Supporting Information

Titania Polymorphs Derived from Crystalline Titanium Diboride

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**Fig. S1** Photographs of TiB$_2$ (Left one) and derived TiO$_2$ (Right one).

**Fig. S2** Survey and high resolution XPS spectra of derived *anatase* dominant TiO$_2$. 

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**Fig. S3** The X-ray diffraction intensity ratios of (101) to (001) facets in TiB₂ with hydrothermal treat time.

**Fig. S4** Optimized model for adsorbed hydroxyl group on surface Ti atom.