

Electronic Supplementary Information (ESI)

**Synthesis and Formation Mechanism of Self-assembled
3D Flowerlike Bi/ γ -Fe₂O₃ Composite Particles**

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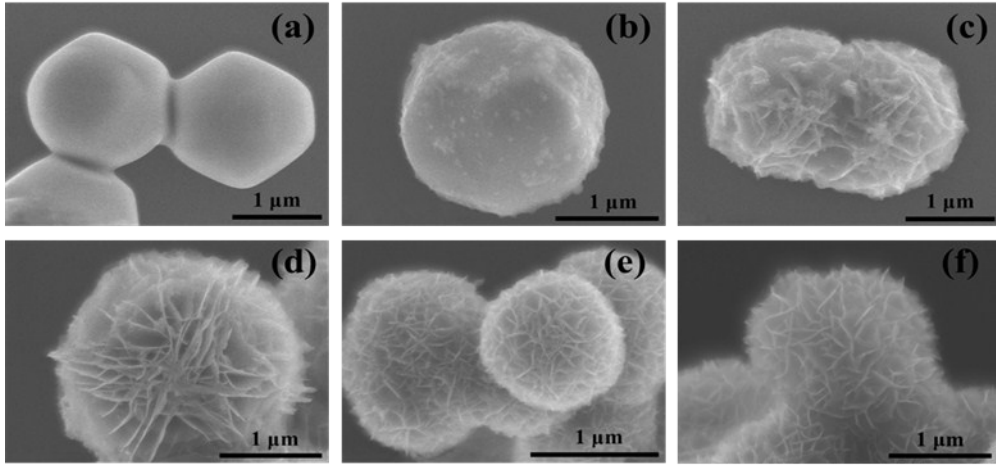


Figure S1. SEM images of the hydrothermal synthesized samples. The initial content of $\text{Bi}(\text{NO}_3)_3$ is 4 mmol. The mole ratio of the starting materials $\text{Bi}(\text{NO}_3)_3$ and $\text{Fe}(\text{NO}_3)_3$ are 4:0 (a), 4:1 (b), 4:2 (c), 4:3 (d), 4:4 (e), and 4:5 (f).

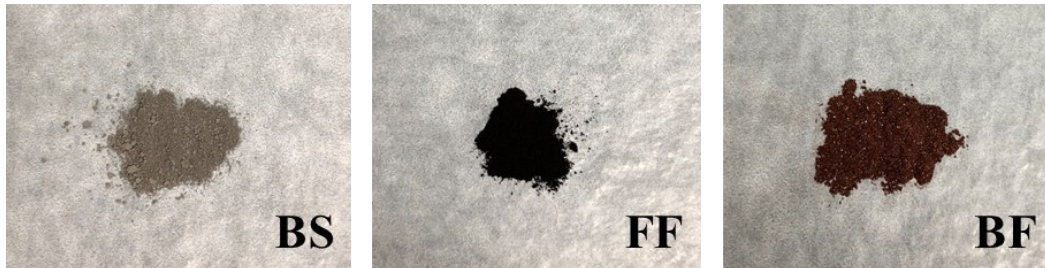


Figure S2. Hydrothermal synthesized BS, FF, and BF samples. The as-prepared BS, FF, and BF are, respectively, earthy-yellow, black, and reddish-brown. From the colors, it can be judged that FF sample is Fe_3O_4 , while BF sample is $\gamma\text{-Fe}_2\text{O}_3$.

