

Effective Removal of Methylene Blue by $\text{Mn}_3\text{O}_4/\text{NiO}$ Nanocomposite under Visible Light

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Supplementary information

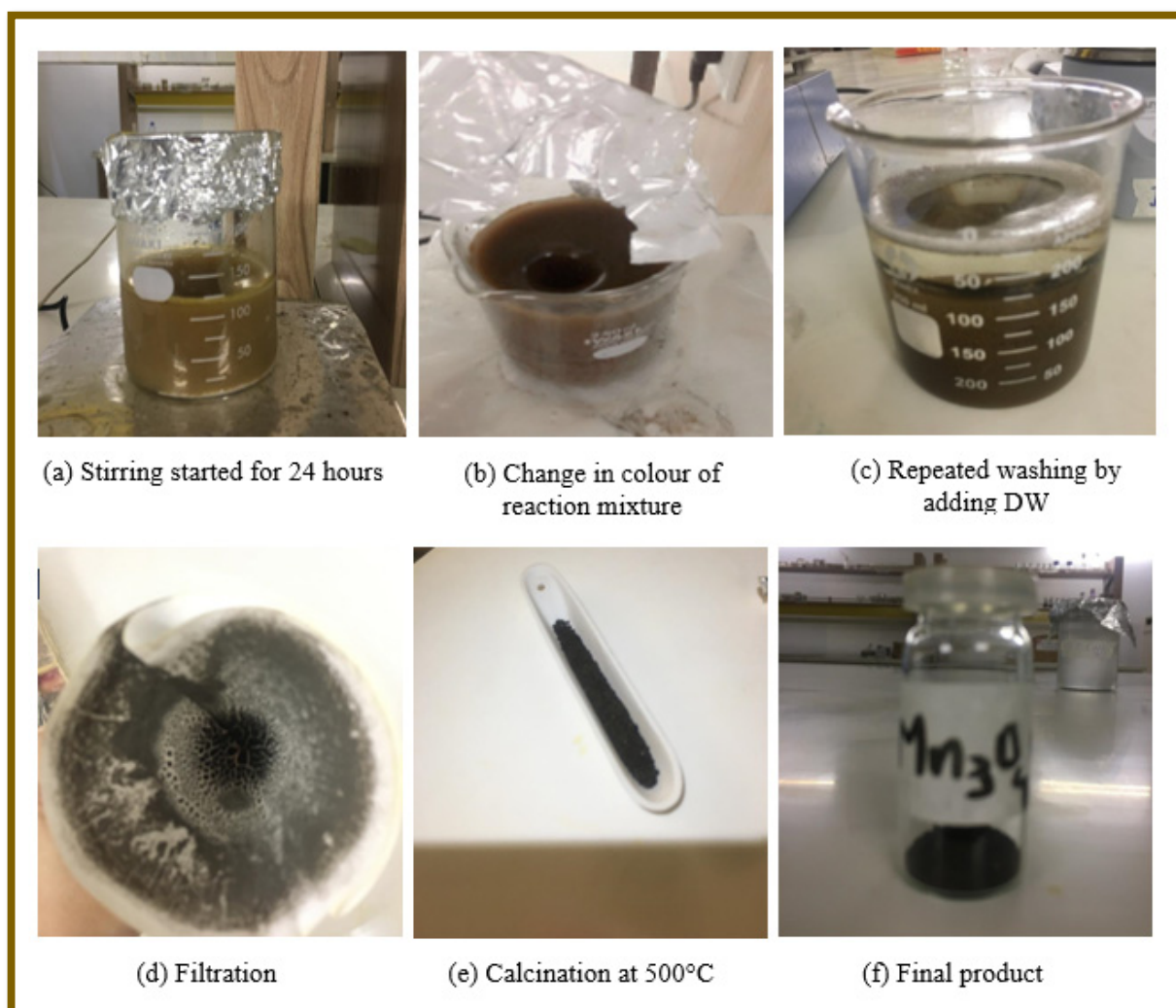
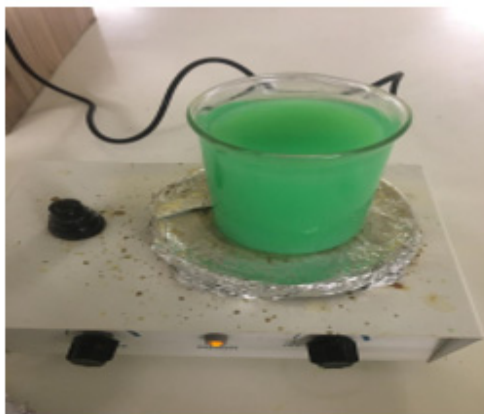
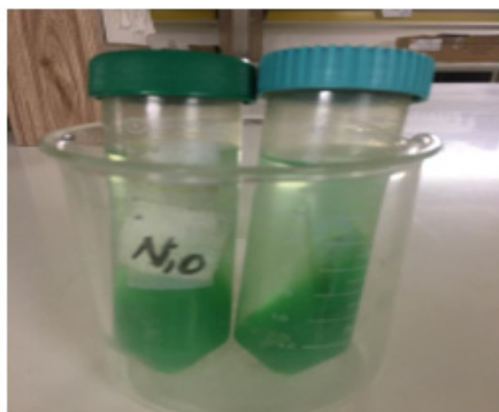


