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POWERSAVE CAMPUS
AN ALLIANCE TO SAVE ENERGY PROGRAM

THE GREEN INSIDER

Powersave Recycled Article

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HOW TO KEEP WARM AT HOME WITHOUT THE HEATER

BY ARPY KASPARIAN

It finally happened, California. It's kinda cold. It's time to bust out those furry boots and turn up the heat. But wait! Before you reach over to your thermostat and get your home to a comfortable 90o, consider taking other steps to get warm. According to Energy Star, heating and cooling alone costs the average homeowner about $1,000 a year. Yikes! Here are some simple ways to save money and stay nice and warm during the brutal California winter:

Keep your home warm:

- Use the windows. Open window curtains and blinds during the day to let warm sunlight naturally in to heat your home. Then, close them at night to make sure it doesn't escape.
- Keep your oven door open after baking those delicious gingerbread cookies. The heat from the oven will circulate throughout your kitchen and warm up the immediate spaces. This works for bathroom doors while showering, too.
- Increase the humidity in your home. Humidity increases the temperature within your home. Therefore, skip your space heater and turn on an energy-efficient humidifier.
- Cover hard floors with blankets. As much as 10 % of heat in your home can escape through your floors. Keep them covered with rugs and blankets to stop cool air from seeping up into the room.
- Use towels or rags to block chilly air. Roll up a towel and place along the bottom of a door to stop drafts and heat leaks.
- Keep all the doors in your home shut. The smaller the space, the easier it is to keep warm. Keeping doors closed will help contain the heat you've generated.
- Install clear shower curtains over the windows. Allow your home to absorb heat, and keep it in, by installing clear shower curtains over windows that receive direct sunlight.
- Don't run bathroom ventilation fans. And the one in your kitchen, for that matter! These ventilation fans pull out the warm air in your home.

Keep yourself warm:

- Wear multiple layers of clothes. Dress in multiple layers to keep your core temperature comfortably warm.
- Don't forget your socks! According to the University of San Diego, if you have cold feet, you're going to be cold. Keep warm by wearing thick wool socks. Slip on some slippers to stay extra toasty.
- Cover your head. Much like your feet, heat escapes through your head. Wear a wool hat or beanie to keep your body warm.
- Enhance your bedding. Change out your sheets for flannel and use a down comforter to stay warm during frosty winter nights.
- Warm a bag of beans. Warm a bag of beans in the microwave and place in your bed or against you while lounging on the couch.

Adjust your behavior:

- Stay away from windows. Sitting by the window can cause radiant heat loss from your body to the glass make you feel cold. To avoid this, make sure your furniture is not in front of a large window or pushed up against an outside wall.
- Eat hot soups. Raise your core temperature by consuming hot soups and drinks.
- Stay active. Clean your home or exercise whenever you feel the sting of coldness. By staying active, you'll naturally increase your core temperature.

One rule of thumb to keeping your heating bills low, but keeping yourself warm is to focus on the person and not the house. Keep your insides warm, get bundled, stay active, and take comfort in the fact that this cold weather won't last very long.

Hang in there, California.

ELECTRICITY GENERATING FOIL

BY RYAN GOFF

Two researchers at Columbia University have successfully created the smallest electric generator yet. It is a thin (only a few atoms thick) foil of molybdenum disulfide that when bent and stretched creates a small electric current. This is the first physical evidence of piezoelectric properties in atomically thin materials such as this. Normally large chunks and bricks of molybdenum disulfide won't exhibit piezoelectric properties but when made atomically thin stretching the material will cause a current, and even stretching it the opposite direction will cause the current to reverse.

This discovery has a large impact in energy and sustainability, for example the material could be integrated into clothing, utilizing you movement to create electricity that could charge your phone or power medical sensors, all driven by the mechanical movement of your body throughout the day. Though only being able to produce minimal current, these materials could end up reducing electric costs for numerous applications where only low voltages are required. With future advancement these piezoelectric materials could solve numerous energy problems and create current out of mechanical movement that already serve a purpose.

