

Supporting Information for

Tailoring of {116} faceted single crystalline anatase nanosheets array and improved electrochemical performance

Feng Li,^a Xiaoning Li,^a Shangfeng Yang,^{abc} Zhengping Fu,^{*abc}
and Yalin Lu^{*abc}

^aCAS Key laboratory of Materials for Energy Conversion, Department of Materials
Science and Engineering, University of Science and Technology of China, Hefei
230026, P. R. China

^bNational Laboratory for Physical Sciences at the Microscale, University of Science
and Technology of China, Hefei 230026, P. R. China

^cSynergetic Innovation Center of Quantum Information & Quantum Physics, University of
Science and Technology of China, Hefei 230026, P. R. China

*E-mail: fuzp@ustc.edu.cn; yllu@ustc.edu.cn

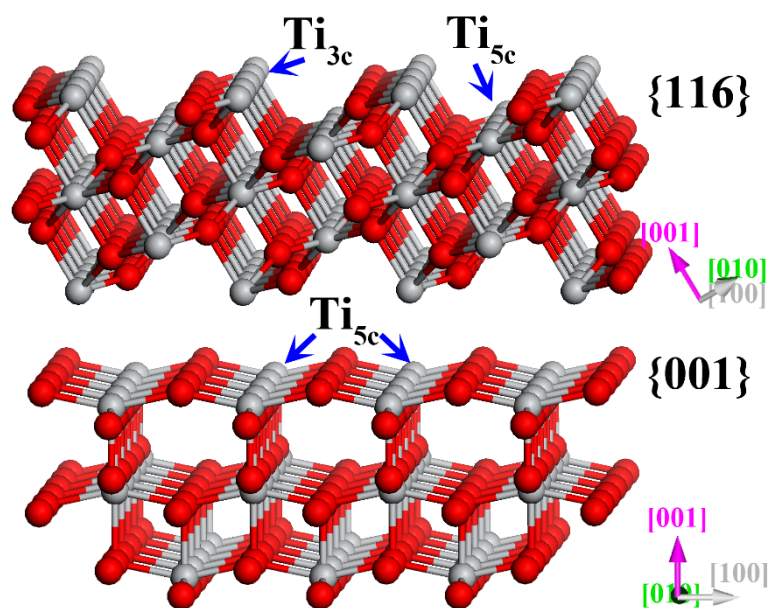


Figure S1. Atomic structures of {116} and {001} facets.

