

# Ionothermal synthesis of aggregated $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoplates and their magnetic properties

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## Supporting Information

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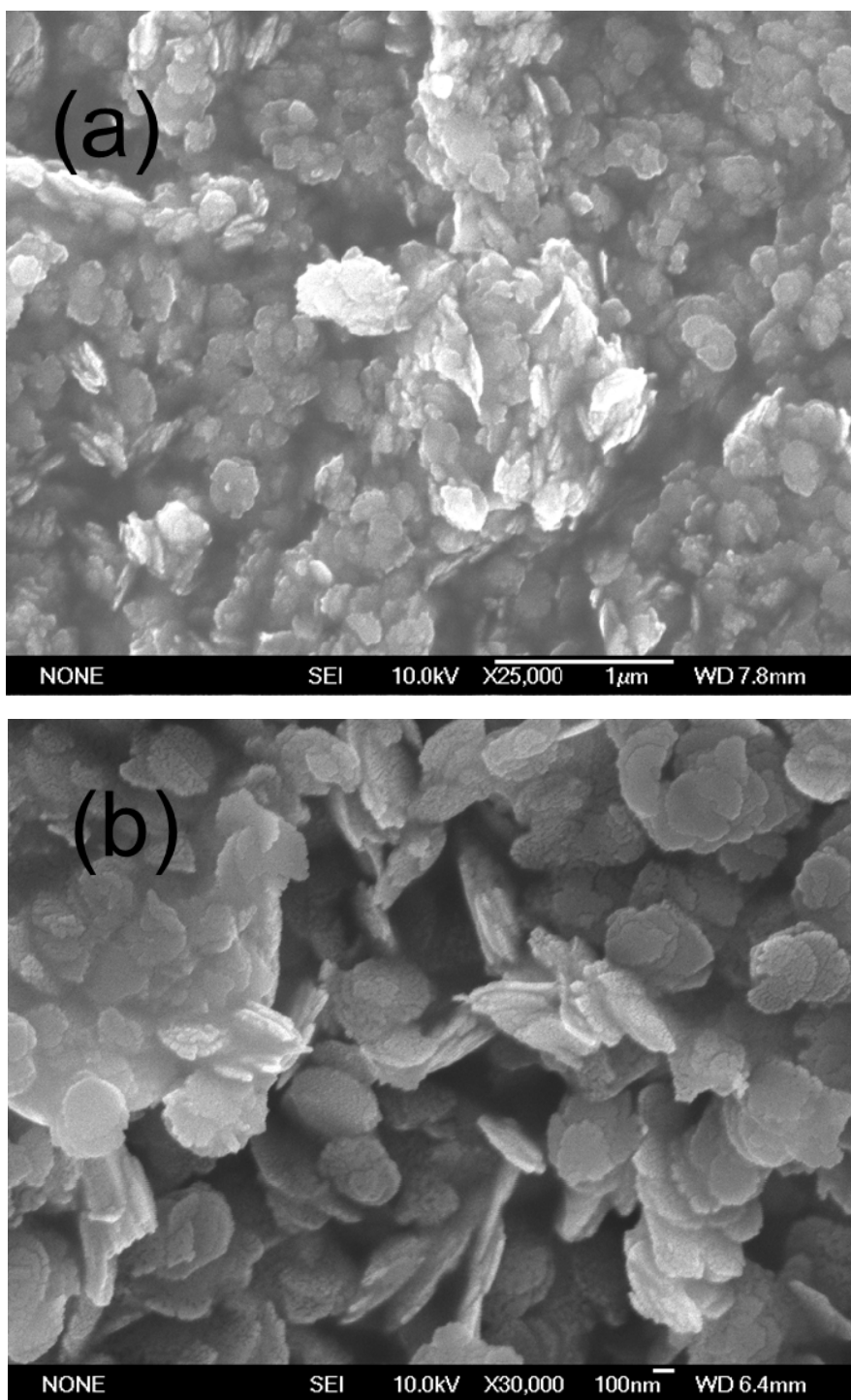
**Fig. S1** (a and) SEM images of the aggregated  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoplates assembled by nanoplatelets.

