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# A review on chitin dissolution as preparation for electrospinning application

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**Source** INTERNATIONAL JOURNAL OF BIOLOGICAL MACROMOLECULES  
Volume: 265 Part: 1  
DOI: 10.1016/j.ijbiomac.2024.130858

**Article Number** 130858

**Published** APR 2024

**Early Access** MAR 2024

**Document Type** Review

**Abstract** Electrospinning has been acknowledged as an efficient technique for the fabrication of continuous nanofibers from polymeric based materials such as polyvinyl alcohol (PVA), cellulose acetate (CA), chitin nanocrystals and others. These nanofibers exhibit chemical and mechanical stability, high porosity, functionality, high surface area and one-dimensional orientation which make it extremely beneficial in industrial application. In recent years, research on chitin - a biopolymer derived from crustacean and fungal cell wall - had gained interest due to its unique structural arrangement, excellent physical and chemical properties, in which make it biodegradable, non-toxic and biocompatible. Chitin has been widely utilized in various applications such as wound dressings,

drug delivery, tissue engineering, membranes, food packaging and others. However, chitin is insoluble in most solvents due to its highly crystalline structure. An appropriate solvent system is required for dissolving chitin to maximize its application and produce a fine and smooth electrospun nanofiber. This review focuses on the preparation of chitin polymer solution through dissolution process using different types of solvent system for electrospinning process. The effect of processing parameters also discussed by highlighting some representative examples. Finally, the perspectives are presented regarding the current application of electrospun chitin nanofibers in selected fields.

**Accession Number** WOS:001219249900001

**PubMed ID** 38490398

**ISSN** 0141-8130

**eISSN** 1879-0003

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