

## Supporting Information

### Vertical Arrays of SiNWs/ZnO Nanostructures as high performance electron field emitters.

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#### Photoluminescence properties:

The optical properties of the as-synthesized heterojunctions are investigated. Figure S1 exhibits the room-temperature photoluminescence (RT-PL) spectra recorded on ZnO nanostructures on SiNWs. ZnO multipod structures display the near band edge emission at 382 nm whereas in ZnO nanorods, the position of this band is slightly shifted to 378 nm. The difference in band edge emission between the two nanostructure geometries is likely due to surface state populations that vary with surface area-to-volume ratios.

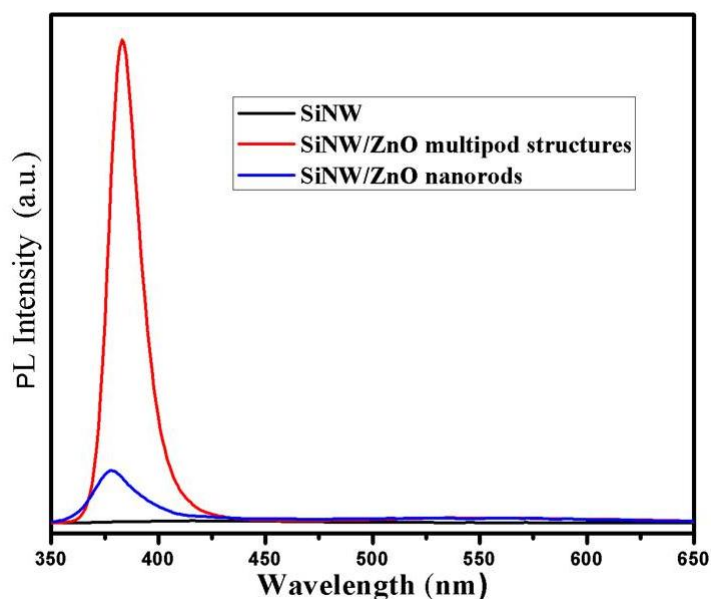


Figure S1. Room-temperature photoluminescence spectra of ZnO nanostructures on SiNWs.

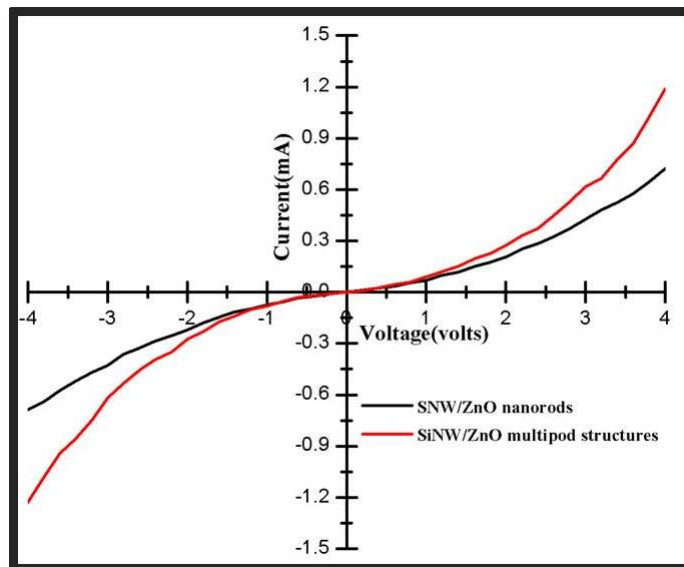


Figure S2. Current-voltage (I-V) characteristics of ZnO nanostructures-SiNWs heterojunctions.