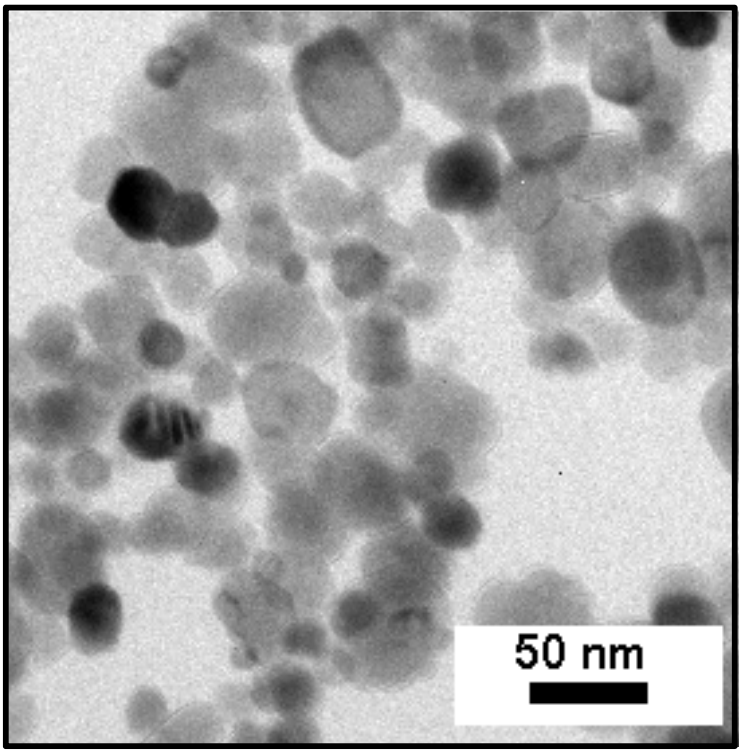

Figure S1: TEM image of synthesized ZnO nanoparticles

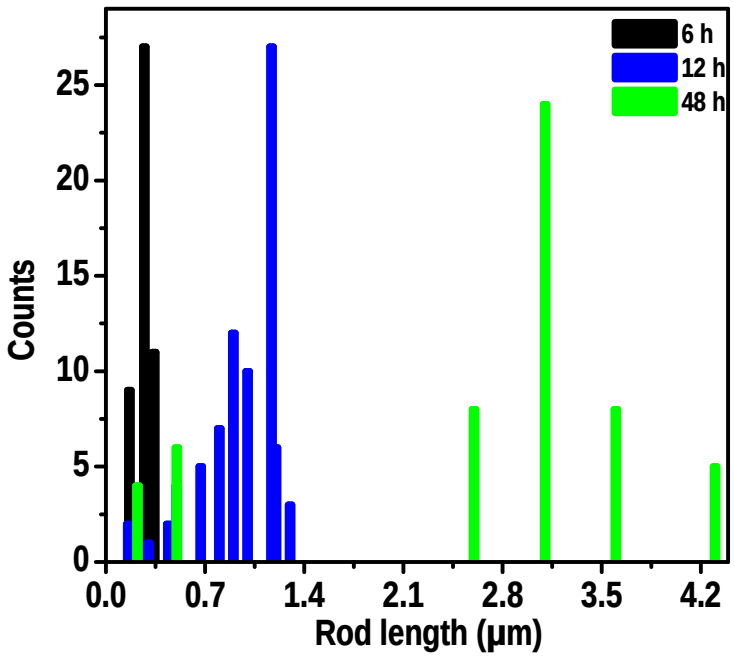

Figure S2: The histogram of length distribution of ZnO nanorods prepared at different reaction times

