

Energy Generation From Gym Equipment: A Review

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Abstract- *The world is facing energy crisis with the difference in demand and supply and limited number of natural resources. So, there is a need for saving energy and requirement an alternate energy source which is cheap and feasible. In this Paper ,we have concentrated on how electrical energy can be generated from gym/exercise equipment. The paper aims to establish a green source of energy focused on a learning product. The fuel used in a practice session in the fitness centre is typically lost in machinery. This plan extracted the machine's mechanical energy and transformed it to electric power via a generator unit. The training equipment is placed upon the generator shaft. The electrical energy produced is therefore used in driving a piece of equipment such as a lamp or a computer during workouts. The development of Energy across the planet still rise there's a powerful ought to develop new strategies for Energy Conservation and power generation interns Human Power is not ideal of life cycle costs. In this paper, we charge the Battery by the manual Gym machines which are connected by Rectifier Circuit which stores the power in battery at particular period as well as it also optimizes the street Lights and have applications as well.*

Keywords- Electrical power, mechanical energy, generator, power generation etc.

I. INTRODUCTION

Human power is a power produced from gym exercise. Human powers can another renewable source of energy. The intention of this project is to design a system based on renewable energy source [1]. A generator having 24V motor which is powered by a gym bicycle. A motor is connected to gym bicycle in such way that the circular rotation takes place in front wheel of the bicycle then it suddenly rotates the motor shaft [2]. The generated DC current is divided into different DC voltages then the conversion of DC current voltage into AC current voltage levels. The generated will be useful for light bulbs, laptop and mobile charging, musical system, and other appliances, that will reduce the energy demand in today's life [3][4]. This paper will introduce the project and present all applicable information regarding the design, development, and the final product. This project will help one develop engineering skills while learning about a

clean way of generating electricity [5]. The cutting edge challenge looked with the worldwide energy circumstance is the developing energy request and the solid reliance on unsustainable petroleum products [6]. Another simultaneous issue is the unfriendly wellbeing and financial ramifications of grown-up heftiness. This Gym Power Generation Machine venture, which uses used human energy to produce electrical power, might address both these difficulties [7][8]. The use of human power is the best idea from machines used by humans. [9]The idea is "The normal human produces 100 watt power in a day approximately. Depended upon the person's action, weight, and digestion, the persons scope of work will come lightly sequential". Expecting no weight addition or misfortune, results 2500 kilocalories are generally utilized by the body [10]. An energy emergency can emerge due to over utilization of the assets and wastage of energy produced. This venture tends to both the issues of energy sparing just as energy age utilizing basic system from gym equipment. "Energy changes from one structure to the next". At the point when individuals turn out in gym then there are parcel of energies engaged with the procedure [11]. With expanding interest for fuel and another wellspring of energy, improvement of human controlled generators become a need. [12]

II. LITERATURE SURVEY

[1] **P.V.Shingare et al [2018]**, In this paper, the author design an energy producing machine from workout machine. The energy used while doing regular workout in gym manual machines is normally squandered in the mechanics of the equipment. This venture tackled the mechanical energy of the machine and changed over it to electrical energy utilizing a generator-based framework. The exercise equipment, connected to the pole of the generator. In this manner, created electrical energy is utilized in fuelling a bit of equipment, for example, light or a PC while working out.

[2] **M. Musharraf et al [2018]**, This paper contributed to the idea Electrical energy reaped by utilizing shrewd EGGS will be spotless, inexhaustible and manageable. Research proposed for keen EGGS recommend that individual is additionally a wellspring of sustainable power source and compound energy controlled by people can be changed over into electrical

energy [8]. EGGs will be gainful for the nations that are confronting serious energy emergencies. Absolute yield of all the gymnasium machines will give an adequate measure of electrical energy required by the gymnasium electrical apparatuses. The extreme electrical energy can be send back to utility.

[3].Mrs. Saylee Bidwai et al [2017], Human power is a power created from gym exercise. Human powers can another inexhaustible wellspring of energy. The aim of this venture is to plan a framework dependent on sustainable power source. A generator utilized here is the 24V engine which is powered by a gym bike. An engine is associated with gym bike in such path as the round about pivot of the front bicycle wheel turns the engine shaft. The subsequent direct current is changed over into various usable DC current voltage levels and by changing over this DC current voltage into ac current levels. This will diminish the energy demand in the present life.

[4]. Madhup Kumar et al [2017], Popular proposed Work Software internet of Things (IOT) and the cloud Computing. are the most present day issues of Future Internet. The IoT is the most significant idea of Upcoming Internet for giving an aggregate worldwide IT Platform to join consistent systems and organized things. In this paper, creator will give the audit about different distributed computing overwhelming fields in IoT and all dialog of open difficulties and potential answers for Future Internet under distributed computing.

[5]. Roshan Ojha et al [2016], this paper includes application of battery charge home appliances and other electrical appliances.

