Supporting Information to:

Enhanced Thermal Management of Mats and Yarns from Polystyrene Fibers Through Incorporation of Exfoliated Graphite

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This Supporting Information include:

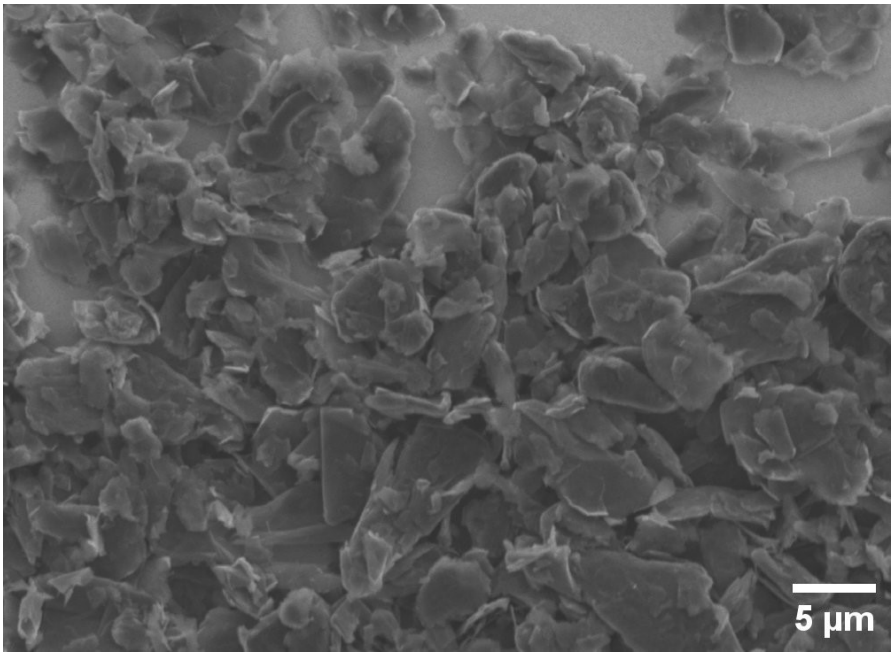

Figure S1. The representative image of exfoliated graphite (EG) flakes.

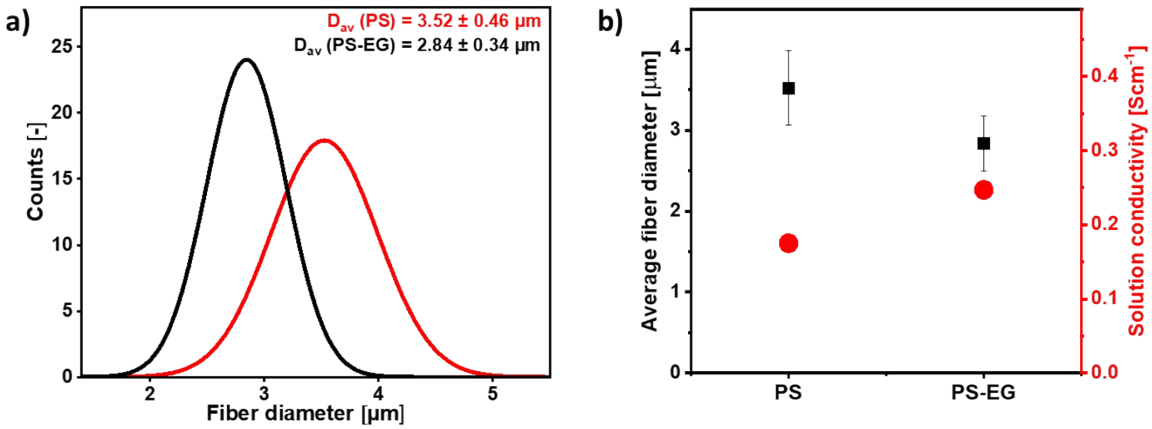

Figure S2. a) Histograms with distribution curves representing the fiber diameters of PS and PS-EG in mats, and b) the average fiber diameter of PS and PS-EG fibers vs. the conductivity of the solution for electrospinning.

