

ABSTRACT

Most of Indonesia area is sea, but wave energy utilization is still considered low. This could be seen on fishermen's live that up until today still rely on Solar oil fuel, while oil fuel's price is unpredictable and soon will be run out. Based on that, the need to find a common solution for the fishermen to be free of burden from oil fuel price is in need. As we know wave is one of the unlimited energy as well as wind, water, geothermal, etc. Given that, its utilization is easier given the unlimited resource.

This research designed a power generator using direct curent generator which could convert wave energy into electricity. Sea wave be treated into rotation through a mechanical devices in form of sprockets linked to a chain, produced rotation will be connected to a flywheel then rotate generator's core that could produce electicity. Next, produced power will be flowed into DC chopper, but before, power went through a current sensor and voltage sensor for calculation. Power engineered on DC Chopper then could be stored in a battery. To prolong battery life, DC chopper is controlled by microcontroller to stabilize current and voltage value.

Tests were done to find out power output value from the system. Result of this research is the generator could produce 7.2451 Volt of voltage and is a sufficient voltage to charge up a battery so that it could be used by the fishermen. Considering that the cost to build this wave powered generator is affordable, it is expected that this research could help the fishermen's work.

Keywords: Generator DC, sprocket, chain, DC chopper, the free wheel.