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Heat treatment on PEDOT:PSS polymer composite nanofibers

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Poly(3,4-ethylenedioxythiophene)/poly(styrene sulfonate) (PEDOT:PSS) as conductive polymer has been widely used for various electrical compartments such as photovoltaics, solar cell, electronic displays, organic light emitting diodes, and touch panels etc. [1-3]

Most applications of PEDOT:PSS are as coating material on the wafer such as silicone. Recently, studies on nanofibrous web made of PEDOT:PSS have been attention due to their various applicability. However, the electrospinning of only PEDOT:PSS is not easy due to its poor viscosity to form fibrous materials. To increase the spinnability of PEDOT:PSS solution, a blend of additional polymer is necessary and the polymer should be water soluble because PEDOT:PSS is suspended in water medium.

In this work, two different methods for constrained and unconstrained annealing were compared to investigate the effect of annealing methods on the electrical conductivity of PEDOT:PSS/polymer composite nanofibers. Two water soluble polymers of polyvinyl alcohol (PVA) and poly(ethylene oxide) (PEO) were selected to blend with PEDOT:PSS solution.

Biography

Tae Hwan Oh has completed his PhD at the age of 29 years from Seoul National University. He works for Yeungnam University, Department of Nano, Medical and Polymer Materials. He has published more than 25 papers in reputed journals and has been serving as an editorial board member of Korean Fiber Society.

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