Charging Smart-Phones Using Renewable Energy ((Kinetic Energy))

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1/ Abstract

In this project It has been experimenting and study the possibility of CHARGING smart phones through energy Renewable (kinetic energy & solar energy) BY Using simple design Model wheel moving Manually (kinetic energy), WHERE (the voltage 5 volts And the current does not exceed 2 amperes) conversion the Kinetic energy into electric energy for CHARGING Directly beside using a solar cell conductive Electronic circuit .

2l Introduction

After that the world realize that energy sources such as(oil and gas) threatened access and also a threat to the environment, has become looking for a clean and sustainable alternative sources The energy Renewable [1] already considered the hope of saving Energy in the first embodiment of this idea, is French scientist and inventor Pixi created in 1832 when the first generator rotor Electromagnetic stream Continuous. [2]

In our project, we worked on a scale model to take advantage of renewable energy and focused Kinetic energy, solar energy and convert it to electrical energy by generator Which leads to charging phones .

3/ Theory

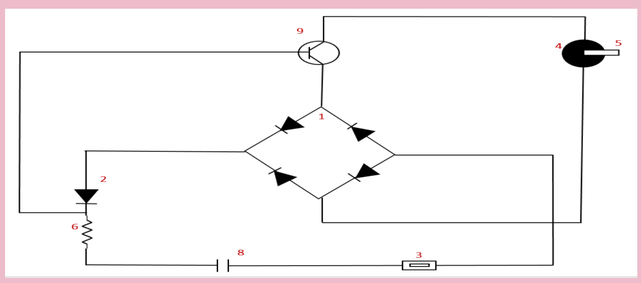
- Ohm's law describes what happened in the electrical circuit of the device between both voltage (V) and resistance (R) and the resultant current (I). The Electricity intensity (electric current) [3]

$$V = I \times R$$

- The law of conservation of energy " that energy cannot be created or destroyed, but only changed from one form into another " [4] .

4/ Methods

Designing charger works using the kinetic energy , it's starting with a Wheel connected to the key run connects with the electronic circuit .
The circuit shown in the figure is used to make a charger :



The following are tools used to the circuit

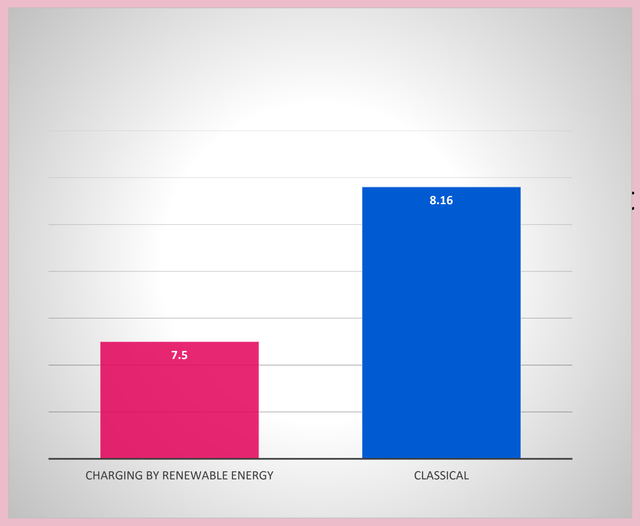
	Name	Function
	1/ Full Bridge Rectifier	wave rectification- provides full
	2/ Diode	Current passes from anode to cathode
	3/ USB cable colors	to charging
	4/ generator	direct current produces
	5/ Wheel	To movement
	6/ Resistor	reduce current flow
	7/ Electronic board	electronic components Connects
	8/ Capacitor	to store electrical energy temporarily in an electric field (charge and discharge)
	9/ Transistor	used to switch electronic signals
	10/ Wires	To connect

5/ Results

Consumed Energy :

We measured the energy consumption of the charger that uses the "kinetic energy & solar energy " and compared it to Power bank .

$$P = R \times I^2$$



Conclusion

In this study were obtained an Alternating current between 8 – 9 volts using "Kinetic energy" By that we were able to charge the smart-phone .
This study recommends that the device can evolve in the future by using "Wind turbine" to converts kinetic energy from the wind into electrical power.

References

1. James & James September (2000) *The World Directory for Renewable Energy .*

2. Mohamed E. El-Hawary (2002) *Principles of Electric Machines with Power Electronic Applications.* chapter 4 , 4.3 page 185

3. - S.LEONARD. BOBROW, Oxford University Press (1996). *Fundamentals of Electrical Engineering*

4. - T.B Akrill, G.A.G.Bennet and C.J.Miller , (1979) *Edward Arnold, Physics* .

Acknowledgment :

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