

**Interface energy barrier tailoring the morphological structure evolution from ZnO
nano/micro rod arrays to microcrystalline thin films by Mn doping**

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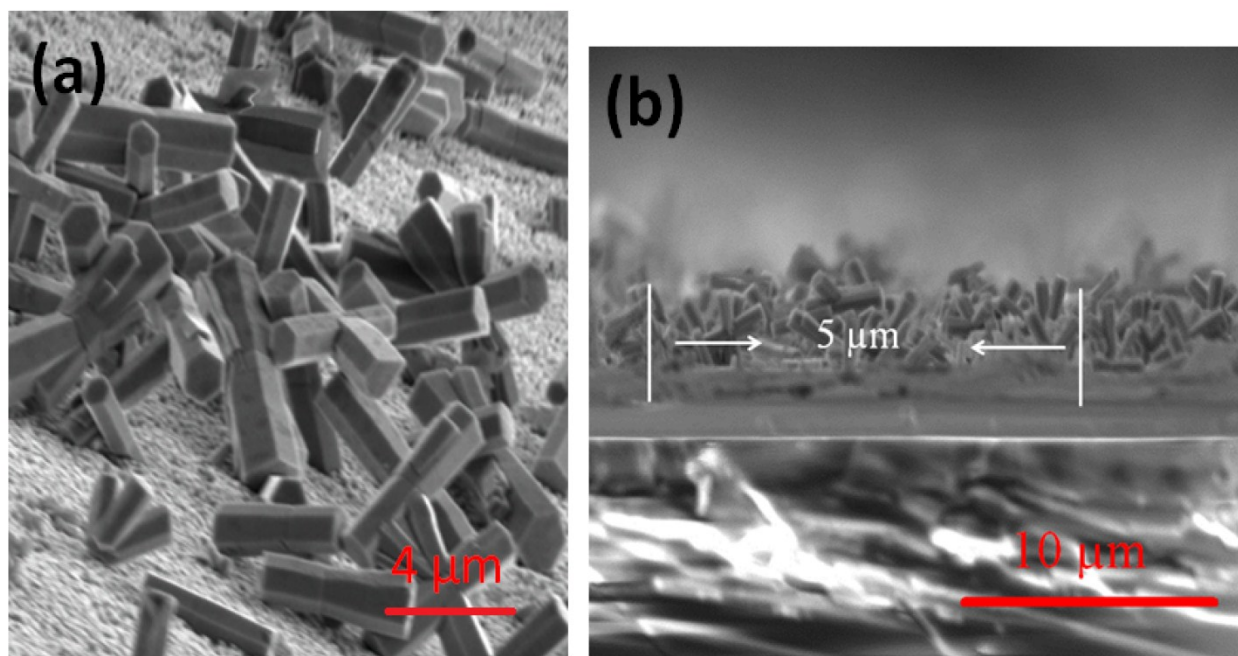


Fig. S1. Tilt (a) and cross-section (b) FESEM image of pure ZnO N/MRAs thin film. Due to low magnification FESEM image of ZnO N/MRAs, the NRs do not clearly seen in cross-section view.

