



Limited resources and unlimited usage.
How can we save it?

Newsletter



**Conserve the energy,
Save our climate!**

August, 2015

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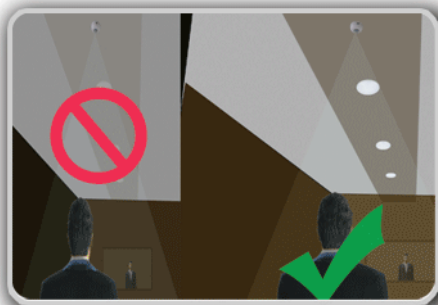
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Why ???

We the people on the earth are gifted with wonderful energy sources by the nature, which has made our routine much more smother & easier... However, this gift of the nature is ' limited '. What we have done is, with the growth of science & technology, we have started using it extremely, because of which the energy resources are going to finish in near future. Hence, let us take the pledge to conserve the energy - save the energy!!!

Tips of the Month



Outdoor lighting not only shoots up our electricity bill but is also harmful and destructive to wildlife. Use of motion sensors not only saves money and electricity but also adds security to our apartment.

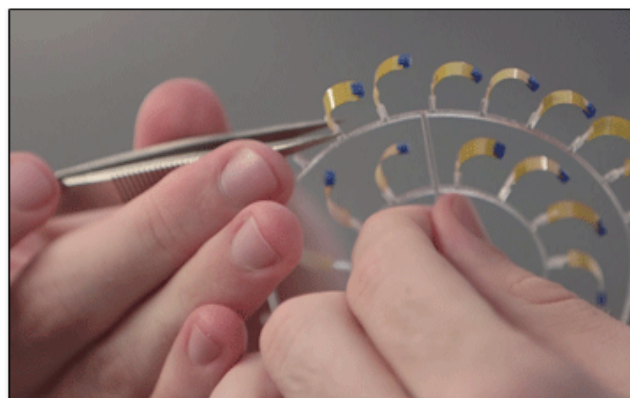
Article - 1 : NEW CLEAN ENERGY FROM EVAPORATING WATER

The scientists of Columbia University have shown that evaporating water could be an abundant new source of clean, renewable energy, to light up a small LED and power a miniature car. With around 70 percent of the planet covered in water that's constantly evaporating into the atmosphere, the new technology has huge potential to help us power our homes, transportation and industries, without producing greenhouse gas emissions.

The scientist, Sahin found that when bacterial spores shrink and swell with changing humidity, they can push and pull other objects forcefully. Sahin and his Columbia colleagues sought to build actual devices that could be powered by such energy. They used the strips - which they're calling Hygroscopy driven artificial muscles, or HYDRAs - to build a shuttered structure that floats on water. The humidity produced by the evaporating water causes the tape to expand, opening up the shutters and causing the device to dry out. As the tape shrinks again in the dry air, the shutters are pulled shut, which allows the humidity to build up again, repeating the cycle. A self-sustaining cycle of motion was born. The spore-covered artificial muscles function as an evaporation-driven piston. Coupling that piston to a generator produced enough electricity to cause a small light to flash.

The other new evaporation-driven engine the Moisture Mill contains a plastic wheel with protruding tabs of tape covered on one side with spores. Half of the wheel sits in dry air, causing the tabs to curve, and the other half sits in humid environment, where the tabs straighten. As a result, the wheel rotates continuously, effectively acting as a rotary engine. Using the system, the team was able to make a small toy car weighing 0.1 kg roll forwards on its own. In the future, it may be possible to design engines that use the mechanical energy stored in spores to propel a full-sized vehicle. Such an engine, if achieved, would require neither fuel to burn nor an electrical battery

**Imagesource:/caxapa.ua/fotos/articles/5580293f567a3.png.*



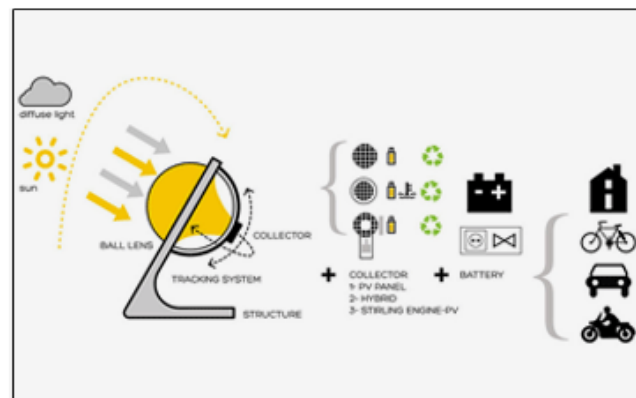
Article - 2 : RAW LEMON'S BETA-RAY POWER GENERATOR

The German architect, Andre Broessel has invented a new power generator that can consume more energy from the sun. His company Rawlemon has created a spherical sun power generator prototype called the beta-ray.

He was inspired by his daughter's toy marbles; the Rawlemon design uses a spherical lens to concentrate sunlight on a small photovoltaic panel and combines this with a dual-axis pivot that tracks the movement of the sun. This design consists of a transparent sphere which is fully rotational and is suitable for inclined surfaces like walls of the building and anywhere facing the sky.

