Supplementary Information

**TiO\textsubscript{2} nanoparticals/ZnO nanowires hybrid photoanode for enhanced quantum dots sensitized solar cell performance**

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Fig.S1 Plane photograph and cross SEM of ZnO nanowires. Their seed were prepared by different concentrations of ZnO NPs, (a, c) 5mg/ml and (b, d) 1mg/ml. The seed films were prepared by a process (2000rpm, 30s, one cycle). Fig.S1(a, c) and Fig.S1(b, d) show the plane photograph and cross SEM of ZnO nanowires prepared by the NPs concentration of 5mg/ml and 1mg/ml, respectively. The plane photographs show that ZnO NW films with high density and uniformity present the light blue when the concentrations is 5mg/ml, however, ZnO NW films are low
density and poor uniformity when the concentrations is 1mg/ml. From the cross-
section SEM, ZnO NWs have small diameter and big density and the pore is very 
small when the concentration is 5mg/ml (Fig.S1c), so it is difficult to inject TiO$_2$ paste. 
The NWs have a low density and clutter when the concentrations decrease to 1mg/ml 
(Fig.S1d). Although the big pore present, NWs easy fall off due to the weak adhesive.