**Fig. S2** EDX spectrum of the aggregated  $\alpha$ -Fe<sub>2</sub>O<sub>3</sub> nanoplates assembled by nanoplatelets.

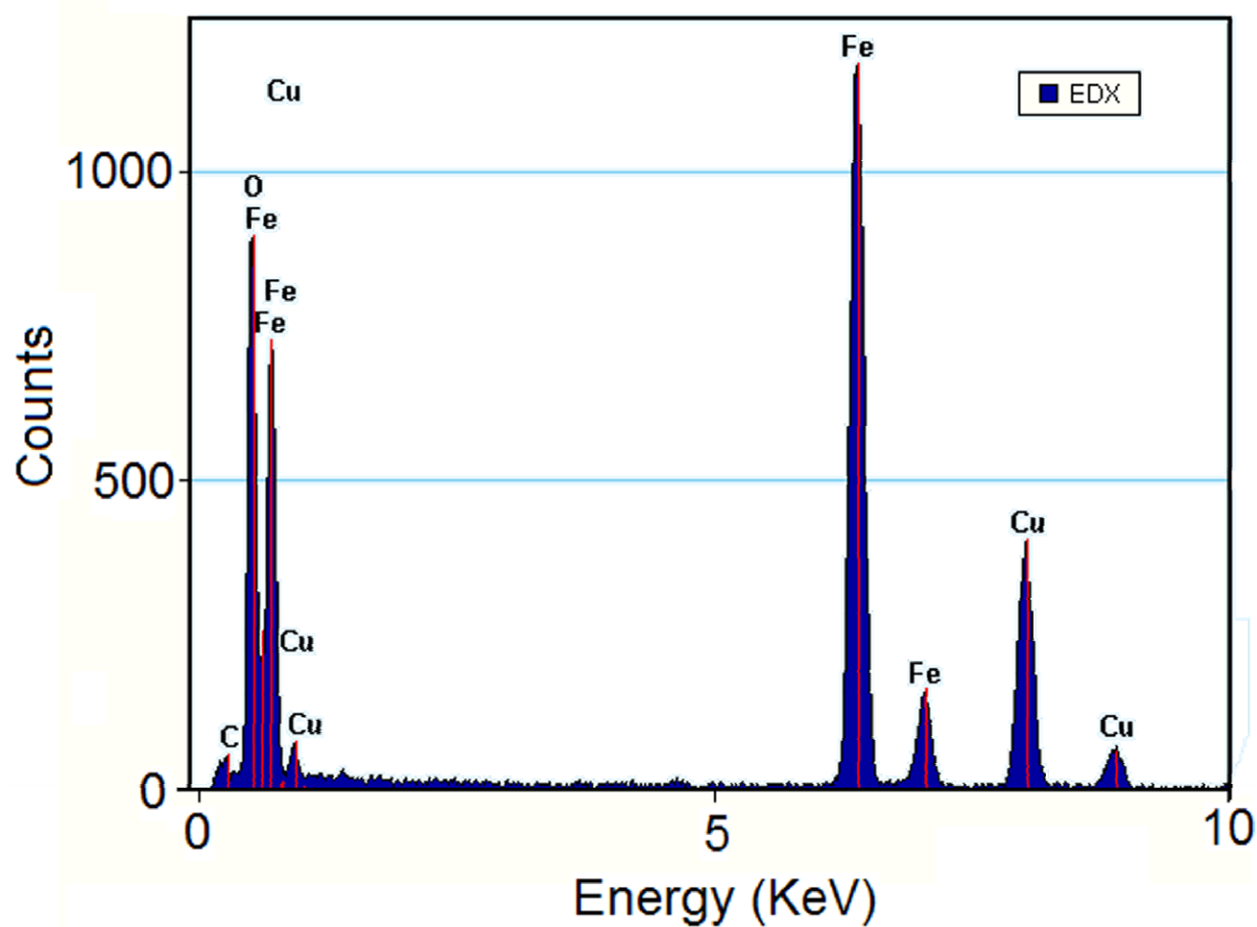
**Fig. S3** TEM image and XRD pattern of the sample synthesized in the mixed solution of [Pmim]I and distilled water with a volume ratio of 2:1 while other condition kept constant. (The irregular nanoplates have a diameter of about 18 nm.)

**Fig. S4** The products obtained for different times: (a) SEM image and (b and c) TEM images for 1h; (d) SEM image and (e and f) TEM images for 3h; (g) SEM image and (h and i) TEM images for 5h; (l) SEM image and (m and n) TEM images for 7h.

