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Supplementary Information

Synthesis of Hollow Rod-like Hierarchical Structures Assembled by CoFe/C Nanosheets for Enhanced Microwave Absorption

*Susu Bao,[a] Zhijia Song,[a] Runjing Mao,[a] Yue Li,[b] Shuhong Zhang,[a] Zhiyuan Jiang, *[,a] Xueai Li, *[,b] and Zhaoxiong Xie [a]*

[a] State Key Laboratory of Physical Chemistry of Solid Surfaces, and College of Chemistry and Chemical Engineering, Xiamen University, Xiamen 361005, China. Tel: +86-5922182432, Fax: +86-5922183047.

[b] School of Environmental and Chemical Engineering, Yanshan University, Qinhuangdao, 066004, Hebei, P. R. China.

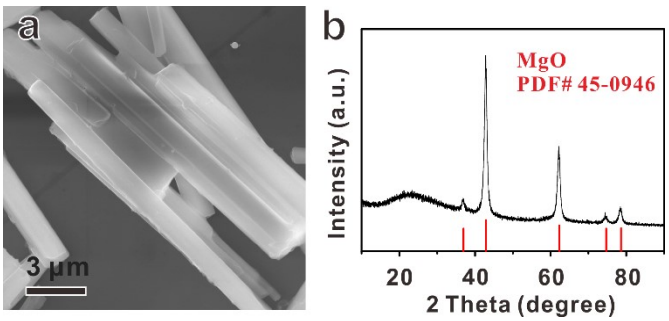

Figure S1. (a) SEM image and (b) XRD pattern of MgO micro-rods.

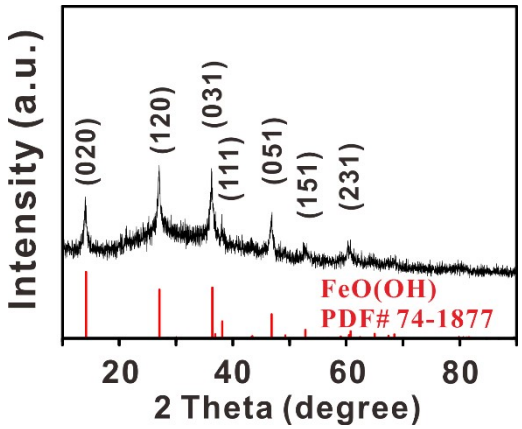

Figure S2. XRD pattern of as prepared $Co_{0.5}Fe_{0.5}O(OH)$ precursors.

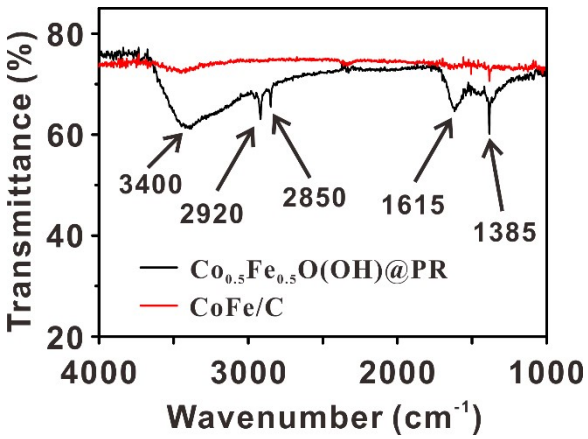

Figure S3. FT-IR spectra of $Co_{0.5}Fe_{0.5}O(OH)$@PR and CoFe/C. For CoFe/C, the peak around 3400 cm^{-1} is O−H stretching band, the peak around 1385 cm^{-1} is O−H in-plane stretching band. For $Co_{0.5}Fe_{0.5}O(OH)$@PR, the peaks at 2920, 2850 and 1615 cm^{-1} belong to phenolic resin, which can be identified as -CH_2- in-phase stretching vibrations, -CH_2- out-of-phase stretching vibrations, and the aromatic ring stretching band, respectively.

