

## ABSTRACT

Energy is nowadays the main concern for the whole world. Finding renewable sources of energy is a challenging process that attracts the interest of scientists and researchers everywhere.

The rapid expansion in electrical technology at this time transformed industry and society. Electricity's extraordinary versatility as a main source of energy means it can be put to an almost unlimited set of applications. The backbone of modern industrial society is, and for the foreseeable future can be expected to remain, the use of electrical power. Electrical energy plays one of the most important roles in human's daily life in different fields such as transport, heating, lighting, communications, and computation.

Moreover, "wireless" as a technology has become a generic and all-encompassing word, which is used to describe communications, in which electromagnetic waves or RF (rather than some form of wire) carry a signal over part or the entire communication path.

Most of the mobile devices nowadays like mobile phones and laptops for example are still dependent on centralized power sources to charge their batteries. Energy Harvesting implies that the device can extract its energy from the surrounding environment without the need for these kinds of sources.

- The objective of this project is to find a way to harvest the Radio Frequency energy from the air and convert it to electrical energy that can be used in charging.
- This project helps in providing sources of energy to power electrical equipment through using existing sources in the environment.
- This project will go through different stages to implement the required objective. Researches will be done on the characteristics of RF signals and its harvesting methods.

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