Electronic Supplementary Material (ESI) for RSC Advances

Supporting Informations

Facile fabrication of highly efficient, reusable Heterostructured Ag-ZnO-CdO and its twin applications of dye degradation under natural Sun light and Self-Cleaning

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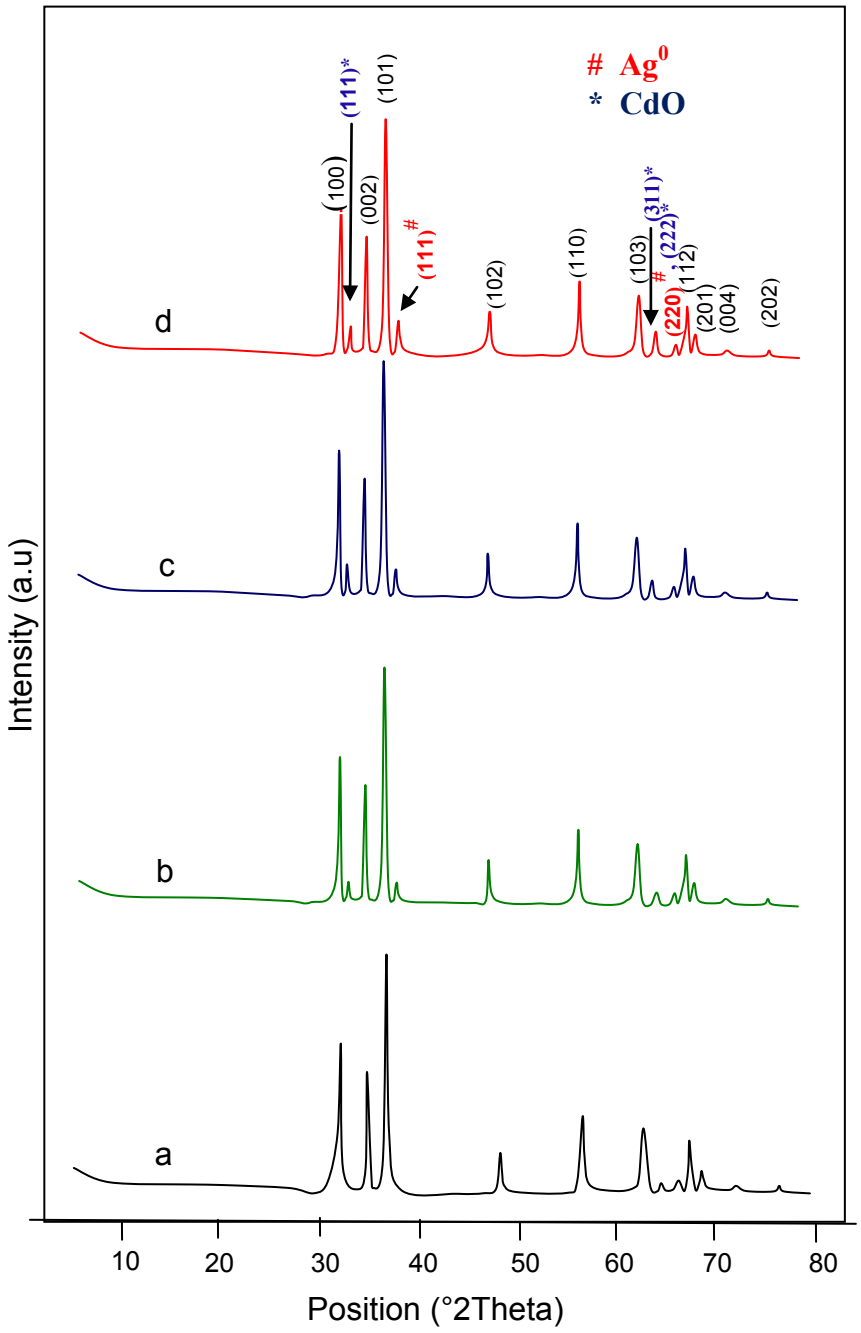

Fig. S1 XRD pattern (a) prepared ZnO, (b) 3wt% of Ag contain Ag-ZnO-CdO, (c) 6 wt% of Ag contain Ag-ZnO-CdO and (d) 9wt% of Ag contain Ag-ZnO-CdO

