

Supporting Information

Oxygen vacancy mediated construction of anatase/brookite heterophase junctions for high-efficiency photocatalytic hydrogen evolution

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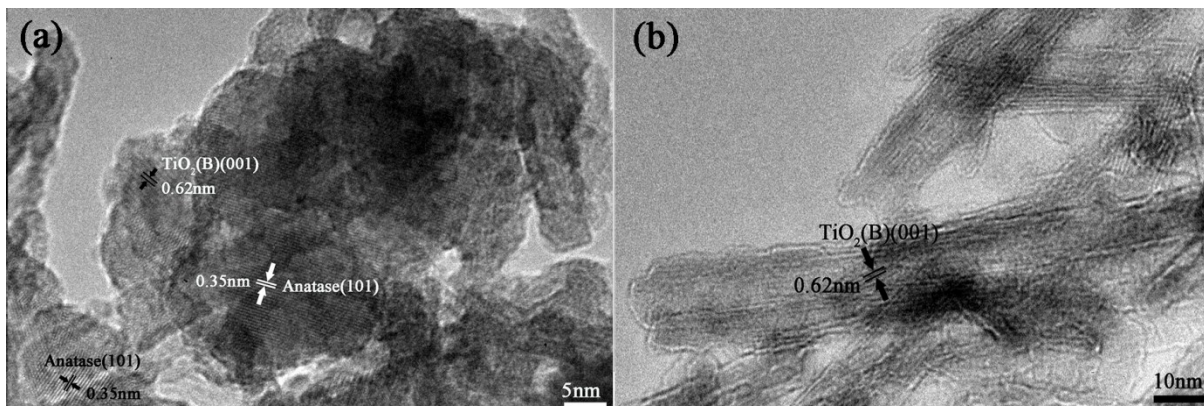


Fig. S1 High-resolution TEM images of TiO₂ NFs-H₂.

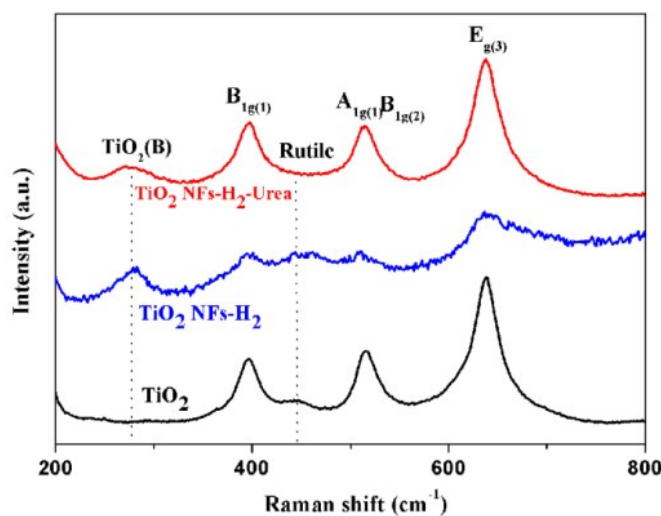


Fig. S2 Raman spectra of TiO₂ NFs, TiO₂ NFs-H₂ and TiO₂ NFs-H₂-Urea.

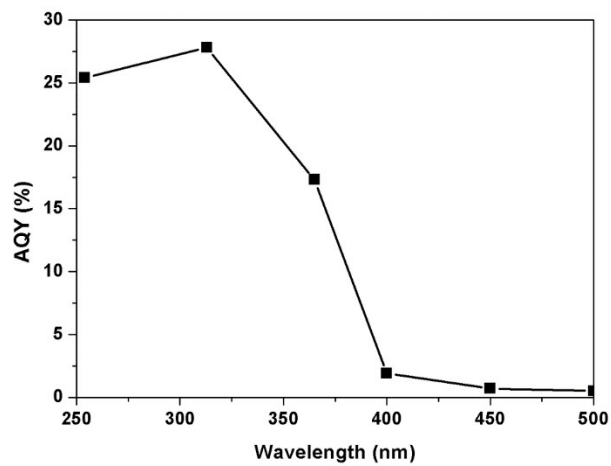


Fig. S3 Action spectrum of TiO₂ NFs-H₂-Urea.