Figure S1. Pictorial description of synthesis steps for Mn_3O_4 NPs



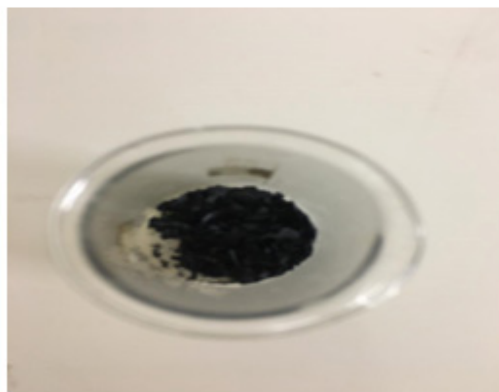
(a) Initially reaction mixture at 50°C



(b) Centrifugation

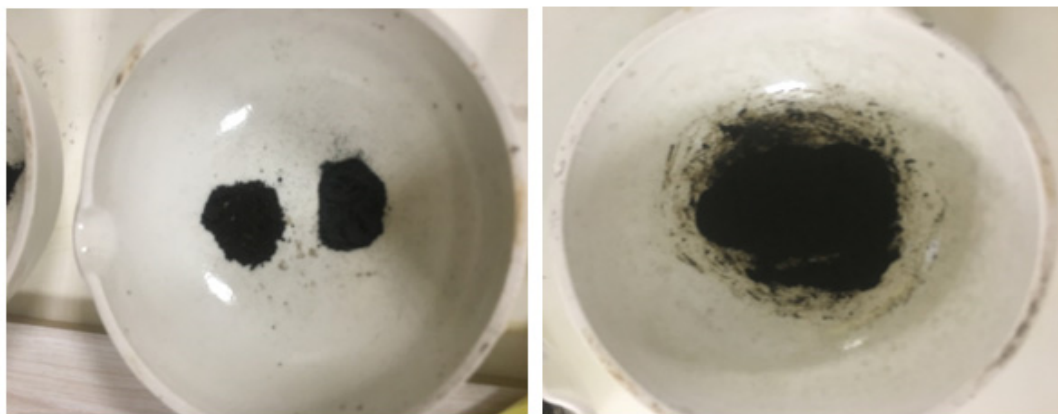


(c) Gel formation after oven drying



(d) Final product after calcination of gel

Figure S2. Pictorial description of synthesis steps for NiO NPs



(a) Calculated amounts of both the samples (b) Mixing and grinding of powdered Samples



