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Special Issue Reprint

Recent Development of Electrospinning for Drug Delivery

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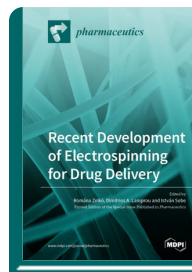
Romána Zelkó

Dimitrios A. Lamprou

István Sebe

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Several promising techniques have been developed to overcome the poor solubility and/or membrane permeability properties of new drug candidates, including different fiber formation methods. Electrospinning is one of the most commonly used spinning techniques for fiber formation, induced by the high voltage applied to the drug-loaded solution. With modifying the characteristics of the solution and the spinning parameters, the functionality-related properties of the formulated fibers can be finely tuned. The fiber properties (i.e., high specific surface area, porosity, and the possibility of controlling the crystalline–amorphous phase transitions of the loaded drugs) enable the improved rate and extent of solubility, causing a rapid onset of absorption. However, the enhanced molecular mobility of the amorphous drugs embedded into the fibers is also responsible for their physical–chemical instability. This Special Issue will address new developments in the area of electrospun nanofibers for drug delivery and wound healing applications, covering recent advantages and future directions in electrospun fiber formulations and scalability. Moreover, it serves to highlight and capture the contemporary progress in electrospinning techniques, with particular attention to the industrial feasibility of developing pharmaceutical dosage forms. All aspects of small molecule or biologics-loaded fibrous dosage forms, focusing on the processability, structures and functions, and stability issues, are included.



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