Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supplementary Information

Lightweight, and Robust Cobalt Ferrite/Carbon Nanotubes/Waterborne Polyurethane Hybrid Aerogels for Efficient Microwave Absorption and Thermal Insulation

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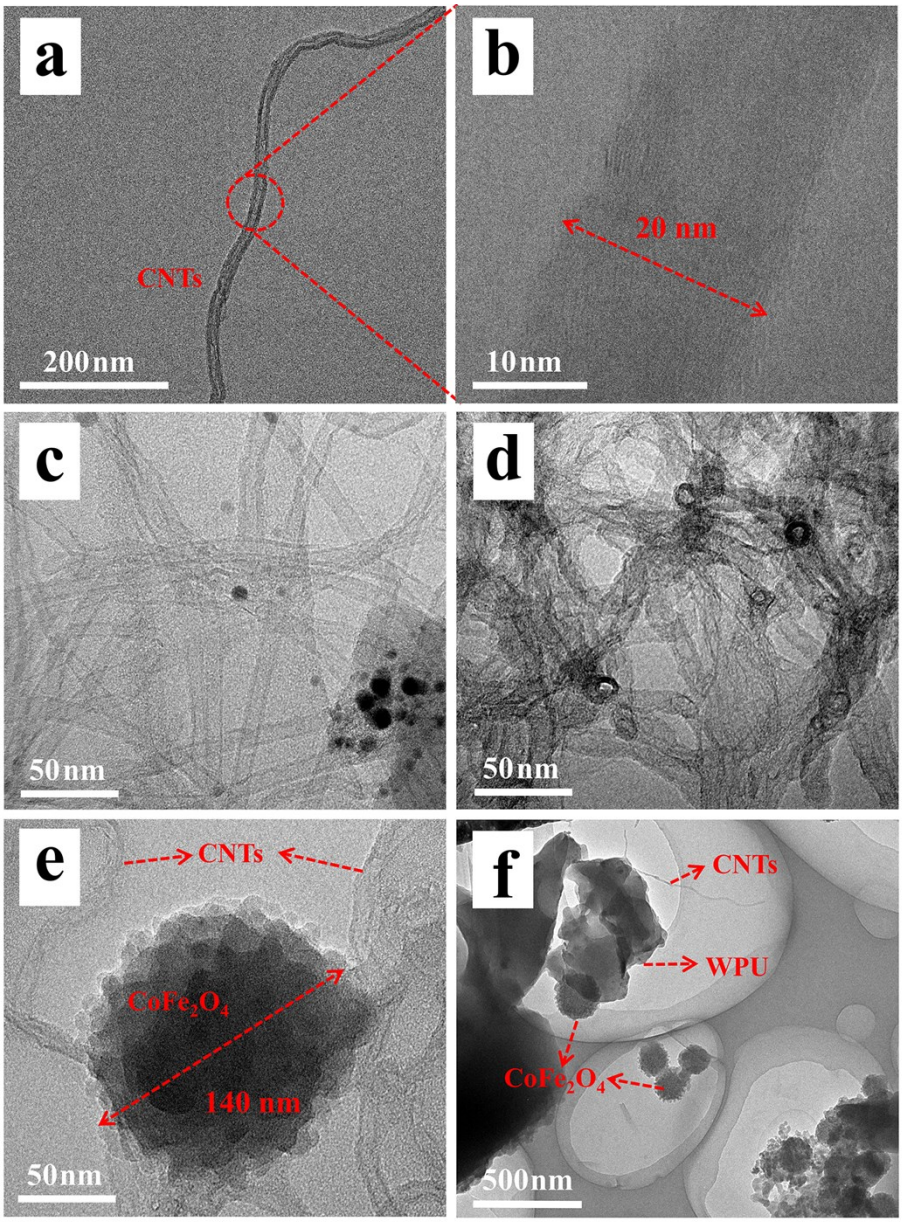

Fig. S1 (a-f) The TEM images of CCW-3 aerogel.

