

Supplementary Information

Table S1. Zn2p³, O1s, C1s, and Zn/O ratio calculated from XPS spectra.

| Film | Zn2p | | O1s | | C1s | | Zn/O |
|------|-----------|-------|-----------|-------|-----------|-------|------|
| | Peak (eV) | at% | Peak (eV) | at% | Peak (eV) | at% | |
| ZnO | 1022.44 | 37.98 | 531.17 | 41.26 | 285.90 | 20.75 | 0.92 |
| AZO | 1022.42 | 44.14 | 531.17 | 45.40 | 285.84 | 10.45 | 0.97 |

Note: Film thickness: 50 nm, Annealing temperature: 350 °C.

Figure S1. (a) XRD patterns and (b) relative intensity of (002) peak of the ZnO NRs grown on AZO seed layers with various seed annealing temperatures.

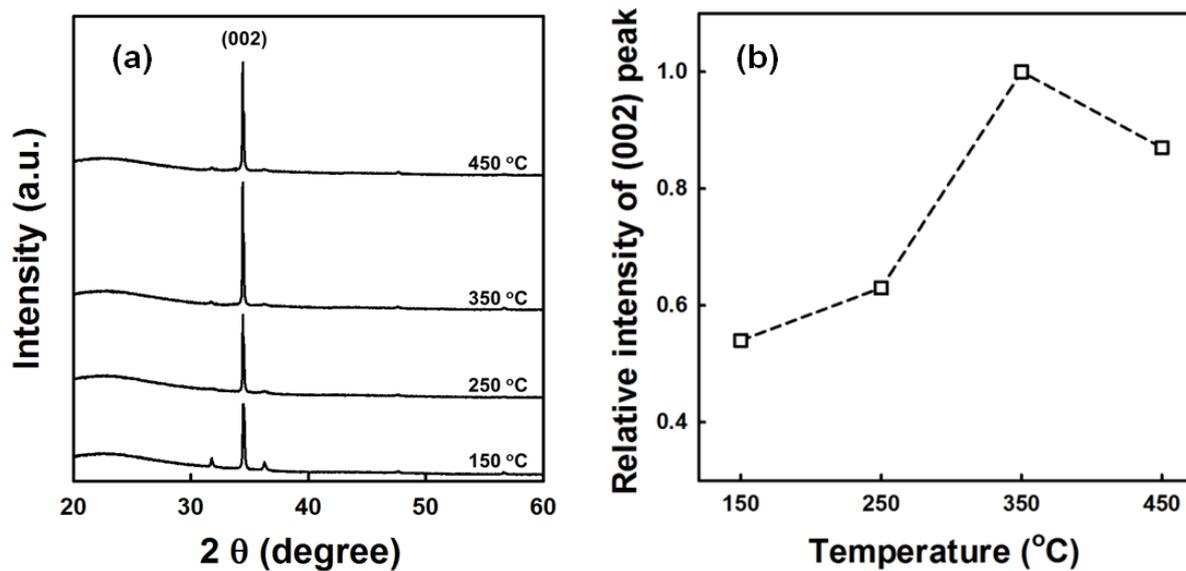
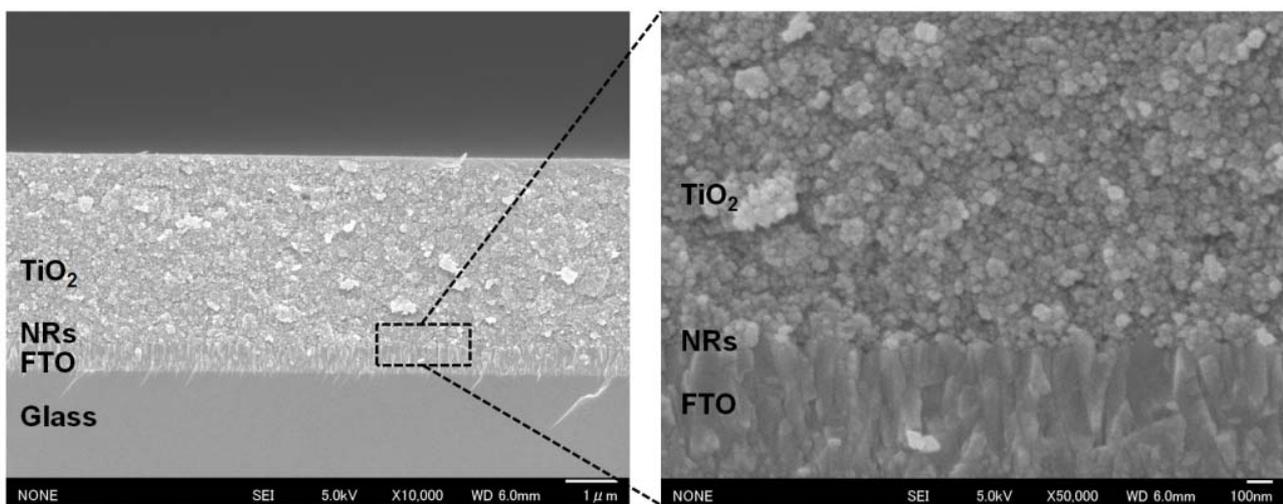
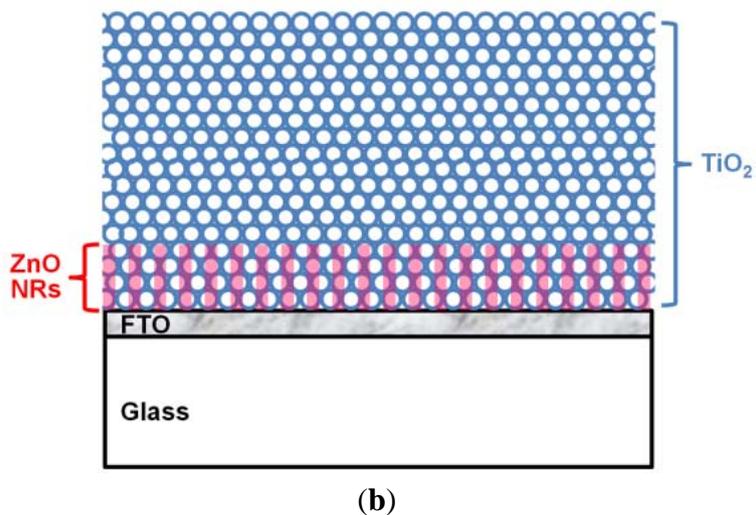


