

## **Supplementary Materials**

# **Heterostructures of Cut Carbon Nanotube-Filled Array of TiO<sub>2</sub> Nanotubes for New Module of Photovoltaic Devices**

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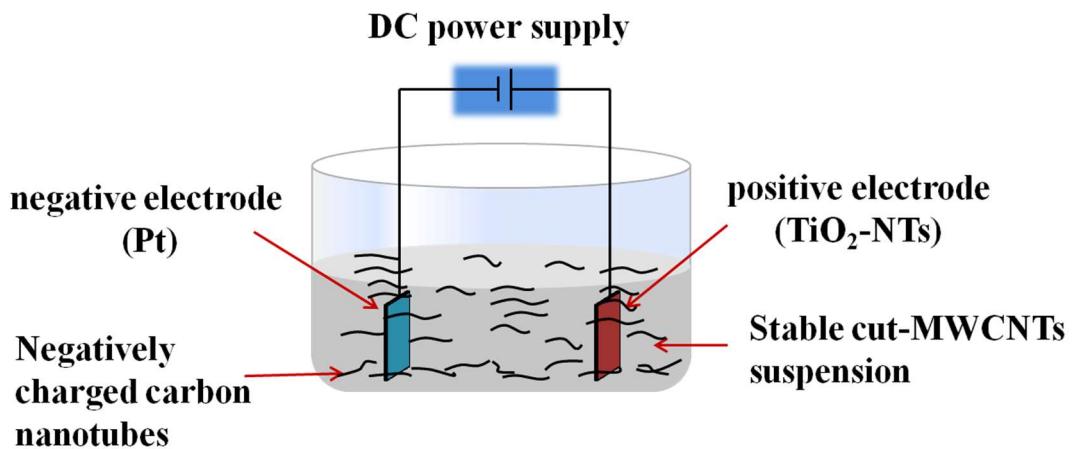


Figure S1. Schematic diagram of the electrophoresis device.

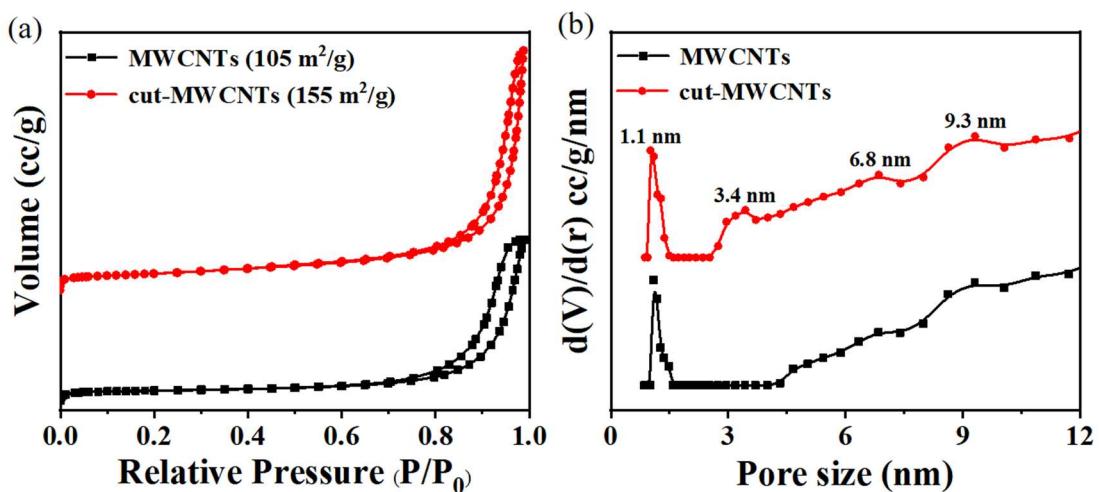


Figure S2. (a) N<sub>2</sub> adsorption-desorption isotherms; (b) NL-DFT pore size distributions of MWCNTs and cut-MWCNTs.

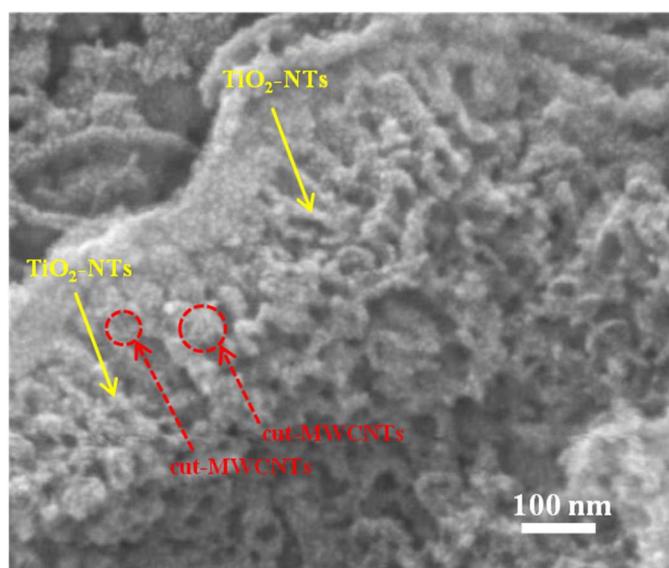
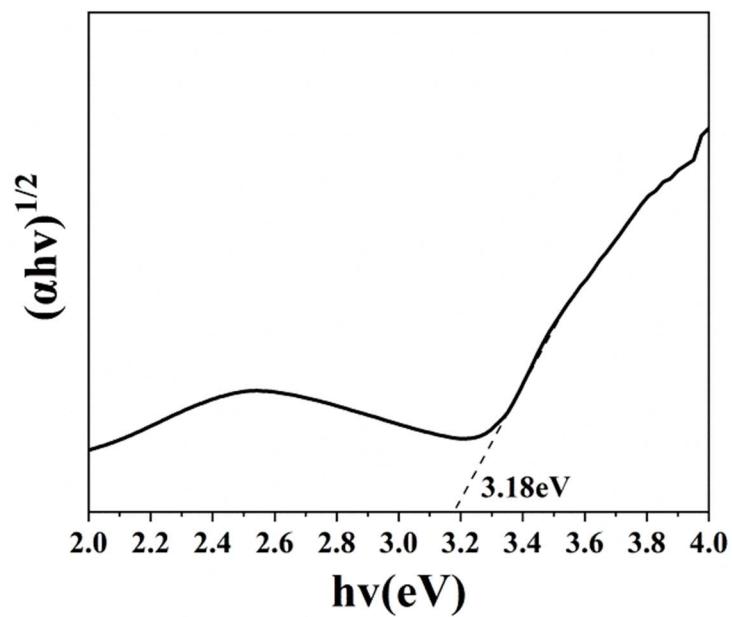


Figure S3. Cross-sectional SEM image of the TiO<sub>2</sub>-NTs@cut-MWCNTs heterostructure.



**Figure S4.** Kubelka-Munk function for band gap estimation of TiO<sub>2</sub>-NTs.