Electronic Supplementary Material (ESI) for RSC Advances.

Supplementary Information

On the stability of CdSe quantum dot-sensitized solar cells

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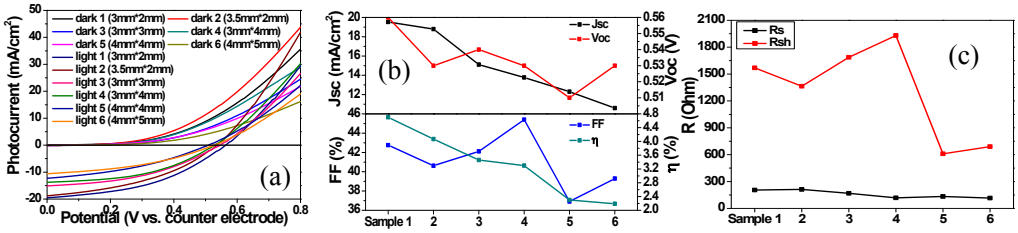

Fig. S1 Performance of CdSe QDSCs (a), variation of the cell parameters *J*sc, *V*oc, *FF*, and η (b) and the resistance (c) with the area of the photoelectrodes.

Table S1 *J*sc, *V*oc, *FF*, and η of CdSe QDSCs with the area of the photoelectrodes.

Sample Area(mm*mm)	**3×2**	**3.5×2**	**3×3**	**3×4**	**4×4**	**4×5**
***J*sc (mA/cm²)**	**19.53**	**18.79**	**15.11**	**13.78**	**12.30**	**10.60**
***V*oc (V)**	**0.56**	**0.53**	**0.54**	**0.53**	**0.51**	**0.53**
***FF* (%)**	**42.76**	**40.63**	**42.11**	**45.40**	**36.91**	**39.29**
η (%)	**4.70**	**4.07**	**3.46**	**3.30**	**2.3**	**2.19**

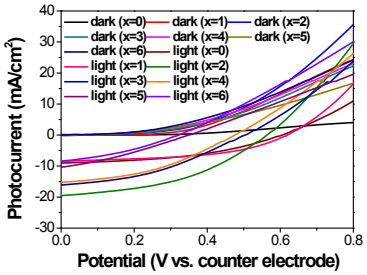

Fig. S2 *J-V* curves of CdSe QDSCs with different thickness of ZnS passivation layer.

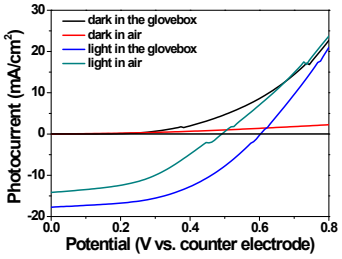

Fig. S3 *J-V* curves of CdSe QDSCs prepared in air or in the glove box.

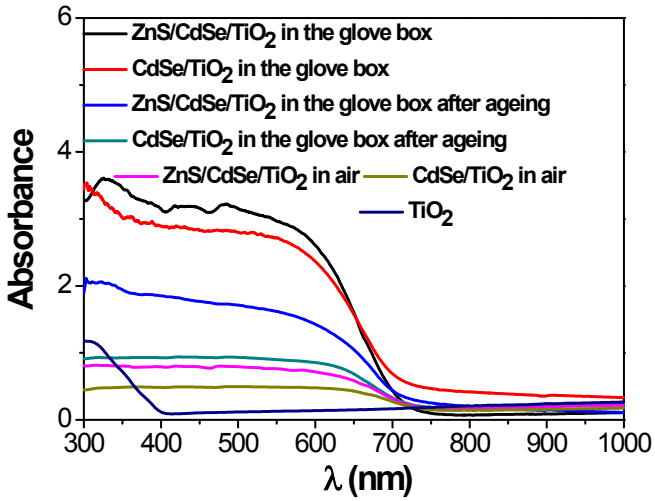

Fig. S4 Optical absorption of CdSe QDSCs under different degradation conditions with TiO_2 as a blank control.

