Supporting Information

Pre-constructed Graphene-Ammonium Polyphosphate Aerogel (GAPPA) for Efficient Enhancing Mechanical and Fire-Safety Performances of Polymer

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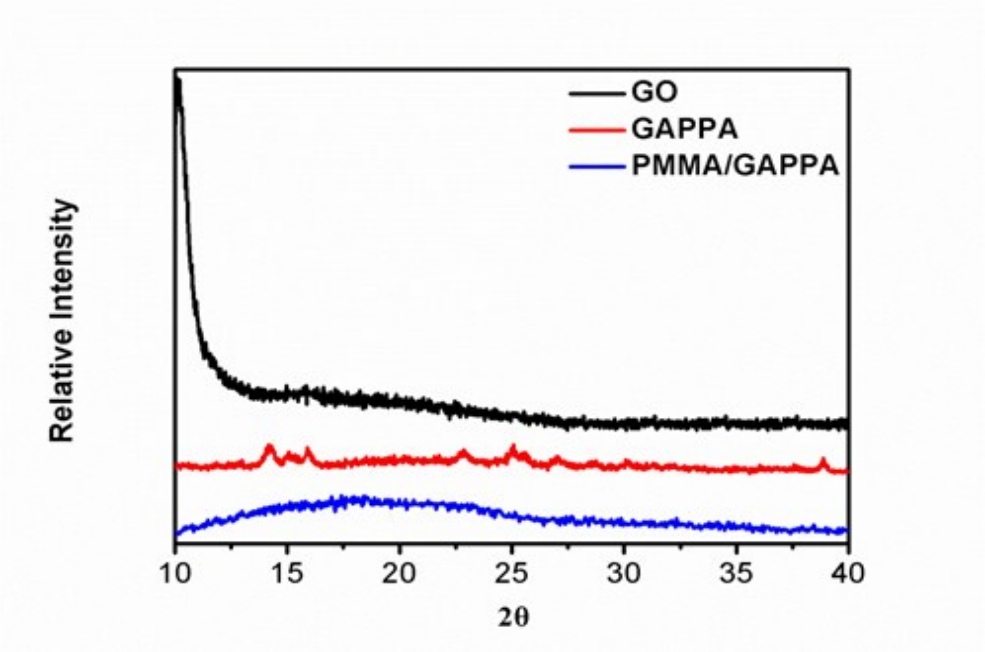

Figure S1. XRD of GO, GAPPA and PMMA/GAPPA composite.

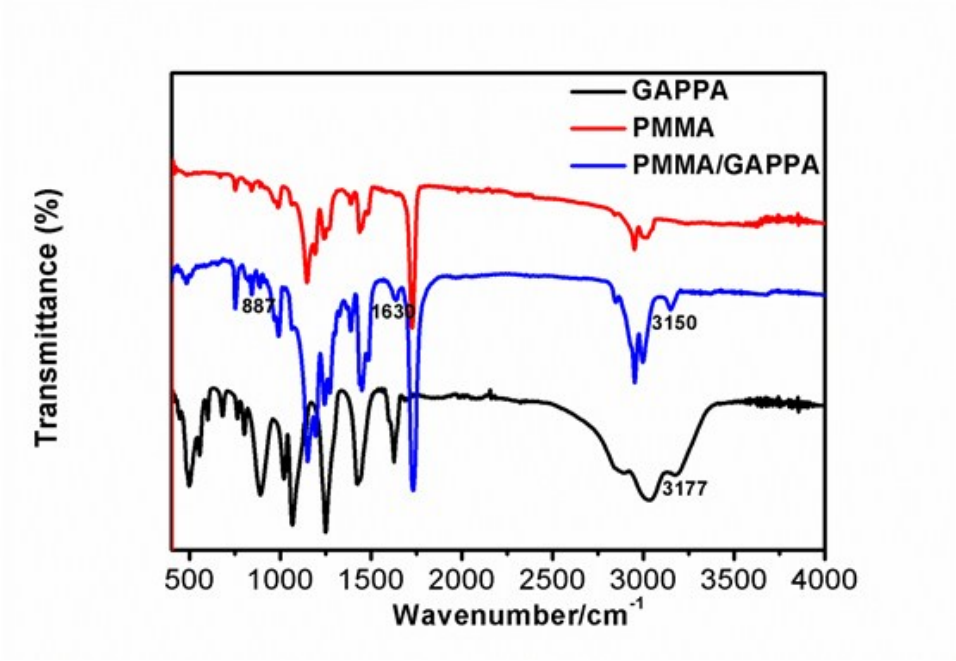

Figure S2. FTIR spectra of PMMA, GAPPA and PMMA/GAPPA composite.