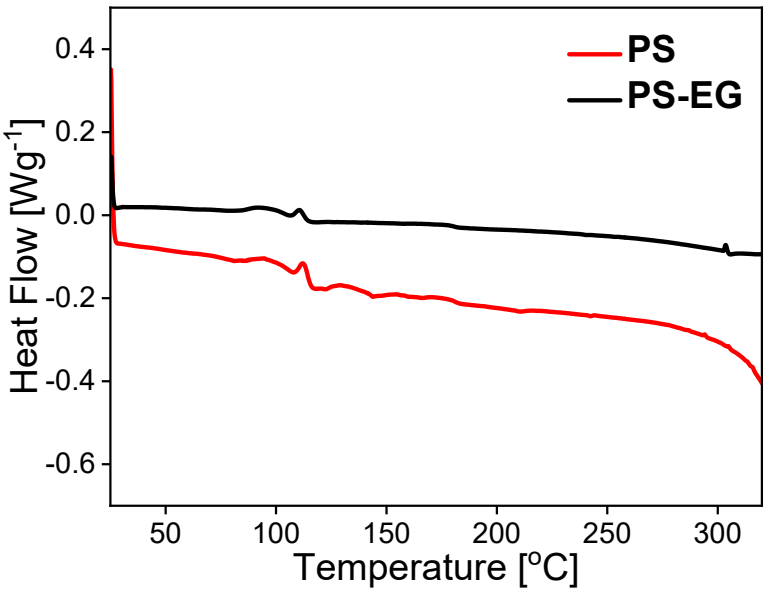

Figure S3. DSC diagram of PS, PS-EG mat, representing no melting peak under 25°C to 325°C temperature scan range.

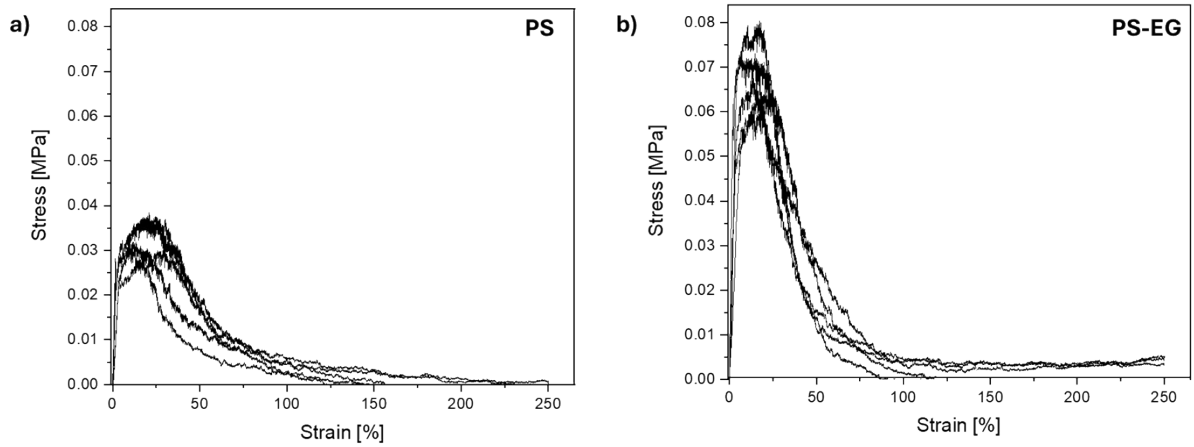

Figure S4. Stress vs. strain curves of electrospun randomly oriented fibers mats: a) PS, and b) PS-EG.

Table S1. The mechanical properties obtained from stress-strain curves of electrospun mats.

	PS	**PS-EG**
Maximum stress (MPa)	0.03 ± 0.01	0.07 ± 0.01
Strain at max. stress (%)	17.41 ± 10.20	15.75 ± 5.51
Toughness ($MJ \cdot m^{-3}$)	1.73 ± 0.31	2.93 ± 0.52

