

# Aluminum Oxide Nano-Rings Synthesized by Electrospinning Techniques

조준모<sup>1</sup>, 박주연<sup>1</sup>, 고성위<sup>2</sup>, 김돈<sup>1</sup>, 강용철<sup>1</sup>

<sup>1</sup>부경대학교 화학과, <sup>2</sup>부경대학교 기계시스템공학과

One or two-dimensional nanostructures such as nanowires or nanomats have been widely used as building blocks for nanoscale electronic devices. Nanofiber is one of sub-category of nanostructures, it is easy to make nano-sized fiber by electrospinning technique. Nanofiber has large surface area as compared with their volume, it could be widely applied to many areas easily. Electrospinning technique is easy to control their structures and morphology safely and cost-effectively.

We made nano-rings as a model of one dimensional nanostructures by electrospinning technique. To our knowledge, there were no reports on the preparation and investigation of alumina nano-rings by electrospinning technique.

In this study, aluminum oxide nano-rings were produced after electrospinning and calcination. The synthesized aluminum oxide nano-rings were characterized by scanning electron microscopy (SEM) to identify the morphology and the diameter of the ring, X-ray diffraction (XRD) to verify the crystallinity of the aluminum oxide, and X-ray photoelectron spectroscopy (XPS) for investigation of the chemical nature of the synthesized nano-rings.