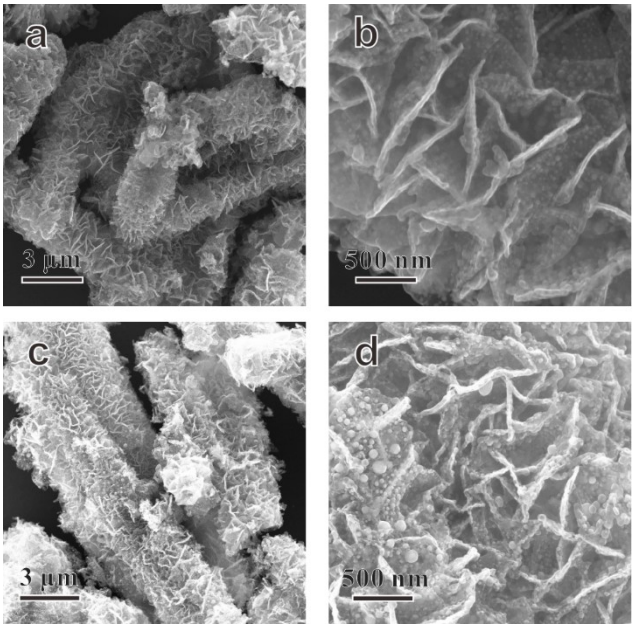

Figure S4. (a), (b) SEM images of CoFe/C-M and (c), (d) SEM images of CoFe/C-L.

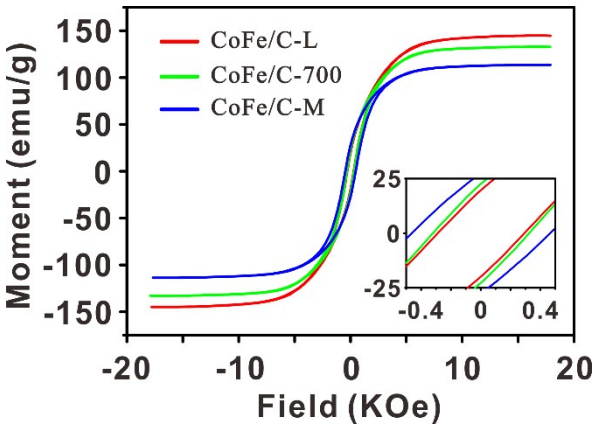

Figure S5. Room-temperature magnetization curve of CoFe/C hierarchical structures. For CoFe/C-L, the *Ms* value is 144.8 emu/g, *Hc* is 293.3 Oe. For CoFe/C-700, the *Ms* value is 132.8 emu/g, *Hc* is 324.5 Oe. For CoFe/C-M, the *Ms* value is 113.6emu/g, *Hc* is 464.5 Oe.

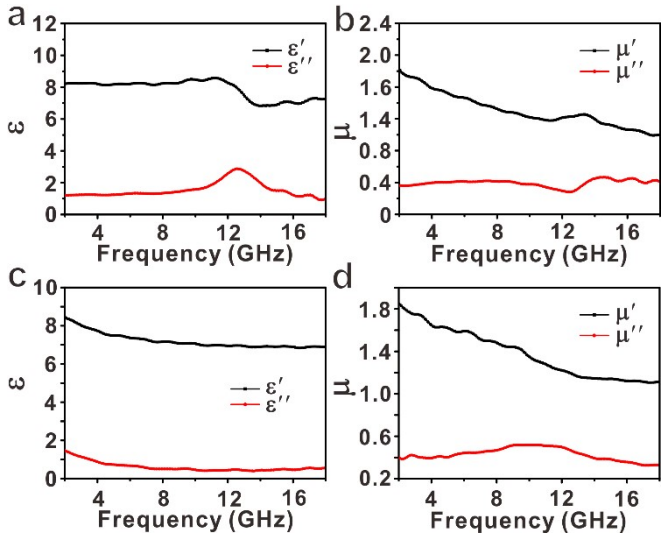

Figure S6. (a) Relative complex permittivity, (b) Relative complex permeability of the sample obtained by calcining $Co_{0.5}Fe_{0.5}O(OH)$@PR precursors at 800 ºC for 2 h; (c) Relative complex permittivity, (d) Relative complex permeability of the sample obtained by calcining $Co_{0.5}Fe_{0.5}O(OH)$@PR precursors at 800 ºC for 4 h.

Table S1. Iron cobalt ratio of iron cobalt oxide hydroxide hierarchical composites measured by EDX and ICP.

Sample	Initial feed molar ratio $(n_{Fe^{2+}}/n_{Co^{2+}})$	Molar ratio of final product (n_{Fe}/n_{Co}) by EDX	Molar ratio of final product (n_{Fe}/n_{Co}) by ICP
hydrated iron cobalt oxide	1	0.93	0.94

Table S2. Carbon contents and magnetic component contents of CoFe/C hierarchical composites measured by elementary analysis method.

Samples	The mass percent of carbon (wt %)	The mass percent of magnetic component (wt %)	Calcination temperature (ºC)
CoFe/C-700	21.7	78.3	700
CoFe/C-M	27.5	72.5	700
CoFe/C-L	16.7	83.3	700