Electronic Supplementary Information

Influence of solution-deposited rutile layer on morphology of TiO_2 nanorod arrays and performance of nanorod-based dye-sensitized solar cells

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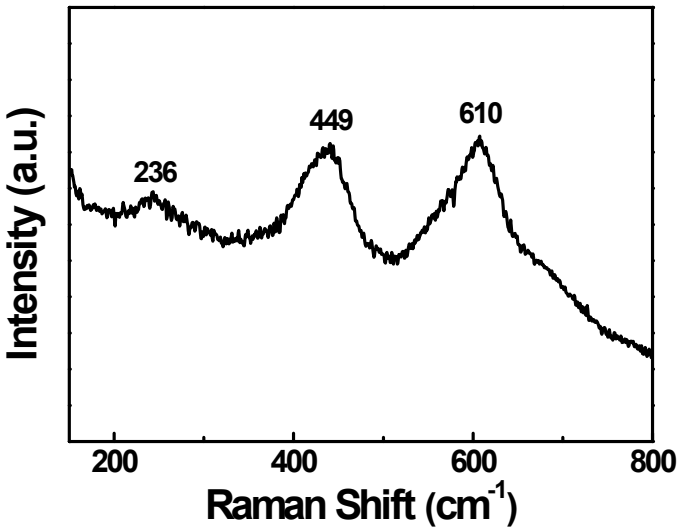

Figure S1. Raman spectrum of the rutile seed layer deposited onto conducting glass *via* hydrolysis of $TiCl_4$ solution.

Table S1. Structural properties of TiO_2 NR arrays grown on bare FTO and TiO_2 seed layers which were deposited from $TiCl_4$ precursor solutions with concentrations of 0.05, 0.2, and 0.4 M, respectively.

samples	The density of TiO_2 NRs (number μm^{-2})	The length of TiO_2 NRs (μm)	The diameter of TiO_2 NRs (nm)
FTO-NR	24±4	1.2±0.05	82±25
0.05 M-NR	39±8	1.3±0.05	80±24
0.2 M-NR	58±8	1.3±0.06	60±10

0.4 M-NR	99±13	1.5±0.06	52±9

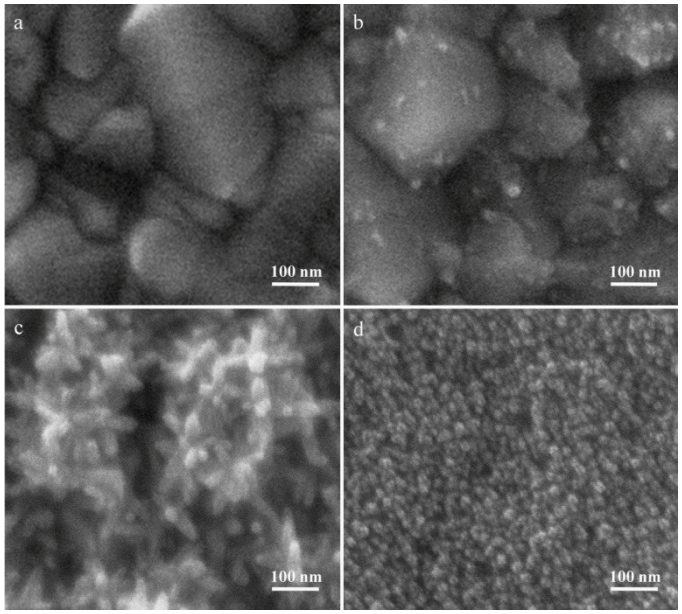

Figure S2. Top-view SEM images of the TiO_2 NR arrays grown at 150 °C for 30 min on bare FTO (a) and TiO_2 seed layers which were deposited from $TiCl_4$ precursor solutions with concentrations of 0.05 (b), 0.2 (c), and 0.4 M (d), respectively.

Table S2. Series resistance (R_s), charge transfer resistance (R1), interfacial recombination resistance (R2) from EIS spectra calculated by equivalent circuit as shown in Fig.8.

samples	**R_s (Ω)**	**R1 (Ω)**	**R2 (Ω)**
0.05 M-NR	30.74	1.14	331.2
0.2 M-NR	31.33	1.31	304.6
0.4 M-NR	38.45	2.89	237.4