A heterojunction of high-entropy alloy and nitrogen-doped carbon nanospheres for efficient electromagnetic wave absorption

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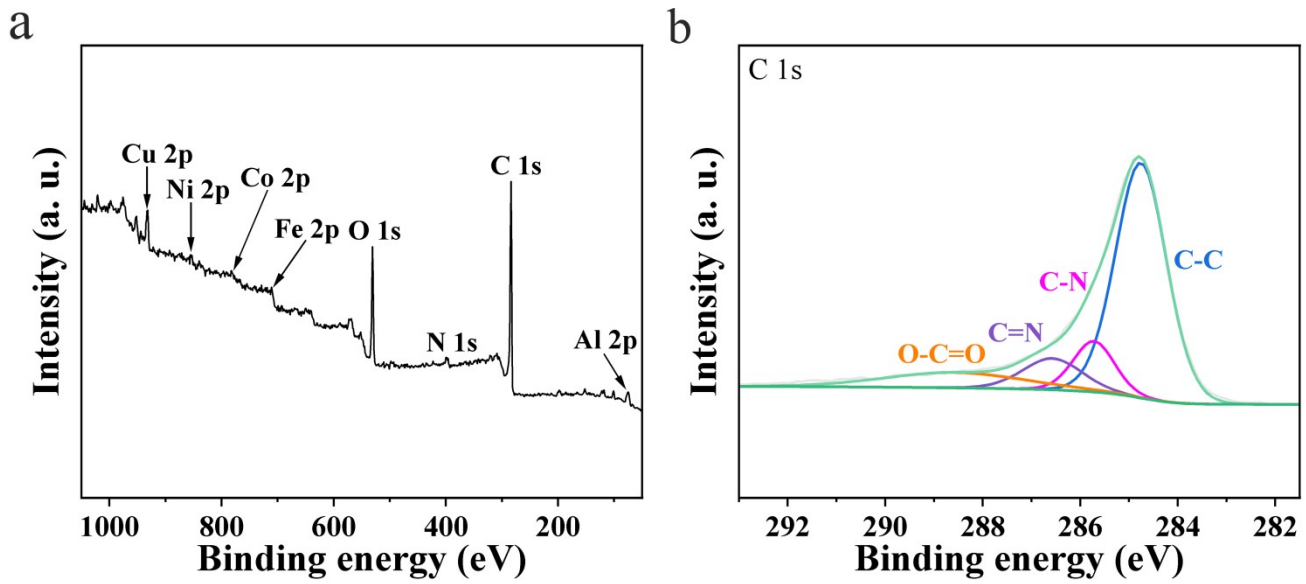
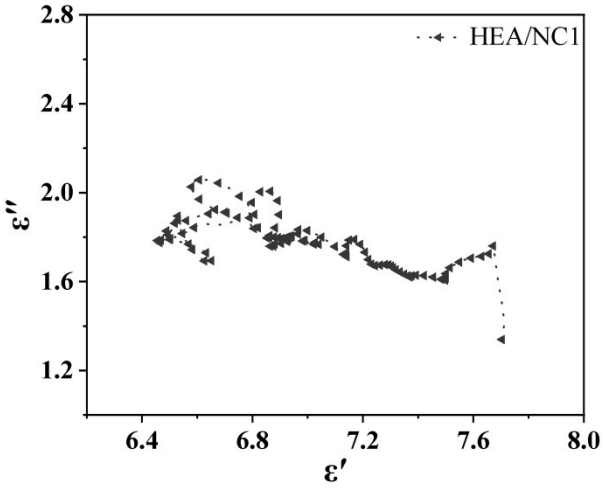


Fig. S1 (a) XPS survey spectrum and (b) high-resolution XPS spectrum of C 1s of HEA/NC2.

