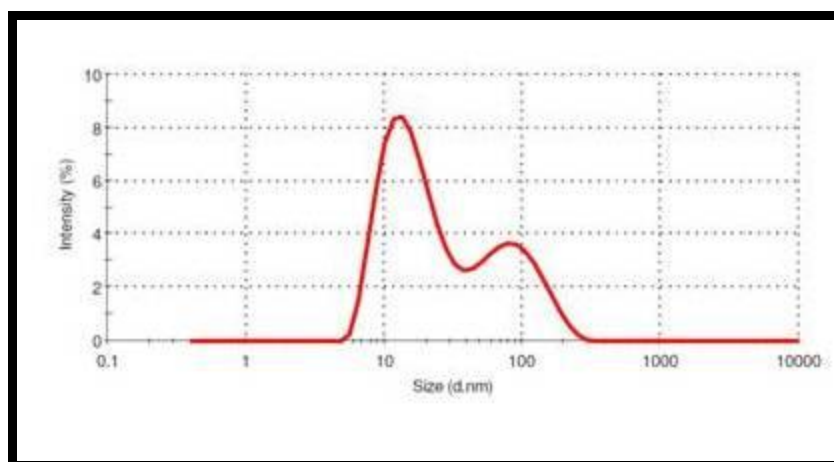


## Supporting Information

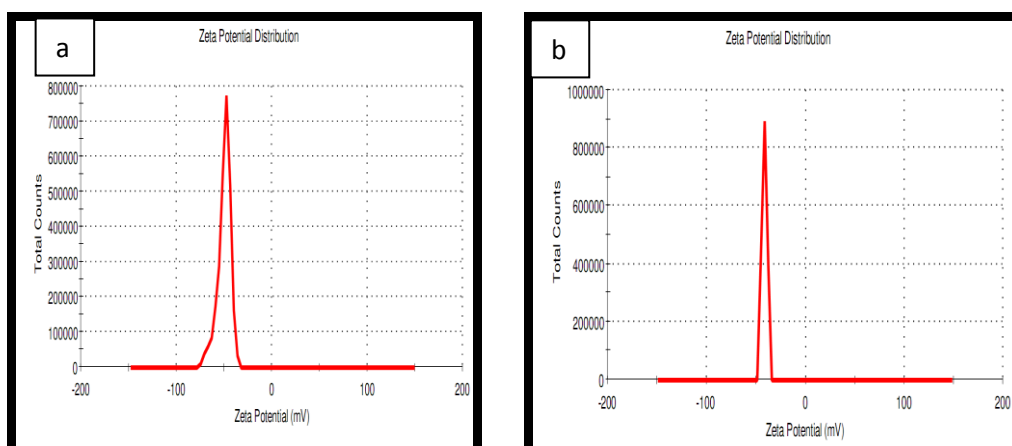
### **Nanostructured Polyaniline-Polytitanate -Clay Composite for Photocatalytic Applications: Preparation and Properties**

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**Fig.1S DLS showing particle size of PHT.**



