Supplemental Information

Patterns of Ensemble Variation of the Optical Properties of ZnO Nanowires Grown with Copper and Gold Catalysts
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Figure S1: Comparison of data from the PL of copper-catalyzed ZnO NWs and the size from SEM images. (a) gap-to-trap ratio vs. the average diameter of the NWs (b) intensity of the deep trap emission as a function of the average diameter and (c) intensity of the band gap emission vs. the ratio of the surface-volume-to-bulk-volume.
Figure S2: Color coded images of copper-catalyzed ZnO NWs with the intensity of the band gap emission and the intensity of the deep trap emission color coded. Both the band gap and deep trap emission are plotted with two different scales to visualize the emission intensity in the edge areas as well as the middle of the substrate.
Figure S3: Color coded images of the gap-to-trap ratio, band gap emission intensity and deep trap emission intensity of a gold-catalyzed ZnO NWs on a sapphire substrate (same sample shown in manuscript).
Figure S4: Color coded images of the gap-to-trap ratio, band gap emission intensity and deep trap emission intensity of a gold-catalyzed ZnO NWs on a sapphire substrate (different sample from that shown in manuscript).
Figure S6: (a-c) SEM images of ZnO NWs grown on a sapphire substrate with gold catalyst in the areas shown in Figure S4 (d) Width distributions of the NWs from the areas selected (differences are not significant) (e) Length distributions of the NW from the areas selected where the green selected NWs are significantly longer than the other NWs.
Figure S7: Plots of the gap-to-trap ratio vs. the row number of the spot of gold-catalyzed ZnO NWs (low #’s near leading edge, high #’s near trailing edge) with the spots on the edge separated from those in the middle. (a) same sample as in the manuscript and Figure S3, (b) same sample as Figure S4.