

Generation of Electricity in Non-Conventional Methods by Applying Wasted Footsteps Technology

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Abstract— The substantial portion areas are customarily habituated across the world is electricity. In need of electricity generation, no equipment, instruments, motor, or any machinery is functioning. The paper portrays consequently footsteps energy carries on exploited and it draws upon non-conventional sources of energy resources. There are many types of electricity generation i.e., solar power, wind conversion system, thermal, hydro-electricity, nuclear energy. Renewable energy and Non-Renewable Energy Sources are inherent notions in the Electricity generation system. The Walking Footsteps are and untapped natural resources. While employing the Walking Footsteps energy its more concise amount of cost means that it's modest and innocuous for human. The metamorphosis technology is intermingled that electrical energy can proselytize to mechanical energy using footsteps walking of human beings. The consequent equipment's efficacious used for procedure of footsteps is as supervening like pipe arrangement, nozzle type, unidirectional valve, water reservoir, turbine motor of any type, and DC motor. The occupied conformance is accomplished by pertinent pressure which is strive on the water reservoir; water flows amidst the direction of nozzle into the turbine and generates electrical energy. This type of electrical energy is kept stored in the energy battery storage. There is very much load disturbance in the consumers terminal so that there will be causing global warming and load shedding. This paper defines having advantages of the global warming and load shedding in best way of cleaner the cost-effective way.

Index Terms— Footsteps Technology, Turbine, Generator, Output Power.

I. INTRODUCTION

The simulated of producing electrical power from different types of energy sources like solar power generation, wind power energy conversion, thermal energy, hydroelectricity & nuclear energy, biomass energy, ocean thermal energy conversion system, Tidal energy, and Wave energy is called electricity generation. Nature accomplished this type of energy which is turning to one's advantage to human beings, animals, and plants. The various types of energy conversion are used in diurnal life. By the reconstruction of primary sources of energy, examples are;

atomic energy or nuclear energy, gasoline, coal, coal is drawn upon in thermal power plants, and other natural sources which have been practiced and used constantly in human life.

Fossil fuels are used by human beings for household chores. Fossil fuels may have an impact on the environmental conditions. They pollute the environment with harmful gases. Nuclear power plants are adapted seldom. Nuclear power plants' waste products are very treacherous to human beings and always create major problems. This may eradicate human beings, animals, and plants due radioactive effect. The man used an energy resource in some respects and perpetually used earth resources. The earth's resources are becoming annihilation. But human beings can't stop clawing the resources from the earth's surface. So, some sources are no longer continued. This type of new technology we are using like a human being Footstep walking electricity energy generation. The energy created is an infrequent amount but it can be brought to bear in some small fraction of instruments and equipment which they required. The non-renewable energy sources are rapidly decreasing and now we have to switch over renewable energy sources like solar energy, wind energy, biomass energy, tidal energy, ocean thermal energy conversion system, wave energy. The solar energy from solar cell principle is continuously increasing and from that we used large amount energy. This solar energy is benefited to human beings and constantly in increased in demand.

II. PROBLEM IDENTIFICATION

The power crises are developing in every rural, urban, private and government sector. The generation of electricity is not proper in villages. In villages large amount of load shedding problem is occurring and people facing many problems regarding this less amount of energy consumption. The metro cities the demand of electricity is increased day by day. Because so many shops, restaurant, mall, cinemas hall are required tremendous amount of electricity. The various industries and colleges are using generator if load shedding problems is continuously occurring. The IT sectors are required constant amount of electricity and generation of electricity is from thermal power, hydro power plants, and nuclear power plants. Due all this factors which are going on the other sources of electricity is required.

III. LITERATURE REVIEW

[01] Design and fabrication of mechanical Footstep power generator

In this paper the energy demand increasing factor is mentioned and accordingly how the resources are used and utilized by other methods. The resources are exhausted and wasted day by day. The various types of proposal for are held on & this type of technology is being used in many populated countries where roads, railway stations, bus stands, temples, are included. The people are moving here and there by this footsteps technology and electricity generation can be created. This type of energy is very efficient and low cost but maintenance is required in some areas. In this a non-conventional energy is required for just walking the footsteps in crowded areas. In this paper, a rack and pinion assembly are used. From this method the various types of control mechanism carried out for rack & pinion, and DC generator to output. The Footsteps method does not require any fuel and it's simply work by applying walking in the footstep's methods.

