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| **Abstract:** |  |
| At present, the need for power is paramount. To meet the current necessity of undisrupted power supply, researchers are working on different renewable and green energy sources. For powering up devices, it is required to make the wired connection either with batteries or with a grid line. However, the batteries are subjected to charging and maintenance which makes it difficult to charge it every now and then in conventional ways at locations such as busy roads and remote places. To solve this situation, energy harvesting technique using piezoelectric material can be used. This technique is mainly based on converting mechanical stress into electrical energy by means of low-frequency vibration using piezoelectric effect. In this paper, we have proposed an innovative way to harvest energy by piezoelectric effect in the roads using the vibratory motion of vehicles. There are several works that have been done on harvesting energy from piezoelectric material, but the limitation of this kind of source is a micro level of energy. Our motivation is to provide a circuitry using a boost converter to level up the output voltage and hence increase the efficiency. The circuit comprises of an electrochemical battery, an AC to DC rectifier, and a switchable DC to DC converter that controls the energy flow into the battery. A versatile control strategy for the DC to DC converter is utilized to persistently actualize the ideal power transfer hypothesis and exploit the power stored in the battery. Vibration energy generated by the movement of the vehicle can be converted into electrical energy by the piezo-speed breaker. As a consequence, this stored energy can be used to power up the roadside traffic signal and street lights. The prototype ensures a green energy source that will reduce power generation cost and the usage of fossil fuel. | |