1. Supplementary Information

1.1. Thermogravimetric analysis

Table S1. Thermogravimetric analysis of composite filaments and the percentage residual weight.

Filament		Fil3D	FilText
		Residue (wt.%)	Residue (wt.%)
PLA		-	-
PLA + 0.25		0.43±0.21	0.20±0.25
PLA + 0.5		0.74±0.22	0.39±0.31
PLA + 1	EG	1.02±0.88	1.14±1.30
PLA + 2		1.44±0.37	2.34±1.74
PLA + 0.25		0.23±0.25	0.48±0.74
PLA + 0.5		0.73±0.16	0.36±0.58
PLA + 1	f-EG	1.13±1.17	1.15±0.26
PLA + 2		2.00±0.96	2.18±1.72
PLA + 0.25		0.26±0.14	0.21±0.85
PLA + 0.5		0.55±0.27	0.53±0.44
PLA + 1	[(f-EG)+Ag]	1.43±1.40	1.06±1.10
PLA + 2		2.04±0.85	1.02±0.22

1.2. Melt flow index

Table S2. MFI of filaments containing PLA and PLA reinforced with 0.5 and 2 wt.% of EG, f-EG and [(f-EG)+Ag].

Fil3D		MFI (g/10min)
PLA		14.50 ± 0.86
PLA+0.5	EG	13.22 ± 1.10
PLA+2		15.79 ± 0.89
PLA+0.5	f-EG	10.33 ± 0.73
PLA+2		14.26 ± 1.73
PLA+0.5	[(f-EG)+Ag]	10.15 ± 0.97
PLA+2		12.09 ± 0.85

