Solar powered jacket

By: Akani Ivin Miyen

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I. Introduction)

The Solar Charged Jacket is naturally fuelled by sunlight, so one of the easiest ways to charge It is by wearing it outside during the day. The jacket will store energy from the sun to the solar power bank. Even if it's a cloudy day or you leave it outside or near the window is bright enough to charge it up.

The jacket also has electromagnetic induction to enable wireless charging also powered by the solar system. Inside the pocket there's a portable patch with coils or electromagnetic induction.This will enable charging your phone wireless by easily inserting inside the pocket, without the power charger cable.

Explained from (reseachgate.com)

The purpose of manufacturing this " SOLAR JACKET " is to encourage the idea of energy conservation by shifting focus on renewable energy sources. In this paper a solar garment is designed which provides a cooling environment to people working in the hot summer. A solar panel is used to convert the sun radiation into electrical energy. The circuit consists of a solar panel; consisting of four solar cells ,ICs f and rechargeable batteries converting DC(direct current) into AC(alternative current). The glass sheet coated solar panel is attached at the back of the jacket using a designed transparent pocket in the garment itself.

link:
https://www.researchgate.net/publication/305699521_SOLAR_JACKET_an_innovation_against_energy_crisis/link/579a294c08ae2e0b31b14b30/download

The wires and other accessories were attached inside the jacket, the batteries and charging pins were placed inside the pockets of Jacket maintaining all the safety norms and providing safety to the people wearing it from unnecessary electrical shocks. It is affordable, easily detachable, washable and gives comfort to the wearer.

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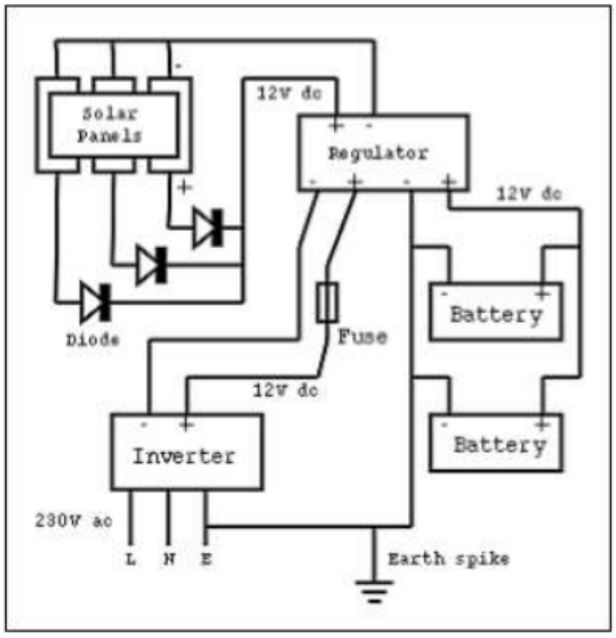
II. Components 1)

Copied from researchgate.com



PV panel (four no.s each of 3 watt peak): Solar panels generate free power from the sun by converting sunlight to electricity with no moving parts, zero emissions, and no maintenance. The solar panel, the first component of an electric solar energy system, is a collection of individual silicon cells that generate electricity from sunlight. 2) Constant voltage regulator(IC) using VR1 (15V) and VR2 (9V) : In this system we are using a 7809 voltage regulator.

The fixed 3- terminal regulator is useful in applications where an adjustable output is not required making the output power supply simple, but very flexible as the voltage it outputs is dependent only upon the chosen regulator. The constant voltage output throughout the day ranging between 7.9V to 15 V. This constant output voltage is then fed to the charge controller which delivers 700 mA current to charge the batteries. 3) Charge controller (12 volt): A battery charger is used to maintain the proper charging voltage on the batteries. As the input voltage from the solar array rises, the charge controller regulates the charge to the batteries preventing any over-charging.

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III.Electromagnetic Induction

Wireless charging works by **transferring energy from the charger to a receiver in the back of the phone via electromagnetic induction**. The charger uses an induction coil to create an alternating electromagnetic field, which the receiver coil in the phone converts back into electricity to be fed into the battery. Explained by google

future:

- The patch will be mobile integrated and you can remove it from the jacket. It has its own power supply and acts as a second battery installed from the jacket where it stores solar energy.
- We are going to design artificial clothes with installed technology from casual,formal clothes , camping clothes and uniforms.

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V.Advantages:

. Liat jackets are water resistant jackets treated to be made of polyethylene to prevent penetration by water.
. The solar system and the power bank are water resistant and all the power devices from the jacket are removable.
.Store's enough power to charge your phone anytime even during the midnight, power will be stored to the power bank for further use.

IV. Conclusion

This paper is a step towards the solution of the energy crisis for the world . Renewable energy which comes free of cost is used to overcome energy crises and provide a solution towards energy security . The designed portable garment basically provides a charging system to the world. It is an affordable, compact and comfortable eco-friendly charging garment. Moreover charging facilities for different electronic devices (laptop, mobile, iPod and mp3 players) in the absence of electrical energy can be introduced as further studies in this garment. Electronic items can be plugged in and charged, allowing power to power most of the devices less than or equal to +24 V. For making jackets more flexible, small wafer solar cells can be used but this type of garment requires a clean environment and weather.

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Why?

I asked myself what if people had access to charging devices everywhere they go,
without them even irritated by heavy cables, or that they were carrying a charging device on their clothes. This means artificial clothes that enable people to charge their devices. Having access to charging systems on their clothes is portable, water resistant and removable.

imaginary , wishful world !

Imagine in the future people had those long lasting smartphone's batteries which could last for 3 days or 4 days, they rely on access to electricity at home or their cars, charger banks for their smart phones and laptops . How about they were away from home or someone was lost, maybe in the middle of the mountain or ocean, maybe diving and you find out they are far away from all this devices it means the would'nt charge their devices. If they had access to a charging system enough to power more than 3 phones and a laptop, powered by renewable energy
it would simplify our lives and save the world by conserving energy.

Thank you so much for considering my dreams.

Email address : akaniivin@gmail.com
Phone number: 068 341 5775