

ABSTRACT

Hydrogen gas generator is a device that used to separate hydrogen from its compound. There are several methods to make hydrogen gas generator. The simple method is the water electrolysis. There are two old hydrogen gas generator of water electrolysis has been carried, the wet cell and dry cell. However, they are still weaknesses that excess heat so they also produce water vapor. Excess heat is caused by the leakage current that occurs in the dry cell. Universitas Nasional was developed a new hydrogen gas generator of water electrolysis called Zero Current Leak Cell (ZCLC). But there is no research about Is ZCLC has leakage current like dry cell or not and how about comparison of hydrogen gas volume produced by ZCLC to dry cell. So instead of that, this final project examines this by characterizing and measuring the volume of any gas produced by both of hydrogen gas generator in the laboratory of the Institute of Technology Bandung. The results showed ZCLC has not leakage current but dry cell has it because the longer working hours of dry cell then its electric current tends to rise while ZCLC tends to be stable. In dry cell, change of electric current can reach 2 A while the change of electric current on ZCLC just reach 0.5 A when the hydrogen gas generating work for 150 minutes. The temperature in the cell of ZCLC also lower than the temperature in the cell of dry cell. In addition, the volume of hydrogen gas produced by ZCLC is 67.58 mL of 100 mL while volume of hydrogen gas produced by dry cell is 48.58 mL of 100 mL of gases.

Keywords : hydrogen gas, dry cell, Zero Current Leak Cell (ZCLC), leakage current, and water electrolysis.