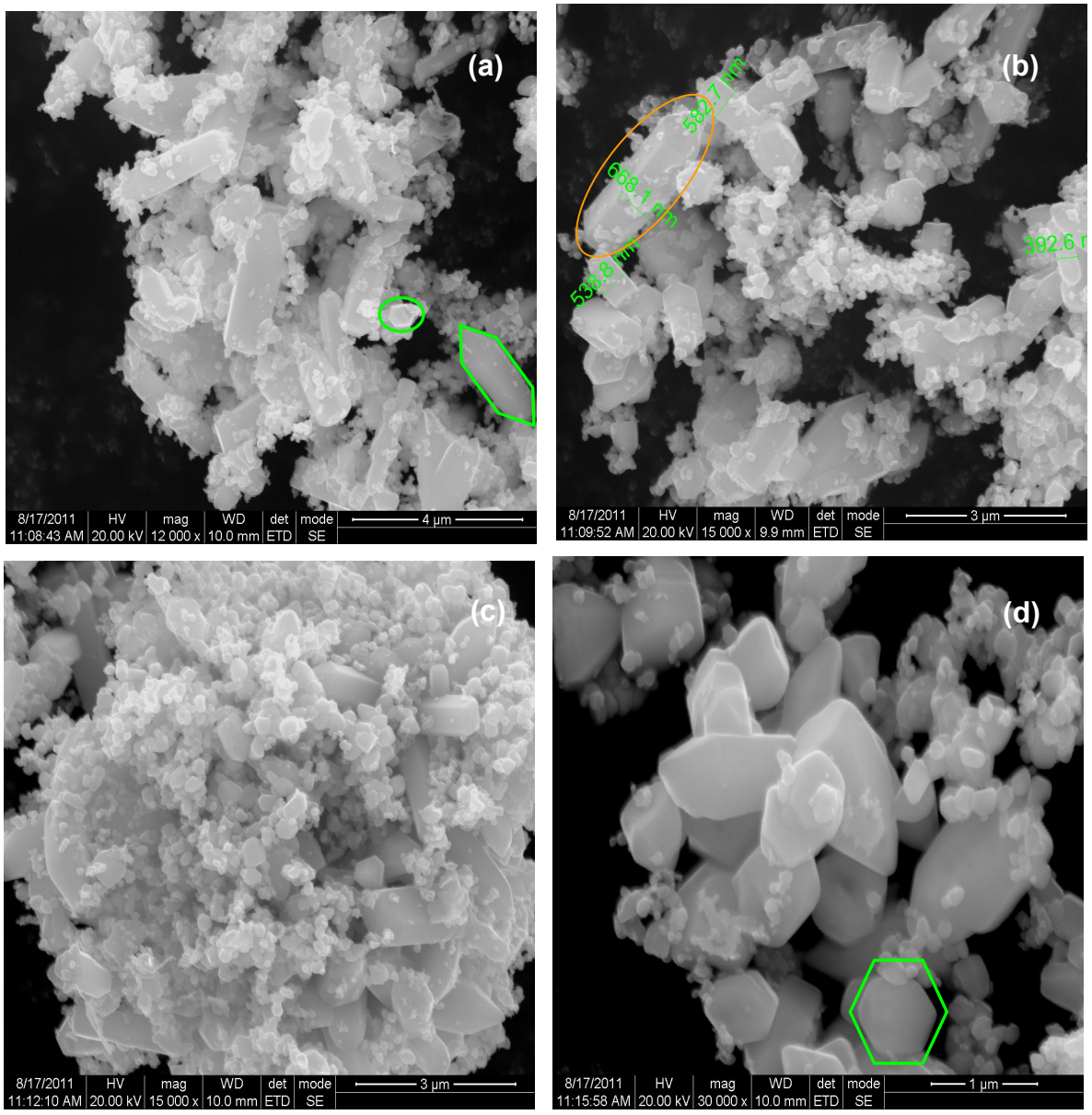

Fig. S2 HR-SEM images of Ag-ZnO-CdO at different magnification (a) 12 K, (b-c) 15 K and (d) 30 K

