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Flexible quantum dot sensitized solar cells based on weaved titanium wires with improved efficiencies

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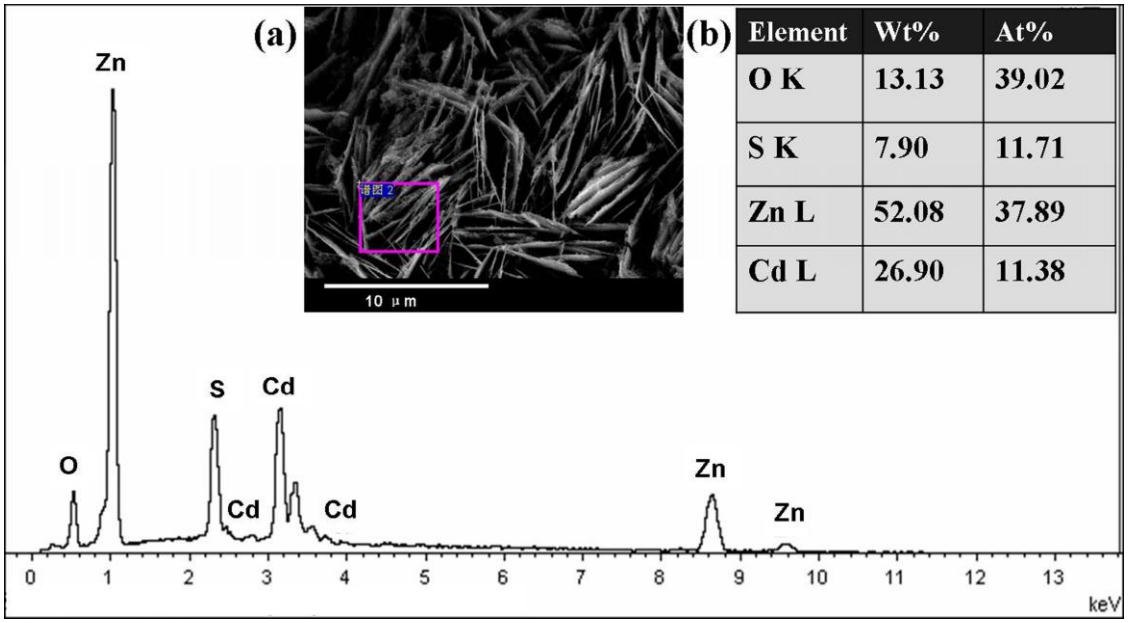
Supporting Information



Element	Wt%	At%
O K	13.13	39.02
S K	7.90	11.71
Zn L	52.08	37.89
Cd L	26.90	11.38

Figure S1. EDS spectrum of the CdS/ZnO nanostructure with inserted (a) SEM images and (b) chemical composition table.

Table S1. Parameters of CdS/ZnO nanostructured flexible solar cells with different CdS successive ionic layer adsorption and reaction (SILAR) cycles of 10, 20, 30.

	Voc (V)	***Jsc (mA/cm^2)***	***FF (%)***	***η (%)***
CdS/ZnO with 10 CdS SILAR cycles	0.22	3.6	28	0.22
CdS/ZnO with 20 CdS SILAR cycles	0.23	5.1	21	0.24
CdS/ZnO with 30 CdS SILAR cycles	0.20	3.4	24	0.16

