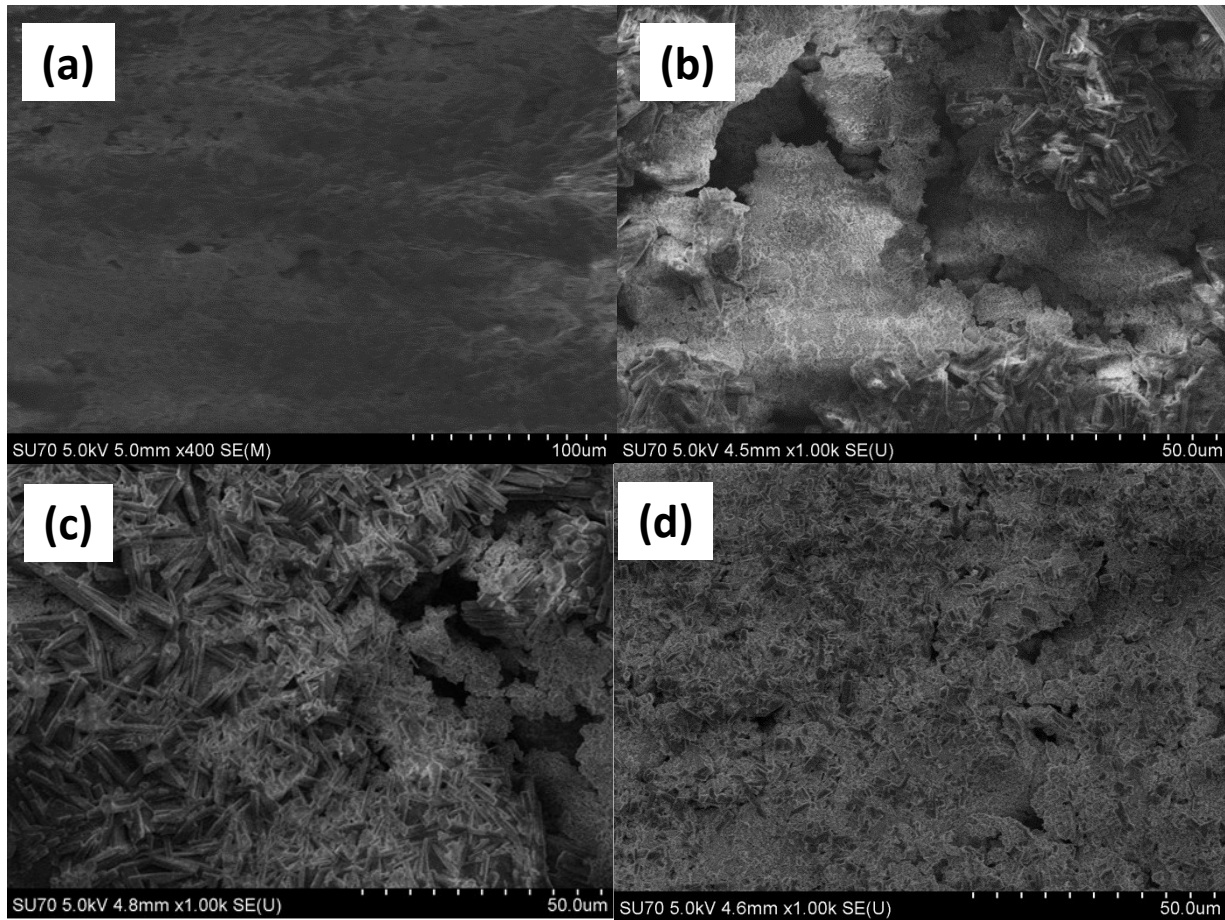


Supportive info:

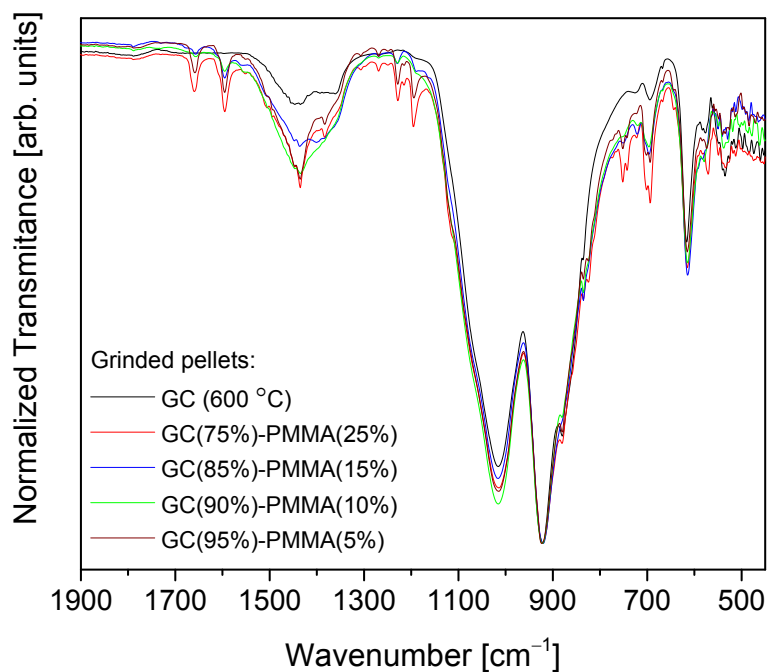
Table S1. Values of diameter, height, mass and compressive strength for GC-PMMA composites. FE-SEM micrographs showing the surface of the pellets: (a) neat PMMA, ((b) and (c)) GC(75%)-PMMA(25%) composites, and (d) GC(95%)-PMMA(5%) composite.

