

POWER GENERATION USING PIEZOELECTRIC SENSOR**Swati Wankhede^{*1}, Prachi Wankhede^{*2}, Minal Bangare^{*3}, Vidya Kumbhare^{*4},****Prof. Geetanjali Jichkar^{*5}, Prof. Chandani Suryawanshi^{*6}**^{*1,2,3,4,5,6}Electronics And Telecommunication Engineering, Madhukar Rao Pandav College Of Engineering, Bhandara, Maharashtra, India.**ABSTRACT**

Power generation and its use is one of the issues. Now-a days numbers of power sources are present, non-renewable & renewable, but still we can't overcome our power needs. Among these human population is one of the resources. In this project we are doing generation of power by walking or running. Power can be generated by walking on the stairs. The generated power will be stored and then we can use it for domestic purpose. This system can be installed at homes, schools, colleges, where the people move around the clock. When people walk on the steps or that of platform, power is generated by using weight of person. The control mechanism carries piezoelectric sensor, this mechanical energy applied on the crystal into electrical energy. When there is some vibrations, stress or straining force exert by foot on flat platform. In day today's life the utilization of power turns to be necessary for each work. The power delivered in this paper will not contaminate the surroundings and it is also will not rely upon the climate conditions. The paper proposes a novel technique for the creation of power utilizing piezoelectric sensors kept along the footpaths which can ready to charge the battery and ready to supply the force at whatever time of our prerequisite. The footstep power generation technique through piezoelectric sensors produces electrical force by changing mechanical energy of the development of individuals on the floor to electrical energy. The benefits of piezoelectric force generation framework is that it is sheltered and secure to utilize, it doesn't make any issue or distress for the general population strolling through footpath, and it is absolutely chance free strategy. Footstep power generation technique has mechanical part and in addition electrical part, however the electrical and mechanical losses are negligible. This framework additionally has the ability to store the electrical force away battery. The power produced by this technique can be utilized for helping up the road lights, additionally for activity reason, sign boards of streets. At long last the force which will be abandoned can be given to national grid for power reason.

I. INTRODUCTION

Energy is nothing but the ability to do the work. In day to day life, Electricity is most commonly used energy resource. Now-a-days energy demand is increasing and which is life-line for people. Due to this number of energy resources are generated and wasted. Electricity can be generated from resources like water, wind etc. to generate the electricity from these resources development of big plants are needed having high maintenance cost. Some other energy resources are also costly and cause pollution. They are not affordable to common people. Electricity has become important resources for human being hence, it is needed that wasted energy must have to utilize, walking is the most common activity done by human being while walking energy is wasted in the form of vibration to the surface. And this wasted energy can be converted into electricity. Using the principle called piezoelectric effect. Piezoelectric effect is the effect in which mechanical vibrations. Pressure or strain applied to piezoelectric material is converted into electrical form. This project gives idea about how energy is used on stepping on stairs. The use of stairs in every building is increasing day by day even small building has some floors when we are stepping amount of this wasted energy is utilized and converted to electricity by Piezoelectric effect. Piezoelectric effect is the effect of specific materials to generate an electric charge in response to applied mechanical stress.

OBJECTIVE

- To get source of energy.
- To obtain even pressure for better working of piezoelectric sensor.
- To obtain unbreakable, strong even surface
- Separate foot counting system.

ADVANCE WIRELESS POWER TRANSMISSION BY USING UPDATED TECHNOLOGY

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ABSTRACT

The main aim of the research is to improve the performance of the WPT system by increasing the distance between the resonators, decreasing the system dimensions, improving the spatial freedom and efficiencies. This research also aims to investigate the magnetic resonance base four-loop wireless power transmission system to facilitate a highly efficient and stable power transmission between the car and the charging panel.

Keywords: Wireless Technology, SCMR, WPT, Research.

I. INTRODUCTION

Transportation plays a major role in day-to-day life where commuters spend the majority of their day stuck in traffic jams while travelling to their jobs in the cities. These traffic jams are caused due to yearly increase in the number of automobiles. According to a study in [1], approximately 70% of UK households owns at least one vehicle. In 2016, UK alone had more than 30 million registered cars that were driven on the roads. Vehicle licensing statistics indicate that, in 2016, around 3.3 million cars were registered for the first time and 42,000 vehicles were ultra-low emission vehicles (ULEVs) [2]. ULEVs can be defined as the vehicles that have less than 75g of carbon dioxide (CO₂) emission per kilometer and purchasing ULEV are further encouraged by eliminating the vehicle exercise duty (VED). As the emission standards surge, both new and conventional automakers anticipate in Electric vehicle (EV) manufacturing, and thus investing in significant research efforts. Irrespective of the smaller percentage of EV on the road, considering the environmental aspect, Electrical vehicles (EV) are not just a greener, it is also an investment for the future being an eco-friendly material. If we look back at history, we find that prior to Marconi's successful radio wave transmission in 1902, only a handful of alternative solutions has been tested to fulfil the means of both energy and information transfer over long distances in attempt to eliminate the use of wires. During the late 19th century, both Nikola Tesla and Heinrich Hertz, had theorized the achievability of charger and the receiver which is the vehicle, efficiency runs between 30%- 80%. However, even with the most ideal setting power could be wasted. Wireless charging has come a long way that it has given endless possibilities to improve the entire EV industry.

II. METHODOLOGY

The fundamental concept of the entire thesis has been an analysis of how the IWPT phenomenon can be further simplified with no deterrents to the end user. Challenges and limitations along with variations of techniques, have been discussed to narrow down the potential challenges of upgrading the wireless charging infrastructure to simultaneously support and adapt variety of electronic devices and platforms including EVs. Particularly, the incompatibilities between the currently deployed WPT techniques and the EV charging platforms, causing commercial and technical unviability, has been further narrated. The thesis investigates multiple approaches of improving the system efficiency, spatial freedom while minimizing the weight of the IWPT charging system, in order to cater the efficiency requirements that the consumer desires. The theoretical IWPT system has been simulated using both MATLAB and Wolfram Mathematica, built relying upon the mathematician equations. The analysis has been further supposed by the results, obtained via the simulation software Advance Design System (ADS) and Micro Cap (MC). Ultimately simulation results were compared with a real-life application through a laboratory built IWPT system prototype. The results generate by the prototype were measured using an oscilloscope and a spectrum analysis and compared with the calculated results.



Surveillance Robot Controlled using an Android App

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Abstract

The robotics and automation industry which is ruled the sectors from manufacturing to household entertainments. It is widely used because of its simplicity and ability to modify to meet changes of needs. The project is designed to develop a robotic vehicle using android application for remote operation attached with wireless camera for monitoring purpose. A robot along with camera can wirelessly transmit real time video with night vision capabilities. This is kind of robot can be helpful for spying purpose in war fields. The Wi-Fi technology is relatively new as compared to other technologies and there is huge potential of its growth and practical application. The android application loaded on mobile devices, can connect with security system and easy to use GUI. The security system then acts on these command and responds to the user. The CMOS camera and the motion detector are attached with security system for remote surveillance. A robot is a machine capable of carrying out a complex series of actions automatically, especially one programmable by a computer. A robot can be controlled by a human operator, sometimes from a great distance. In such type of applications wireless communication is more important. This paper also shows general idea and design of the robot. Surveillance security robot provides safety like man. Automatic patrolling vehicle for periodic patrolling in defined or a restricted area, the patrolling vehicle can move automatically to monitor the dead zones and capture the images by using the camera.

Keywords and Glossary

Keywords:

Android, Robot, Bluetooth, Robotic control, Wi-Fi, Surveillance, Artificial Intelligence, Arduino