

Study reveals new, cost-efficient method for creating portable hydrogen fuel cells

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A new paper published in *Journal of the American Ceramic Society* proposes a new method of producing hydrogen for portable fuel cells.

This new method negates the need for the complicated and expensive equipment currently used. With their ability to work steadily for 10-20 times the length of equivalently sized Lithium-ion batteries, portable fuel cells are ideal energy suppliers for devices such as computers, cell phones and hybrid vehicles.

Significant amounts of hydrogen are needed to power these long-lived fuel cells, but producing the chemical has, until this point, been costly and difficult. Zhen-Yan Deng, lead author of the study, found that modified aluminum powder can be used to react with water to produce hydrogen at room temperature and under normal atmospheric pressure. The result is a cost-efficient method for powering fuel cells that will make their use a more practical and realistic option in many applications.

Efforts to produce large amounts of hydrogen for portable devices have previously focused on other chemicals; however, compared to other hybrids, aluminum is cheaper and requires no other chemical in order to react with water. "This makes the modified aluminum powder a more economically viable material to generate hydrogen for the future use of portable fuel cells," says Deng.

Source: Blackwell Publishing Ltd.

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