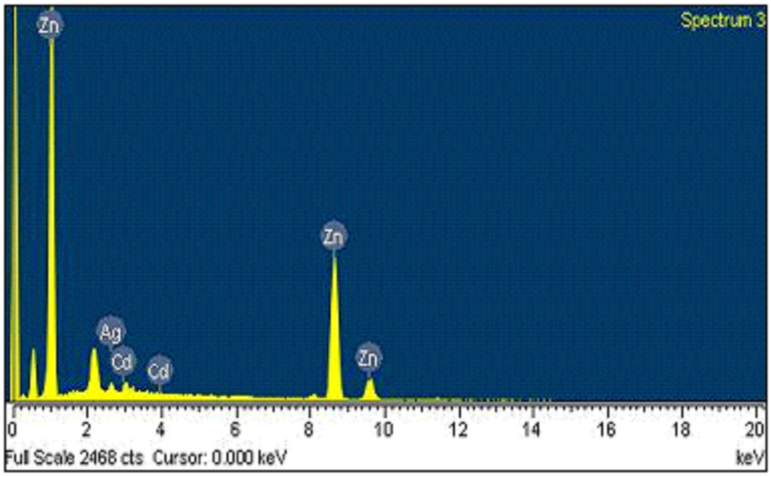

Fig. S3 EDS of Ag-ZnO-CdO

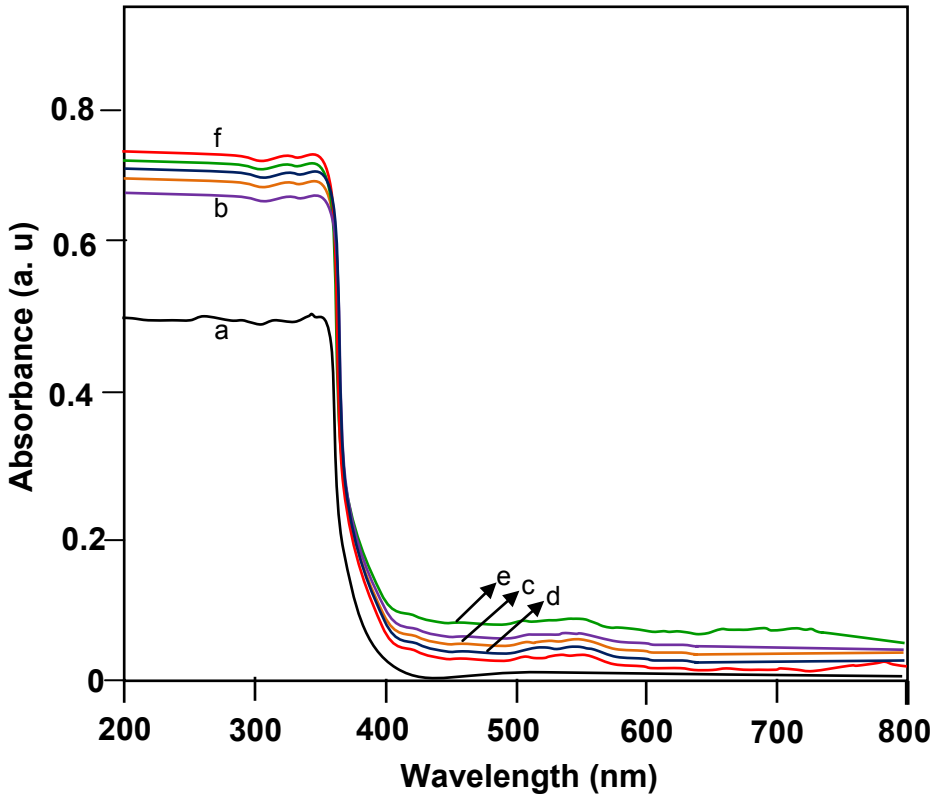

Fig. S4 DRS of (a) prepared ZnO, (b) 1wt% CdO in Ag-ZnO-CdO, (c) 2wt% CdO in Ag-ZnO-CdO, (d) 3wt% CdO in Ag-ZnO-CdO, (e) 4wt% CdO in Ag-ZnO-CdO and (f) 1wt% CdO in Ag-ZnO-CdO.