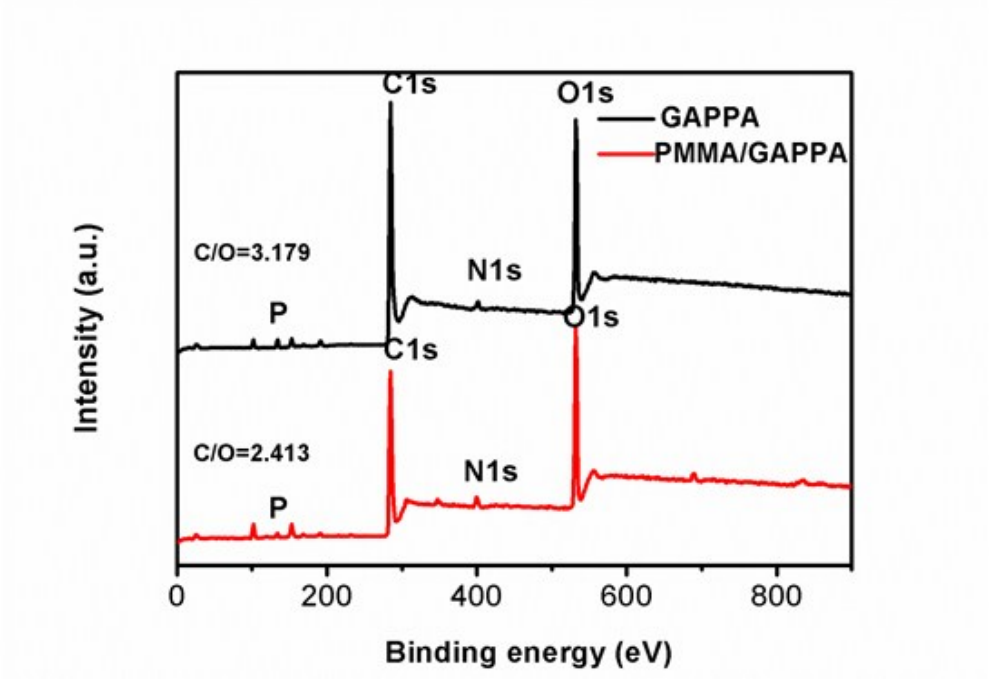

Figure S3. XPS survey pattern of GAPPA and PMMA/GAPPA composite.

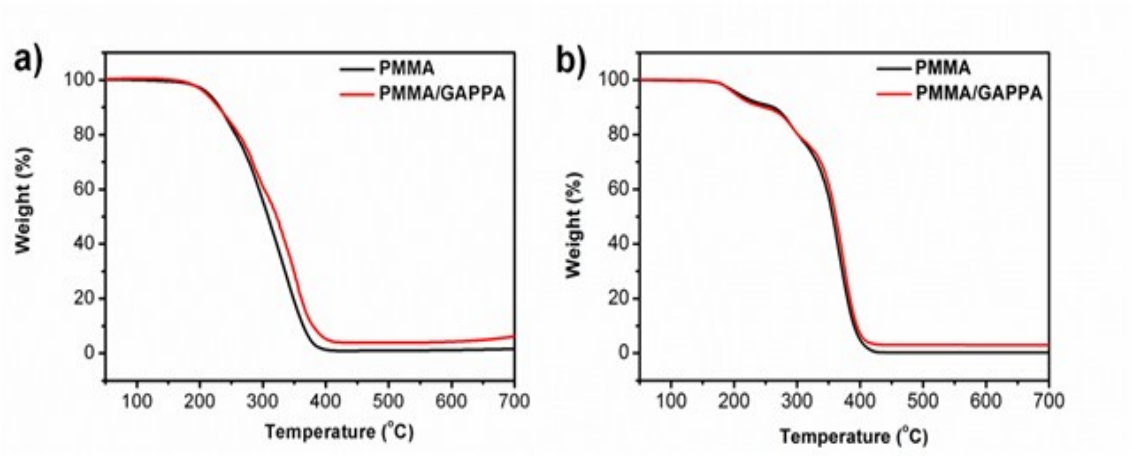

Figure S4. TGA analysis of PMMA, PMMA/GAPPA composite under a) air and b) nitrogen atmosphere.

Table S1. Physical and mechanical properties of GAPP aerogels prepared with different synthetic parameters.

Samples	Density (mg/cm^3)	S_{BET} (m^2/g)	Compression Stress at 50% strain (kPa)	Young's Modulus (kPa)
1GO/1APP	18.56	236.9	3.00	0.245
1GO/2APP	25.82	196.8	3.57	0.210
1GO/3APP	32.90	157.5	4.47	0.187