III. PROPOSED METHODOLOGY

The below block diagram consists of Proposed System Human Body Convert Solar Nuclear Energy in to Electrical Energy it is used to convert mechanical energy to electrical energyThe block diagram of Figure 1. The gym power station turning workout into electricity which consists of shaft connected to motor as generator, battery, inverter, transformer, and load.

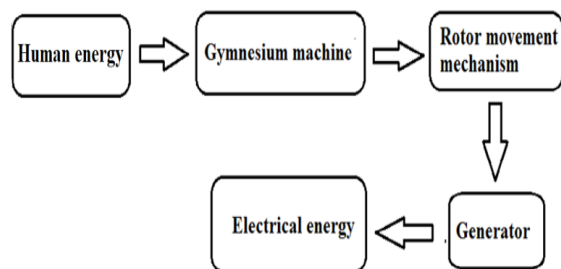


Figure 1: Proposed System Human Body Convert Solar Nuclear Energy in to Electrical Energy

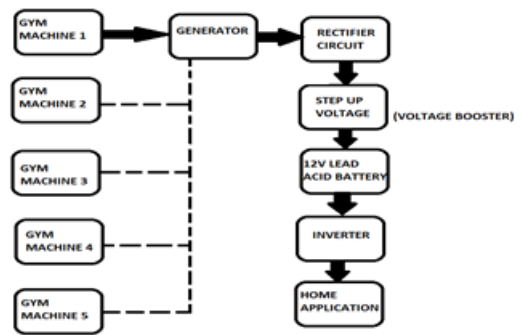


Figure 2: Gym Manual Machines Energy Generation.

IV. HARDWARE COMPONENTS

The hardware components used are: Generator, Motor, Rectifier Diode (In4007), Inverter Module, Bulb (220Watt), Rechargeable Battery and Manual Gym Machines.

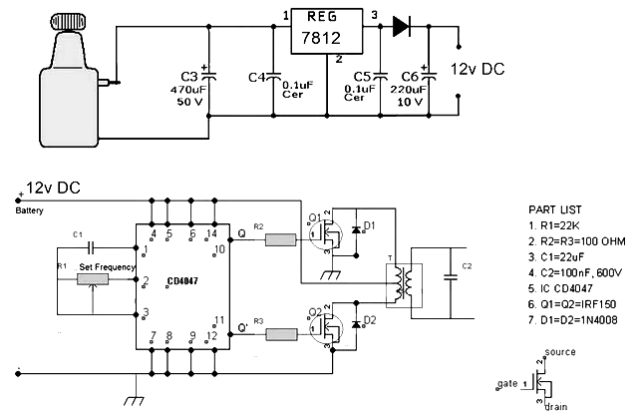


Figure 3: Proposed circuit diagram of energy generation from human body using GYM equipment.

Figure 3 shows the Proposed circuit diagram of energy generation from human body using GYM equipment here converting the mechanical energy into electrical energy.

V. IMPLEMENTATION

This section presents solid works designs in the below figures.



Figure 4: Proposed Design of Treadmill on Solid works.



Figure 5: Proposed Design of Lat Pull Down Machine on Solidworks.

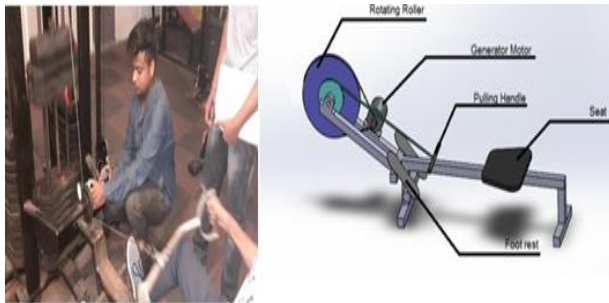


Figure 6: Proposed Design of Magnetic Rowing Machine on Solidworks.



Figure 7: Proposed Design of LEG Press Machine on Solidworks.



Figure 8: Proposed Design of Chest Press Machine on Solidworks.

VI. RESULTS

The results are shown in below table.

Table 1: Parameter Readings ,

Machine	Voltage (Motor) Volt	Current Amp	Power Generated Watt	Voltage (Motor) Volt
Treadmill Machine	15	0.2	3Watt	15
Lat Pull Down Machine	15	0.15	2.25	15
Magnetic Rowing	15	0.17	2.55	15
LEG Press	15	0.21	3.15	15
Chest Press Machine	15	0.18	2.7	15

VII. CONCLUSION

On the basis of the study of all Researchers in Every generated from gym equipment. Energy generation to meet specified need in our locality. The manual gym machines used to generate Energy will also serve as an area where there is no power supply and would always be readily available .The gym machines are Environmentally friendly as we have calculated power generated at same voltage ie:15 volts and current generated by gym machines charged the battery in lesser time . This system proved to be more efficient .

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