

Supporting information

**Unconventional Gas-Based Bottom-up, Meter-Area-Scale Fabrication
of Hydrogen-Bond Free g-CN Nanorod Arrays and Coupling Layers
with TiO₂ toward High-Efficient Photoelectrichemical Performance**

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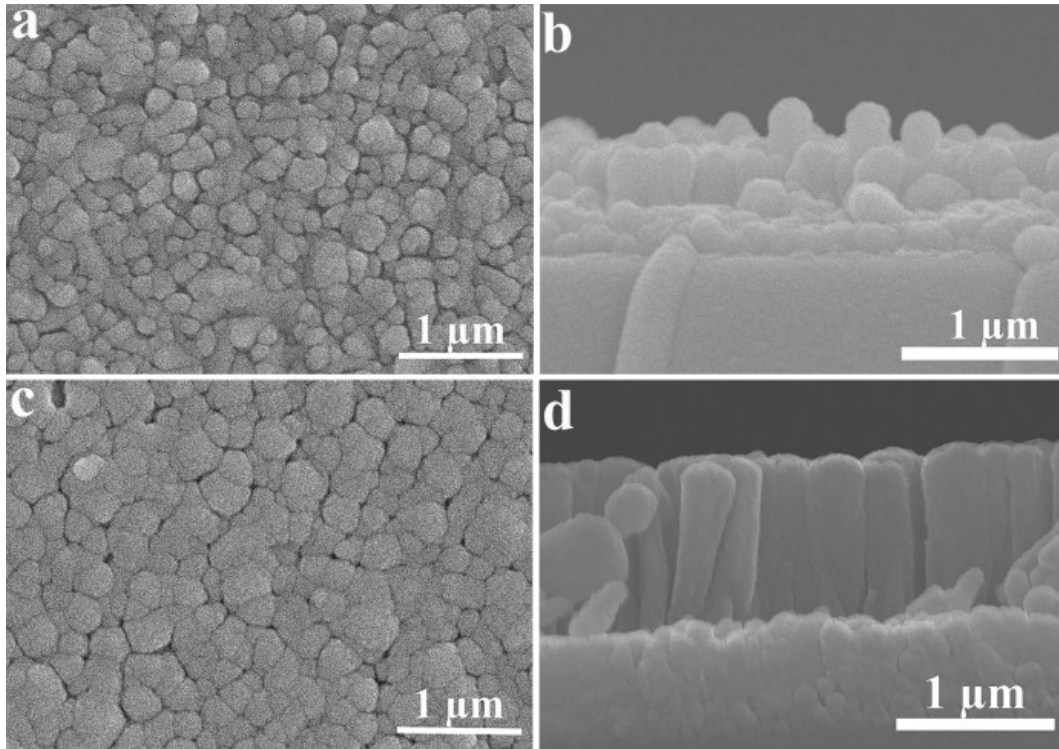


Figure S1. Surface and cross-sectional morphologies of the g-CN NRs under different targets current (a and b) g-CN-30, (c and d) g-CN-70.

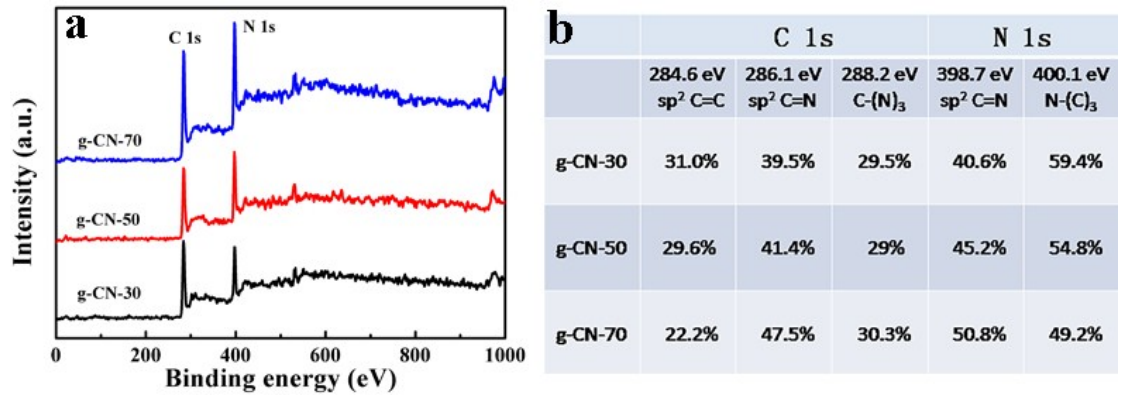


Figure S2. (a) The survey XPS spectra, and (b) the stoichiometric ratio of various C-N bonds of g-CN under different targets current.

