SUPPLEMENTARY INFORMATION

p-Co_3O_4 Supported Heterojunction Carbon Nanofibers for Ammonia Gas Sensor Applications

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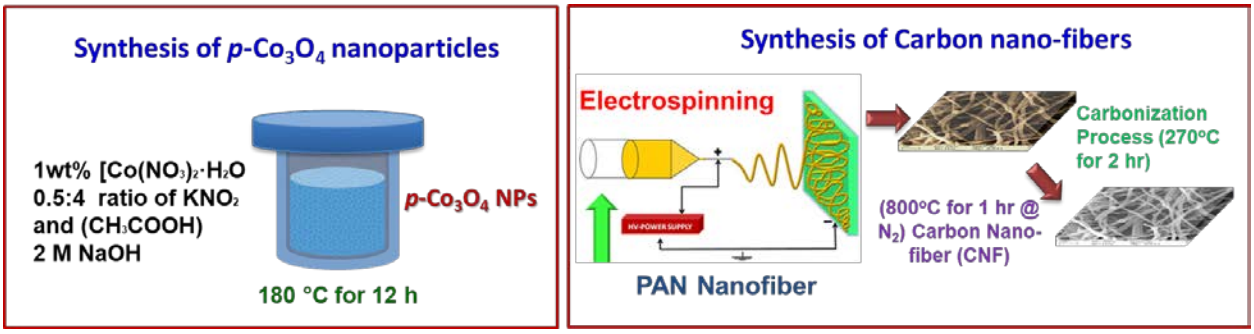
S1. Characterization Techniques:

The X-ray diffraction (XRD) patterns of bare and heterojunction *p*-Co_3O_4 supported CNFs were acquired using a PANalytical EMPYREAN spectrometer (Netherland) with Cu Kα radiation of wavelength 1.5418 Å at a scanning rate of 0.02°/sec in the 2θ range of 20 – 80°. In order to investigate the vibrational modes, Raman spectra were acquired using a confocal Raman microscope (WITec alpha 300 RA, Ulm, Germany) using He-Cd laser (λ = 532 nm) as an excitation light source with 600 g/mm gratings. Scanning Electron Microscopy (ZEISS EVO 18, USA), with in-built Energy-Dispersive X-Ray Spectrometer (Oxford Instruments, INCA, UK).



Scheme S1. Synthesis of *p*-Co_3O_4 nanoparticles and carbon nano-fibers.

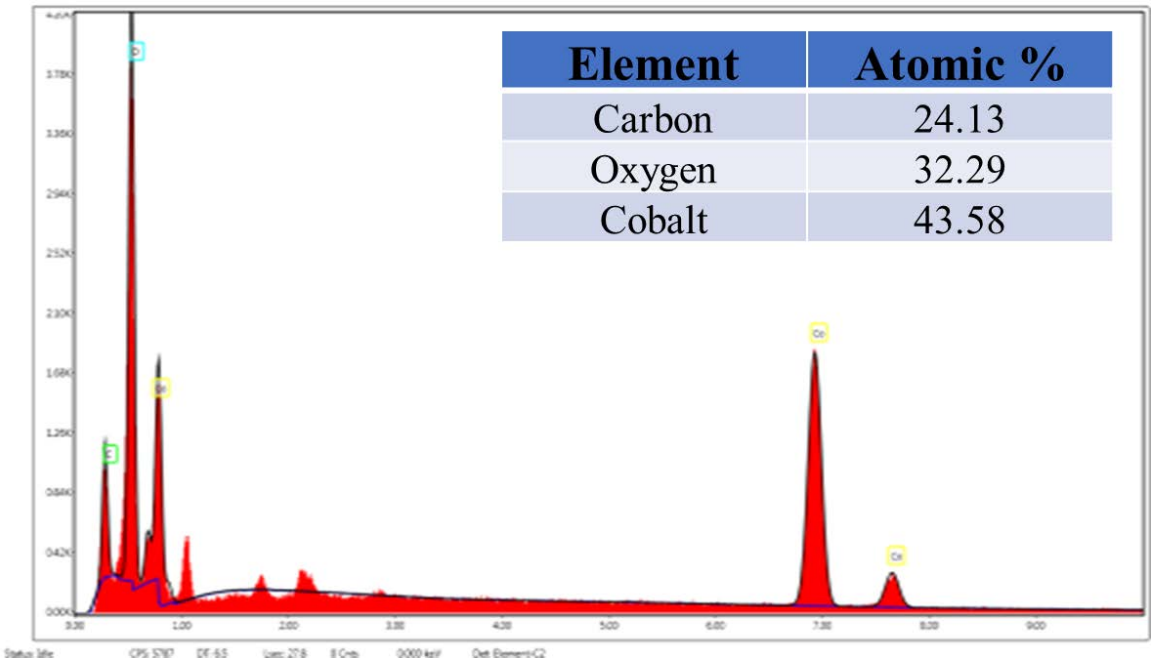


Figure S1. EDX spectrum shows the presence of Co, C and O elements.

Table S1 NH_3 Sensing properties of pristine Co_3O_4 and *p*-Co_3O_4 supported heterojunction carbon nano-fibers.

Conc. of NH_3 (ppm)	Co_3O_4 NPs			*p*-Co_3O_4 supported heterojunction carbon fibers		
	Response $[(R_g - R_a)/R_a]$ S (%)	Response time (s)	Recovery time (s)	Response $[(R_g - R_a)/R_a]$ S (%)	Response time (s)	Recovery time (s)
0.5				42.12	4	6
1	3.61	12.4	30	54.80	5.6	14.2
2	4.02	13	35	63.54	7.6	15.8
3	4.62	14.8	40	72.09	8.8	18.2
4	5.05	21.8	47	80.21	10.6	21.2
5	5.59	26	68	91.14	18.2	25.6