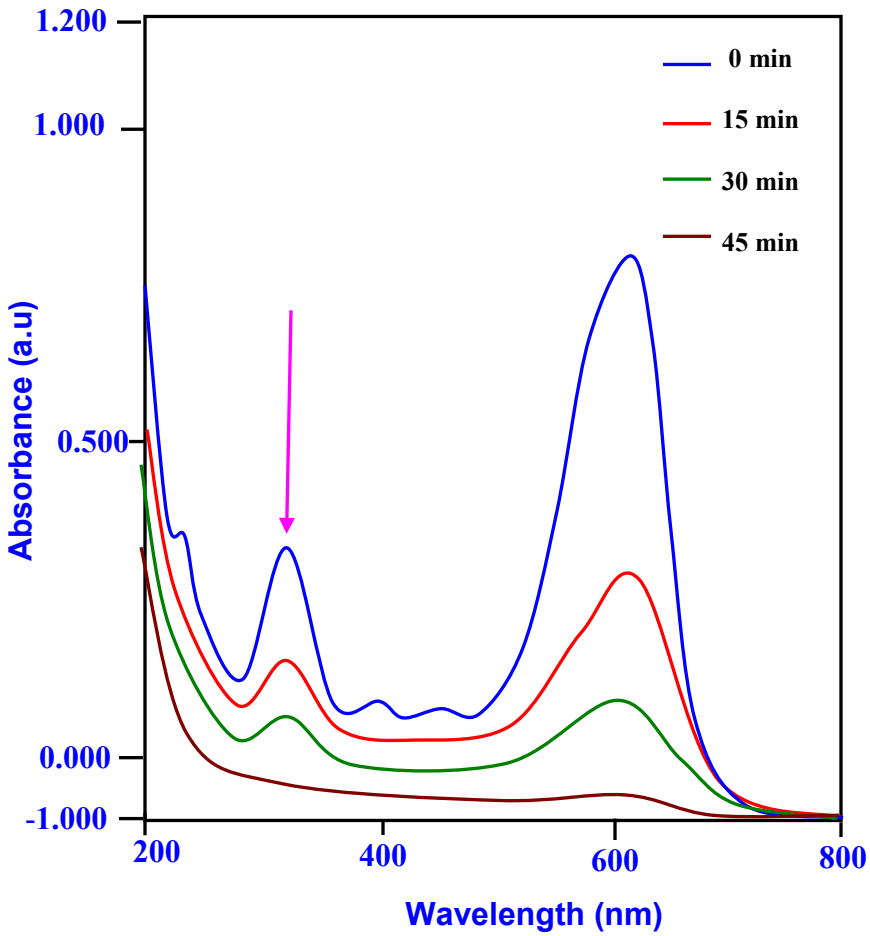

Fig. S5 UV spectral changes of AB 1 at different irradiation times with Ag-ZnO-CdO

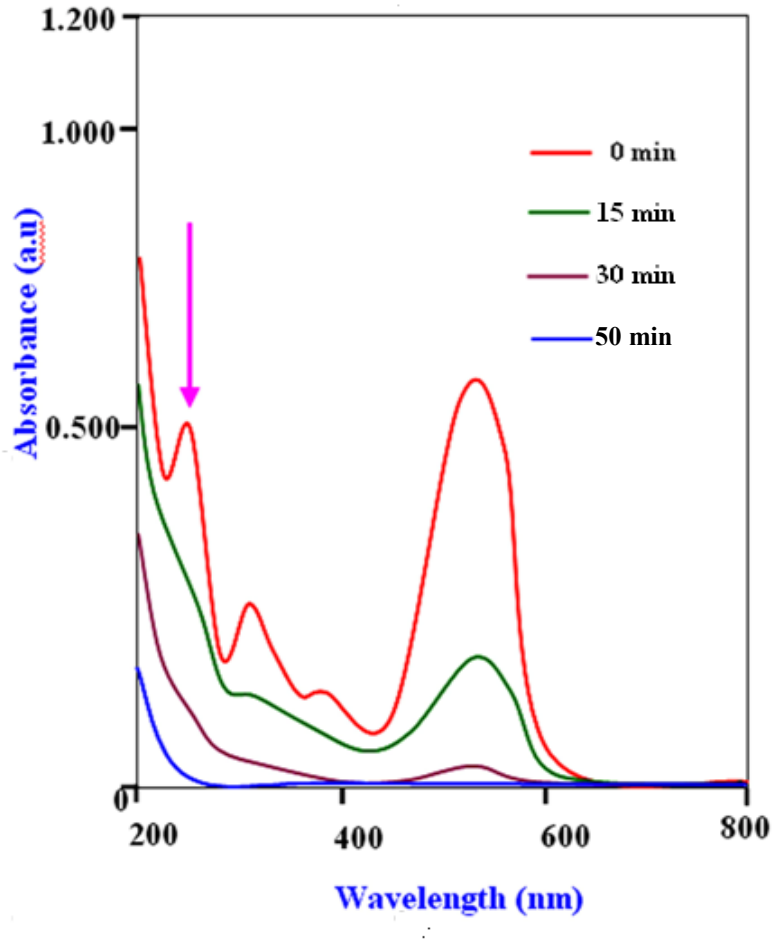

Fig S6. UV spectral changes of AV 1 at different irradiation times with Ag-ZnO-CdO

