

Supplementary Material (ESI) for Journal of Materials Chemistry C

Single-source-precursor synthesis and electromagnetic properties of novel RGO-SiCN ceramic nanocomposites

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Based on the literature survey, Table S1 shows the electromagnetic (EM) performance of various RGO-based composites. It is worth mentioning that with comparable thickness, our present RGO-SiCN nanocomposites show excellent EM absorbing properties ($RC_{\min} = -62.1$ dB, EAB = 3.0 GHz with a sample thickness of 2.10 mm) and EMI shielding performance ($SE = 43.2$ dB with a sample thickness of 2.0 mm).

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Table S1 Electromagnetic performance of various RGO-based composites

Filler	Filler content (wt.%)	Matrix	Thickness (mm)	RC _{min} (dB)	EAB (GHz)	EMI SE (dB)	Ref
RGO/ γ -Fe ₂ O ₃	45	Paraffin	2.5	-59.65	3.0	/	1
RGO/ZnO hollow spheres	50	Paraffin	2.2	-45.05	3.3	/	2
RGO/CNTs	5.0	PDMS	2.75	-55	3.5	/	3
RGO/SiC nanowires	3.0	SiOC	2.35	-69.3	3.4	/	4
RGO/ZnO nanowires	3.3	PDMS	4.8	-27.8	4.2	/	5
RGO/SiC nanowires	/	PDMS	3.5	-40.7	3.8	/	6
RGO	~1.1	SiCN	2.10	-62	3.3	/	This work
RGO	7	PS	2.5	/	/	45.1	7
RGO	10	PEI	2.3	/	/	22	8
RGO	0.7	PMDS	1.0	/	/	30	9
RGO	20	WAX	2.0	/	/	29	10
RGO	60	WAX	0.35	/	/	27	11
RGO	7.5	WPU	1	/	/	34	12
RGO	15	Epoxy	/	/	/	21	13
RGO	30	PS	2.5	/	/	29	14
RGO	4	PI	0.073	/	/	51	15
RGO	33	PANI	2.8	/	/	34.2	16
S-doped RGO	15	PS	2	/	/	24.5	17
RGO/Fe ₂ O ₃	75	PANI	2.5	/	/	51	18

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RGO/Fe ₂ O ₃	35	PVA	0.3	/	/	15	19
RGO/Fe ₂ O ₃	66	PANI	2.5	/	/	30	20
RGO/CF/Fe ₂ O ₃	50	Resin	0.4	/	/	41.8	21
RGO/Fe ₃ O ₄	10	PVC	1.8	/	/	13	22
RGO/Fe ₃ O ₄	10	PEI	2.5	/	/	18	23
RGO/CNTs	15	SiCN	2.0	/	/	67.2	24
RGO/MnO ₂	Bulk	/	3	/	/	57	25
rGO/Fe ₃ O ₄	Bulk	/	0.25	/	/	24	26
rGO/Fe ₃ O ₄	Bulk	/	3	/	/	41	27
rGO-BaTiO ₃	Bulk	/	1.5	/	/	41.7	28
rGO-Ba Ferrite	Bulk	/	1.0	/	/	18	29
rGO/CNT/Fe ₃ O ₄	Bulk	/	2.0	/	/	37.5	30
RGO/CNTs	10.0	PDMS	2.0	/	/	10.4	3
RGO	~5.5	SiCN	2.0	/	/	43.2	This work

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