

ABSTRACT

As we know 2/3 of Indonesia is sea. That is one of natural asset that is one of Indonesian fishermen's main source of living. But, the sea's utilization is not yet optimized and is tend to be not yet used to its full potential by the government, on the other hand, decreasing Indonesian energy sources and rising fuel price had become a problem faced by fishermen.

Based on stated problem, author designed a power plant that will be used of boats by using electricity in place of oil fuel. Harness unlimited sea waves as power generator could ease the burden faced by fishermen and electrical boat could contribute in pollution cutback produced from the use of fossil fuel. Battery used in this electrical boat could be use to store energy and could also be recharged from antoher power source.

Focus of this research is wave powered power generator system design especially on electronics to create electrical power and the system output. Output voltage from the generator will go through a buckboost converter which output could be higher or lower from the voltage output from the generator. It is also controlled by microcontroller which uses fuzzy logic method to control current and voltage fit to the user desire then produce electrical energy which is stored in a battery which serve as energy storage. With produced power of 14 Watt and mean of voltage 11,9193V and minimum voltage is 3,2V, this research aim to engineer a wave powered power generator that could help fishermen.

Keywords : Buck-boost Converter, Generator, Fuzzy Logic, Microcontroller, Sea Wave