

Supporting Information

Synthesis of Flower-like BaTiO₃/Fe₃O₄ Hierarchical Structure Particles and Their Electro-rheological and Magnetic Properties

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Table S1 The main elementary composition of BaTiO₃/Fe₃O₄ hierarchical particles obtained under different solvothermal time:

a) 0.5h, b) 1h, c) 6h, d)12h, e)72h

Element	Weight%	Atomic%
C K	16.15	30.55
O K	15.24	21.64
Si K	53.50	43.28
Ti K	0.56	0.26
Fe K	7.69	3.13
Ba L	6.87	1.14
Totals	100.00	

Element	Weight%	Atomic%
C K	21.01	38.53
O K	28.50	39.24
Si K	15.34	12.03
Ti K	0.32	0.15
Fe K	19.05	7.51
Ba L	15.78	2.53
Totals	100.00	

a)

Element	Weight%	Atomic%
C K	9.92	21.30
O K	20.34	32.79
Si K	36.15	33.20
Ti K	2.89	1.55
Fe K	19.63	9.07
Ba L	11.08	2.08
Totals	100.00	

b)

Element	Weight%	Atomic%
C K	11.55	23.97
O K	21.22	33.05
Si K	36.18	32.09
Ti K	3.41	1.78
Fe K	15.53	6.93
Ba L	12.10	2.19
Totals	100.00	

c)

Element	Weight%	Atomic%
C K	5.46	13.64
O K	29.24	54.84
Si K	3.24	3.46
Ti K	11.51	7.21
Fe K	30.74	16.52
Ba L	19.81	4.33
Totals	100.00	

d)

e)

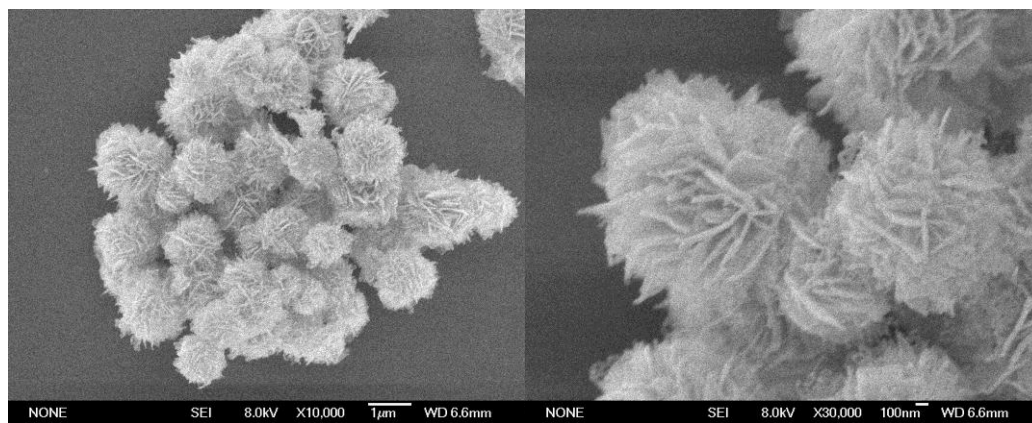


Figure S1. SEM images of iron alkoxide particles synthesized by refluxing the solution of $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$, urea, and surfactant in ethylene glycol.

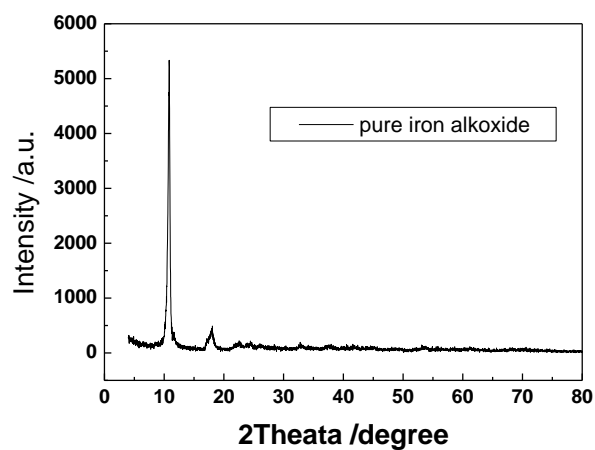


Figure S2. XRD patterns of iron alkoxide particles synthesized by refluxing the solution of $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$, urea, and surfactant in ethylene glycol.

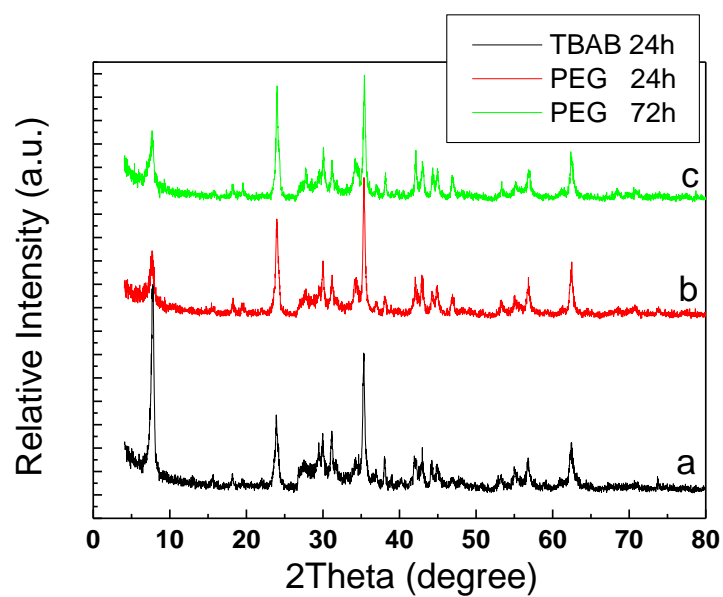


Fig.S3 XRD patterns of BaTiO₃/Fe₃O₄ particles prepared with different surfactant (a) TBAB, 24h (b) PEG, 24h (c) PEG, 72h

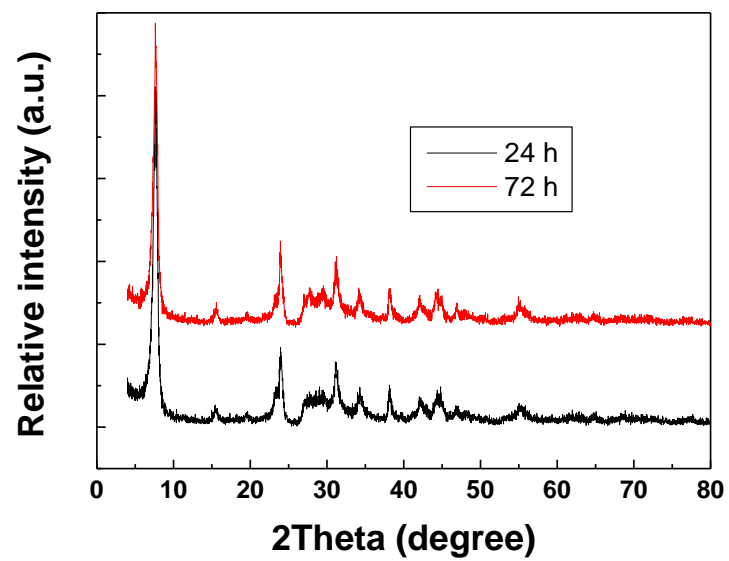


Figure S4 the XRD curves of pure BaTiO₃ particles via the same solvothermal method