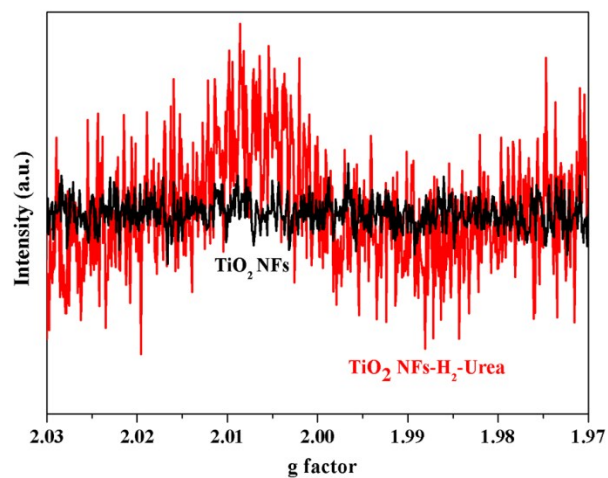


Fig. S4 ESR spectra of TiO₂ NFs and TiO₂ NFs-H₂-Urea.

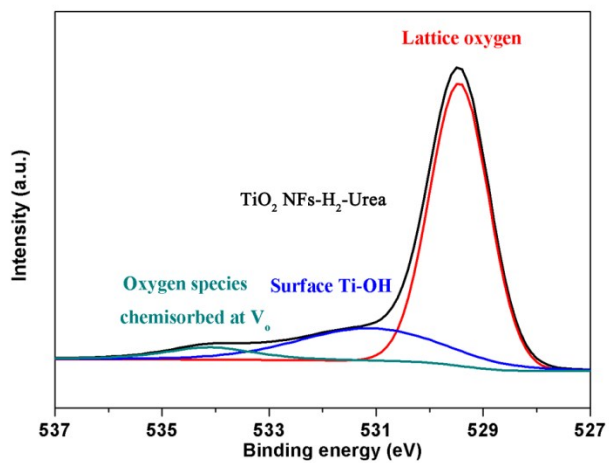


Fig. S5 O 1s XPS spectrum of TiO₂ NFs-H₂-Urea.

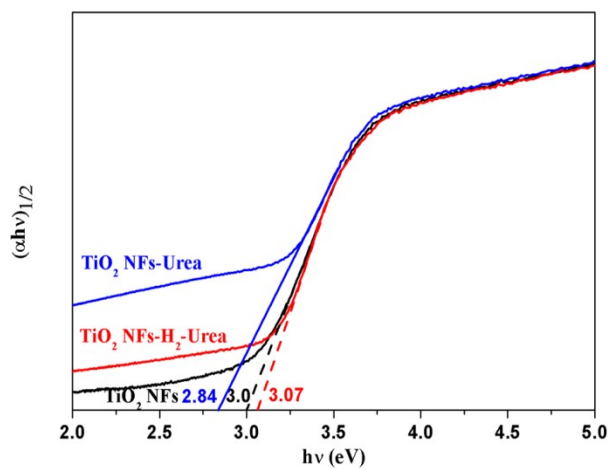


Fig. S6 The corresponding Kubelka–Munk transformed diffuse reflectance spectra.

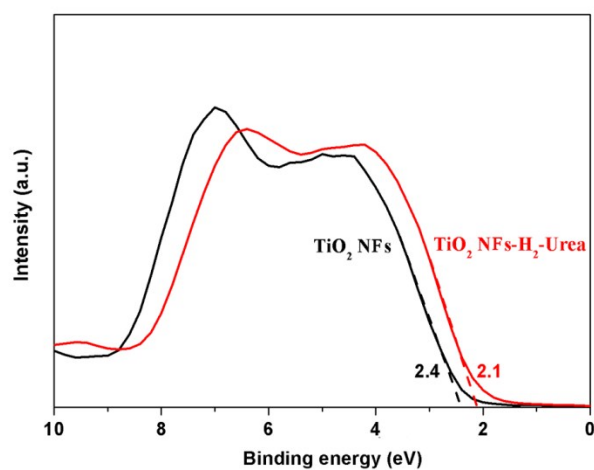


Fig. S7 VB XPS spectra of TiO₂ NFs and TiO₂ NFs-H₂-Urea.

