SYNTHESIS AND CHARACTERIZATION OF POLY EPSILON CAPROLACTONE-GOLD NANOFIBERS

Jose Hafid Roque Ruiz\textsuperscript{1}, Miriam Denisse Rivera-Castillo\textsuperscript{1}, León Francisco Espinosa-Cristóbal\textsuperscript{1}, Alejandro Donohue-Cornejo\textsuperscript{1} and Simón Yobanny Reyes-López\textsuperscript{1}.

\textsuperscript{1}Instituto de Ciencias Biomédicas, Universidad Autónoma de Ciudad Juárez, Envolvente del PRONAF y Estocolmo s/n, Ciudad Juárez, Chihuahua, México C.P. 32300.

PCL/AuNPs fibers were successfully fabricated by electrospinning of PCL-AuNps acetone solution. The optical property of gold nanoparticles synthesized was observed by UV–visible absorption spectra. Morphology and structure of the Au-PCL hybrid nanofibers were characterized by scanning electron microscopy, scanning transmission electron microscopy and Fourier transformed infrared spectroscopy. The results of investigations by UV–visible and dynamic light scattering confirmed the presence of gold nanoparticles with diameters less than 10 nm. The resulting PCL/AuNPs fibers have a smooth surface and uniform diameters. The AuNPs can be observed on the surface of the fibers with round shape, which mainly distributed from 30 to 180 nm in the nanofibers. The present approach to fabricating PCL/AuNPs nanofibers may be extended for producing other nanoparticle-containing composite nanofibrous materials.

Keywords: Gold nanoparticles, nanofibers, electrospun

References:

1. W E Teo and S Ramakrishna, A review on electrospinning design and nanofibre assemblies, Nanotechnology, 17 (2006), R89.

Presenting author’s email: simon.reyes@uacj.mx