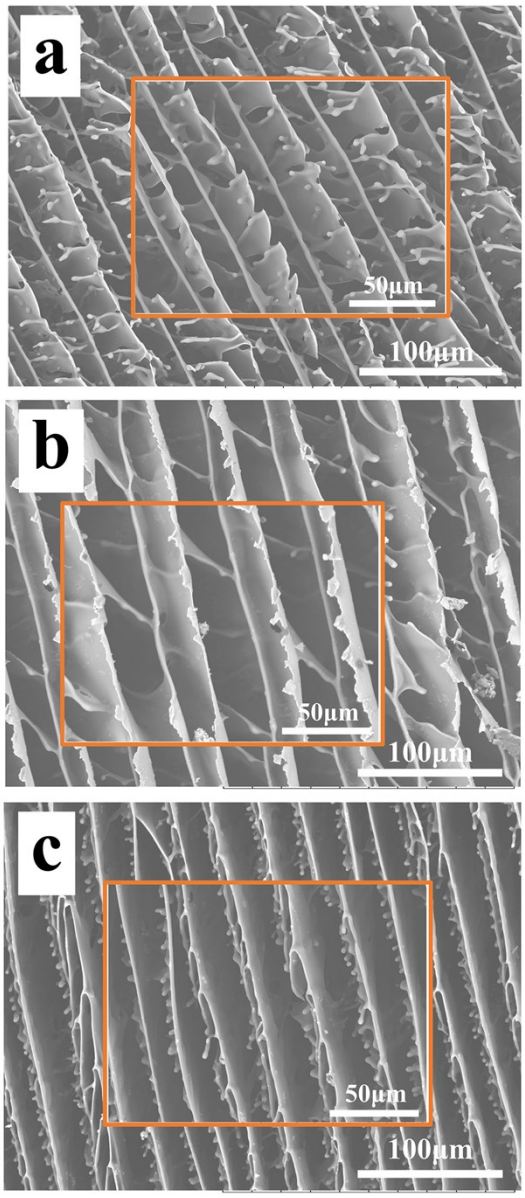

Fig. S2 (a-c) The enlarged SEM images of lamellar structure for CCW-1, CCW-2, CCW-3 aerogel, respectively.

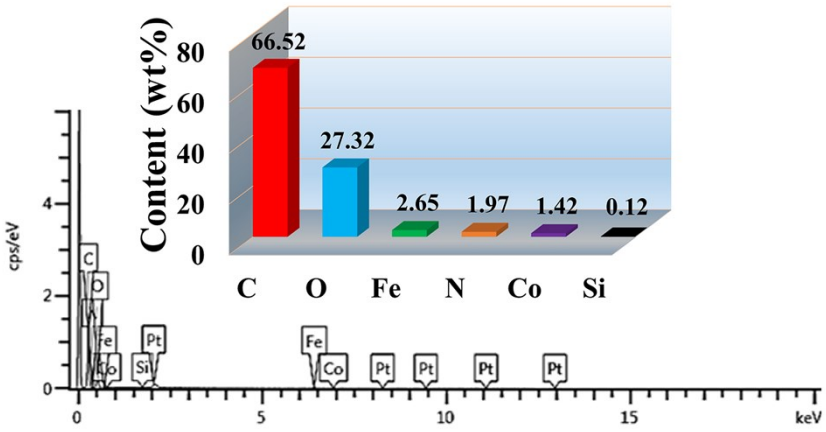

Fig. S3 The contents of C, O, Fe, N, Co, Si elements in CCW-3 aerogel.

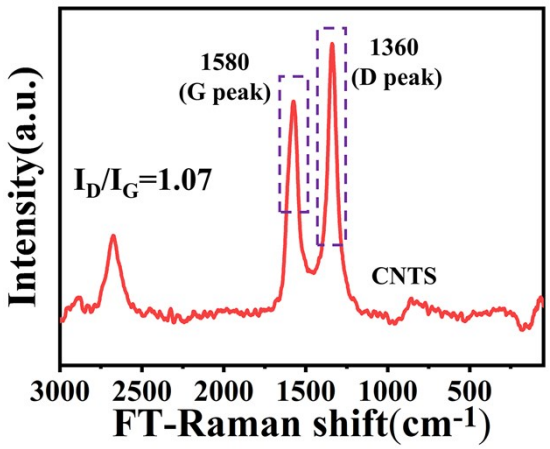

Fig. S4 The Raman spectroscopy of CNTs.

