

# Synthesis, Characterization, and Biophysical Interaction Studies of Water-Dispersible Polypyrrole/Polythiophene Co-oligomers with Bovine Serum Albumin and Human Serum albumin: An Experimental and Theoretical Approach

Ufana Riaz <sup>a,b\*</sup>, Aaliyah Farooq<sup>b</sup>, Nuzhat Mir<sup>b</sup>, Faith R Nwanze<sup>a</sup> and Fei Yan<sup>a</sup>

<sup>a</sup>Department of Chemistry and Biochemistry, North Carolina Central University, NC, 27707, USA

<sup>b</sup>Materials Research Laboratory, Department of Chemistry, Jamia Millia Islamia, New Delhi 110025, India, \*Corresponding author: Fax-(+91-112-684-0229); E-mail address- ([ufana2002@yahoo.co.in](mailto:ufana2002@yahoo.co.in))

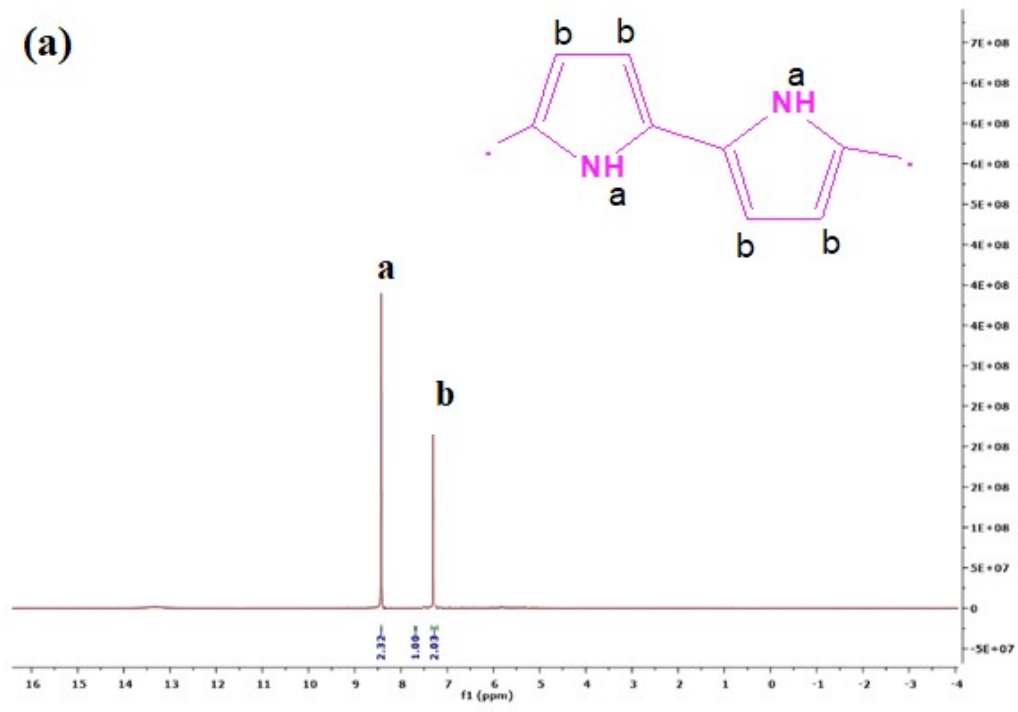
S.no	Figure caption	Pg no
1.	Table S1 Solubility of homo-oligomers and co-oligomers in different polar/nonpolar solvents	S2
2.	Figure S1 <sup>1</sup> H-NMR spectra of (a) WS-PPy, (b) WS-PTh, (c) WS-PPy/PTh-1/1	S3
3.	Figure S2 <sup>13</sup> C-NMR (a) WD-PPy, (b) WD-PTh, (c) WS-PPy/PTh-1/1	S5
4.	Figure S3 FTIR of (a) WD-PPy, (b) WD-PTh, (c) WD-PPy/PTh-4/1, (d) WD-PPy/PTh-1/1, (e) WD-PPy/PTh-1/4	S7

