

**Table S1.** Composition analysis of fabricated composite materials.

Trial number	Analysis of Composite			
	Polymer *(wt. %)	Fe <sub>2</sub> O <sub>3</sub> ** (vol. %)	Polymer (vol. %)	Porosity*** (vol. %)
V1	4.40	77.28	17.79	4.93
V2	3.15	65.28	10.59	24.13
V3	3.70	73.70	14.15	12.15
V4	3.02	75.61	11.77	12.62
V5	3.97	75.69	15.65	8.66
V6	4.66	67.00	16.37	16.63
V7	5.10	67.33	18.09	14.58
V8	4.91	69.82	15.76	14.42

\*Determination thermogravimetrically (arithmetic mean from three measurements).

\*\*Determination by porosity, mass and volume of composite and polymer content.

\*\*\*Determination by pycnometer (arithmetic mean form three measurements).

**Table 2.** Bending strength and Young's modulus of fabricated composite materials (standard deviation included).

Trial number	Mechanical Properties				No. of measurements
	Bending strength (BS) (MPa)	Stand. Dev. (BS) (MPa)	Young's modulus (E) (GPa)	Stand. Dev. (E) (GPa)	
V1	2.94	0.65	0.39	0.17	6
V2	1.18	0.63	0.49	0.18	6
V3	3.86	0.56	1.23	0.06	6
V4	2.21	0.65	0.51	0.24	9
V5	4.14	0.42	0.63	0.14	8
V6	4.59	0.97	1.23	0.40	9
V7	6.14	0.26	0.86	0.06	7
V8	6.17	0.41	2.30	0.43	12