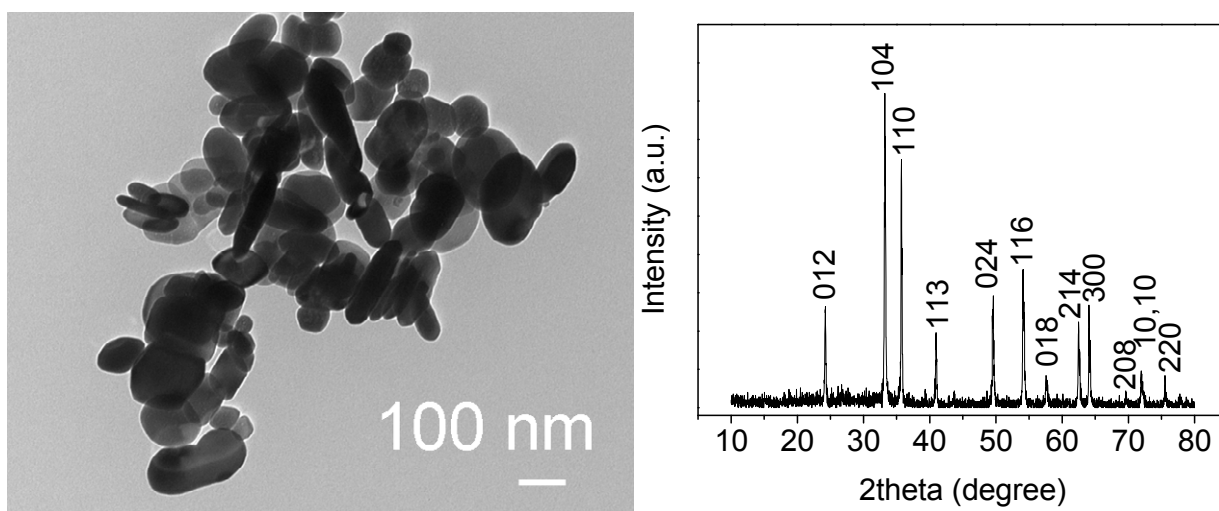
**Fig. S5** XRD pattern for the products obtained for different times: (a) 1h; (b) 3h, (c) 5h; (d) 7h and 12h.



