

“ELECTRICAL ENERGY HARVESTING TILE BASED ON HYBRID PIEZO-ELECTRIC TECHNOLOGY”

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A Project Report

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Submitted by

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ABSTRACT

POWER CRISIS is being one of the major topics to be discussed. The possible solution for this is to provide considerable amount of power using adaptable renewable resources. Among these resources, human population is the only abundant and perennial resource that has not been utilized. If a suitable method is available, expected amount of power can be tapped out from this resource. We have presented the idea to utilize human locomotion power to produce electricity and also we have designed a method named POWER PRODUCING PLATFORM, a large scale project that consists of number of similar mechanical setups under a special flooring system. When people walk over the platform, electricity is generated in this system utilizing the pressure due to weight of the person walking on the platform and stored using dry batteries. This method will have an efficient outcome if installed in countries where population is more. As per this strategy, this method is well suited for our country and a large power can be tapped out.

The main aim of this project is to generate the electrical energy through the pressure generated by footsteps. This setup is placed at footpath when a person walking along the footpath. Piezoelectric crystals are placed under the crosswalk so that vibrations and pressure fluctuations caused by pedestrians can be converted into electricity. The electricity is piped to power street lamps, traffic signals, cameras and other electronic devices located in the vicinity. The electrical energy generated can be used in the street lights to turn it on during night times, the street light can be switched on automatically without any human effort by simply setting on and off time. By using this we can develop extra energy without wasting other resources. Lot of energy is wasted for the street lights as they don't switch off at the right time and if this project is implemented in areas where there is lot of pedestrian floating in busy areas and railway stations, power is cost effectively saved as there will be no need separate power supply from the power station.

Keywords --- Tile, Piezo-Electric crystals, Mechanical Stress, Rechargeable Battery, Piezo-Electric Technology