

Sustainable Green synthesized Hematite Nanocatalysts and their Efficient Reduction of Aromatic Nitro Pollutants

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Supporting Documents

Supporting Figure Legends

Fig.S1. UV-Vis Spectra: a) 4-NP&4-AP; b) 4-NA& 1,4-DAB; c) 2-NB & 2-AB; d) 2,4-DNA & 1,2,4-TAB.

Fig.S2. Reduction kinetics of ANC: a) Absorbance vs Time; b) $\ln(A/A_0)$ vs Time by NaBH_4 . (Condition: ANC= 2mmol; NaBH_4 = 1mmol; Temp.= 38°C; Solvent= water).

Fig.S3. Reduction kinetics of ANC: a) Absorbance vs Time; b) $\ln(A/A_0)$ vs Time by HNPs. (Condition: ANC= 2mmol; HNPs= 6.25mol%; Temp.= 38°C; Solvent= water).

Fig.S4. Recycle absorbance vs Time. (Condition: ANC= 2mmol; HNPs= 6.25mol%; Temp.= 38°C; Solvent= water).

Fig. S5. Linear Fit for Reduction of 4-NP by NaBH_4 . (Condition: ANC= 2mmol; NaBH_4 = 1mmol; Temp.= 38°C; Solvent= water).

Fig. S6. Linear Fit for Reduction of 4-NA by NaBH_4 . (Condition: ANC= 2mmol; NaBH_4 = 1mmol; Temp.= 38°C; Solvent= water).

Fig. S7. Linear Fit for Reduction of 2-NB by NaBH₄. (Condition: ANC= 2mmol; NaBH₄= 1mmol; Temp.= 38°C; Solvent= water).

Fig. S8. Linear Fit for Reduction of 2,4-DNA by NaBH₄. (Condition: ANC= 2mmol; NaBH₄= 1mmol; Temp.= 38°C; Solvent= water).

Fig. S9. Linear Fit for Reduction of 4-NP by HNPs. (Condition: ANC= 2mmol; HNPs= 6.25mol%; Temp.= 38°C; Solvent= water).

Fig. S10. Linear Fit for Reduction of 4-NA by HNPs. (Condition: ANC= 2mmol; HNPs= 6.25mol%; Temp.= 38°C; Solvent= water).

Fig. S11. Linear Fit for Reduction of 2-NB by HNPs. (Condition: ANC= 2mmol; HNPs= 6.25mol%; Temp.= 38°C; Solvent= water).

Fig. S12. Linear Fit for Reduction of 2,4-DNA by HNPs. (Condition: ANC= 2mmol; HNPs= 6.25mol%; Temp.= 38°C; Solvent= water).

Fig. S13. UV-Vis spectrum of reaction mixture after addition of NaBH₄only,(Condition: ANC= 2mmol; NaBH₄= 1mmol; Temp.= 38°C; Solvent= water).

Supporting Table Legend

Table.S1. Interpretation of d space value and hkl from SAED pattern.

