# Supporting information

**S1. Synthesis of ZnO seed.** ZnO sol-gel solution was prepared as reported previously.[1] 125 mL zinc acetate dehydrate solution in methanol (0.01 M) was prepared under vigorous stirring at 60 ℃. Then, 65 mL KOH solution in methanol (0.03 M) was injected dropwise into the above solution. The sol-gel solution of ZnO seeds was obtained after continuous stirring at 60 ℃ for 2 h.

**S2. Synthesis of ZnO NR arrays on ITO.** The ZnO seed-coated ITO was immersed in the same nutrients for the growth of ZnO NR-grown Ag NWs at 85 ℃ for 8 h. Then the samples were taken out for subsequent cleaning.

**S3. Synthesis of ZnO NRs.** The preparation of pure ZnO nanorods was conducted directly in solution, which is the same as S2 except without introducing ITO substrate. Subsequently, the resultant ZnO NRs were cast onto ITO substrates.

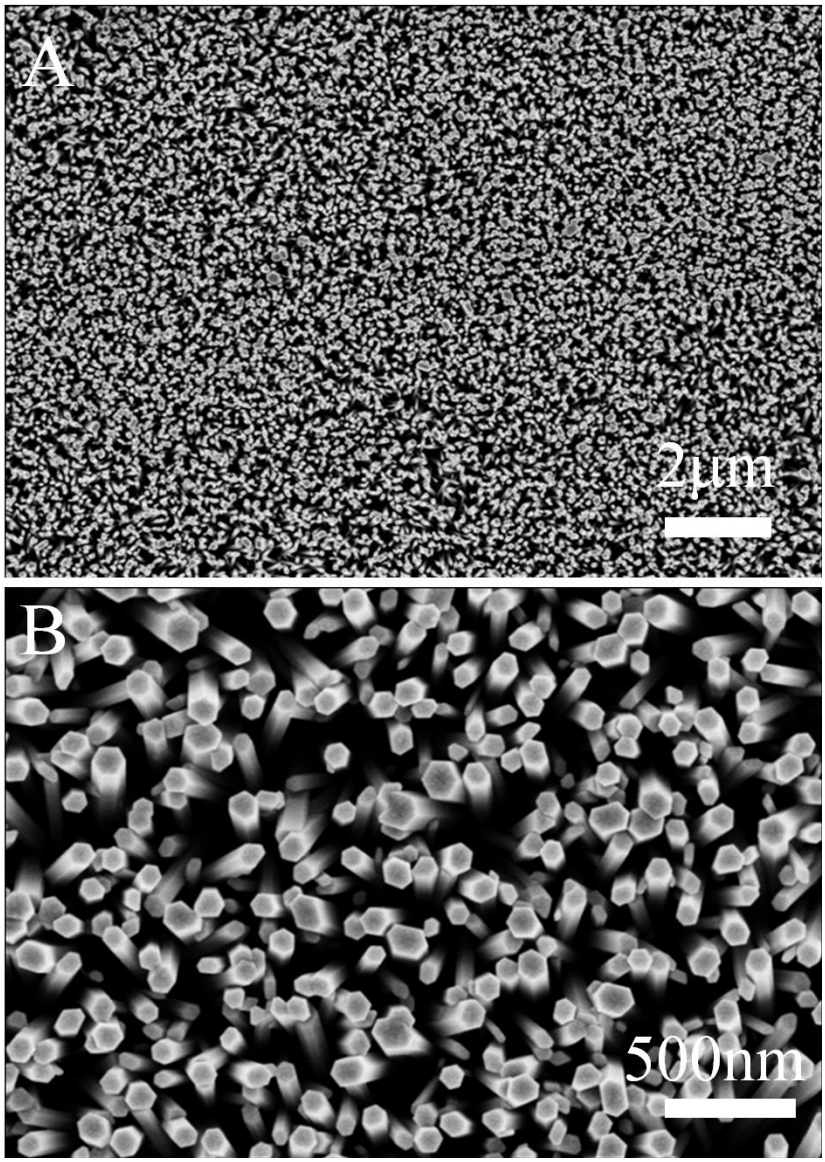


**Fig. S1**. SEM images of ZnO NR arrays on ITO substrates.

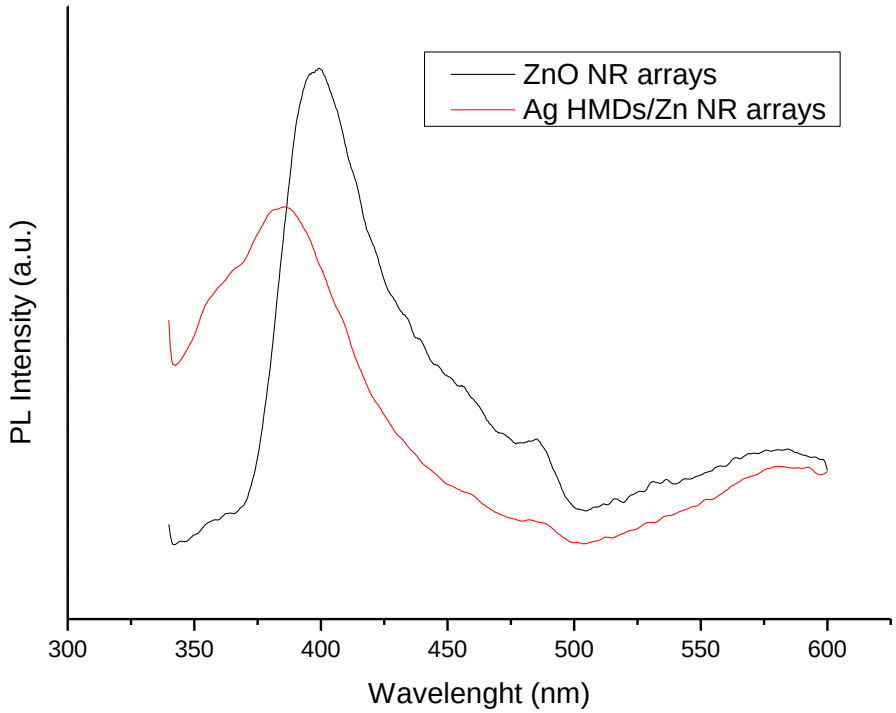


**Fig. S2** Room-temperature PL spectra of the bare ZnO NR arrays and the Ag HMDs/ZnO NR arrays obtained with 325 nm He-Cd laser excitation.

Reference

1 C. Pacholski, A. Kornowski and H. Weller, *Angew. Chem. Int. Ed.* 2002, **41**, 1188.