Fabricating Fibers of a Porous-Polystyrene Shell and Particle-Loaded Core

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Supporting Information

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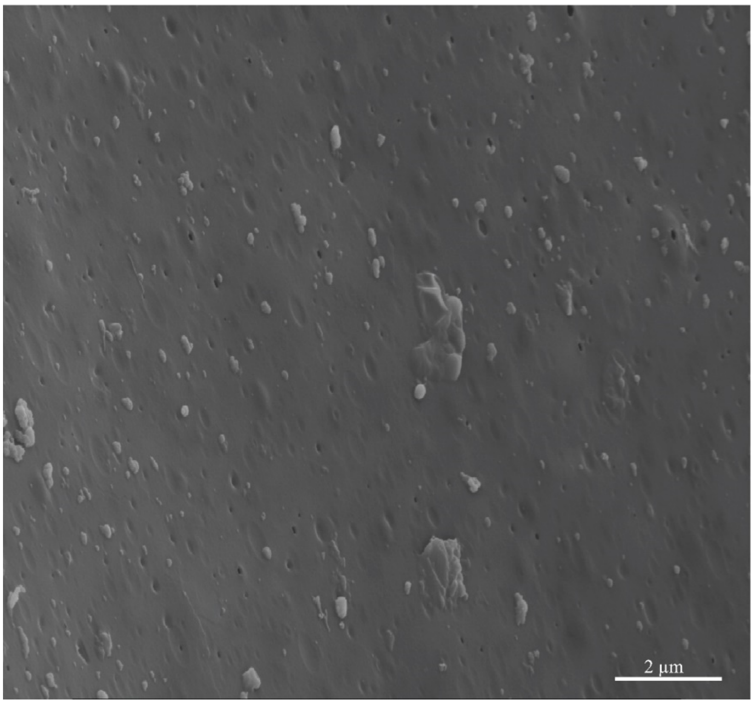

Figure S1. Enlarged view of Figure 3(e2) 35 wt% PS_{p-LM} and 5 wt% PEG in xylene for better a view of the pores on the surface area.

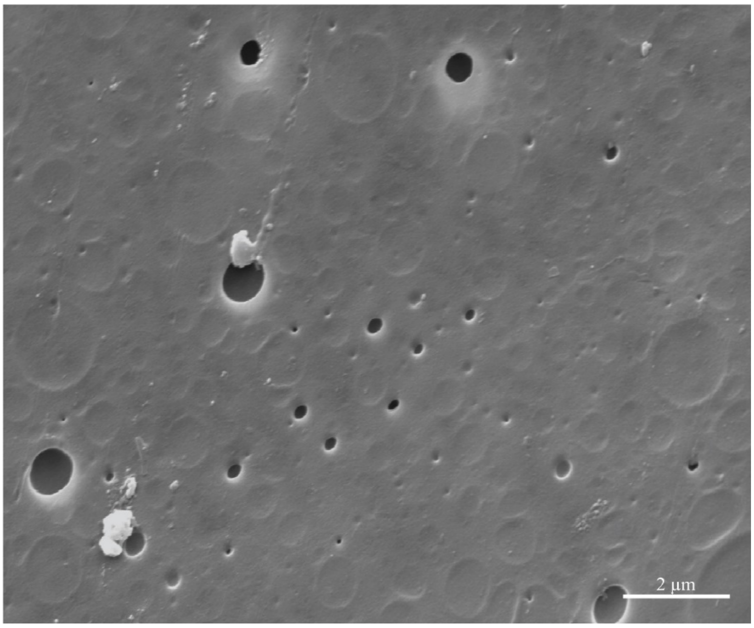

Figure S2. Enlarged view of Figure 3(f2) 35 wt% PS_{p-LM} and 10 wt% PEG in xylene for better a view of the pores on the surface area.

