ELECTRONIC LOAD CONTROLLER IN PICO HYDRO POWER SYSTEM

Thesis is presented in partial fulfillment for award of the
Bachelor of Engineering (Honors) Electrical
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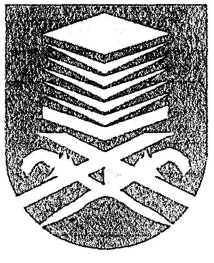

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In the name of ALLAH S.W.T., the most Merciful and the most Gracious

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ABSTRACT

This paper describes the design and development of a prototype of an uncontrolled turbine in pico hydro power generation with constant input power. This system produces small output power not exceeding thirty (30) watts. A water wheel turbine was used to spin rotor of alternator. The alternator converted kinetic energy into electrical energy.

The paper mainly describes the design of a simple and cheap controller namely Electronic Load Controller (ELC) for alternator on a standalone applications. ELC contains Dummy Load and DC to DC Buck Converter. A Dummy Load is connected in shunt with the Real Load. It is necessary to maintain total output current at alternator's terminal. Power MOSFET switch in DC to DC Buck Converter is functioned to control the disconnection or connection of the Dummy Load. When the total output current maintained, the speed rotator of alternator was stable.

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