

## Electronic Supplementary Information

### **Magnetic-responsive Pickering Emulsion Based on MFe<sub>2</sub>O<sub>4</sub> (M=Mn, Fe, Co, Ni, Cu, Zn) for Green and Efficient Oxidation of Benzyl Alcohol**

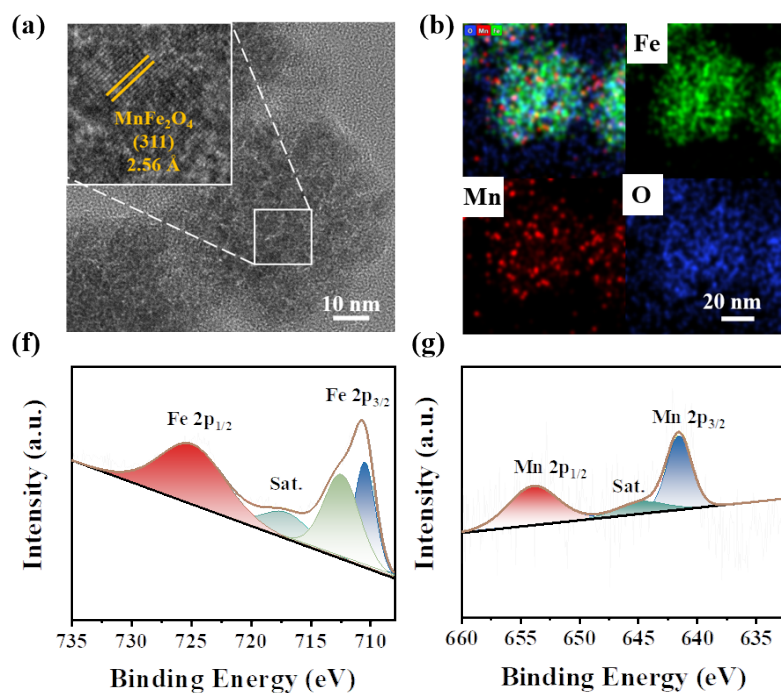
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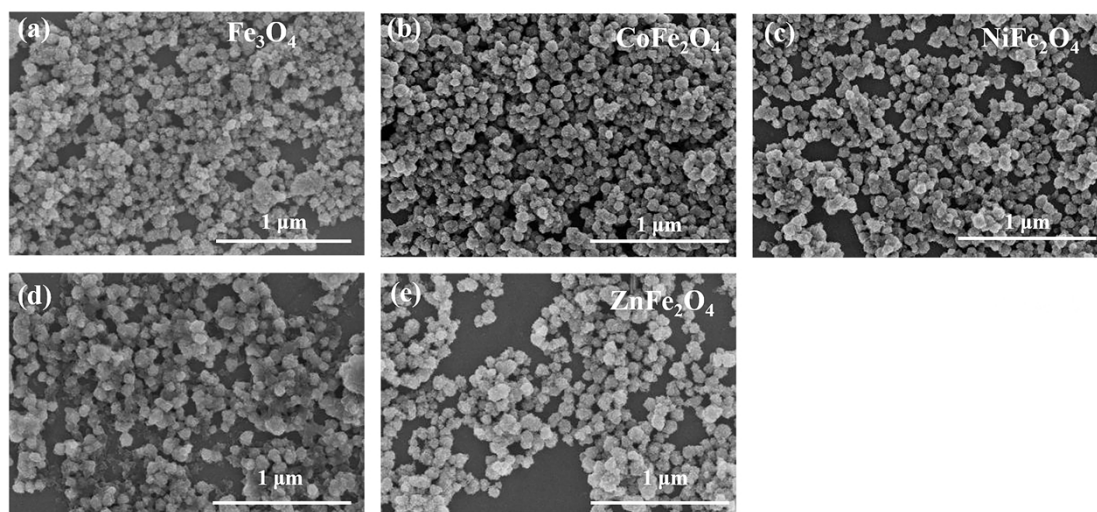
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## Electronic Supplementary Information



**Fig. S1** Characterization of MnFe<sub>2</sub>O<sub>4</sub> nanoparticles: HRTEM (a), EDS elemental mapping (b) and XPS (c).



