

ABSTRACT

Making supercapacitor electrodes by utilizing the electrospinning method to make fibers and coating them with manganese material. electrospinning is one way to make micro to nano sized fibers with polyvinyl alcohol (PVA) polymer material. Fiber manufacture using PVA solution with a concentration of 13%, with a voltage of 8.50 kV and a flow rate of 5 uL/minute. Manganese is a chemical that is found around us, the nature of manganese itself is non-toxic and odorless. Elemental manganese can be obtained from elemental manganese sulfate (MnSO₄) and potassium permanganate (KMnO₄). The fibers that have accumulated on the collector plate will be burned first and then soaked or dripped with a manganese solution as a coating for the fiber. From the results of immersion and dripping, KMnO₄ has a heavier mass than MnSO₄. From the results of the fiber specifications that have been coated with KMnO₄ and MnSO₄ that have been dripped or soaked with a scan rate of 10 mV/s, each has a capacitance specification of 6.1 uF/g, 1.58 uF/g, 2.63 uF/g, and 0.38 uF/g. The largest capacitance specification measurement is fiber that has been coated with MnSO₄ by dripping method, because it has the highest capacitance specification result, namely 6.1 uF/g.

Keyword : supercapacitor, fiber, electrospinning, manganese, MnSO₄, KMnO₄