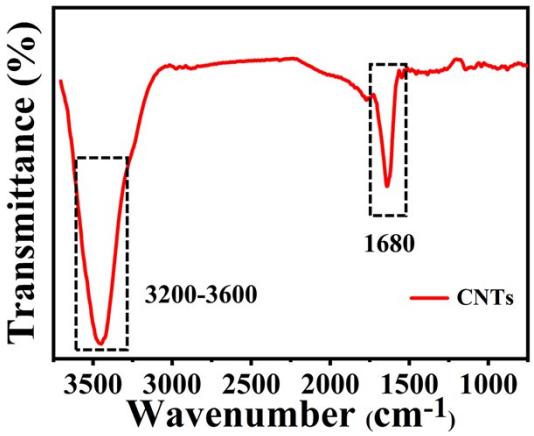

Fig. S5 The infrared spectrum of CNTs

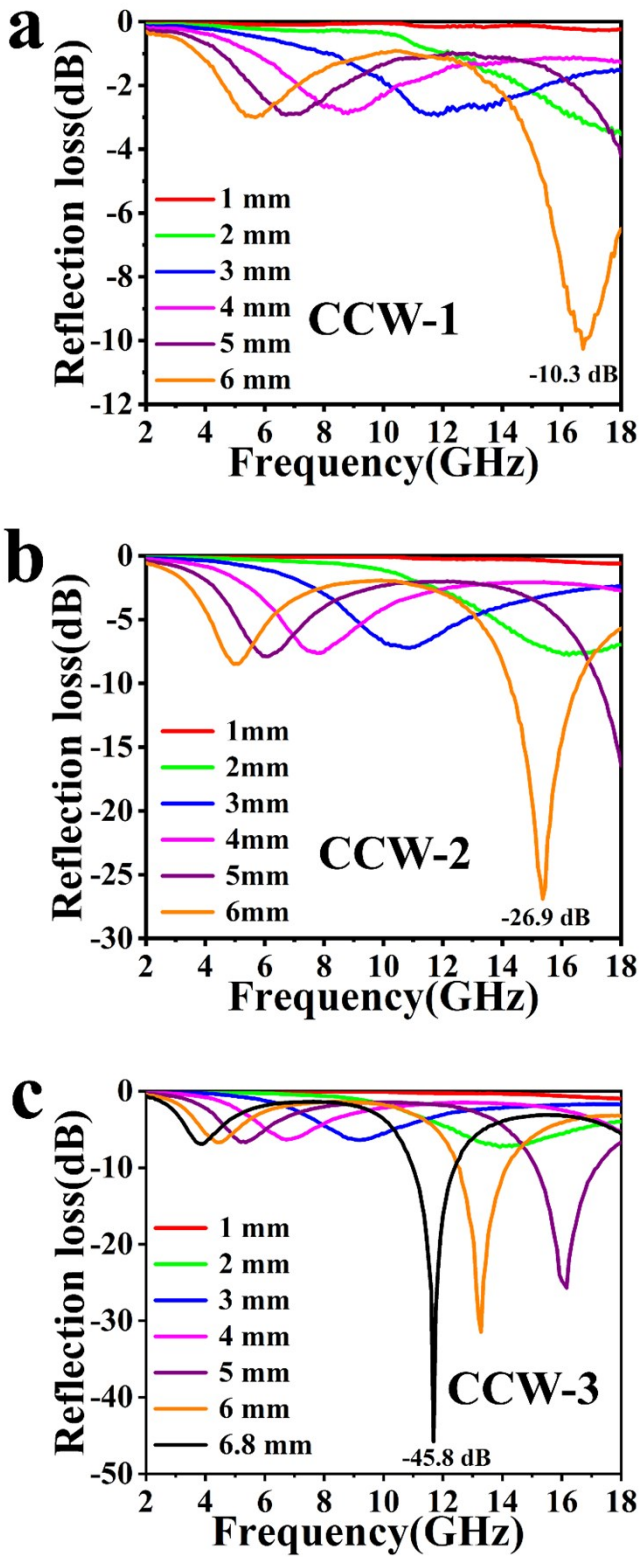

Fig. S6 (a-c) Frequency dependence of reflection loss of CCW-1, CCW-2, CCW-3 aerogel.

