Supporting information

Controllable synthesis of hierarchical porous Fe_3O_4 particles mediated by poly (diallyldimethylammonium chloride) and their application in arsenic removal

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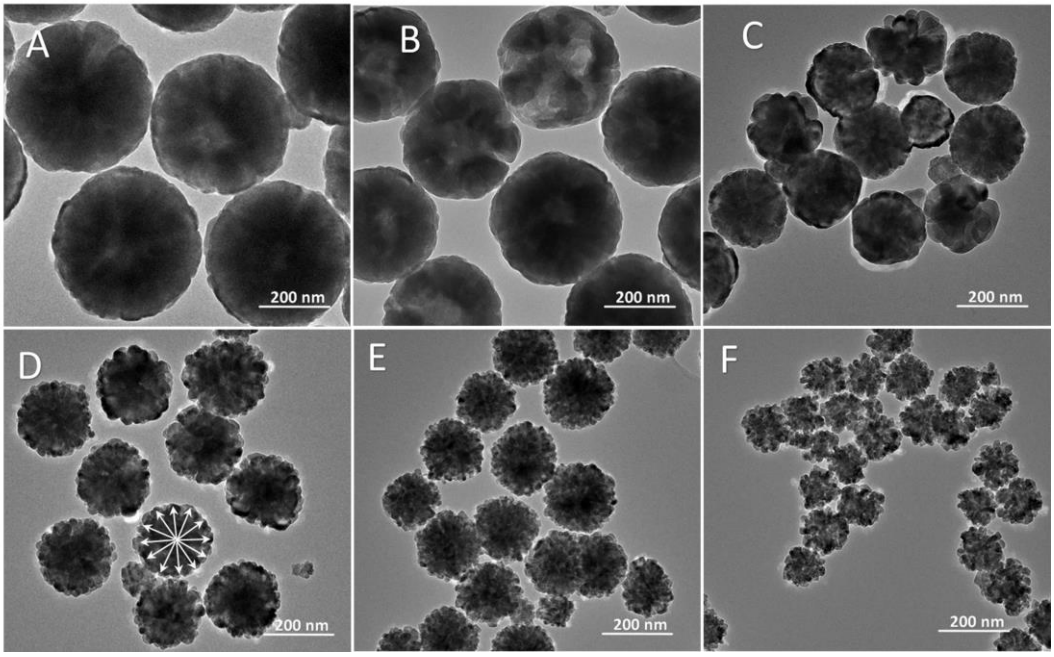

Figure S1. TEM images of (A) Fe_3O_4-1, (B) Fe_3O_4-2, (C) Fe_3O_4-3, (D) Fe_3O_4-4, (E) Fe_3O_4-5, (F) Fe_3O_4-6 with initial PDDA dosage varying from 1 g to 6 g.

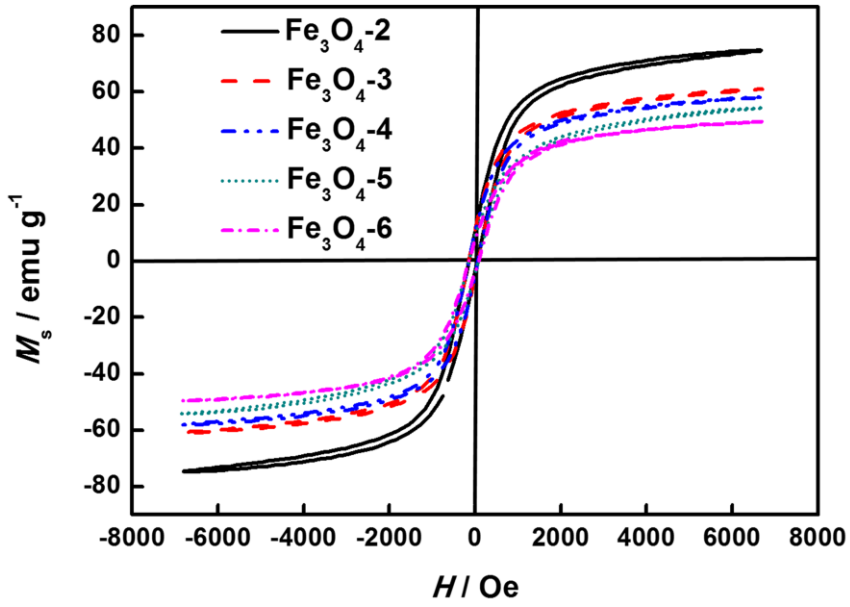

Figure S2. Room temperature hysteresis loops for the Fe_3O_4-*i* (*i*=2-6) with initial PDDA dosage increasing from 2 g to 6 g.

