

## **ABSTRACT**

Water composition can be determined by many ways. However there is no way to determine water composition specifically other than the use of expensive instruments such as XRF and Spectroscopy, to then give the idea to use capacitance measurement as a cheaper and easier alternative. In this research, water composition is determined by its capacitance value with capacitometer. The determined composition is ferric ion in Ferrous Sulphate ( $\text{FeSO}_4$ ). Capacitometer is an instrument to measure capacitance using comparison concept between object's capacitance and voltage and reference's capacitance and voltage. This instrument is used to measure capacitance of water and  $\text{FeSO}_4$  solution with the help of capacitive sensor. Solutions of 70 mL water and 6 samples of  $\text{FeSO}_4$  salt ranging from 0-0,5 g are made three times and measured 20 times each. Correlation of capacitance value and mass of  $\text{FeSO}_4$  salt exists and shown by mathematical equation. From research there is conclusion that the more ferric ion added to water, the higher its capacitance value.

Keywords: Water composition, ferric ion, measurement, capacitance, capacitometer.