

Supplementary data

Tunable flower-like $\text{NiFe}_2\text{O}_4\text{-FeNi/C/SnO}_2$ composites with radar-infrared compatible stealth performance

Jue Wen ^a, Guoqing Dai ^a, Yuerong Li ^a, Kui Wang ^{a, b}, Kesong Xiao ^c, Xianlong Zhang ^{a, d **},

Xueping Wu ^{a, d, e, *}

^a School of Chemistry and Chemical Engineering, Hefei University of Technology, Hefei
230009, China

^b Smith School of Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY
14853, United States

^c Instrumental Analysis Center, Hefei University of Technology, Hefei 230009, China.

^d Anhui Province Key Laboratory of Value-Added Catalytic Conversion and Reaction
Engineering, School of Chemistry and Chemical Engineering, Hefei University of
Technology, Hefei 230009, China

^e Engineering Research Center of Advanced Composite Materials Design& Application of
Anhui Province, Hefei 230009, China

* Corresponding authors.

E-mail addresses: xuepingw@ustc.edu.cn (X. Wu);

zhangxianlong@hfut.edu.cn (X. Zhang).

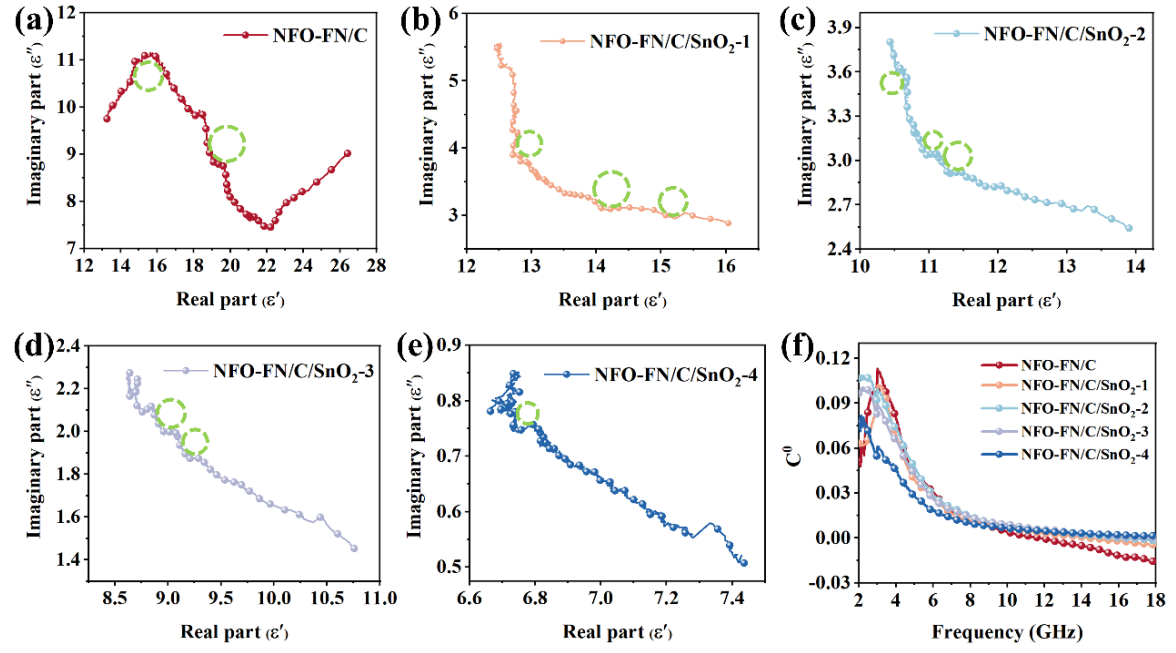


Fig. S1 ϵ' - ϵ'' curves of (a) NFO-FN/C, (b) NFO-FN/C/SnO₂-1, (c) NFO-FN/C/SnO₂-2, (d) NFO-FN/C/SnO₂-3, and (e) NFO-FN/C/SnO₂-4.; (h) C_0 curves of all samples

Table S1

Comparison of microwave absorption and infrared stealth performance with various SnO₂-based and flower-like composites.

Sample	RL _{min} (dB)	<i>d</i> (mm)	EAB (GHz)	<i>d</i> (mm)	RCS reduction (dB m ²)	Infrared emissivity (8-14 μm)	Infrared reflectivity (8-14 μm)	Refs.
FeCoNi@SnO ₂	-65.55	1.76	8.12	1.61	-	0.56	-	1
Fe ₃ O ₄ @SnO ₂	-39.40	5.50	-	-	-	-	0.51	2
ErBO ₃ @ATO	-31.60	2.50	2.08	2.50	-	-	-	3
slice-like bread SnO ₂	-33.89	1.50	2.08	2.50	20.03	-	-	4
SnO ₂ @SnO nanoparticle@foamed C	-40.75	3.30	3.44	2.00	-	-	-	5
Embroidered spherical SnO ₂	-45.60	2.60	6.08	2.60	13.70	-	-	6
Flower-like Ni/SiC NWs	-49.26	1.90	4.25	1.90	-	-	0.113	7
Flower-like CoFe@C	-54.00	1.80	5.80	2.10	-	-	-	8
Flower-like CuS/γ-Fe ₂ O ₃	-61.53	2.80	2.88	2.00	-	-	-	9
NiFe ₂ O ₄ -FeNi/C/SnO ₂ -1	-64.64	3.00	4.04	1.40	23.97	-	0.76	This work
NiFe ₂ O ₄ -FeNi/C/SnO ₂ -2	-55.14	3.80	4.16	1.60	25.24	-	0.82	This work

References

- S1 C. Li, L. Liang, Y. Yang, B. Zhang and G. Ji, *Chem. Eng. J.*, 2024, **481**, 148354.
- S2 M. Qiao, Y. Tian, J. Li, X. He, X. Lei, Q. Zhang, M. Ma and X. Meng, *J. Colloid Interface Sci.*, 2022, **609**, 330-340.
- S3 S. Guo, J. Zhu, Z. Song, Q. Ren, T. Feng, Q. Zhang and L. Wang, *Rare Metals*, 2023, **42**, 2406-2418.
- S4 J. Lu, Y. Wang, L. Wang, D. Liu, L. Zhou, C. Wei, G. Wen, X. Zhang and X. Huang, *Colloids Surf. A Physicochem. Eng. Asp.*, 2024, **686**, 133391.
- S5 X. Liu, S. Xie, X. Liu, Z. Yu, S. Cai, G. Tong, L. Xie, Z. Li and W. Wu, *Chem. Eng. J.*, 2024, **497**, 154492.
- S6 J. Lu, X. Zhang, X. Yan, D. Liu, L. Wang, Y. Wang, X. Huang and G. Wen, *J. Mater. Chem. C*, 2023, **11**, 4855-4866.
- S7 J. Wei, Y. Zhang, X. Li, J. Hui, H. Zhang and W. Lei, *J. Colloid Interface Sci.*, 2023, **641**, 414-427.
- S8 L. Han, H. Yang, Y. Lin, H. Zhou, Z. Cai and Y. Qiu, *Ceram. Int.*, 2024, **50**, 1341-1350.
- S9 N. Lu, J. Xu, M. Yuan and G. Sun, *Nano Res.*, 2023, **17**, 3324-3333.