Electronic supplementary information (ESI) for

Graphene-wrapped TiO_2 nanofibers with effective interfacial coupling as ultrafast electron transfer bridges in novel photoanodes

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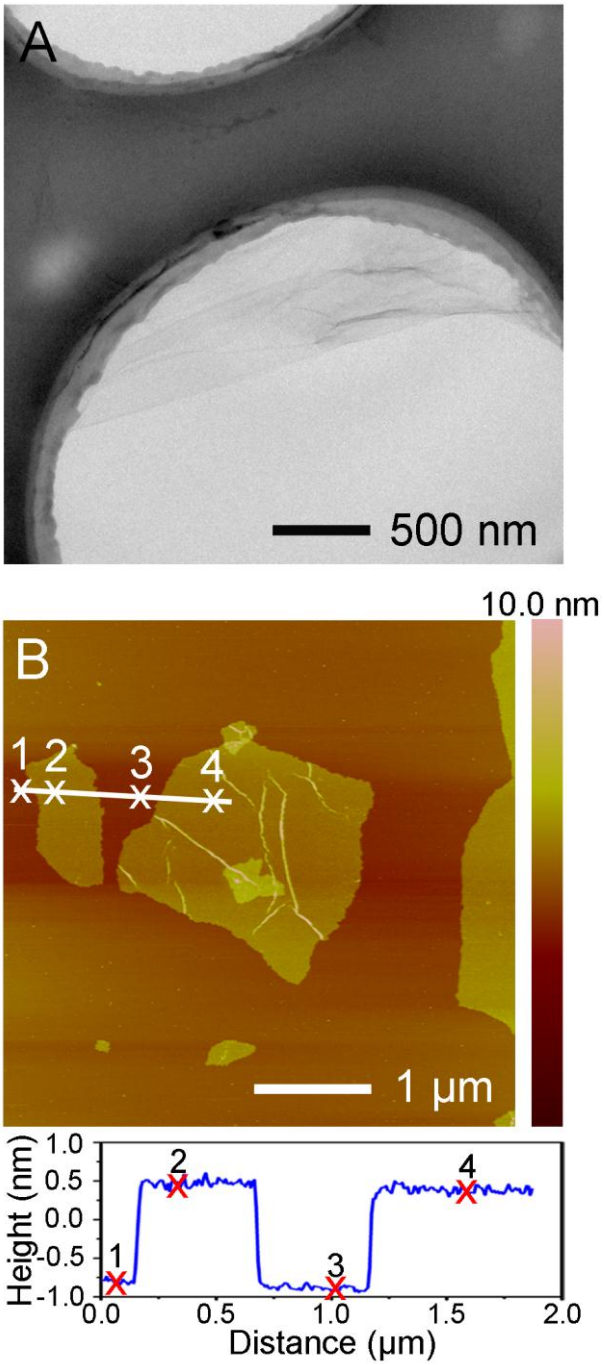

Fig. S1 (A) TEM image of a piece of pristine graphene oxide (GO) sheet. (B) AFM image and height profiles of the same sample.

