

DESIGN AND CONSTRUCTION OF ELECTRICAL ENERGY HARVESTING ON FOOTWEAR USING PIEZOELECTRICAL AND LTC3588

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ABSTRACT

In this modern era, electricity is no longer a secondary need, but a primary need. Various types of electric tools have been made to help human survival, and these needs make electricity one of the main needs. Several electrical tools are used to influence the amount of power supply that must be provided, therefore I developed an environmentally friendly tool, one of which is the use of piezoelectric and LTC3588 to harvest electrical energy on foot mats. This tool is built using other components such as capacitors, LTC3588, rechargeable battery, voltmeter display and solar panels. Based on the results of the tests that have been carried out on this piezoelectric foot mat, it requires a weight of more than 31kg so that the LTC3588 is active and changes the input voltage from AC to DC, this voltage output will be stored in a Lithium-type battery with a charge of 3.7 V 2000 mAh. Within 5 minutes this electric energy harvester using piezoelectric and LTC3588 can store an average voltage of 32.35 mV, for charging from a 1 V - 3.7 V battery it takes 6 hours and 57 minutes.

Keywords: *Piezoelectric, Capacitor, LTC3588, Lithium Battery, Alternative Energy.*

