

Abstract Submitted
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Production of bi-component core-sheath nanofibers using Chitosan and Polyethylene oxide SATYAJEET OJHA, DERRICK STEVENS, LAURA CLARKE, RUSSELL GORGA, North Carolina State University, NANOMATERIALS GROUP COLLABORATION — There has been a renewed interest to develop fibers at nanometer scale due to the large number of potential biomedical uses such as tissue engineering, drug delivery and wound care applications. Chitosan is a naturally occurring polysaccharide obtained from crustaceans. Its antibacterial properties have been acknowledged. Our effort has been to develop core-sheath nanofibers using chitosan, and poly (ethylene oxide) (PEO), another bio-compatible polymer. The critical properties and parameters such as feed rate, electric field, distance between needle and grounded collector and their consequences on morphology are discussed. Chitosan/PEO solutions have been characterized by surface tension, molecular weight and viscosity which are crucial factors to achieve core-sheath geometry. Tensile and conductive properties of these core-sheath nanofibers have been investigated which could be important for them to be used in wound scaffolds and cell-culture respectively.

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