**Table S1 Solubility of homo-oligomers and co-oligomers in different polar/nonpolar solvents**

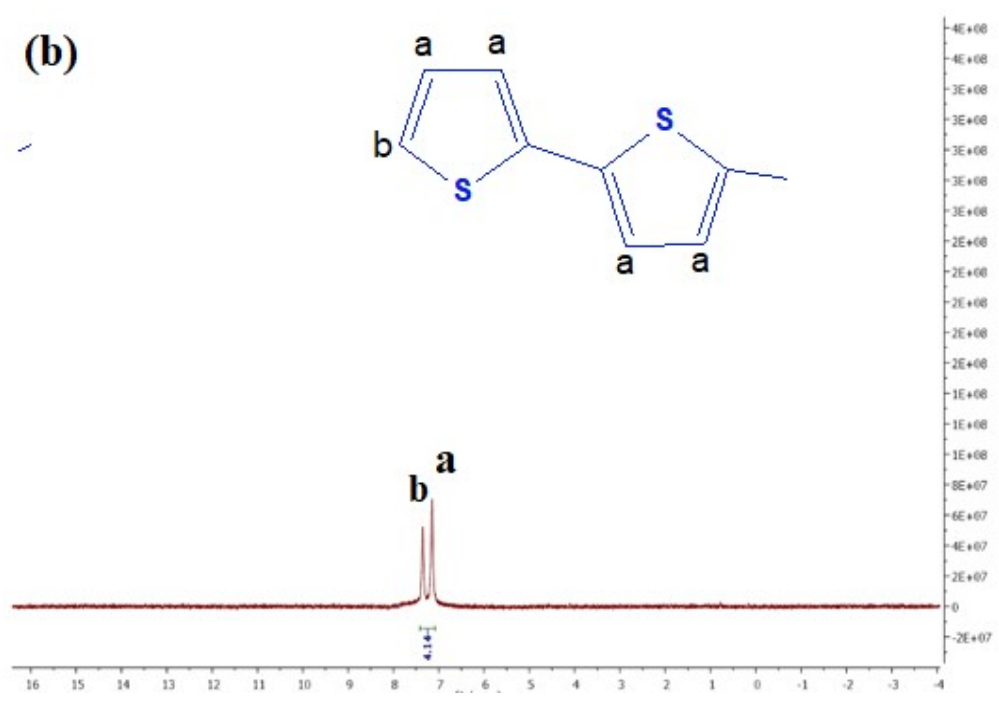
<b>Polymer/copolymer</b>	<b>Water</b>	<b>NMP</b>	<b>DMSO</b>	<b>THF</b>	<b>Ethanol</b>	<b>Acetone</b>
WS-PPy	D	S	S	D	IS	IS
WS-PTh	D	S	S	D	IS	IS
<b>WS-PPy/PTh-4/1</b>	D	S	S	D	IS	IS
<b>WS-PPy/PTh-1/1</b>	D	S	S	D	IS	IS
<b>WS-PPy/PTh-1/4</b>	D	S	S	D	IS	IS

**S-soluble; D- dispersed; IS- insoluble. The solution was prepared by dissolving 0.1 mg in 10 ml of the solvent**

(a)



(b)



(c)

