Supporting Information

Sol-gel Processed TiO_2 Nanotube Photoelectrodes for Dye-Sensitized Solar Cells with Enhanced Photovoltaic Performance

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Section S1. Characterization of Nb-doped NPs and NTs.

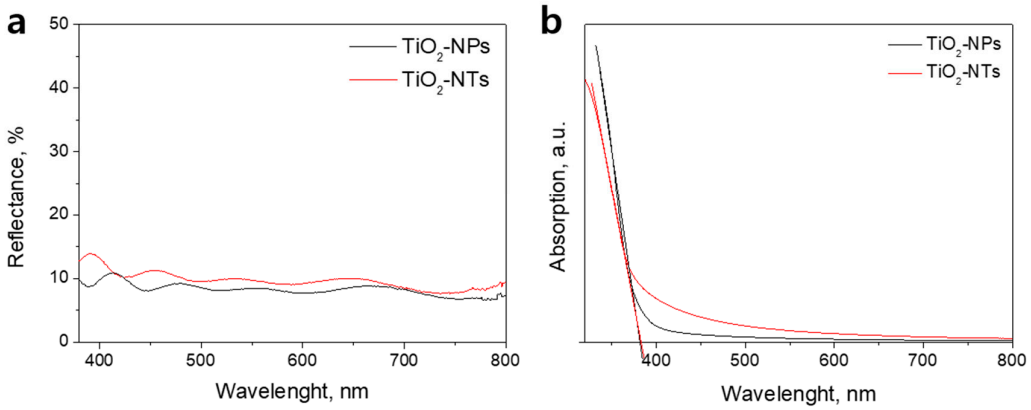

Figure S1. (a) Reflectance of NTs and NPs powders. (b) Absorption spectra of NTs and NPs films.

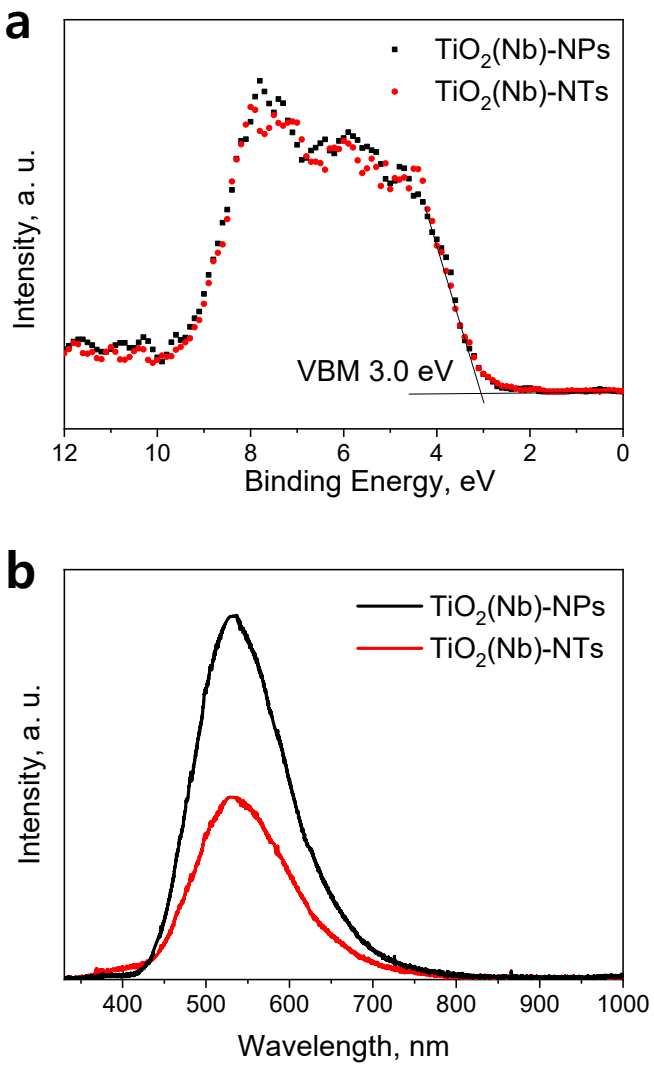

Figure S2. (a) Valence band XPS spectra of TiO_2(Nb)-NPs and TiO_2(Nb)-NTs layers. (b) PL spectra of TiO_2(Nb)-NPs and TiO_2(Nb)-NTs layers taken at 10 K.

Table S1. The ratios of the emission intensity of O p_π to O p_σ orbitals for Nb-doped NPs and NTs.

Sample	O p_π/O p_σ
TiO_2(Nb)-NPs	1.7
TiO_2(Nb)-NTs	2.1

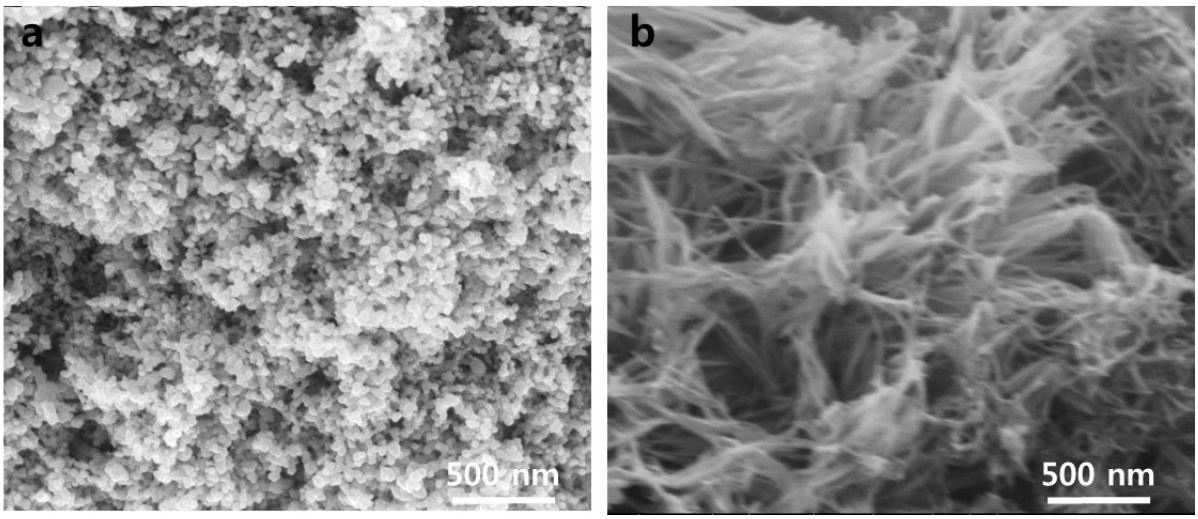

Figure 3. SEM micrographs of (a) TiO_2(Nb)-NPs and (b) TiO_2(Nb)-NTs.