

Lightweight Composite Foams for Electromagnetic Interference Shielding with High Absorption and Excellent Mechanical Properties

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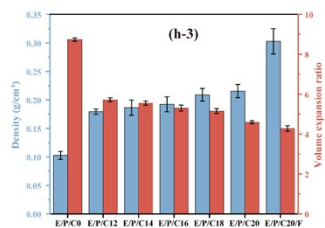
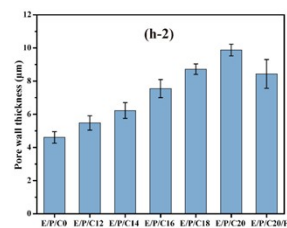
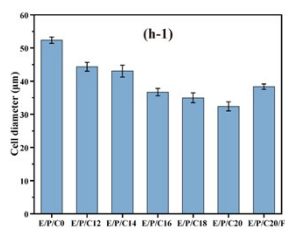
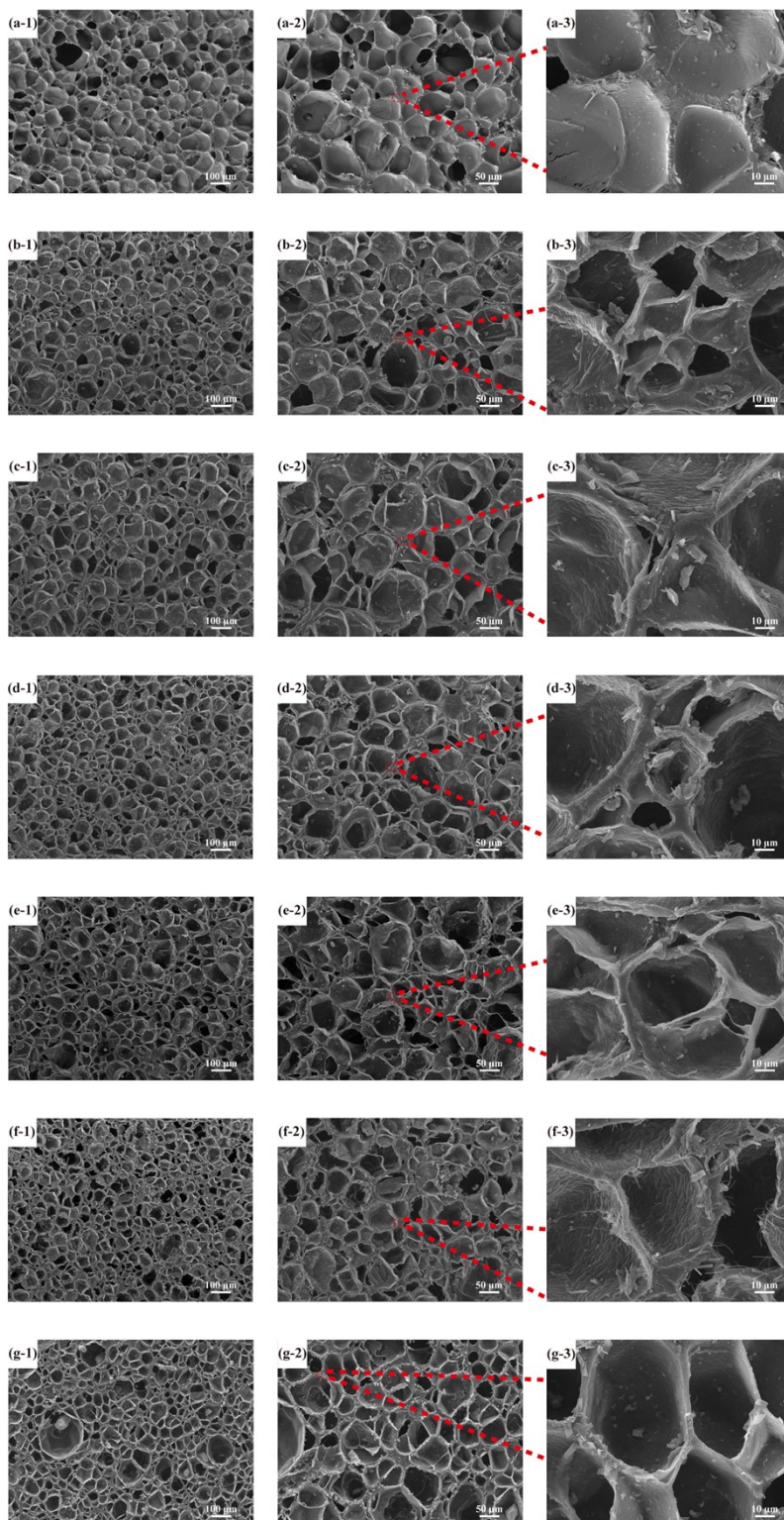


Fig. S1 (1) SEM images of cross-sections for all samples: pure EPDM/POE foam (a 1-3), E/P/C12 (b 1-3), E/P/C14 (c 1-3), E/P/C16 (d 1-3), E/P/C18 (e 1-3), E/P/C20 (f 1-3), E/P/C20/F (g 1-3). (2) Changes in pore size, pore wall thickness, apparent density, and volume expansion ratio for all samples (h 1-3).

