ABSTRACT

EFFECT OF ACTIVATED BY NaOH ON THE PERFORMANCE OF TiO_2/C REINFORCED CERAMICS AS ELECTRODE OF SUPERCAPACITOR

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Effect of activated by NaOH on the performance of TiO_2/C reinforced ceramics as electrode of supercapacitor have been done. Synthesis of TiO_2 sol was used sol-gel method. Membrane of ceramic as template TiO_2/C growth that activated by NaOH was prepared as electrode of supercapacitor which used polymer hydrogel electrolyte, polyvinyl alcohol as separator and phosphoric acid (H3PO4) as electrolyte. Effect activated by NaOH at the electrode of supercapacitor can increase the capacitance at temperature calcined 250^oC and 300^oC. Based on characterization of EDX (Energy Dispersive X-Ray), the most high contain of carbon was electrode after activated at temperature calcined 300^oC was 60,67%, which is the higest capacitance was 14540 nF with concentration of electrolyte H_3PO_4 0,5 M, voltase 0,62 volt and current 5,3 µA at charger time 30 minutes with conductivity 45,4x10^{-5} S/cm.

Keywords: Supercapacitor, TiO_2, Activated, Capacitance, Polymer hydrogel electrolyte