

■ EFFECTIVE THERMAL INSULATION WITH WOOD FOAM

Researchers at the Fraunhofer Institute for Wood Research, Wilhelm-Klauditz-Institut, WKI in Braunschweig have adopted a very promising approach to the problem by developing a method for creating foam from wood particles. "Our wood foam can be used in exactly the same way as conventional plastic spray foams, but is an entirely natural product made from sustainable raw materials," explains Professor Volker Thole of the WKI.

The scientists produce the foam by grinding wood very finely until the tiny wood particles become a slimy mass. They then add gas to this suspension to expand it into a frothy foam that is then hardened.

The hardening process is aided by natural substances contained in the wood itself. In an alternative method, specific chemical processes are used to produce the final product. "It's a bit like baking, when the dough rises and becomes firm in the oven," Professor Thole explains. Wood foam is a lightweight base material that can then be made into rigid foam boards and flexible foam mats.



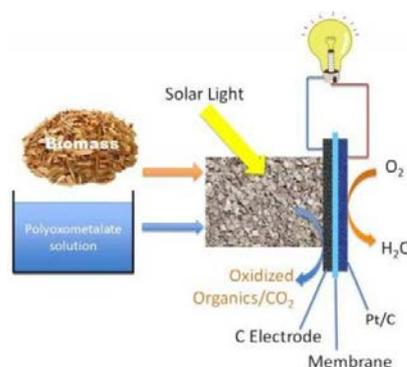
Source:

<http://www.fraunhofer.de/en/press/research-news/2014/march/effective-thermal-insulation.html>

■ NEW SOLAR POWER FUEL CELL RUNS ON WOOD CHIPS

There are a number of promising pathways to solar power fuel cells, but the new solar thermal development - a research project at the Georgia Institute of Technology - approaches the problem from a fresh angle. With a potential market that includes developing economies, the Georgia Tech team set out looking for a low cost, low energy fuel cell that can be scaled down into small units, in addition to its application for large-scale projects.

The idea of using biomass to run a fuel cell is nothing new. The problem is that to break down the carbon bonds in natural polymers you need a catalyst. That currently involves expensive precious metals, typically platinum. One workaround is the development of microbial fuel cells, but the current state of technology provides for limited application and low power output.



Source: <http://cleantechnica.com/2014/02/19/new-solar-power-fuel-cell-runs-wood-chips/>

Edited by:
Prof.dr.ing. Teofil MIHĂILESCU