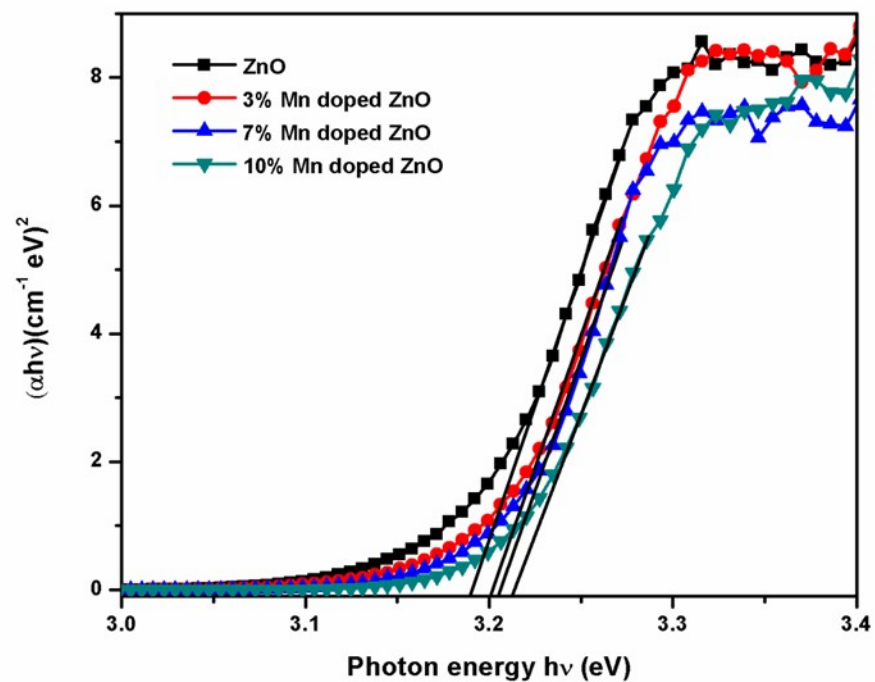


Fig. S3 Band gap energy of pure and Mn doped ZnO N/MRAs thin films.

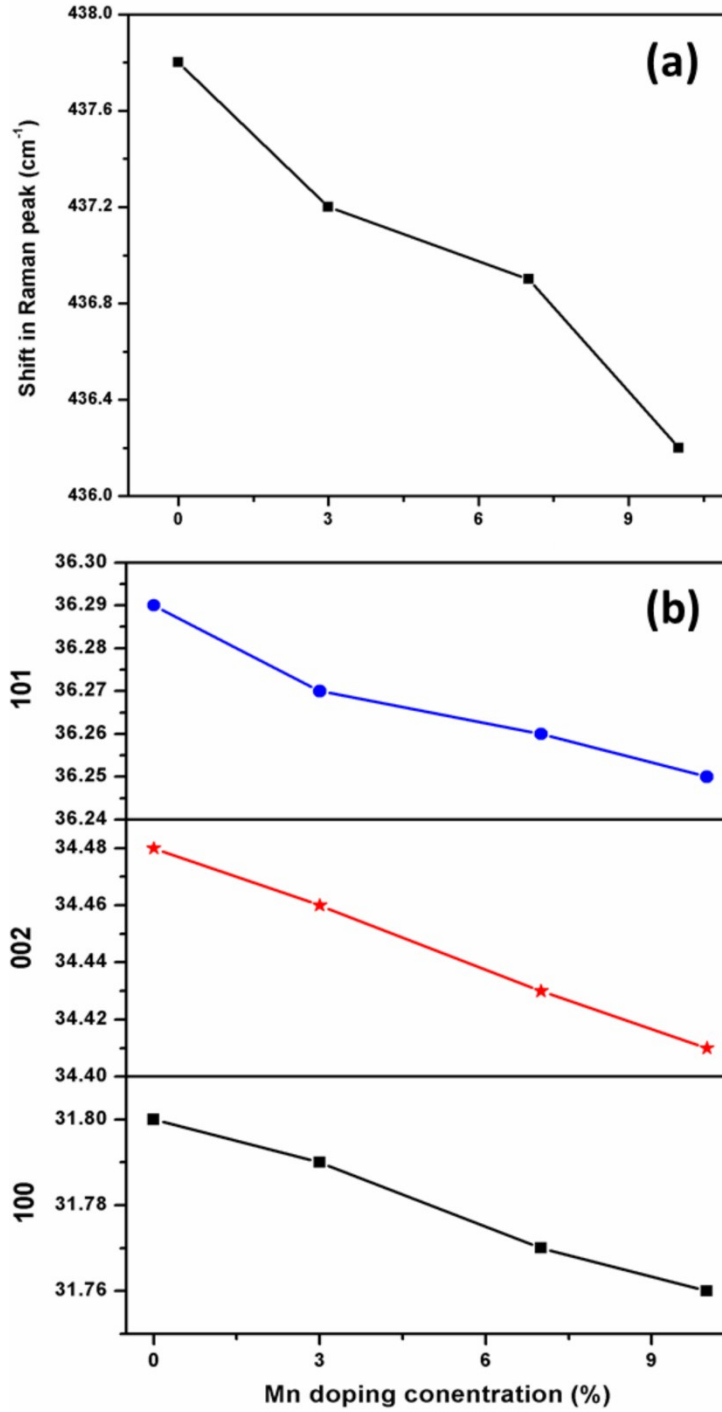


Fig. S3 Raman E₂ high mode shift (a) and dominant XRD peaks shift (b) of pure and Mn doped ZnO N/MRAs films.