

# Energy Generation using Sound Energy

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**Abstract-** We all know everywhere there is huge scarcity of energy and for running most of our appliances and to carry out daily work we need electricity. It's really very difficult to imagine our life without electricity, our life would really stop so there is high need, to produce electricity at faster rate and find some other feasible method to produce electric energy. In this project we demonstrate the idea of energy generation and automatic energy saving concept. In this concept we design a system that utilize speaker that generate the electrical energy. **SOUND ENERGY:** in this idea we generate the electrical energy using speaker.

## I. INTRODUCTION

We all know sound energy is a mechanical energy which travel in the form of wave, mechanical wave that is an oscillation of pressure which need medium to travel i.e. it could not travel through vacuum as it need medium. Through liquid and gas state sound is transmitted as longitudinal wave whereas through solid it could be transmitted as both longitudinal wave and transverse wave. Longitudinal waves are of alternating pressure deviation from the equilibrium pressure, causing local region of compression and rarefaction, while transverse wave (in solid) are waves of alternating shear and stress at right angle to the direction of propagation. When sound wave travel through a medium mater in that medium is periodically displaced and thus oscillates with sound wave. The sound wave displace back and forth between the potential energy of compression or lateral displacement strain of the matter and the kinetic energy of the oscillation. As sound energy is a mechanical energy it could be converted into

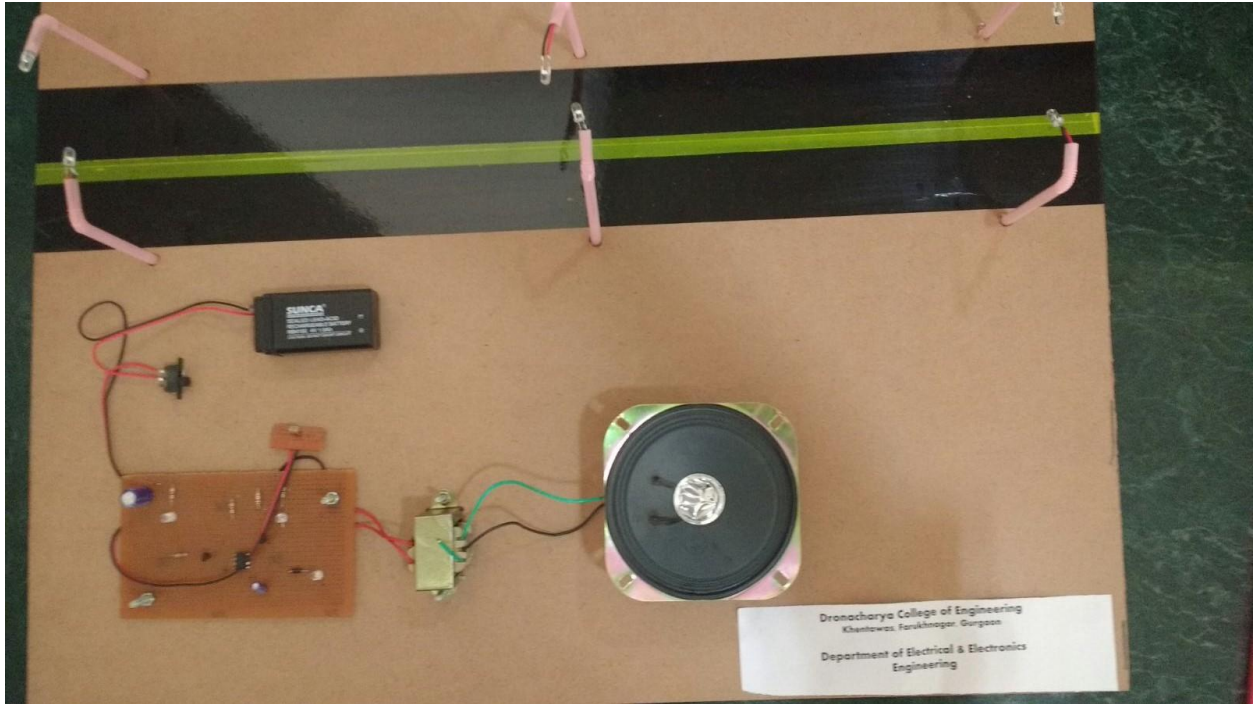
electricity as mechanical energy could be converted into electricity by the law of thermodynamics. Sound energy could be easily converted into heat energy which could be easily converted into electricity but it is not highly efficient as the loss in conversion will be more whereas the other method is converting sound energy to electricity by piezo electric material, piezo electric materials are the crystal which converts mechanical strain to electric energy by such method. So we could see that sound is a form of mechanical energy and according to third law of thermodynamics mechanical energy could be converted into electric energy.

