Supporting information for

TiO_2 cellular-protected nanowire array fabricated super-rapidly by the precipitation of colloid in the nanopore

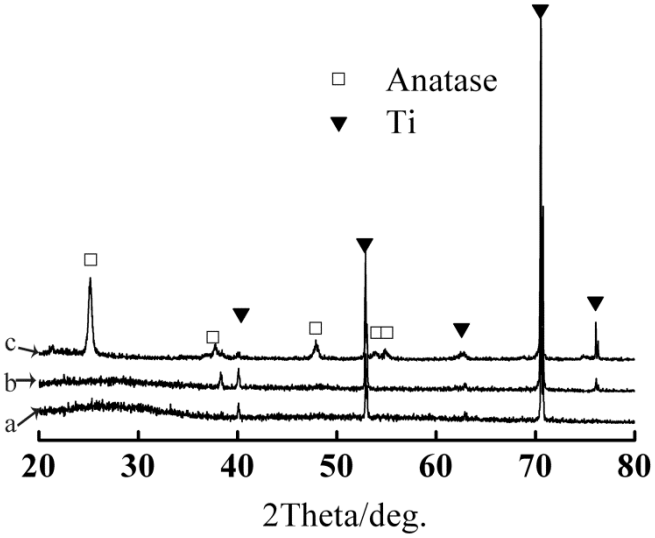
[1]Wei Li, [1]Jiajun Li, [1]Chunsheng Shi, [1]Enzuo Liu, [1]Chunnian He, [1]Xiwen Du, [1]Naiqin Zhao, [1,2]Michael Springborg, [1,2]Yi Dong,*

nqzhao@tju.edu.cn

1. Department of Material Science and Engineering, and Tianjin Key Laboratory of Composite and Functional Materials, Tianjin University, Tianjin300072, China

1. 2. Department of Physical and Theoretical Chemistry, Saarland University, 66123 Saarbrücken, Germany

Supplementary figures.



FigureS1. XRD patterns of a: the as-anodized TiO_2 nanotube array, b:unannealed TiO_2 CPNW array, c: TiO_2 CPNW array annealed at 40℃.

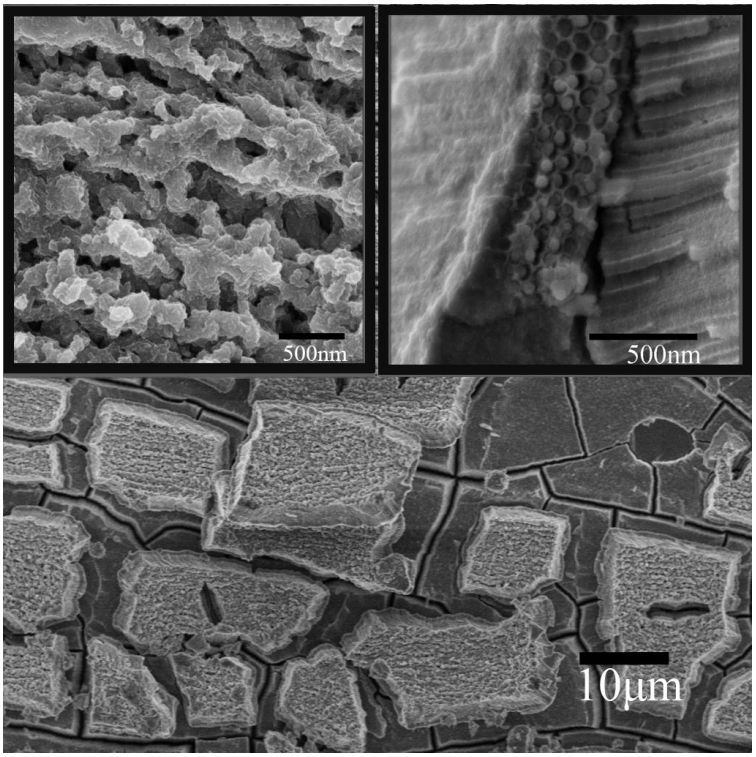


Figure S2. SEM images of alkali treated TiO_2 nanotube array. The inset in the left corner is the magnified view of top layer, the inset in the right corner is the magnified view of the bottom layer.

