

Supporting Information

Novel MOF-derived 3D hierarchical needlelike array architecture with excellent EMI shielding, thermal insulation and supercapacitor performance †

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† Electronic supplementary information (ESI) available.

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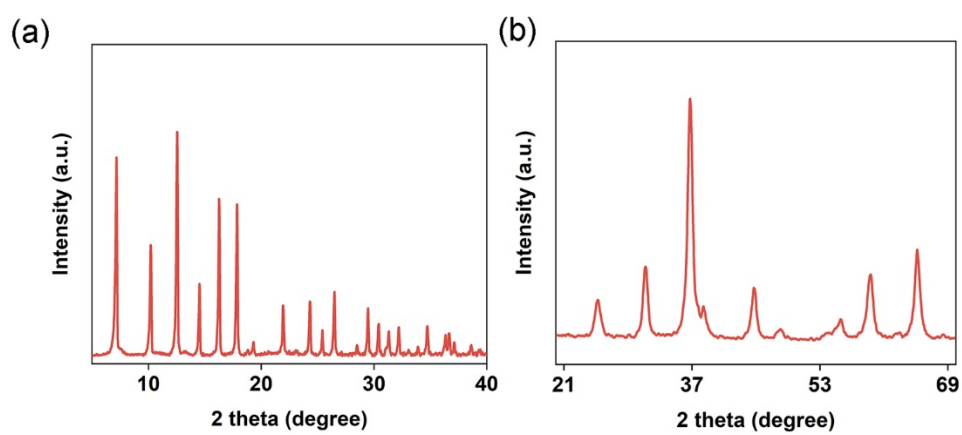


Fig. S1. XRD patterns of (a) ZIF-67 and (b) Co₃O₄/C.

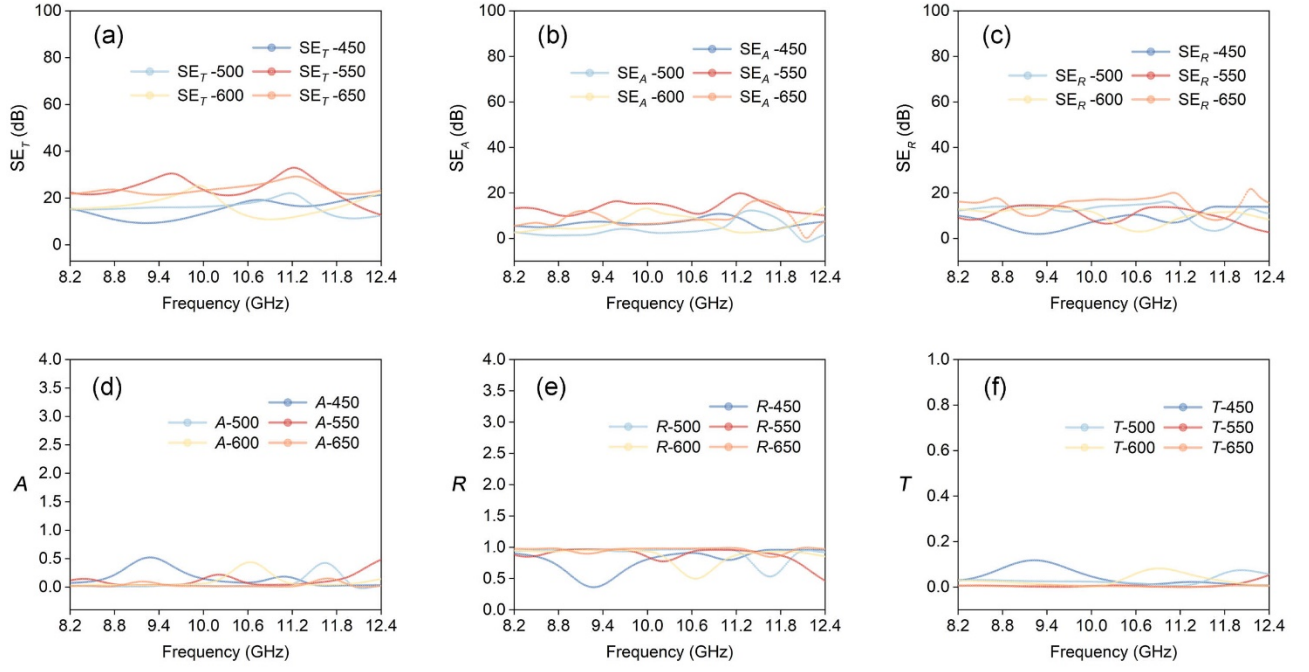


Fig. S2. (a) SE_T , (b) SE_A , (c) SE_R , (d) A , (e) R and (f) T of the NF@Co/C architectures with different pyrolysis temperatures.

