

Electronic Supplementary Information

Investigation of Strain Effects on Photoelectrochemical Performance of Flexible ZnO Electrodes

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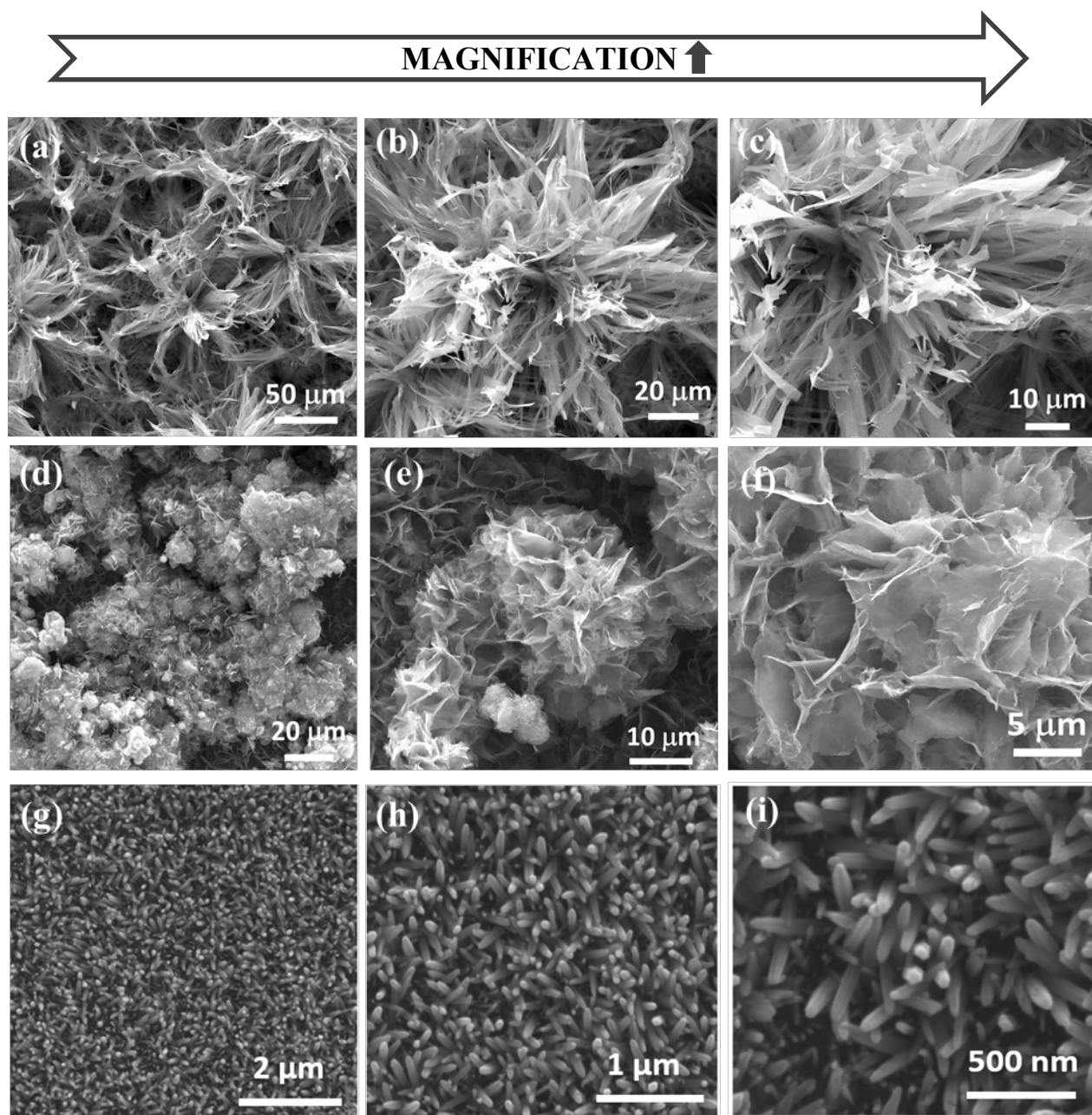


Fig. S1. SEM images of (a) – (c) Nanoflower, (d) – (f) Nanosheet and (g) – (i) Nanorods at different magnifications