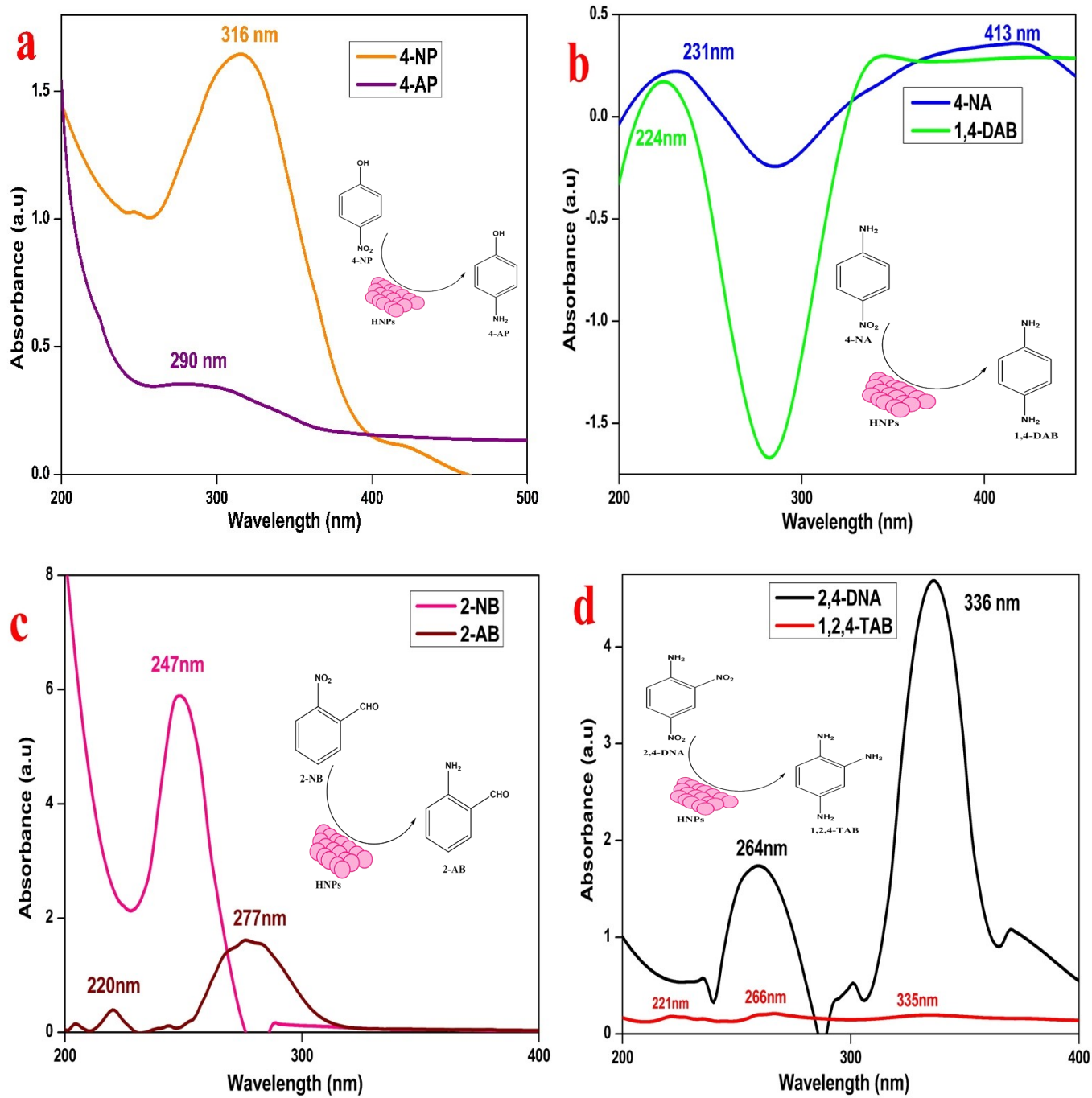


Fig.S1.