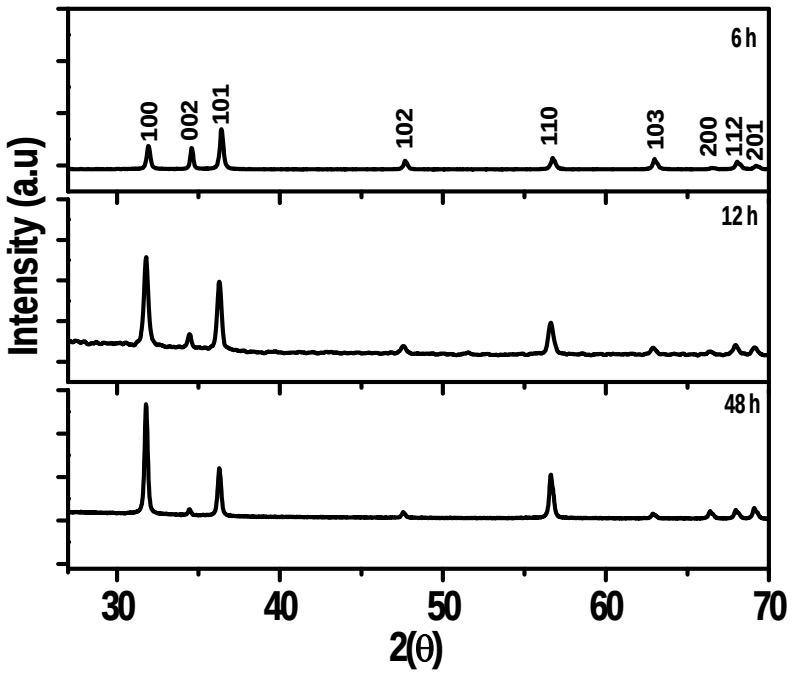

Figure S3: XRD pattern of ZnO nanorods prepared at different solvothermal reaction times 6 h (0.25 µm length rods), 12 h (1 µm length rods) and 48 h (3 µm length rods) showing the intensity ratio (I_{100}/I_{002}) difference

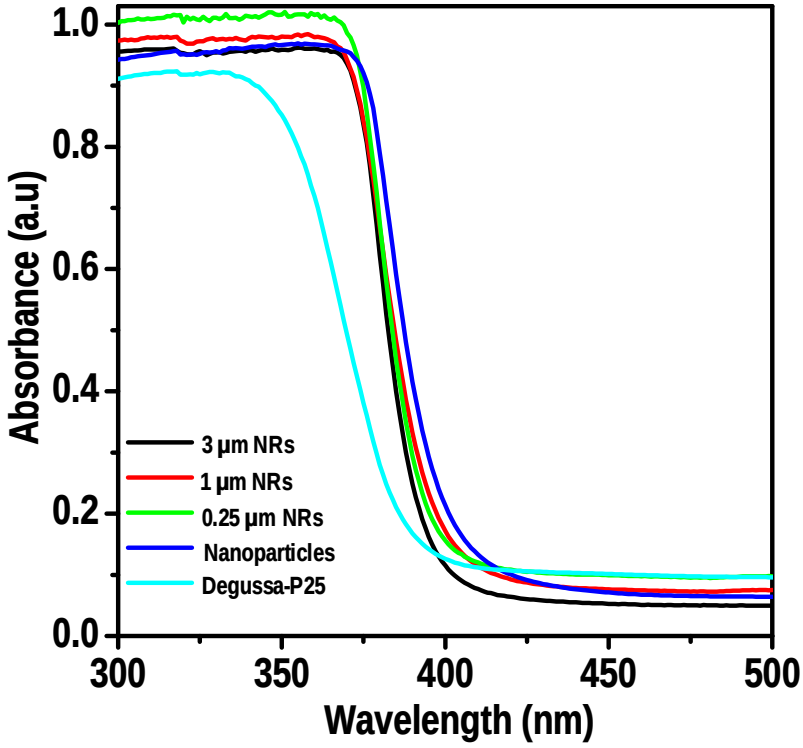

Figure S4: UV-Visible Diffuse reflectance spectra of as-synthesized ZnO nanostrucutres and P-25

