## **Supporting Information**

## Heterointerface engineering in Cr<sub>2</sub>GaC/C hybrids through bottom-up template synthesis for enhanced electromagnetic wave absorption

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Figure S1. TG and DTA curves of Cr<sub>2</sub>GaC/C-2 sample.

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Figure S2. (a) Cr 2p spectra and (b) Ga 2p spectra of Cr<sub>2</sub>GaC/C-2 under different heat treatment temperatures.



Figure S3. Three-dimensional representations, two-dimensional projection images of reflection loss values and  $|Z_{in}/Z_0|$  projection drawings of Cr<sub>2</sub>GaC-C (Cotton) samples in paraffin with the same filling ratio of 15 wt.% (a, b, c) Cr<sub>2</sub>GaC/C-1, (d, e, f) Cr<sub>2</sub>GaC/C-2, (g, h, i) Cr<sub>2</sub>GaC/C-4.



Figure S4. Power coefficients of (a) R, (b) A, and (c) T of all samples.



Figure S5. (a)  $SE_R$  value, (b)  $SE_A$  value, and (c)  $SE_T$  value of all samples.



Figure S6. 3D RCS simulation results of PEC coated with (a) S-900, (b) S-950.



Figure S7. 3D RCS simulation results of PEC coated with (a) Cr<sub>2</sub>GaC/C-1, (b) Cr<sub>2</sub>GaC/C-4.