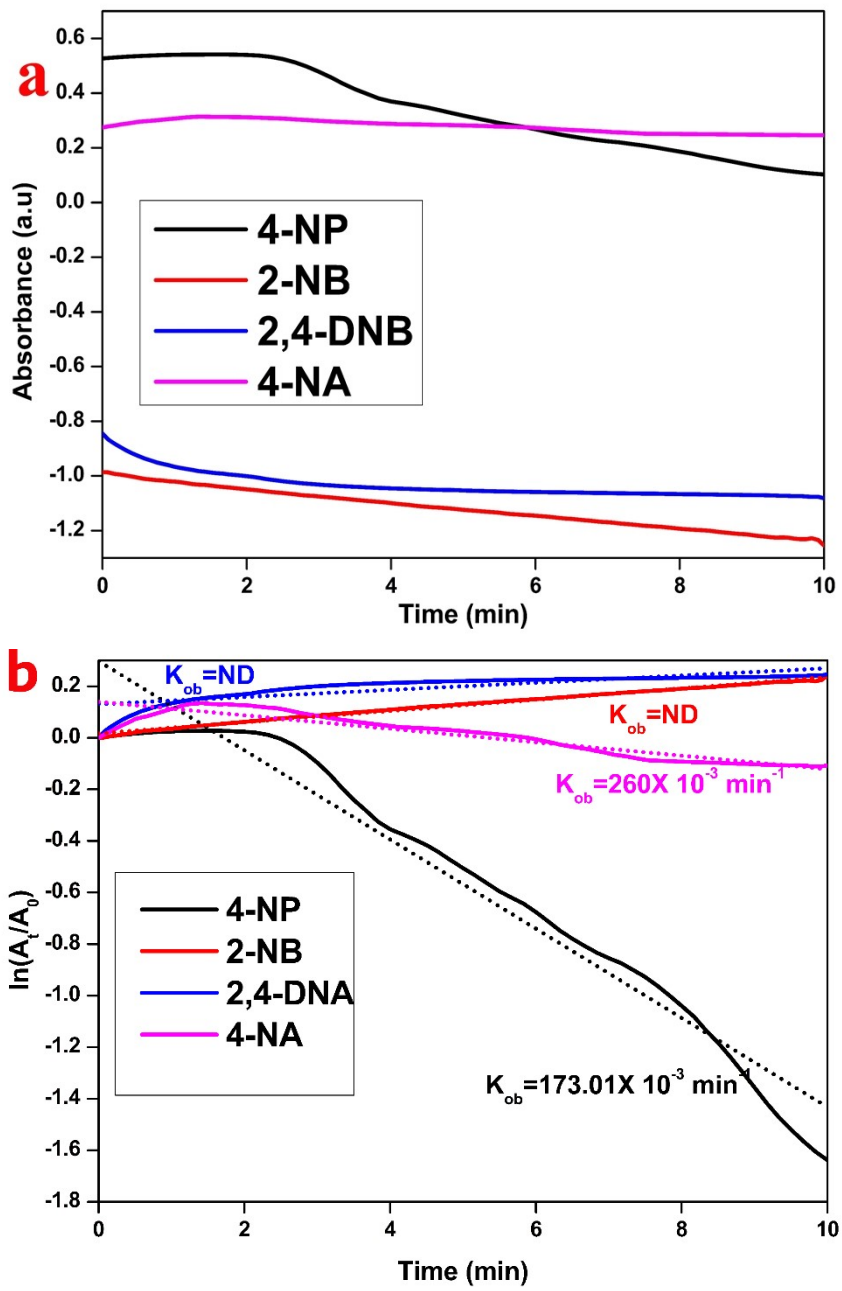


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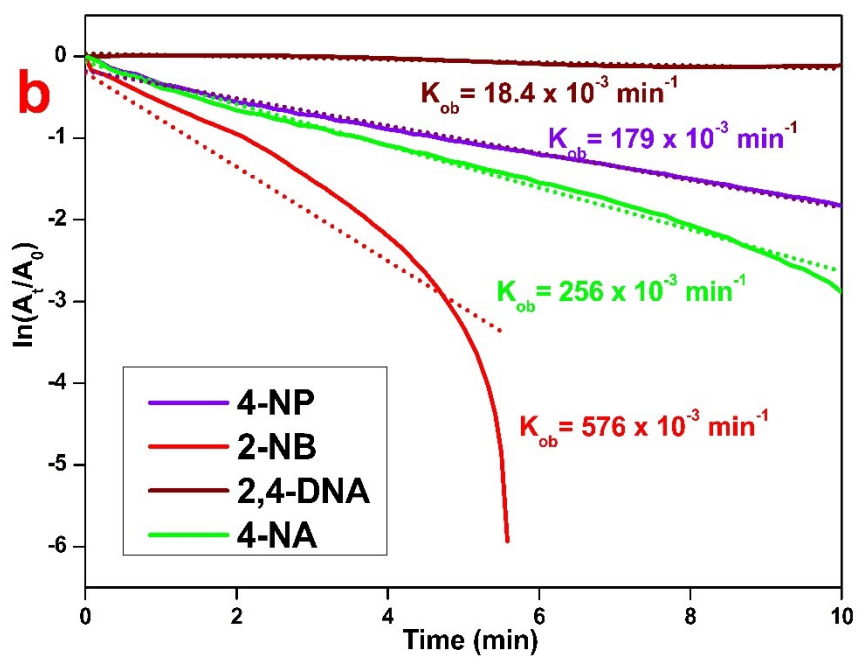
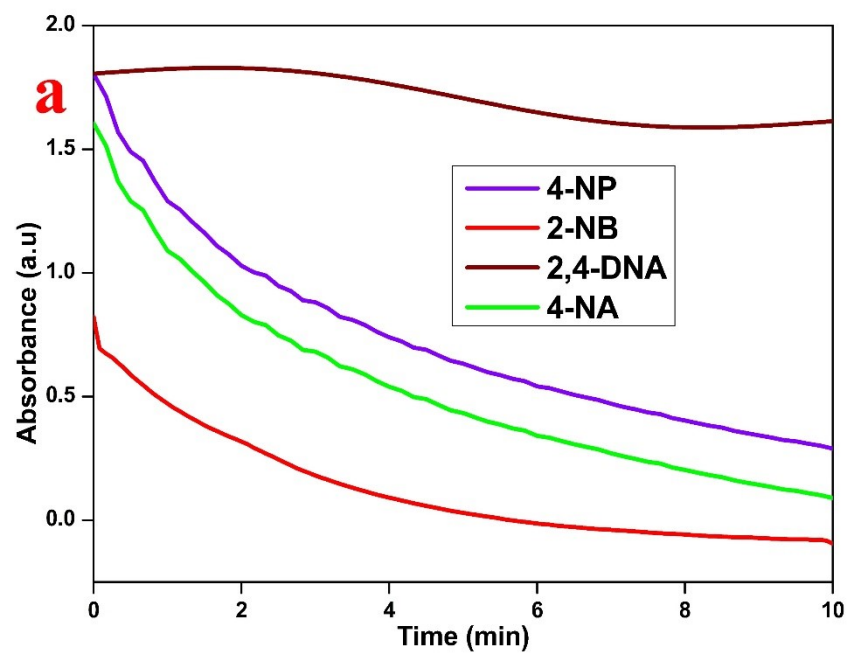