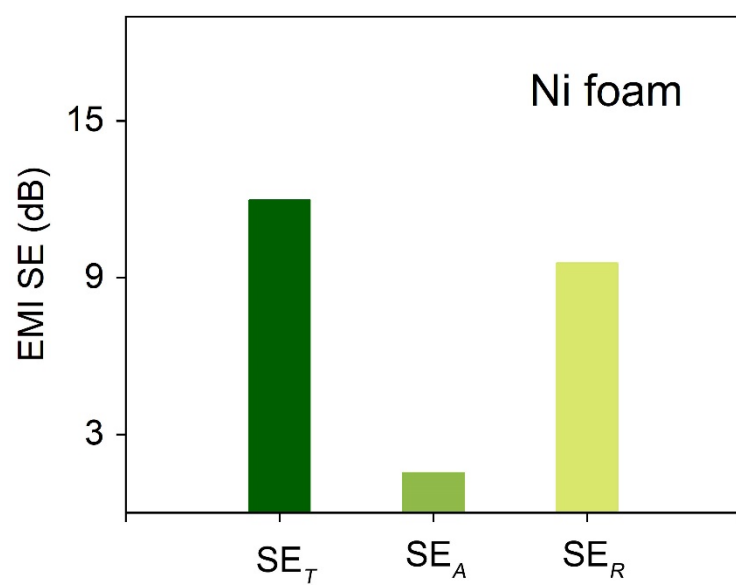


Fig. S3. SE_T , SE_A and SE_R of Ni foam in X band.

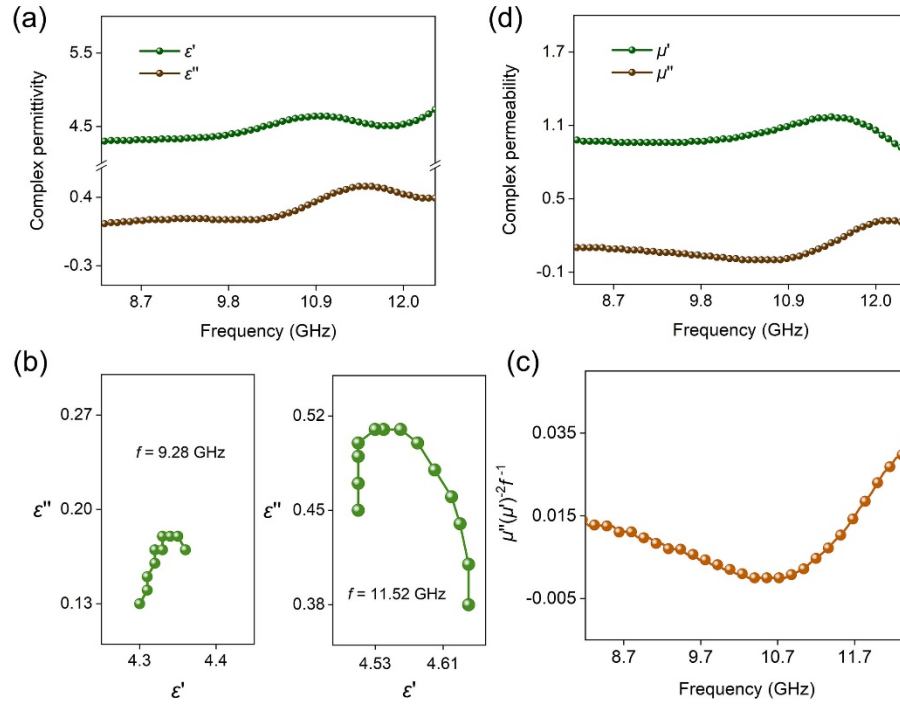


Fig. S4. The plots of (a) complex permittivity, (b) Cole-Cole plots, (c) $\mu''(\mu')^{-2}f^1$ and (d) complex permeability for the NF@Co/C-550 sample.

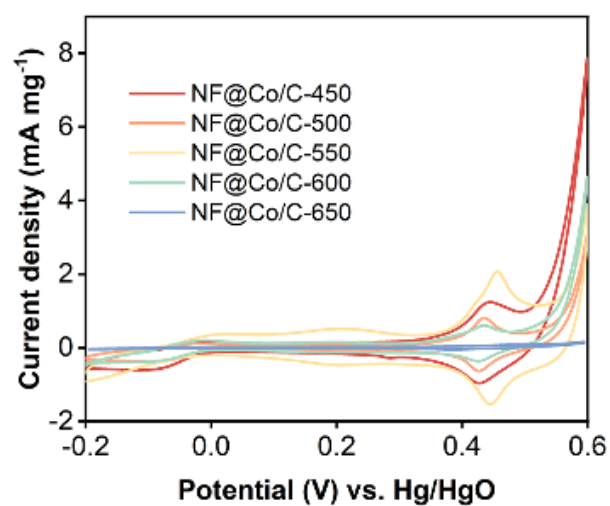


Fig. S5. CV curves of the NF@Co/C architectures with different pyrolysis temperatures.