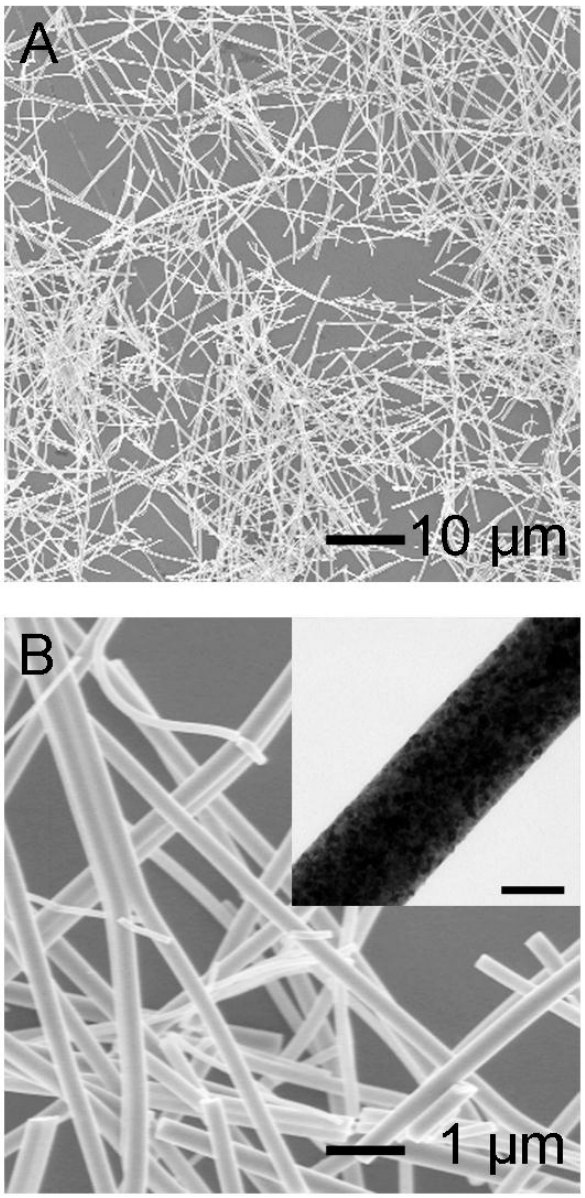

Fig. S2 (A) SEM image of a typical sample of electrospun TiO_2 nanofibers. (B) SEM image of the same sample at a higher magnification with the inset showing its TEM image. The scale bar in the inset is 200 nm.

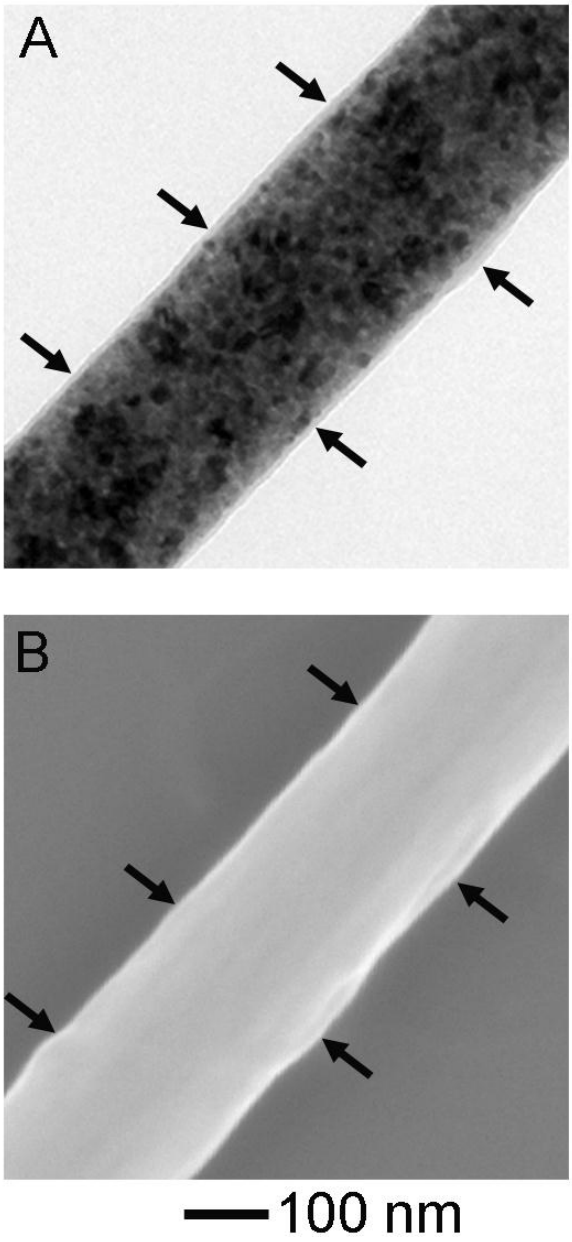

Fig. S3 (A) TEM and (B) SEM images of one typical 0.8-RGO/TiO_2 nanofiber. The arrows marked the edges of RGO nanoshells.