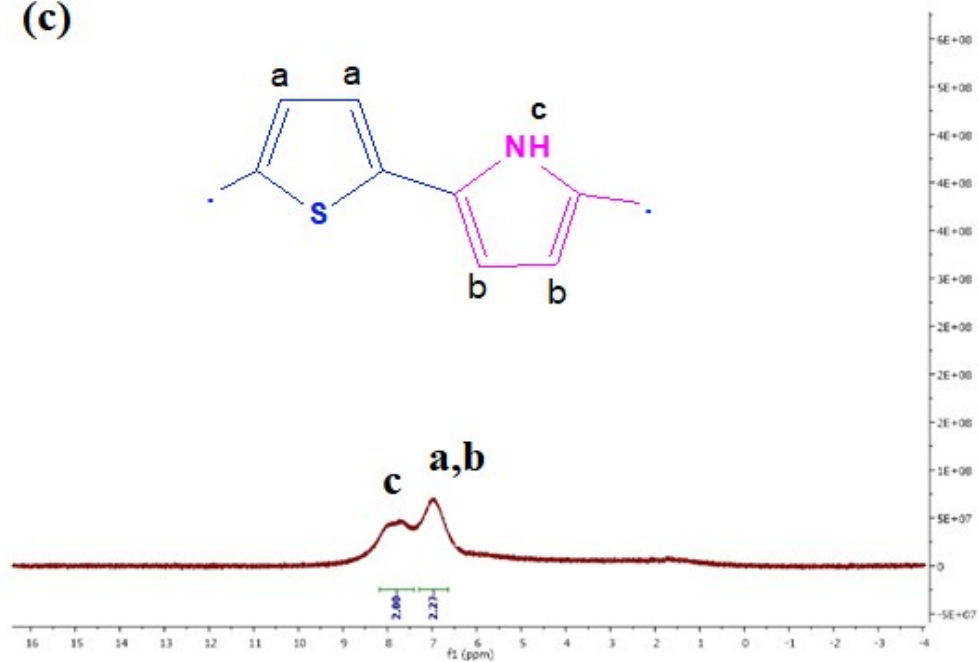
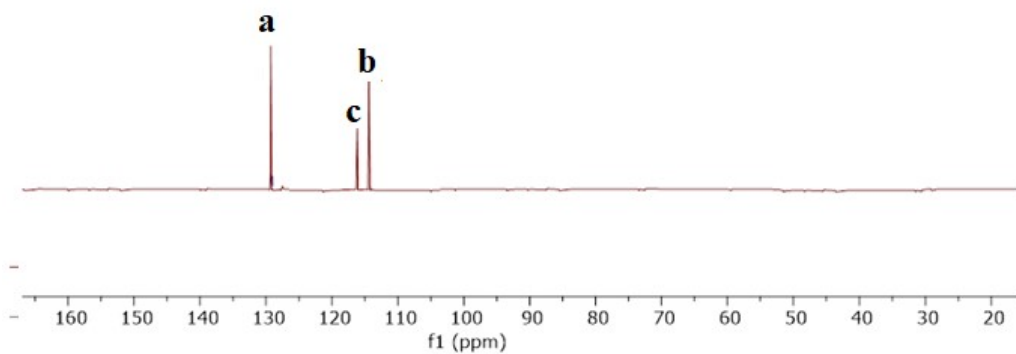
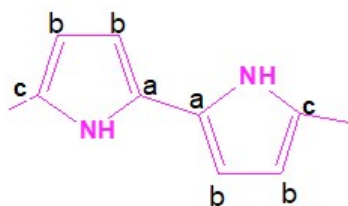
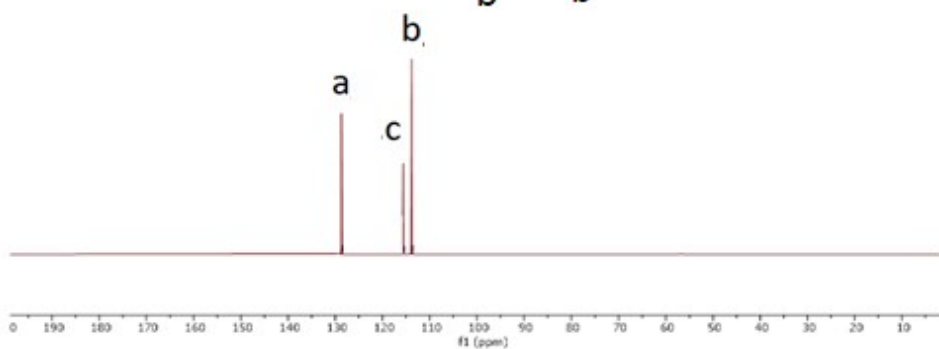
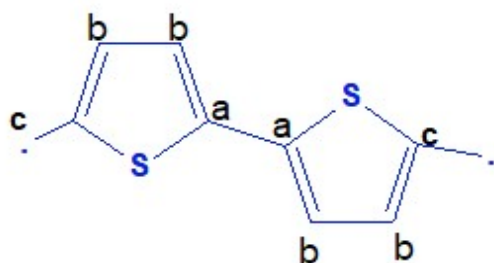