## II. COMPONENT REQUIRED

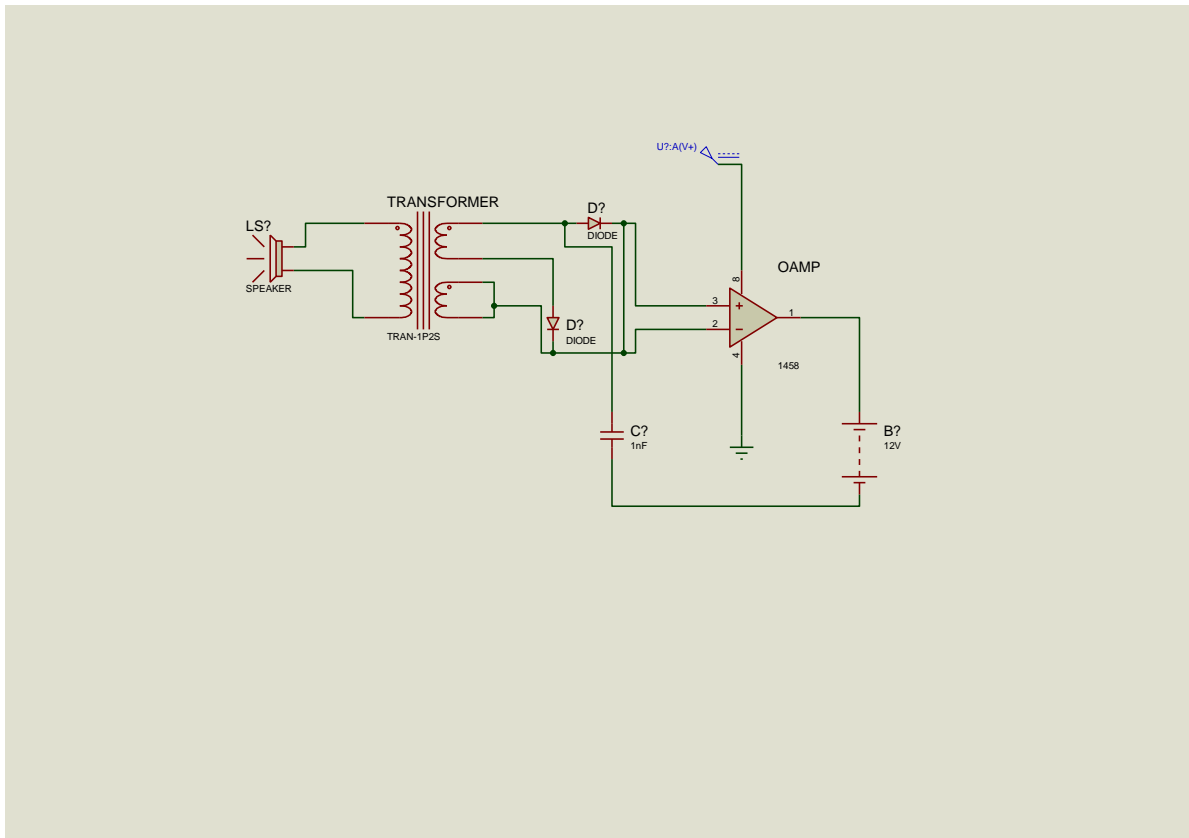
- Amplifier-741.
- Step up transformer.
- Transistor(npn, pnp)
- Led
- Diode(in4007)
- Capacitor(10uf,1000uf,27pf,22uf)
- Register(1k,10k,470ohm,270ohm).

## III. METHODOLOGY

Sound energy:- In this method we give a idea of energy generate by sound wave this sound wave incident on speaker this device act as transducer and output of the speaker give to step up transformer this transformer step-up the signal and after amplification we store the signal in battery. This supply use in driving of the vehicle.



Circuit Diagram



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