Supporting Information

Hierarchically Porous Polyimide/Graphene Aerogels with Superior Compressibility and Electromagnetic Interference Shielding Performance

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Supplementary Figures

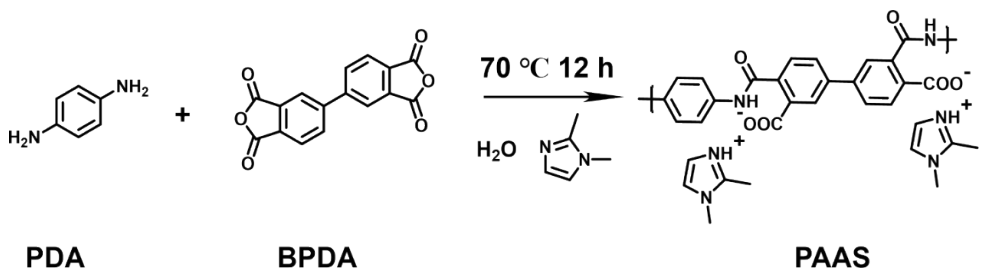

Figure S1. Synthesis of PAAS

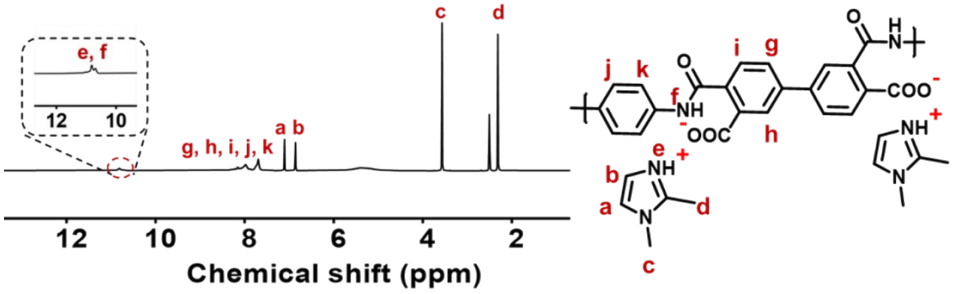

Figure S2. [1]H NMR spectrum of PAAS

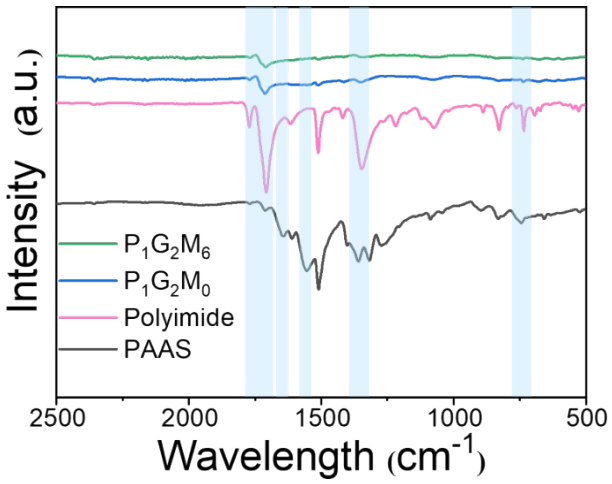

Figure S3. FTIR spectra of PAAS, Polyimide, $P_1G_2M_0$, and $P_1G_2M_6$

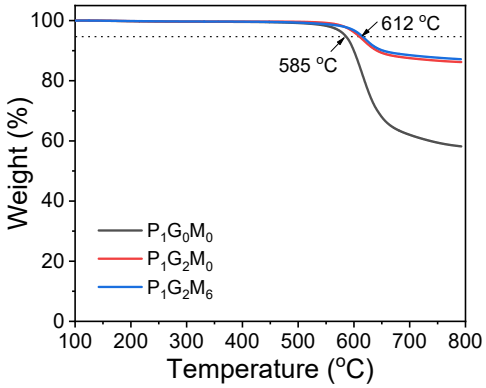

Figure S4. TGA curves of $P_1G_0M_0$, $P_1G_2M_0$, and $P_1G_2M_6$, respectively.

