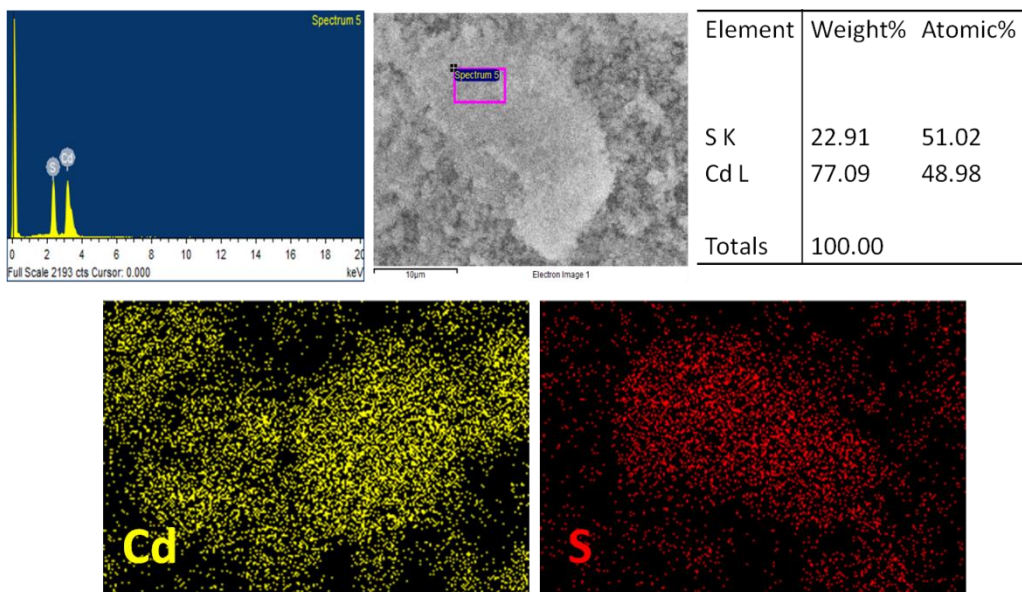
<b>Figures/Tables</b>	<b>Description</b>	<b>Page No.</b>
Figures S1-S6	EDX spectra and elemental mapping of CdS nanoparticles	S3-S5
Figures S7-S8	PXRD patterns of <b>CdS-1</b> and <b>CdS-4</b> after BET surface area analysis and <b>CdS-1</b> recovered after photocatalysis	S6
Table S1	Comparison of rate constants of CdS nanoparticles	S7
Scheme S1	Reactions involved on the surface of CdS catalyst	S8



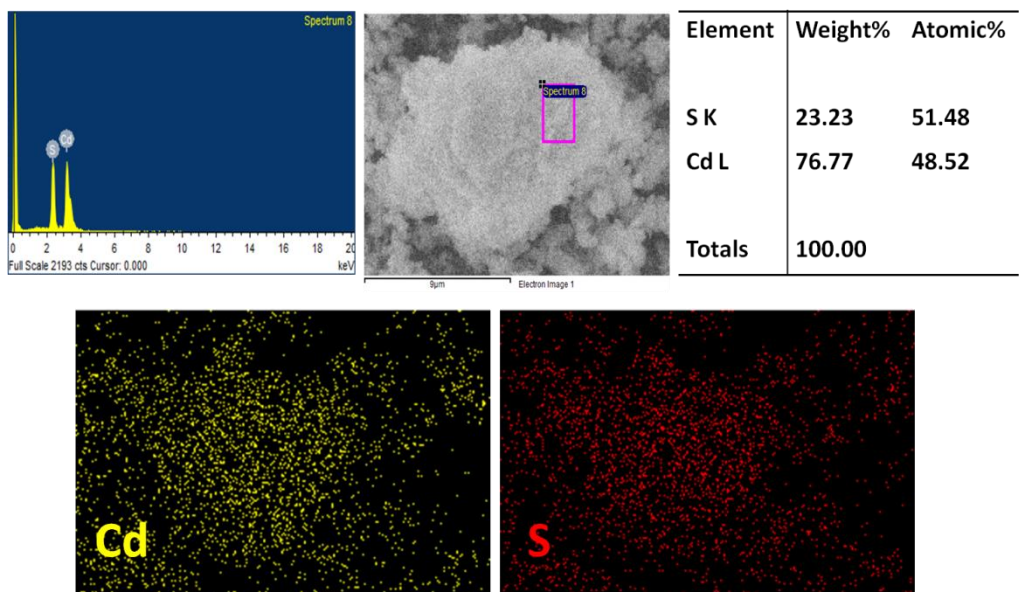
**Fig. S1** EDX spectrum and elemental mapping of CdS-1.