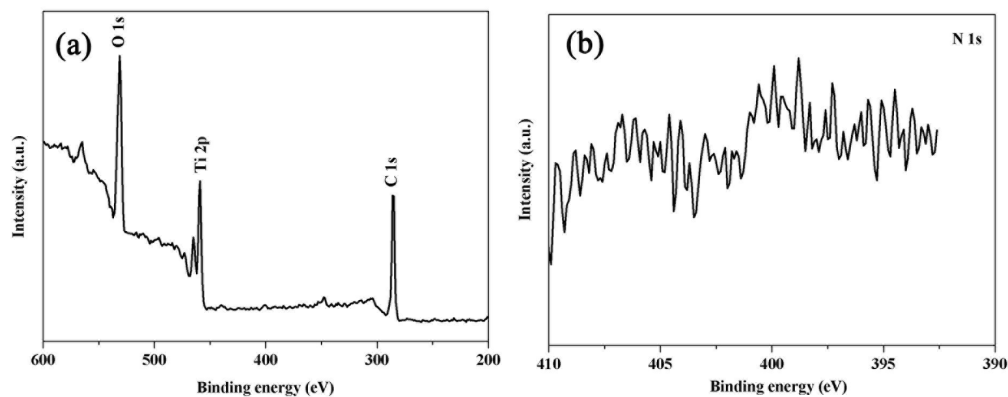


Fig. S8 (a) Survey XPS spectrum of TiO₂ NFs-H₂-Urea; (b) N 1s spectrum of TiO₂ NFs-H₂-Urea.

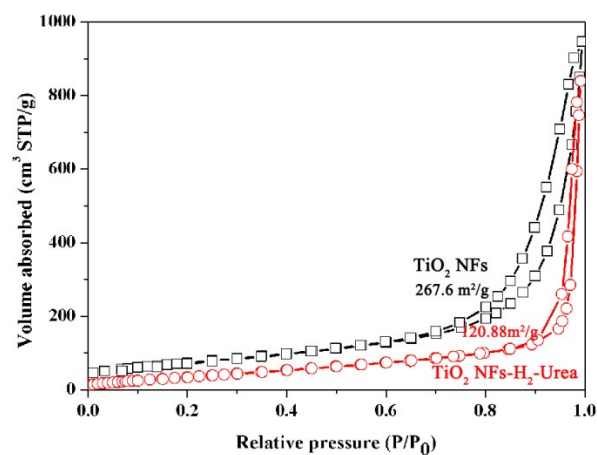


Fig. S9 N₂ adsorption–desorption isotherms of TiO₂ NFs and TiO₂ NFs-H₂-Urea.

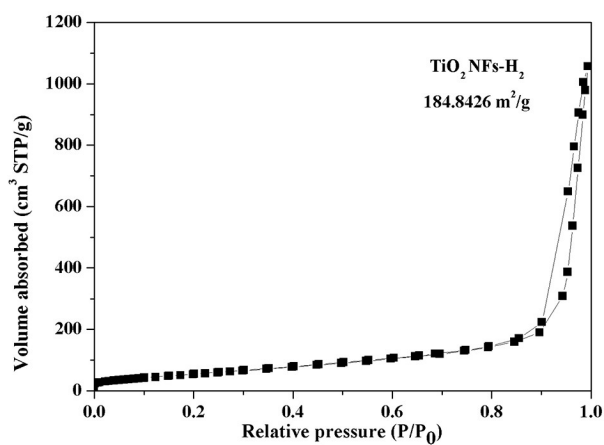


Fig. S10 N₂ adsorption–desorption isotherms of TiO₂ NFs-H₂.

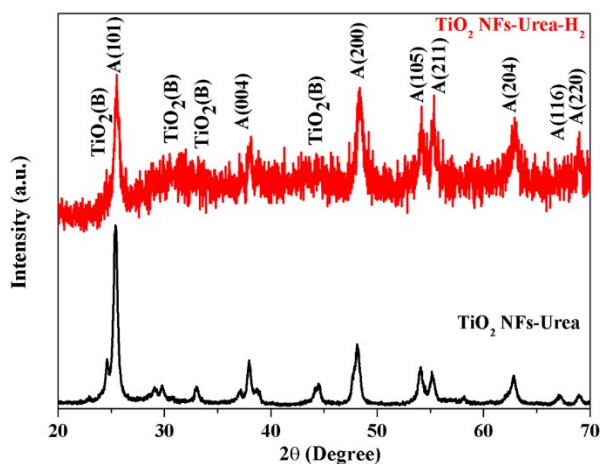


Fig. S11 XRD pattern of TiO₂ NFs-Urea and TiO₂ NFs-Urea-H₂, which indicates the presence of anatase and TiO₂(B) in the junctions.

