

Electricity Generation from Piezo

Abstract

In last few years low power electronic devices have been increased rapidly. The devices are used in a large number to comfort our daily lives. With the increase in energy consumption of these portable electronic devices, the concept of harvesting alternative renewable energy in human surroundings arise a new interest among us. In this project we try to develop a piezoelectric generator. That can produce energy from vibration and pressure available on some other term (Like people walking). This project describes the use of piezoelectric materials in order to harvest energy from people walking vibration for generating and accumulating the energy. This concept is also applicable to some large vibration sources which can find from nature. This project also represents a footstep of piezoelectric energy harvesting model which is cost effective and easy to implement. Keywords: Piezoelectric Sensor, Full-wave bridge rectifier, Lead Acid Battery, Load (LED and USB Charger)

INTRODUCTION

Now a day's energy is one of the most important issues around the world. Especially in Bangladesh energy crisis is a big problem. Renewable energy sources can be a great media to solve this energy crisis problem in Bangladesh. As we know natural resources will finish one day. That's why researchers are trying to introduce substitute energy sources from nature. That must be green and not harmful for the environment. Energy harvesting is defined as capturing minute amounts of energy from one or more of the surrounding energy sources. Human beings have already started to use energy harvesting technology in the form of windmill, geothermal and solar energy. The energy came from natural sources, termed as renewable energy. Renewable energy harvesting plants generate kW or MW level power; it is called macro energy harvesting technology. Moreover, micro energy also can produce from those natural sources that are called micro energy harvesting. Micro energy harvesting technology is based on mechanical vibration, mechanical stress and strain, thermal energy from furnace, heaters and friction sources, sun light or room light, human body, chemical or biological sources, which can generate mW or μ W level power. Micro power supply needs is increasing greatly with time as our technology is

moving to the micro and nano fabrication levels. Our discussion on this is based on generating micro energy from vibration and pressure using piezoelectric material.

