



Electrospinning and Nanotextile

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | Manufacturing and Characterisation of Electrospun Nanostructured Mats from Poly(lactic acid) | Electrospinning is a simple and relatively inexpensive method of producing nanofibres by solidification of a polymer solution, stretched by an electric field. When viscosity and surface tension of a polymer solution are appropriately tuned with the applied electrical forces, the break-up of the polymer drop is avoided and a stable jet of micro/nanofibres is formed. The primary requirement of the process is to obtain nanofibres in continuous form with fine diameters and minimum variations. Secondly, the fibre network has to have minimum area occupied by beads to enhance the network's porosity and strength. Although apparently, electrospinning appears to be easy and straightforward, it is a complex structure-forming process of a liquid strand and depends on many factors. It is vital to produce electrospun nanotextiles in a controlled manner so that the process gives high quality fibres with precise fibre morphology. In this doctoral research, the primary objective has been to carry out a systematic investigation of the effects of varying manufacturing parameters on the electrospinning of nanotextiles and analyse them to develop a fundamental understanding for facilitating the usage of the process. | Format:...



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