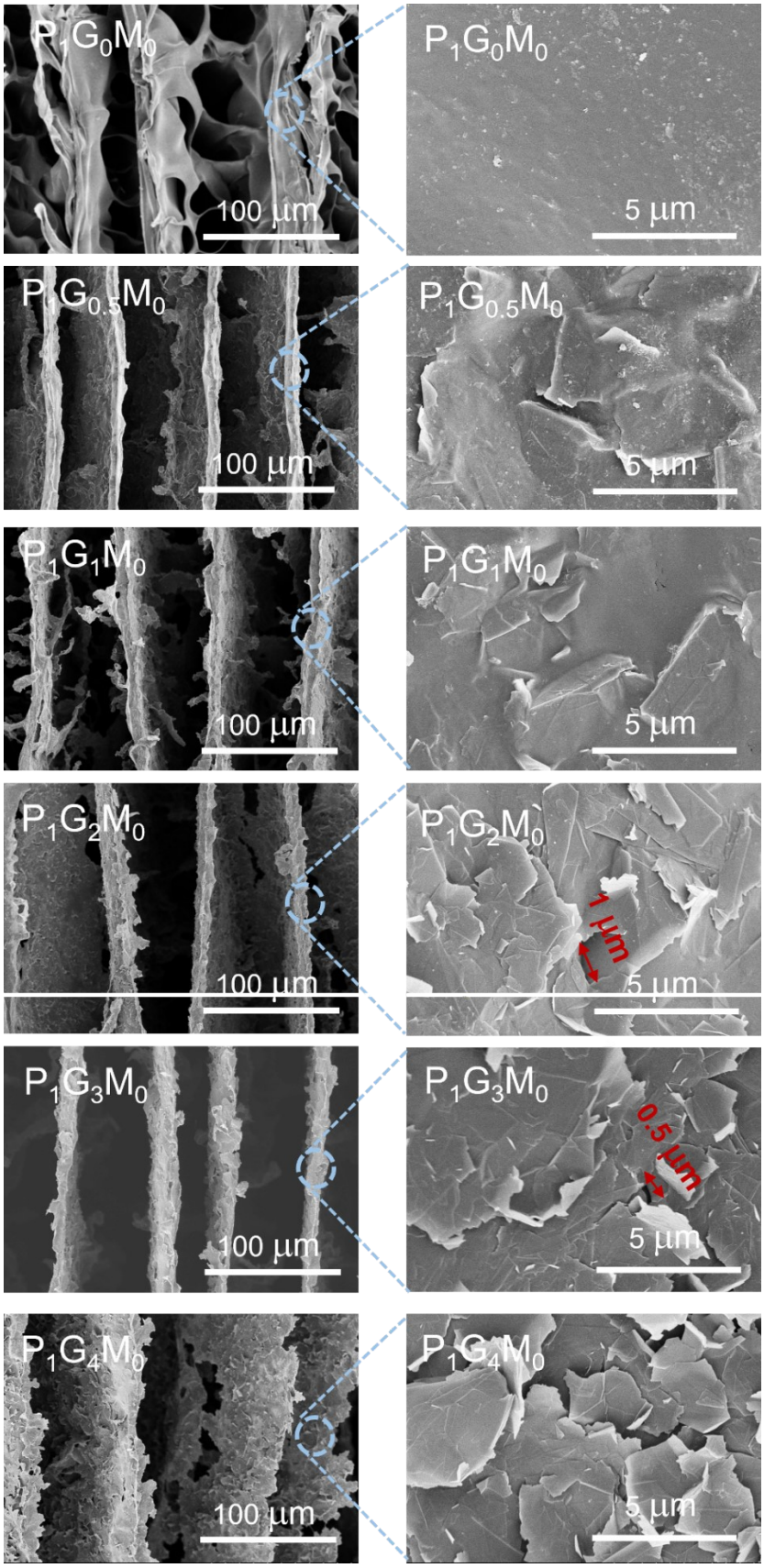

Figure S5. SEM images of $P_xG_yM_0$ aerogels

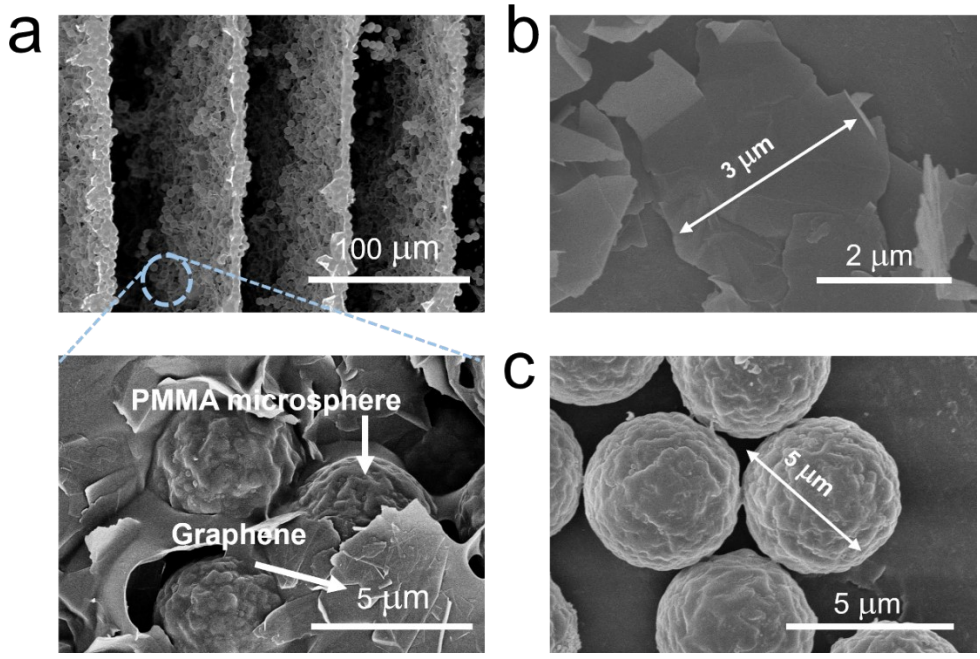

Figure S6. a) SEM images of $P_1G_2M_6$ before thermal treatment; b) SEM images of graphene; c) SEM images of PMMA microspheres