It can even be used as an electric car charging station. It provides an efficiency boost that can be used in far more locations. It is claimed that by concentrating the sun's light in one area, the Rawlemon design reduces the solar cell surface required to just 1 percent of that required by a traditional panel.

The beta.ray comes with a hybrid collector to convert daily electricity and thermal energy at the same time. While reducing the silicon cell area to 25% with the equivalent power output by using our ultra transmission Ball Lens point focusing concentrator, it operates at efficiency levels of nearly 57% in hybrid mode.



**Image source:<http://www.alternative-energy-news.info/wp-content/uploads/2015/04/sun-power-generator.jpg>*

At nighttime the Ball Lens can transform into a high-power lamp to illuminate your location, simply by using a few LED's. The station is designed for off grid conditions as well as to supplement buildings' consumption of electricity and thermal circuits like hot water.

Rawlemon is also developing a system called Microtrack, which uses the same technology but is installed as a building skin. Microtrack will produce energy during the day and can be used as a multimedia display at night.

Article - 3 : REVOLUTIONIZING SOLAR ENERGY FROM SPACE BY 2030

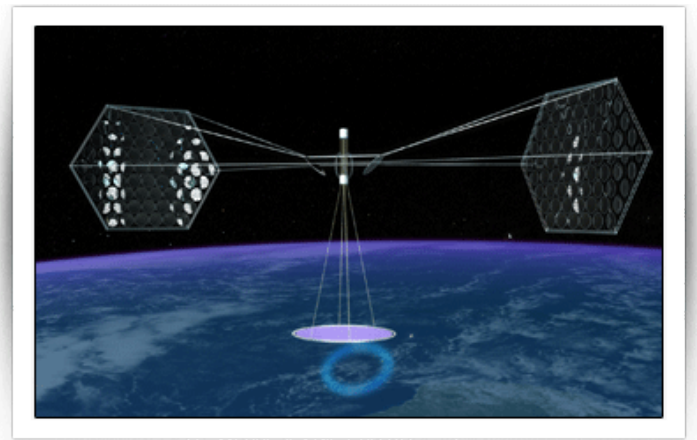
Japanese Space Agency (JAXA) has been working very hard to develop technologies to transmit wireless electricity. The goal of Space Solar Power System (SSPS) is to be able to transmit energy from orbiting solar panels by 2030.

On March, 12th, Japanese engineering giant Mitsubishi has successfully demonstrated long-distance wireless power transmission. During the test, the engineers managed to beam 10KW of power through a microwave transmitter across a distance of 500m. LED lights on the receiver confirmed the transmission. Japan is developing an innovative new system for collecting solar energy from space. Solar panels would be placed on geostationary satellites, sitting 36,000 km above the Earth, which would generate electricity in the form of laser beams or microwave.

Mitsubishi believes space-based solar power will revolutionize renewable energy generation and can in future become the world's number one source of clean renewable power. But there are many technological

challenges to be solved before implementing the idea.

The Japan Aerospace Agency (JAXA) officials had published many studies about the concept in past years and expect the system to be ready for practical use in the 2030s.



**Image source: <http://assets.inhabitat.com/wp-content/blogs.dir/1/files/2013/10/space-solar-station1.jpg>*

Article - 4 : VTT PRODUCING 3D PRINTED SOLAR POWER TREES

A team of VTT Technical Research Centre of Finland has created a 3D printed “tree” that can harvest solar energy from indoor and outdoor sources. The tiny leaves generate and store it, creating enough electric power to run small devices such as mobile phones and LED lighting. They can be flourished indoor and outdoor and can also harvest kinetic energy from wind and temperature changes in the surrounding environment- and it's cute enough to fit in with your décor.

The VTT Technical Research Centre is the largest multi-technological applied research organization in Northern Europe. This came as a result of a new mass production method which enables designers to create functional objects from organic solar panels – or OPV, organic photovoltaic – which are sensitive enough to collect energy from interior lighting or sunlight.

The tree's leaves are flexible organic solar cells, printed using mass production techniques. Each leaf has a separate power converter, which has a surface area of 0.0144 square meters, including necessary wiring connections. 200 of the OPV “leaves” can generate 3.2 amperes of electricity and 10.4 watts of power outdoors in sunnier climes in a one-square-meter formation. The more panels you attach and more energy the tree can harvest.



**Image source: <https://lockerdome.com/bigthink.com/>*

The leaves are flexible, light and made of silicon-based solar panels. They are manufactured by roll-to-roll method which is capable of producing upto 100 metres of layered film per minute. Once the working life of the leaves is over, the OPV panels can be recycled.

VTT also developed 3D printed “trunks” made of a wood-based flexible biocomposite which is patterned to form an electronic system complete with wiring channels that conduct energy to a converter system, that can be infinitely replicated.

Conserve the Energy,
Save our Climate!

Conserve™
The Energy



It's
Tomorrow™


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