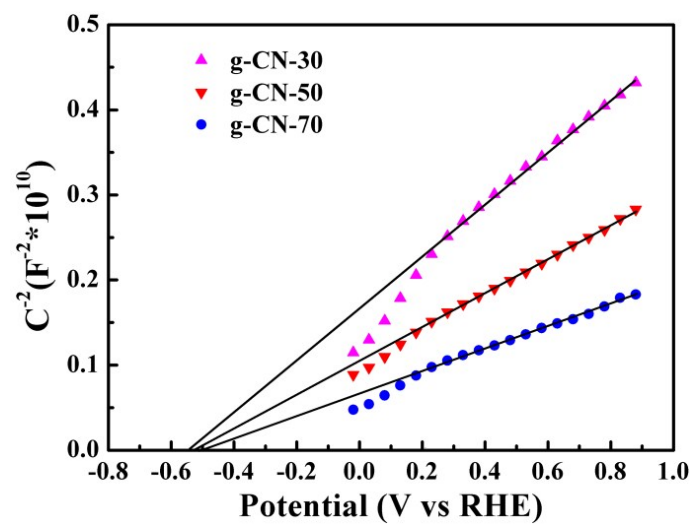


Figure S3. Mott-Schottky plots of g-CN NRs under different targets current.

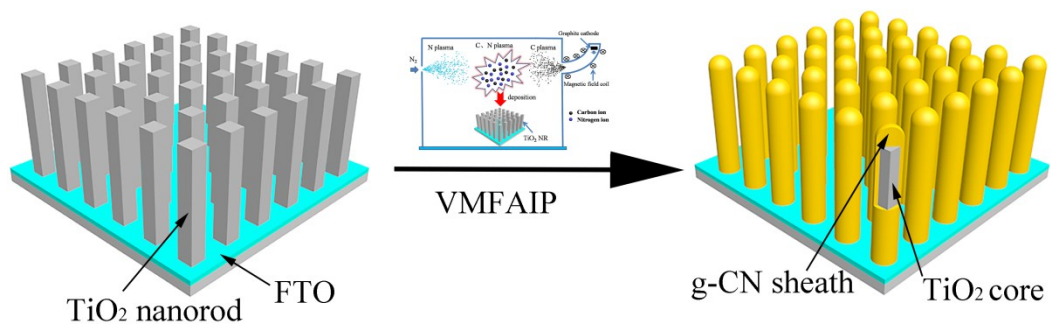


Figure S4. Schematic illustration for the preparation of the TiO₂@g-CN NR.

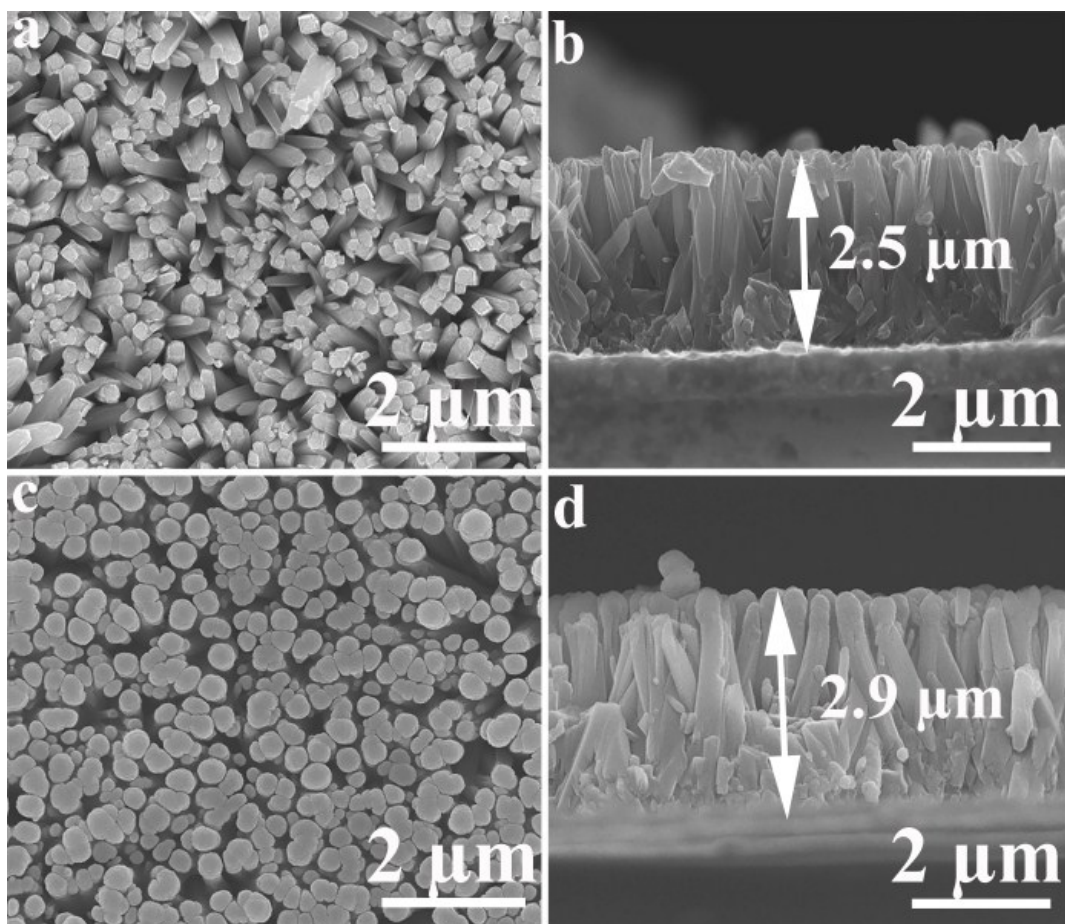


Figure S5. Surface and cross-sectional morphologies of (a and b) the TiO₂ NR and (c and d) the TiO₂@g-CN NR.