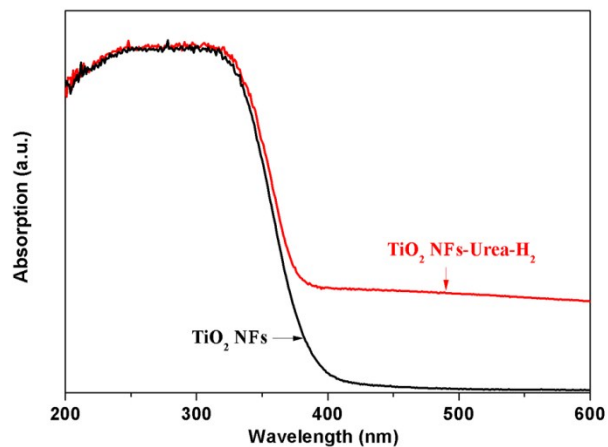


Fig. S12 DRS spectra of TiO_2 NFs and TiO_2 NFs-Urea- H_2 .

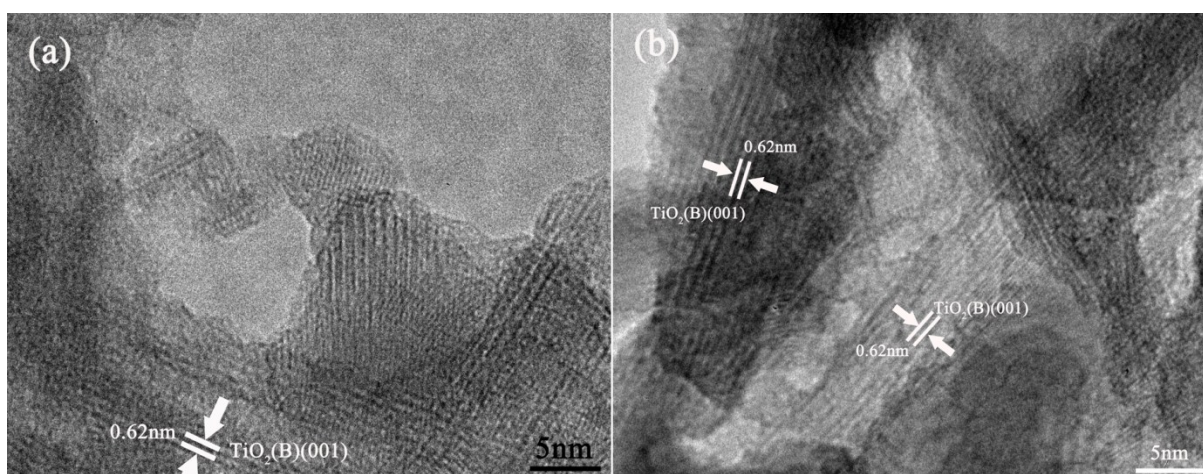


Fig. S13 HR-TEM images of TiO_2 NFs-Urea- H_2 .