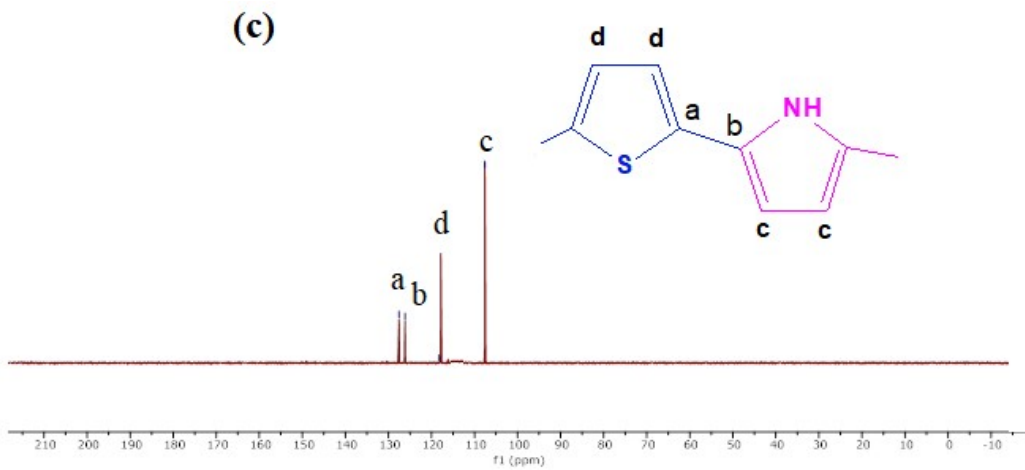
Figure S1 <sup>1</sup>H NMR spectra of (a) WD-PPy, (b) WD-PTh, (c) WD-PPy/PTh-1/1

(a)

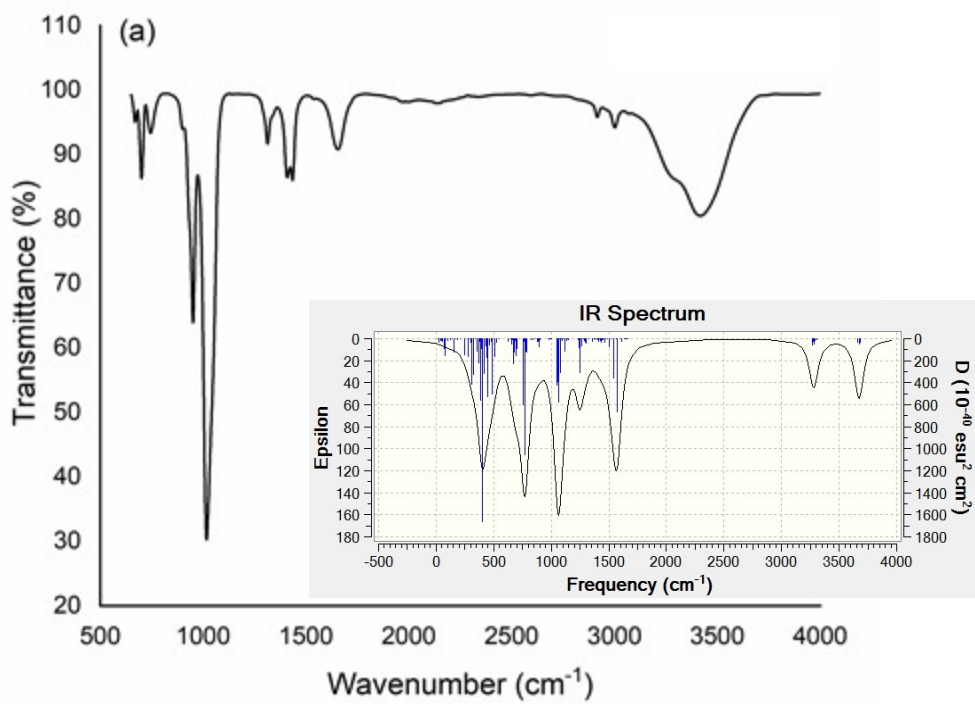


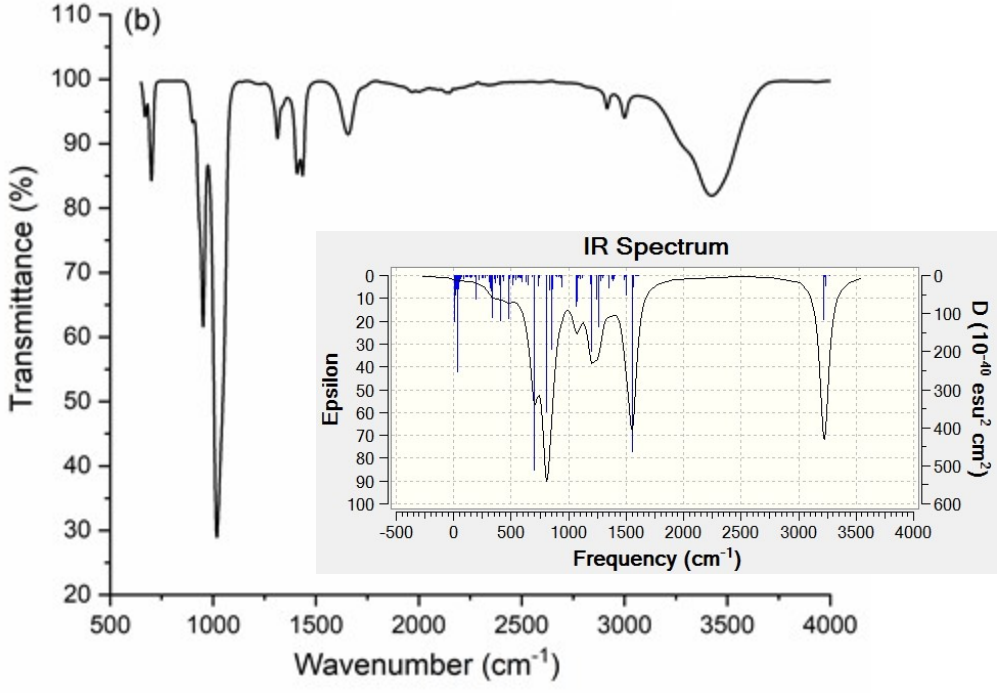
(b)