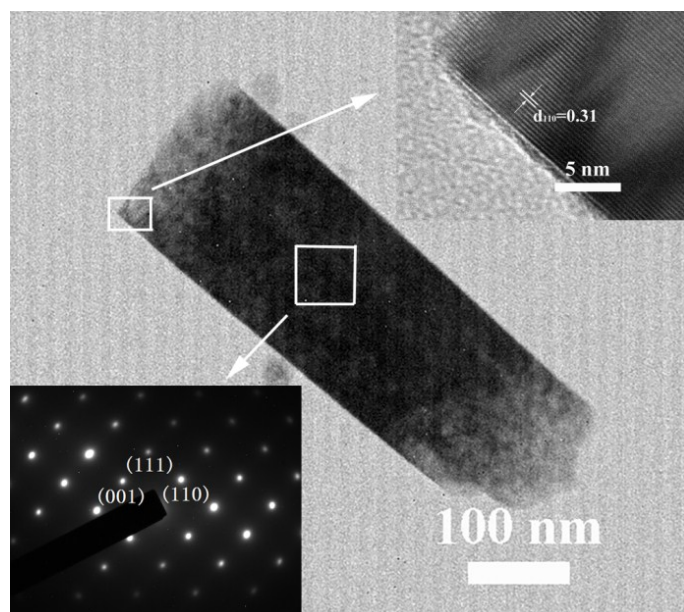


Figure S6. TEM and HRTEM (inset) images of the pristine TiO₂ NR.

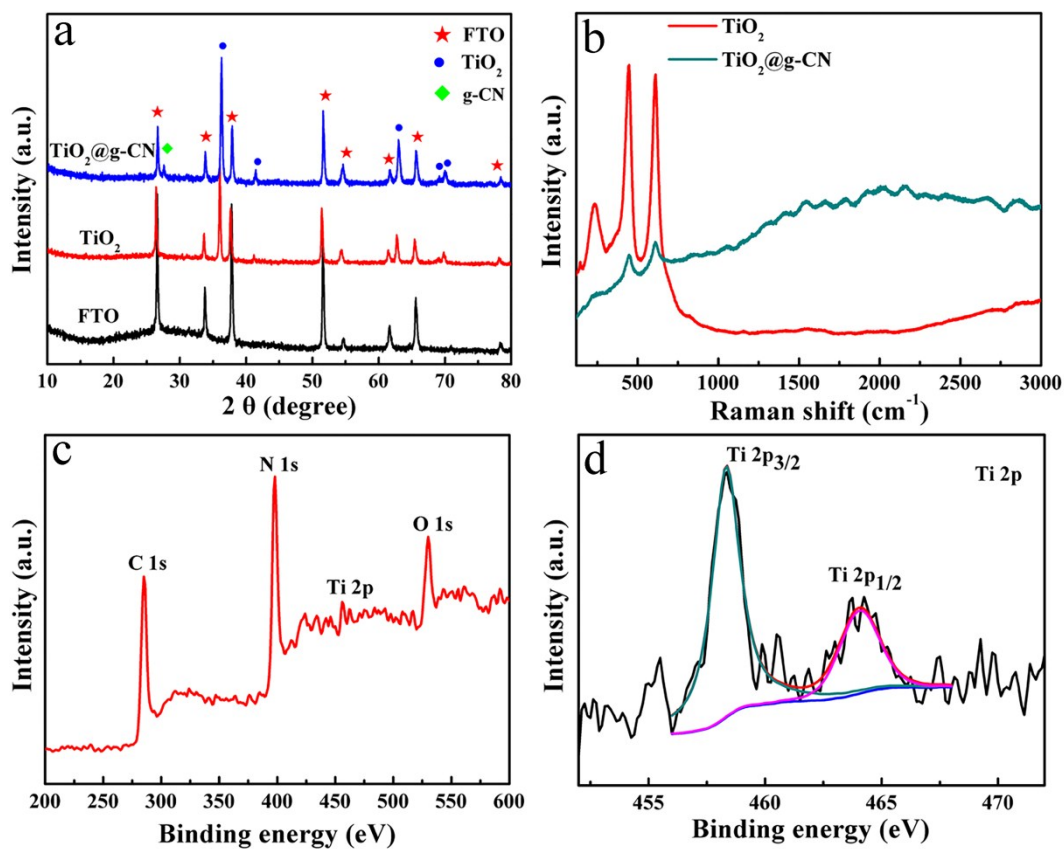


Figure S7. (a) XRD patterns of FTO, the pristine TiO₂ NR, and TiO₂@g-CN NR. (b) Raman spectra of the pristine TiO₂ NR and TiO₂@ g-CN NR, (c) XPS spectrum of the TiO₂@ g-CN NR, and (d) high resolution XPS spectra of Ti 2p.