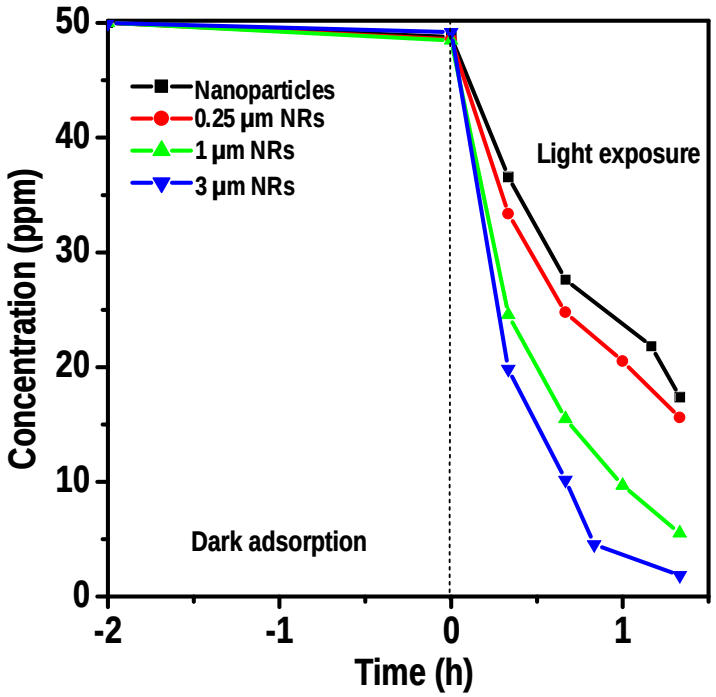

Figure S5: Equilibrium dark adsorption and photodegradation of orange G (OG) under visible light in the presence of different ZnO nanostructures.

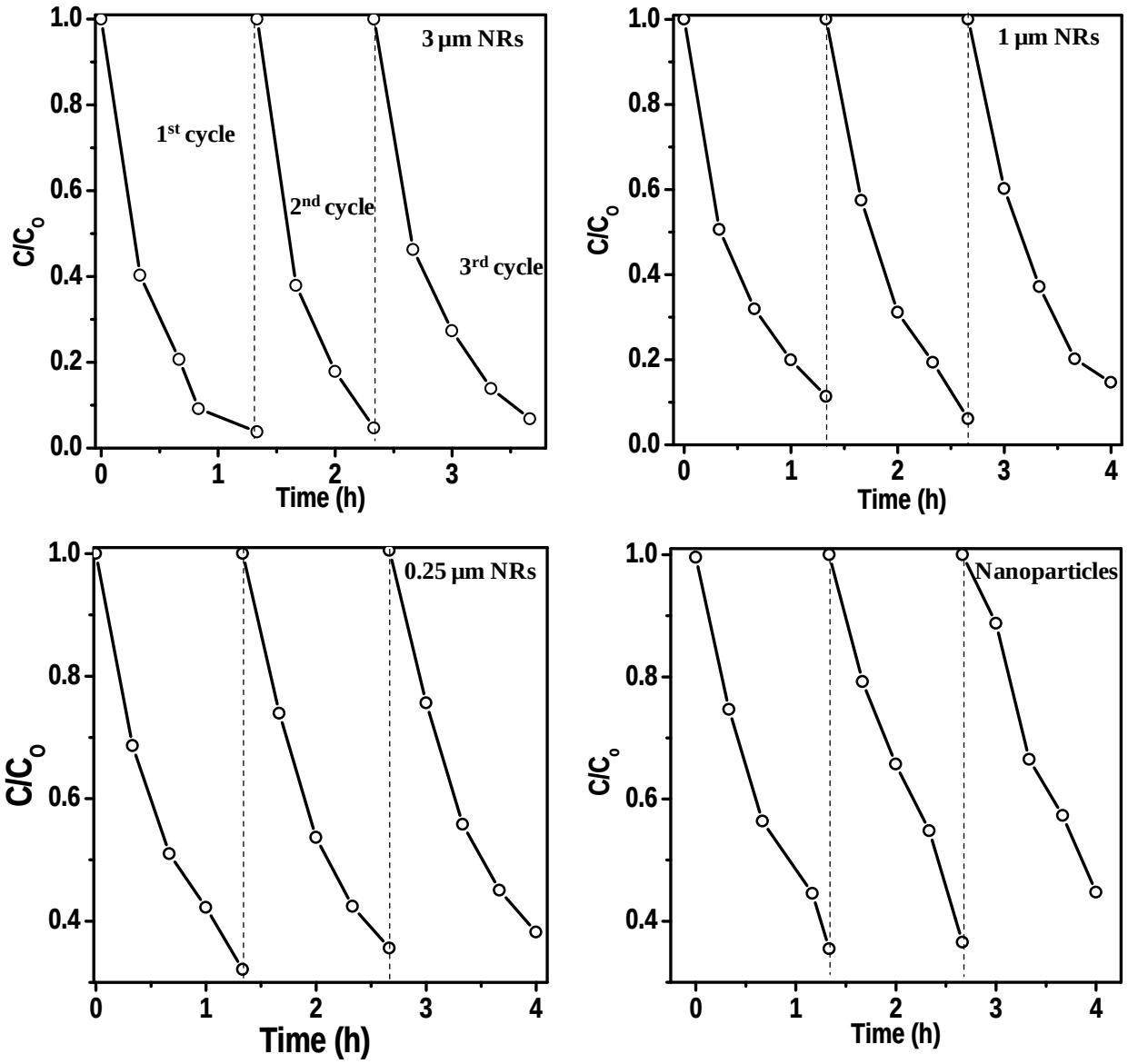

Figure S6: Cyclic photodegradation of OG under visible light in the presence of different ZnO nanostructures.