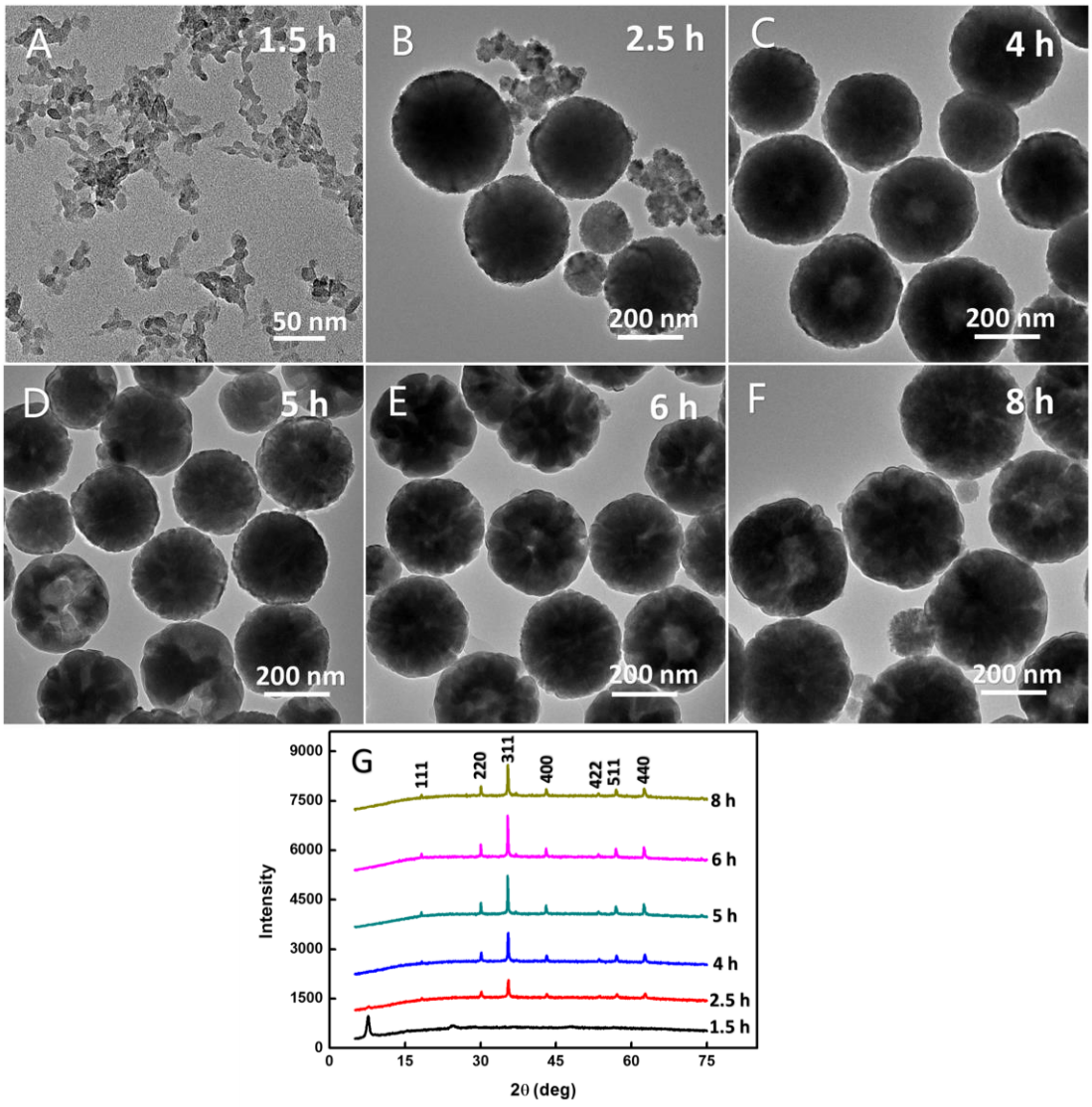

Figure S3. The TEM images (A-F) and XRD patterns (G) of Fe_3O_4-2-*x*h samples at *x*=1.5, 2.5, 4, 5, 6, 8 h.

