Supporting Information

CdSSe Layer-Sensitized TiO_2 Nanowire Array as Efficient Photoelectrode

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Fig. S1: EDX data of the CdS_xSe_{1-x} NWs with (a) x = 0, (b) 0.2, (c) 0.4, (d) 0.6, (e) 0.8, and (f) 1; TiO_2-CdS_xSe_{1-x} NCs with (g) x = 0, (h) 0.2, (i) 0.4, (j) 0.6, (k) 0.8, and (l) 1. The HAADF STEM images are shown in the insets.

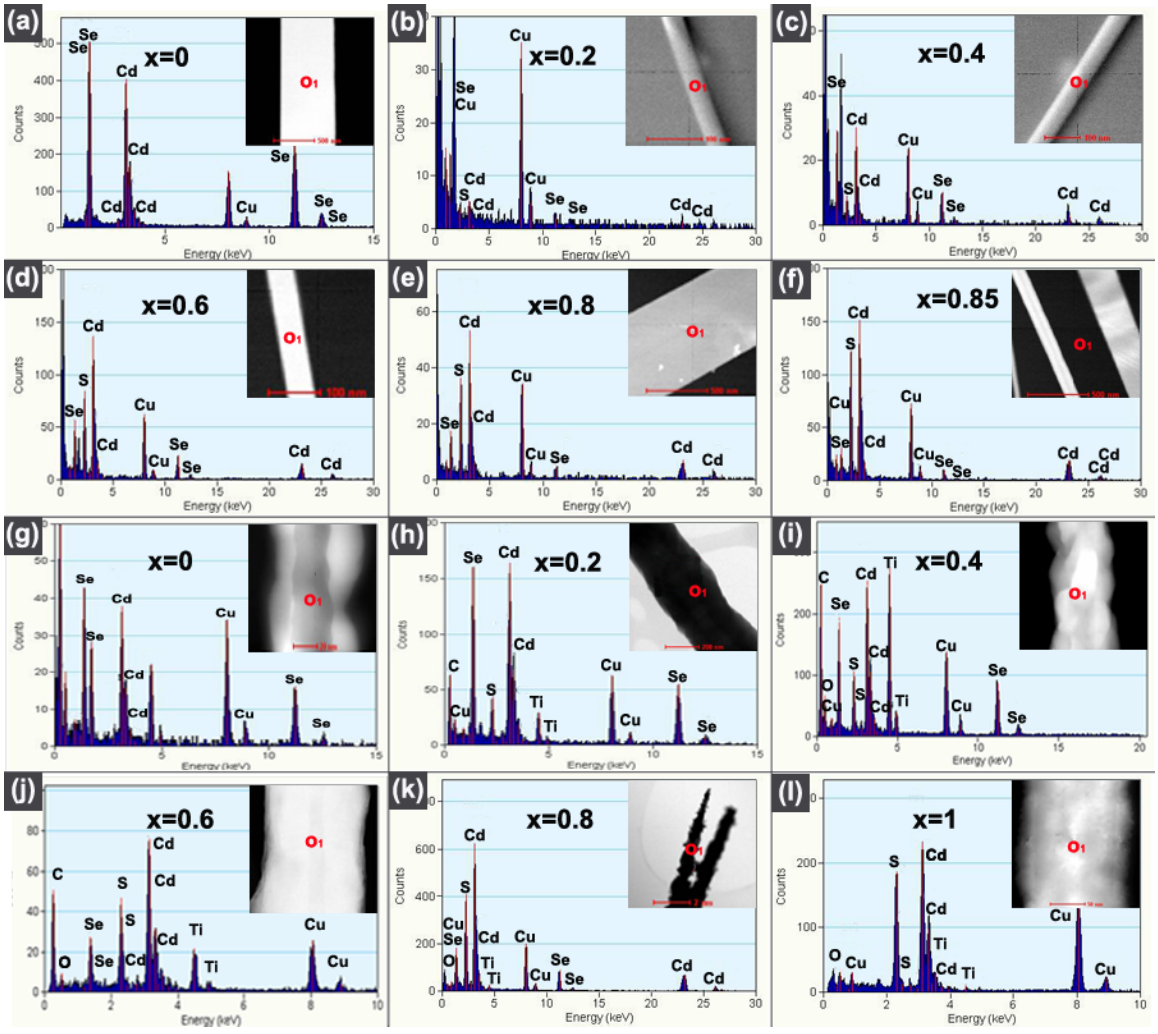

Fig. S2. Band gap of CdS_xSe_{1-x} NWs, estimated from Vegard' rule (dotted line), PL, and UV-visible absorption, as a function of S mole fraction (x). It shows the good match of the band gap of the CdS_xSe_{1-x} NWs, experimentally determined from the PL band-edge emission, with the predicted E_g values using Vegard's rule (dotted line). The experimental data exhibits a linear fit function, $E_g(x) = 1.74 + 0.73\ x$, indicating that there is no bowing effect. For comparison, the band gap, predicted from the onset of the UV-visible absorption band, also follows a linear relation with x, according to $E_g(x) = 1.63 + 0.72\ x$.