1.3. Digital Microscopy Characterization

Digital microscopy images of the 3D-printed scaffolds at all the compositions of EG, f-EG, and [(f-EG)+Ag] are displayed in Figure S1-S4.
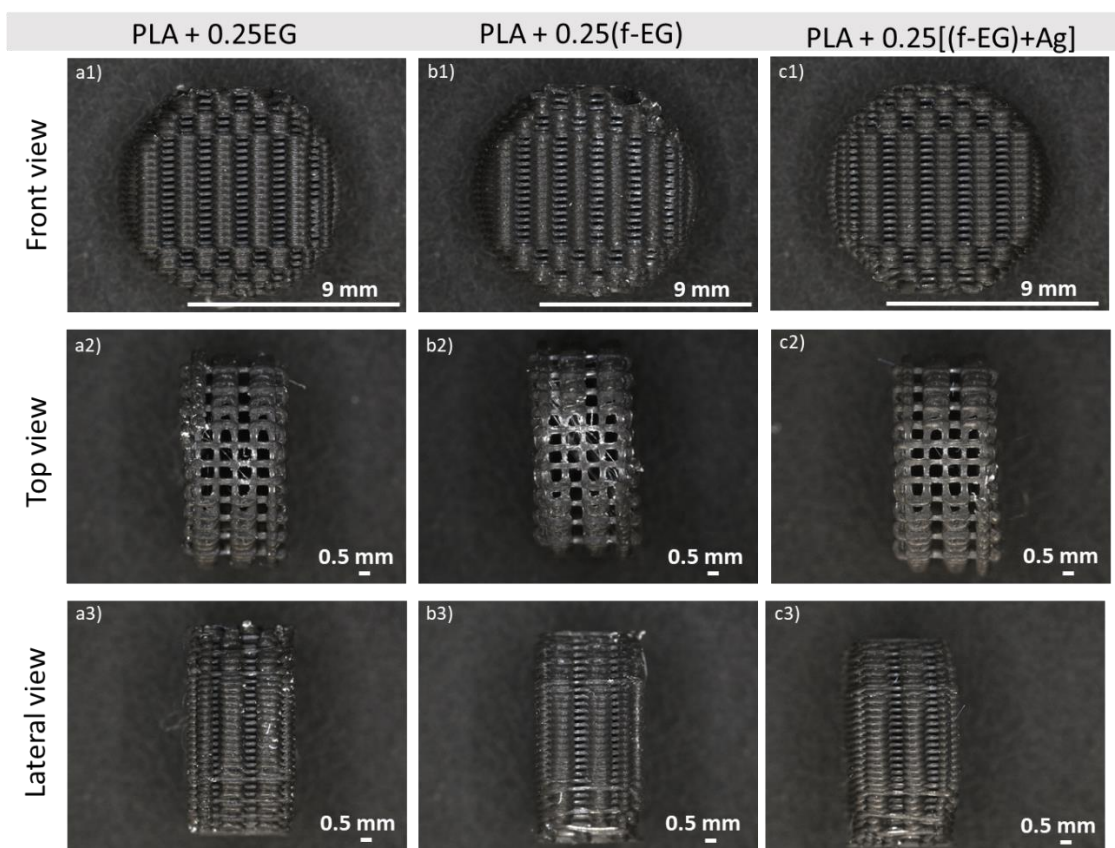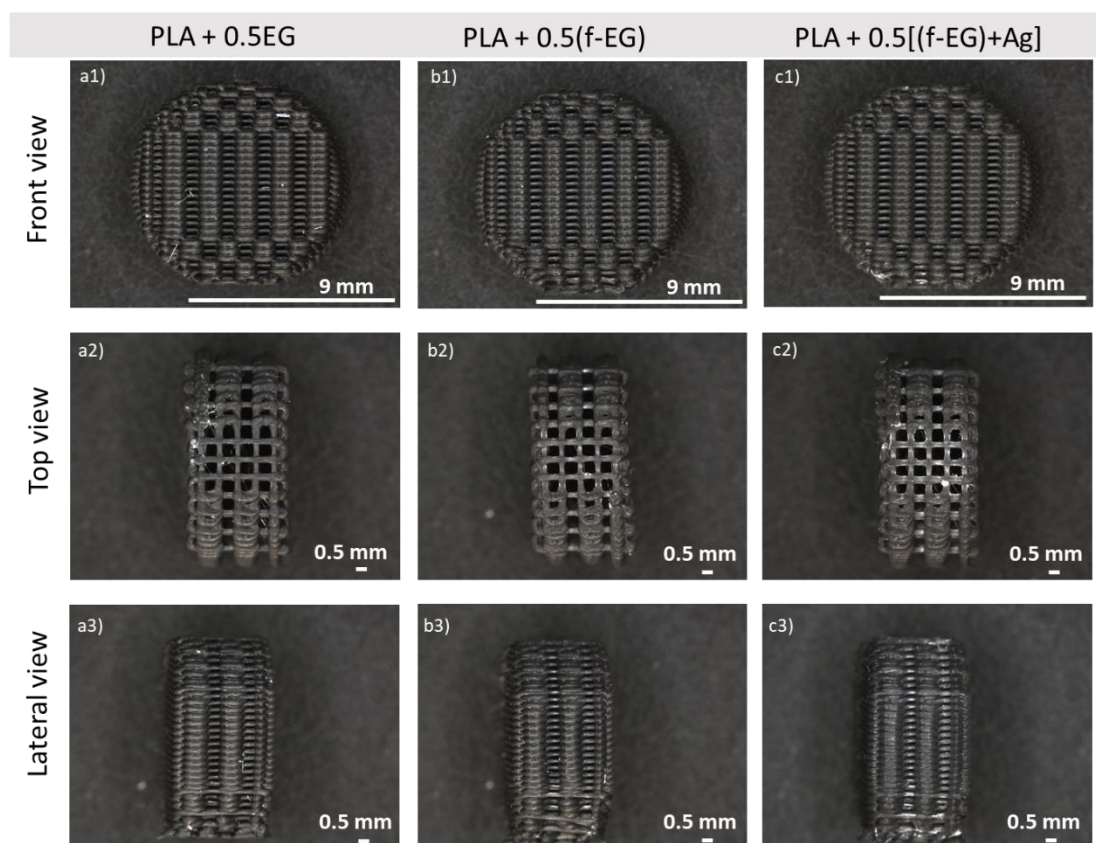
Figure S1. Digital microscopy images of 3D-printed scaffolds containing (**a1-a3**—PLA+0.25EG; **b1-b3**—PLA+0.25(f-EG) and **c1-c3**—PLA+0.25[(f-EG)+Ag]) from a front, top, and side perspectives.

