

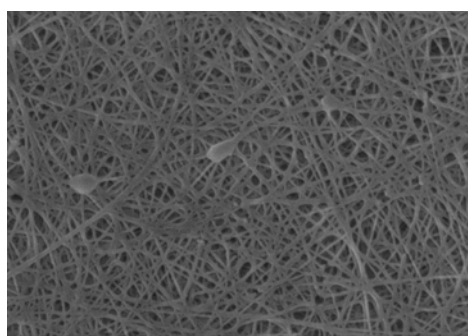
Morphologic study of poly(vinyl alcohol) nanocomposites containing silver particles via electrospinning.

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The objective of this work was to study the morphologies of nanocomposites based on PVA loaded with particles of silver nitrate (AgNO_3) prepared by electrospinning. These materials have great potential to be used in the plastics industry, because as particles of silver have bactericidal properties, the resulting composites prepared by electrospinning have bactericidal properties. In this work were prepared and electrospun solutions containing various concentrations of silver nitrate. The electrical field was varied from 10 to 24 KV, using injection rates from 0.02 mL/h to 0.7 mL/h, depending on the concentration of silver nitrate. Specimens for microscopic examination were obtained at the center of the jet cone. The nanofibers were characterized by means of scanning electron microscope (SEM). SEM micrographs showed that the fibers have many beads and their diameters range between about 100 and 600 nm, with low polydispersity in length.



SEM micrograph of the as-spun PVA- AgNO_3 nanofiber
(24 KV and 0.02 mL/h).

Keywords: electrospinning, silver nitrate, nanofiber, Poly(vinyl alcohol), nanocomposites.

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[1] W. J. Jin, H. J. Jeon, J. H. Kim, Ji H. Youk, *Synthetic Metals*, **157**, 454 (2007).

[2] K. H. Hong, J. L. Park, I. H. Sul, J. H. Youk, T. J. Kang, *Journal of Polymer Science: Part B: Polymer Physics*, **44**, 2468, (2006).

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