Supporting Information

Three-Dimensional Self-Branching Anatase TiO_2 Nanorods: Morphology Control, Growth Mechanism and Dye-Sensitized Solar Cells Application

Weiguang Yang,[a] Yueyang Xu,[a] Ying Tang,[a] Chen Wang,[a] Yajing Hu,[a] Lu Huang,[a] Jin Liu,[a] Jun Luo,[a] Haibo Guo,[a] Yigang Chen,[a] Weimin Shi[a] and Yali Wang*[a,b]

[a] Department of Electronic Information Materials, School of Materials Science and Engineering, Shanghai University, Shanghai 200444, China.

[b] Nano-Science and Nano-Technology Research Center, School of Materials Science and Engineering, Shanghai University, Shanghai 200444, China.

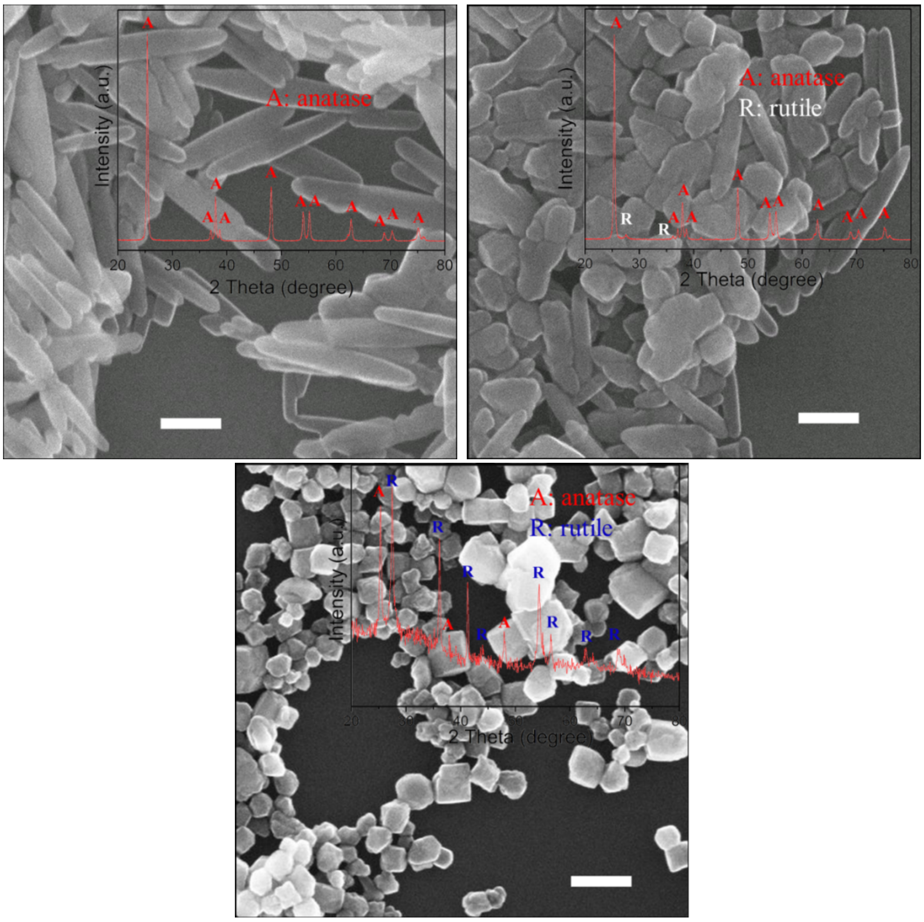

Fig. S1 SEM images of the as-obtained products prepared for 24 h with different weight ratios of F127/TBAH: (a) 1.0, (b) 1.1, and (c) 1.4. Inset: their XRD patterns. Scale bars: 200 nm. The percentages of rutile and anatase were calculated using the method outlined by Spurr and Myers (R. A. Spurr, H. Myers, *Anal. Chem.* 1957, **29**, 760).

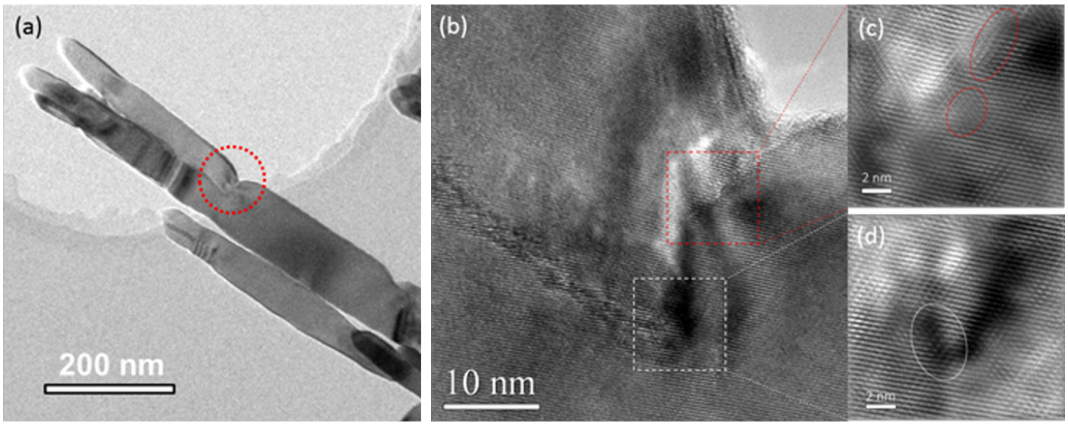

Fig. S2 (a) TEM image of the as-obtained products prepared for 8 h with 0.9 of the weight ratios of F127/TBAH. (b) HRTEM image of branch-main rod interface marked by the red dashed circle in a). (c and d) magnified images from the red and white rectangle-enclosed areas in (b), respectively. The red ellipses in (c) and white ellipse in (d) represent the defects.

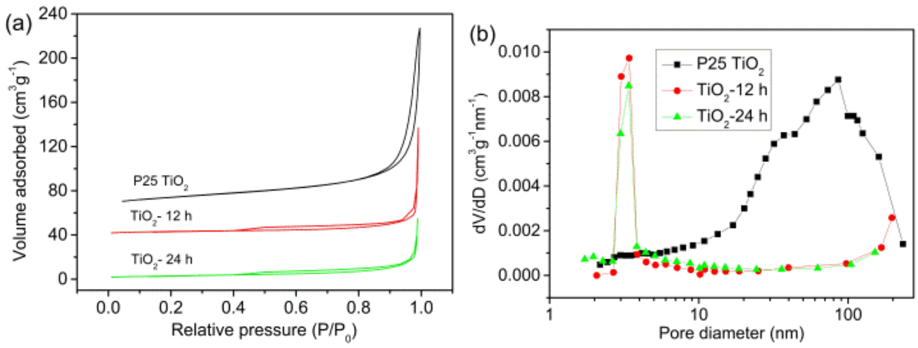

Fig. S3 Nitrogen adsorption-desorption isotherm curves (a) and Barret-Joyner-Halenda (BJH) pore size distribution plot (b) of self-branching TiO_2 obtained with the reaction time of 12 and 24 h and P25 TiO_2.