

Research article

Exploring the possibilities of FDM filaments comprising natural fiber-reinforced biocomposites for additive manufacturing

Mahdi Rafiee¹, Roozbeh Abidnejad¹, Anton Ranta¹, Krishna Ojha¹, Alp Karakoç^{1,2,*}, and Jouni Paltakari¹

¹ Aalto University, Department of Bioproducts and Biosystems, Vuorimiehentie 1, Espoo, Finland

² Aalto University, Department of Communications and Networking, Maarintie 8, Espoo, Finland

* **Correspondence:** Email: alp.karakoc@alumni.aalto.fi; Tel: +358503442937.

Supplementary

Table S1. Mechanical characterization. Mean, and StDev represents the mean value and standard deviation, respectively.

Wood fiber (wt%)	PEG (wt%)	Young's Modulus (MPa) (Mean and StDev)	Energy to peak (N.mm ²) (Mean and StDev)	Elongation to peak (%) (Mean and StDev)	Yield stress (MPa) (Mean and StDev)				
0	0	852.4	53.5	2999.9	820.3	2.8	0.4	46.6	8.3
	1	870.6	20.2	2594.9	443.3	2.6	0.3	43.5	3.3
	5	366.5	19.3	477.5	228.2	1.7	0.4	11.6	3.1
	10	394.5	21.5	824.2	253.7	2.2	0.3	16.3	2.2
1	0	665.8	67.2	1229.8	174.0	2.0	0.1	25.4	3.5
	1	501.8	10.9	1343.3	131.5	2.4	0.2	23.6	1.2
	5	728.6	13.0	1135.6	250.0	1.8	0.3	26.2	3.4
	10	361.9	19.4	506.4	311.2	1.8	0.5	12.5	3.6

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Wood fiber (wt%)	PEG (wt%)	Young's Modulus (MPa) (Mean and StDev)		Energy to peak (N.mm ²) (Mean and StDev)		Elongation to peak (%) (Mean and StDev)		Yield stress (MPa) (Mean and StDev)	
5	0	487.8	472.7	861.3	125.2	2.1	0.3	18.0	2.8
	1	694.0	35.5	851.7	117.2	1.6	0.1	21.6	1.9
	5	481.8	12.5	513.8	181.1	1.6	0.3	14.5	2.5
	10	522.3	28.0	701.3	117.0	1.8	0.1	17.6	1.5
10	0	505.8	42.8	552.5	97.0	1.6	0.1	15.1	2.1
	1	709.7	141.5	697.8	69.3	1.4	0.1	19.6	3.3
	5	584.2	17.4	522.3	105.5	1.4	0.2	15.8	1.3
	10	636.1	20.7	700.4	65.5	1.6	0.0	19.7	0.8
20	0	751.2	50.1	520.5	82.7	1.2	0.1	17.9	2.1

Table S2. Thermal characterization.

Wood fiber (wt%)	PEG (wt%)	T _m (from DSC) (°C)	TGA Onset Value (°C)
0	0	171.9	346.1
	1	172.9	342.9
	5	171.9	339.8
	10	166.7	336.4
1	0	162.6	339.1
	1	171.4	351.8
	5	166.4	338
	10	166.8	336.1
5	0	165.8	333.3
	1	166.8	353.6
	5	166.7	336.3
	10	165.8	346.2
10	0	166.8	341.5
	1	165.8	329.6
	5	166.3	340.1
	10	165.9	327



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