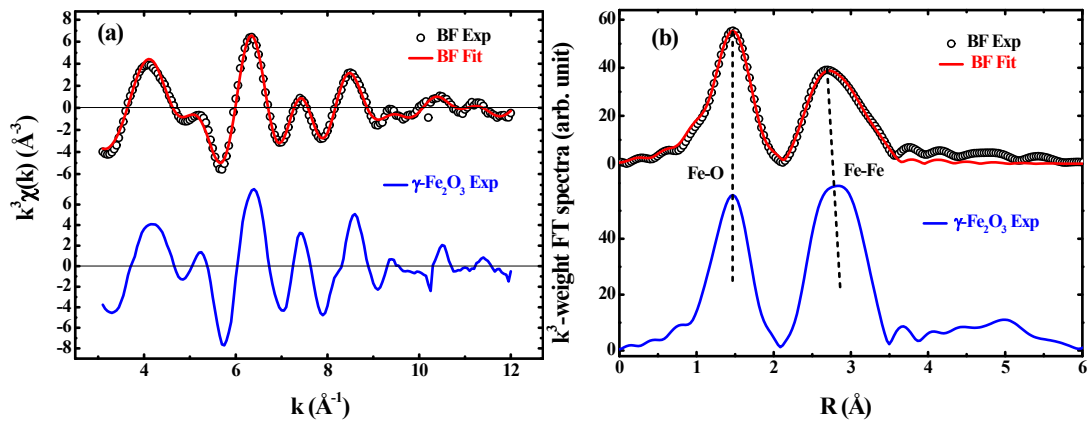


Figure S3. Fe K-edge EXAFS oscillations $k^3\chi(k)$ (a) and the corresponding FT spectra (b) of $\gamma\text{-Fe}_2\text{O}_3$ and sample BF.

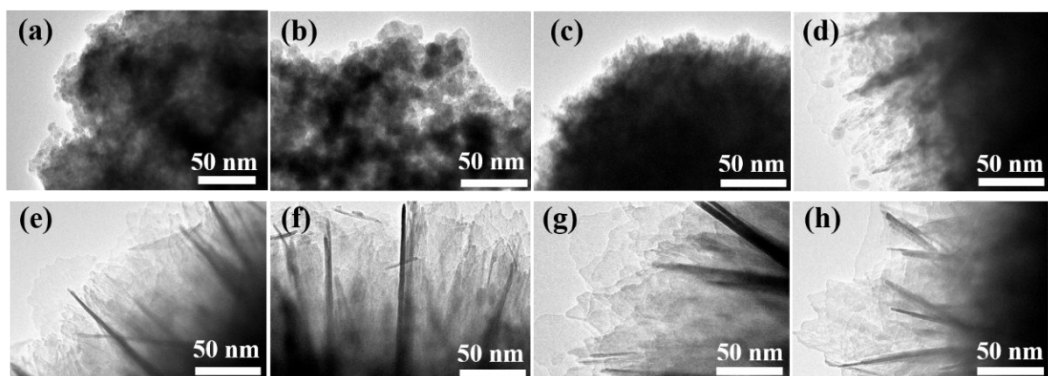


Figure S4. TEM images of time-dependent hydrothermally intermediate products. (a) BF-30min, (b) BF-45min, (c) BF-1h, (d) BF-2h, (e) BF-4h, (f) BF-8h, (g) BF-12h, and (h) BF-24h.