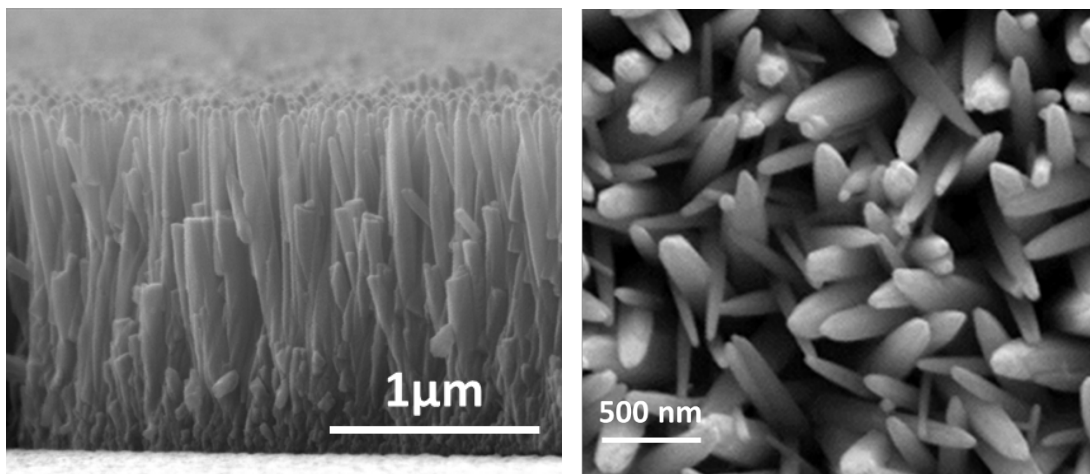


Fig. S2. Cross sectional and surface SEM images of ZnO nanorods.

