

Editorial Review: Melt Electrospun Nanofibers for Applications in Filtration

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Abstract

We have produced some nanofibers from melts by utilizing recently developed melt electrospinning facilities in our laboratory. One important aspect of nanofibers from melt is that dissolution of polymers in organic solvents and their removal/ recycling are not required. Thus, it is important to tailor the properties of melt-electrospun nanofibers (100 nm or less) for their commercial applications. To this end, the continuous production of nanofibers directly from polymer melts such as PCL PLA, PP, PET and their nanocomposites via multiple nozzle systems has been explored. This research would greatly lessen the potential environmental hazard of nanoscale materials and processing. The project also provides fundamental understanding of the structure- property relationships of melt electrospun nanofiber using PCL as a model polymer.

Keywords. Nanofiber, electrospinning, nanocomposites, PCL

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