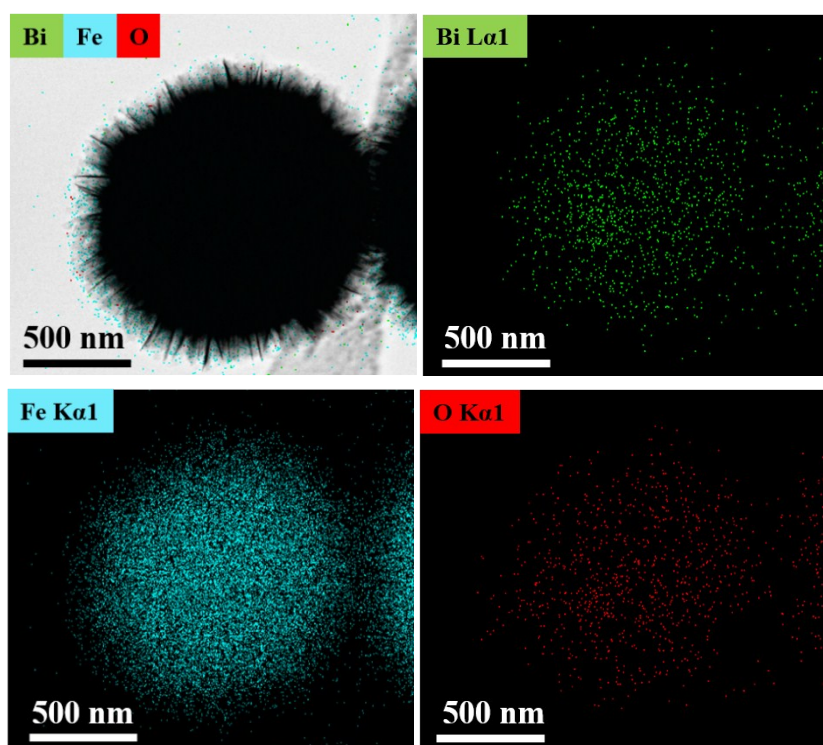


Figure S5. The element mapping of BF particle.

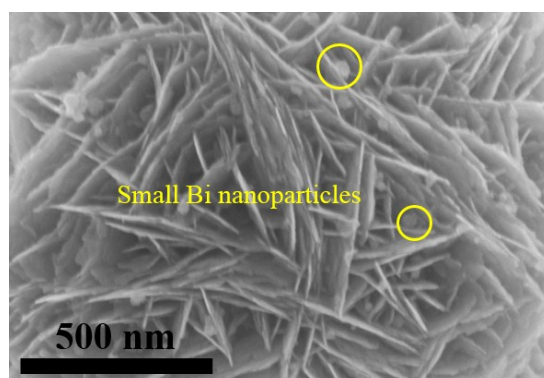


Figure S6. Surface enlarged SEM image of BF particle.

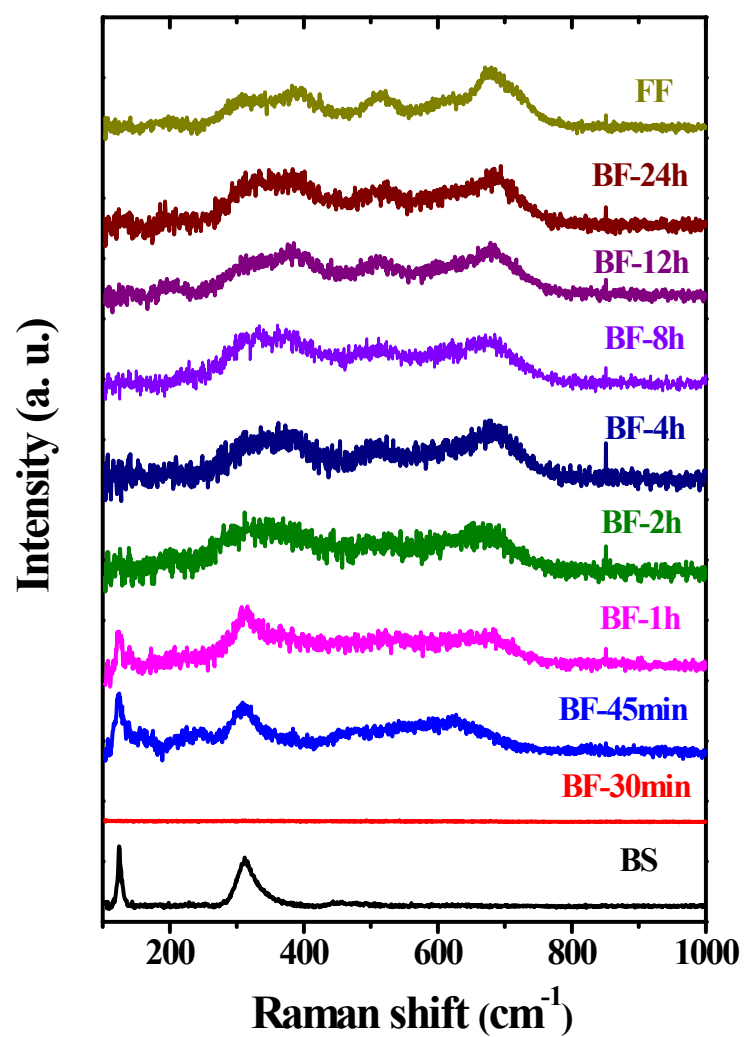


Figure S7. Raman spectra of time-dependent intermediate products during the hydrothermal synthesis process.