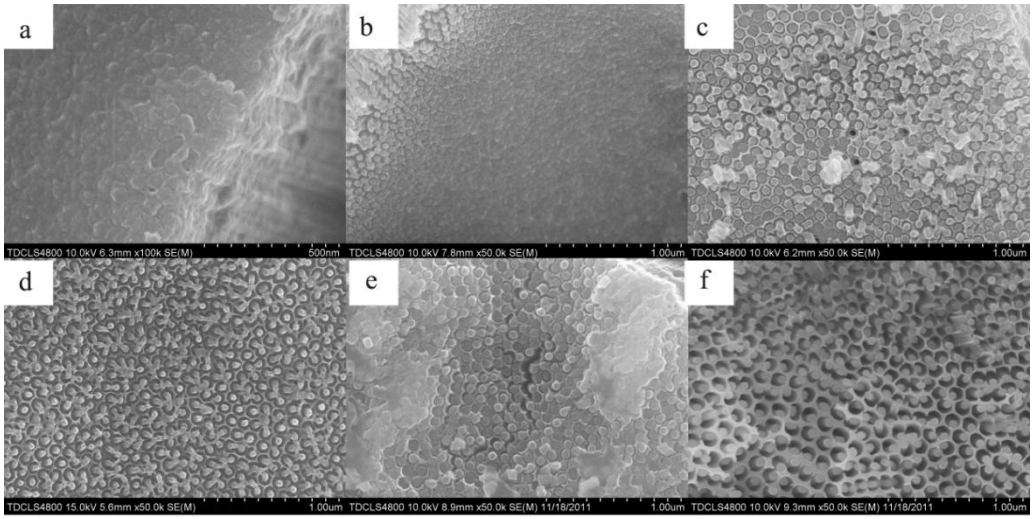


Figure S3. SEM graphs of alkali treated TiO_2 NTA treated in HCl for a 5min, b 8min, c 10min, d 1h, and e in HNO_3 for 1h, f in H_2SO_4 for 1h.

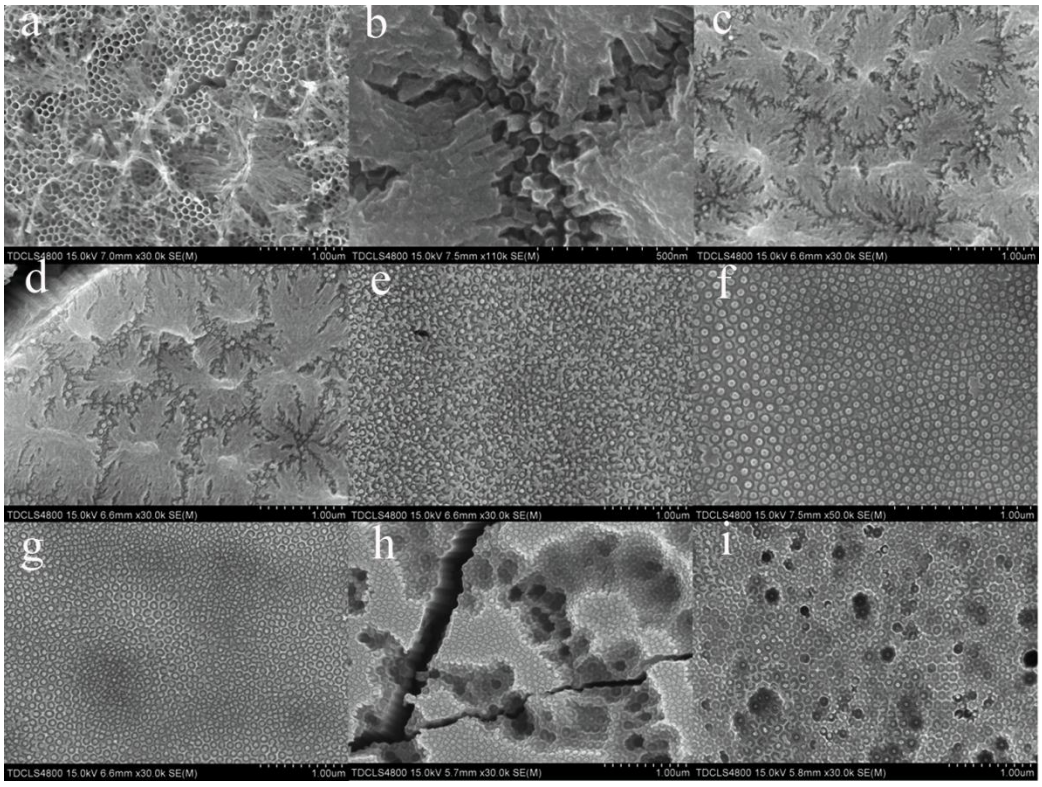


Figure S4. SEM graphs (a) the TiO2 nanotube array, the TiO2 CPNW array obtained by treating TiO2 nanotube array in KOH with concentration of (b)1M, (c) 1.5M, (d)2M, (e) 2.5M, (f) 3M, (g) 4M, (h) 5M, and (i) 7M for 2 days and in 0.57 M HCl for 1h.