Fig.S3.

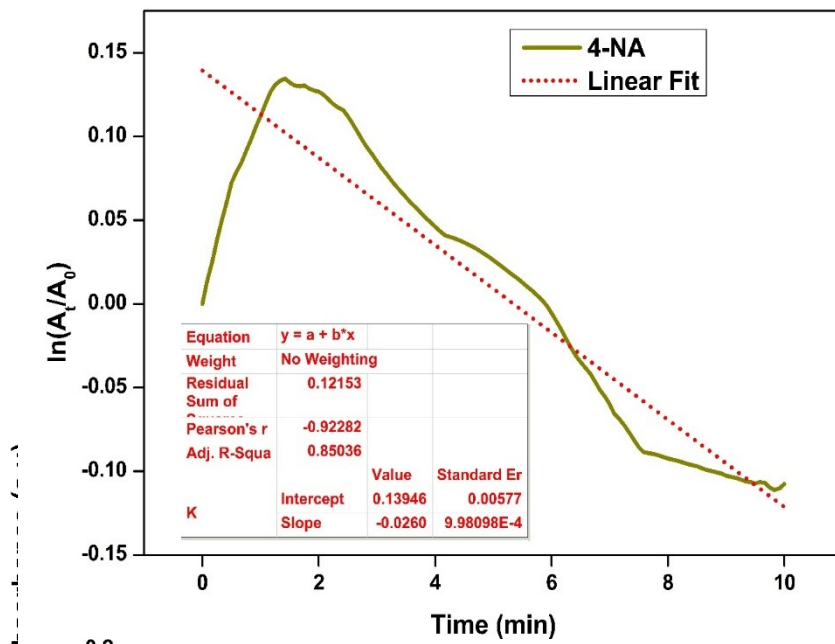


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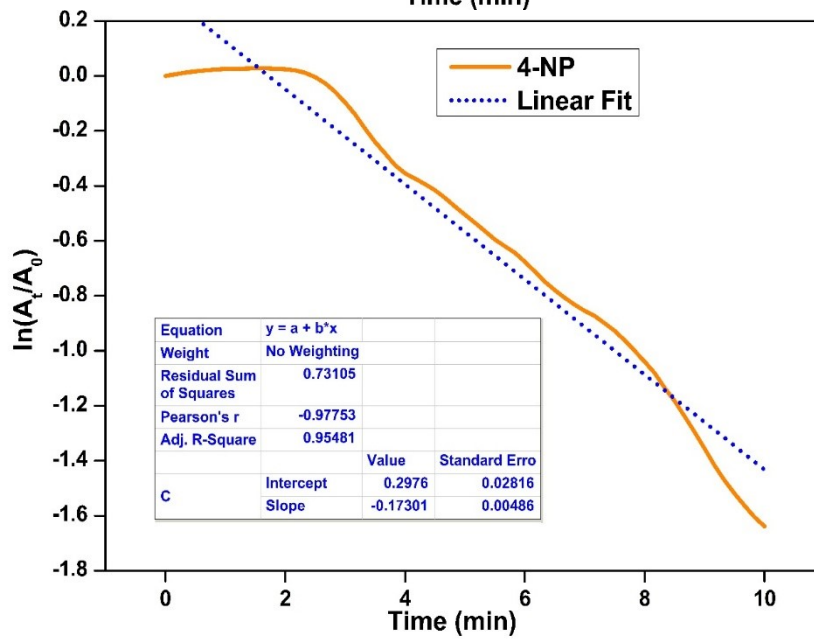