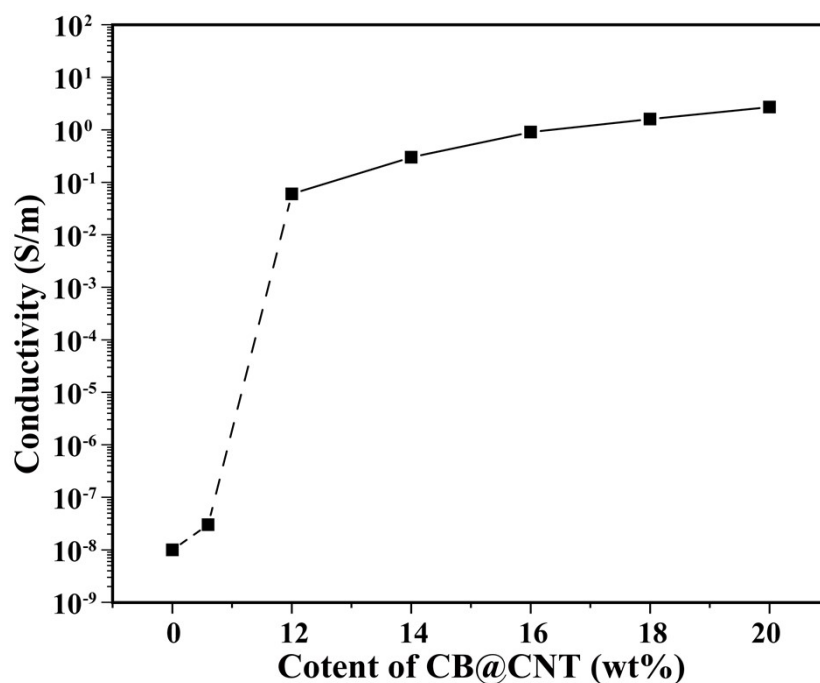


Fig. S2 Conductivity value

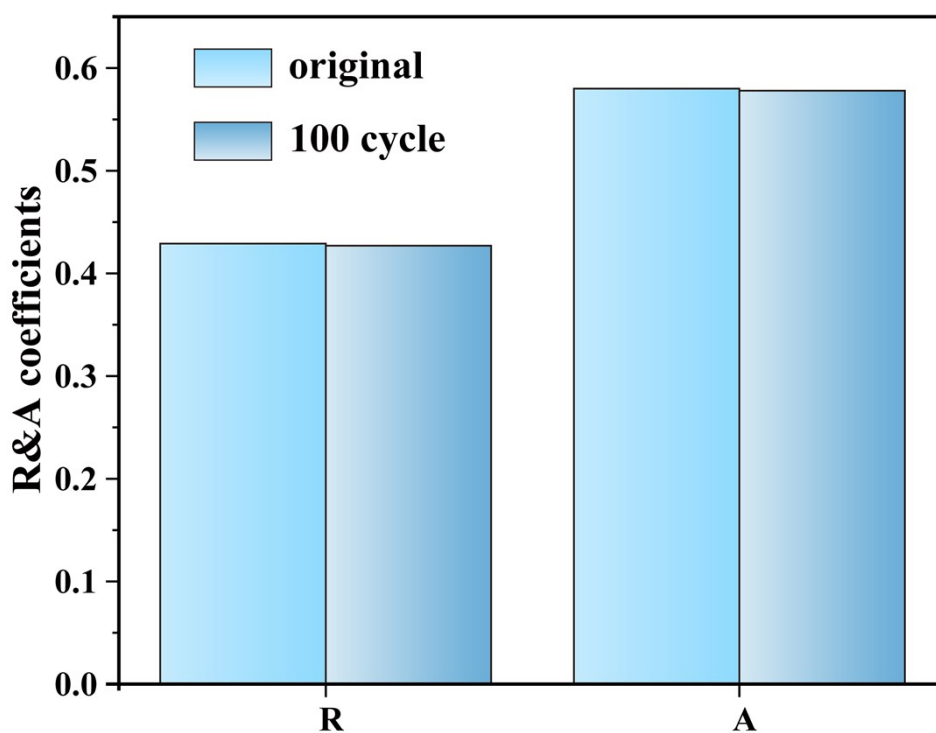


Fig. s3 Change in R-A coefficients of E/P/C20/F after 100 compression cycles at 60% strain.

Table S1 Mechanical properties and EMI SE of different samples in X-band reported recently

Sample	Compressive strain (%)	Compressive stress (MPa)	SE (dB)	A	Frequency (GHz)	ref
EPDM/POE/CB/CNTs/Fe ₃ O ₄	60	1.05	34	0.58	8.2-12.4	This work
WPU/CNTs/AG	75	0.4	40.1	0.2	8.2-12.4	16
ME/Co ₃ O ₄ /CNTs	80	0.062	25.6	-	8.2-12.4	47
ANF/GN	50	0.194	31.55	0.7	8.2-12.4	48
TPU-GNSs @ MF	60	0.04	35.6	0.3	8.2-12.4	49
PANI/MXene	60	0.7	27.7	0.7	8.2-12.4	50
CNT/CMF800	80	0.175	34.6	0.53	8.2-12.4	51
AG@ME	80	0.02	21	0.18	8.2-12.4	52
PP/CNT/CB	50	4	8	-	8.2-12.4	53
PBAT/CNTs	-	-	23.4	0.25	8.2-12.4	54

Table S2 the decomposition temperature, residual mass, and the decomposition temperature at the maximum thermogravimetric loss rate for all composite foams.

Sample	Residual quality at 600 °C (%)	T _{5%} (°C)	DTG _{max} (°C)
E/P/C0	2.7	407	475.33
E/P/C12	13.3	438	483.54
E/P/C14	14.5	440	482.65
E/P/C16	16	443	482.37
E/P/C18	16.22	425	482.72
E/P/C20	18.1	444	483.15
E/P/C20/F	23.4	447	482.69