

Artificial leaf could debut new era of 'fast-food energy'

November 30 2011

Technology for making an "artificial leaf" holds the potential for opening an era of "fast-food energy," in which people generate their own electricity at home with low-cost equipment perfect for the 3 billion people living in developing countries and even home-owners in the United States. That's among the prospects emerging from research on a new genre of "electrofuels" described in the current edition of *Chemical & Engineering News*, the American Chemical Society's weekly newsmagazine.

In the article, C&EN Senior Correspondent Stephen K. Ritter describes research on electrofuels, made by using energy from the sun and renewable ingredients like water and carbon dioxide, reported at a gathering of experts sponsored by the U. S. Department of Energy's Advanced Research Projects Agency (ARPA-E). Created in 2009 by the American Recovery & Reinvestment Act, ARPA-E is funding electrofuels research, with the goal of developing technologies that improve on nature's approach — photosynthesis. Electrofuels is one of 12 programs funded by ARPA-E.

The artificial leaf is one of the electrofuels technologies. Made of inexpensive materials, the leaf breaks down ordinary water into the oxygen and hydrogen that can power an electricity-producing fuel cell. Just drop the credit-card-sized device into a bucket of water and expose it to sunlight. With the cost-conscious technology, one door-sized solar cell and three gallons of water could produce a day's worth of [electricity](#) for a typical American home. The article describes a range of other

electrofuel technologies, including ones based on engineered microbes, being developed in the quest for new ways of making fuels.

More information: “Electrofuels Bump Up Solar Efficiency”
cen.acs.org/articles/89/i48/Electrofuels-Bump-Up-Solar-Efficiency.html

Provided by American Chemical Society

Citation: Artificial leaf could debut new era of 'fast-food energy' (2011, November 30) retrieved 21 September 2024 from <https://phys.org/news/2011-11-artificial-leaf-debut-era-fast-food.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.