

ABSTRACT

Electrospinning is a system that can produce fiber by utilizing high-voltage electricity. One of the most important quantity related to electrospinning process is fiber diameter, the effect of fiber diameter during electrospinning process is a function of surface tension, flow rate, and electric current. However, control over fiber diameter remains a barrier in the electrospinning process. The control variable in determining fiber diameter is the voltage between the electrodes, but recent attempts have shown that the control variable is a constant electric current. The current control system in the electrospinning process has been carried out. To keep the electric current constant, a controller is applied to the program so that the value of the electric current will adjust to its setpoint value. The electric currents applied to the electrospinning process are 60 nA, 80 nA, 120 nA and 160 nA. Nanofibers that have been produced from the electrospinning process using a mixture of pvp and ethanol materials with a ratio of 20 wt% and 30 wt% and the results of these fibers will be characterized using an optical microscope with 4x and 10x magnification. With increasing electric current the diameter of the resulting fiber will decrease.

Keywords: *Electric current control, electrospinning, PVP, ethanol, nanofiber, fiber diameter.*