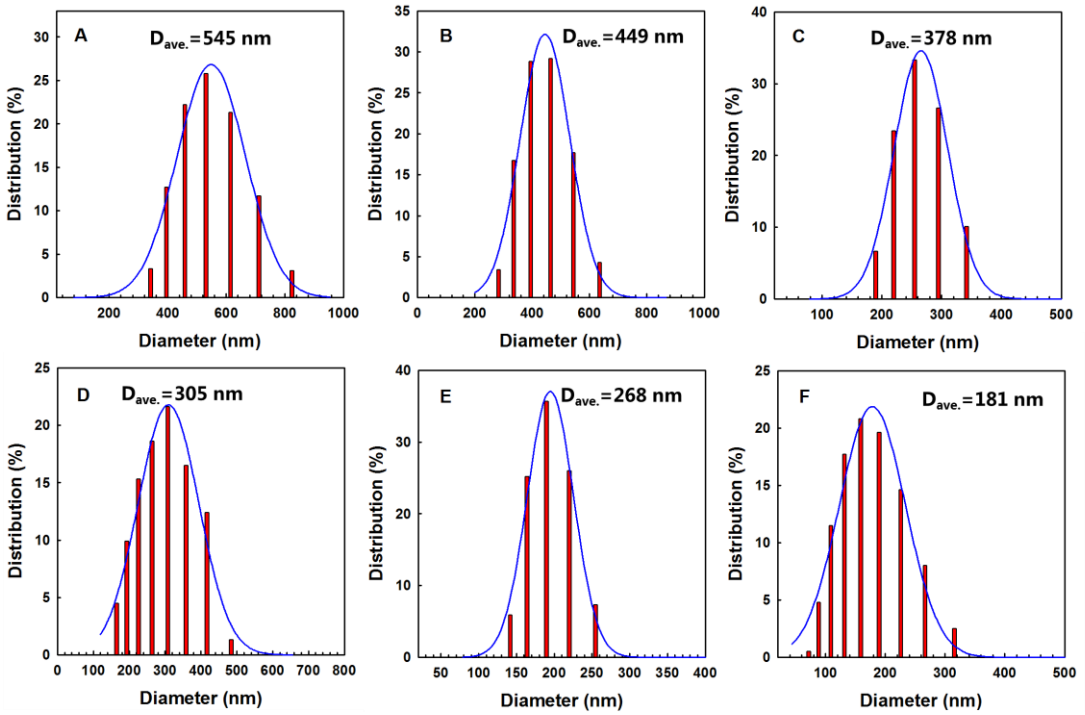

Figure S4. The size distribution of Fe_3O_4-1 (A), Fe_3O_4-2 (B), Fe_3O_4-3 (C), Fe_3O_4-4 (D), Fe_3O_4-5 (E), and Fe_3O_4-6 (F) in aqueous solution.

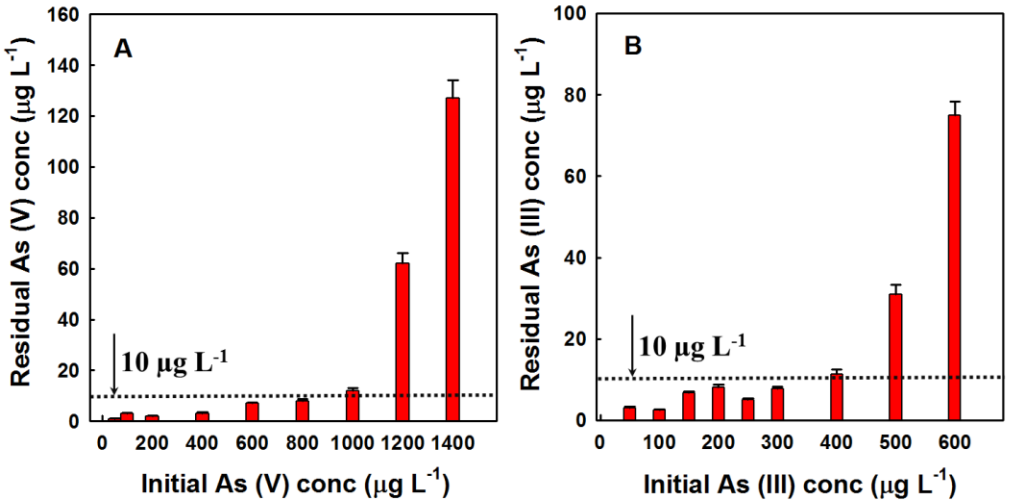

Figure S5. The residual arsenic concentration exploiting Fe_3O_4-5 as the adsorbent for the low-level arsenic removal (T=25 ^{o}C; adsorbent doses=0.5 g L^{-1}; pH=5 ± 0.2).

Table S1. Equilibrium Adsorption Isotherm Fitting Parameters for As (V)/As (III) onto Fe_3O_4-*i* (i=2-6)

			Fe_3O_4-2	Fe_3O_4-3	Fe_3O_4-4	Fe_3O_4-5	Fe_3O_4-6
As (V)	Langmuir isotherm	q_m(mg g^{-1})	1.967	2.340	4.203	6.422	7.257
		K_L(L/mg)	248.05	34.484	11.384	11.44	28.744
		R^2	0.999	0.992	0.996	0.994	0.996
As (III)	Freundlich isotherms	1/n	3.806	2.995	2.847	2.243	2.261
		K_F((mg $g)^{1-1/n}$)	2.70	1.53	0.55	0.27	0.15
		R^2	0.98	0.965	0.987	0.995	0.990