

Scientists develop new inexpensive technology to produce hydrogen

February 9 2006

By mimicking a protein found in nature and putting it to work, a group of scientists in Montana and New York is looking at producing alternative fuel using inexpensive sources and a unique chemical reaction. The invention is aimed at producing hydrogen as a fuel using inexpensive ingredients, although the inventors say more development is needed.

"Currently the energy industry produces hydrogen by using fossil fuels and re-forming them into hydrogen," said MSU chemistry professor and co-inventor Trevor Douglas. "That's a zero-sum game."

This invention--a hydrogen production reactor--would use organic acids or ethanol and water along with either the naturally occurring protein or a synthetic equivalent to create hydrogen.

"In principle, this is an incredibly efficient, renewable, environmentally friendly source of hydrogen," Douglas said.

The scientists face hurdles, however, before the invention can supply fuel. One involves getting enough of the protein, which the scientists have learned how to make in the laboratory, to drive large-scale energy production.

But the invention is far enough along, Douglas said, to interest potential fuel manufacturers.

Commercial challenges exist as well, including the lack of a hydrogen-fuel infrastructure to support large-scale distribution and usage similar to that for petroleum fuels.

But Douglas said once hydrogen reactors are commonplace, a hydrogen distribution and usage system is likely to follow.

In addition to Douglas, the other inventors are MSU chemistry professor John Peters, MSU plant pathology professor Mark Young and Hamilton College (New York) scientist Tim Elgren. A patent on the invention is pending.

Source: Montana State University

Citation: Scientists develop new inexpensive technology to produce hydrogen (2006, February 9) retrieved 11 May 2024 from <https://phys.org/news/2006-02-scientists-inexpensive-technology-hydrogen.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.