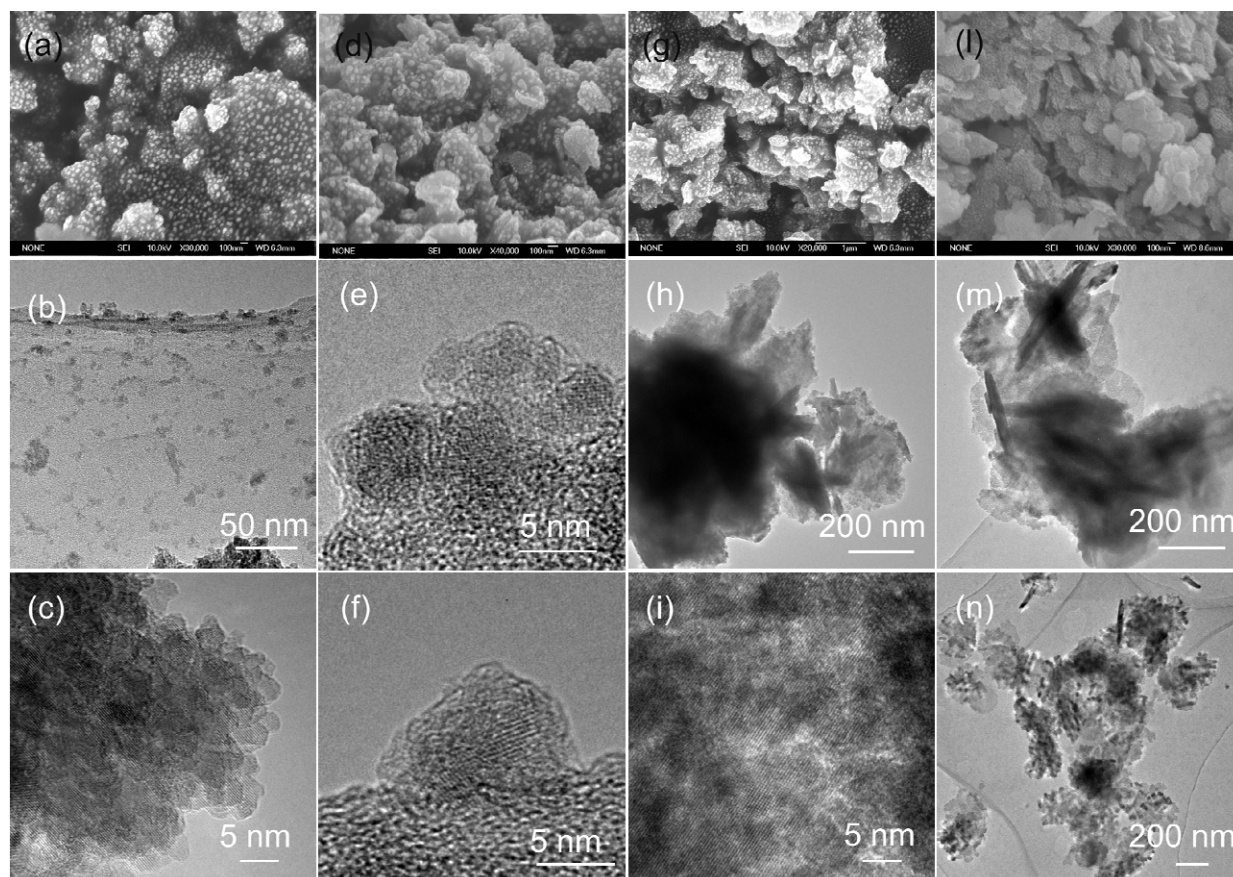
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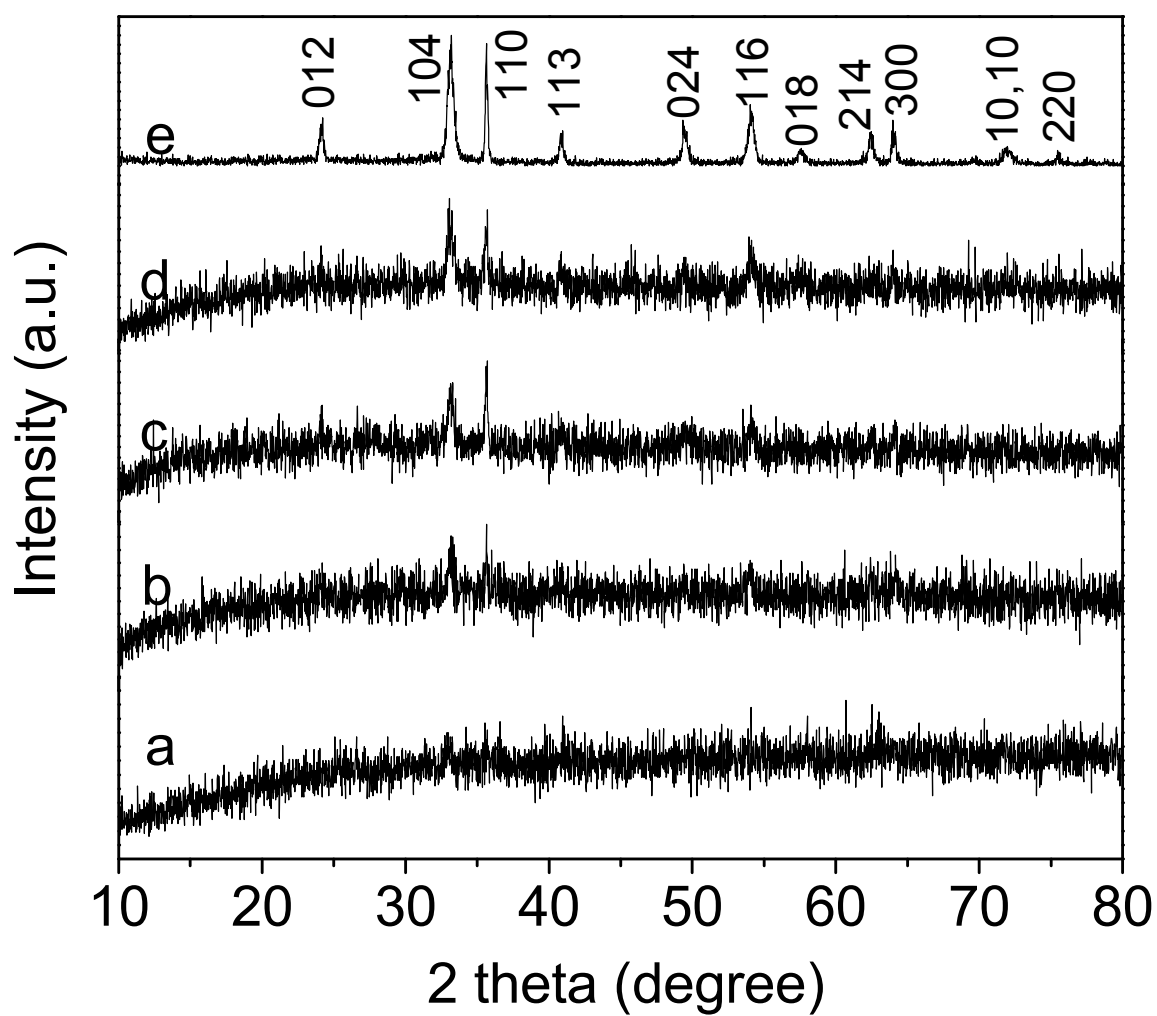
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