Sample (BG/PMMA)	Diameter, mm	Height mm	Mass (m), g	Density (ρ), kg/m ³	Strength, MPa	Strength at $\rho=1900\text{kg/m}^3$, MPa
75/25 (I)	8	4.53	0.444	1951	49.77	47.21
75/25 (II)	8	4.14	0.403	1938	50.5	48.56
75/25 (III)	8	4.36	0.429	1958	48.63	45.77
Average:				1949	49.63	47.18
Standard deviation				11	0.94	1.40
85/15 (I)	8	5.38	0.518	1916	47.57	46.76
85/15 (II)	8	5.27	0.508	1919	48.67	47.73
85/15 (III)	8	5.28	0.509	1919	50.1	49.12
Average:				1918	48.78	47.87
Standard deviation				1	1.27	1.19
90/10 (I)	8	5.39	0.507	1872	48.01	49.44
90/10 (II)	8	5.47	0.511	1859	42.81	44.70
90/10 (III)	8	5.43	0.51	1869	48.29	49.88
90/10 (IV)	8	5.4	0.509	1876	50	51.28
Average:				1869	47.28	48.82
Standard deviation				7	3.11	2.86
95/5 (I)	8	5.21	0.493	1883	40.51	41.22
95/5 (II)	8	5.21	0.497	1899	42.33	42.39
95/5 (III)	8	5.19	0.486	1864	43.14	44.83
95/5 (VI)	8	5.42	0.513	1884	43.8	44.55
Average:				1883	42.45	43.25
Standard deviation				14	1.42	1.74

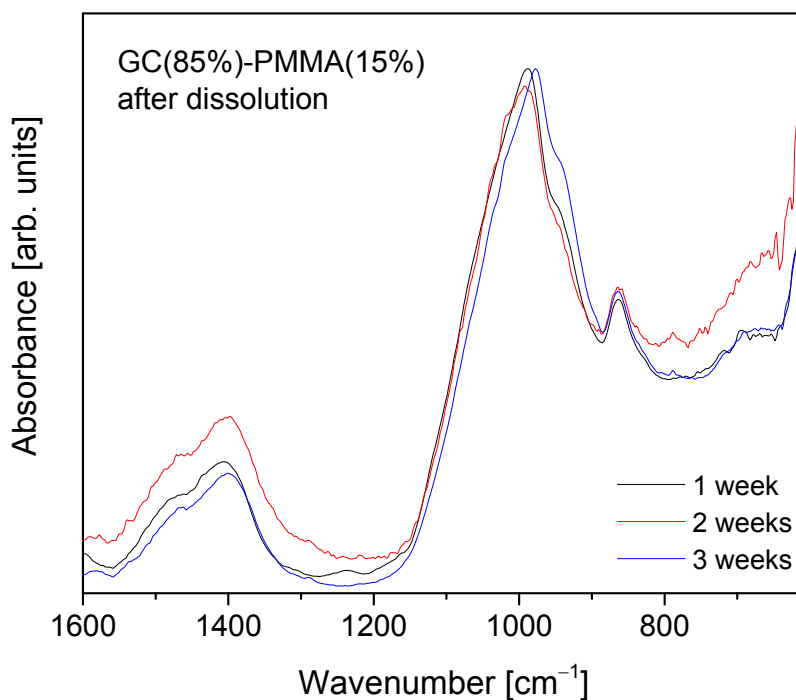
Figure captions:



ESI Fig S1. FE-SEM micrographs showing the surface of the pellets: (a) neat PMMA, ((b) and (c)) GC(75%)-PMMA(25%) composites, and (d) GC(95%)-PMMA(5%) composite.



ESI Fig S2. FTIR spectra of GC (annealed at 600 °C) and grinded GC-PMMA composite pellets.



ESI Fig. S3. Absorption FTIR spectra recoded from the surface of GC(85%)-PMMA(15%) composite pellets 1, 2 and 3 weeks after the dissolution in SBF.