Conserve™ The Energy

It's Tomorrow™

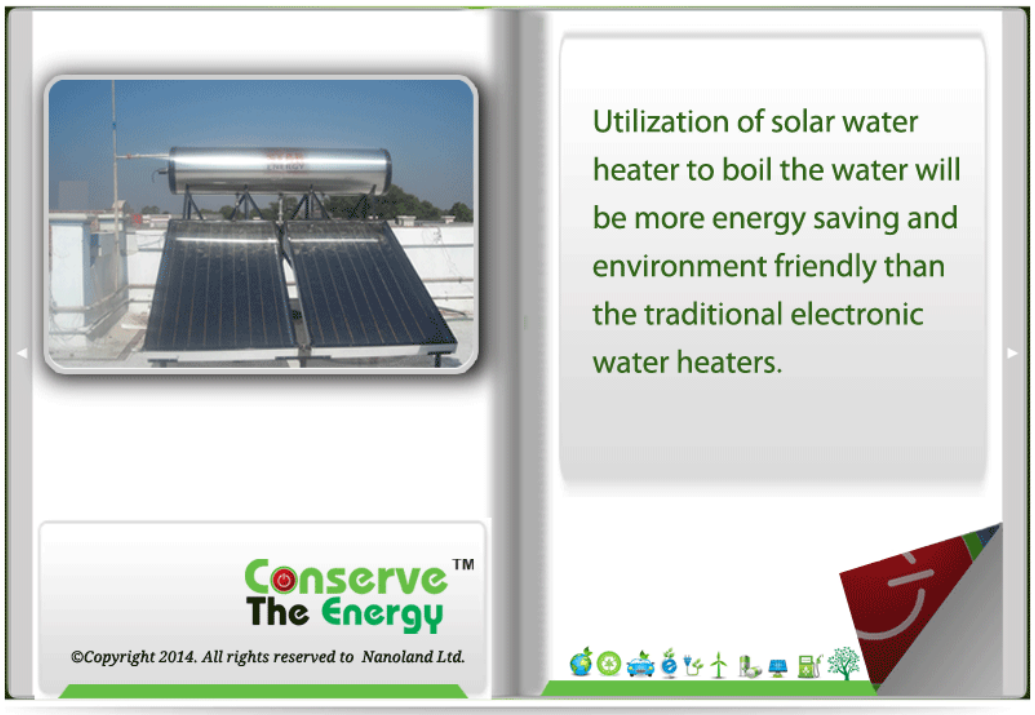
April, 2015 Issue : 10

INSIDE...

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



Article - 1 : PRINTED SOLAR ENERGY TREES

The tiny leaves generate and store solar energy and can be used to power small appliances and mobile devices. The researchers at the VTT Technical Research Centre of Finland have developed some decorative prototypes of what they are calling “energy harvesting trees”. These trees flourish indoors and outdoors and can also harvest kinetic energy from wind and temperature changes in the surrounding environment. They have developed some very decorative prototypes of what they are calling “energy harvesting trees”.

The tree’s leaves are actually flexible organic solar cells, printed using well established mass-production techniques.

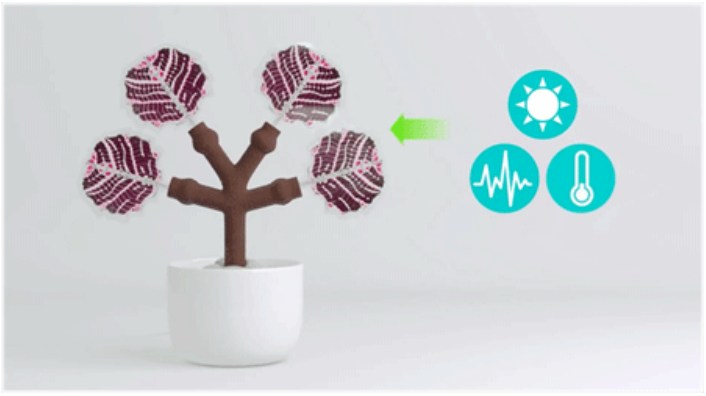


Image source: www.3ders.org/

Each leaf has a separate power converter, creating a multi converter system that makes it possible to collect energy from a variety of sources like solar, wind and heat temperature. This is the tree which can be placed both indoors or outdoors to harvest energy, stores the electricity internally until it is ready to be used.