**Fig. S2** SEM images of (a) Fe<sub>3</sub>O<sub>4</sub>, (b) CoFe<sub>2</sub>O<sub>4</sub>, (c) NiFe<sub>2</sub>O<sub>4</sub>, (d) CuFe<sub>2</sub>O<sub>4</sub> and (e) ZnFe<sub>2</sub>O<sub>4</sub>.

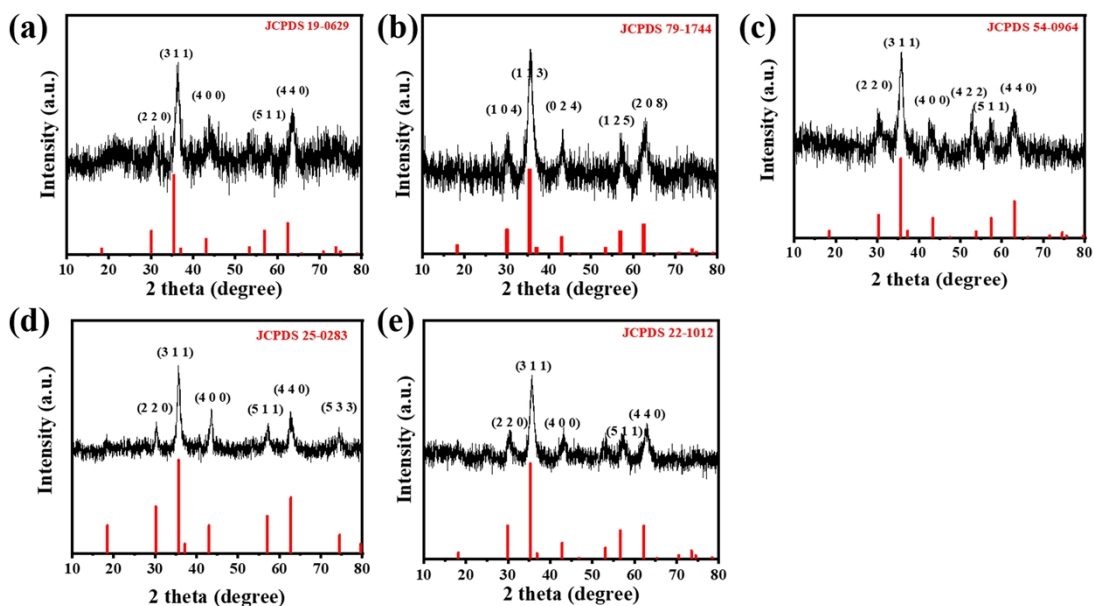


Fig. S3 XRD of (a)  $\text{Fe}_3\text{O}_4$ , (b)  $\text{CoFe}_2\text{O}_4$ , (c)  $\text{NiFe}_2\text{O}_4$ , (d)  $\text{CuFe}_2\text{O}_4$ , and (e)  $\text{ZnFe}_2\text{O}_4$ .