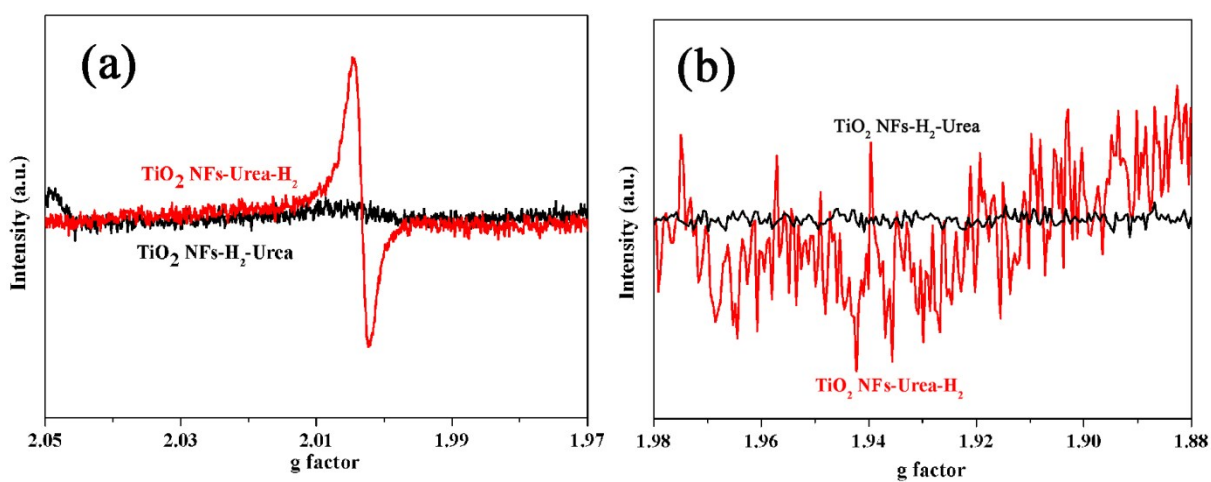


Fig. S14 (a) ESR spectra of TiO_2 NFs- H_2 -Urea and TiO_2 NFs-Urea- H_2 ; (b) Higher magnification ESR spectra of TiO_2 NFs- H_2 -Urea and TiO_2 NFs-Urea- H_2 .

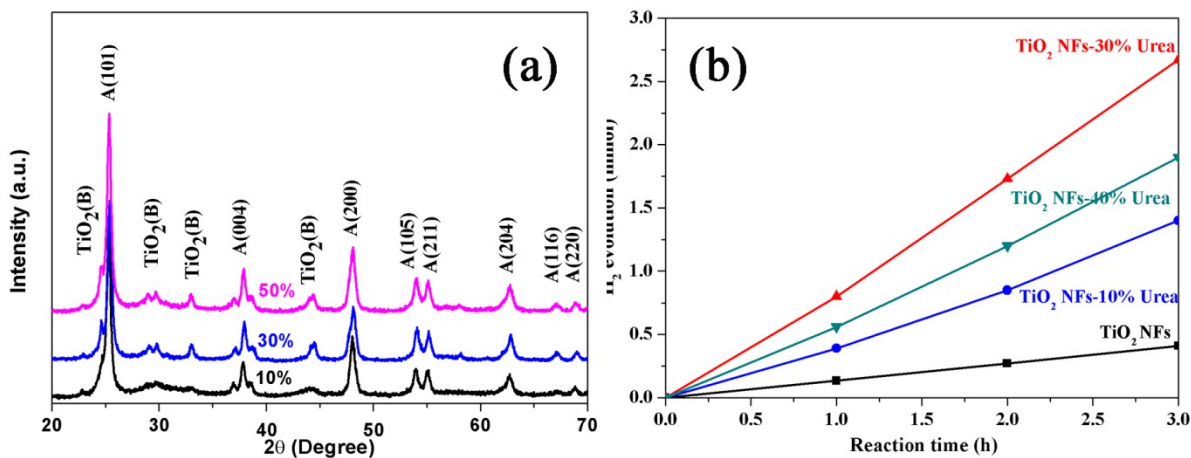


Fig. S15 XRD patterns of TiO₂ NFs-Urea fabricated in the presence of different amount of urea; (b) Photocatalytic hydrogen evolution of TiO₂ NFs-Urea fabricated in the presence of different amount of urea.

