

## **Project Name : Eco - friendly charger**

Team name : Get Charged

Team Members :

- 1) Omkar Deepak Karmarkar.
- 2) Shachi Shailesh Deshpande.
- 3) Yashaswini Murthy
- 4) Pranjali Thakare

Description :

We are trying to build a gadget that charges cellphone batteries with the help of friction or say heat energy. We will be using thermocouple to convert heat produced by friction into electricity. We will be emphasizing on increasing the efficiency of current production. Important aspect of this project is providing low cost and non-polluting source of energy. This gadget will be very much useful in remote areas where we have no electricity & also during emergencies.

Concepts involved :

The basic principle behind this project is 'Seebeck effect'. We will be using the concept of 'voltage produced by difference in temperature'.

Components required and their costs:

- 1) Thermocouple wires
- 2) Zener diode
- 3) Transistors
- 4) Voltage regulator (not mandatory)
- 5) PCB and charger cable
- 6) Plastic box (to cover the gadget)

We are trying to make this project as cheap as possible. So the cost for all these components will not go above Rs. 100 considering maximum prices of each.

Ex.: Max. prices of diode - Rs. 10 , zener diode - Rs. 13, Transistor - Rs. 1.

## Plan of action :

### Week 1 -

We will study seebeck effect, thermocouple working and simple charger circuit with some basics of electronics.

### Week 2 -

We will be finalizing the parameters (e.g. length and thickness of wire, rating of other components) and then we will buy all the required components.

### Week 3 -

We will create a thermocouple and assemble all other components. We will try to ideate upon improving efficiency by re-adjusting configuration, and try to implement that.

### Week 4 -

We will be carrying out test run of the gadget and try to make it more and more efficient. Finally we will be completing the framework (cover, cable, etc.) of the gadget. We will explore areas where similar principle could be used for charging some other batteries, and such source of energy can be developed further.

some links related to use of thermocouple :

[https://www.youtube.com/watch?v=JQUY\\_bs59a4](https://www.youtube.com/watch?v=JQUY_bs59a4)

[http://en.wikipedia.org/wiki/Thermocouple#Physical\\_principle:\\_Seebeck\\_effect](http://en.wikipedia.org/wiki/Thermocouple#Physical_principle:_Seebeck_effect)