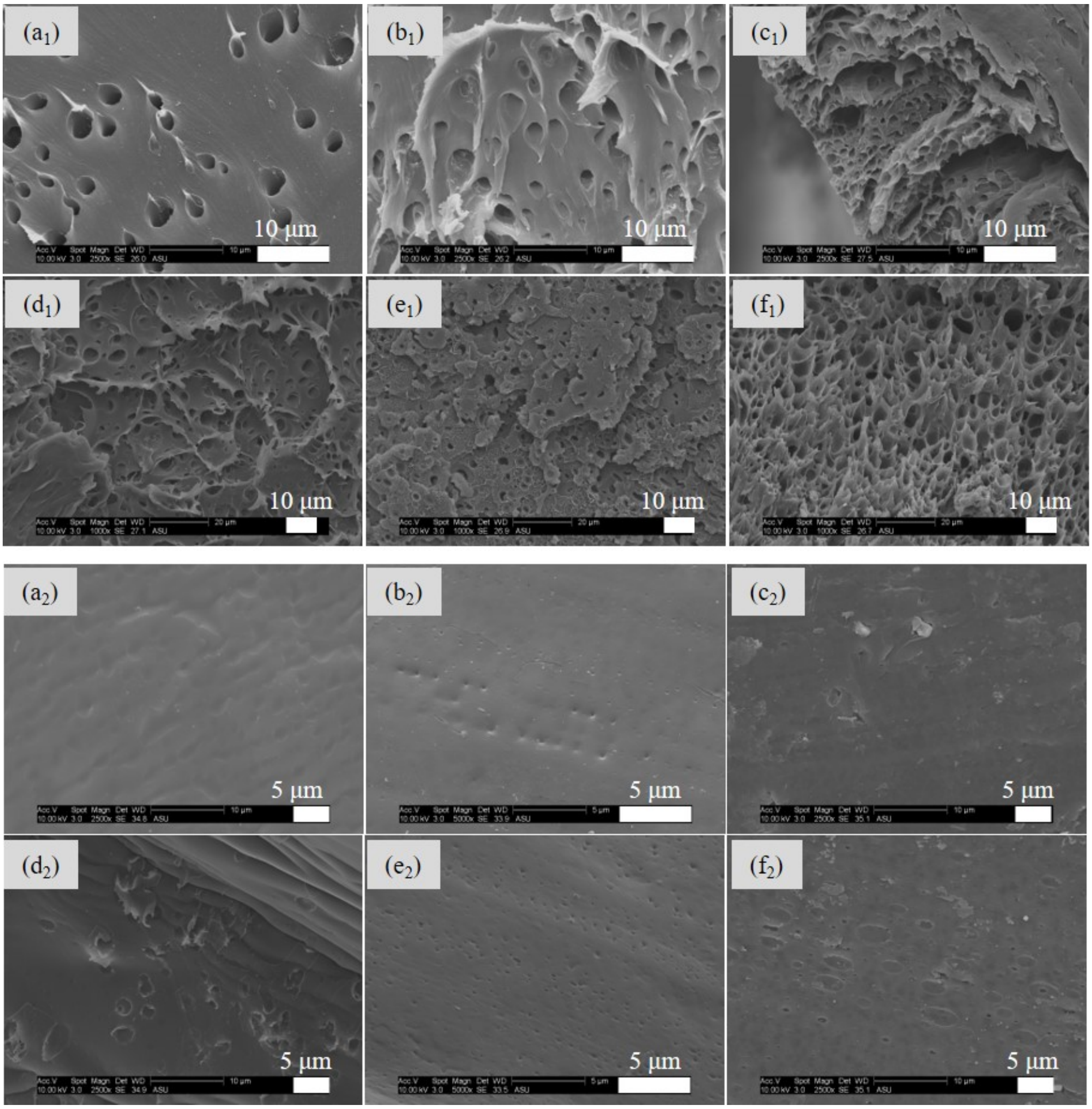

Figure S3. Polyethylene glycol(PEG)/polystyrene (PSLM) of (a) 1 wt%, (b) 2 wt%, (c) 3 wt%, (d) 4 wt%, (e)5 wt%, and, (f) 10 wt% PEG in PSLM immersed in water flow to dissolve PEG for pore generation. a1-f1 demonstrate cross-section areas, and a2-f2 demonstrate surface areas