Fig. S2 Cole-Cole plots of HEA/NC1



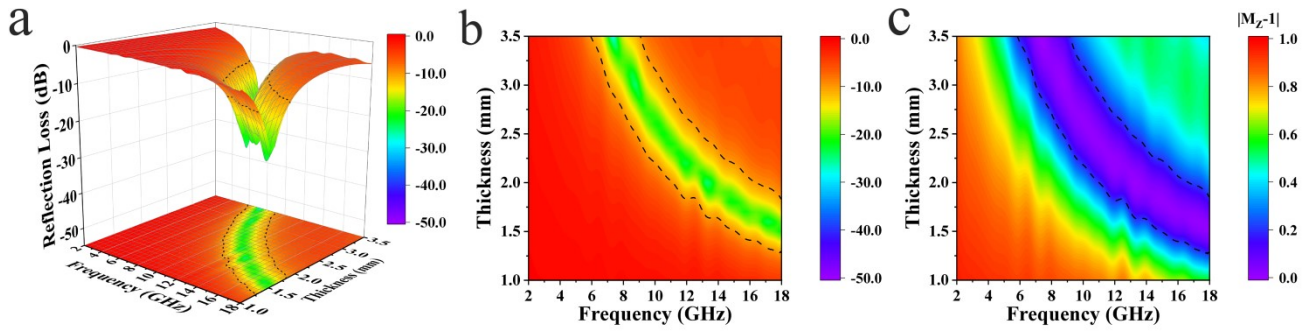


Fig. S3 (a) 3D RL surface plots, (b) 2D RL projections and (c) $|M_Z-1|$ curves of HEA/NC1.

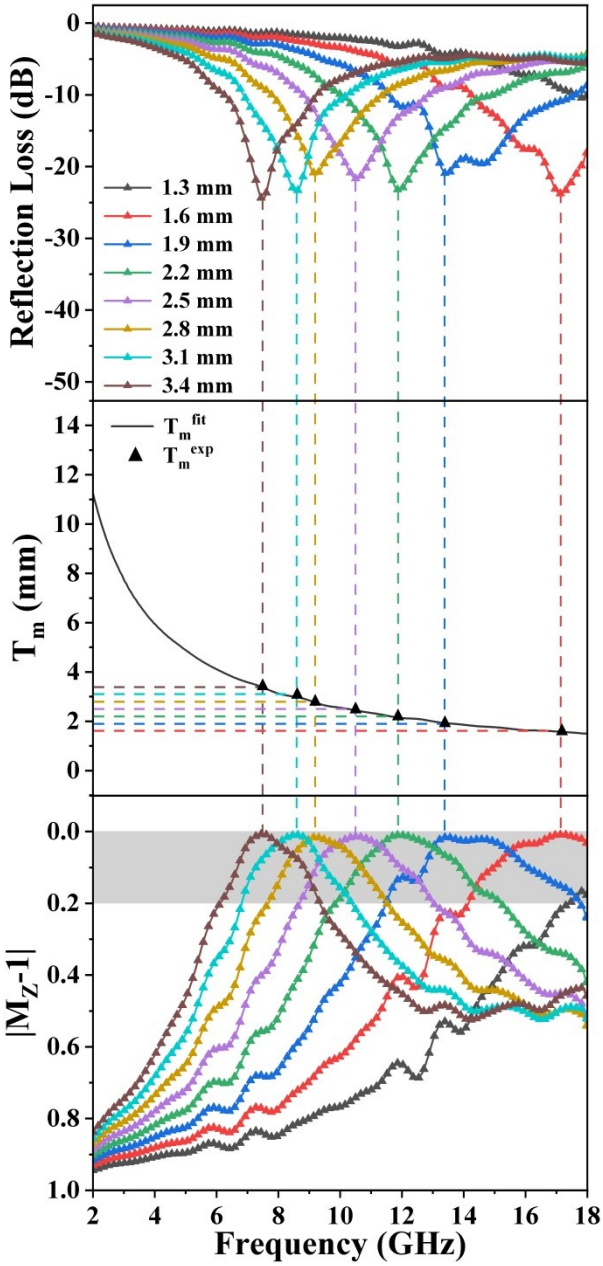


Fig. S4 2D RL, $|M_Z-1|$ curves and corresponding theoretical matching thickness curves at different thicknesses of HEA/NC1.

