

Generation of Power from Footprints

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Abstract: *The extensive use of fossil fuels has been recognized as a significant contributor to climate change. Additionally, these non-renewable resources are depleting rapidly, leading to an urgent need to explore alternative sources of energy. Walking is one of the most common activities in daily life, during which humans lose energy to the surface in the form of vibrations or tremble. Harnessing this otherwise wasted kinetic energy and converting it into electricity presents a sustainable solution to meet small-scale energy requirements.*

In this project, we focus on designing, fabricating, and testing a simple yet effective device capable of converting the kinetic energy generated by footsteps into electrical energy. This energy is harvested using a specially designed platform, which can be installed at the entrance of rooms, classrooms, or other commonly used areas. The captured energy is then transmuted into electrical form, stored in a battery, and utilized for powering LED lights or similar low-energy devices at the entrance.

The objectives of this project include the development of a robust and efficient energy-harvesting platform, integrating it with generators and storage units to ensure smooth operation. The fabricated device was thoroughly tested for its ability to generate and store electricity under various conditions. This innovative approach not only reduces reliance on fossil fuels but also promotes sustainability by utilizing everyday human activity to generate clean energy.

The designed platform can find applications in educational institutions, workplaces, and other high-footfall areas, where the generated energy can be used for lighting or other low-power applications. The project demonstrates a practical and scalable model for energy harvesting, contributing towards a greener and more sustainable future.

Keywords: Footprint, LED, Generator, Battery, Energy Harvesting, Sustainability