TEAM MEMBERS-

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ABSTRACT

In everyday life there are many situations where there is an emergency requirement of battery backup for our mobile phones so that we can contact our near and dear ones or reach out to the world. Walking is one of the most basic exercise that a normal person does in his day to day life and our aim is to use this exercise to charge our devices.

IMPLEMENTATION STEPS

Piezoelectricity has been in use since mid18th century. Piezoelectricity is the electric charge that accumulates in certain solid materials in response to the applied mechanical stress. This pressure difference applied by our feet on piezoelectric disc while walking or running will generate measurable electricity when the structure of sensors is deformed by about 0.1% of the original dimension. This electricity produced will be AC in nature which has to be converted to DC by using a rectifier. The voltage produced due to this pressure difference is of variable magnitude and hence a rectifier has to be used to get a constant voltage of say 5V, so as to charge a mobile phone's battery. So as to increase the feasibility of the electricity produced a number of discs connected in parallel have to placed inside the sole of the shoe. The main challenge is to amplify the

current produced so as to make it feasible enough to charge devices efficiently which will be done by the help of an adapter.

Plan:

Week 1:

See the lectures series concerning with Piezoelectric Effect.

Week 2:

Tutorials on Arduino and Multi-meter Usage.

Week 3 & 4:

Making the model

Week 5:

Testing model and making modifications, if any.

Week 6:

Buffer Week.

COMPONENTS-

Parts/ Materials:

- Cheap/ Generic USB Powerbank-RS .500
- Piezoelectric Transducers (6x)-RS.400
- 1N4007 Rectifier Diodes (4x)-200
- Hookup Wire (at least 12")-100
- Pair Of Shoes-800
- Contact Adhesive-100

Tools & Equipment:(expecting the availability of these tools beforehand)

- Digital Multimeter-
- Multitool (w/ pliers)

- Rotary Tool

MISCILLANEOUS

Arduino-800

LED lights-50(for testing purpose)

Adapter-400

Other components-650

Total expense-4000