Figure S2. Digital microscopy images of 3D-printed scaffolds containing (**a1-a3**—PLA+0.5EG; **b1-b3**—PLA+0.5(f-EG) and **c1-c3**—PLA+0.5[(f-EG)+Ag]) from a front, top, and side perspectives.
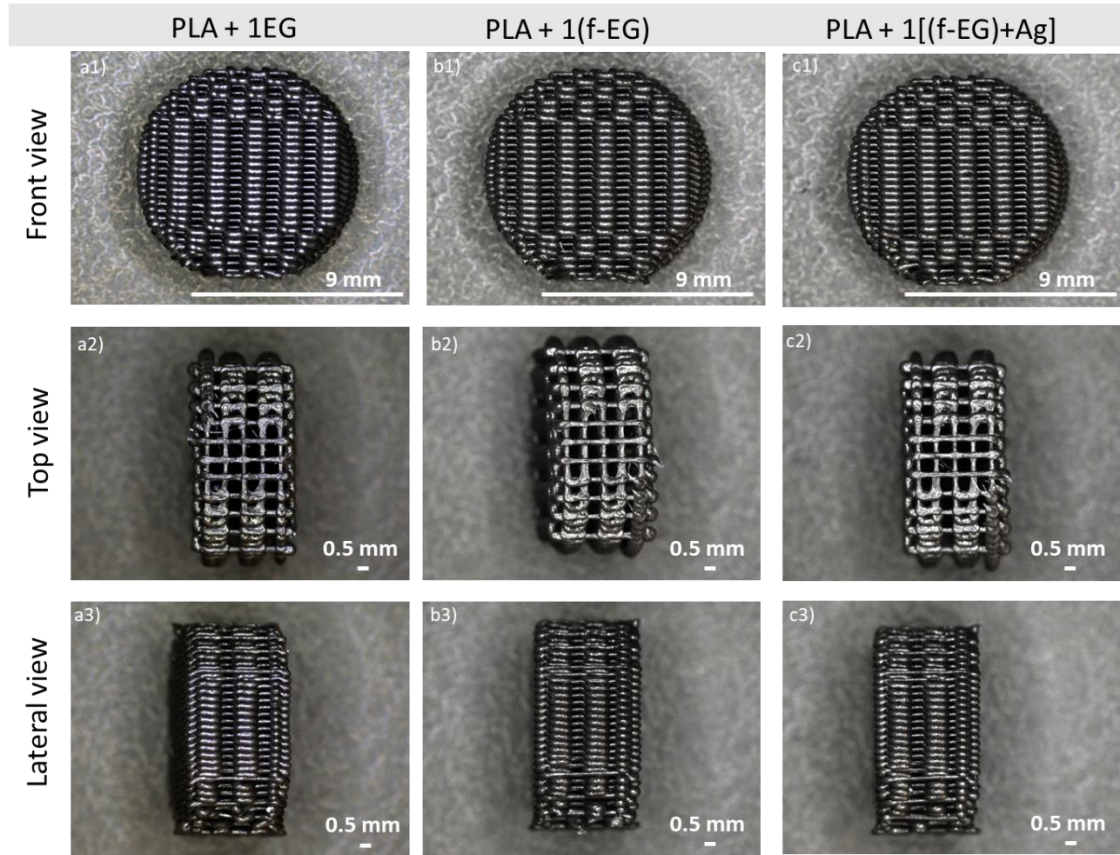

