

STUDY ON MANUFACTURE OF NANOFIBERS USING BIODEGRADABLE POLYESTER MATERIALS

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Medical biodegradable polyester materials are high value-added materials that can generate US\$ 300 million in the world market. Medical biodegradable polyester materials are easy to control the molecular weight and composition ratio and physical properties through physical and chemical modification. In this study, in order to produce functional polyester nanofibers with improved productivity and uniform diameter, poly lactic acid-co-glycolic acid (PLGA), medical biodegradable polyester materials, was electrospun to produce nanofibers established production technology. In order to produce PLGA nanofibers of uniform diameter, electrospinning conditions were established in consideration of variables such as solvent, concentration, viscosity, voltage, TCD etc. As the concentration of the spinning solution decreased, the diameter of the fibers became thinner, more pores were observed and uniform nanofibers could be produced at a concentration below 5% w/v. In addition, by applying multi nozzle to the electrospinning nozzle, productivity increased and manufacturing of nanofiber with improved water pressure resistance was able to be manufactured.

Biography

Lee Hee-dong is currently working at Korea Institute of Industrial Technology. He is engaged in R&D related to dyeing process automation, smart factory, smart wearable wear and low-energy eco-friendly dyeing. Especially, he is conducting various researches related to biomedical materials.

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