Electronic Supplementary Material (ESI) for RSC Advances.
This journal is © The Royal Society of Chemistry 2015

Calibration on force upon the surface of single ZnO nanowire applied by AFM tip with different scanning angles

Peifeng Li[a,#], Qingliang Liao[a,#], Zengze Wang[a], Pei Lin[a], Zheng Zhang[a], Xiaoqin Yan[a], Yue Zhang[a,b,*]

[a] *State Key Laboratory for Advanced Metals and Materials, School of Materials Science and Engineering, University of Science and Technology Beijing, Beijing 100083, People's Republic of China.; E-mail: yuezhang@ustb.edu.cn*
[b] *Key Laboratory of New Energy Materials and Technologies, University of Science and Technology Beijing, Beijing 100083, People's Republic of China.; E-mail: yuezhang@ustb.edu.cn*

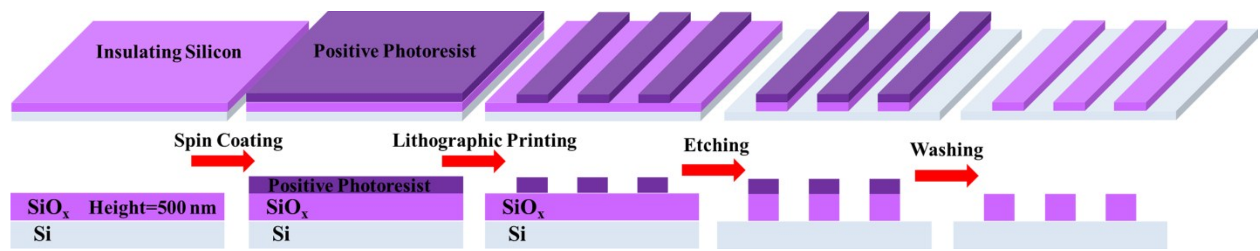

Fig. S1 The production processes of the insulating silicon trench arrays.

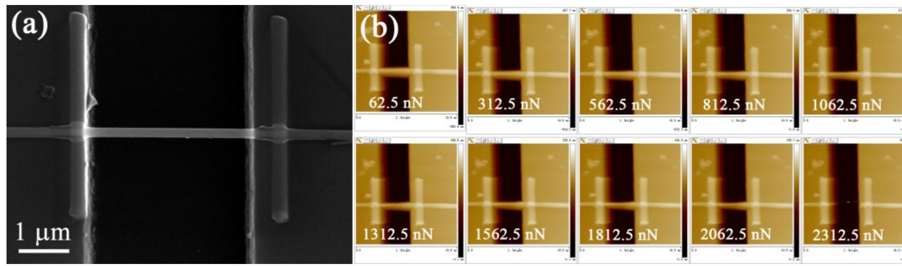

Fig. S2 (a) SEM images of the ZnO NW with diameter of about 172 nm in Figure 3d. (b) AFM images of the ZnO NW change with the increase of the applied force.

Table S1 Sizes and mechanical parameters of the ZnO NWs with small scanning angles.

No.	d (nm)	F_{f} (nN)	$F_{th\text{-}s}$ (nN)	θ (º)
1	67	312.5	312.5	3
2	121	1312.5	1312.5	1
3	165	2062.5	2062.5	2
4	172	2312.5	2312.5	0
5	201	2437.5	2437.5	3

Table S2 Sizes and mechanical parameters of the ZnO NWs with large scanning angles.

No.	d (nm)	F_f (nN)	$F_{th\text{-}s}$ (nN)	θ (º)	μ_2
1	85	187.5	681.16	12	16.80
2	92	312.5	798.18	11	12.32
3	102	312.5	965.34	16	10.60
4	103	437.5	982.06	15	7.76
5	105	437.5	1015.49	30	4.19
6	120	437.5	1266.24	21	7.58
7	120	562.5	1266.24	21	5.63
8	150	812.5	1767.74	41	2.95