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ENERGY CONSERVATION BY IMPROVING ELECTRO KINETIC ENERGY BY USING POWER ELECTRONICS APPLICATIONS

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ABSTRACT

The main objective of this work is to optimize electro- kinetic energy based power electronics application to improve its utilization of vehicle's wheel pressure by continuous power generation. This proposal includes electro kinetic methods to generate electrical power with reduction of energy losses, effective utilization of electrical energy and in turn improving the nation's economic problems for meeting the regular demand of energy. This proposal further aims to develop a system that will produce electrical energy without polluting and destroying the nature. In the present day scenario, Electro kinetic energy dominates among the energy storage devices in hybrid vehicles, electrical train and embedded system based automotive vehicles. The vehicle's wheel is integrated with pressure pad there for vehicle movement time wheels produce some amount of pressure. Consequently the pressure pad is converts pressure energy into electrical energy. Power electronics circuits are used in this process, since the output of pressure pad is direct current but the required input for load side is alternative current. Power electronics circuit is also utilized to increase to improve the electrical energy efficiency and various AC power conversion stages are used to reduce the harmonics. This research presents a current state-of-

the-art in optimizing electro kinetic energy based energy storage technologies. It also provides a clear vision of the latest top research advances in energy conservation. The generated electrical power can be used for the lamps, automotive application, motor application and this will be a strong boon for the rural villages too. Suggested scheme second objective is improving or making pure sinusoidal wave forms how means using some multilevel power conversion applications.

KEYWORDS: optimization, electro kinetic, hybrid, Piezoelectric, PWM.

1. INTRODUCTION

In India and other nations likewise America, japan , Germany etc… commonly 19-25% of the total amount power bill goes towards highway or street illumination purpose and consequently this is one field that needs major consideration.[14] Our impartial and modifying existing scheme is to ingathering motorized stress engendered from running vehicles on road into electrical power and accumulation the engendered power for further use.[11] The scheme of piezoelectricity to produce electricity form the moving vehicles motorized stress on road is actuality used.[8] There is a lot of differences in traffic solidity, much stream of traffic during the diurnal time than night.[13] By entrenching the piezoelectric producers in the road can convert the stress created by vehicles into utilitarian form of electricity.[5] Right now, most profitable ones are the tarmac transportations on which most of the vehicles tracks. From the moulds it is clear that greater volume of electrical energy can be produced from normal automobiles like cars, bikes etc.[7] Also it has the ability to continue the load created by the weighty vehicles having tones of load transmuting into a much greater amount of electric energy.[1] The engendered power is stored in the batteries and can be used further for wayside applications e.g. highway lights, announcement boards.[3] In our project is contain various technology likewise motoring application and power electronics applications. there for continuously we are developing electricity harvesting and reducing major power quality problems that means harmonics from final output level. obviously current research and survey scheme is researching reducing power qualities problems series sag, swell, over voltage, under voltage, frequency distortion, etc….[9] the maximizing several number of renewable power area and circulated producers necessitates new approaches for the operation and organization of the electricity network in order to preserve or even to progress the power supply dependability and quality. In accumulation, liberalization of the networks leads to new controlling assemblies, in which swapping of energy and power is becoming progressively

important. The power electronics machinery plays an imperative role in disseminated generation and in combination of renewable power sources into the electrical network, and it is widely used and rapidly mounting as these of applications become more united with network-based systems. Throughout the last scarce years, power electronics has been suffering a fast development, mainly due to two factors. The first one is the expansion of fast semiconductor alterations, which are talented of switching quickly and handling high powers. The second factor is the outline of real-time computer supervisors that can implement advanced and complex control procedures. These issues composed have led to the development of cost-effective and grid-friendly converters.[15] In this paper, new tendencies in power electronics technology for the integration of renewable energy sources and energy storage systems are obtainable. The paper is prearranged in the following sections. In section II, we describe current technology and future trends in variable speed vehicle wheel and pressure of vehicle . pressure energy has been established to be both technically and frugally viable. It is expected that current developments in harmonics less energy transmission with power microchip technology net work boundary will lead to a new generation of quiet, effectual, and inexpensive piezo electric energy conversion. In section III, we present future scope of electromagnetic energy producing systems used in magnetic principles for reducing electricity demands in current developing electricity vehicle why means diesel and petroleum based vehicle is polluting environmental and also fuel based vehicle fuel cost is very is high consequently fuel resources is non-renewable resources. if any case we are integrating last level of invention. that means combining wind energy from vehicle wheels and using fuel cell based hybrid vehicle technology further we are using regenerative breaking methodologies. above sources are only making or generating electricity but various loss contain transmitting time and consuming, storing time. energy save in an electricity produce and distributing system empowers for reducing electricity demand Energy storage in an electricity generation and supply system enables the decoupling of electricity generation from demand. In section IV, we contemporary research and development trends in energy storing systems used for the e vehicles integration of intermittent renewable power sources.