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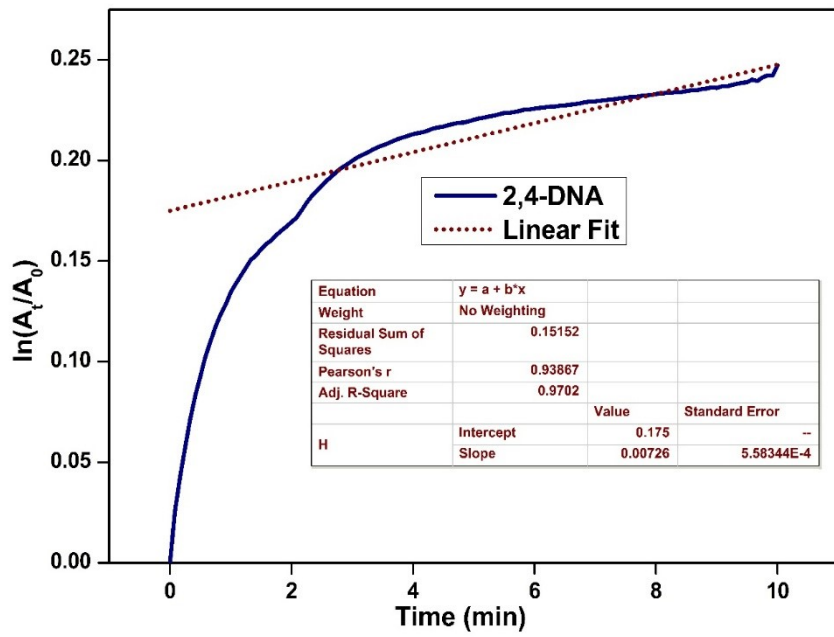


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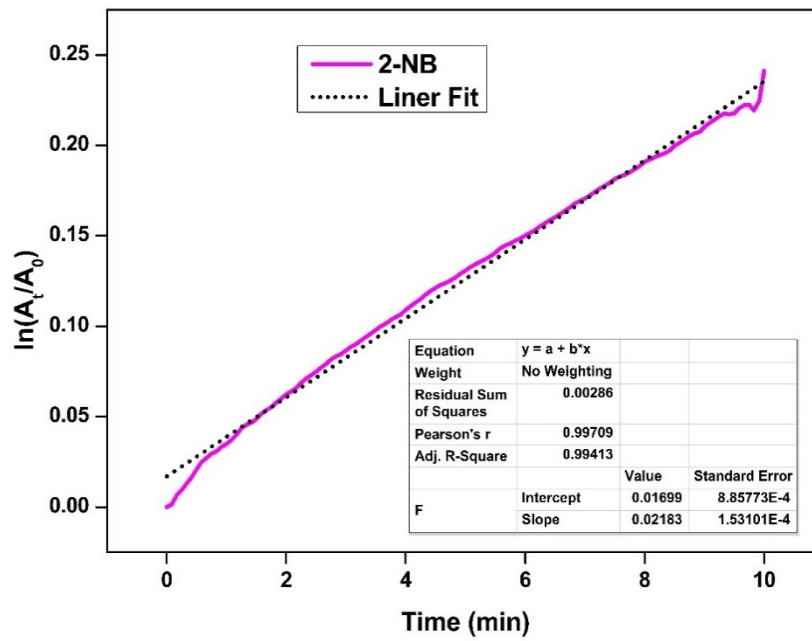


Fig. S7.

Fig.S8.