While this current innovation of this tree won’t be able to power large structures such as homes. But it is currently able to power small devices including smart phone, humidifier, thermometer and LED light bulbs and other household appliances and gadgets. The flexible and patterned solar cells that make up the leaves of the tree are made using an undisclosed printing technology.

The connected leaves within the tree create an electronic system that feeds the harvested solar energy into a converter before it is able to be used to power small device. The more solar panels there are in a tree, the more energy it can harvest. The trunks are 3d printed using wood-based biocomposites. They are mass producible and can be infinitely replicated.

The future scope of this project is that research will help in creating more opportunities for sustainable powering, even develop larger- scale trees that are capable of powering much larger structures and homes.

Source: http://www.alternative-energy-news.info/; www.3ders.org/

Article - 2 : CARBON NANOTUBES TO PRODUCE ELECTRICITY

The researchers of Massachusetts Institute of Technology (MIT) have uncovered a new phenomenon of carbon nanotubes. They have found that carbon nanotubes discharge powerful waves of electricity under certain circumstances. It is called as thermopower waves. Thermopower waves generate electricity which can be utilized in small electrical appliances and in large-scale applications too. Generation of electricity from carbon nanotubes is a very rare happening. Usually electricity derived from water, sun, wind, coal or heat produced by burning of fossil fuels. The thermopower wave opens up a new area of energy research which is rare.

Carbon nanotubes are submicroscopic structures. The key ingredient in the process is carbon nanotubes submicroscopic hollow tubes made of a chicken-wire-like lattice of carbon atoms. They are just billionths of a meter in diameter. Carbon nanotubes look like honeycombs. These three substances can be valuable for the medicine, nanotechnology, geoengineering, biology, and for the electronics industry.

The moving pulses of heat pass through the carbon naotubes, electrons also travel along. This movement of electrons is responsible for generation of electric current.

Carbon nanotubes coated with a layer of reactive fuel that can generate heat by decomposing. This fuel was then ignited by a laser beam or high voltage spark at the one end of the nanotube. This ignition resulted in fast moving thermal waves.

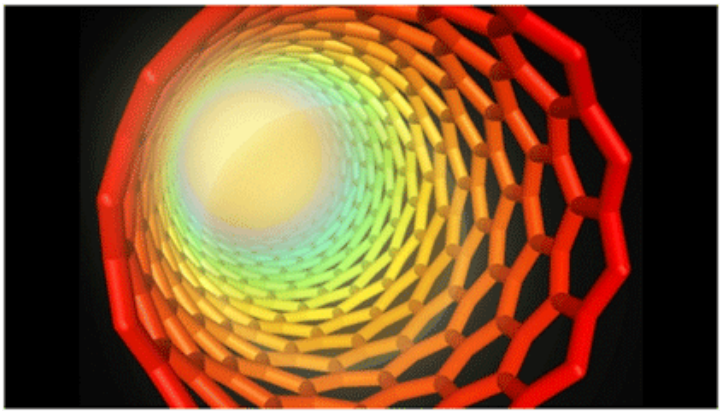


Image source: http://www.gizmag.com/

When this thermal wave enters into carbon nanotube its velocity increases thousand times than the fuel itself. When heat waves contact the thermal coating they produce a temperature of 3,000 Kelvin. This ring of heat runs to the length of the tube 10,000 times faster than the normal spread of this chemical reaction. Thermal waves are behaving like ocean waves. It is observed that when ocean waves travel they carry the debris on their surface. This property is responsible for the high power output by the system.

After further development, the system now puts out energy, in proportion to its weight, about 100 times greater than an equivalent weight of lithium-ion battery. The amount of power released is much greater than that predicted by thermoelectric calculations.

Source: http://www.alternative-energy-news.info/

Article - 3 : SEMI-SOLID FLOW CELLS BATTERY

A new technology is developed which breaks metals that would normally be solids in a conventional battery into nano size particles that are suspended in a liquid. This battery is also known as “semi-solid flow cells”. This technology is in research phase and if effectively brought into action it could revolutionizes the way energy is stored and transport, replacing fossil fuels and oil.

Power is stored in semi-solid flow cells in a black gunk that looks like motor oil. It will eliminate the primary issue with turning electric cars into true analogous for the modern automobile.