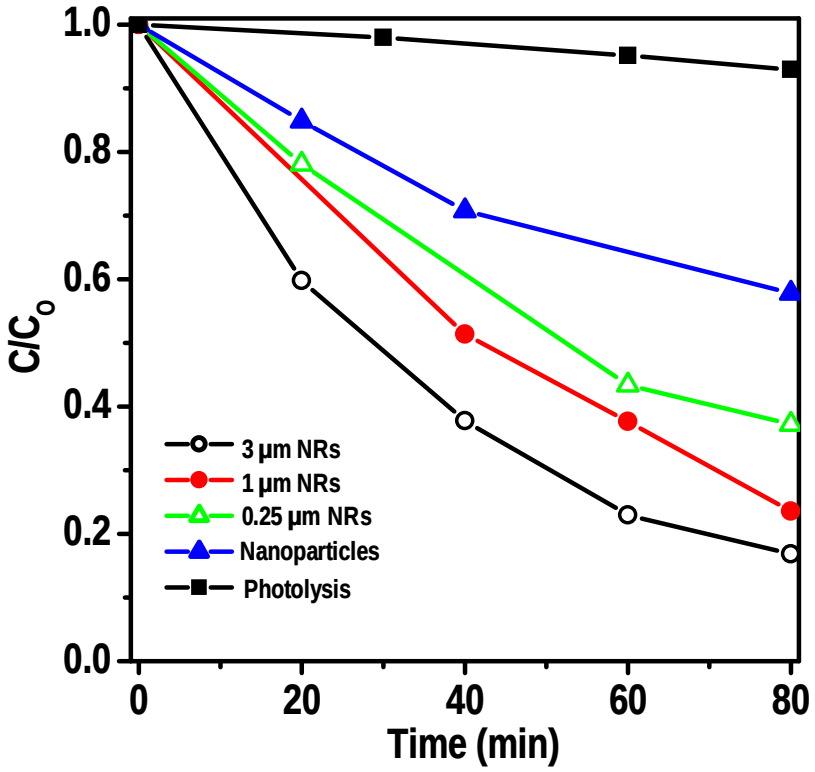

Figure S7: Photodegradation of orange G (OG) under UV in the presence of different ZnO nanostructures.

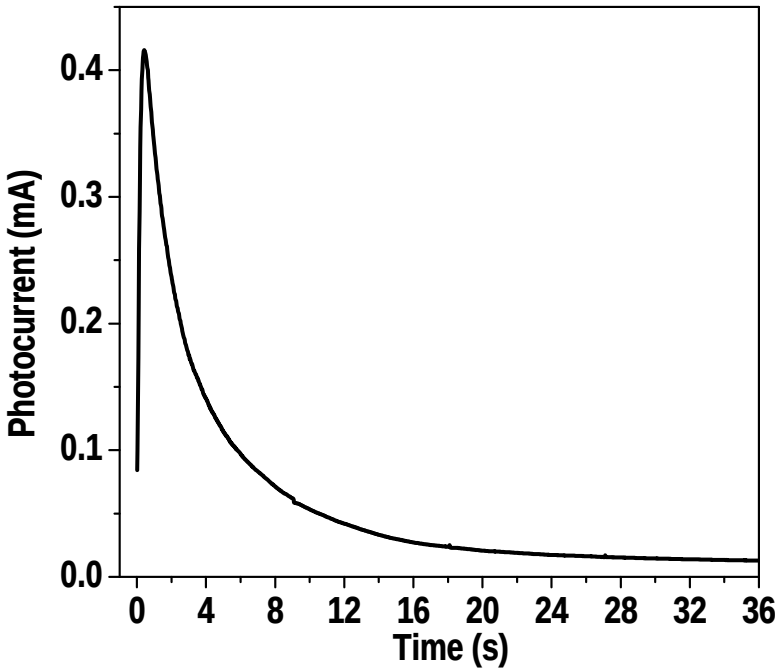

Figure S8: Decrease of photocurrent versus time for ZnO nanoparticle under illumination.