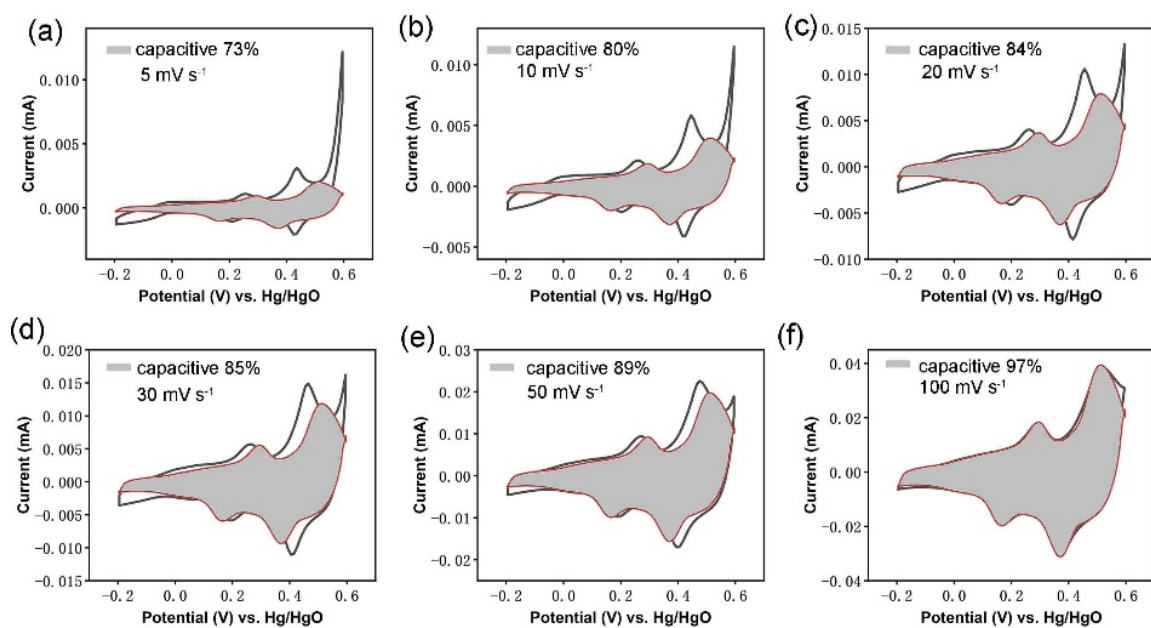


Fig. S6. Capacitive contributions at (a) 5 mV s^{-1} , (b) 10 mV s^{-1} , (c) 20 mV s^{-1} , (d) 30 mV s^{-1} , (e) 50 mV s^{-1} and (f) 100 mV s^{-1} .

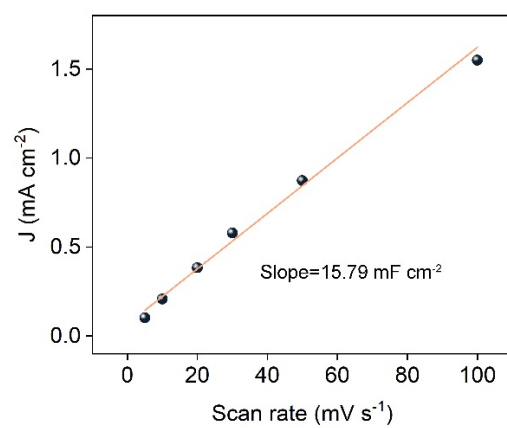


Fig. S7. Non-faradaic current density obtained from the CV curves at 0.1 V as a function of scan rate.

Table S1 The equivalent circuit parameters of NF@Co/C-550 electrode.

Sample	R ₁ (Ω)	R ₂ (Ω)	CPE1 (mF)	W1
NF@Co/C-550	0.45	0.3882	9.17	0.01337

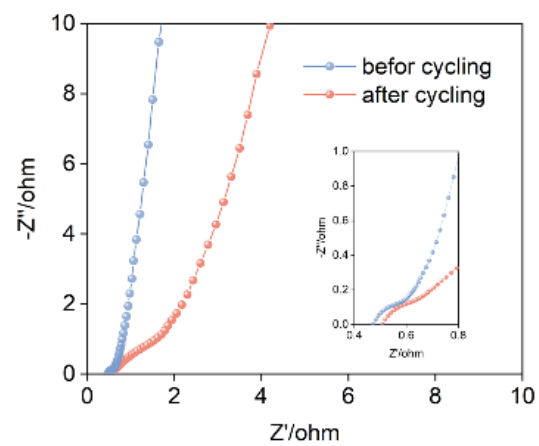


Fig. S8. Nyquist plots of NF@Co/C-550 sample before and after 10000 cycles.