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SOLAR MOBILE CHARGER

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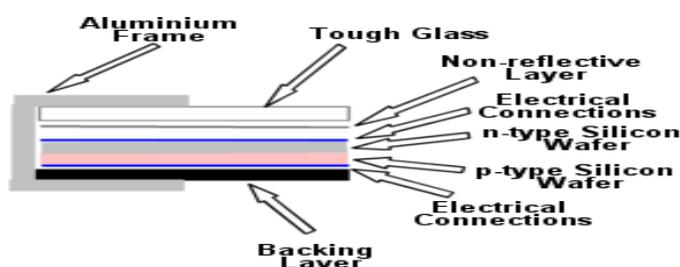
Abstract:

Today charging of mobile phone is became a big problem. When travelling too long distance we don't have charge in our mobile. So we go for an alternative method of non-conventional energy called "solar energy". Even we have alternative methods to charge the mobile it is so expensive. We can use solar energy instead which is highly efficient and economical to use. This charger is used also in travelling, power cut and non-availability of power in some remote areas. solar charger is economical to use.

Keywords: Universal mobile charger, economical mobile charger.

1. Introduction

During travelling, the charging of mobiles mainly smartphones are becoming main problem. Even we have chargers for mobiles and mp3. There are too expensive. To overcome we came across on non-conventional energy one of those "solar energy". We introduce a mobile charger using solar energy. A solar panel can generate 8v of energy. This charger will solve the problem of charging when travelling, power cuts and non-availability of power in some remote areas. It is also does not emit any atmospheric emission and greenhouse gas. Solar energy is a non-conventional energy. We can use solar energy in industries, colleges, complexes and household applications. Solar energy is used in many ways to decrease the atmospheric pollution from thermal plants and nuclear stations. solar energy is eco-system and livelihoods.



It is produced by conducting the sun's radiation-A process void of any smoke, gas, or other chemical by-products. Solar energy is becoming increasing popular as the world takes notice of the burgeoning carbon emission problems that come with burning fossil fuels. solar energy offers decentralization in most(sunny) locations, meaning self-reliant societies. With solar energy currently contributing only an estimated 4% of world's electricity. It is a vital well spring of renewable vitality and its advancement are comprehensively described as either aloof sunlight based or dynamic sun based relying upon how they catch and circulate sun powered vitality or believer it into solar power.

2. Components Required

A. Solar Panel: Each solar cell consists of two layers of "doped" silicon (p-type and n-type), in contact to form a junction, with each wafer having electrical connection. Each cell, whilst very thin, measures approximately 100mm across. One of these cells may be capable of producing up to 0.8 volt, with maximum power being produced at a voltage of approximately:

Time	Voltage(v)
Morning	8.5
Mid-day	10
Evening	7

0.4*72=28.8 volts.

These cells will sit on an intense support plate, while the framework of electrical associations lies above and beneath the cells of the cells. Electrical interfacing strips will go from the base of one cell to the highest point of the following, associating cells in arrangement. Over this will be a non- intelligent layer (Silicon is actually intelligent), to expand light ingestion. At long last on top will be a layer of extreme glass, and the entire structure is for the most part inside an aluminum outline, fixed against the climate. A sunlight based board is a strong state electrical gadget which changes over light vitality into electrical vitality straightforwardly utilizing photograph voltaic impact. Gather of numerous sun based modules which are utilized to catch the daylight, which are known as "sun powered boards". Photograph voltaic impact is spotless and noiseless and creating no air outflow and nursery gasses. The sun oriented board produces diverse voltages in various times.