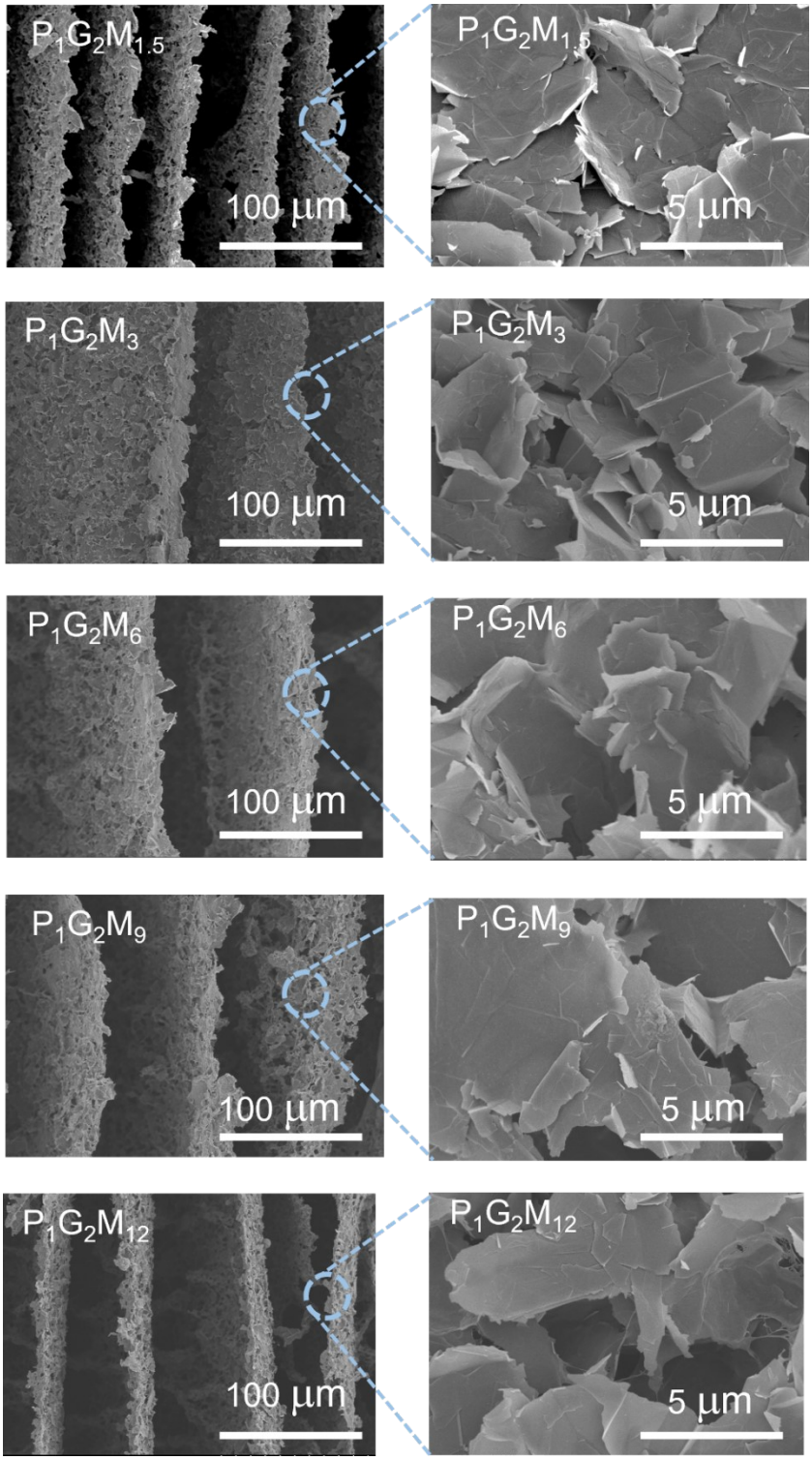

Figure S7. SEM images of $P_xG_yM_z$ aerogels after thermal treatment

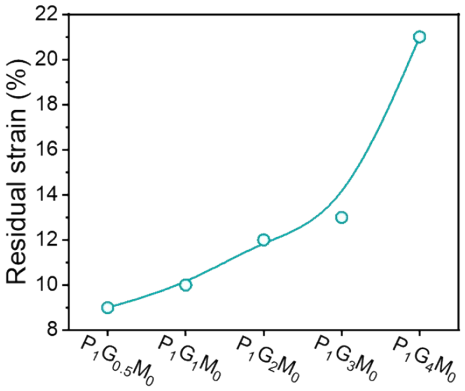

Figure S8. Residual strain of $P_1G_yM_0$.

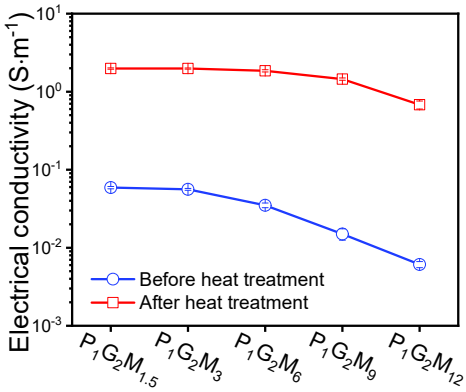

Figure S9. Electrical conductivity of $P_1G_2M_z$.

