



One-Step Fabrication of Dual Responsive Lignin Coated Fe_3O_4 Nanoparticles for Efficient Removal of Cationic and Anionic Dyes

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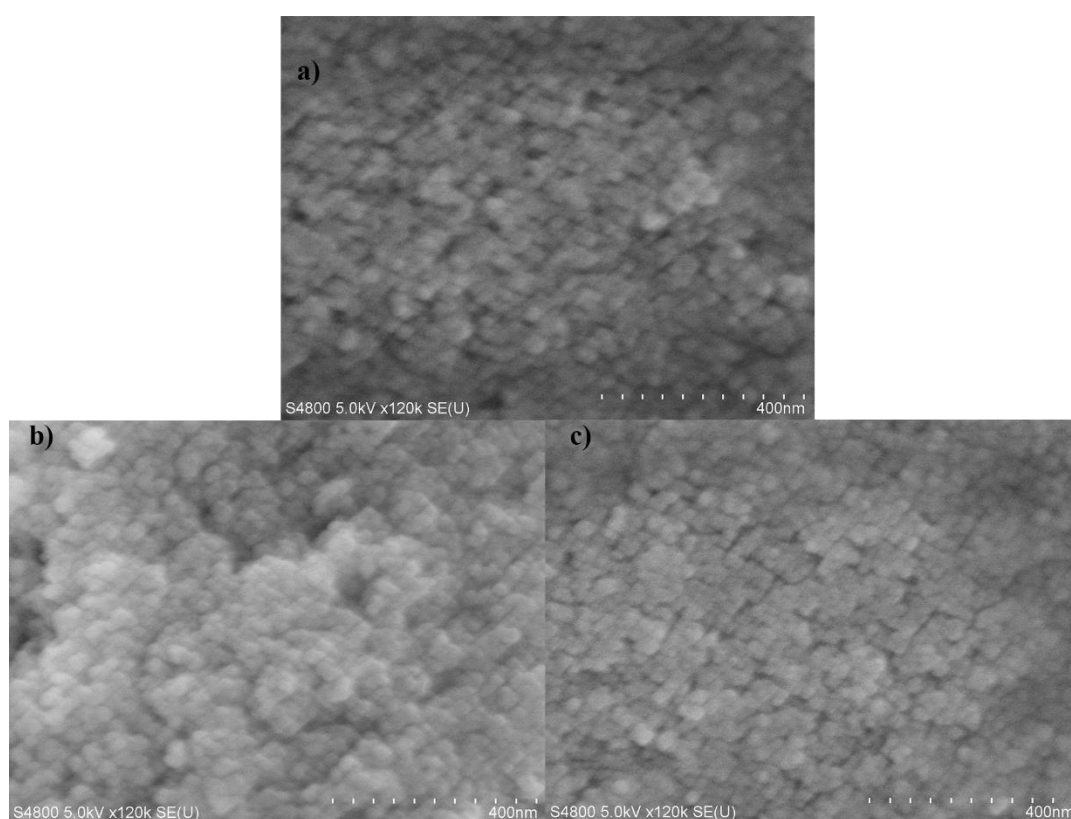


Figure S1. SEM images of (a) LAMNPs-25%, (b) LAMNPs-50%, (c) LAMNPs-100%.