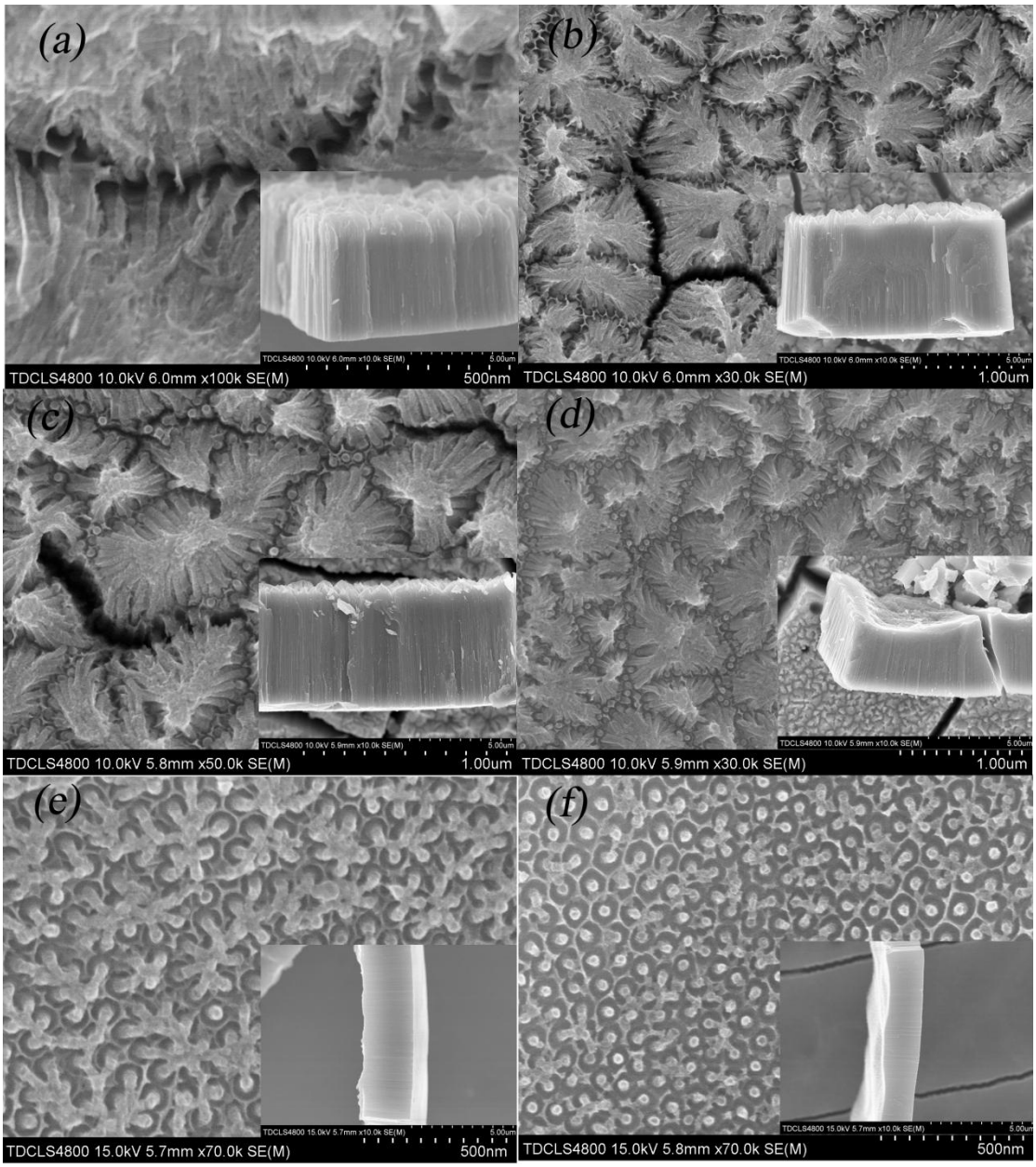


Figure S5. SEM graphs of CPNW arrays obtained by treating TiO2 nanotube arrays in 3M KOH for (a)8 min, (b) 30min, (c) 1h, (d) 6h, (e) 3d, (f) 4d.

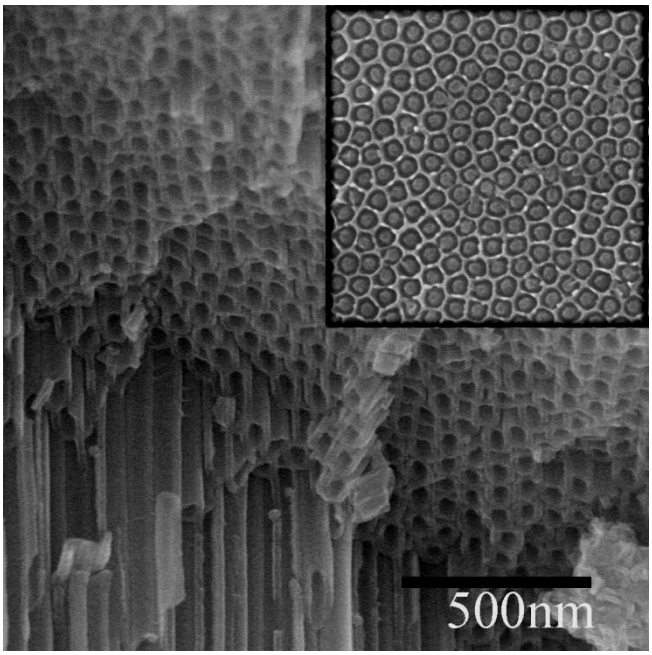


Figure S6 SEM image of exposed crack surface of the as-anodized NT array which corresponds to the surface of CPNW array shown in the inset, the tube wall become thinner with the formation of CPNW array.