

## Characterization of nano-structured Poly( $\epsilon$ -caprolactone) nonwoven mats via electrospinning

석수자<sup>1</sup>, 박수진<sup>2,1,\*</sup>

<sup>1</sup>한국화학연구원; <sup>2</sup>인하대학교

(sjpark@inha.ac.kr\*)

In this work, nano-structured biodegradable poly( $\epsilon$ -caprolactone) (PCL) fibers were prepared by electrospinning. Electrospun nanofibers with different compositions of PCL and tocopherol were obtained using methylene chloride (MC) as a solvent. The effect of processing parameters, such as charged voltage and PCL concentration, on the diameter of PCL fibers was investigated. The structure and morphology of the PCL fibers were investigated using scanning electron microscopy (SEM), differential scanning calorimetry, and wide-angle X-ray diffraction. SEM images showed that the fiber diameter and fiber morphology were depended on the PCL concentration. And the diameter was decreased with decreasing the PCL concentration or increasing the electrospinning voltage. The electrospun fibers obtained from PCL melt and solution provide a very large surface area per unit mass due to the nano-scale diameter of the PCL fibers.