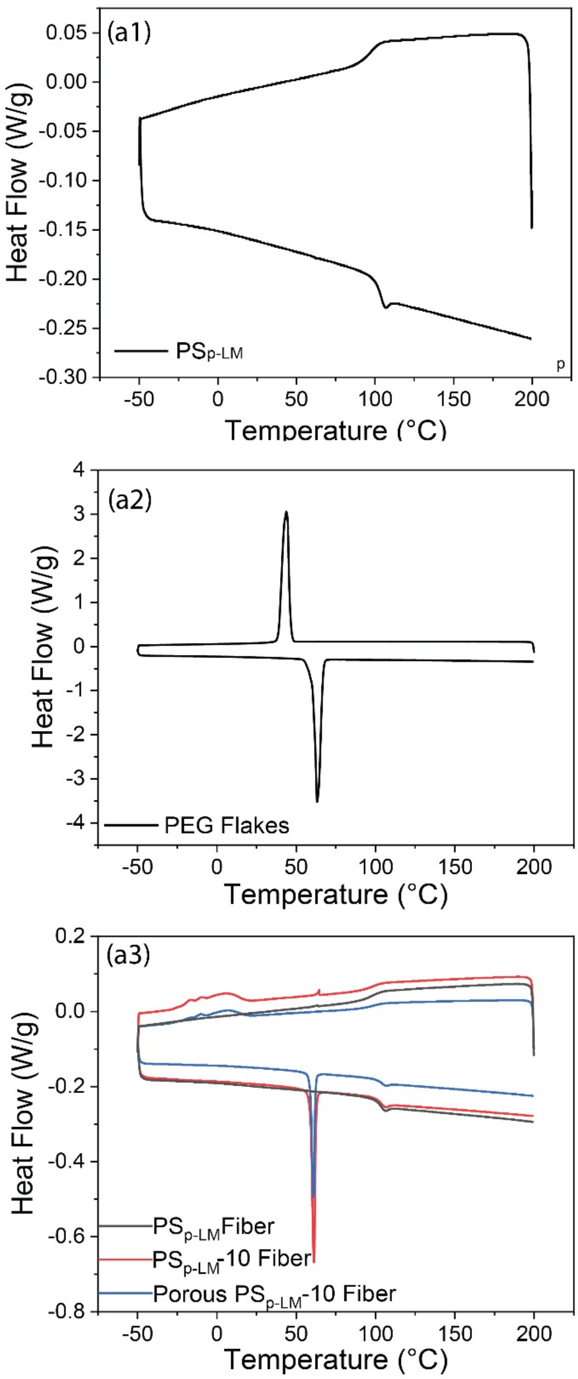

Figure S4. DSC curves for (a1) as- purchased $PS_{p\text{-}LM}$ (a2) as-purchased PEG flakes (a3) as-spun fibers of $PS_{p\text{-}LM}$, $PS_{p\text{-}LM}$-10, and porous $PS_{p\text{-}LM}$-10.

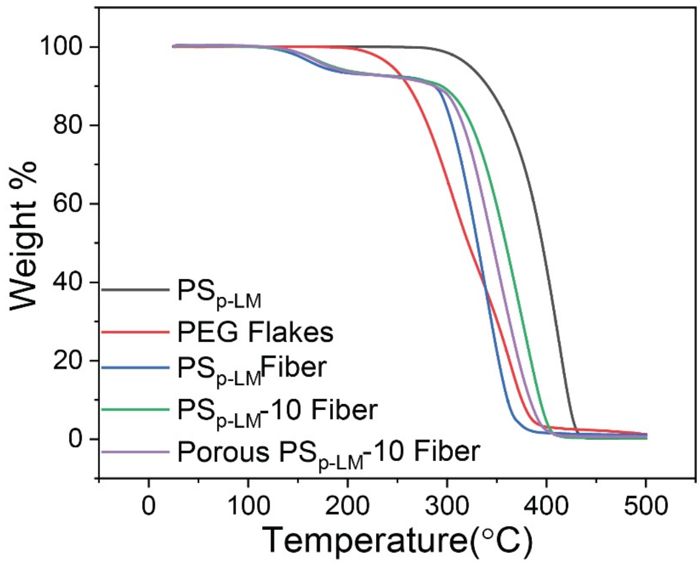

Figure S5. TGA curves of $PS_{p\text{-}LM}$ and PEG flakes as purchased and as-spun fibers of $PS_{p\text{-}LM}$, $PS_{p\text{-}LM}$-10, and porous $PS_{p\text{-}LM}$-10

Table S1. Mechanical properties for obtained and fabricated fibers at varying PEG concentration

	Solvent of DMF	
Fiber	**Modulus (MPa)**	**Strength (MPa)**
$PS_{p\text{-}LM}$ - 0	105.278	0.42
$PS_{p\text{-}LM}$ – 1	147.69	0.461
$PS_{p\text{-}LM}$ – 2	159.728	0.5799
$PS_{p\text{-}LM}$ – 3	134.269	0.842
$PS_{p\text{-}LM}$ – 4	159.331	1.091
$PS_{p\text{-}LM}$ – 5	166.123	1.305
$PS_{p\text{-}LM}$ - 10	122.769	1.395
$PS_{p\text{-}HM}$ – 10	110.953	1.563

Tensile test of the shell fiber made of 35 wt% $PS_{p\text{-}LM}$/ DMF/ PEG of (a) 1 wt%, (b) 2 wt%, (c) 3 wt%, (d) 4 wt%, (e)5 wt%, and, (f) 10 wt%, 10mm in length and 1.088 mm in diameter at a constant linear rate of 10 μm. The table above gives the elastic modulus and tensile strength of the fiber.