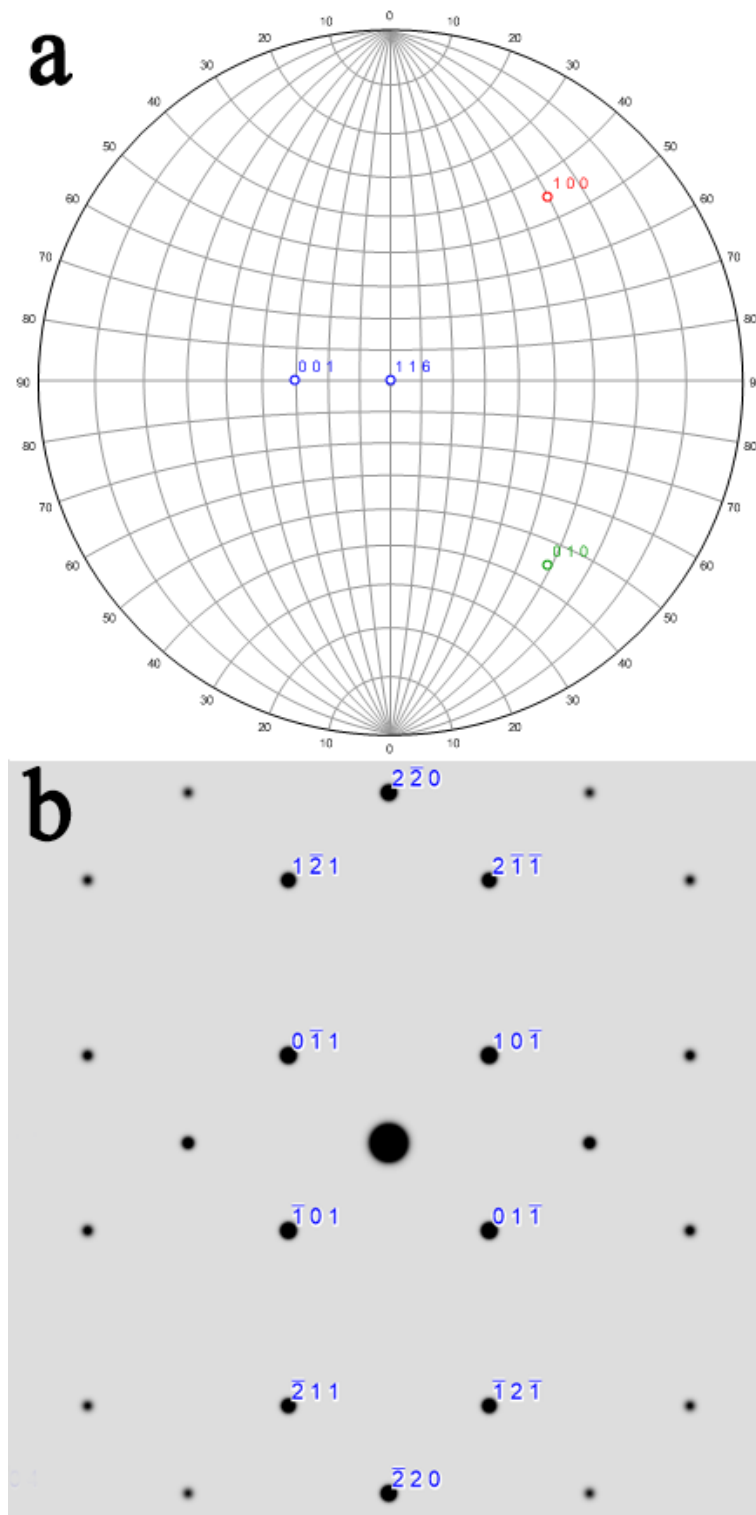


Figure S2. (a) (116) stereographic projection, (b) corresponding single crystalline diffraction pattern.