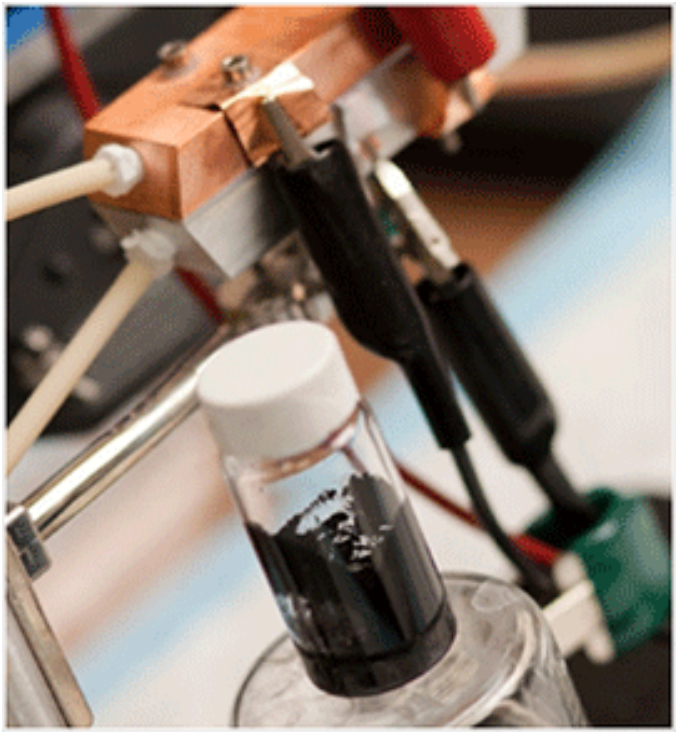
Batteries in electric vehicle are less energy dense and heavier than an equivalent amount of gasoline while semi solid batteries could be twice as energy dense as convectional lithium-ion batteries. Therefore car manufactures could get twice the range out of same battery mass.

The batteries could be lower at cost as compared to convectional battery. Semi solid flow cells batteries could make these suitable for giant, grid-scale applications like storing power from intermittent renewables.

A pioneer in battery research has launched a $350 million company to supply batteries to GE and Chrysler. It will be complete reinvention of battery technology.

This technology of semi-solid flow cells batteries would have advantages like low cost, energy dense liquid batteries that could make renewable power cheaper and electric cars truly competitive. It can also be charged like convectional batteries.

**source:http://grist.org/list/2011-06-08-no-joke-this-is-the-biggest-battery-breakthrough-ever/*



**imagesource:http://grist.org/list/2011-06-08-no-joke-this-is-the-biggest-battery-breakthrough-ever/*

Article - 4 : WIND TOWER FOR JAPAN

Wind is considered as an important source of energy. Wind is considered as a clean, non-polluting energy source available freely. Wind is irregular and can blow from any direction and at any strength. Therefore there has to be system which can collects wind strength from any direction. Japan based ZENA System is working on new technology which can collect wind from any direction at any height and at any speed.

A wind tower of 50 meter tall is made in hexagonal shape which collects winds from six sides. Once it is captured inside the tower then runs the rushing air through a series of ground-based generators. It also includes desalination plant for clean wind generation.

It works on three bases

1.Collection of wind from any direction and speed

2.Compression of air

3.Acceleration of wind through a wind tunnel in the middle of the hexagonal tower.

The air flows downward to a series of turbines, which convert the wind’s energy to electricity.

