ABSTRACT

A development of utilizing the energy from the ocean is a modeling study of ocean wave-power plant with flat pendulum system. In this model, the ocean waves will be utilized to change the position of a flat pontoon. The moves of waves change the position of the pendulum to become obliged. This movements causes pendulum to rotate whit the rotation center shaft is connected to a generator. As an end result, spinning generator generates some voltages 20.

This simulator will be modeled with a seesaw motion which is generated by the movement of the input DC motor rotational movement then converted into translational motion. The pontoon is modeled as a beam in which two opposing sides of the beam axis to produce detained by the seesaw movement. Embedded within the beam axis a mini generator that will connect with the pendulum arm will cause the generator to spin.
The results of this ocean wave motion simulator research is explained: the simulator sea wave power plant 10 RPM single pendulum in amplitude occur 4cm rounds in the direction of the effective voltage (RMS) of 0.8484. Whereas on 10 RPM amplitude 6 cm there is back and forth motion occurs resulting high RMS value as large as 11.0292. At 20 RPM amplitude of 4 cm did not occur turnover. While the RPM 20 6 cm amplitude occurs in the direction of rotation. At of 30 RPM amplitude 4 cm pendulum does not rotate when in RPM 30 6 cm amplitude pendulum rotates in the same direction and produce effective voltage of (RMS) 15.554. While the simulator sea wave power plant showed a triple pendulum and the pendulum moving in the direction of the effective voltage (RMS) 0.5656 at 10 RPM amplitude of 4 cm. At 20 RPM 4cm amplitude of the pendulum moving in the direction of the effective voltage of (RMS) 0.9191. At 20 RPM6cm amplitude of the pendulum moving in the direction of the effective voltage of (RMS) 9.191. At 30 RPM 4cm amplitude of the pendulum moving in the direction of the effective voltage of (RMS) 14.14. At 30 RPM 6cm amplitude of the pendulum moving in the direction of the effective voltage of (RMS) 9.898While at 10 RPM amplitude 6 cm the pendulum moves back and forth (not constant) the effective voltage is (RMS) 8.484.

Key words: Triple Pendulum, Simulator PLTGL-SB Triple Pendulum, PLTGL-SB sistem tiga pendulum, triple pendulum