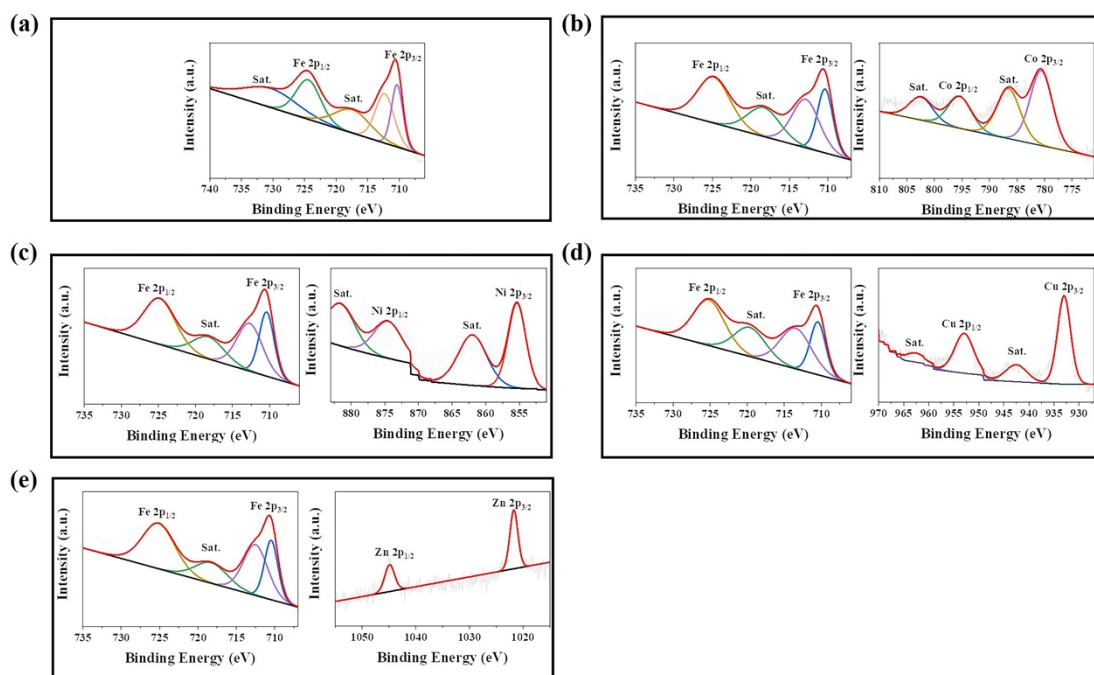


Fig. S4 XPS of (a)  $\text{Fe}_3\text{O}_4$ , (b)  $\text{CoFe}_2\text{O}_4$ , (c)  $\text{NiFe}_2\text{O}_4$ , (d)  $\text{CuFe}_2\text{O}_4$  and (e)  $\text{ZnFe}_2\text{O}_4$ .

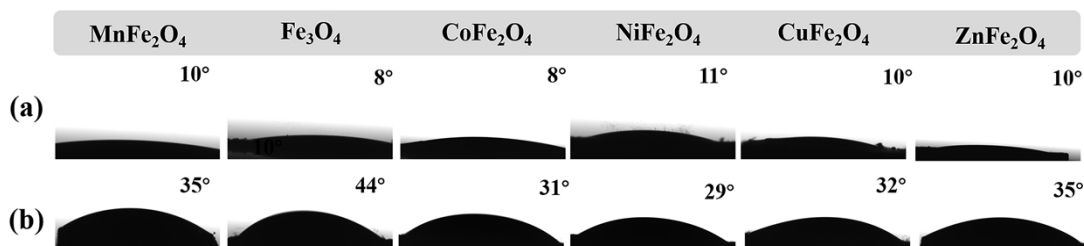
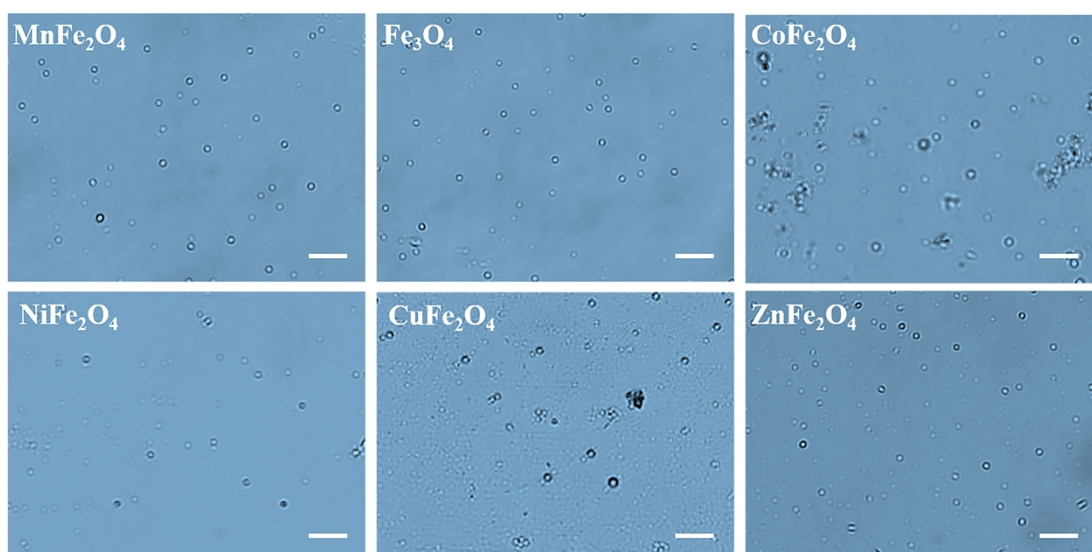
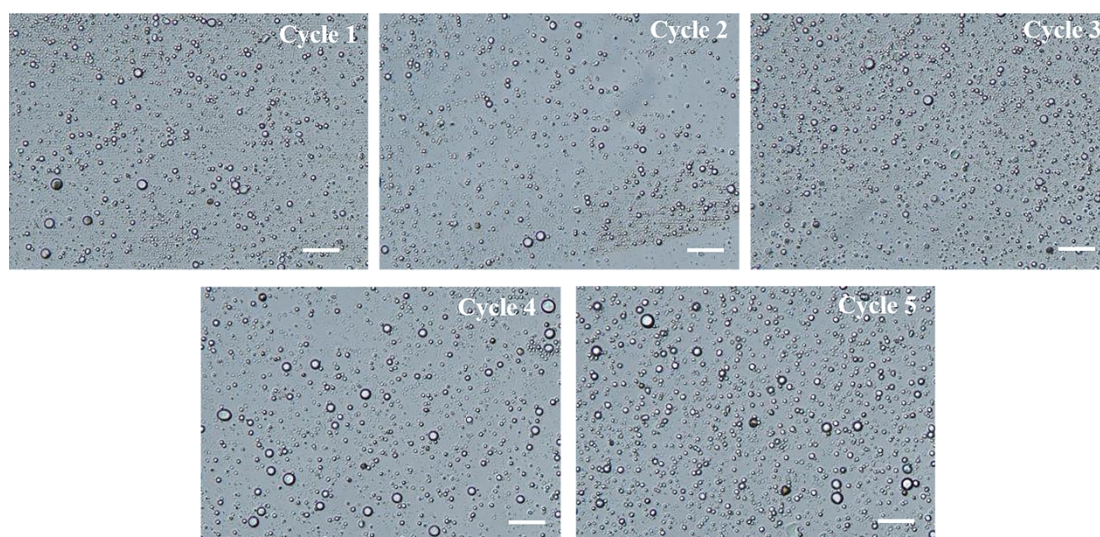


