

**DESIGN AND BUILDING OF A STEAM POWER
PLANT PROTOTYPE**

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ABSTRACT

To generate student motivation and interest in the teaching and learning process and to increase student understanding, it is necessary to use experimental learning media and methods, this is expected to generate motivation so that an effective learning process is achieved. Making teaching media in the form of prototypes really helps improve students' understanding of the material being taught. The method is designed in such a way as to get good dynamo rotation results from tests carried out with the help of steam from a steam turbine. This design includes the design of a steam power plant prototype that aims to obtain electrical power based on the rotational speed of the steam turbine. The results of this test are obtained from the velocity of the steam that comes out and the shape of the blade affects the energy produced by the generator, the greater the rotational speed of the steam turbine given the greater the voltage generated, as well as the greater the power produced. The movement of data from the measurement of turbine rotation for 2 minutes can produce an average turbine output of 1080 rpm, for 4 minutes it can produce an output of 1456 rpm, for 6 minutes it produces a turbine output of 1585 rpm, for 8 minutes it can produce an output of 2170 rpm, and at 10 minutes produces 2250 rpm turbine rotation. The results of the steam pressure measurement test show that the steam produced during the 2-minute combustion time gets a steam pressure of 10 psi, at 4 minutes of combustion time it has a steam pressure of 15 psi, 6 minutes of time produces a vapor pressure of 20 psi, 8 minutes of time produces a steam pressure of 30 psi, and within 10 minutes produces a vapor pressure of 40 psi. generator rotation when the load is empty. at 2 minutes the voltage generated is 0.64 volts, at 4 minutes the voltage generated by the generator rotation is 1.51 volts, 6 minutes produces 2.52 volts, at 8 minutes the resulting voltage is 3 , 53 volts, and in 10 minutes it produces 3.7 volts.

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