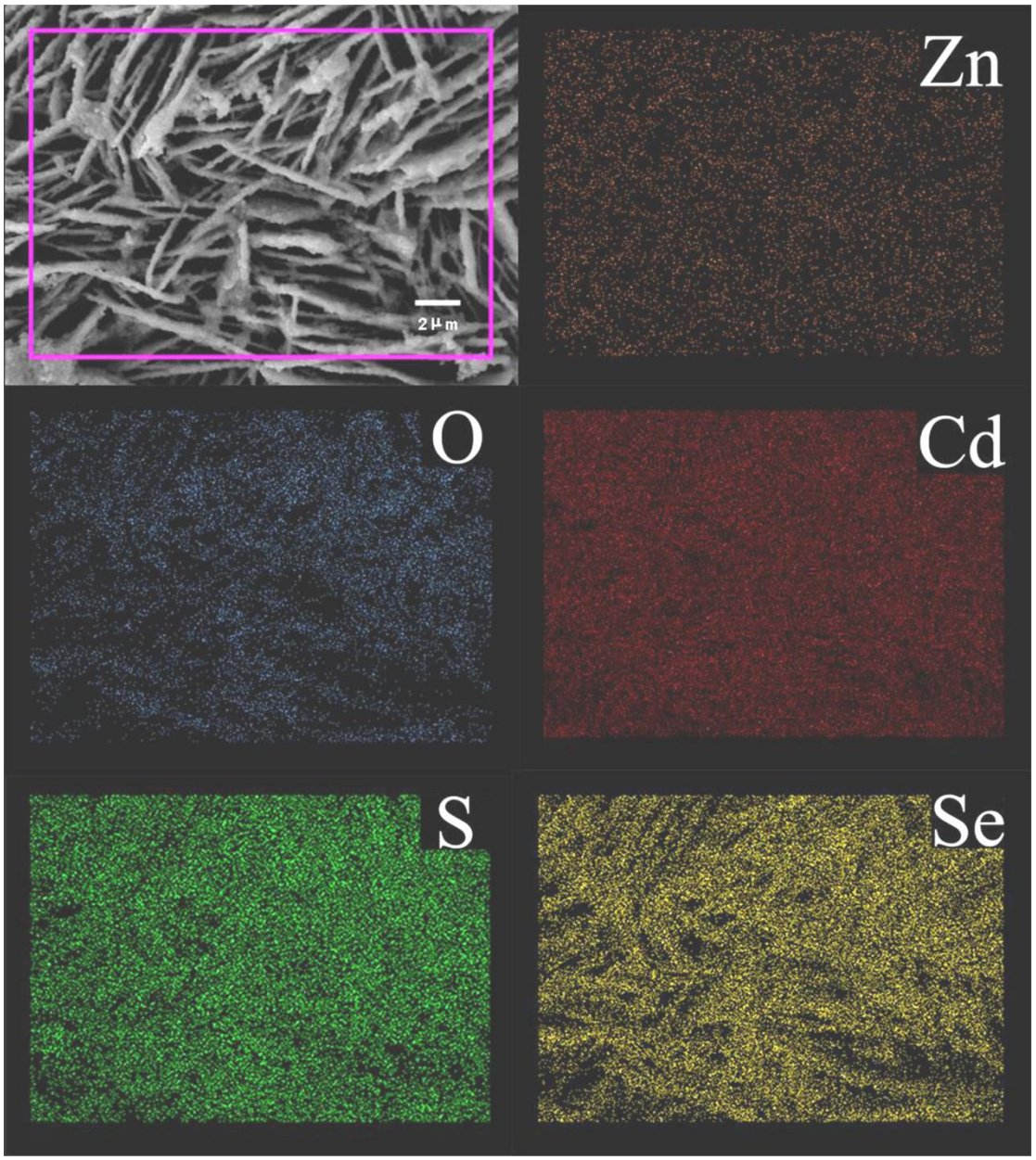
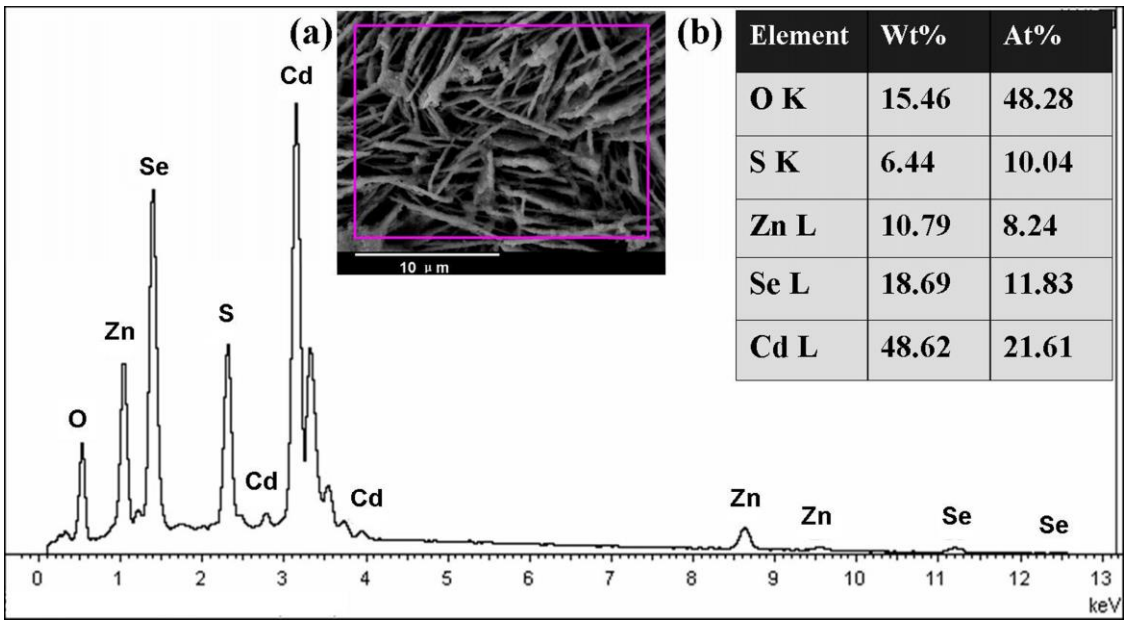


