
News letter - on making the difference.

Changes in batteries & Hydrogen as a potentially green alternative to gasoline

1. [New Oxygen-Hydrogen battery could be key to storing solar energy](#)

"Researchers have come up with a cheap and easy process for storing solar energy, in a finding that could provide one of the final elements for efficient solar power systems: the ability to store excess energy in a battery for use later when the sun isn't shining. "The new technique involves the standard process of electrolysis, in which a current is run through a liquid and used to split apart its chemical components. In this case, water is broken down into oxygen and hydrogen, which can be stored and recombined to power a hydrogen fuel cell"

<http://blogs.discovermagazine.com>

3. [Air-fueled Battery Could Last Up To 10 Times Longer: Ground-breaking Technology For Electric Cars](#)

"A new type of air-fuelled battery could give up to ten times the energy storage of designs currently available. "This step-change in capacity could pave the way for a new generation of electric cars, mobile phones and laptops. The "Improved capacity is thanks to the addition of a component that uses oxygen drawn from the air during discharge, replacing one chemical constituent used in rechargeable batteries today" <http://www.sciencedaily.com>

5. [Battery-powered vehicles to be revolutionized](#) -

"Thousands of small electric scooters, bicycles and wheelchairs throughout Europe and Asia are powered by LifePO4 -- a material used in advanced lithium-ion batteries developed by Université de Montréal researchers." <http://www.sciencedaily.com>

7. [Proposals are flooding into the new civilian version of DARPA](#)

For years, science policy players have had a bad case of DARPA envy. The Defense Dept. agency has long funded breakthrough research deemed too risky for industry to tackle on its own. The nascent agency, which is housed in the Energy Dept., still has no director or permanent staff. But that hasn't stopped it from soliciting research proposals. It's been flooded with thousands of applications, with ideas ranging from super-high-efficiency solar cells to new battery materials.

[Www.businessweek.com](http://www.businessweek.com)

2. [New material doubles record for holding hydrogen](#)

"so far the best performers, which are known as metal hydrides, hold only about 2% of their weight in hydrogen at room temperature, well below what is needed for a practical gas tank. Other materials can get up to 7% but require either high or low temperatures, and thus added energy and cost."

"Researchers at the National Institute of Standards and Technology in Gaithersburg, Maryland, calculated that a material made from certain metals, such as titanium, and a small hydrocarbon called ethylene should form a stable complex that could bind up to 14% of its weight in hydrogen"

[Www.sciencemag.com](http://www.sciencemag.com)

4. [Fuel cell powered unmanned aerial system achieves flight Endurance milestone](#)

The Naval Research Laboratory (NRL) has completed a successful flight test of the fuel cell powered XFC (eXperimental Fuel Cell) unmanned aerial system (UAS).

"by developing a hydrogen fuel cell power plant system that greatly extends endurance and permits increased payload capacity. The technology has been successfully integrated into the XFC UAS, a folding wing, expendable UAS that has a small footprint with a standard lightweight rail launcher"

[Www.sciencedaily.com](http://www.sciencedaily.com)

6. [Longer-running electric-car batteries](#)

"Silicon nanotube electrodes can store 10 times more charge than the conventional graphite electrodes used in lithium-ion batteries."

<http://www.technologyreview.com>

8. [About SFC Smart Fuel Cell](#)

SFC Smart Fuel Cell is the leader in mobile energy for leisure-time, industrial and military applications. One of Germany's technology pioneers, SFC has been awarded numerous prizes for innovation

<http://www.sfc.com/en/about-sfc.html>

List of primary sources

1. <http://blogs.discovermagazine.com/80beats/2008/08/01/new-oxygen-hydrogen-battery-could-be-key-to-storing-solar-energy/>
2. <http://sciencenow.sciencemag.org/cgi/content/full/2007/1116/1>
3. <http://www.sciencedaily.com/releases/2009/05/090517152557.htm>
4. <http://www.sciencedaily.com/releases/2009/08/090806141720>
5. <http://www.sciencedaily.com/releases/2009/05/090505124756.htm>
6. <http://www.technologyreview.com/energy/23516/>
7. <http://www.businessweek.com/>
8. <http://www.sfc.com/en/about-sfc.html>