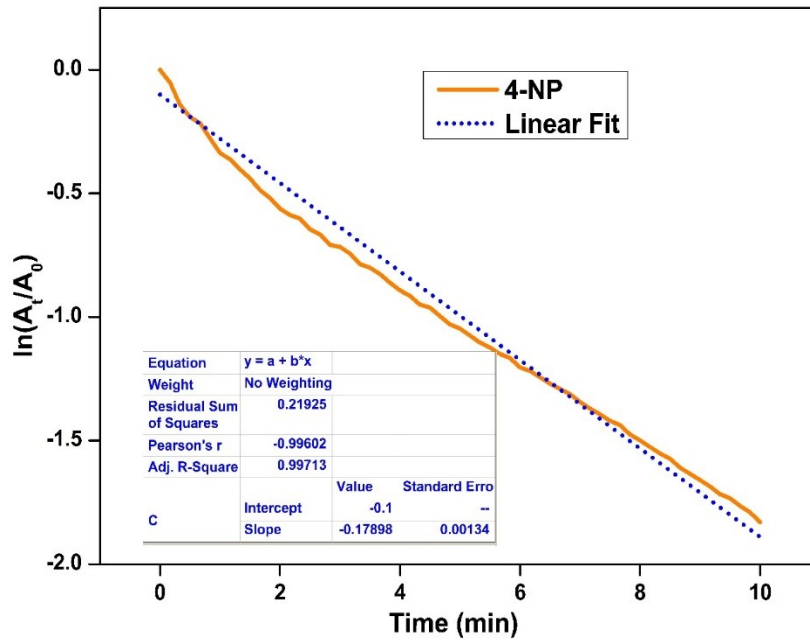


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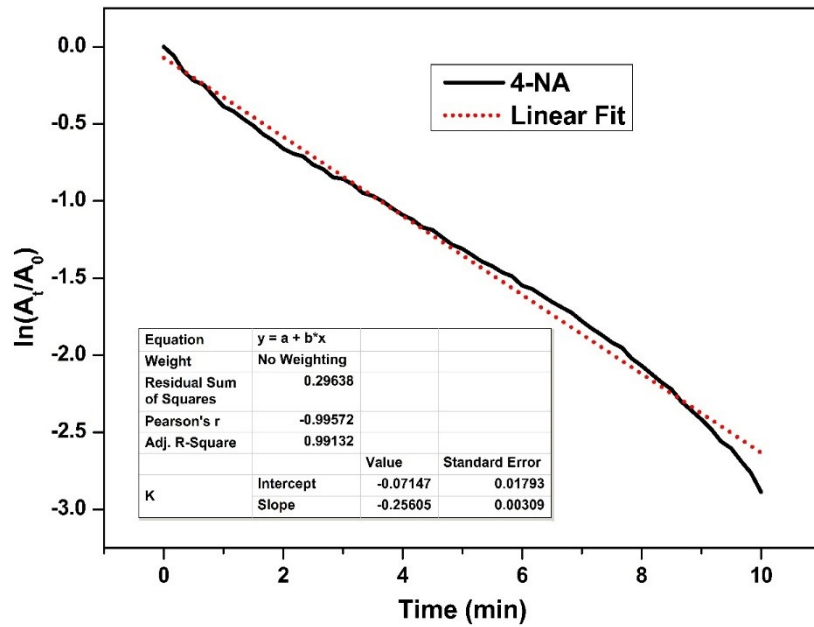


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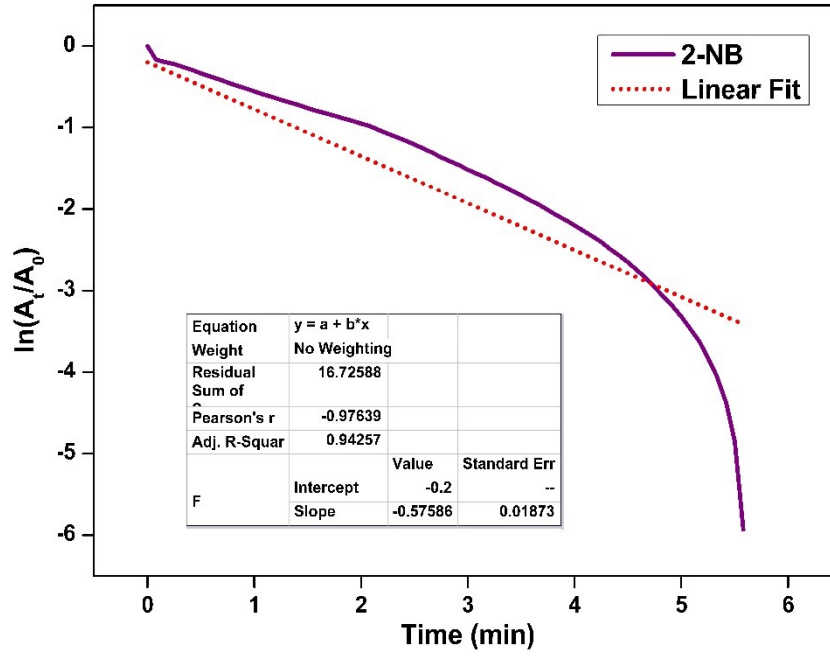