Figure S2. SEM image of CdSe/CdS/ZnO nanostructures and energy-dispersive X-ray spectroscopy (EDS) mapping images of zinc (Zn), oxygen (O), cadmium (Cd), sulfur (S) and selenium (Se), respectively.



Element	Wt%	At%
O K	15.46	48.28
S K	6.44	10.04
Zn L	10.79	8.24
Se L	18.69	11.83
Cd L	48.62	21.61

Figure S3. EDS spectrum of the CdSe/CdS/ZnO nanostructures with inserted (a) SEM images and (b) chemical composition table.

Table S2. Photovoltaic parameters for flexible QDSSCs based on these three photoelectrodes (CdS/ZnO/Ti, CdSe/ZnO/Ti and CdSe/CdS/ZnO/Ti) using different counter electrodes (Pt, Au, PbS and Cu_2S)

	Voc (V)	***Jsc (mA/cm^2)***	***FF (%)***	***η (%)***
CdS/ZnO/Ti with Pt electrode	0.25	5.31	18	0.24
CdSe/ZnO/Ti with Pt electrode	0.25	4.42	20	0.22
CdSe/CdS/ZnO/Ti with Pt electrode	0.30	12.32	27	0.98
CdS/ZnO/Ti with Au electrode	0.23	4.92	26	0.29
CdSe/ZnO/Ti with Au electrode	0.21	4.15	22	0.19
CdSe/CdS/ZnO/Ti with Au electrode	0.30	7.58	23	0.53
CdS/ZnO/Ti with PbS electrode	0.26	14.23	34	1.27
CdSe/ZnO/Ti with PbS electrode	0.21	11.86	33	0.83
CdSe/CdS/ZnO/Ti with PbS electrode	0.35	15.75	45	2.48
CdS/ZnO/Ti with Cu_2S electrode	0.25	12.34	34	1.04
CdSe/ZnO/Ti with Cu_2S electrode	0.29	14.73	40	1.70
CdSe/CdS/ZnO/Ti with Cu_2S electrode	0.36	23.67	41	3.41