2. METHODOLOGY AND MATERIAL

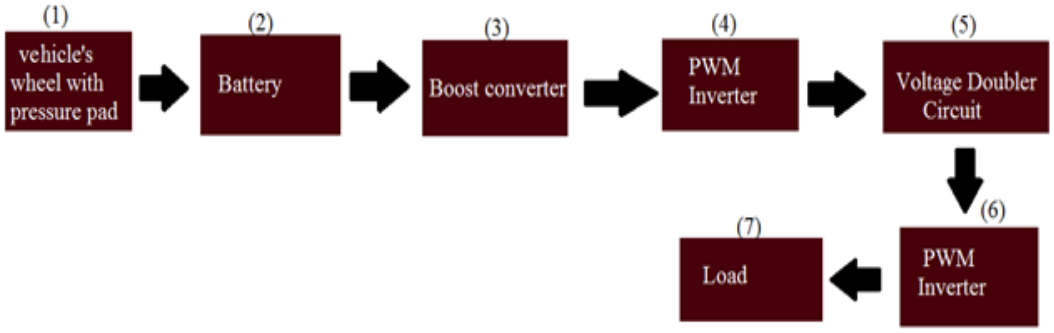

Figure 1: Typical Block Diagram For improving electro kinetic energy.

The Novel scheme is combination of renewable energy resources and power electronics applications for reducing electricity demands and making pure sinusoidal ac wave form shown in figure 1. also this project working principle is based upon newton 3rd law "every force equal to opposite fore" consequently we are know pressure energy into electrical energy development projects in existing system is using one force how means vehicle moving on the road. road also integrated pressure mat. there for moving vehicle wheel is producing some amount stress. continuously the stress will flow pressure mat. the pressure mat contain rotating panel. there for rotating panel was utilized kinetic energy after rotating panel was continuously rotate to produce mechanical energy. finally the mechanical energy wiil flow dynamo. to occur mechanical energy into electrical energy conversion process. But we are losing opposite force. Shown in figure 2 that means vehicle moving time wheel is produced one pressure but this pressure was utilized. also road also produce opposite force but we are not used there for we are developing this project scheme. how means we are using piezo electric effect and some advanced power electronics applications likewise two level of inversion and integrating two energy outputs.

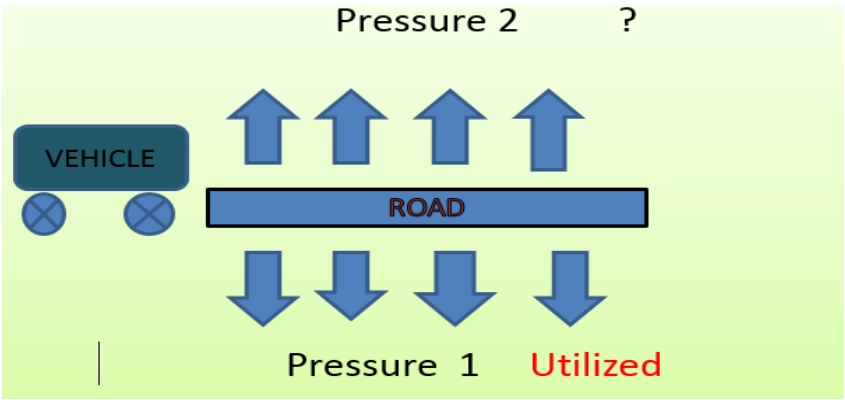

Figure 2: Gathering New ton 3rd law based stress utalization.

3. Proposal scheme

The proposal scheme is contain various energy conversion level and power conversion level. also using some power semiconductor switches based circuits like wise battery for storing purpose, boost converter by purpose of boosting direct current. pulse width modulation inverter by converting dc to ac conversion. above module is first level of conversion process affter integrating two power outputs by using voltage doubler circuit finally again we are using pulse width modulation inverter to converting dc to ac shown in figure 3 for over view.

