Department of Energy: Supporting Research at Michigan

The University of Michigan (U-M) is the eighth-largest university recipient of competitively-awarded grants from the Department of Energy (DoE). DoE is the largest federal supporter of fundamental research in the physical sciences.

Robust investment in DoE allows the agency to partner with universities like U-M to conduct innovative research to enhance our nation's energy security and develop solutions to the most pressing energy challenges. DoE funding also provides critical support to train the next generation of scientists and engineers.

$41M

Research Expenditures in FY2018

4.8%

of Overall U-M Federal Support

251 Active Projects

U-M research projects supported by DoE annually involve about:

223 Faculty
27 Postdoctoral Fellows
23 Graduate Students

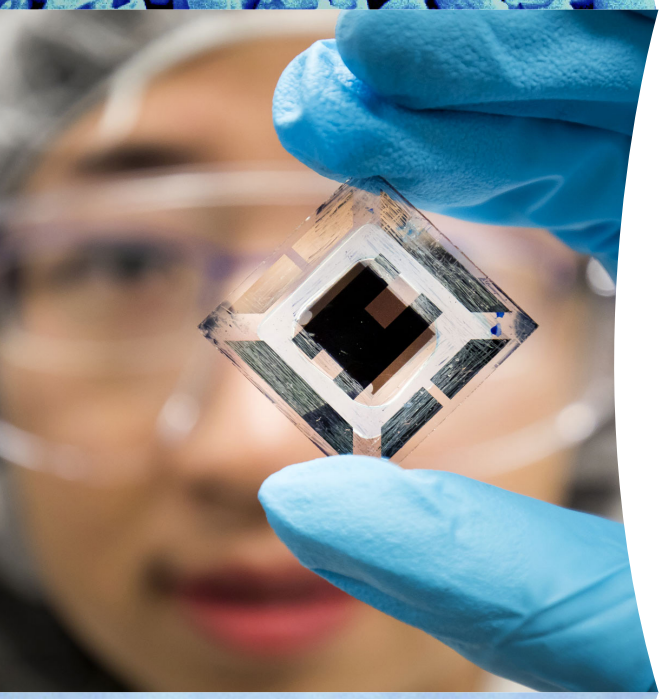
RESEARCH
UNIVERSITY OF MICHIGAN

For more information about research at U-M, visit **research.umich.edu**

FY18 DoE-Funded Research Highlights

Harvesting Hydrogen

A new, stable artificial photosynthesis device doubles the efficiency of harnessing sunlight to break apart both fresh and saltwater, generating hydrogen that can then be used in fuel cells. The device could also be reconfigured to turn carbon dioxide back into fuel. "If we can directly store solar energy as a chemical fuel, like what nature does with photosynthesis, we could solve a fundamental challenge of renewable energy," said U-M Professor Zetian Mi.



Organic Solar Cells

In an advance that makes a more flexible, inexpensive type of solar cell commercially viable, U-M researchers have demonstrated organic solar cells that are transparent and able to absorb almost double the solar energy of traditional solar cells. This level of efficiency is in the range of many solar panels, or photovoltaics, currently on the market. "Organic photovoltaics can potentially cut way down on the total solar energy system cost, making solar a truly ubiquitous clean energy source," said U-M Professor Stephen Forrest.

Potential for Soil

If managed well, the ability for soil to trap carbon dioxide is potentially much greater than previously estimated, and it could "significantly" offset increasing global emissions. The findings highlight the need for more research into how soil influences climate change. "In recent years, our science has reached a point that we can actually put numbers on the soil carbon impacts of management or policy decisions by creatively synthesizing and applying existing datasets," said U-M scientist Luke Nave.

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