Figure S3. Digital microscopy images of 3D-printed scaffolds containing (**a1-a3**—PLA+1EG; **b1-b3**—PLA+1(f-EG) and **c1-c3**—PLA+1[(f-EG)+Ag]) from a front, top, and side perspectives.
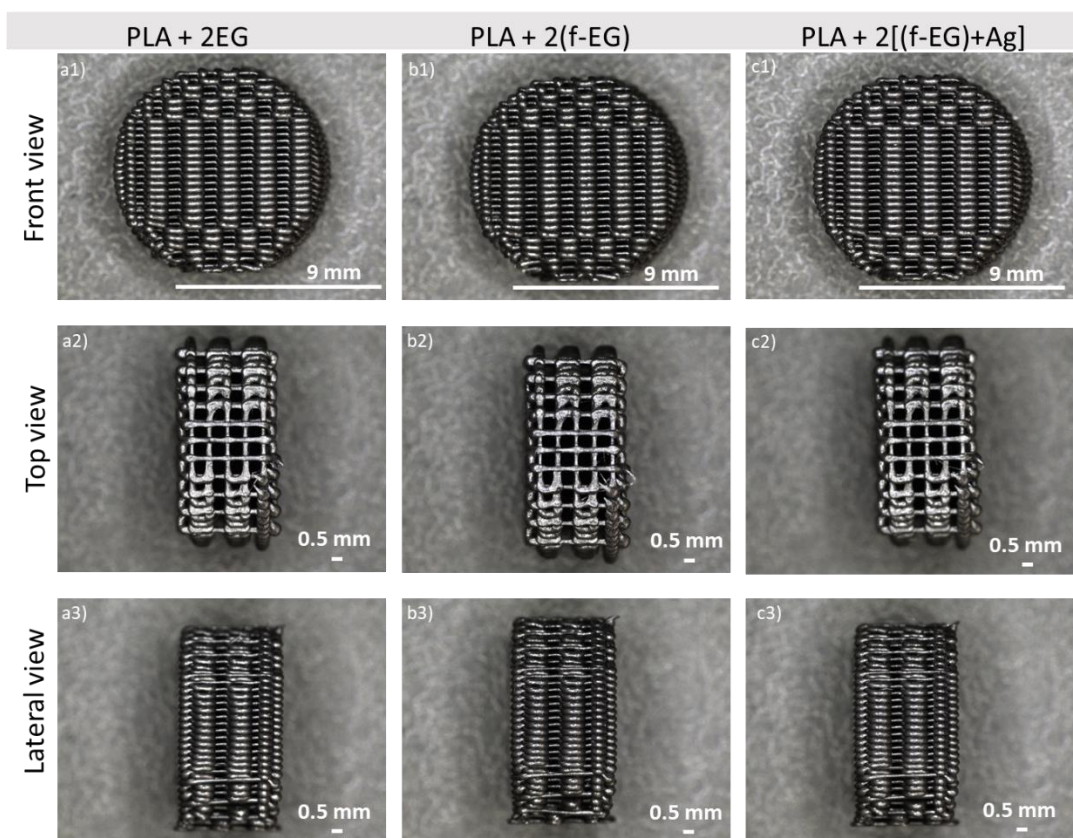
Figure S4. Digital microscopy images of 3D-printed scaffolds containing: **a1-a3**—PLA+2EG; **b1-b3**—PLA+2(f-EG) and **c1-c3**—PLA+2[(f-EG)+Ag], from a front, top, and side perspectives.