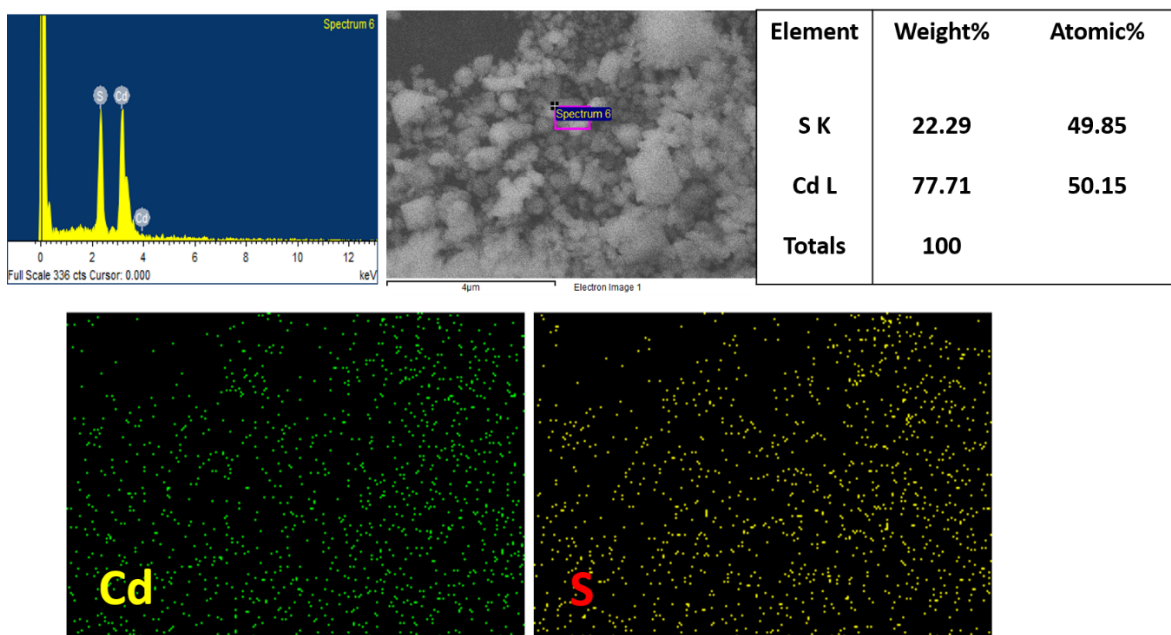
**Fig. S2** EDX spectrum and elemental mapping of CdS-2.



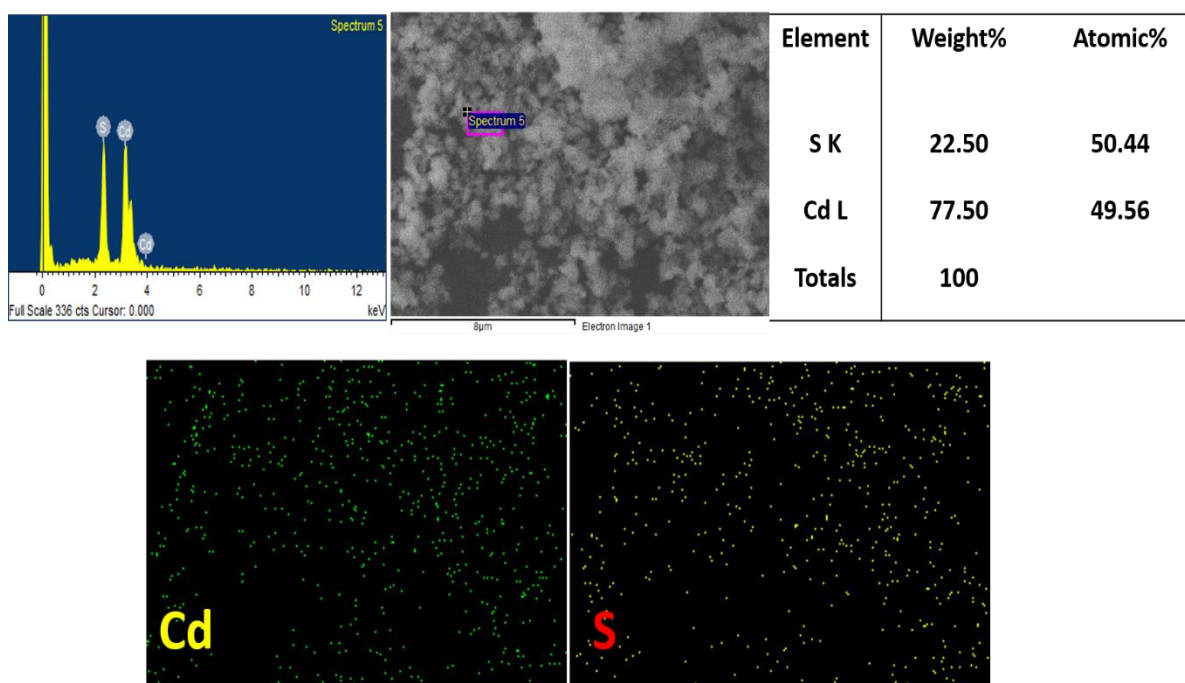
**Fig. S3** EDX spectrum and elemental mapping of **CdS-3**.



