

Supporting Information

Solvothermally Controllable Synthesis of Anatase TiO₂ Nanocrystals with Dominant {001} Facets and Enhanced Photocatalytic Activity

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Table S1. Average percentage of exposed {001} facets of the TiO₂ samples obtained after 72 h solvothermal alcoholysis of TiF₄ at 250°C with binary alcohols. The volume ratios between benzyl alcohol and another alcohol were fixed at 35/5.

Sample number	Binary alcohols	Exposed {001} facets (%)
a	benzyl alcohol + ethanol	50
b	benzyl alcohol + <i>n</i> -butanol	57
c	benzyl alcohol + isopropanol	62

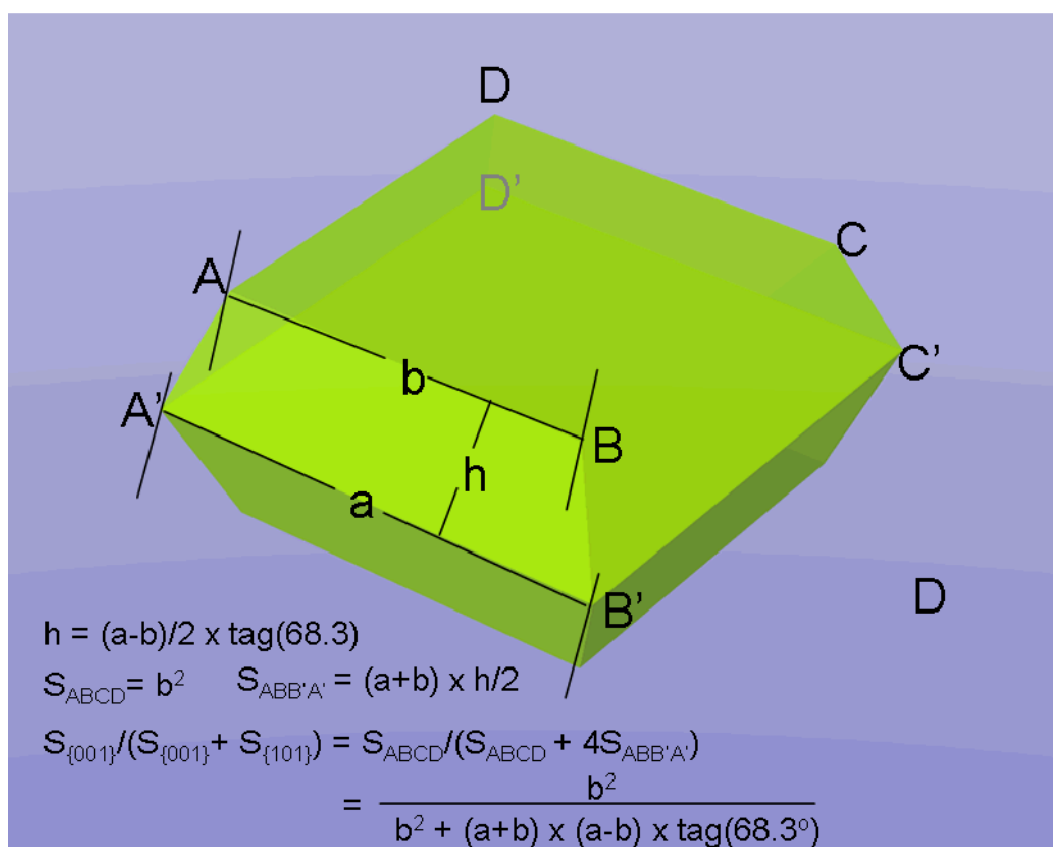


Fig. S1 Model of anatase TiO₂ decahedral nanocrystals used for calculating the percentage of exposed {001} facets.

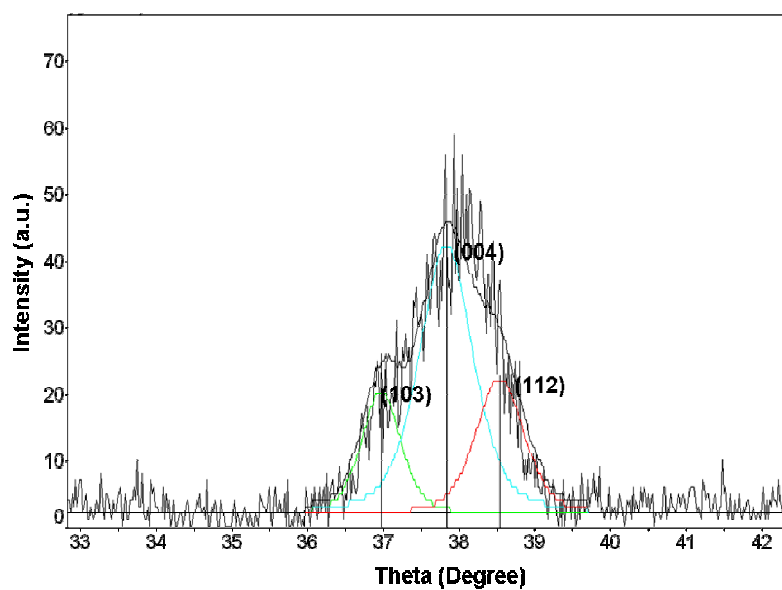


Fig. S2 The corresponding fitting XRD pattern of NC-001 sample to distinguish the overlapping of the (004) diffraction peak with the (103) and (112) diffraction peaks.