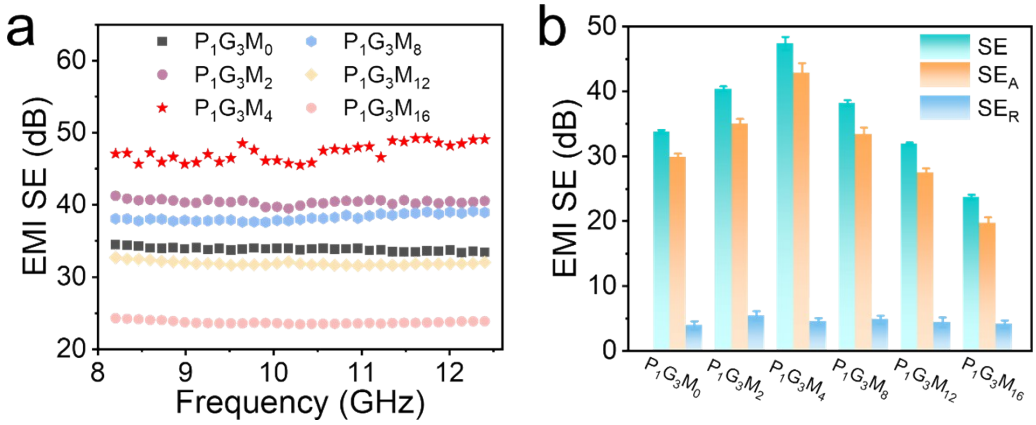

Figure S10. a) EMI SE of $P_1G_3M_z$; b) EMI SE, EMI SE_A and EMI SE_R of $P_1G_3M_z$

