

# Supporting Information

## C/Co<sub>3</sub>O<sub>4</sub>/Diatomite Composite for Microwave Absorption

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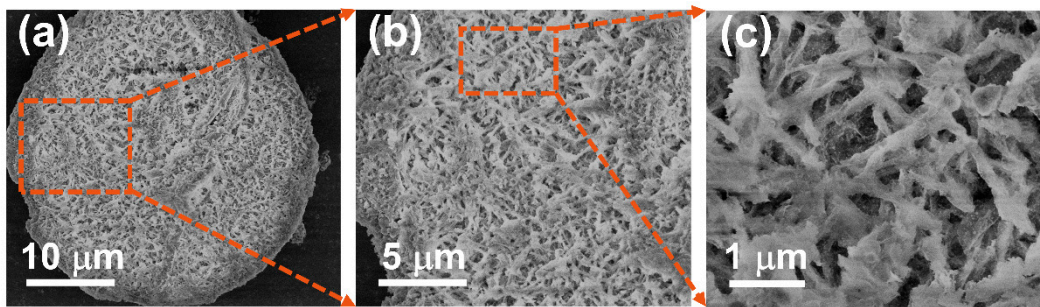
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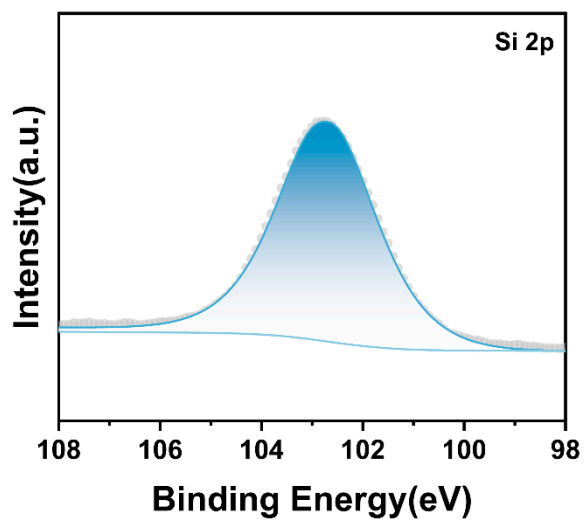
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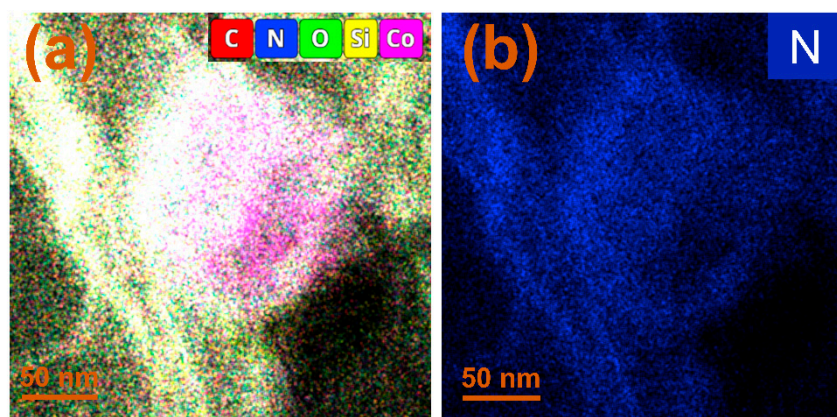
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**Figure S1.** The scanning electron microscopy (SEM) images of  $\text{Co}(\text{OH})_2/\text{De}$  with different scales (a)  $10\ \mu\text{m}$ , (b)  $5\ \mu\text{m}$  and (c)  $1\ \mu\text{m}$ .



**Figure S2.** High-resolution XPS spectra of Si 2p



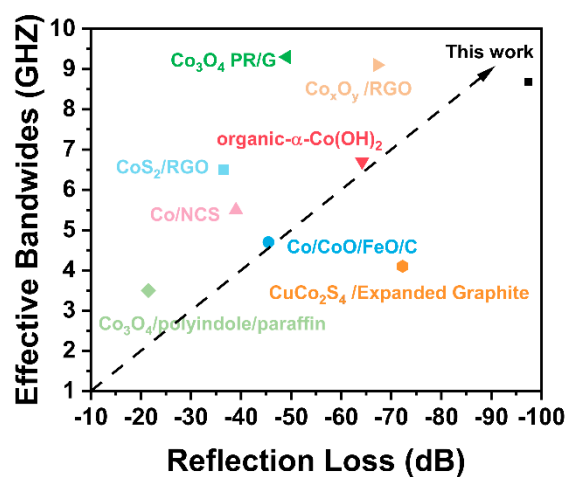
**Figure S3.** HAADF-EDS element mapping images of (a)  $\text{C}/\text{Co}_3\text{O}_4/\text{De-450}$  and (b) N of the  $\text{C}/\text{Co}_3\text{O}_4/\text{De-450}$

**Table S1.** Elemental concentrations of C/Co<sub>3</sub>O<sub>4</sub>/De-450 obtained from XPS spectra

Name	Area (P) CPS.eV	Atomic %	Weight %
O 1s	3456474.77	49.78	36.40
Si 2p	586526.85	20.35	26.11
Co 2p	3390402.06	16.21	26.03
C 1s	465478.50	9.67	8.90
N 1s	178235.46	4.00	2.56

**Table S2.** Comparison of electrical resistivity and electrical conductivity of C/Co<sub>3</sub>O<sub>4</sub>/De-300, C/Co<sub>3</sub>O<sub>4</sub>/De-450, and C/Co<sub>3</sub>O<sub>4</sub>/De-600.

Samples	Average electrical resistivity ( $\mu\Omega$ cm)	Average electrical conductivity ( $S\text{ cm}^{-1}$ )
C/Co <sub>3</sub> O <sub>4</sub> /De-300	135838.889	$7.36^{-6}$
C/Co <sub>3</sub> O <sub>4</sub> /De-450	136611.111	$7.32^{-4}$
C/Co <sub>3</sub> O <sub>4</sub> /De-600	130238.889	$7.68^{-4}$

**Figure S4.** Comparison of C/Co<sub>3</sub>O<sub>4</sub>/De-450 with other representative materials.

**Table S3.** Comparison of related absorber materials.

Materials	RL <sub>min</sub> (dB)	EAB (GHz)	Thickness (mm)	Reference
CuCo <sub>2</sub> S <sub>4</sub> @Expanded Graphite	-72.28	4.14	1.4	[1]
CoO/Co <sub>3</sub> O <sub>4</sub>	-67.2	9.1	2.62	[2]
Co <sub>3</sub> O <sub>4</sub> PR/G	-49.1	9.3	4	[3]
Co <sub>3</sub> O <sub>4</sub> /polyindole/paraffin	21.5	3.5	2	[4]
organic- $\alpha$ -Co(OH) <sub>2</sub>	-64.2	6.7	2.17	[5]
Co@NCS	-39	5.5	2.5	[6]
CoS <sub>2</sub> /RGO	-36.5	6.5	2	[7]
	-98.7 dB	9.52	9	This work
C/Co <sub>3</sub> O <sub>4</sub> /De-450	-17.8 dB	6.45	3	This work

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