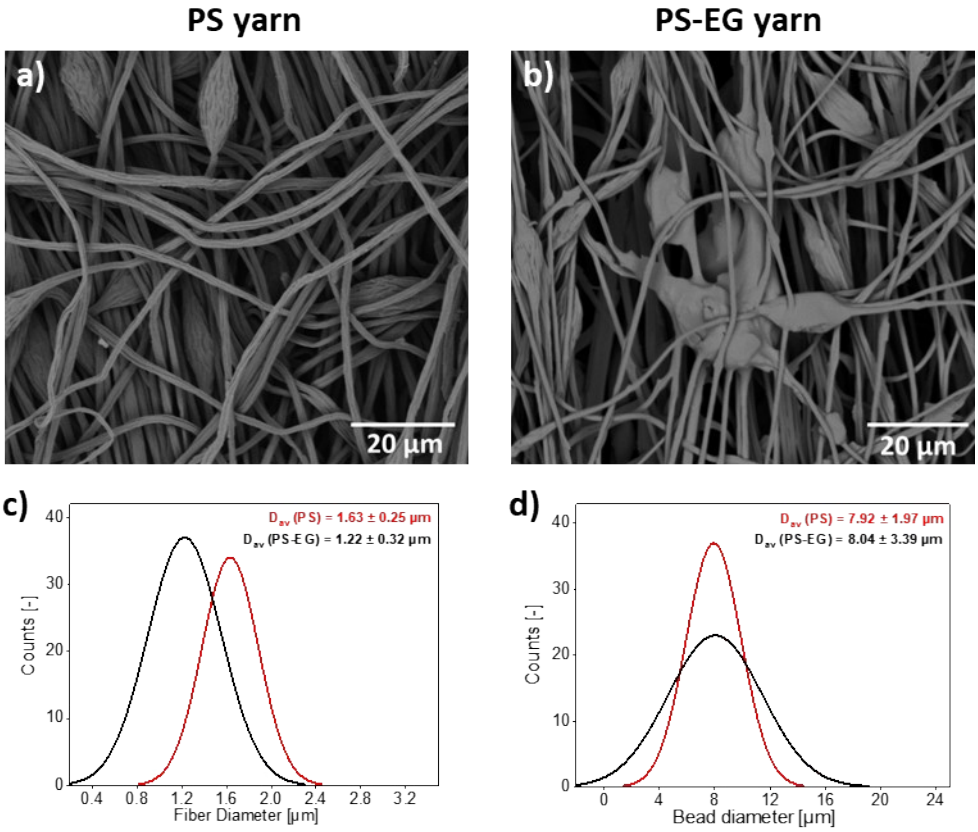

Figure S5. SEM micrographs representing the surface morphology of: a) PS and b) PS-EG fibers in yarns. Histograms with distribution curves representing the distribution of: c) fiber diameters and d) bead diameters of PS and PS-EG fibers in yarns.

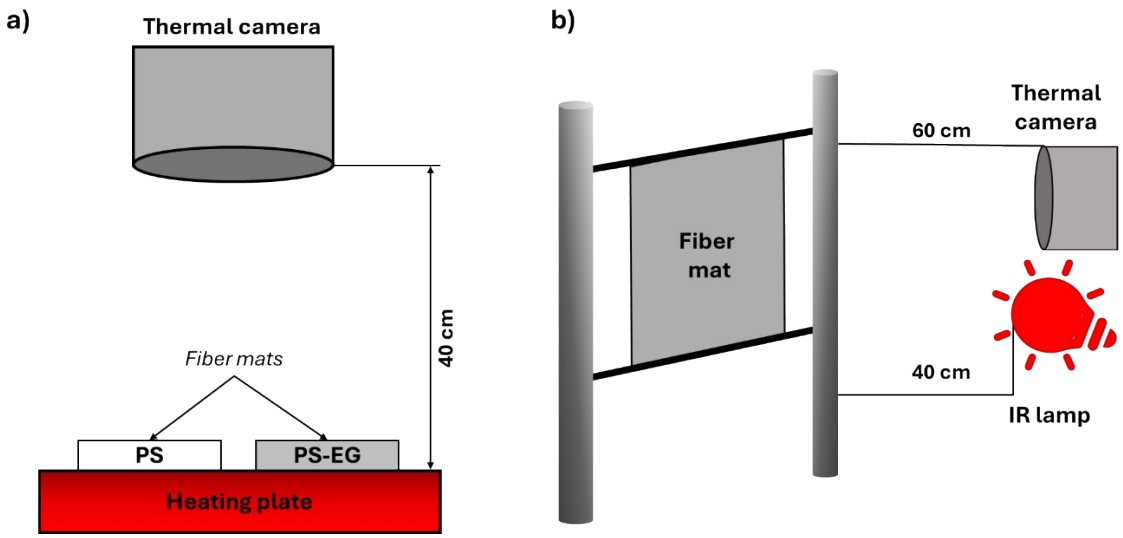

Figure S6. The experimental setup for heating the mats on a) the heating plate, and b) by infrared radiation.