Figure S2. Cross-sectional FESEM images of (a) TiO₂/ZnO NRs on FTO glass coated substrate and (b) its schematic diagram.



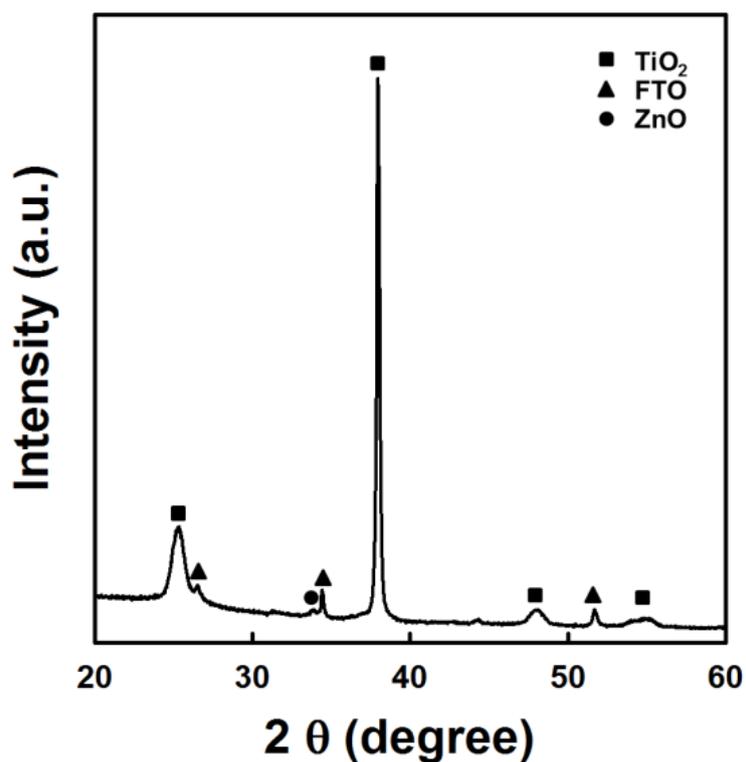
(a)

Figure S2. Cont.



As seen, TiO₂ nanoparticles could effectively fill in the interspaces between ZnO nanorods.

Figure S3. XRD pattern of TiO₂/ZnO NRs on FTO coated glass substrate.



Diffraction peak corresponding to the hexagonal wurtzite structure of ZnO is clearly observed.