POWERSAVE CAMPUS RECYCLED ARTICLE

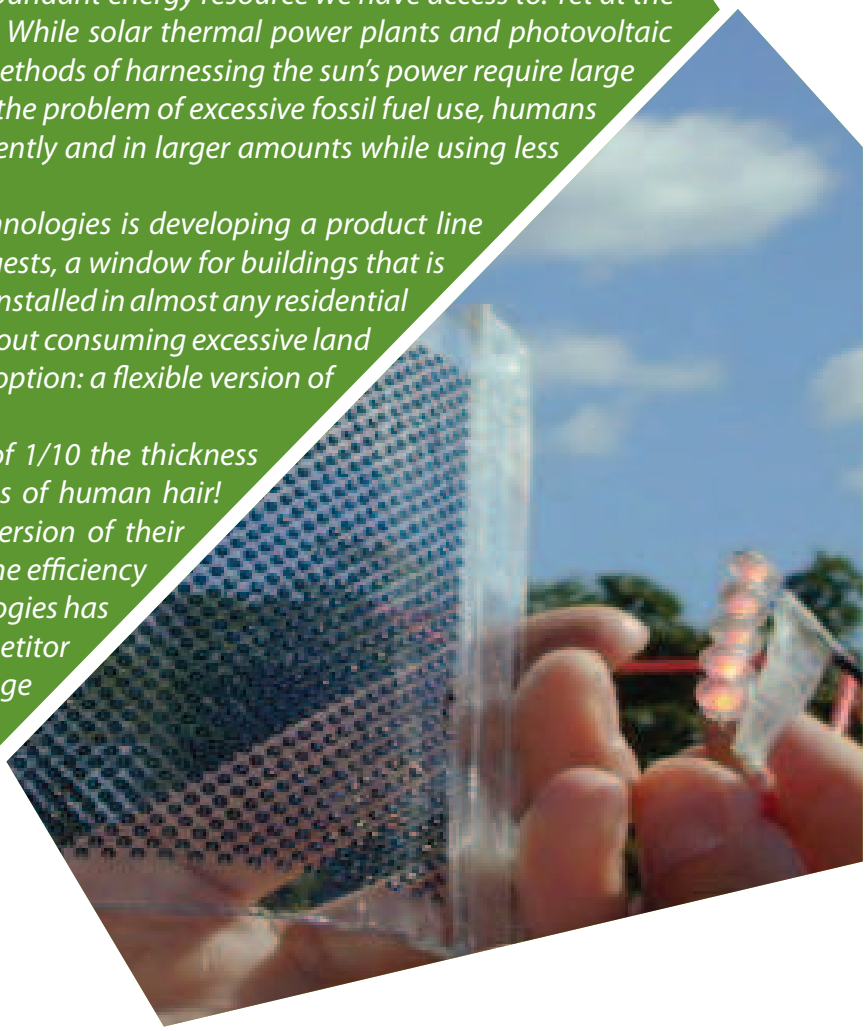
BY BRANDON SAUER

This month's PowerSave Campus Recycled article comes from the Team Manager of UC Berkeley's PowerSave Campus team, Aridam Kumar. The article discusses new innovations and advances in Solar Energy conversion through window technology.

Solar energy, or energy from the sun, is by far the most abundant energy resource we have access to. Yet at the same time, it is one of the least utilized sources as well. While solar thermal power plants and photovoltaic solar panels are becoming increasingly common, both methods of harnessing the sun's power require large investments and vast amounts of land. If we are to solve the problem of excessive fossil fuel use, humans need to devise a way to harness solar energy more efficiently and in larger amounts while using less space.

A Maryland based US company called New Energy Technologies is developing a product line known as SolarWindow. It is exactly what the name suggests, a window for buildings that is layered with a photovoltaic material. The window can be installed in almost any residential or commercial setting, and allows power generation without consuming excessive land resources. New Energy Technologies also provides a Flex option: a flexible version of their window.

The thin film technology is designed at a specification of 1/10 the thickness of today's thin films, which is about 1/100 the thickness of human hair! Furthermore, SolarWindow is working on a spray-on version of their coating to be used with existing windows as well. While the efficiency of their technology is not yet known, New Energy Technologies has confidently said that their product will be a leading competitor with today's photovoltaic industry, and they hope to change the power generation landscape in the near future.



A LOOK BACK INTO 2014

BY LYNAE SALGADO

2014 is officially done and you're probably wondering what happened in the world of sustainability in 2014. Here is a look back into 2014...

- In July, the Energy Department finally invested in the first commercial-scale offshore wind facility in the US
- We reached a new milestone of solar energy, concentrating solar power. With five new plants in construction they have the capacity to generate 1.26 gigawatts of electricity.
- According to the New York Times, the cost for alternative fuels such as wind and solar has fallen below the price of conventional fuels forcing utilities to make the positive switch.
- The Petra Nova Project broke ground in September capturing 1.4 million tons of CO_2 that would have been released into the air.

Let's see what 2015 has in store!

ARTIC GRAND OPENING

BY JOMEL BAUTISTA

The Anaheim Regional Transportation Intermodal Center, otherwise known as the ARTIC project, located in Anaheim, California looks to redefine transportation norms in Southern California. ARTIC is a public transportation facility that will serve more than three million Orange County residents as well as more than 40 million visitors annually. This significant vision recently hosted its grand opening on December 13th, 2014. With its grand opening, Southern California will see a shift in public transportation. This change will vastly impact the amount vehicle emissions and natural resource usage. Some populations that will benefit from this include commuters, residents, and students. Electric vehicles will grow in popularity in this region due to the facility's support with electric vehicle charging stations. Overall, transportation will face a major green makeover, something that Southern California is desperate for.

The facility itself introduces cutting edge sustainability practices that result in magnificent resource saving numbers. First and foremost, the materials being used will reduce energy consumption up to 50% when comparing with standard building construction practices. Indoor and outdoor water conservation fixtures and drought tolerant landscaping will reduce potable water consumption up to 55%. The frame itself introduces a 200,000 square-foot ethylene tetrafluoroethylene (ETFE) roof system provides a breakthrough in architectural practices and was recently honored with a 2014 BIM Award from the American Institute of Architects Technology in Architectural Practice Knowledge Community. To successful design this structure, contractors from Clark worked closely with subcontractors from HOK, Parsons Brinkerhoff, and Buro Happold that focused closely on the points and arcs of this geogrid model.

With this outstanding facility being only 15 minutes away from Cal Poly Pomona, the PowerSave Campus team highly encourages students to visit. For those who have not experienced much public transportation, this is the perfect opportunity to be part of Southern California history.

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