

Electronic Supplementary Information (ESI)

Superhydrophobic fluorinated POSS-PVDF-HFP nanocomposite coating on glass by electrospinning

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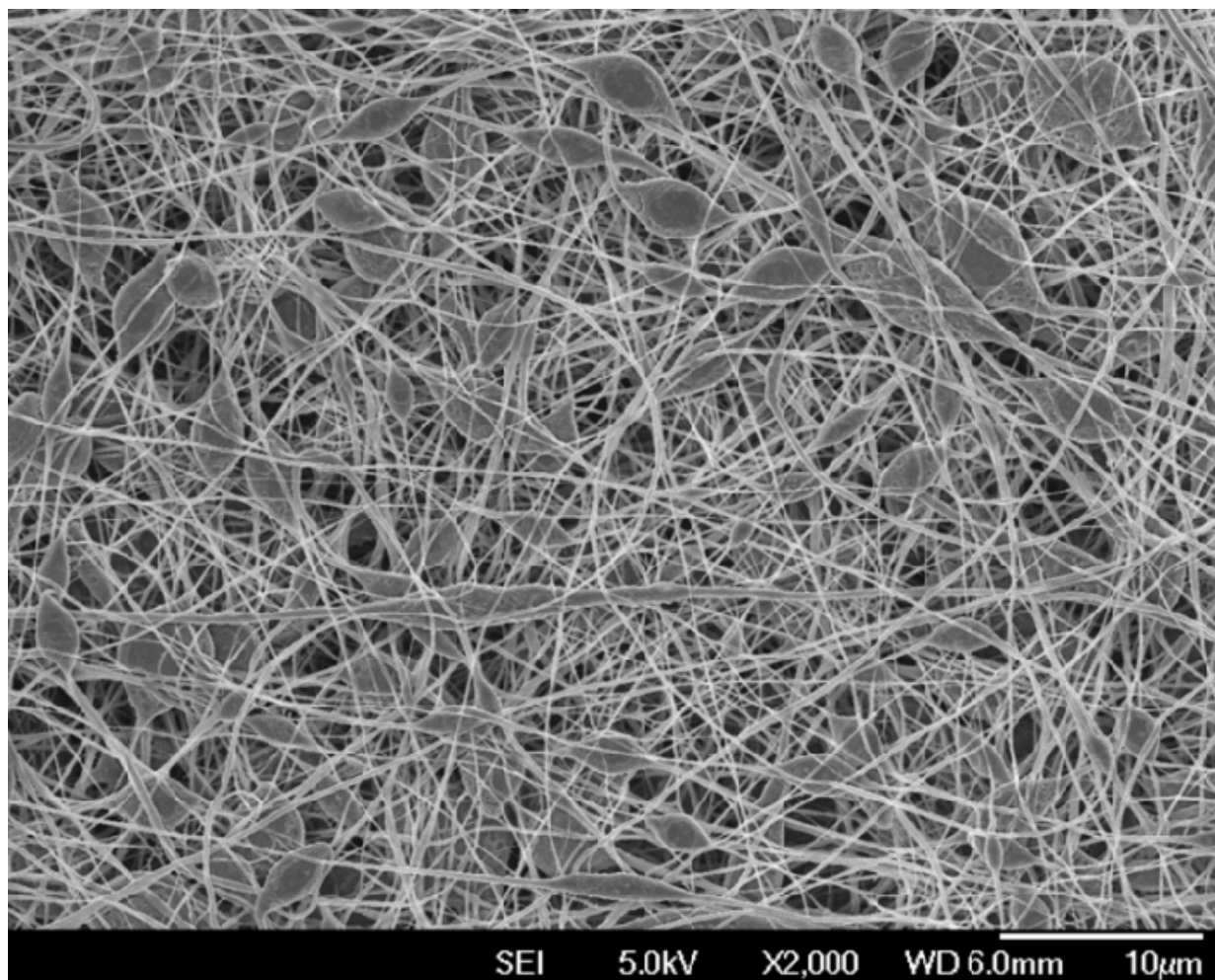
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Electronic Supplementary Information (ESI) 1



ES1: SEM Image of 20 wt. % FPSi8 fluoroPOSS in PVDF-HFP showing the formation of beaded nanofibers.

Electronic Supplementary Information (ESI) 2

^1H , ^{13}C NMR, ^{29}Si nuclear magnetic resonance (NMR) spectra were recorded on a Bruker DRX 400 MHz spectrometer in CDCl_3 at room temperature. ^{19}F NMR spectra were recorded on an AC-300 MHz spectrometer in CDCl_3 at room temperature. Spectrometer operating frequencies were 400.13 MHz (^1H), 100.61 MHz (^{13}C), 79.46 MHz (^{29}Si) and 282.38 MHz (^{19}F). Tetramethylsilane was used as an internal standard for ^1H , ^{13}C , and ^{29}Si NMR spectra. Trifluoroacetic acid was used as an external standard for ^{19}F NMR spectra.

FP8: mp: 106–108 °C. Yield: 91%. δ_{H} (400 MHz; CDCl_3 ; Me_4Si , 45 °C), 2.74 (m, 16H), 2.67 (t, 16H), 2.35 (m, 16H), 1.07 (t, 16H). δ_{C} (400 MHz; CDCl_3 ; Me_4Si , 45 °C) 122.2–105.4 (m), 32.32, 27.12, 22.66, 18.55, -0.098. δ_{Si} (400 MHz; CDCl_3 ; Me_4Si , 45 °C) -68.54. δ_{F} (300 MHz; CDCl_3 ; Me_4Si , 45 °C) -5.05, -38.16, -45.64, -45.83, -46.66, -47.24, -50.07. MS (MALDITOF, m/z) $[\text{M} + \text{Ag}]^+$: 4582.79. Found: C, 25.81; H, 1.87. Calc. for $\text{C}_96\text{H}_{64}\text{F}_{136}\text{O}_{12}\text{S}_8\text{Si}_8$: C, 25.77; H, 1.44%.

FPSi8: mp: 69–71 °C. Yield: 88%. δ_{H} (400 MHz; CDCl_3 ; Me_4Si) 2.73 (m, 16H), 2.63 (t, 16H), 2.35 (m, 16H), 0.99 (t, 16H), 0.20 (s, 48H). δ_{C} (400 MHz; CDCl_3 ; Me_4Si) 122.2–105.5 (m), 32.32, 27.12, 22.66, 18.55, -0.10. δ_{Si} (400 MHz; CDCl_3 ; Me_4Si) 11.79, -108.87. δ_{F} (300 MHz; CDCl_3 ; Me_4Si) -5.01, -38.53, -45.92, -46.11, -46.92, -47.52, -50.33. MS (MALDI-TOF, m/z) $[\text{M} + \text{Ag}]^+$: 5175.65. Found: C, 26.70; H, 2.55. Calc. For $\text{C}_{112}\text{H}_{112}\text{F}_{136}\text{O}_{20}\text{S}_8\text{Si}_{16}$: C, 26.54; H, 2.23%.