[02] System for Generating Power from Footsteps

The demand of fossil fuel is increasing day by day. The fuel consumption is very less in future time. Its type of conventional sources and energy consumption is finite amount. In this paper, due to limited amount of fuel consumption and new technology is invented and footsteps methods are utilized. The observation methods and calculation is carried out by this footsteps technology and various assumptions are analyzed. The various types of crowded places in all over India and in other developed countries are mentioned here. The footsteps technology can be used and benefited to human beings by just walking. Some of the consumer's terminal they used power inverter, solar panel, generator and other power conversion devices. So that if there is any power failure these types of inverters can be used. This Footsteps technology method can be used and it's having cost effective, low cost and easy maintenance.

IV. VARIOUS FOOTSTEPS METHOD EXAMPLES

[1] NTT's Electricity Generating Shoe

In Japan the Japanese engineers which is related to telecommunications giant, NTT, has developed shoes that generated electricity from the kinetic energy. This type of energy generated is from walking to shoes. The shoes

generate 1.2 Watts of energy, the structure of Japanese shoe looks like an orthopaedic sandal. This shoe is sufficient to juice up and iPod technology. These types of technology are implemented whenever weight is placed on water areas soles and the water sloshes on the mini turbines which designed according to technology to generate electric power. The small generator provided in the each of the pair of the Japanese shoes a produce an adequate amount of electricity, which can be used to charge digital musical device and small type of gadgets which required less amount of electricity.



Figure 4.1 Representation of electricity generating Shoes

[2] Nano Power Shoes

In the Nano Power Shoes, which is made up of a viscous liquid with tiny metal micro droplets. When any human being steps forward by footsteps the mini droplets to flow in the substrate under pressure to generate electricity by these methods it's called as reverse electro-wetting. The method which is applicable is eco-friendly with low cost and durable for some times.