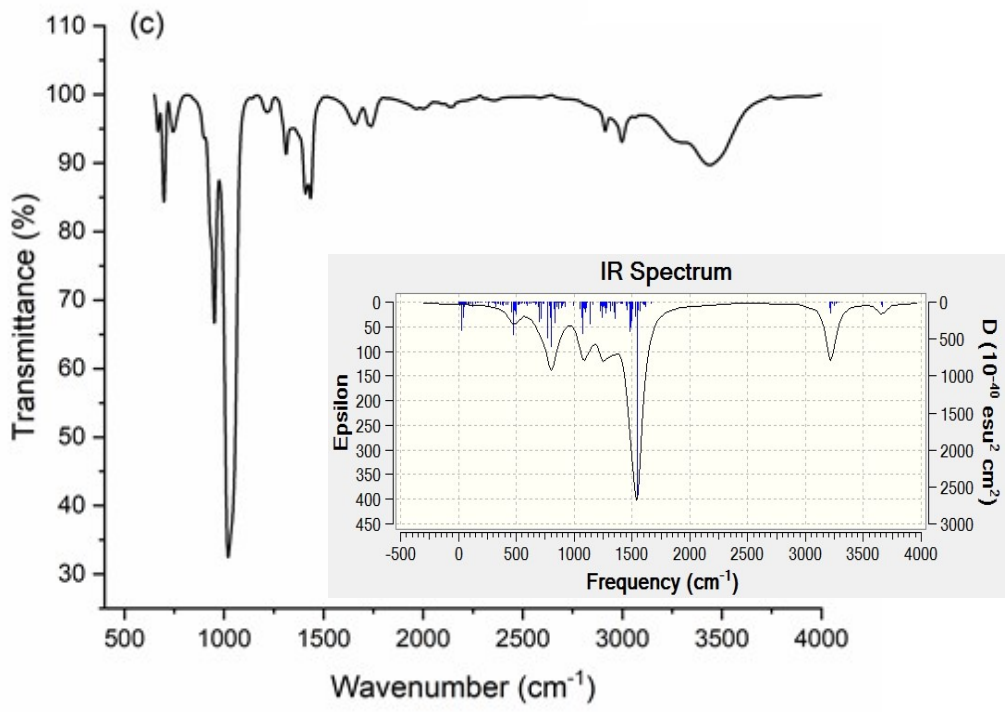


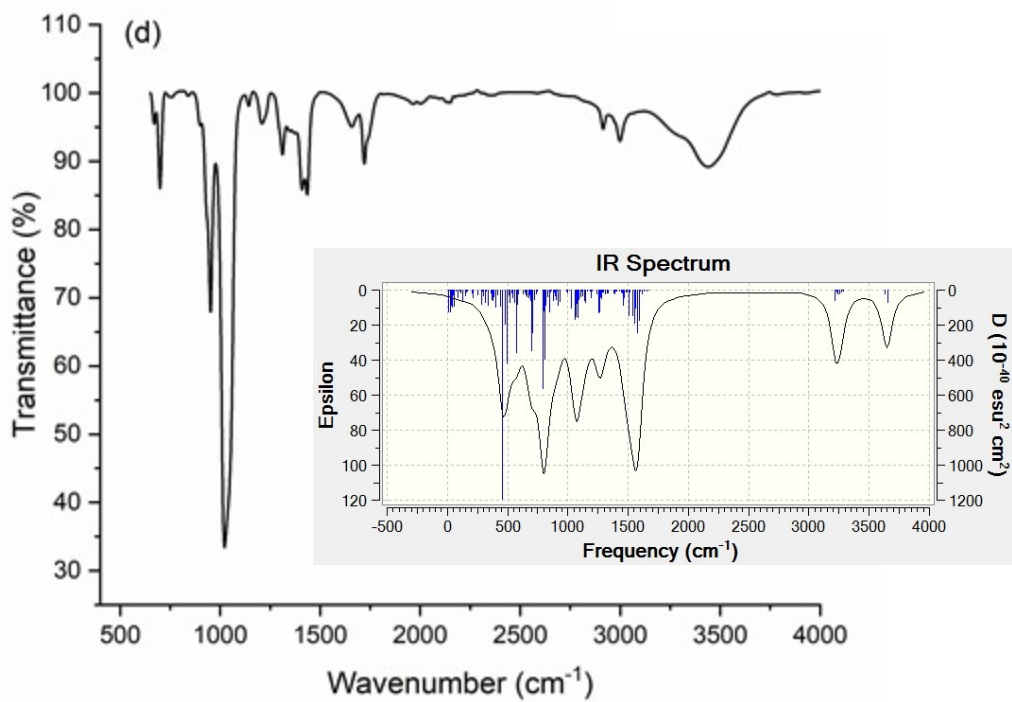
**Figure S2**  $^{13}\text{C}$ -NMR spectra of (a) WD-PPy, (b) WD-PTh, (c) WD-PPy/PTh-1/1

