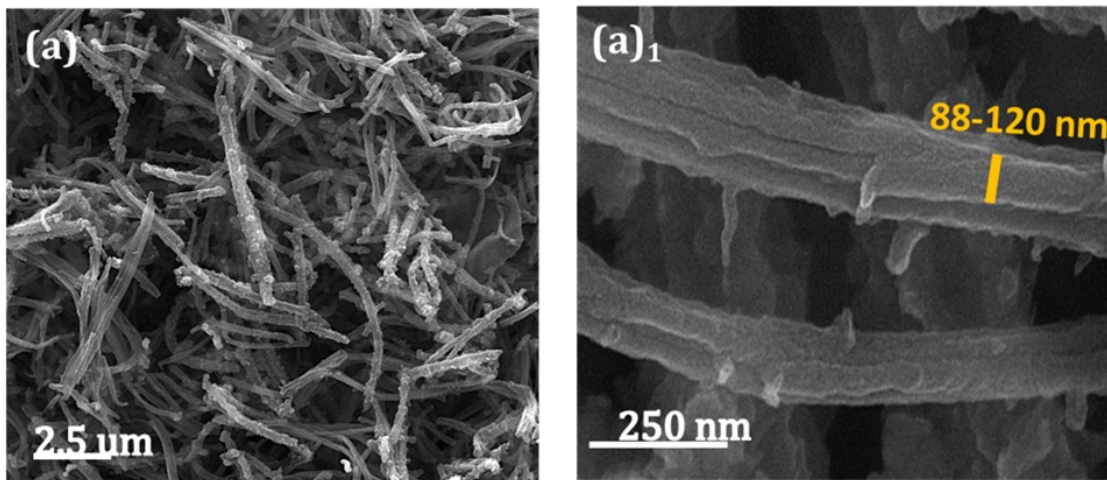
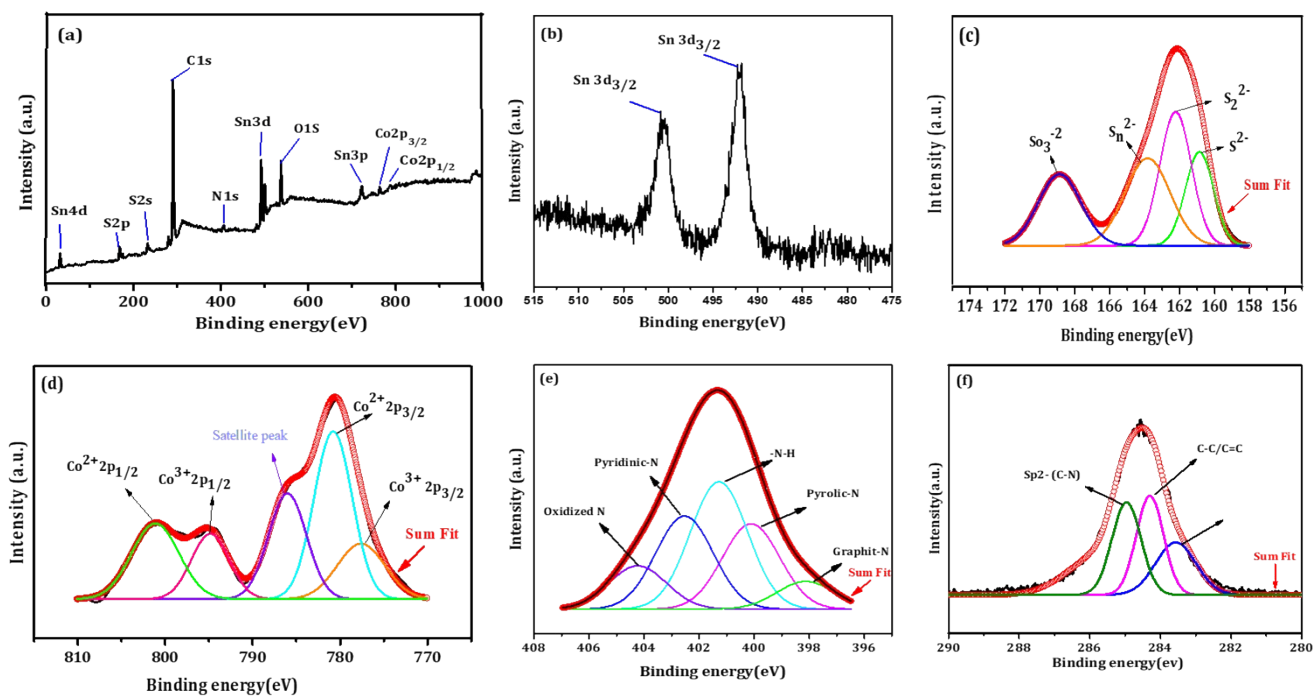


### Supporting Information:



**FigureSI.1:** SEM images of Polypyrrole nanotube with different magnifications



**FigureSI. 2.** XPS spectra of the PNT-SnCoS<sub>4</sub> composite: (a) Survey; (b) Sn 3d; (c) S 2p; (d) Co 2p (e) N 1S; and (f) C 1S.

**Table SI.1** Elemental Composition of PNT-SnCoS<sub>4</sub>

Sample	Elements composition / Wt.%						Molar ratio
	C	O	Sn	Co	S	N	Sn:Co:S
P-PNT-SnCoS <sub>4</sub>	81.5	9.2	3.0	1.5	3.3	1.5	0.026:0.026:0.105