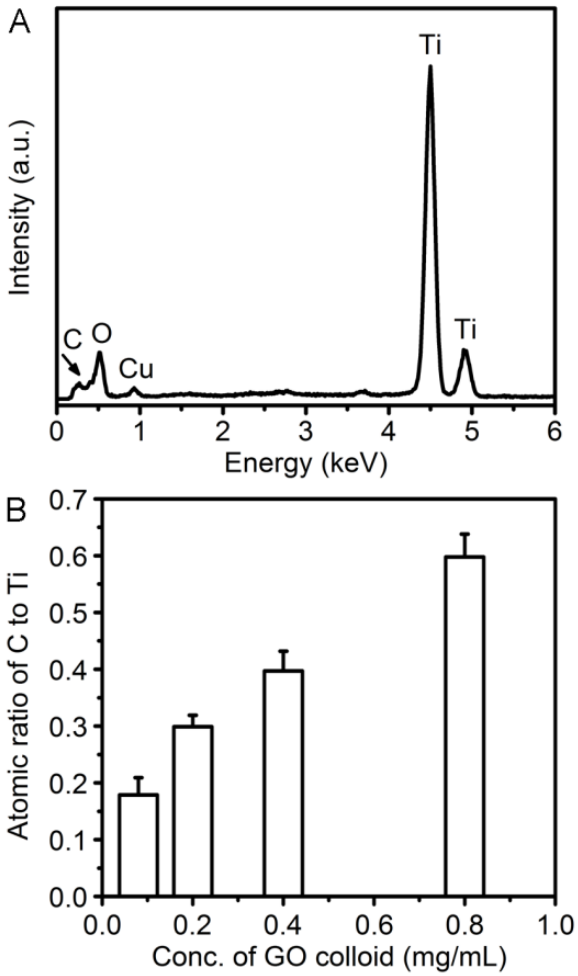

Fig. S4 (A) A typical EDX spectrum of the 0.8-RGO/TiO_2 nanofibers in Fig. 1A. The signal of Cu is arisen from the copper square mesh. (B) A plot showing the dependence of the atomic ratio of C to Ti in products on the concentration of GO colloid.

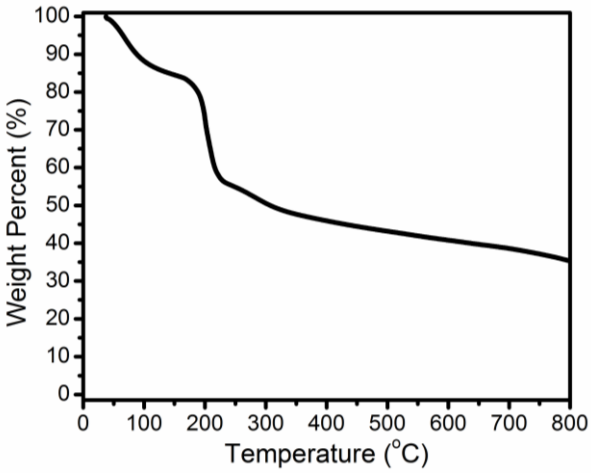

Fig. S5 TGA curve of graphene oxide (GO) measured in N_2 gas.