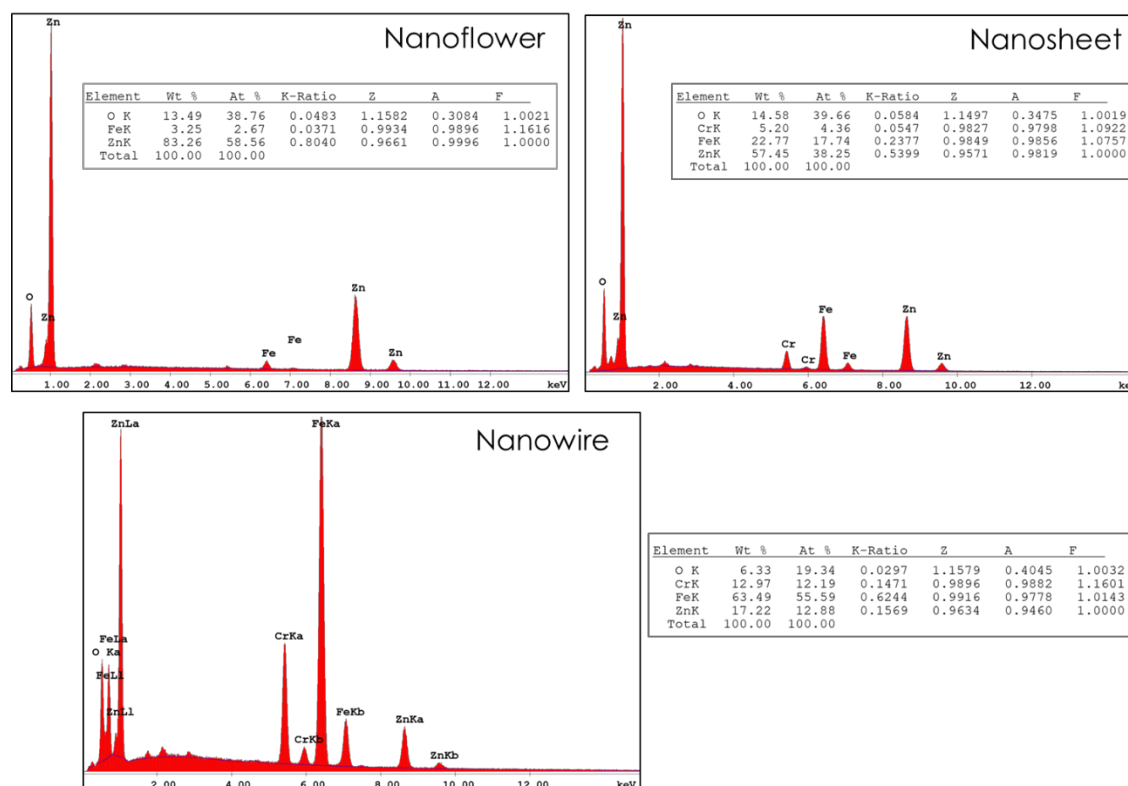


Fig. S3. EDAX results of ZnO thin films

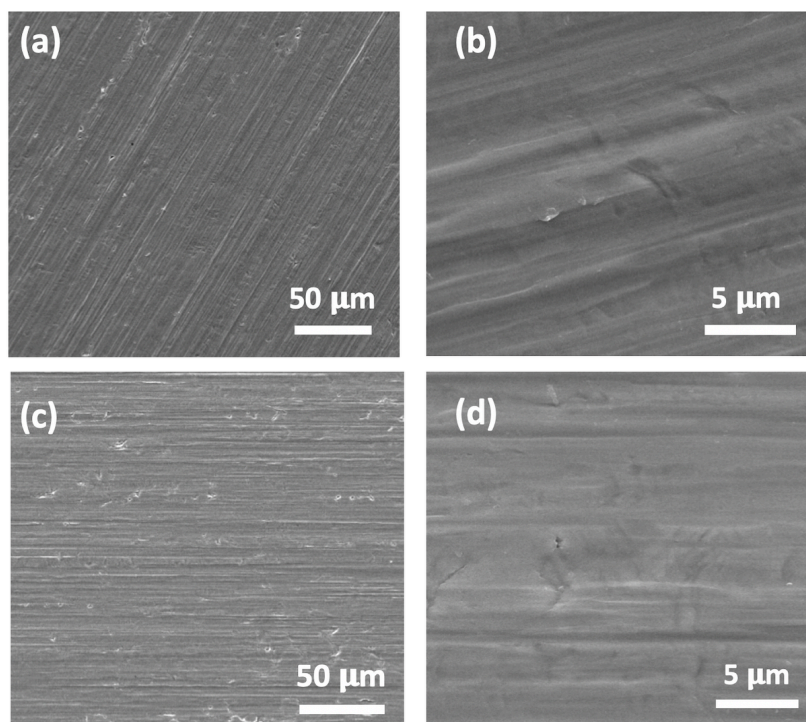
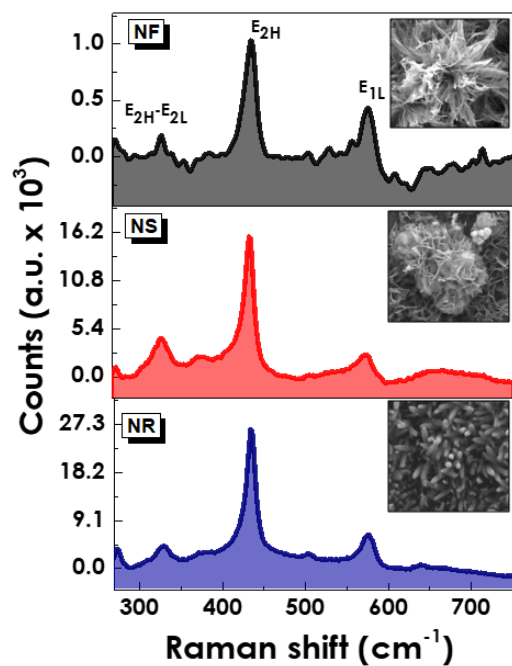


Fig. S4. SEM images and EDAX results of **(a)-(b)** bare SS foil, and **(c)-(d)** ZnO seeding layer deposited SS foil.

Table S1. Peak intensity ratios obtained from PL deconvolutions of ZnO nanostructures

ZnO Morphologies	O_I/O_{III}	O_{II}/O_{III}
Nanoflower	1.22	0.50
Nanosheet	0.73	1.10
Nanorod	0.94	0.52



ZnO Morphologies	E _{1L} / E _{2H} intensity ratios
Nanoflower	0.41
Nanosheet	0.15
Nanorod	0.23

Fig. S5. Raman spectra for NF, NS and NR ZnO nanostructures with corresponding characteristic peaks.

