

ABSTRACT

In this study to measure the capacitance value using parallel plate capacitor method, where the capacitive sensor uses two copper plates arranged in parallel. The capacitive sensor designed has a capacitance value of 2 nF. The application of capacitive sensors is done to measure the value of coal capacitance. The principle of capacitive sensor is to store electrical charge which is influenced by the distance (d) between plates and cross-sectional area. In this study the value of coal capacitance is used to determine the calorific value contained in coal. To measure the capacitive sensor capacitance value connected to the inverting amplifier circuit. The output of the inverting amplifier is a voltage, where the voltage will be modified to the capacitance value. The frequency used is 500 Hz, and the optimum amplitude is 4vpp. The highest capacitance value occurred in the 1867 sample which had a calorific value of 5,885 and a capacitance value of 3.21×10^{-9} F.

Keywords: inverting amplifier, capacitive sensor, coal calorific