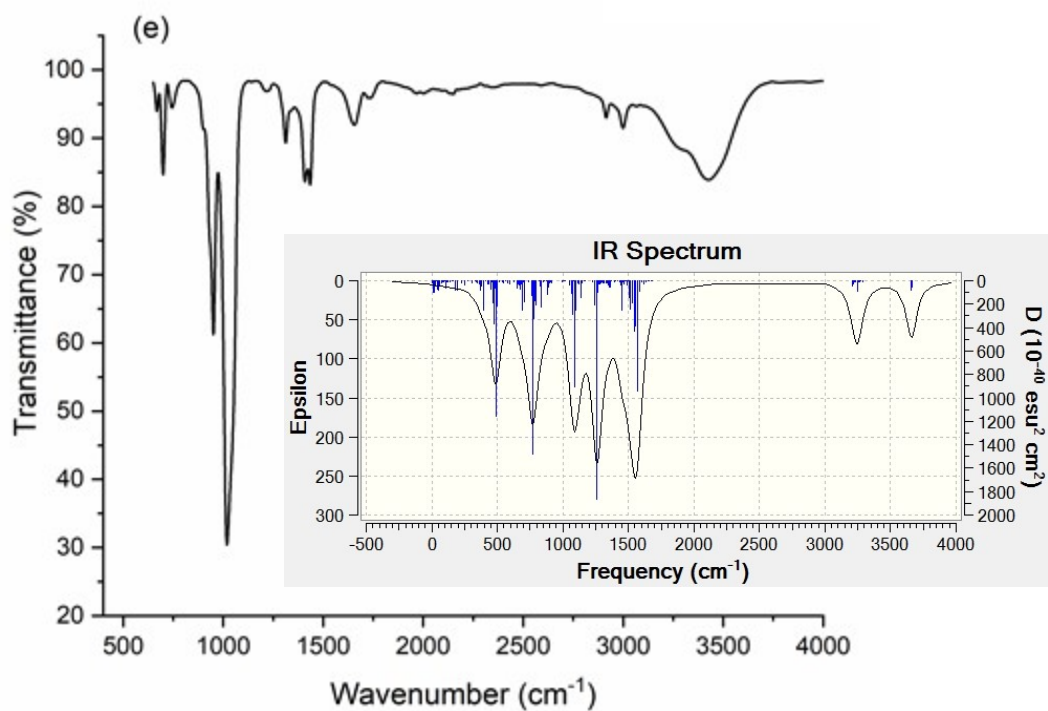












**Figure S3 FTIR of (a) WD-PPy, (b) WD-PTh, (c) WD-PPy/PTh-4/1, (d) WD-PPy/PTh-1/1, (e) WD-PPy/PTh-1/4**