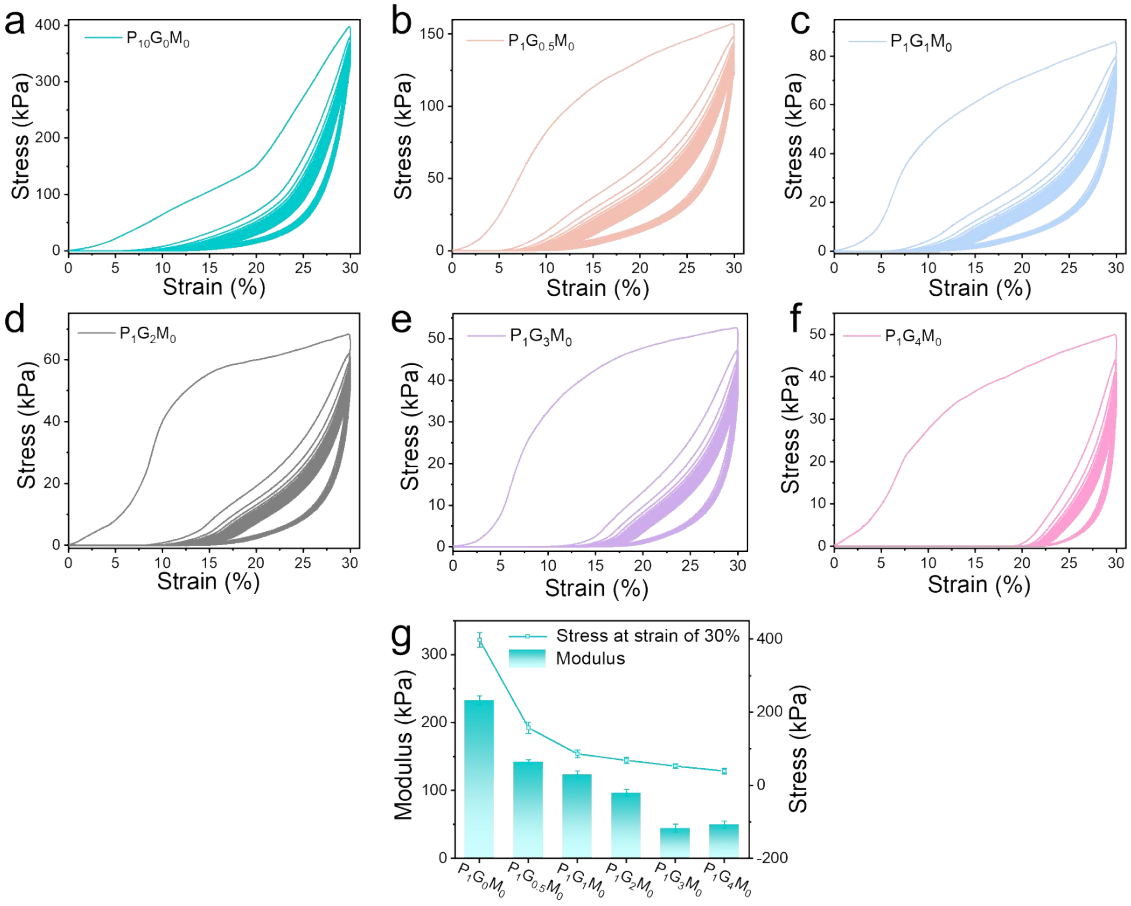

Figure S11. (a-f) Cyclic compressive stress-strain curves of $P_1G_yM_0$;(g) Compressive modulus and stress at strain of 30% for $P_1G_yM_0$

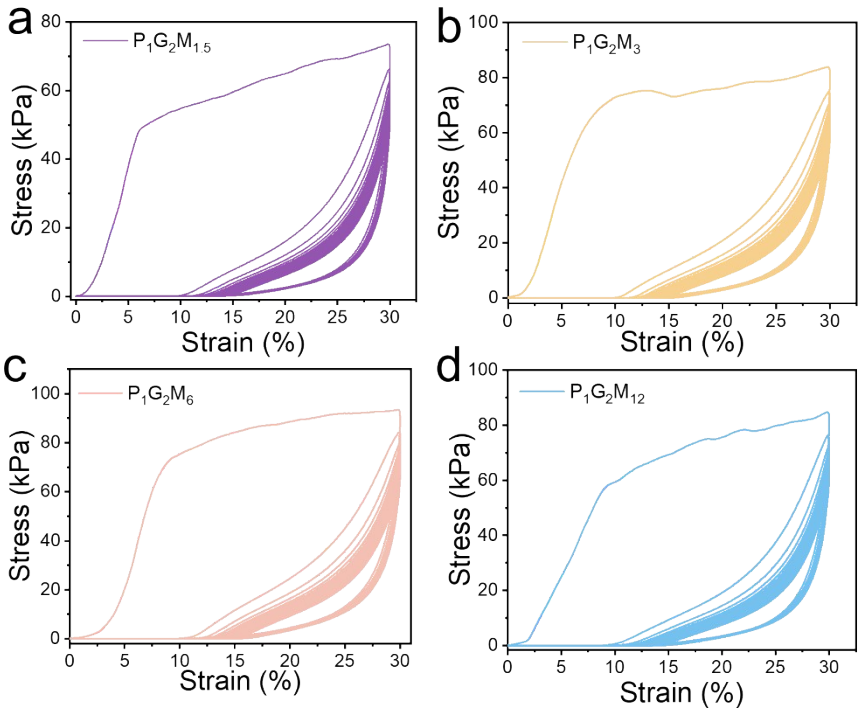

Figure S12. Cyclic compressive stress-strain curves of a) $P_1G_2M_{1.5}$, b) $P_1G_2M_3$, c) $P_1G_2M_9$, and d) $P_1G_2M_{12}$

Table S1. Comparisons of $P_1G_2M_6$ with reported EMI shielding aerogels

Sample	EMI SE (dB)	Stress (kPa)	Content of filler (%)	Ref
AgNW/CNF	35	5	50	1
GO/CNF	43.3	1.4	6	2
Graphene/ANF	31.55	100	41.18	3
MXene/CNTs	32.5	0.2	100	4
MXene/CNTs/WPU	20.06	45.7	8.68	5
MXene/Graphene	45	10	100	6
MXene/PVP	40.6	60	70	7
rGO/CNF	32	4	50	8
rGO/CNF	33	6	50	9
Carbon	38	0.1	100	10
MXene/CuS	32.31	2.5	100	11
GO/PolyetheramineF	27.3	4	58.8	12
GO/CNF	36.75	0.5	50	13
GO/CNF	34.4	2.5	66.7	14
Fe_3O_4/Graphene	41	5	100	15
MOF/CNF	46.5	4	8	16
Graphene/PI	48.3	93.4	0.05	This work

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