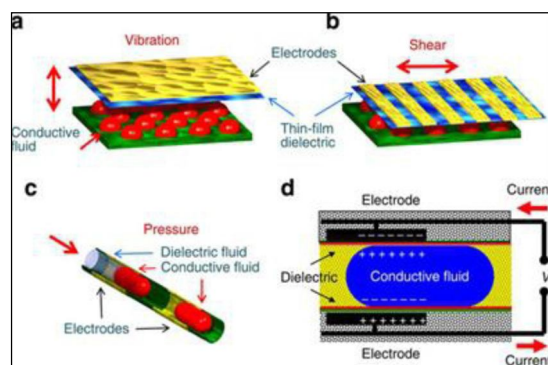


Figure 4.2 Representations of Nano Power Shoes

V. BLOCK DIAGRAM REPRESENTATION OF FOOTSTEPS TECHNOLOGY

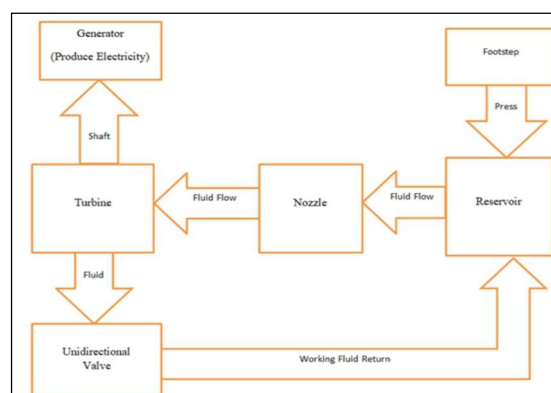


Figure 5.1 Block Diagram Representation of Footsteps Technology

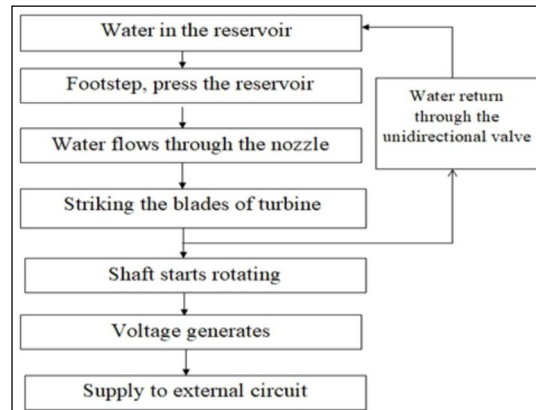


Figure 5.2 Flowchart Representation of Footsteps Technology

The block diagram representation is an innovative and iterative process. The various type of decision can be taken. The design has been created will be a footwear consists of water cushioned soles. The various type of body weight is implemented produce i.e., man and women size. The water flows to the mini turbines and produce electric power. The small generator is installed in it and produces an adequate amount of electricity. However, we can use an electric motor in their reverse direction and your purposes is being fulfilled.

VI. IMPLEMENTATION OF HARDWARE

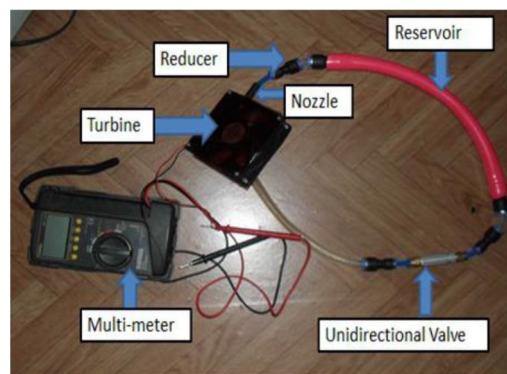


Figure 6.1: - Implementation of Hardware modules

In this project, a nozzle was used to strike the fan turbine. Also, for reservoir purpose a more significant diameter pipe can be used. The water circulates from the reservoir to the nozzle through a reducer (11 mm to 7 mm). The unidirectional valve is used as the water is return back. The unidirectional valve is set up between reducer (11 mm to 7 mm) and expander (7 mm to 11 mm). The expander is then connected to the reservoir.

VII. OBSERVATION & RESULT

The experimental setups are used to collect data and can be calculated by applying footsteps. The output voltage and output current were taken directly from the multi-meter. The turbine casing dimension can be changed and output power and efficiency measurement being calculated. The output power and efficiency measurement can be measured by applying following equations.

$$\text{Output Power} = \text{Output voltage} \times \text{Current}$$

$$\text{Efficiency} = \frac{\text{Output power}}{\text{Maximum capacity}} \times 100\%$$

TABLE NO I: DATA FROM THREE EXPERIMENTAL SETUP

Turbine Casing (inch×inch)	Maximum Capacity (W)	Output Voltage (V)	Current Induced (A)	Output Power (W)	Efficiency (%)
(4×4)	1.54	0.721	0.4	0.2884	18.727%
(5×5)	3.13	0.752	0.4	0.3008	9.61022 %
(6×6)	4.32	0.896	0.4	0.3584	8.2871%

VIII. CONCLUSION

This system is used for human being during walking. The walking is the best exercised in the human being. The more walking can be carried out we large amount of energy. The Footsteps is an uninterrupted and renewable source of energy. The system. The short duration of time this system is being carried out. The turbine operation has to maintain the constant speed. The voltage regulator is controlled the voltage variation which caused during this operation of turbine methods. The total system of the electricity power generation using footsteps depends mainly on the angle of attack of the flowing medium when the water is flowing. The methods are used as high voltage dynamo that it produces more amount of electricity by walking through footsteps method. This system in this paper included is very economical, cost effective, and easy to control and less cost. The human being in any country facing many problems of energy crisis and it's not be sort out by any of government. This type of technology and methods can be used in railways, metro station. By just walking the electricity generation is being carried. The people are aware with new technology and people feel very relief while walking form this type of machinery. The people are really enjoyed and feel proud that by walking they create a electricity. The electricity generation problems are solved by somewhat new technology.

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