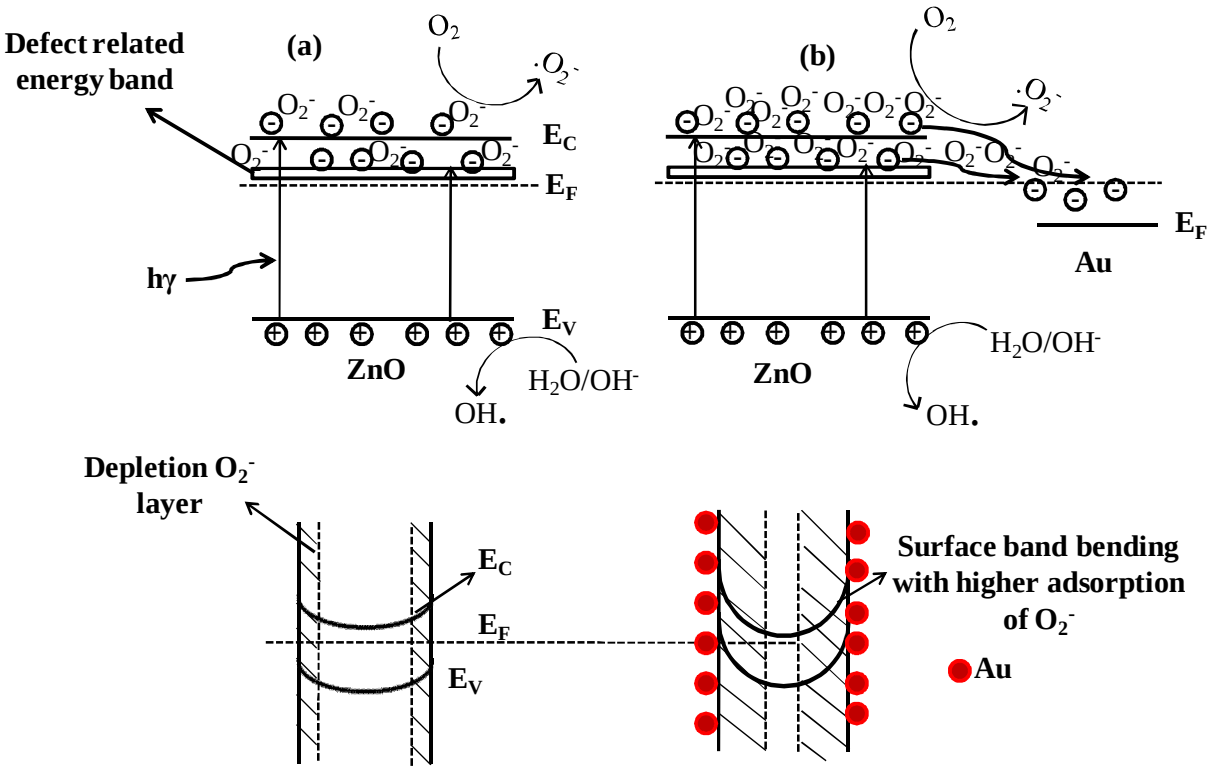

Figure S9: (a) Energy level diagram of ZnO and (b) ZnO/Au for enhanced photocatalytic activity and photocurrent generation.