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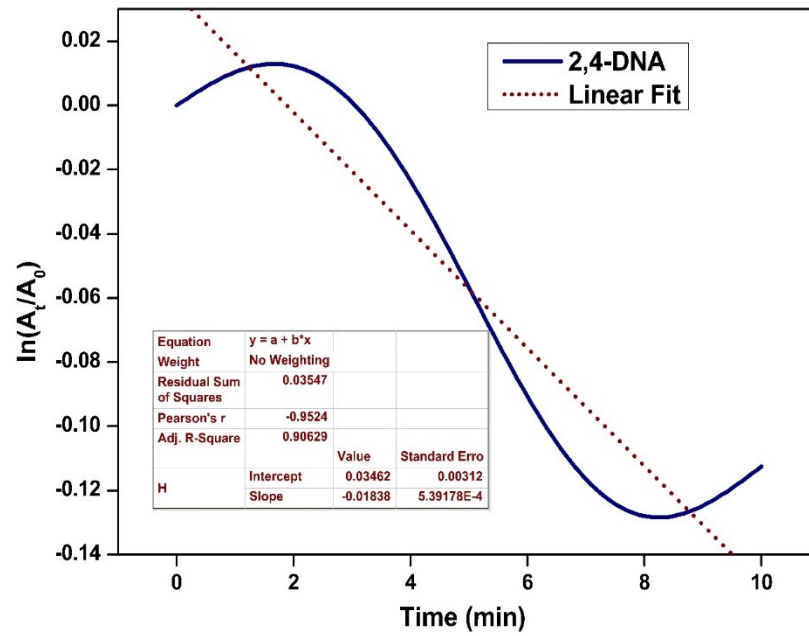


Fig.S12.

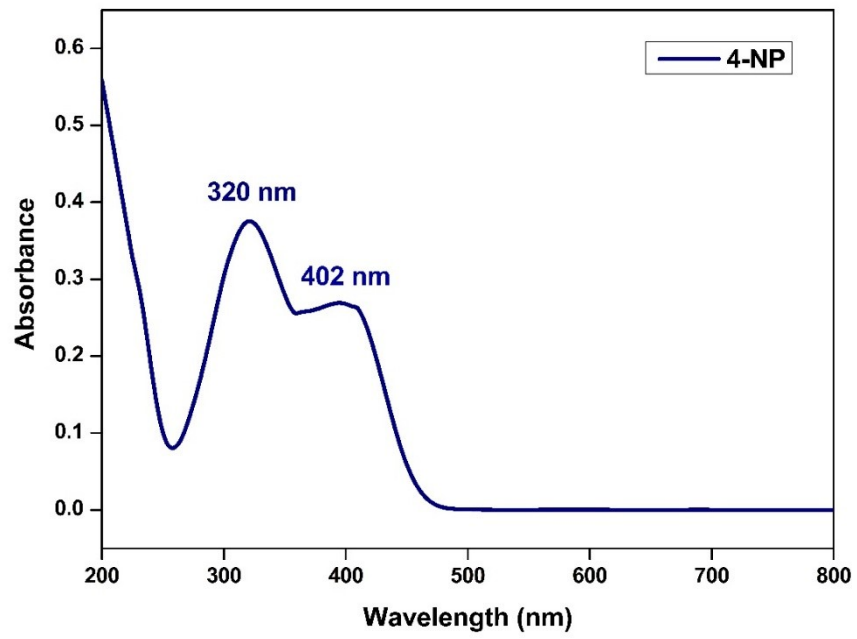


Fig. S13.

Table S1.

S. No	$1/2r$ (nm ⁻¹)	$1/r$ (nm ⁻¹)	r (nm)	d-spacing (nm)	h k l
1.	7.831	3.9155	0.26	0.26	1 1 0
2.	11.234	5.617	0.18	0.18	0 2 4
3.	13.857	6.9285	0.14	0.14	3 0 0
4.	16.953	8.4765	0.12	0.12	2 1 0
5.	20.086	10.043	0.1	0.1	4 0 4
6.	23.625	11.8125	0.08	0.08	1 2 14