Supporting Information for
Hollow Anatase TiO₂ Porous Microspheres with V-shaped Channels and Exposed (101) Facets: Anisotropic Etching and Photovoltaic Property

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Fig. S1 A representative EDS spectrum of the anatase TiO$_2$ microsphere obtained by using 0.5 g ammonium fluoride. Carbon is generated from carbon tape while nitrogen is generated from liquid nitrogen used in the measurement. The inset is the corresponding elements content, showing that the product is composed of titanium, oxygen, and fluorine elements.
**Fig. S2** TEM image of an individual TiO$_2$ microsphere (a). The region in blue dashed circle is further investigated by HRTEM and shown in (b). Lattice distance of 3.5 Å corresponds to the lattice space of anatase TiO$_2$ (101) facet, while the angle value of 68.3° corresponds to the angle between (101) and (001) facets of anatase TiO$_2$. 

$d_{101} = 3.5$ Å
Fig. S3  SEM images of bulk TiO₂ samples obtained without (a) hydrogen peroxide, or without (b) ammonium fluoride.
Fig. S4  XRD patterns of bulk TiO$_2$ samples obtained without (a) hydrogen peroxide, or without (b) ammonium fluoride. When hydrogen peroxide was absent, the sample obtained is pure anatase TiO$_2$, however, mixed phased anatase/rutile TiO$_2$ was obtained when ammonium fluoride not used.