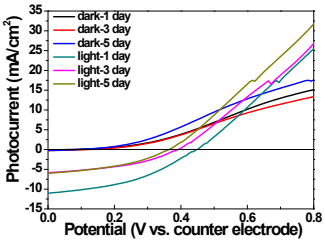

Fig. S5 *J-V* curves of CdSe QDSCs aged for different days in air.

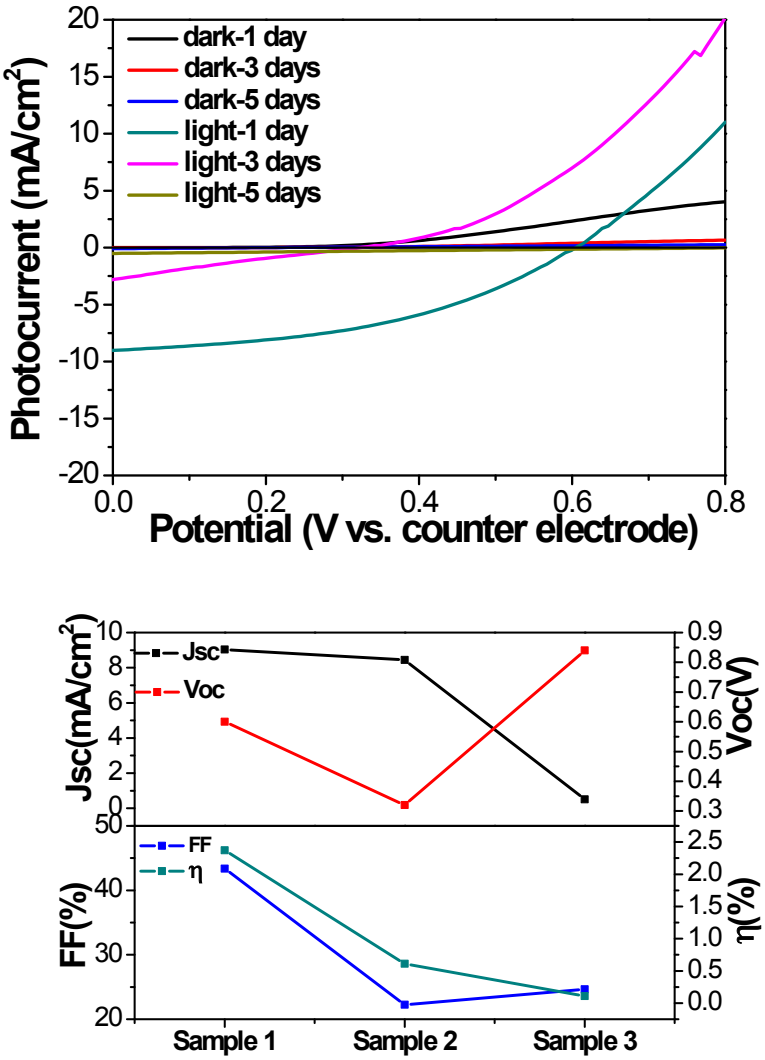

Fig. S6 *J-V* curves (upper panel) and variation of cell parameters *J*sc, *V*oc, *FF*, and η and the series and shunt resistance parameters (lower panel) of CdSe QDSCs without ZnS passivation aged for different days in air.