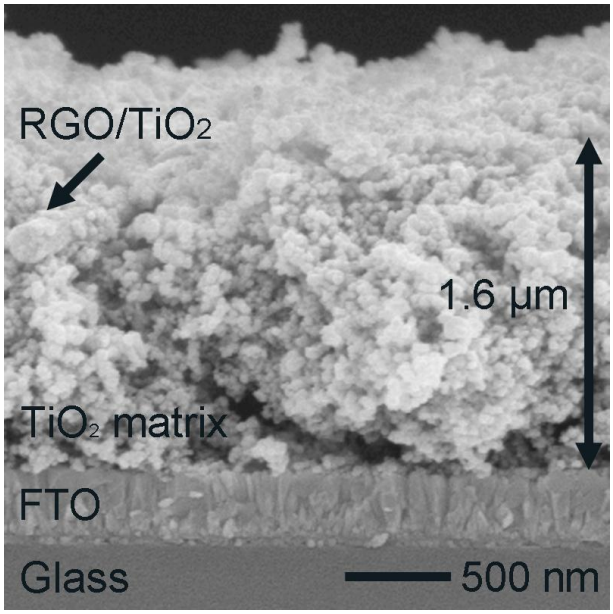

Fig. S6 SEM image showing the cross-section profile of photoanode.

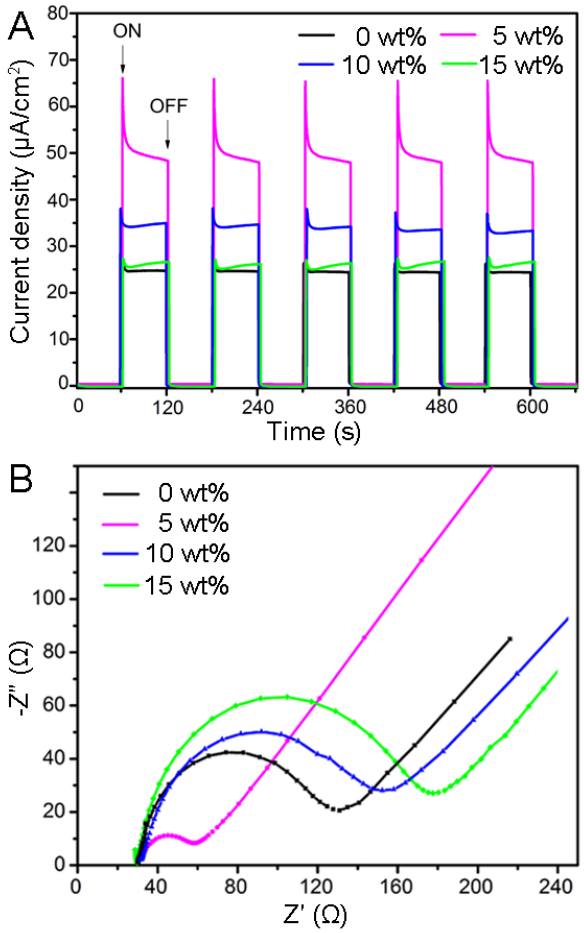

Fig. S7 (A) The transient photocurrent density and (B) Nyquist diagram of photoanodes as a function of gradually increased weight ratio of 0.8-RGO/TiO_2 nanofibers.

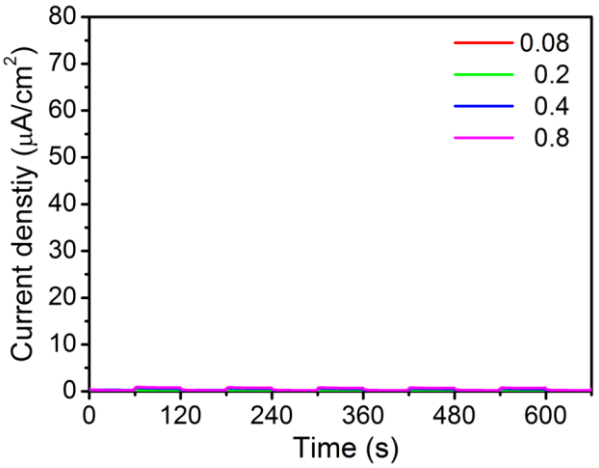

Fig. S8 The transient photocurrent density profiles of photoanodes consisting 100 wt% of RGO/TiO_2 nanofibers made in four different GO concentrations.