1.4. Micro Computed Tomography Characterization

Micro-CT cross-section images of the 3D-printed scaffolds containing 0.25, 0.5 and 1 wt.% of EG, f-EG and[(f-EG)+Ag] are displayed in Figure S5.
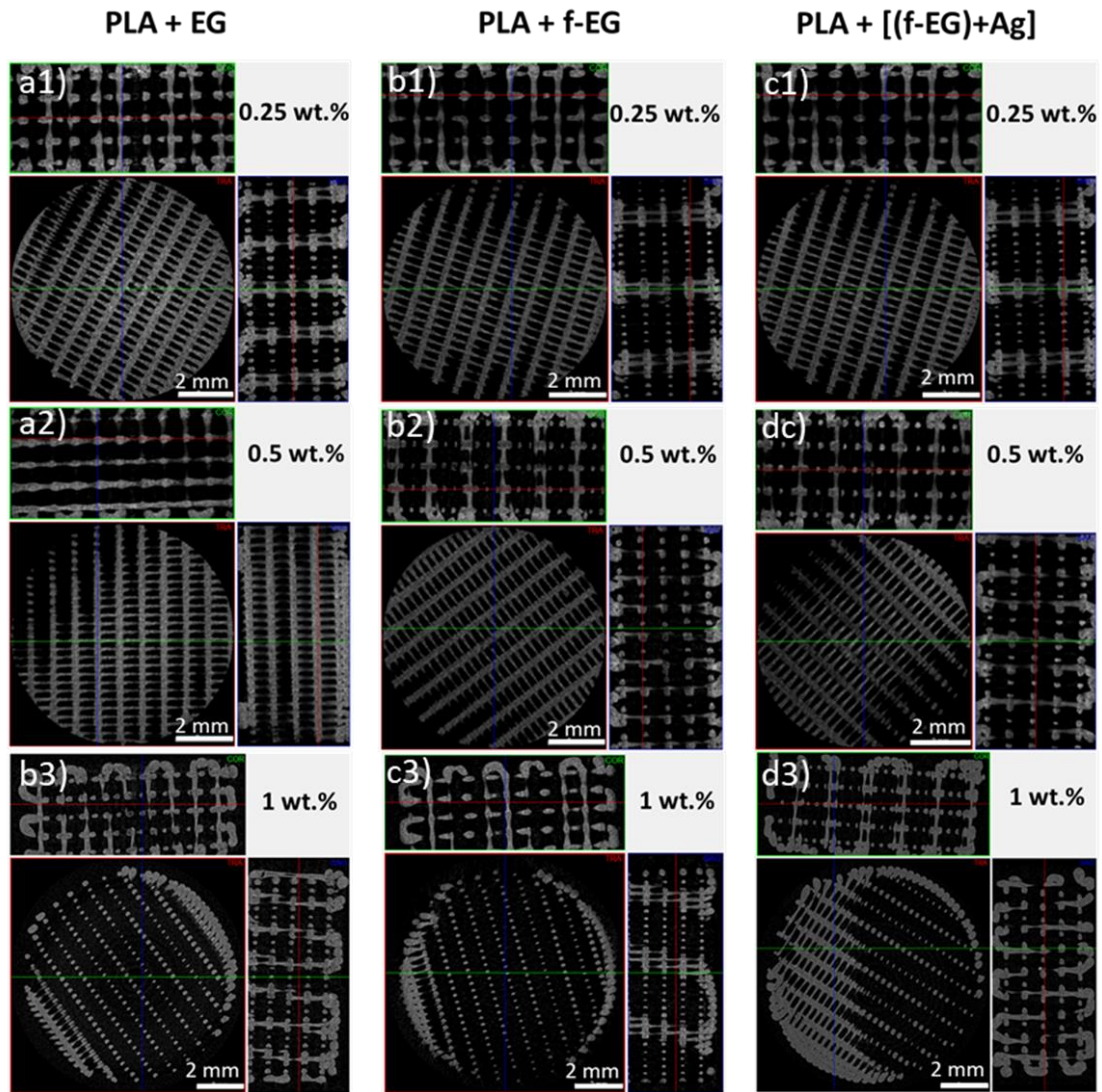
Figure S5. Representative micro-CT cross-sections images of the 3D-printed scaffolds containing PLA reinforced with 0.25, 0.5, 1 wt.% of EG, (f-EG) and [(f-EG)+Ag].

Table S3. Mean porosity, pore size, and filament thickness of 3D-printed scaffolds containing composites of EG, f-EG, and 0.25 and 1wt.% of [(f-EG)+Ag], calculated from the micro-CT data.

3D-Printed Scaffold		Mean Porosity (%)	Mean filament thickness (μm)	Mean pore size (μm)
PLA		66.8 ± 1.5	240 ± 3	484 ± 4
PLA+0.25		69.2 ± 0.8	248 ± 17	494 ± 2
PLA+0.5	EG	70.2 ± 2.9	233 ± 5	515 ± 25
PLA+1		69.68 ± 0.9	235 ± 9	492 ± 29
PLA+2		70.29 ± 2.5	228 ± 16	486 ± 44

PLA+0.25		75.41 ± 1.5	212 ± 7	539 ± 11
PLA+0.5	f-EG	73.38 ± 4.3	218 ± 14	517 ± 29
PLA+1		68.73 ± 0.9	249 ± 12	485 ± 2
PLA+2		70.4 ± 1.1	235 ± 10	496 ± 20
PLA+0.25	[(f-EG)+Ag]	70.5 ± 1.4	234 ± 13	508 ± 10
PLA+1		70.8 ± 3.3	271 ± 7	530 ± 46