**Fig. S4** EDX spectrum and elemental mapping of **CdS-4**.



**Fig. S5** EDX spectrum and elemental mapping of **CdS-5**.



**Fig. S6** EDX spectrum and elemental mapping of **CdS-6**.

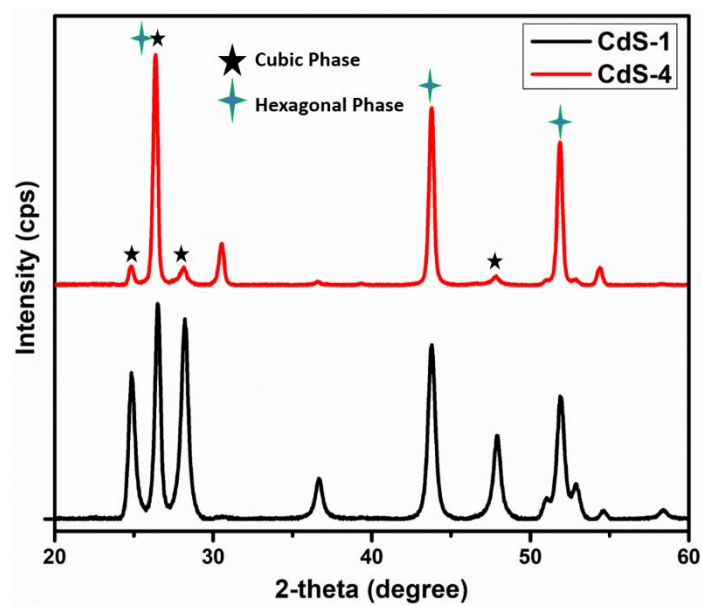


Fig. S7 PXR D patterns of CdS-1 and CdS-4 after the BET surface area analysis.

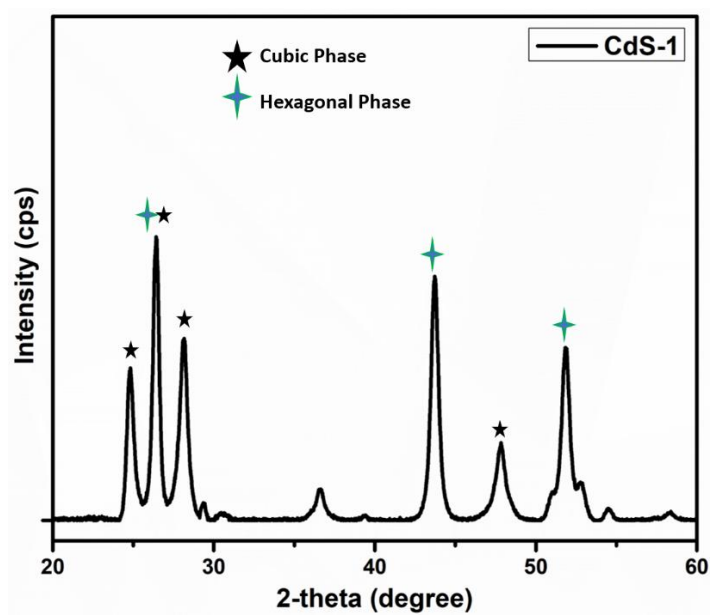


Fig. S8 PXR D pattern of CdS-1 recovered after photocatalysis.

**Table S1.** Comparison of rate constants of CdS nanoparticles (**CdS-1** to **CdS-4**) with literature values.

<b>Morphology</b>	<b>Rate constant (min<sup>-1</sup>)</b>	<b>Time</b>	<b>Reference</b>
<b>Agglomerated Nanoparticles</b>	1.57x10 <sup>-2</sup>	120 min	46
<b>PVP Capped Nanoparticles</b>	0.29x10 <sup>-2</sup>	360 min	47
<b>Hollow microspheres</b>	1.09x10 <sup>-2</sup>	210 min	48, 49
<b>Nanospheres</b>	1.03x10 <sup>-2</sup>	90 min	50
<b>Nanospheres</b>	1.78x10 <sup>-2</sup>	180 min	51
<b>Nanoparticles</b>	1.2x10 <sup>-2</sup>	90 min	52
<b>Nanoparticles</b>	0.4x10 <sup>-2</sup>	140 min	53
<b>CdS-1</b>	1.79x10 <sup>-2</sup>	180 min	<i>This work</i>
<b>CdS-2</b>	1.05x10 <sup>-2</sup>	180 min	<i>This work</i>
<b>CdS-3</b>	0.77x10 <sup>-2</sup>	180 min	<i>This work</i>
<b>CdS-4</b>	0.74x10 <sup>-2</sup>	180 min	<i>This work</i>

**Scheme S1.** Reactions involved on the surface of CdS catalyst.

