

ABSTRACT

Capacitive Deionisation (CDI) is a desalination method by binding seawater salt ions by applying a voltage between two porous carbon electrodes. This method was developed because it is cheap and energy efficient because it is operated at a low DC voltage (1,V). The electrode material that is often used is activated carbon. Because it has a large specific surface area (1000 m²/g) which serves to store salt ions. In some desalination applications it was reported that the addition of an ion exchange membrane can hold salt ions apart from the active carbon pores.

In this study, low measurements will be carried out using a CDI cell made of activated carbon, CMC, and ion exchange membrane (SSA) with a flowrate of 10 ml/minute. As well as a comparison of measurements between CDI cells with membrane variations and CDI cells without membranes at the same discharge. The results of the measurement of membrane variation CDI cells with a reduction in conductivity of 59.30% in 55 cycles, while CDI cells without membranes had a reduction of salt content at 10 ml/minute discharge of 26.58% in 23 cycles.

Keywords: Capacitive Deionisation (CDI), Activated Carbon, Membrane SsSA, Desalination.