DEPARTMENT OF ENERGY

SUPPORTED RESEARCH AT THE

UNIVERSITY OF MICHIGAN

$42M
Research Expenditures

5%
Percentage of Overall U-M Federal Support

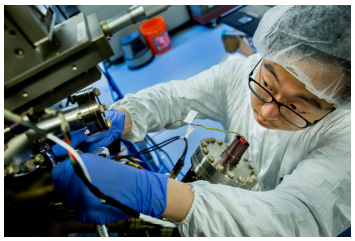
250
Active Projects

FY 2017 Research Expenditures: $42,414,999

Year-to-year, Department of Energy-supported projects involve about:

Faculty Researchers.....228
Postdoctoral Fellows.....27
Graduate Student Researchers.....30

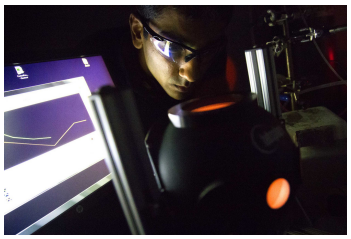
Examples of U-M projects supported by the Department of Energy (DOE):



MAGIC ALLOY

In what could be a major step forward for a new generation of solar cells called "concentrator photovoltaics," U-M researchers, with funding from DOE and the National Science Foundation, developed a new semiconductor alloy that can capture the near-infrared light located on the leading edge of the visible light spectrum.

Easier to manufacture and at least 25 percent less costly than previous formulations, it's believed to be the world's most cost-effective material that can capture near-infrared light—and is compatible with the gallium arsenide semiconductors often used in concentrator photovoltaics.



HARNESSING LIGHT

An exotic interaction between light and metal can be harnessed to make chemical reactions more sustainable, but the physics behind it has been widely debated in the field.

A U-M study, supported by DOE and the National Science Foundation, shows how a light-harvesting metal transfers energy to a catalytic metal, opening the way for better catalyst designs.

Catalysts are mediators of chemical reactions: they can make reactions happen at lower temperatures, reducing the energy needed, and they can also give an edge to a desired reaction pathway, producing more of the target chemical and less waste.

ADVANCED BATTERIES

A $3.5 million grant from DOE supported a U-M researcher's search for a battery construction method that can eclipse lithium-ion batteries, the current industry standard.

The batteries that U-M Professor Jeff Sakamoto envisions, which would be nonflammable, could be used in cars and trucks, as well as in the electrical grid.

Better grid-scale batteries could make solar and wind power more feasible because they could provide storage when it's cloudy or when the air is still.