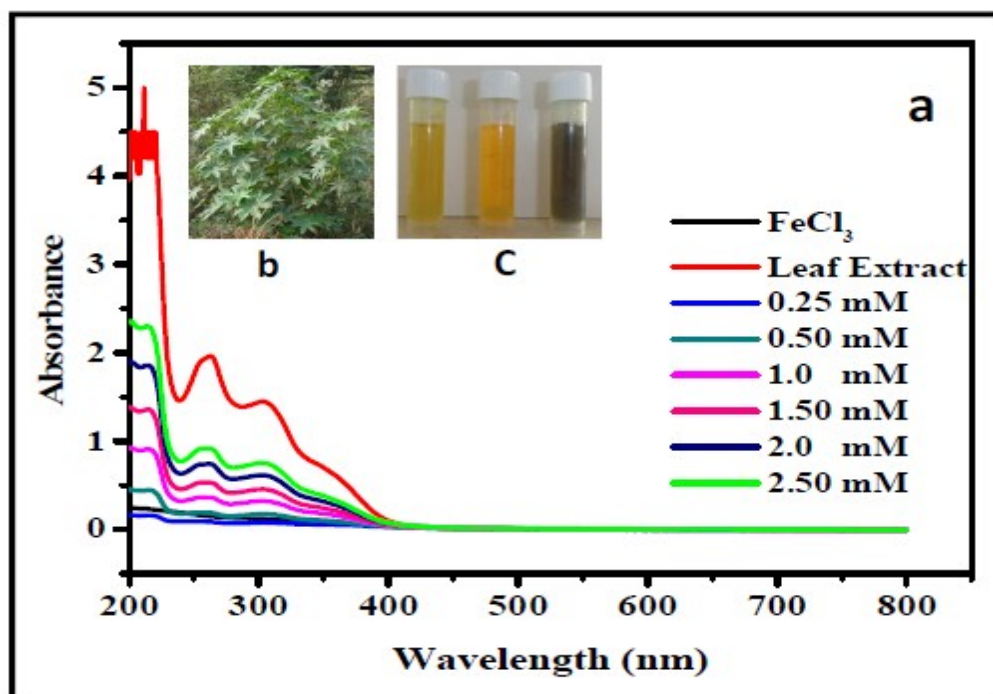


Electronic Supplementary Information

Castor leaves mediated synthesis of iron nanoparticles for evaluating catalytic effects in transesterification of castor oil

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UV-visible Spectra:

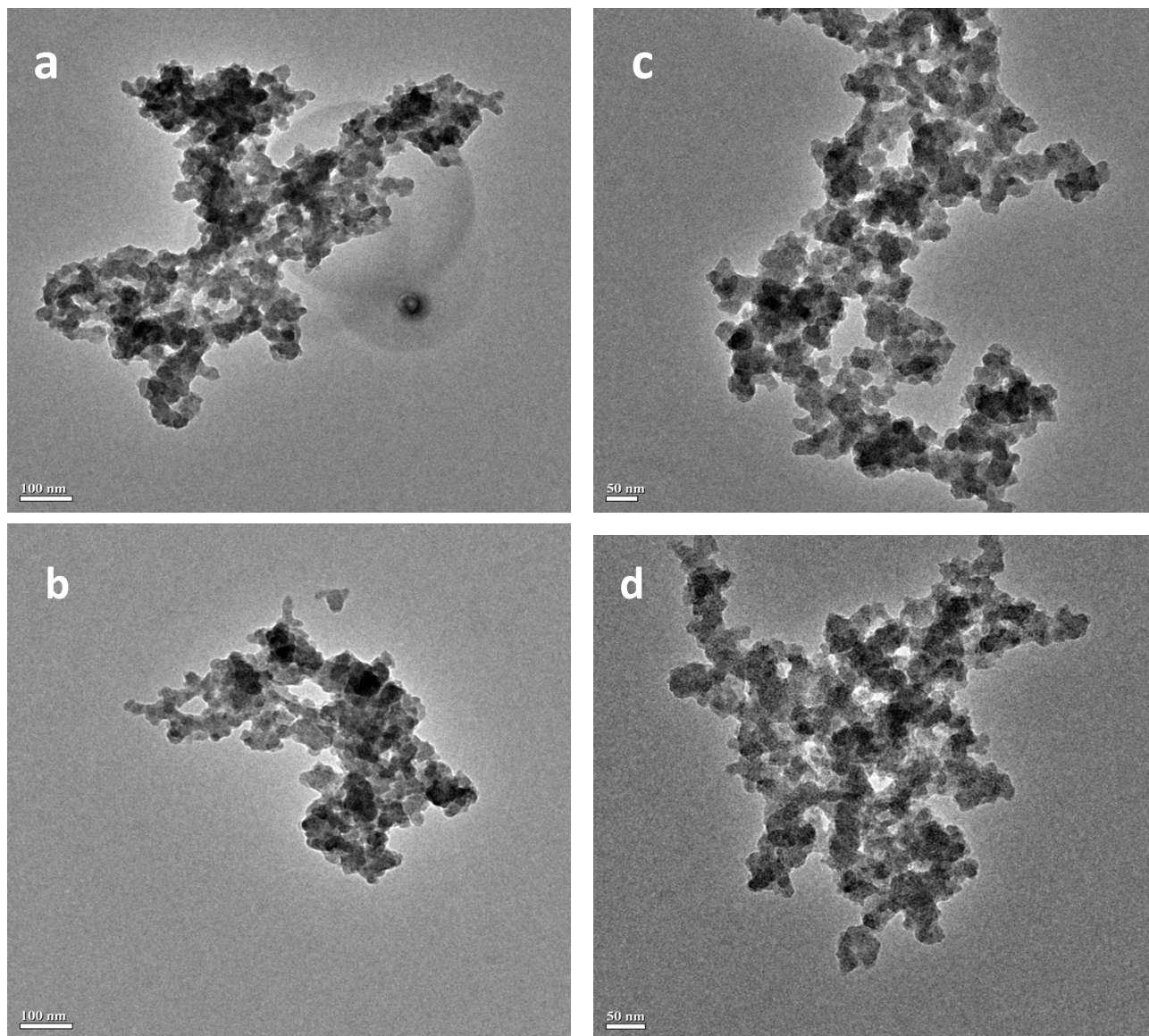


ESI Fig.1 (a) UV-visible absorption spectra of reaction mixture at different FeCl₃ concentrations; (b) Image of *Ricinus communis* leaf (inset) and (c) Visual observation of FeCl₃, leaf extract and reaction mixture (inset)

TEM Images:

The TEM images given in Fig. 5 was analysed using TEM instruments made by Philips (Model: Tecnai 10, Netherlands). In order to confirm the TEM results, the freshly prepared iron nanoparticles were analysed using TEM instruments made by JEOL (Model No: JEOL 2100F, Japan). Similar type of images was obtained. The obtained TEM images are presented

in ESI Fig. 2. The TEM images show that the irregular shapes and agglomerates of the iron nanoparticles were evident. The formation of agglomerates may be due to the presence of biomolecules on the surface of the iron nanoparticles.



**ESI Fig. 2. TEM images of phytosynthesized iron nanoparticles at different scales:
(a) & (b) 100 nm, (c) & (d) 50nm.**

ESI Table 1. GC-MS profile for castor biodiesel

Pk#	RT	Area%	Library/ID	Ref#	CAS#	Qual
1	13.672	1.59	1 Hexadecanoic Acid, Methyl Ester	119400	000112-39-0	99
2	14.658	0.98	13-Hexyloxacyclotridec-10-en-2-one	127655	127062-51-5	95
3	14.772	5.66	9,12-octadecadienoic Acid, Methyl ester	139708	002462-85-3	99
4	14.811	4.74	9- Octadecenoic acid, Methyl ester(E)-	141310	001937-62-8	99
5	14.842	0.51	11-Eicosanoic acid, Methyl ester	141291	052380-33-3	99
6	14.963	1.62	Methyl Stearate	143126	000112-61-8	99
7	16.000	76.30	9-Octadecnoic acid, 12-hydroxy-, Methyl ester, [R-(Z)]-	154825	000141-24-2	94
8	16.948	0.21	Butyl 9,12-octadecadienoate	174149	1000336-54-1	99
9	16.974	0.41	7-pentadecyne	67945	022089-890	86
10	18.081	2.23	10-undecenoyl chloride	62430	038460-95-6	64
11	18.106	4.98	2-Methyl-Z, Z-3,13-octadecadienol	127747	1000130-90-5	93
12	18.672	0.42	Squalene	215927	000111-02-4	95
	Total	99.65				