**Fig. 2S (a) Zeta-Potential of PHT and (b) Zeta-Potential of PHTC**

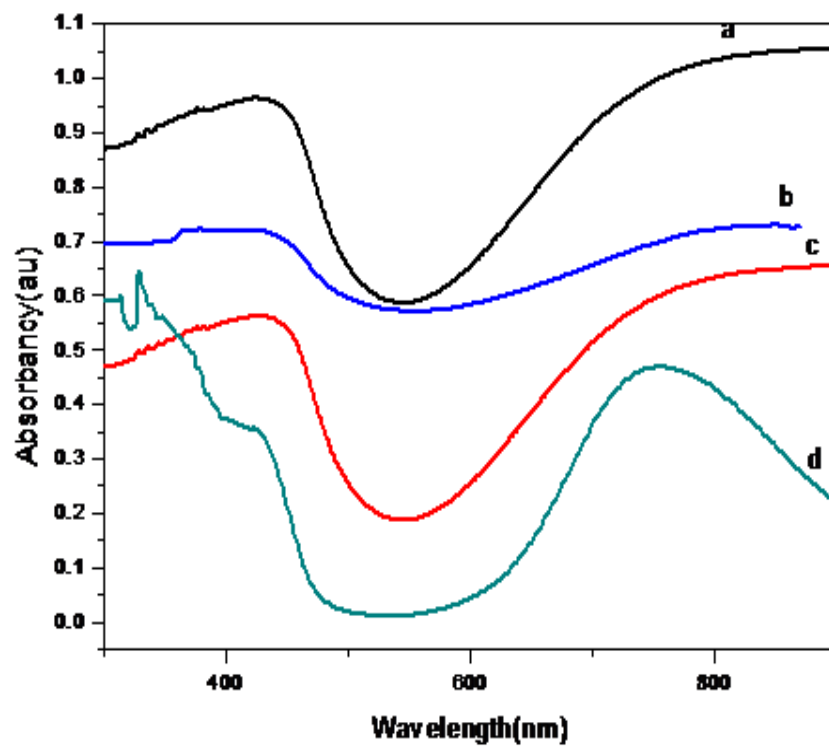


Fig. 3S UV-Visible spectra of (a) PPTC (b) PPT (c) PPC and (d) PANI

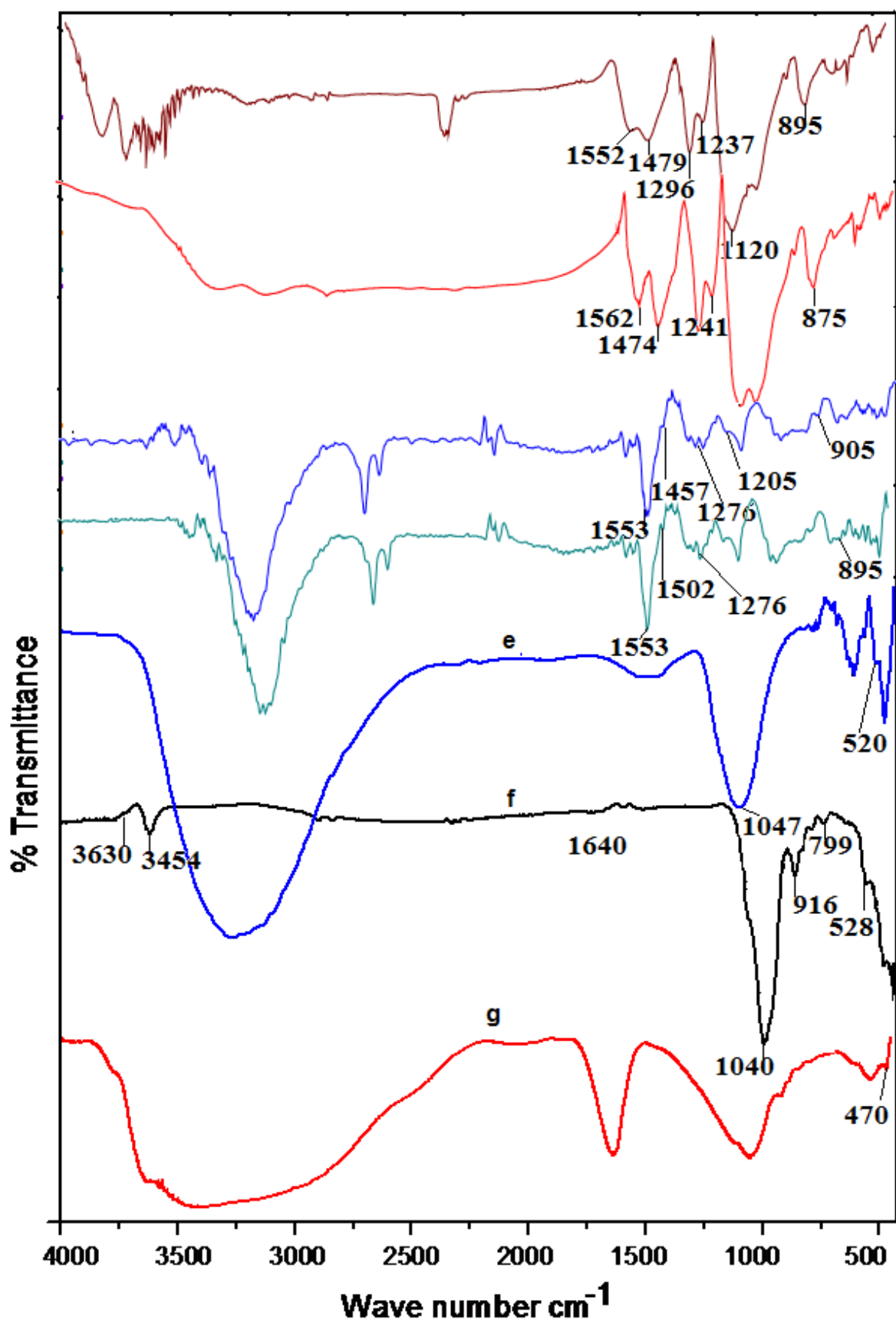


Fig. 4S FT-IR spectra of (a) PPTC (b) PANI (c) PPT (d) PPC (e) PHTC, (f) Clay and (g) PHT

