Supporting Information

General synthesis of two-dimensional porous metal oxides/hydroxides for microwave absorbing applications

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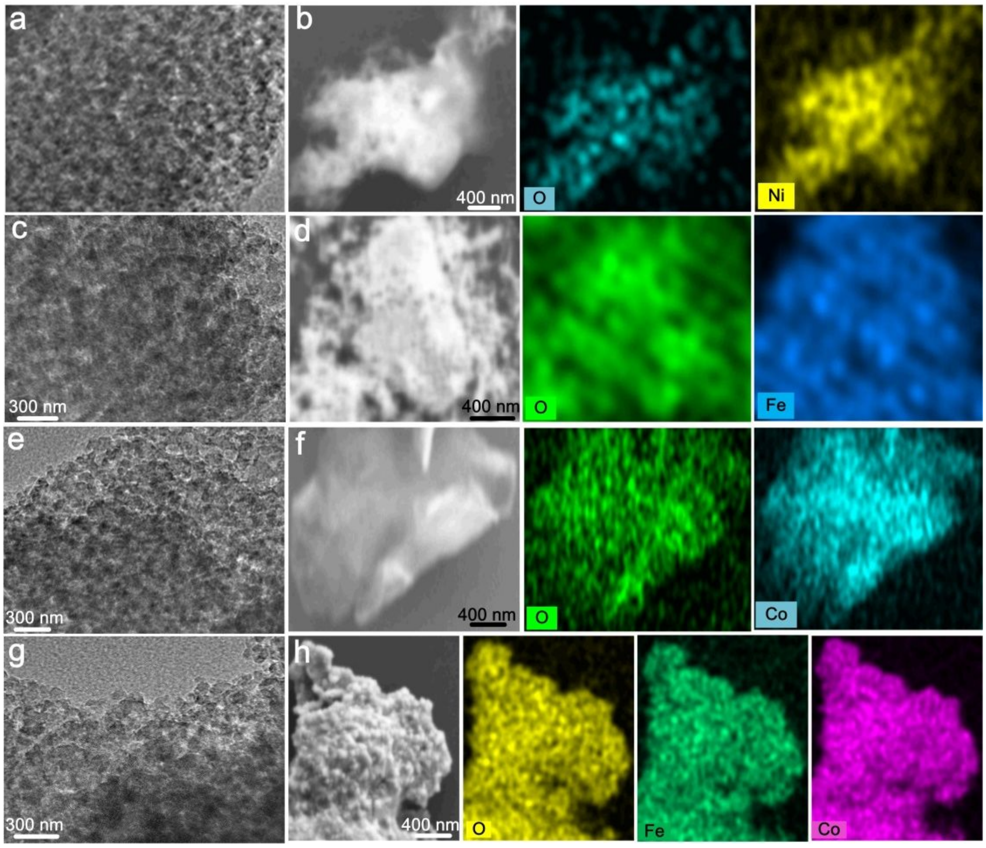

Figure S1 TEM images of (a) NiO, (c) Fe_3O_4, (e) Co_3O_4, and (g) $CoFe_2O_4$; EDS mappings of (b) NiO, (d) Fe_3O_4, (f) Co_3O_4, and (h) $CoFe_2O_4$.

