ABSTRACT

In this study, exfoliated graphite was synthesized from 2B pencil-filled bars (graphite). The synthesis process was carried out using an inorganic salt solution of Na_2SO_4 by electrochemical method. Synthesis of exfoliated graphite was varied based on the concentration of Na_2SO_4. Variations in the concentration of Na_2SO_4 used were 0.05 M; 0.1 M; 0.2 M; 0.3M; and 0.4 M. The electrochemical process was carried out with a voltage of 20 V. The synthesized exfoliated graphite was characterized by three types of measurements, namely four-point probe, galvanostatic charge-discharge, and cyclic voltammetry to determine the conductivity and specific capacitance values of the exfoliated graphite. From the results of the characterization, it was shown that there was an increase in conductivity and specific capacitance of 25.6 μS/m and 31.8 mF/g when using a concentration of 0.3 M from the previous 4.56 μS/m and 4.48 mF/g when using 2B pencil (graphite) ingot powder.

Keywords: Exfoliated Graphite, Na_2SO_4, Electrochemical.