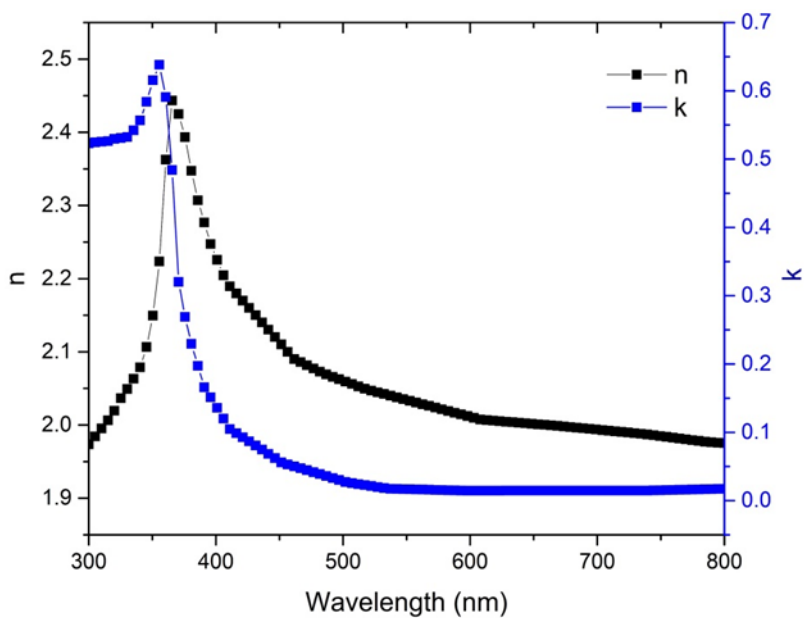


Fig. S6. Complex refractive index of ZnO

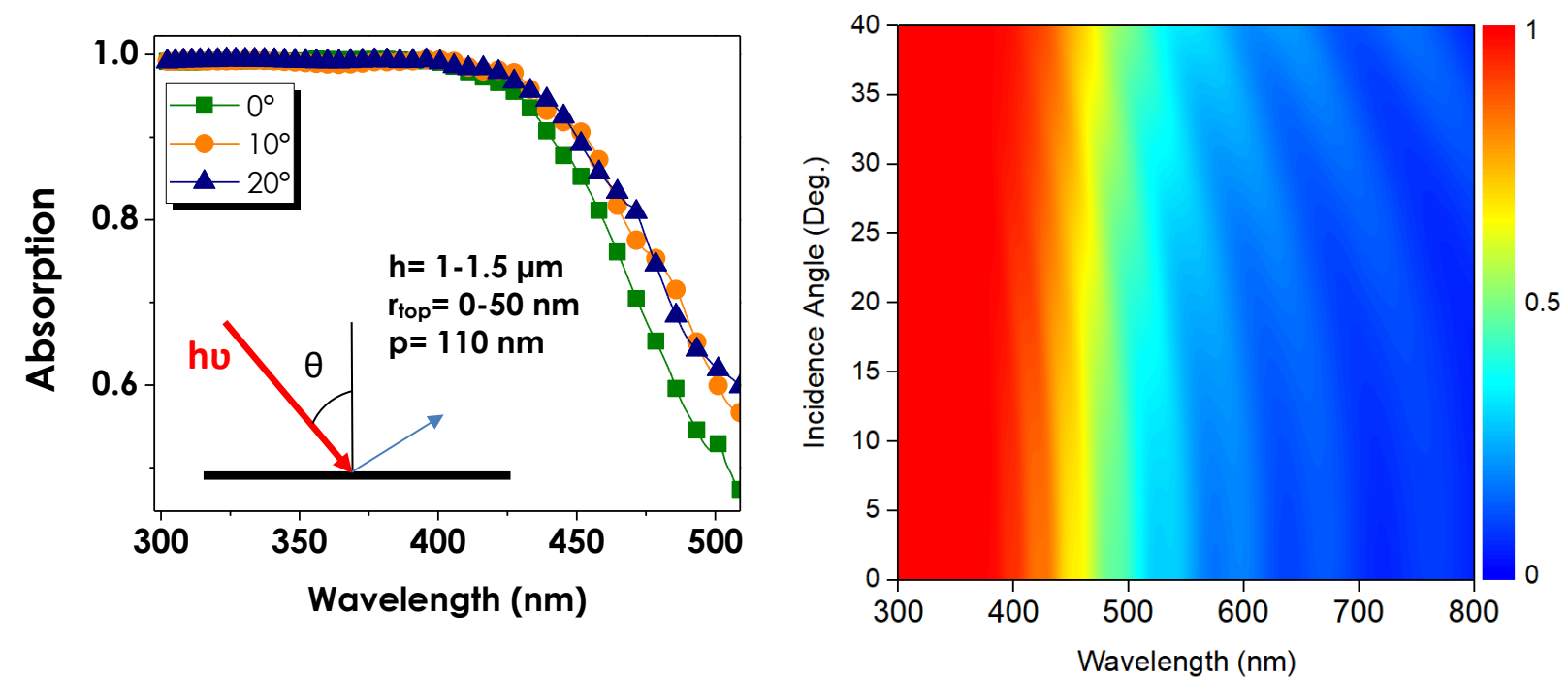


Fig. S7. The dependence of the absorption of ZnO NWs on the angle of incident light