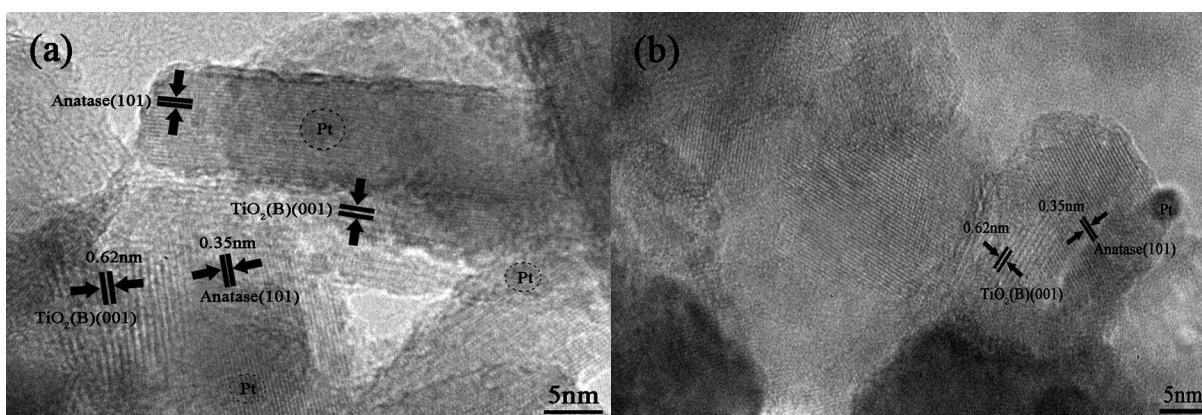


Fig. S16 HR-TEM images of Pt-loaded TiO₂ NFs-H₂-Urea.

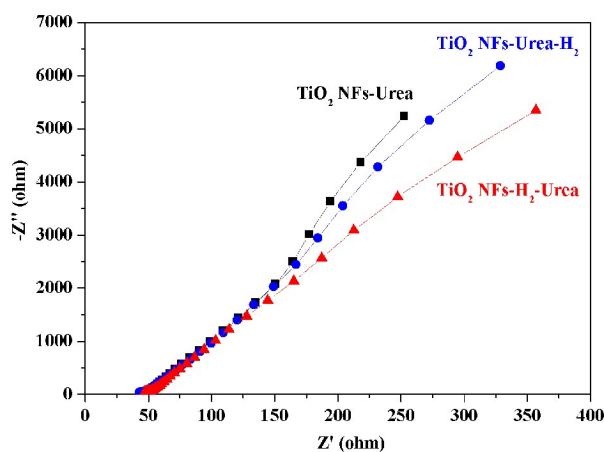


Fig. S17 Nyquist spectra of TiO₂ NFs-Urea, TiO₂ NFs-Urea-H₂ and TiO₂ NFs-H₂-Urea.

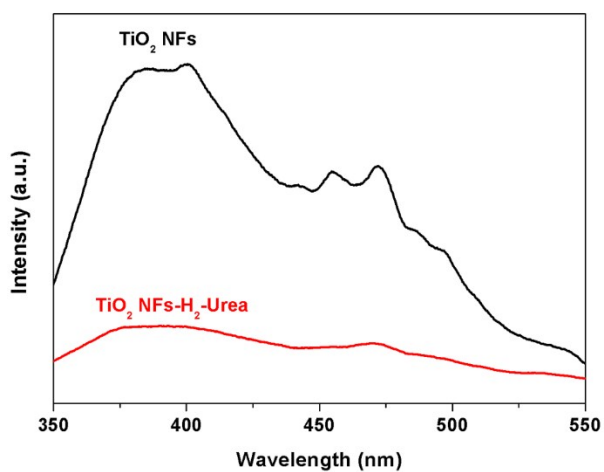


Fig. S18 Fluorescence spectra of . TiO₂ NFs-Urea and TiO₂ NFs-H₂-Urea.

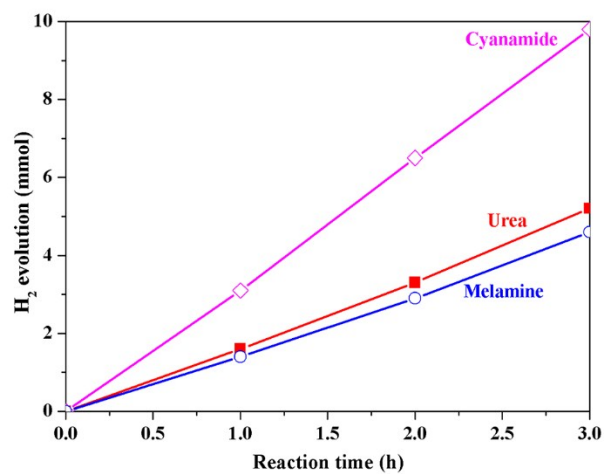


Fig. S19 Time courses of photocatalytic evolution of H₂ using TiO₂ NFs-H₂-Urea, TiO₂ NFs-H₂-Melamine and TiO₂ NFs-H₂-Cyanamide.