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Hierarchical Structure on Nanofiber via Combination of Electrospinning and Polymer Crystallization XI CHEN, Drexel University, BING-BING WANG, CHRISTOPHER LI, Drexel University — We report the formation of hierarchically ordered polymer nanofiber structures, named as nano fiber shish kebabs (NFSKs), by combining electrospinning and controlled polymer crystallization methods. We have proved that it is a general method that can be applied to a number of polymers, both homopolymer and block copolymers.Electrospun poly caprolactone (PCL) nanofibers serve as the shish and a secondary polymer (PCL homopolymer or PCL-related block copolymers) is decorated on the nanofiber in the form of single crystal lamellae by either an incubation (slow crystallization), or a solvent evaporation (fast crystallization) method. This hierarchical architecture is found potential application as a platform for incorporating inorganic nanoparticles into nanoscale polymer fibers in an ordered fashion.

Xi Chen
Drexel University

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