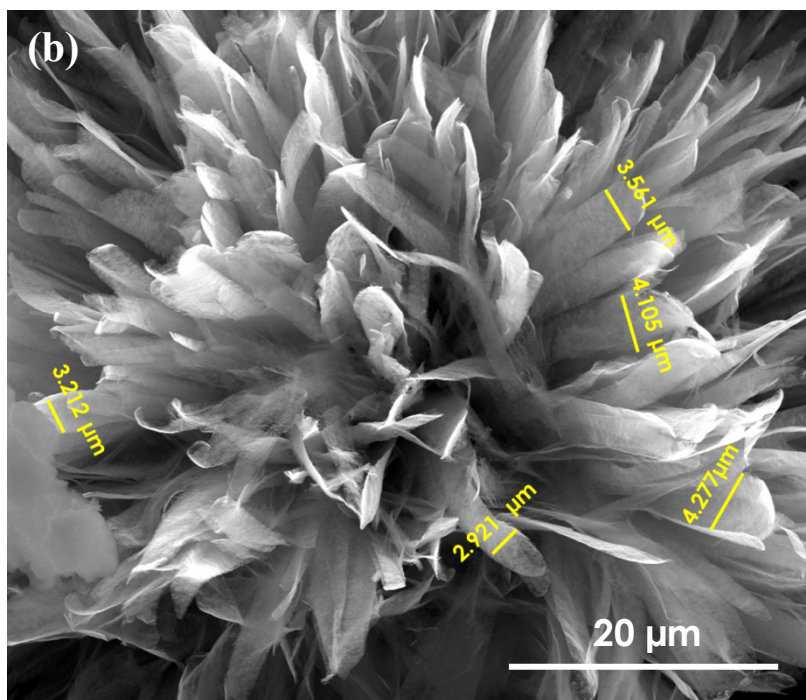
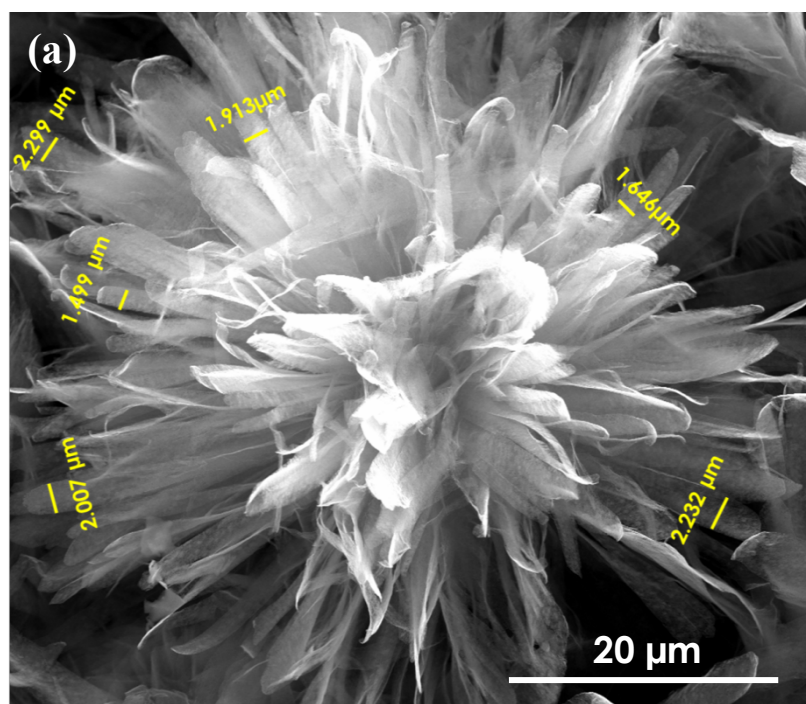


Fig. S8. SEM images of ZnO Nanoflowers showing the increase in the dimensions of petals (a) before and (b) after straining

Table S2. Summary of photocurrent densities of ZnO electrodes at 0 V_{bias} (vs. Ag/AgCl) after straining up to 2000 cycles.

ZnO thin film Morphologies	J (mA cm ⁻²)					
	Flat	10-cycles	50-cycles	100-cycles	500-cycles	2000-cycles
Nanoflower	1.54	1.62	1.16	0.29	-	-
Nanosheet	1.14	0.61	0.37	-	-	-
Nanorod	0.87	1.04	0.57	0.57	0.45	0.41