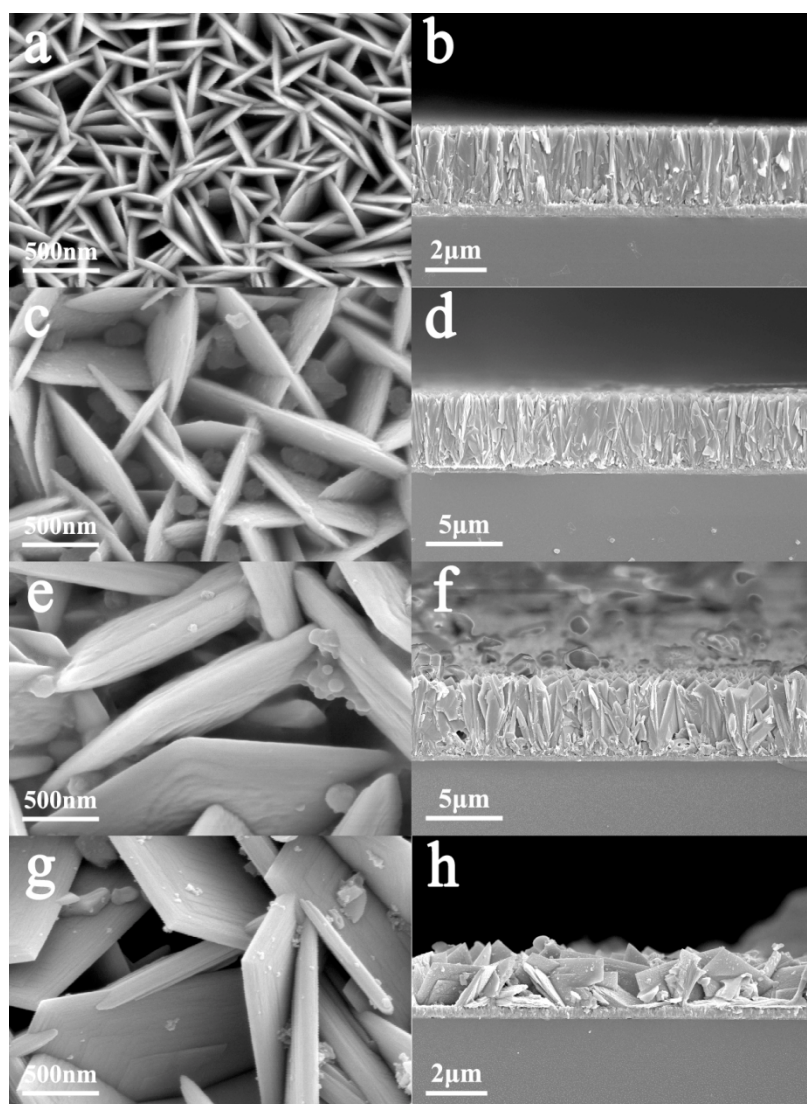


Figure S3. FESEM images of 'nanofishnet' grown on FTO substrate in 15 ml ethanol, (a,b) 0.5 ml titanium butoxide, 0.5 ml hydrofluoric acid, (c,d) 1.0 ml titanium butoxide, 1.0 ml hydrofluoric acid, (e,f) 1.5 ml titanium butoxide, 1.5 ml hydrofluoric acid, (g,h) 2.0 ml titanium butoxide, and 2.0 ml hydrofluoric acid at 200 °C for 12 h.

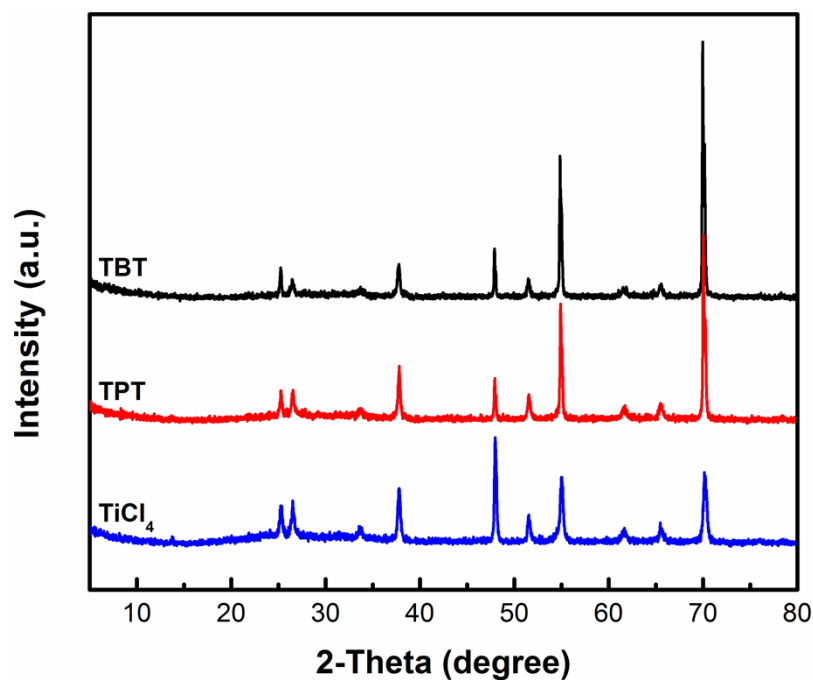


Figure S4. XRD patterns of ‘nanofishnet’ grown on FTO substrate at 200 °C for 12 h in 15 ml ethanol and 1.0 ml hydrofluoric acid with 1.0 ml different titanium precursors (titanium butoxide (TBT), titanium isopropylat (TPT), titanium tetrachloride (TiCl_4)).

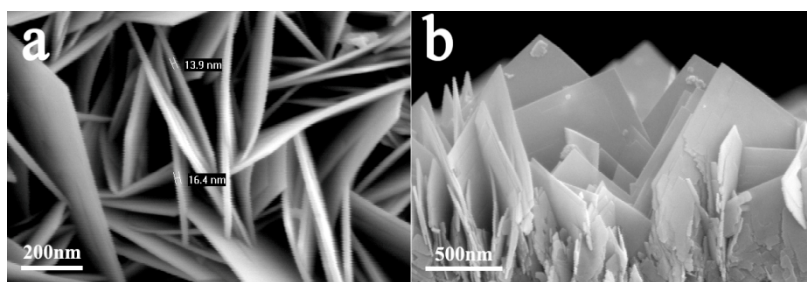


Figure S5. Magnified FESEM images of ‘nanofishnet’ grown on FTO substrate at 200 °C for 12 h in 15 ml ethanol and 1.0 ml hydrofluoric acid with 1.0 ml titanium tetrachloride (TiCl_4)).