1.5. Scanning Electron Microscopy Characterization

Micrografs of 3D-printed scaffolds reinforced with 1 wt.% EG, (f-EG) and [(f-EG)+Ag] are displayed in Figure S6.
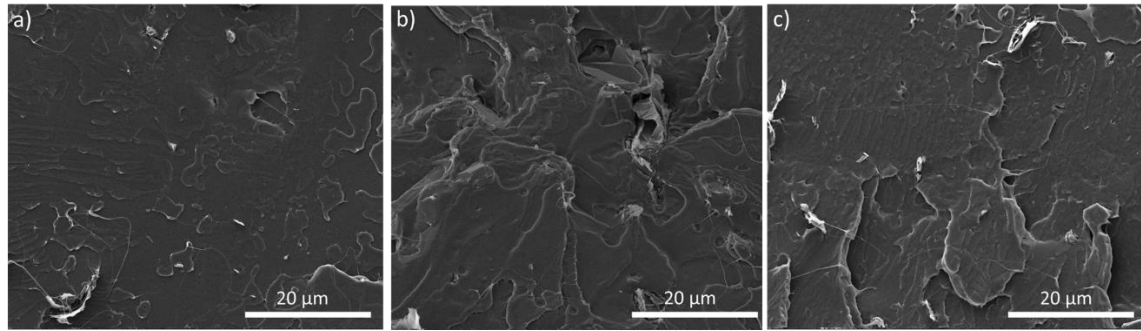

Figure S6. SEM images of 3D-printed scaffolds: **a1**—PLA+1EG; **b**— PLA+1(f-EG) and **c**— PLA+1 [(f-EG)+Ag].

1.6. Compression test of 3D-printed scaffolds

Scaffold stress-strain curve of the 3D-printed scaffolds containing 0.25, 0.5, 1 and 2 wt.% of EG, f-EG and[(f-EG)+Ag] are displayed in Figure S7.
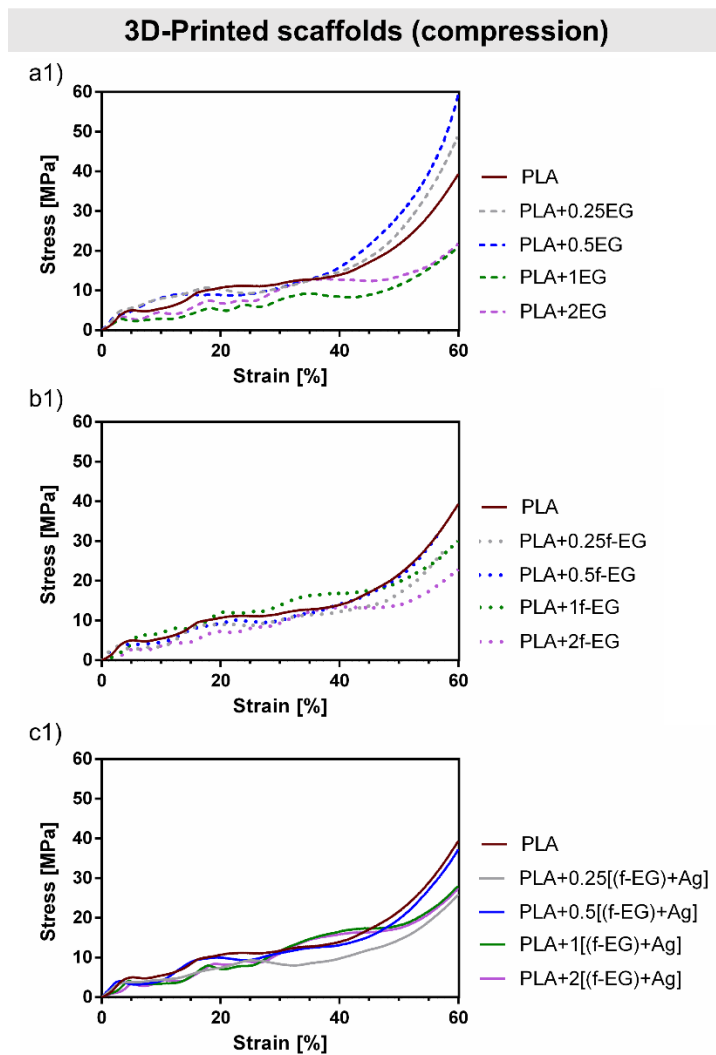
Figure S7. Compressive tests of 3D-printed scaffolds containing PLA and **a1**— EG, **b1**— f-EG and **c1**— [(f-EG)+Ag].