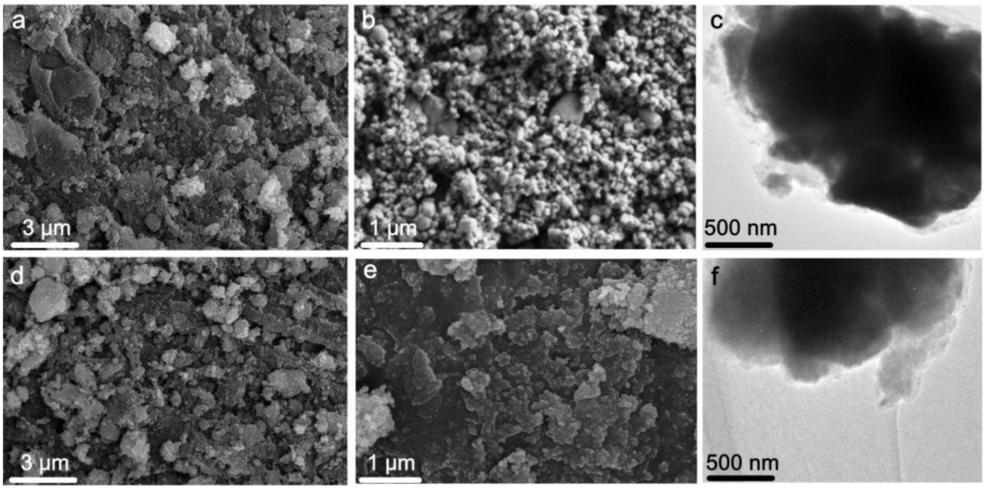

Figure S2 (a, b) SEM and (c) TEM images of $NiFe_2O_4$ synthesized by the vapor diffusion-deposition method without hexadecyl trimethyl ammonium bromide; (d, e) SEM and (f) TEM images of $NiFe_2O_4$ synthesized by the hydrothermal method.

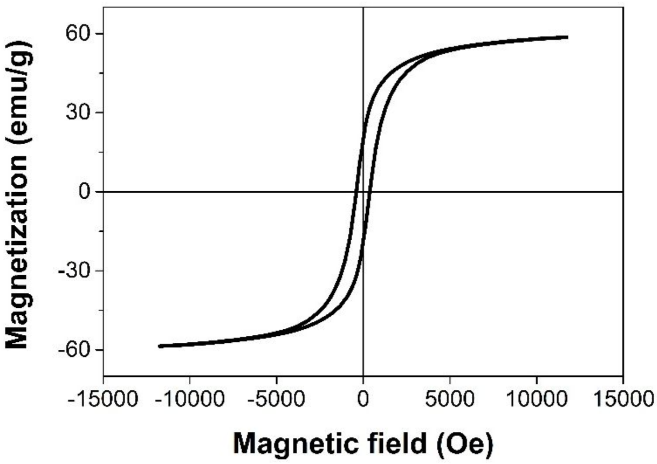

Figure S3 The magnetic property of 2D porous $NiFe_2O_4$.