(c) Calcination at 80°C

Figure S3. Pictorial description of Mn₃O₄/NiO nanocomposite formation

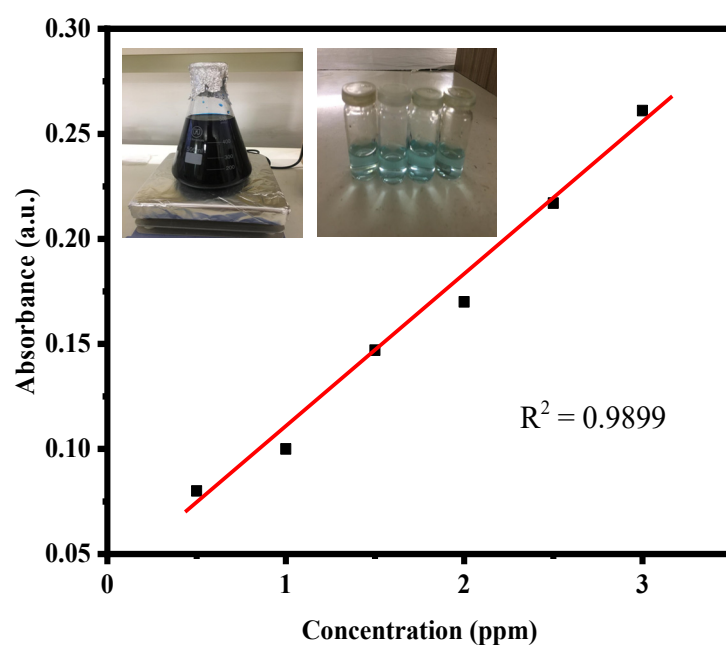


Figure S4. Calibration curve of diluted stock solution

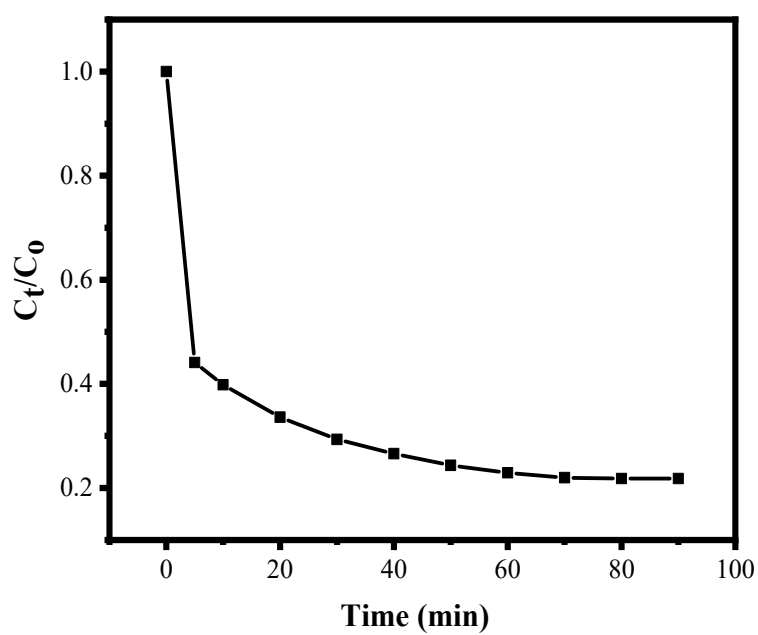


Figure S5. Adsorption capacity of MB dye Vs. time in dark

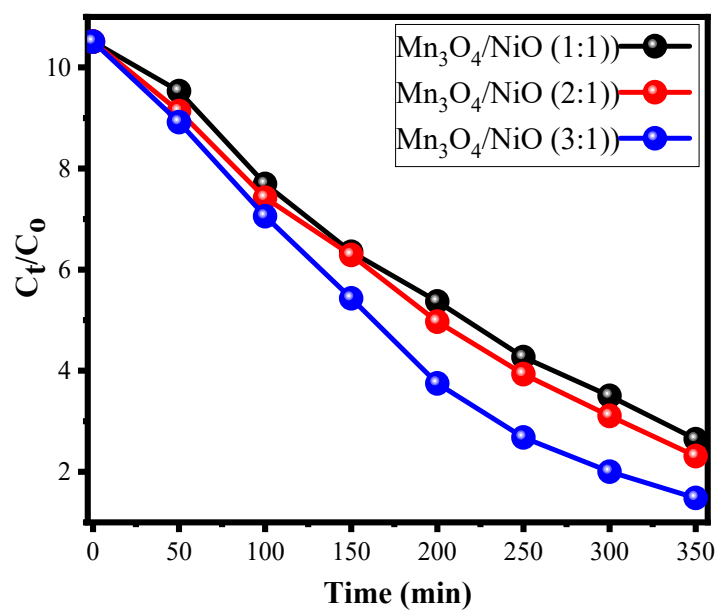


Figure S6. Remaining concentration of dye Vs. time interval

Table S1. XRD measurement of Mn_3O_4 NPs

2 θ (degree)	hkl	FWHM	d-spacing
38.48	004	0.393	2.34
44.61	220	0.344	2.03
64.83	400	0.590	1.43
72.61	332	0.344	1.30
78.06	325	0.366	1.22

Table S2. XRD measurement of NiO NPs

2θ (degree)	hkl	FWHM	d-spacing
36.6	003	0.787	2.44
42.7	012	0.688	2.12
44.6	200	0.196	2.02
62.5	104	0.590	1.48
72.7	311	0.492	1.30

Table S3. XRD measurement of nanocomposite Mn₃O₄: NiO (1:1)

2θ (degree)	hkl	FWHM	d-spacing
38.31	004	0.31	2.34
44.75	220	0.26	2.02
64.97	400	0.27	1.43
72.56	332	0.53	1.30
78.12	325	0.3	1.22

Table S4. XRD measurement of nanocomposite Mn₃O₄/NiO (3:1)

2θ (degree)	hkl	FWHM	d-spacing
38.41	004	0.393	2.34
42.05	012	0.590	2.14
44.68	220	0.295	2.02
72.61	332	0.393	1.30
78.23	325	0.3	1.21