Solar panel



Time	Voltage(v)
Morning	9
Mid-day	10.5
Evening	8

In summer weather

In winter weather

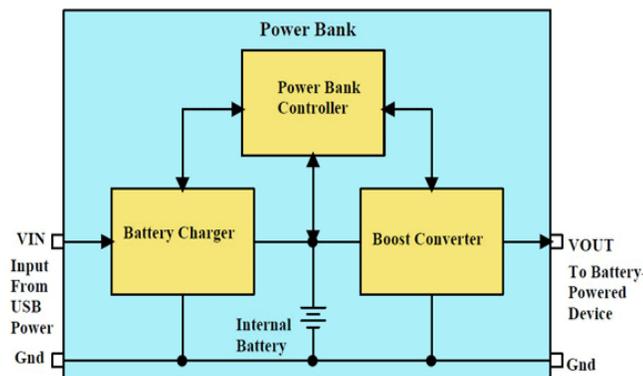
B. power bank:

The solar energy generated from the solar panel are stored in storage device 8 which is capable of storing some data in them is called “power bank”. power bank is a battery charger with a built-in internal battery. The charger is built with an aluminum case, and includes batteries rated at 5000/5200/10000/10400/16000/20000mAh. Through the use of a USB cable, it can be used to charge any device that supports USB charging. The 16000 & 20000mAh have two USB ports. Silicon sleeves are available for all except the 20000mAh version.

Power bank is a battery charger or recharger, is a gadget used to place vitality into an auxiliary cell or rechargeable battery by driving an electric current through it. electrical capacity media usually utilize lithium batteries, in light of the fact that the volume of lithium batteries is moderately reduced, vast limit, wide market liquidity, reasonable and be broadly utilized as a part of computerized items. Lithium voltage in the middle of 2.7-4.2 volts.



Power bank



The portable power bank charging principle is, 5v charger ->charger management ->electric core ->step up system ->5v

USB output

3. Working of Universal Mobile Charger

Solar energy works in a step by step process:

Step 1-Installation of solar panels:

Convenient, lightweight, waterproof and can be situated in 3 ways:

1. Position it in 45-degree point, confronting the window up to a meter away, assuming inside. You simply need to try a bit, in the event that it doesn't charge, draw it nearer to the window and on the off chance that you are after brisk charge, it is smart thought to set crowd to vitality sparing mode I think.
2. It can be joined to the pack or ruck sack, by putting leg in a pocket with your telephone connected to, so you can charge while all over place.
- 3.Can be held tight the window with the string, so even in restricted light you can in any case get charge.

Step 2-collectoin of sun rays:

There are two sorts of sun based force producing frameworks: lattice associated frameworks, which are associated with the business power base; and remain solitary frameworks, which sustain power to an office for quick utilize, or a battery of capacity.



Solar powered photovoltaic(PV) panels convert the sun's rays into electricity by exciting electrons in silicon cells using the photons of light from the sun. This electricity can then be used to supply energy to charge a mobile. The collections of rays depend on the size of the solar panel. The size of the panel is directly proportional to the collection of rays or excitation of energy.



Step 3-power is sent into the directly to the mobile:

The power is directly sent into the mobile because here we use a single solar panel of 2*flexible solar panel 0.8v,2v so it can only charge a phone. the power directly sent into the mobile using DC-DC step converter charger with USB female DC 2.5-5v.

Step 4-credit of unused electricity.

Here we use a storage device to store the unused energy from the solar panel is called power bank which is used to store energy in it and return it back when required.

Advantages of solar energy:

1. Renewable energy source:

Sun based vitality is a genuinely renewable vitality source. It can be bridled in every aspect of the world and is accessible ordinary. We can't come up short on sun powered vitality, not at all like portion of alternate well springs of vitality. Sun oriented vitality will be open the length of we have the sun, in this manner day light will be accessible to us for no less than 5 billion years, while as indicated by researchers the sun going to bite the dust.

2. Diminishes electricity bills:

Since you will meet some of your vitality needs with the power your nearby planetary group has created, your vitality bill will drop. The amount you save money on your bill will be subject to the measure of the nearby planetary group and your power or warmth use. In addition, not just will you be saving money on the power bill, yet in the event that you create more power than you utilize, the surplus will be sent out back to the matrix and you will get extra installments for that sun.