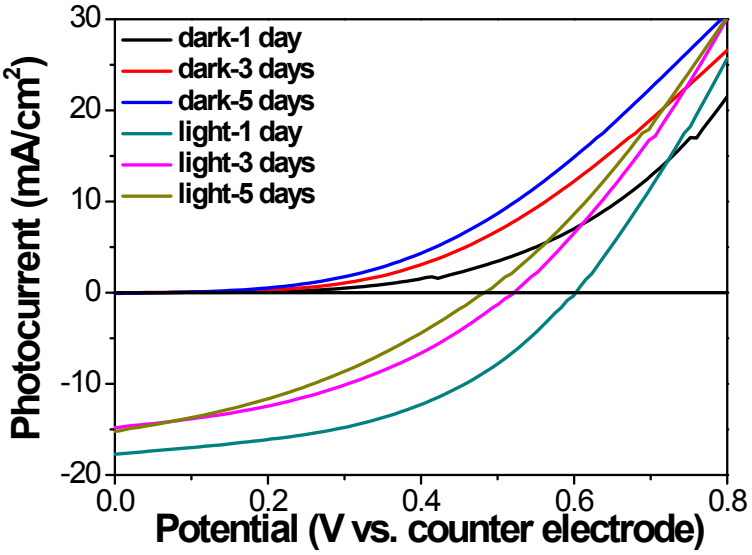

Fig. S7 *J-V* curves of encapsulated CdSe QDSCs aged for different days in air.

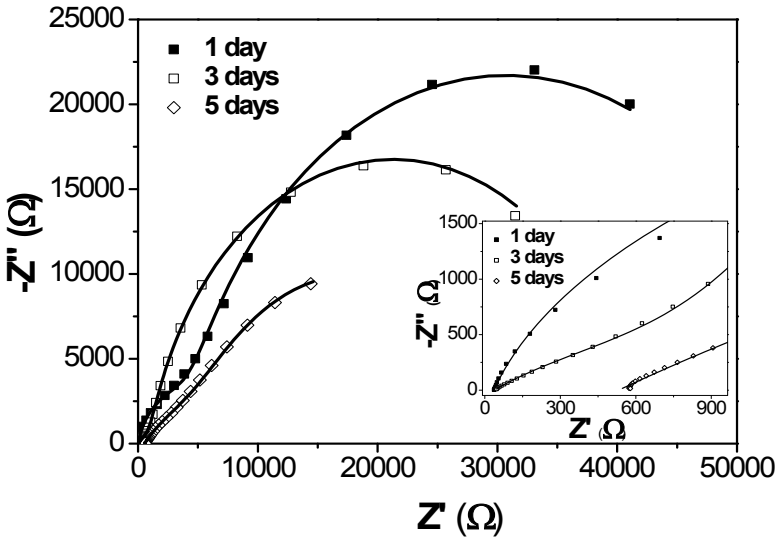

Fig. S8 Impedance spectrum under zero bias voltage of CdSe QDSCs without ZnS passivation aged for different days in air. Inset is an enlarged portion at high frequency range of the curves.

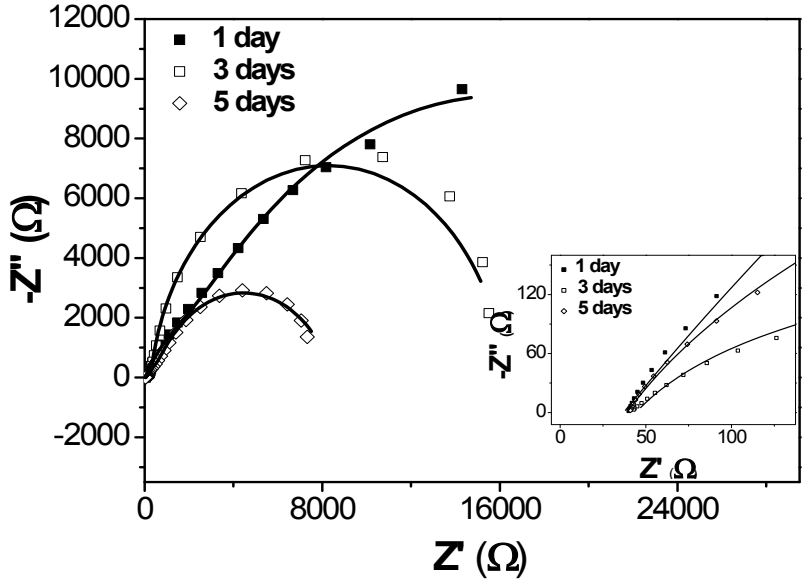

Fig. S9 Impedance spectrum under zero bias voltage of encapsulated CdSe QDSCs aged for different days in air. Inset is an enlarged portion at high frequency range of the curves.