

## Electronic Supplementary Information

### 1 XRD

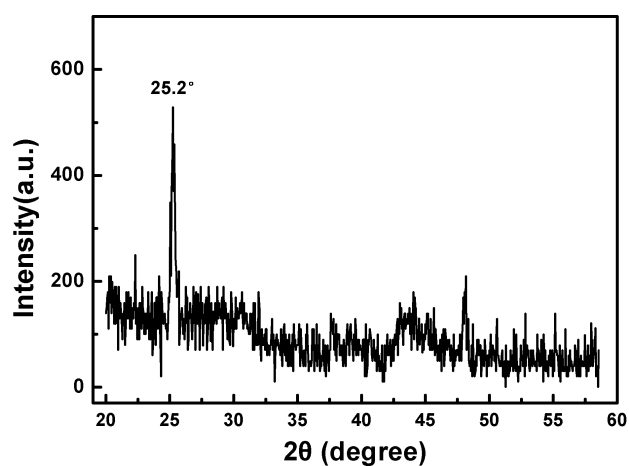


Fig. S1 XRD pattern of the TiO<sub>2</sub> NBs array.

### 2 Cross-section of AFM Data

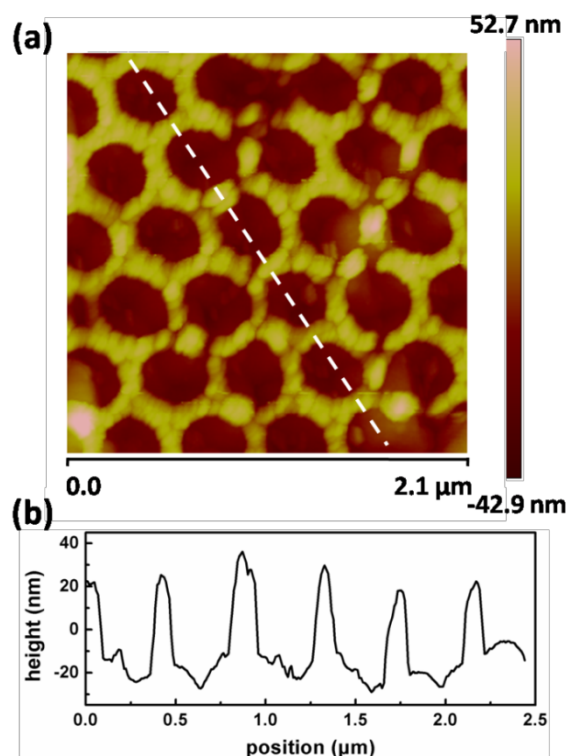


Fig. S2 (a) The 2D AFM image of TiO<sub>2</sub> NBs array, (b) the cross-section of AFM data corresponding to the position of white dot line in Fig. S2(a)

### 3 The J–V characteristics of the device in dark

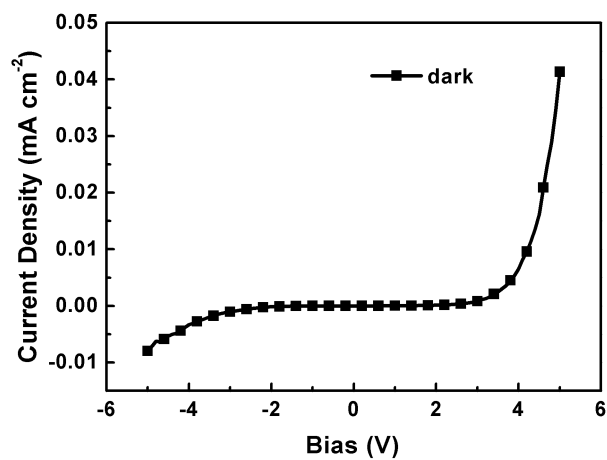


Fig. S3 The J–V characteristics of the device in dark individually (in linear scale).