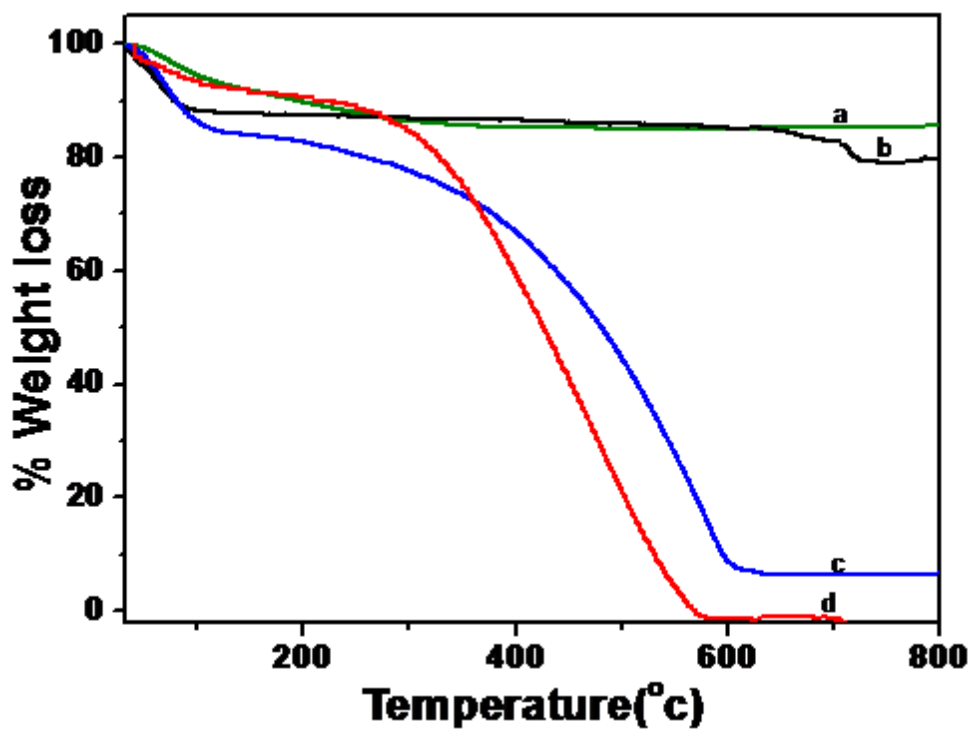


Fig. 5S TGA of (a) PHT (b) Na+ Cloisite (c) PPTC and (d) PANI

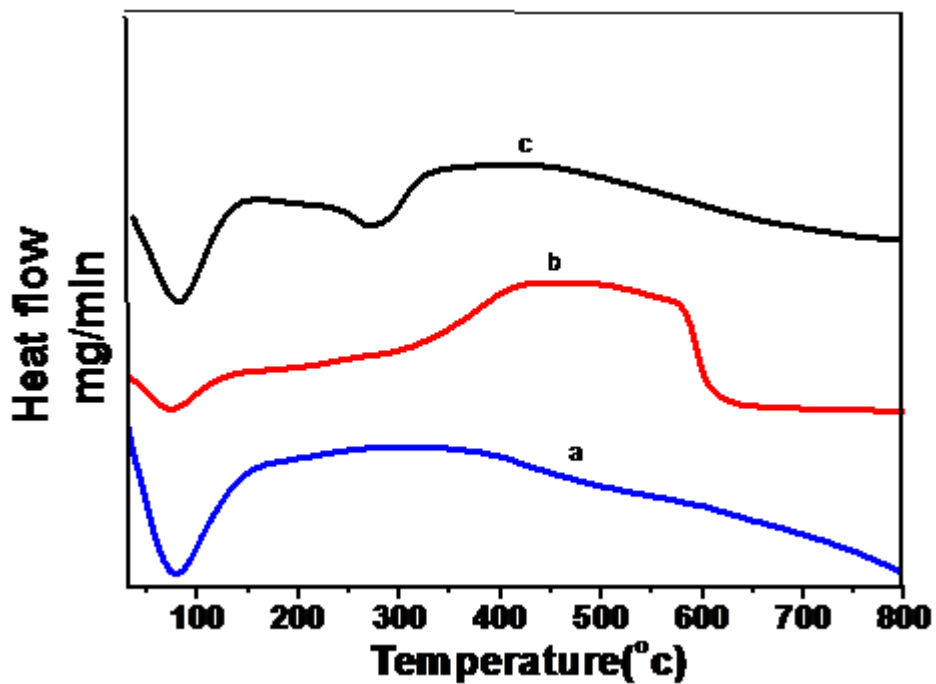


Fig. 6S DTA of (a) PHT (b) PPTC and (c) PANI

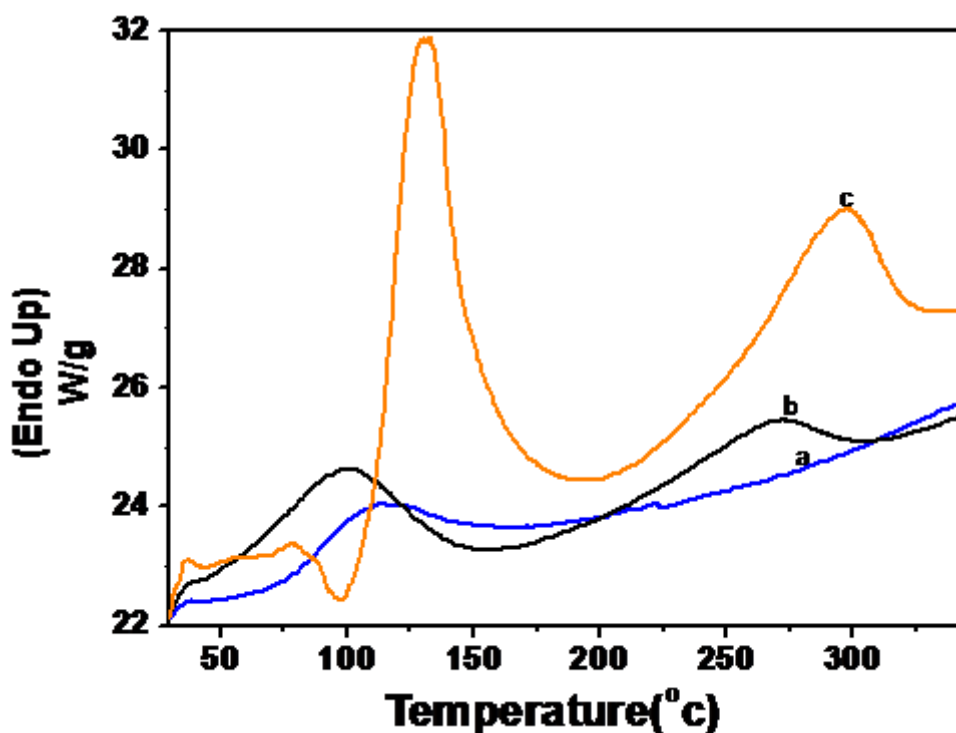


Fig.7S DSC of (a) PHT (b) PPTC and (c) PANI

Table 1S: Surface Area Analysis:

Titanium - clay ratio mmol/meq	Surface area m <sup>2</sup> /g
10	81
50	98
70	223
90	230
110	228

**Table 2S: Details of the X-ray diffraction studies:**

Sample	Diffraction angle $2\theta$	d-spacing $\text{\AA}^\circ$
Na Cloisite	7.2, 19.8, 21.9, 28.6, 34.9, 54.2, 61.8	12.1, 4.8, 4.0, 3.1, 2.6, 1.7, 1.4
PHTC	5.8, 19.8, 26.6, 34.9, 43.4, 48.3, 54.9, 61.9, 67.6	21.53, 13.35, 4.47, 3.34, 2.5, 2.0, 1.8, 1.6, 1.4, 1.38
PHT	25.2, 37.4, 47.7, 54.4 , 62.3, 67.6 <sup>o</sup>	4.4, 3.2, 2.3, 1.9, 1.6, 1.4
PANI	20.1, 25.8	5.4, 3.5
PPTC	7.4 , 19.0, 24.5, 34.5, 53.5, 61.65	11.8, 4.6, 3.6, 2.5, 1.7, 1.5
PPC	8.9 , 18.9, 20.1, 25.1, 53.0, 61.7	9.8, 4.6, 4.4, 3.5, 1.7, 1.5
PPT	19.7, 24.2 , 38.4, 43.8, 51.6, 62.3	9.7, 4.2, 3.9, 3.5, 2.6, 1.7

**Table 3S: Photodegradation reaction rate constant of methyl orange and methylene blue:**

Sample	Photodegradation rate constant of methylene blue K (min <sup>-1</sup> )	Photodegradation rate constant of methyl orange K (min <sup>-1</sup> )
PHT	0.0007	0.0037
PANI	0.00634	0.0212
PHTC	0.00930	0.0315
PPTC	0.0152	0.04467