3. Assorted application:

Sun powered vitality can be utilized for various purposes. You can create power (photovoltaics) or heat (sun based warm). Sun powered vitality can be utilized to deliver power in territories without access to the vitality matrix, to distil

water in locales with restricted clean water supplies and to power satellites in space. Sun powered vitality can likewise be coordinated in the materials utilized for structures. In the no so distant past Sharp presented straightforward sun based vitality windows.

4. Low Maintenance Costs:

Sun based vitality frameworks for the most part don't require a great deal of support. You just need to keep them generally spotless, so cleaning them several times each year will carry out the occupation. Most solid sun oriented board makers give 20-25 years guarantee. Additionally, as there are no moving parts, there is no wear and tear. The inverter is normally the main part that necessities to be changed following 5-10 years since it is constantly attempting to change over sunlight based vitality into power (sun powered PV) and warmth (sun powered warm). In this way, subsequent to taking care of the underlying expense of the close planetary system, you can expect almost no spending on upkeep and repair work.

5. Innovation Development:

Innovation in the sun oriented force industry is always progressing and upgrades will strengthen later on. Advancements in quantum material science and nanotechnology can conceivably build the viability of sun based boards and twofold, or even triple, the electrical contribution of the sun oriented force frameworks.

Disadvantages of solar energy:

1. Cost:

The underlying expense for obtaining a nearby planetary group is genuinely high. Despite the fact that the UK government has presented a few plans for empowering the appropriation of renewable vitality sources, for instance the Feed-in Tariff, regardless you need to take care of the forthright expenses. This incorporates paying for sun based boards, inverter, batteries, wiring and for the establishment. By the by, sun powered innovations are always growing, so it is protected to expect that costs will go down later on.

2. Climate Dependent:

Albeit sun powered vitality can even now be gathered amid shady and stormy days, the effectiveness of the nearby planetary group drops. Sun powered boards are reliant on daylight to successfully assemble sun powered vitality. Consequently, a couple of shady, blustery days can noticeably affect the vitality framework. You ought to likewise check that sun based vitality can't be gathered amid the night.

3. Sun oriented Energy Storage Is Expensive:

Sun oriented vitality must be utilized immediately, or it can be put away in expansive batteries. These batteries, utilized as a part of off-the-matrix heavenly bodies, can be charged amid the day so that the vitality is utilized around evening time. This is great answer for utilizing sun oriented vitality throughout the day yet it is additionally entirely costly. By and large it is more quick witted to simply utilize sunlight based vitality amid the day and take vitality from the framework amid the night (you can just do this if your framework is associated with the lattice). Fortunately our vitality interest is generally higher amid the day so we can meet a large portion of it with sunlight based vitality.

4. Utilizes a Lot of Space:

The more power you need to deliver, the more sun oriented boards you will require, in light of the fact that you need to gather however much daylight as could be expected. Sun powered boards require a ton of space and a few rooftops are not sufficiently enormous to fit the quantity of sunlight based boards that you might want to have. An option is to introduce a portion of the boards in your yard yet they need access to daylight. In any case, if you don't have the space for every one of the boards that you needed, you can simply get a less and they will even now be fulfilling some of your vitality needs.

5. Connected with Pollution:

Despite the fact that contamination identified with sun oriented vitality frameworks is far less contrasted with different wellsprings of vitality, sunlight based vitality can be connected with contamination. Transportation and establishment of heavenly bodies have been connected with the emanation of nursery gasses. There are likewise some dangerous materials and risky items utilized amid the assembling procedure of sun oriented photovoltaics, which can by implication influence nature. All things considered, sun based vitality contaminates far not exactly the other option vitality sources.