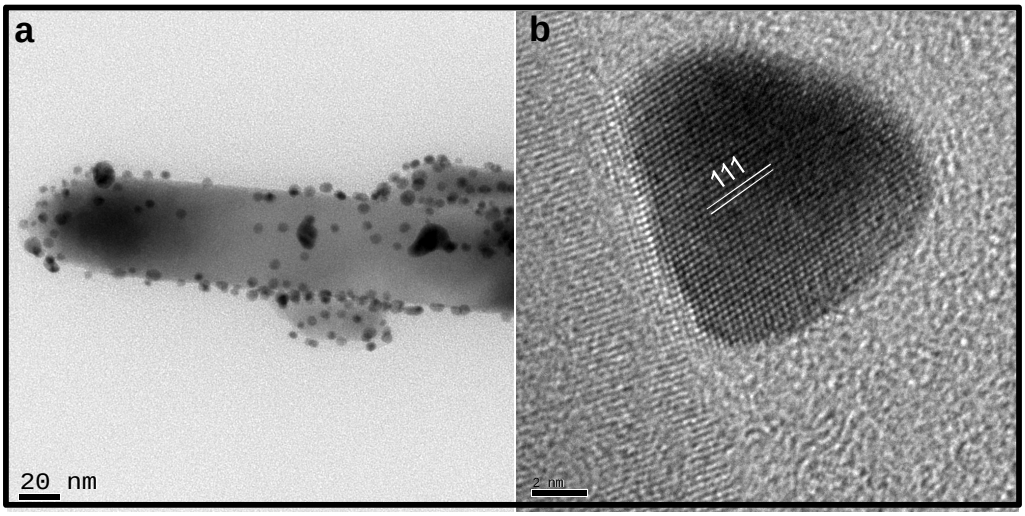

Figure S10: (a) Bright field TEM images of synthesized 1 wt % of Au on 1 µm length nanorods and (b) its HRTEM image.

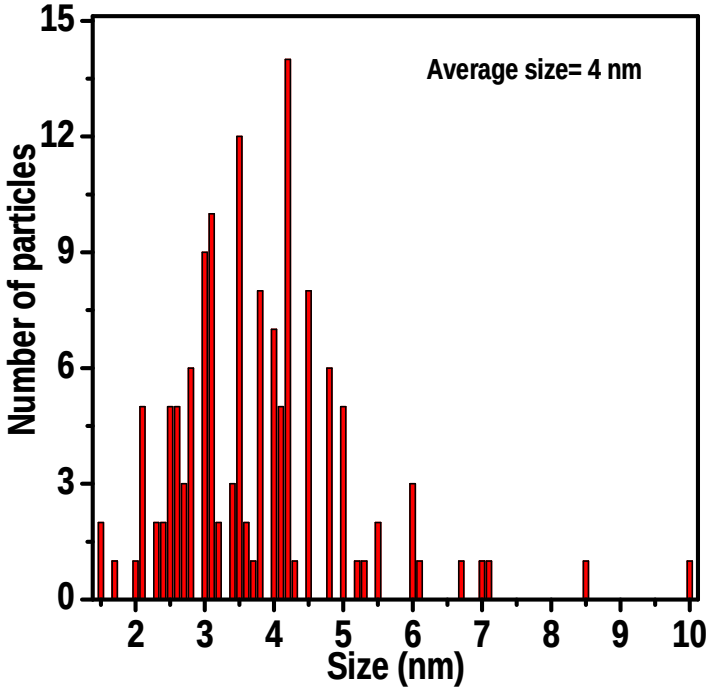

Figure S11: The size distribution histogram of Au nanoparticles on 1 µm length nanorods.

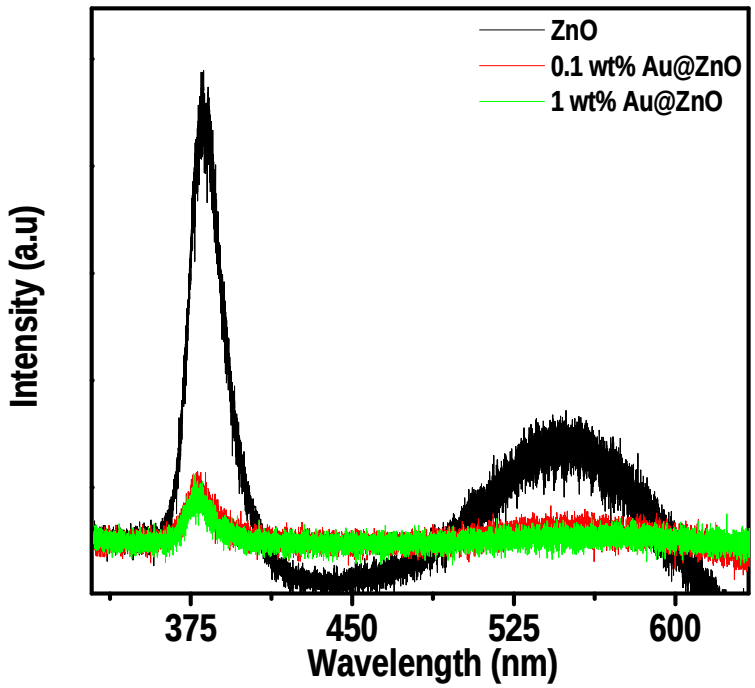

Figure S12: Photoluminescence of bare ZnO and with different Au loading % on 1 µm length ZnO nanorods.