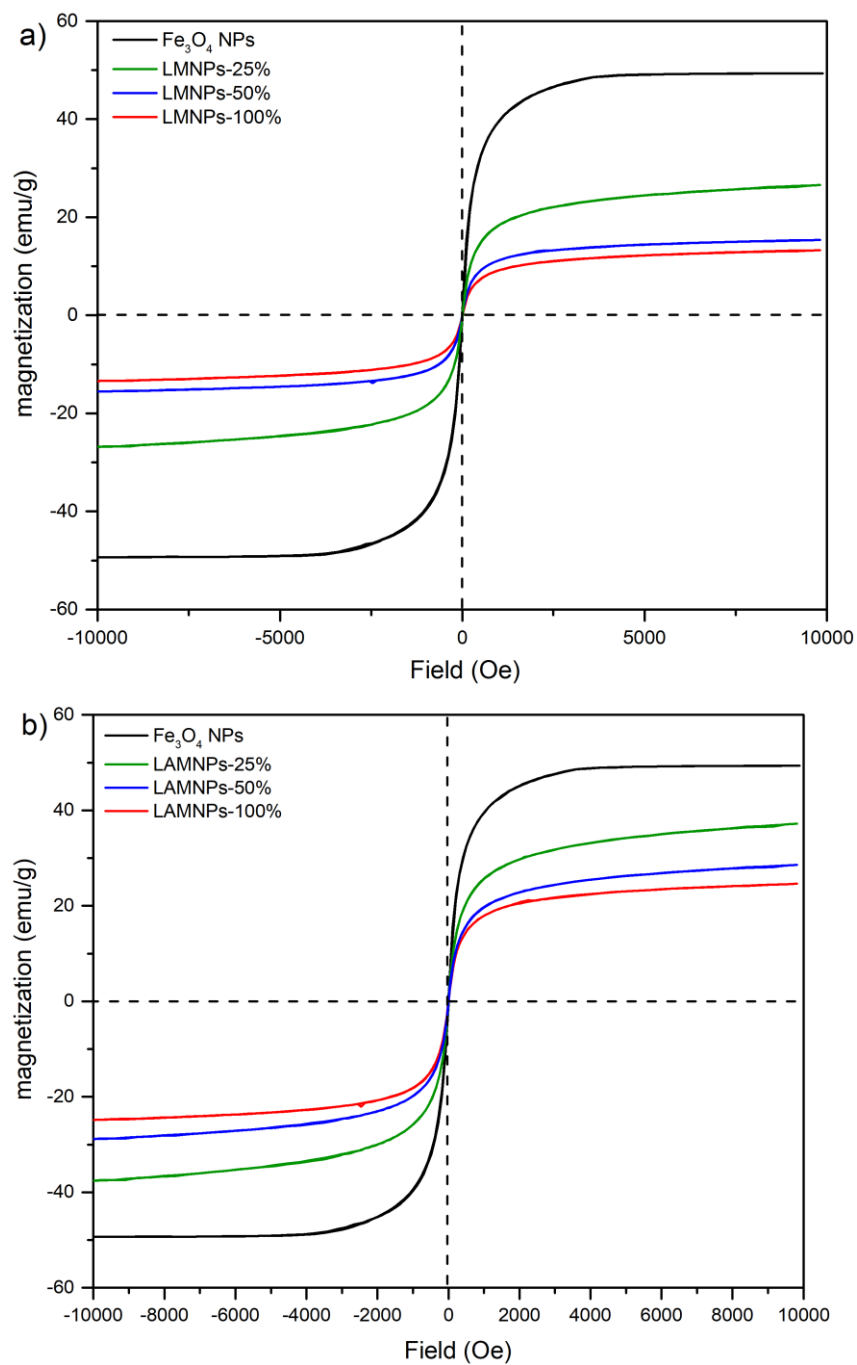


Figure S2 VSM magnetization curves of Fe_3O_4 NPs, (a) LMNPs and (b) LAMNPs.

Table S1. Magnetization value of LMNPs and LAMNPs.

Samples	f_{wt}	Magnetization (emu/g)
Fe_3O_4 NPs	--	49.33
	25%	26.56
LMNPs	50%	15.38
	100%	13.28
LAMNPs	25%	37.19
	50%	28.55
	100%	24.61

Table S2. Desorption efficiency at different time intervals.

Samples	D_e %		q_D (mg/g)	C_D (mg/L) at 12h
	3h	12h		
MB loaded LMNPs-100%	46.27%	50.02%	251.92	252.04
AS-GR loaded LAMNPs-100%	86.45%	92.28%	144.10	265.95