**BATTERY LESS SMART PHONE**

**TEAM:**

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**ABSTRACT:**

One of the greatest inventions that have changed the life of humans to a great extent is **smart phone**. Invented back in 2007, the smart phones have now improved in all fashions , but the highest available battery capacity is rarely upto 6000mAh. In the advent of technology and with billions of users , the energy need is unsolvable, and so the current battery range is clearly not enough and recharging our phone is also an irritable process. That’s where the concept of the battery less smartphones arise. In our presentation we are going to focus on the methods by which we can implement the battery less smartphones.

This can be possibly done using the mechanism of converting the radio waves into DC power using photo diodes and solar cells. This idea was first ever taken into consideration by the members of , “The University of Washington “ . They have tested this method of obtaining energy , but it is not implemented yet. We should use ambient sources like radio waves ,and their range is normally 30 feet and can be increased upto 50 feet by using solar cells. It only requires about 3.5 microwatts of power . We should set up a base station to provide the supply of RF energy waves transmitted in the GHz band and the waves can be converted into electric energy by using an energy harvester device like “ Powercast’s power harvesters and receivers “. The receiver antennae should have the average resistance of 40-50 ohms . We can also use photo diodes to do the conversion work . They can produce energy in the absence of light as they have optical filters and in-built lenses to perform better in dark conditions and are more efficient and economical when compared to other harvesters .

When photons of energy higher than 1.1eV strikes the diode the electron -hole pairs are generated . The photo current is then produced by the electron-hole pair because of the assimilation of the light in the depletion region . By using this mechanism we can easily replace the battery needs and hence enter into a batteryless age of smartphones.

We can also have an additional package consisting of a small battery for storing energy in small quantities inorder to receive calls when the phone is inert.