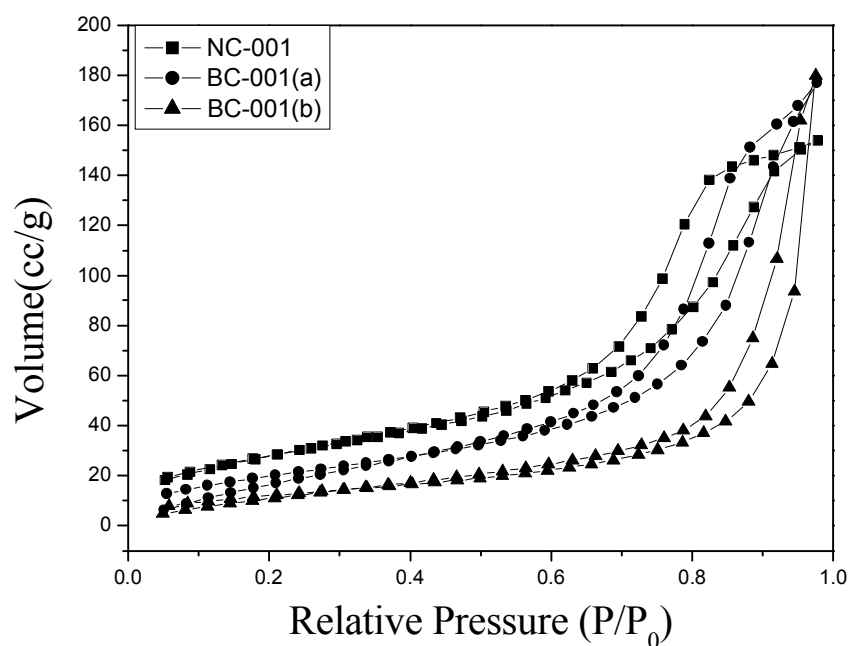


Fig. S3 N₂ adsorption-desorption isotherms of the NC-001, BC-001 samples obtained via solvothermal alcoholysis of TiF₄ in mixed *tert.*-butanol and benzyl alcohol solution. The BC-001(a) and BC-001(b) were obtained at the *tert.*-butanol/benzyl alcohol volume ratios of 35/5 and 30/10, respectively.

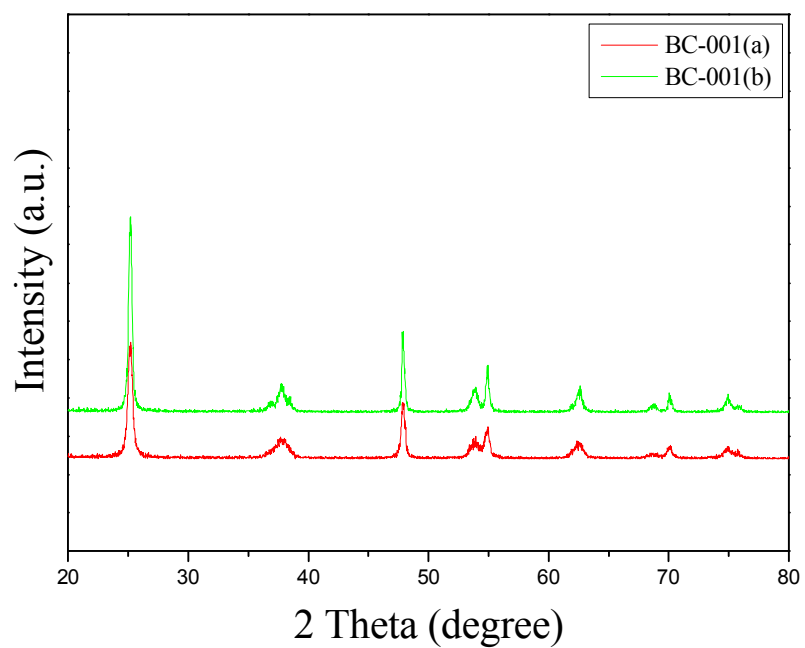


Fig. S4 XRD patterns of sample BC-001 samples obtained via solvothermal alcoholysis of TiF_4 in mixed *tert.*-butanol and benzyl alcohol solution. The BC-001(a) and BC-001(b) were obtained at the *tert.*-butanol/benzyl alcohol volume ratios of 35/5 and 30/10, respectively.

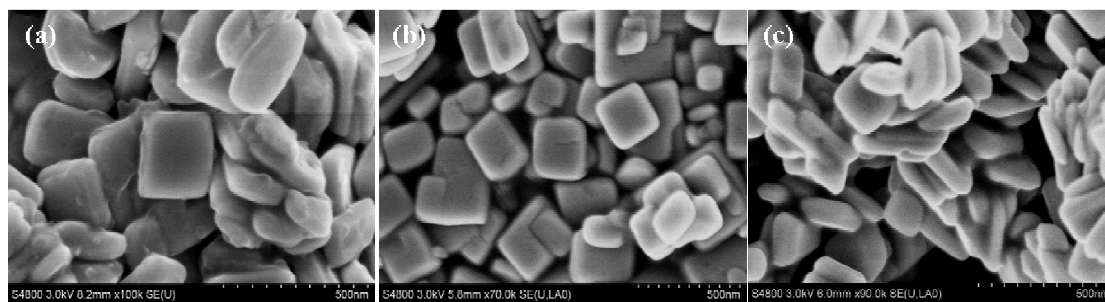


Fig. S5 FESEM images of the TiO_2 samples obtained after 72 h solvothermal alcoholysis of TiF_4 at 250°C by using different binary alcohols. (a) benzyl alcohol and ethanol, (b) benzyl alcohol and n-butanol, (c) benzyl alcohol and isopropanol. The volume ratios between benzyl alcohol and another alcohol were fixed at 35/5.