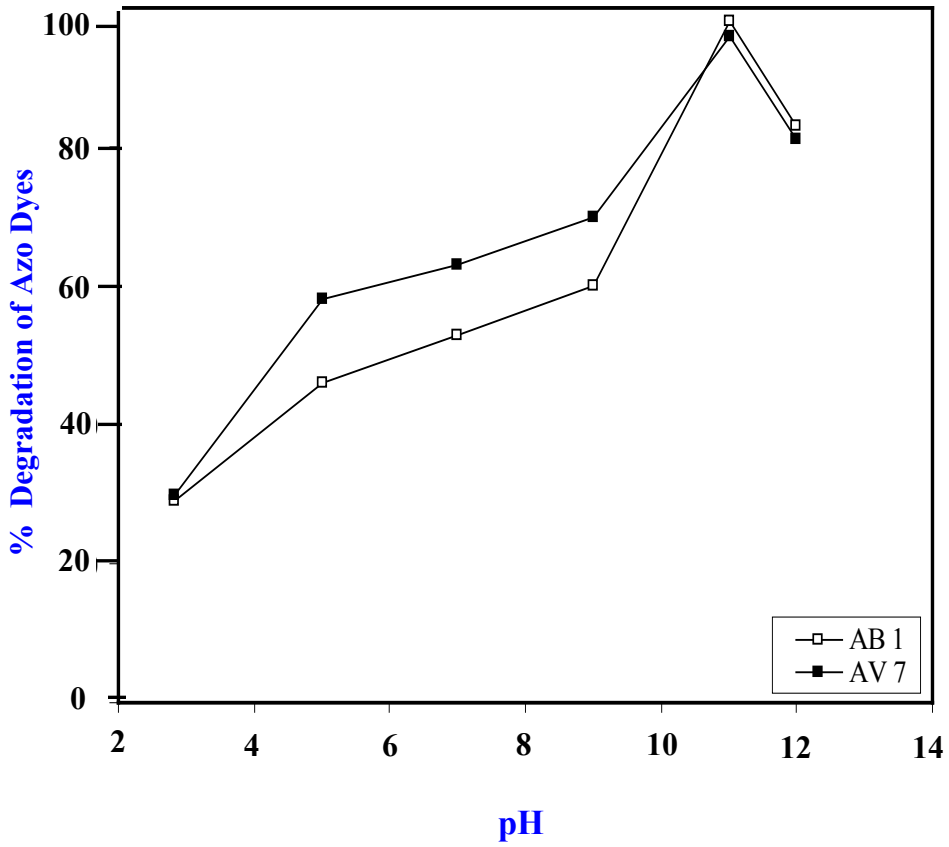

Fig. S7 Effect of solution pH: AB 1: dye concentration = 3×10^{-4} M, catalyst suspended = 3 g L^{-1}, airflow rate = 8.1 mL s^{-1}, I_{solar} = 1250×100Lux ±100 and irradiation time 45 min. AV 7 dye: dye concentration = 5×10^{-4} M, catalyst suspended = 3 g L^{-1}, airflow rate = 8.1 mL s^{-1}, I_{solar} = 1250×100Lux ±100 and irradiation time= 50 min

