

## ABSTRACT

Indonesia is threatened by an energy crisis in 2020. Because our non-renewable energy resources are running low. Consumption of people with existing non-renewable energy production is not comparable, and will even continue to grow. New and renewable energy may be the answer to this problem. There are many types of EBT that can be developed in Indonesia. One of them is hydrogen gas energy. We can produce hydrogen gas from existing water treatment, especially in seawater. In this case, electrolysis can be a solution in producing hydrogen gas with sea water media. In this final project will be designed a control system that regulates the amount of voltage in the electrolysis process. Increasing the efficiency of the power used is needed to reduce production costs. Voltage control is the right way to become a power efficiency solution used in electrolysis of seawater.

The microcontroller is used to regulate PWM (Pulse Width Modulation) which functions as a voltage controller to be used in the electrolysis process of seawater. In addition, the microcontroller also functions as a data processor from current and voltage sensors that can be calculated by the power output efficiency used.

The results of the electrolysis process in the form of hydrogen gas can be used as new and renewable energy.

**Keywords:** *Voltage Control, Electrolysis, DC Chopper Boost, Seawater, Hydrogen.*