Fig. S5 Water contacts angle (a) and oil contact angle (b) on ferrites nanoparticles slice.

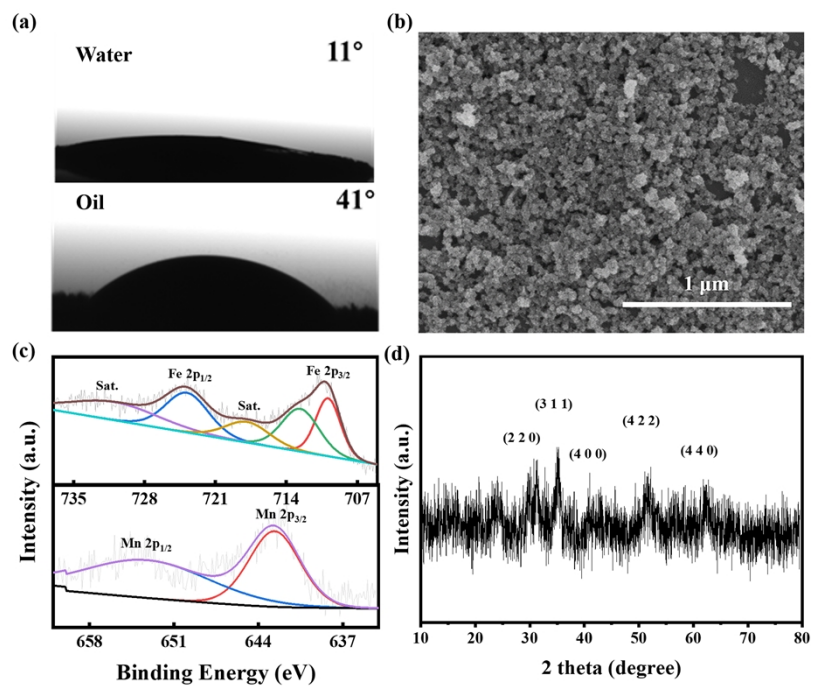


**Fig. S6** Microscope images of Pickering Emulsion stabilized by different ferrites. (Scale bar =10  $\mu\text{m}$ )



**Fig. S7** Emulsion microscope images with five cycles. (Scale bar =10  $\mu\text{m}$ )





**Fig. S8** Characterization of final recycled MnFe<sub>2</sub>O<sub>4</sub> nanoparticles: CA (a), SEM images (b), XPS (c), and XRD (d).