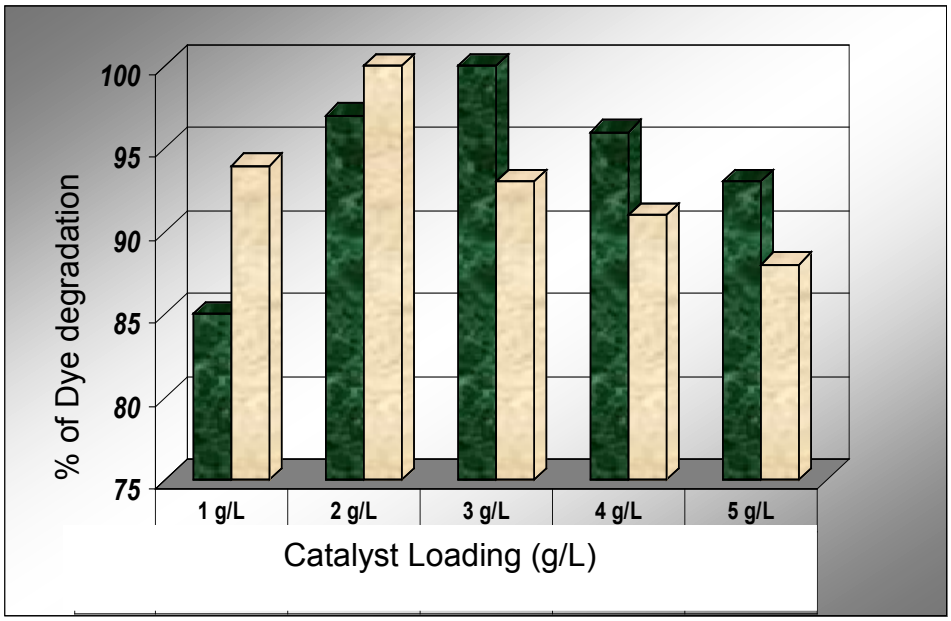

Fig. S8 Effect of catalyst loading: (a) AB 1: dye concentration = 3×10^{-4} M, pH = 11, airflow rate = 8.1 mL $s^{-1,}$, I_{solar} = 1250×100Lux ±100 and irradiation time 45 min. (b) AV 7 dye: dye concentration = 5×10^{-4} M, pH = 11, airflow rate = 8.1 mL s^{-1}, I_{solar} = 1250×100Lux ±100and irradiation time = 50 min.

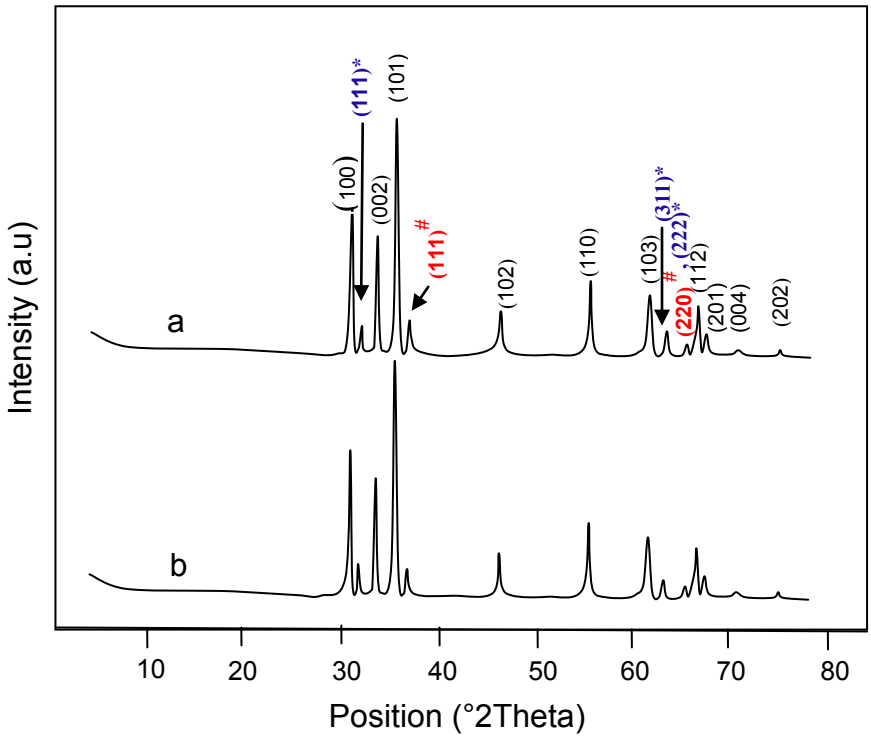

Figure S9: XRD pattern of (a) Fresh catalyst and (b) After 5th cycle reusable catalyst

Table S1: Percentage of AB 1 degradation by the catalysts with different concentrations of Ag and CdO in the catalyst for 45 minute of irradiation

Percentages of Ag in 3wt% CdO-ZnO	**Percentage of Degradation**
1wt%	96
3wt%	100
6wt%	94
9wt%	88

Percentages of CdO in 3wt% Ag-ZnO	**Percentage of Degradation**
1wt%	89
2wt%	95
3wt%	100
4wt%	97
5wt%	94