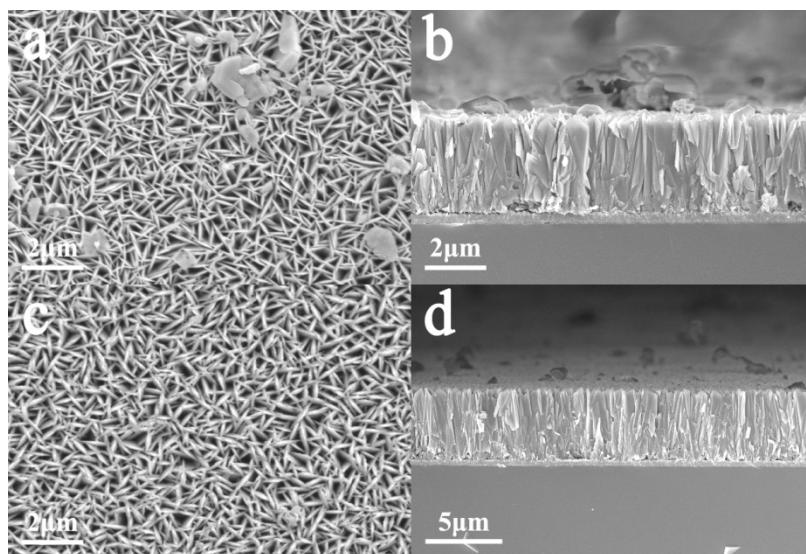


Figure S6. FESEM images of ‘nanofishnet’ grown on FTO substrate in 15 ml ethanol, 1.0 ml titanium butoxide, and 1.0 ml hydrofluoric acid with (a,b) 0.5 ml OA, (c,d) 0.5 g NaF at 200 °C for 12 h.

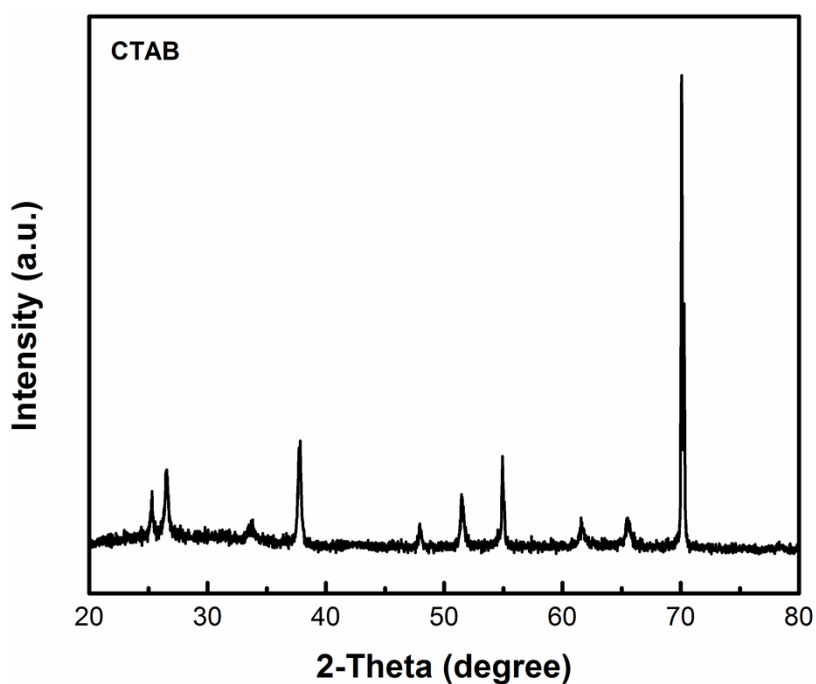


Figure S7. XRD patterns of ‘nanofishnet’ grown on FTO substrate in 15 ml ethanol, 1.0 ml titanium butoxide, and 1.0 ml hydrofluoric acid with 0.5 g CTAB at 200 °C for 12h.