

## Supporting Information

### **A Self-Powered Photoactive Room Temperature Gas sensors based on Porphyrins functionalized ZnO Nanorods/p-Si heterostructure**

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# 1. Morphological Analysis

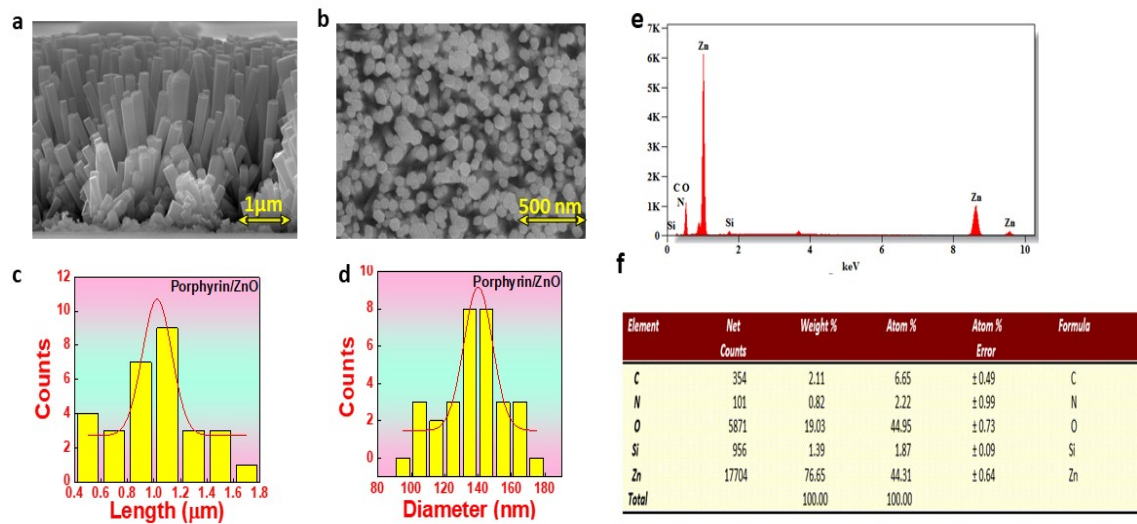


Figure S1. (a) Cross sectional view of Porphyrin/ ZnO NRs, (b) Top View of Porphyrin/ZnO NRs, (c) and (d) Length and Diameter Distribution plot of porphyrin/ ZnO NRs respectively, (e) and (f) EDAX spectrum and data of Porphyrin/ ZnO NRs.

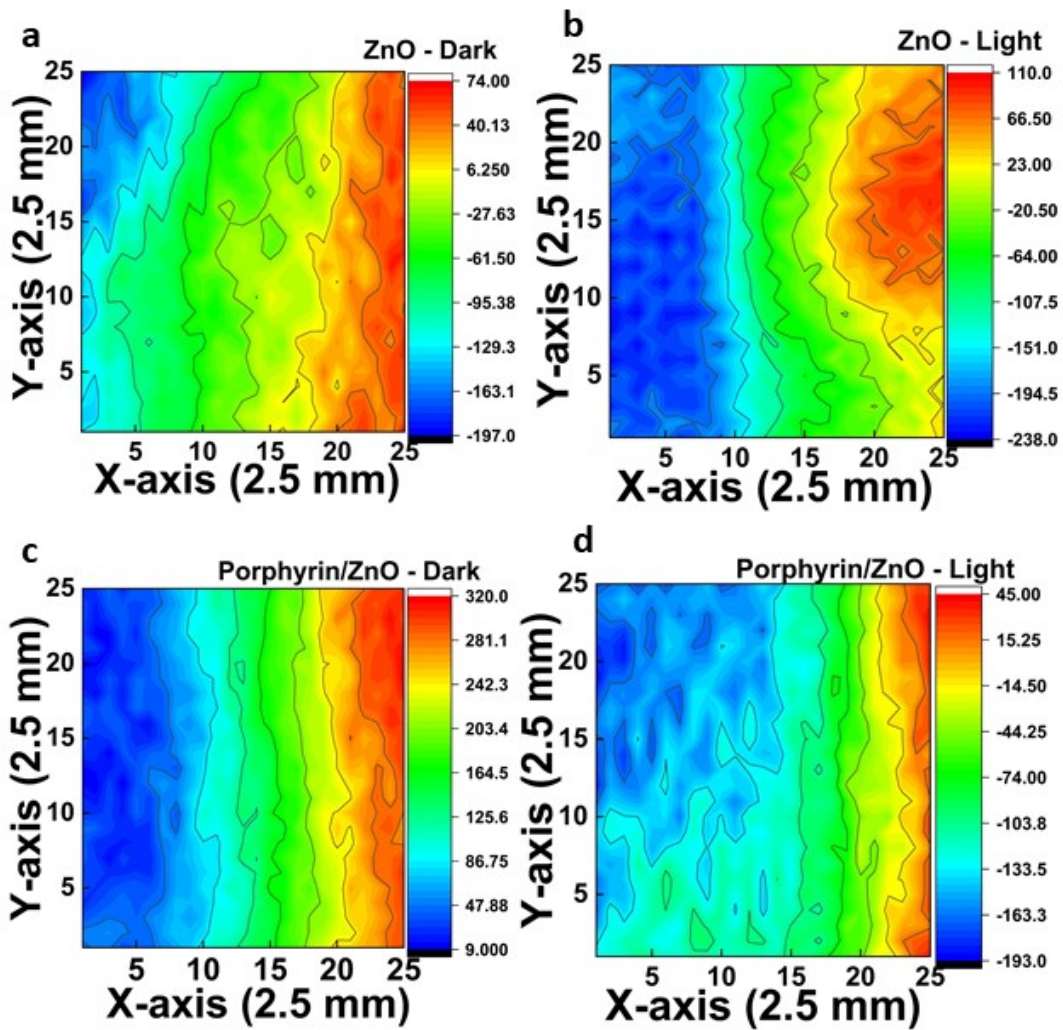


Figure S2. 2D raster scan of pure and porphyrin coated ZnO Nanorods

## 2. Concentrations calculations

$$\frac{\text{Desired concentration} \times \text{Quantity of vapor in syringe}}{\text{Volume of Chamber}} =$$

where the concentration of vapor in cylinder is given as :-

$$\text{Concentration of vapor in cylinder} = \text{Saturated Vapor Pressure of VOC} \times \frac{1000000 (= 1\text{ppm})}{1\text{atm}}$$

Volume of VOC (Ethanol) in	Concentration of VOC in	Volume of VOC	Concentration of VOC in
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<b>syringe (ml)</b>	<b>chamber (ppm)</b>	<b>(TEA) in syringe (ml)</b>	<b>chamber (ppm)</b>
1	32	1	37
2	64	2	74
3	96	3	112
4	129	4	149
5	161	5	186
6	193	6	224
7	225	7	261
8	258	8	298
9	290	9	336

**Table S1:** Dilution ratio and concentration of Ethanol and TEA vapor