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Supporting information

Melamine foam-induced isotropic graphite foam for effective thermal management and electromagnetic interference shielding

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Table S1. Properties of AR MP.

Properties	Units	AR MP
Softening point	℃	282
Toluene soluble content	wt.%	45.0
Pyridine soluble content	wt.%	48.5
N-methyl-pyrrolidone soluble content	wt.%	79.5
Ash content	wt.%	0.03
Volatile content	wt.%	28.4
Mesophase content	wt.%	100

Equations

1 Scherrer equation

$$L = \frac{k\lambda}{\beta cos\theta} \tag{S1}$$

where L indicates crystallite size (L_a) and stack height (L_c) in the sample, λ is the X-ray wavelength (0.15406 nm), d_{002} is the graphite interlayer spacing, β and θ are the full-width half maximum of the diffraction peak and Bragg diffractive angle respectively

1 Bragg equation

$$d_{002} = \frac{\lambda}{2sin\theta} \tag{S2}$$

d_{002} is the graphite interlayer spacing

λ is the X-ray wavelength (0.15406 nm)

2 Mering-Maire formula

$$G(\%) = \frac{0.3440 - d_{(002)}}{0.3440 - 0.3354} \times 100 \quad \text{(S3)}$$

0.3440: the interlayer spacing of the fully non-graphitized carbon (nm)

0.3354: the interlayer spacing of the ideal graphite crystallite

$d_{(002)}$: the interlayer spacing derived from XRD (nm)

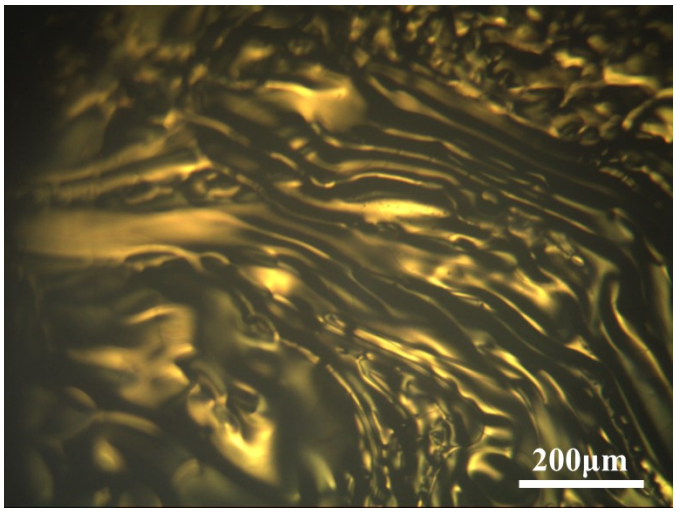

Fig. S1. Polarizing microscope images of ARMP

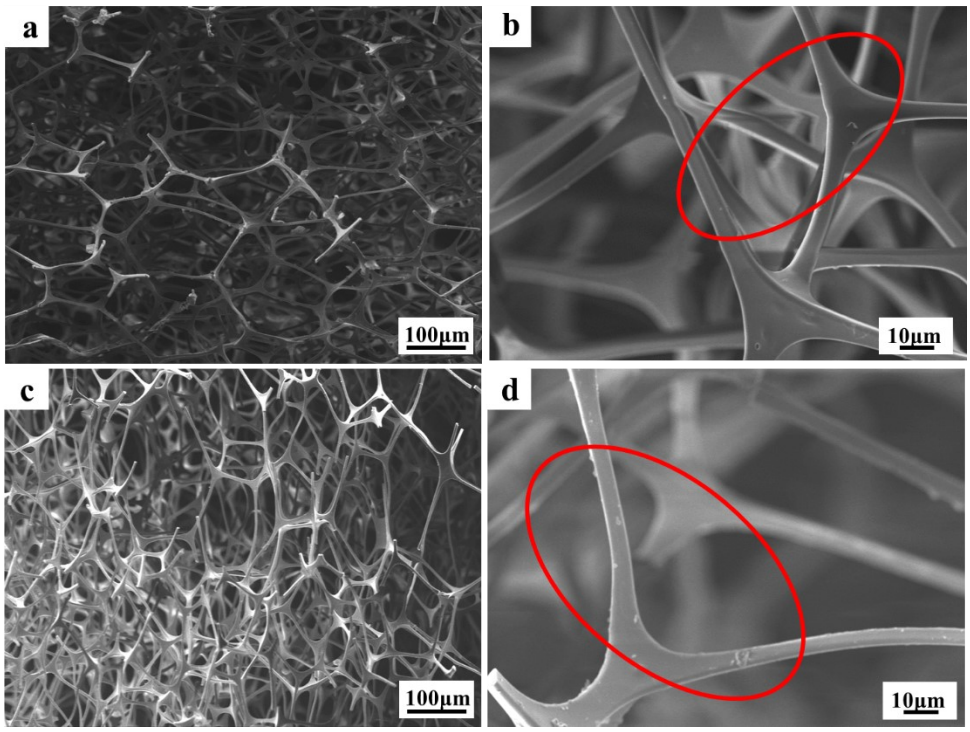

Fig. S2. (a)-(b) MF template before NaOH treatment
(c)-(d) MF template after NaOH treatment