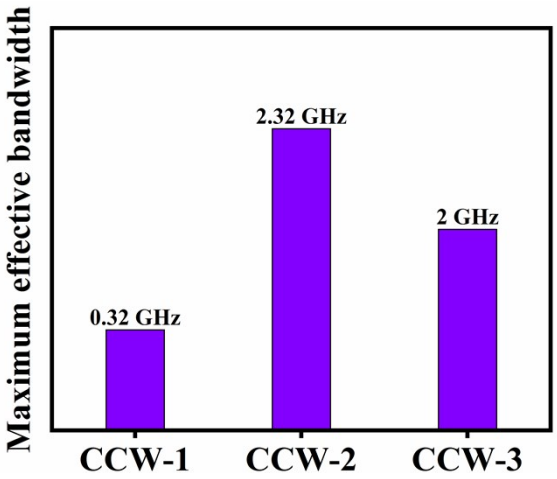

Fig. S7 The maximum effective bandwidth of CCW-1, CCW-2, CCW-3 aerogel.

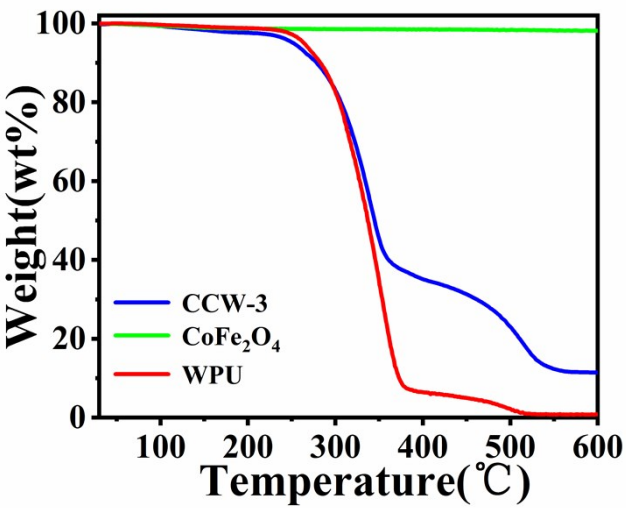

Fig. S8 The TG profiles of the CCW-3 aerogel, WPU and $CoFe_2O_4$ in the air atmosphere.

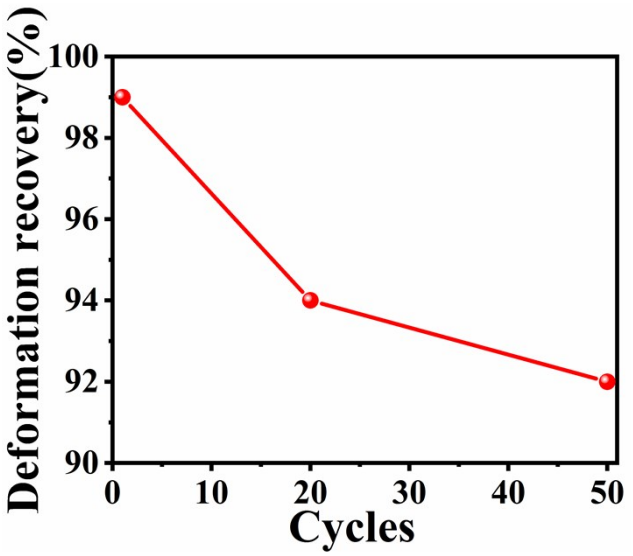

Fig. S9 The deformation recovery of CCW-2 aerogel.

Table S1 Synthetic parameters of aerogels

Sample	CNTs (mg)	$CoFe_2O_4$ (mg)	WPU (g)	Deionized water (mL)	$C_{18}H_{29}NaO_3S$ (mg)
WPU	0	0	7	20	80
CCW-1	150	300	7	20	80
CCW-2	300	300	7	20	80
CCW-3	450	300	7	20	80

Table S2 Microwave absorption and mechanical performance of some relevant works.

Sample	RL_{min} (dB)	EAB (GHz)	Max stress (kPa)	strain	Ref
Polypyrrole/Cellulose	-12.24	4	58.3	50%	[1]
MXene/Polyimide	-45.4	5.1	About 80	50%	[2]
Ni-doping $CoFe_2O_4$	-37.66	2.64	-	-	[3]
Fe_3O_4/Metallic-CNTs/GO	-49	-	About 22	95%	[4]
Co/CMF	-46.2	4.8	About 100	50%	[5]
ANF/rGO/PI	-41	4	59.5	50%	[6]
MXene	-41.8	6.5	75	50%	[7]
CNTs/PMMA	-24.8	2.5	-	-	[8]
$CoFe_2O_4$/CNTs/WPU	-45.8	2.32	194.1	50%	This work

EAB: (efficient microwave absorption bandwidth (RL below -10 dB))

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