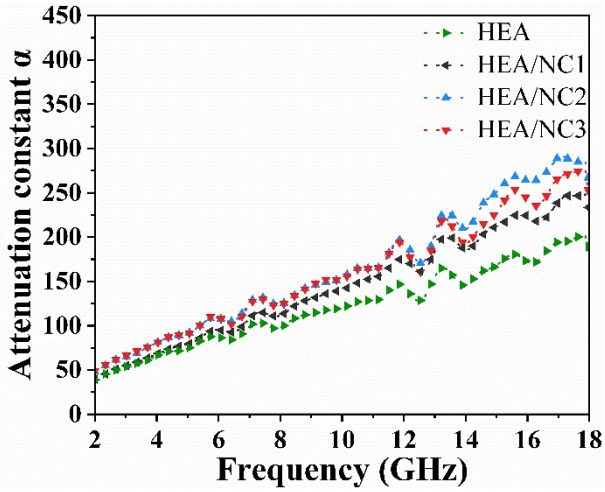


Fig. S5 Attenuation constant (α) curves of HEA and HEA/NC.

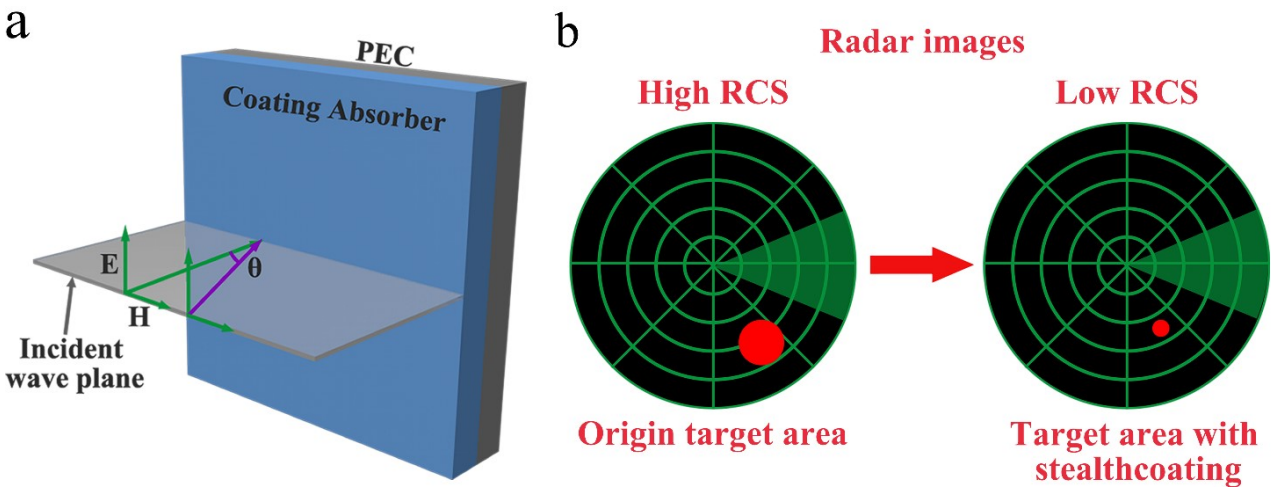


Fig. S6 Schematic diagram of (a) RCS modeling and (b) reduced radar imaging

Table S1. The content of carbon and nitrogen in the HEA/NC samples

Samples	C (wt%)	N (wt%)
HEA/NC1	17.98	2.07
HEA/NC2	25.05	2.92
HEA/NC3	30.37	3.51

Table S2. Comparison of wave-absorbing properties between HEA/NC2 and other HEA-based materials

Absorbers	RLmin/dB	d(RLmin)/mm	EAB/GHz	d(EAB)/mm	Filling ratio/wt%	Refs.
$FeCoNiCuMn_{0.5}/C$	-52.3	2.35	5.52	2.00	20	5
$FeCoNiCuTi_{0.2}$	-47.8	2.16	4.76	2.65	50	11
FeCoNiCr#CN10	-32.3	3.27	4.46	2.58	70	13
$FeCoNiCuC_{0.04}$	-61.1	1.72	5.1	1.70	65	14
$FeCoNiCrCuAl_{0.3}$	-40.2	1.70	4.48	1.70	50	15
$Pt_{18}Ni_{26}Fe_{15}Co_{14}Cu_{27}/rGO$	-41.8	4.00	2.50	2.00	50	16
HEA@air@Ni-NiO	-41.4	1.80	4.00	1.30	50	17
FeCoNiMn#P50	-62.4	2.46	4.10	2.75	70	49
HEA/NC2	-56.3	1.80	5.69	1.80	30	This work