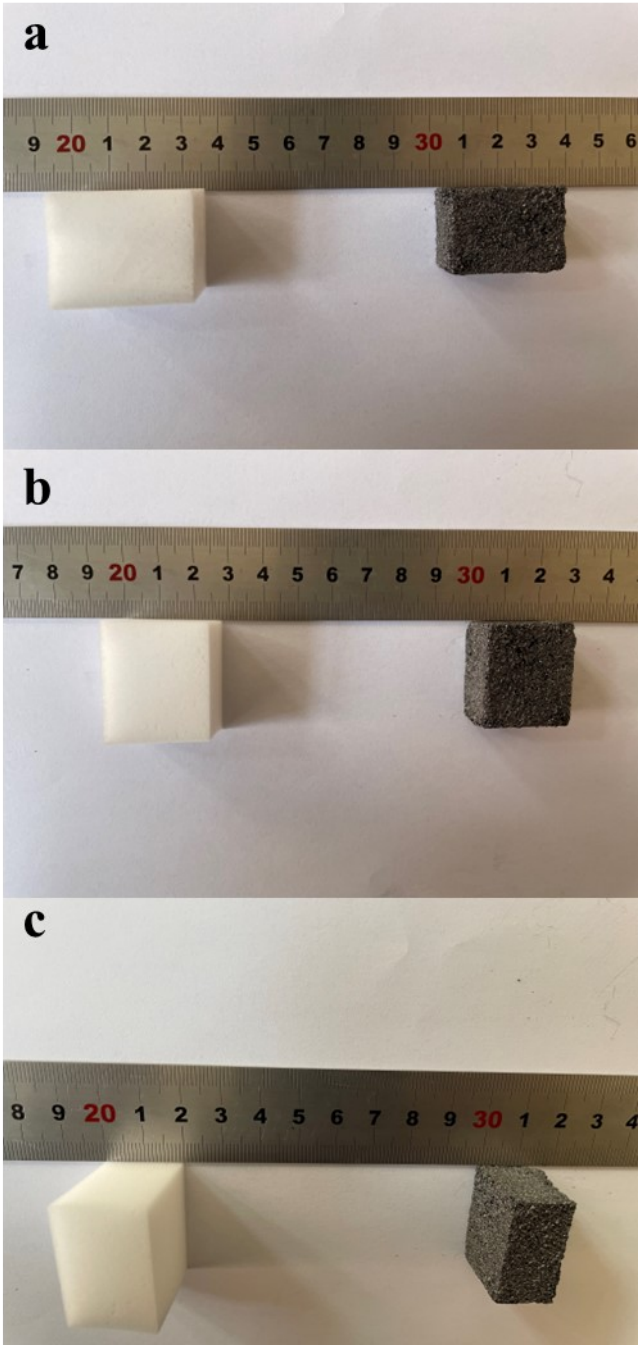

Fig.S3. The digital photos of GF taken from a camera

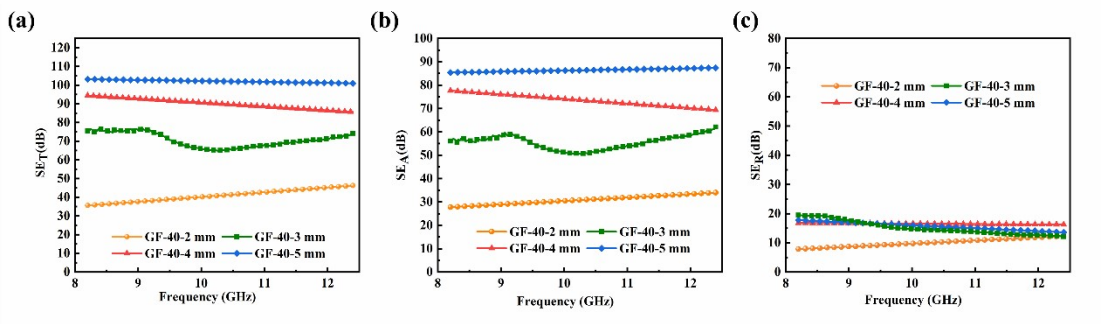

Fig.S4. Comparison of SE_T (a), SE_A (b), and SE_R (c) at X-band of GF-40 in different thicknesses.