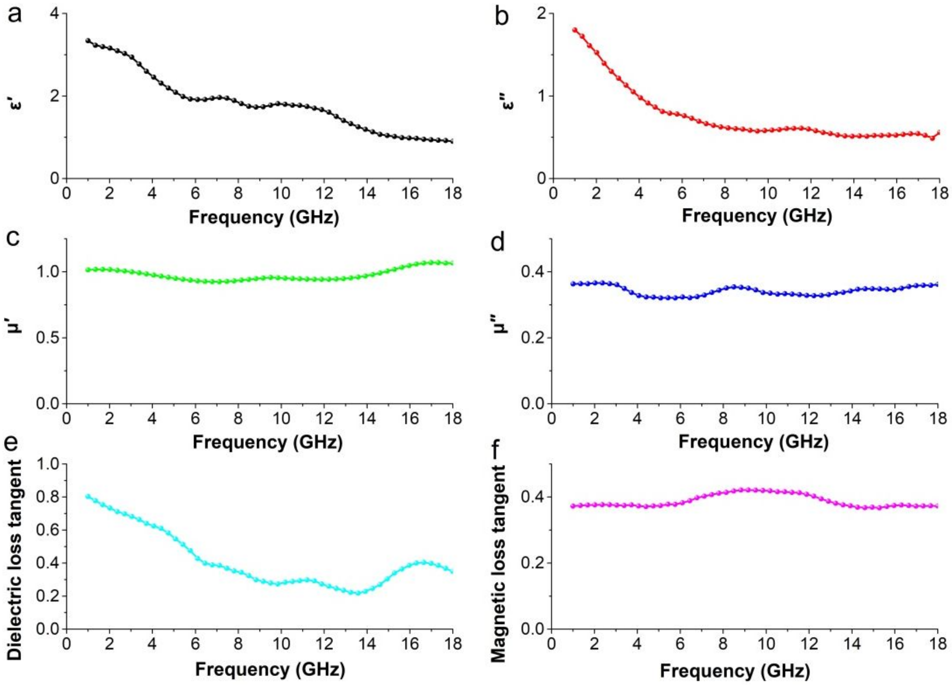

Figure S4 (a) ε', (b) ε'', (c) μ', (d) μ'', (e) dielectric loss tangent and (f) magnetic loss tangent of the $NiFe_2O_4$ particles.

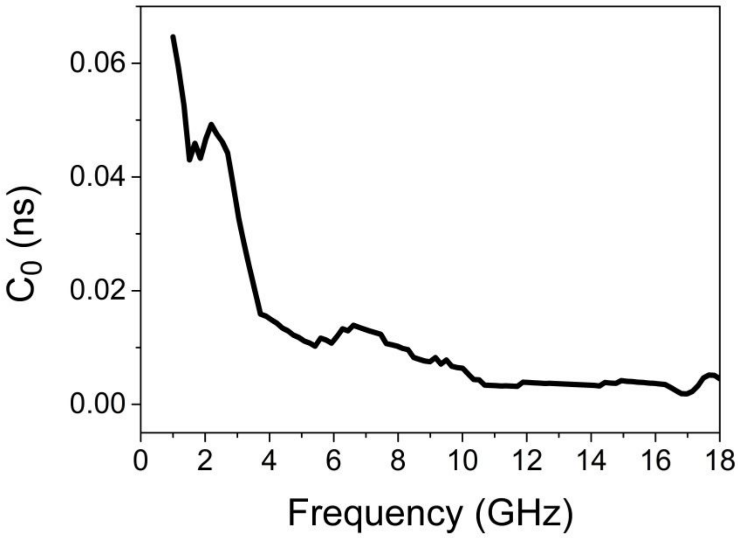

Figure S5 C_0 ~ f curves of the 2D porous $NiFe_2O_4$.

Table S1 Binding energies of O1s, Ni2p, Fe2p and Co2p for 2D porous metal hydroxides/oxides measured by XPS.

Materials	Binding energy (eV)				
$Ni(OH)_2$	529.9(O1s)	855.6(Ni2$p_{3/2}$)	873.3(Ni2$p_{1/2}$)	/	/
$Fe(OH)_3$	531.1(O1s)	710.7(Fe2$p_{3/2}$)	724.5(Fe2$p_{1/2}$)	/	/
$Co(OH)_2$	531.0(O1s)	780.9(Co2$p_{3/2}$)	797.1(Co2$p_{1/2}$)	/	/
NiO	529.1(O1s)	853.4(Ni2$p_{3/2}$)	872.4(Ni2$p_{1/2}$)	/	/
Fe_3O_4	529.7(O1s)	710.4(Fe2$p_{3/2}$)	723.9(Fe2$p_{1/2}$)	/	/
Co_3O_4	529.7(O1s)	779.9(Co2$p_{3/2}$)	795.5(Co2$p_{1/2}$)	/	/
$NiFe_2O_4$	528.8(O1s)	854.6(Ni2$p_{3/2}$)	872.1(Ni2$p_{1/2}$)	710.8(Fe2$p_{3/2}$)	724.0(Fe2$p_{1/2}$)
$CoFe_2O_4$	531.0(O1s)	780.8(Co2$p_{3/2}$)	797.1(Co2$p_{1/2}$)	711.5(Fe2$p_{3/2}$)	725.0(Fe2$p_{1/2}$)