

Table S1. Statistic data of fitting by different mathematical models for SEM, zeta potential and hydrodynamic size data

Sample	SEM		Zeta potential		Hydrodynamic size					
	Lognormal functions		Boltzmann functions		Lognormal functions		Extreme functions		Boltzmann functions	
	R ²	χ^2	R ²	χ^2	R ²	χ^2	R ²	χ^2	R ²	χ^2
Fe ₃ O ₄	0.76	2.19	0.99	3.83	0.98	398.5	-	-	-	-
Fe ₃ O ₄ /APTES	0.80	0.86	0.99	3.52	-	-	0.85	607.9	-	-
Fe ₃ O ₄ /HA	0.73	3.16	0.92	6.80	-	-	-	-	0.97	172.5