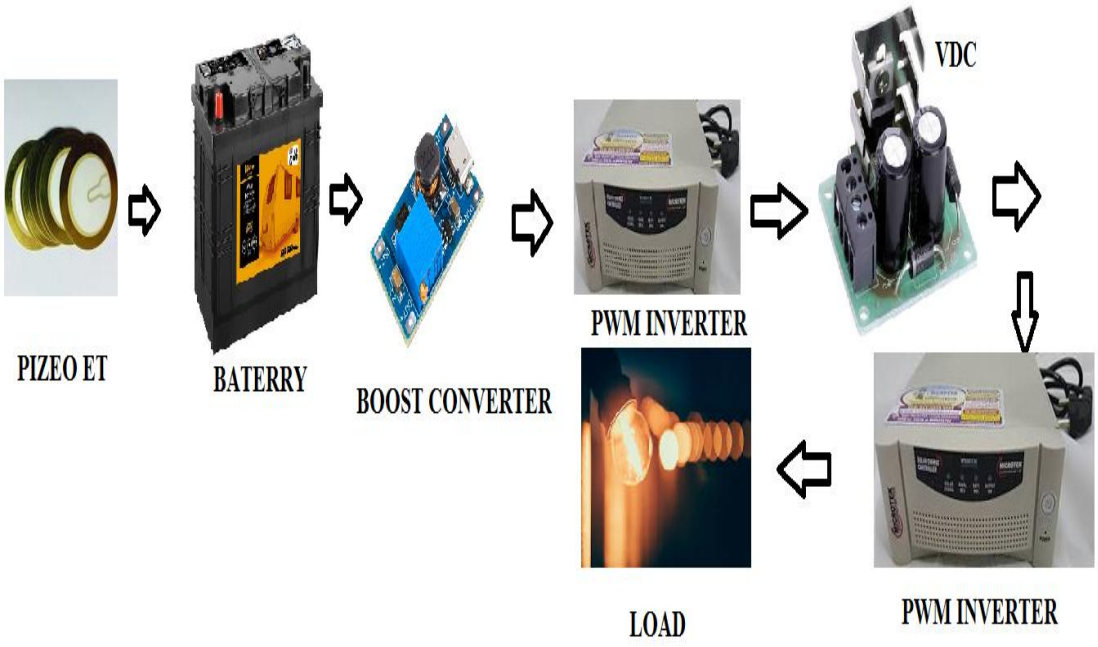

Figure 3: Over view for proposal scheme.

5. RESULTS AND DISCUSSION

The Results Which Are Obtained From comparison level for existing system and proposal scheme. some future scope also attached in following tabulation and graphical repersentation. effeciency and output level also repersented to respective axis. that means effeciency was pointed y axis and power also pointed x axis. pressure 1 utalized scheme and our pressure 2 utalized scheme output level and effecienices are more or less similar but proposal scheme further aiming making pure sinousidal wave form there for power level deviated existing schme. tabulation also contain some parametes likewise power output level, future scops, efficiency, harmonics level, conversion stage, integrating others resources, dynamic or static principle, graphical results formation.

Table 1: Comparison between pressure 1 and pressure scheme.

Parameters	Pressure 1 utilization scheme	Pressure 2 utilization scheme
Power level	More or less	Always high
Efficiency	92	97
Harmonics level	high	less
Conversion stage	one	Two or more
Dynamic or static principle	Static operation	Dynamic operation
Integrating others resources	Not possible	possible
Graphical result form	Non linear	linear
Future scopes	----------	Electromagnetic, regenerating.

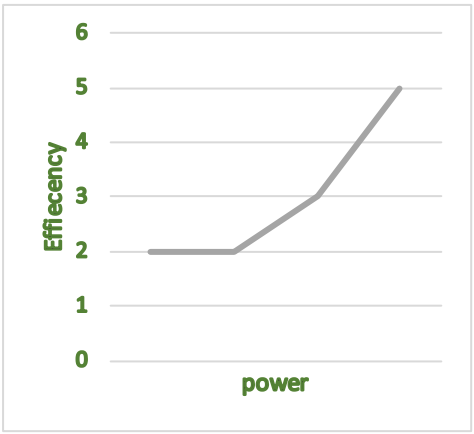

Figure 4: Proposal scheme output analysis.

6. CONCLUSION

This Paper Presents An Without polluting environmental and reducing electricity based vehicle electricity demands. also making pure sinusoidal wave forms by using advanced power electronics conversion stage. this scheme is based upon renewable energy resources. the project is future developing is contain other resources likewise electromagnetic principle based electricity generation and also now days hybrid vehicle act major roles that means hybrid vehicle using some motoring application likewise wheel rotation operation there for we are additionally inserting regenerative breaking, wind panel schemes in our project. one of the main objective is generating more amount of electricity to solve electricity demand. some conversion stage we are using microchip based power electronics application. consequently we are reducing converter size also.

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