Future needs of solar energy:

Request Has Never Been Higher:

Most ventures would salivate over the sun oriented segment's present development. A year ago, interest for sun oriented force in the U.S. expanded by 41 percent, making it the second-greatest new wellspring of vitality era after characteristic gas. Private ventures jumped considerably higher, surging 60 percent over the earlier year. General 4.75 gigawatts of photovoltaic boards were introduced in, sufficiently 2013 to control more than three-and-a-half million homes. It was, by investigators, a urgent year. "2013 offered the U.S. sun oriented business sector the primary genuine look at its way

toward standard status," one master read a clock magazine. What's more, the development hints at no slowing down: in August, Merrill Lynch issued a report to financial specialists encouraging them to empty their cash into sunlight based stocks, which the firm hopes to take off in worth throughout the following three years.

Boards Are Cheaper Than Ever

What number of items can say they're getting less expensive by seven percent for every year? That is the cost direction for sun oriented voltaics as indicated by John Farrell, chief of the Energy Self-Reliant States and Communities program at the Institute for Local Self-Reliance. "100 million Americans in the country's biggest urban areas will have the capacity to 'go sun based' at a lower cost than framework power in the following ten years," predicts his 2012 report Rooftop Revolution. Truth be told, by, sun oriented is as of now less expensive than utility force in a few states on a dollar-per-kilowatt-hour premise — it's lone establishment costs that keep it more costly generally. Be that as it may, those establishment expenses may soon fall. Planning to make sun powered vitality cost focused with different types of power before this present decade's over (a cost the administration recognizes as six pennies for every kilowatt hour), the U.S. Branch of Energy has dispatched the SunShot activity, a variety of endeavors to drive down the expense of introducing and keeping up sun based boards.

China is Part of the Reason It's Getting So Cheap

Convoluting the perspective of China as a wild polluter, a noteworthy reason that sun based is developing the world over is on account of modest Chinese boards. Sponsorships from the Chinese government have helped organizations in that nation catch a large portion of the world's sun powered board producing market, up from 20 percent in 2008. This might be terrible for American organizations and to be sure, in June the U.S. Business Department forced steep taxes on Chinese-made boards however generally speaking, it's China's cut-rate costs that are helping Americans stand to go sun based. Furthermore, China hints at no moderating its yield — one investigator called the size of the Chinese business sector "surprising," including that "PV [photovoltaics] is turning out to be ever less expensive and easier to introduce."

Enormous Business is Falling in Love With Solar

From Apple to Costco, for all intents and purposes the greater part of the greatest U.S. enterprises are making interests in sunlight based force in somehow. From 2012 to 2013, business organization of new sun powered establishments developed by 40 percent, with more than 32,800 offices using sunlight based vitality. What's more, they're not utilizing only a tiny bit of it, either. An overview of the Fortune 100 organizations by the Solar Energy Industries Association

found that the main 25 had expanded their sun based limit altogether, from 300 megawatts at 730 offices in 2012 to 445 megawatts at 950 offices in 2013. That implies that those organizations are no more simply taking a risk on sun oriented they've seen its execution and chose to twofold down on it. What's more, the enterprise introducing more sun oriented boards than whatever other? By a wide margin and away, it's that malicious adversary of liberal activists all over the place: Walmart.

Indeed, even the Tea Party Loves It

Republicans despise huge government as much as they adore private undertaking, which is the reason they're warming to the possibility of a decentralized, free-showcase driven answer for our vitality needs. Sunlight based fits that worldview consummately. One Tea Party pioneer portrayed sun based vitality as "a free market issue that gives buyers more decision." And with expansive open backing for sun based force one review discovered 92 percent of Americans need to grow more sunlight based vitality preservationist legislators must choose between limited options. "Republicans who restrict sunlight based in the following race, will be wiped out no matter how you look at it," one GOP strategist told The New Republic.



Conclusion

The sun is a capable source that can help our planet by giving us perfect, reusable vitality to control our reality. The utilization of this vitality is free, does not make contamination, and if utilized carefully can help us turn out to be less subject to other all the more immoderate and harming types of force. In the wake of taking an interest in this Web Quest I trust you can see the advantages of this significant asset and change the future for vitality use.

In one second, our sun produces enough energy to meet the current needs of the entire earth for 500,000 years.

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