Advantages of Wind Tower

1. High output
2. Cost efficient
3. Easy maintenance

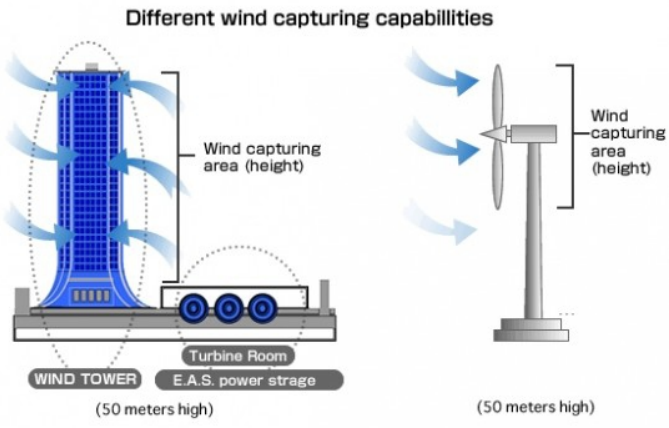


**image source: http://www.zenasystem.co.jp/en/wind-tower02.html*

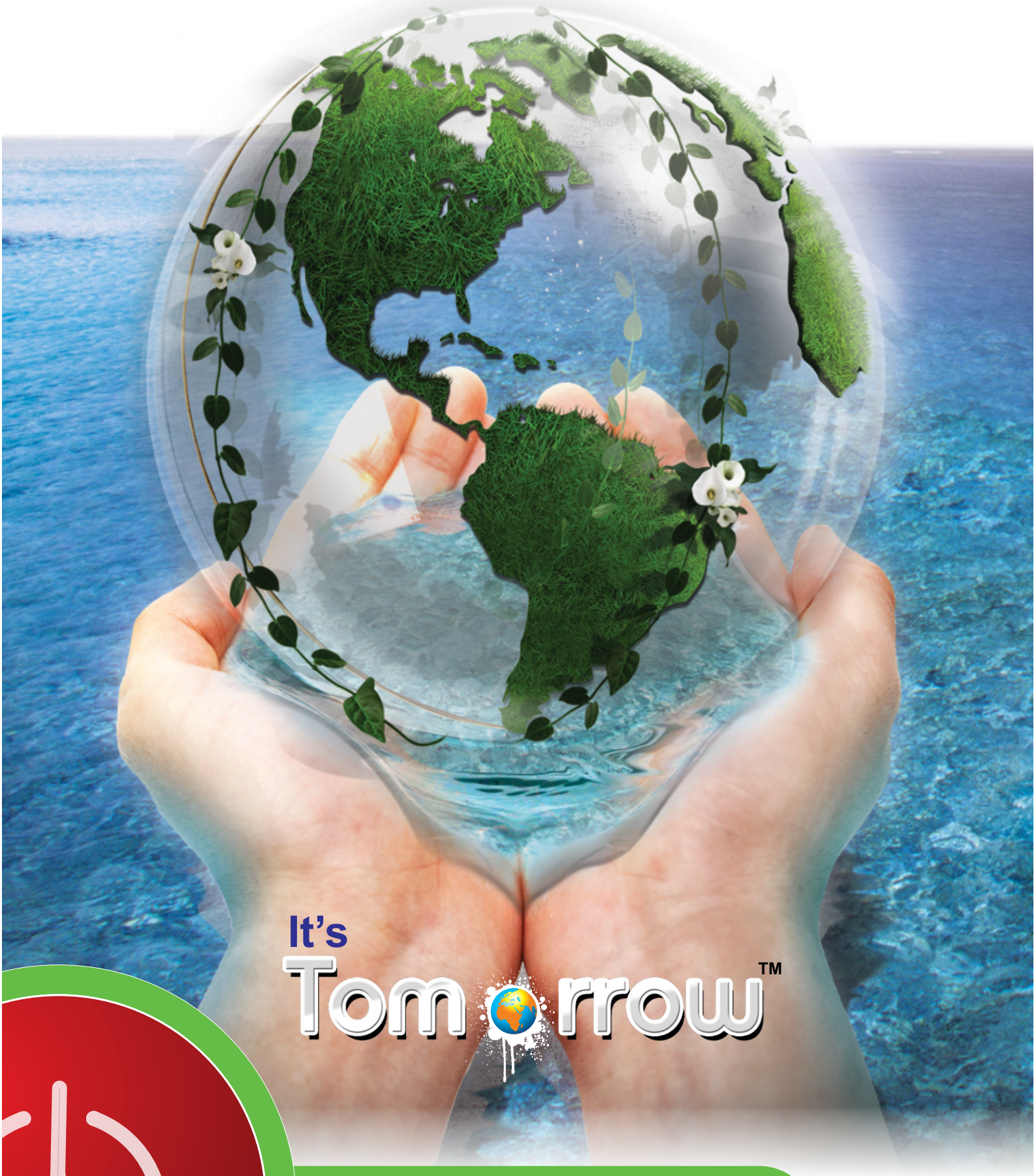
The maximum theoretical harvestable energy from the wind is 59.3 percent. The E.A.S. is a new energy storage system used to stock the energy generated by the Wind Tower system. This system uses vanadium concentrated solution diluted with nano water and pure water. There is no risk of fire or chemical injuries.

Wind tower are more efficient, eco-friendly and cost effective as compared to propeller type wind mill.

**source: http://www.zenasystem.co.jp/en/wind-tower02.html*

Conserve the Energy,
Save our Climate!

Conserve™
The Energy



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