



IN THIS ISSUE

- Discovery could eliminate need to refrigerate vaccines and protein-based drugs □
- Biosensing platform simultaneously detects vitamin C and SARS-CoV-2 □
- Getting over the hump to improve fuel cell manufacturing □
- Old wisdom meets new tech: Traditional Chinese medicine inspires pulse sensors □
- Q&A: \$2.5M grant to help reduce emissions, inefficiencies in industrial systems □
- AWARDS & RECOGNITIONS (see below) □

FEATURED STORY



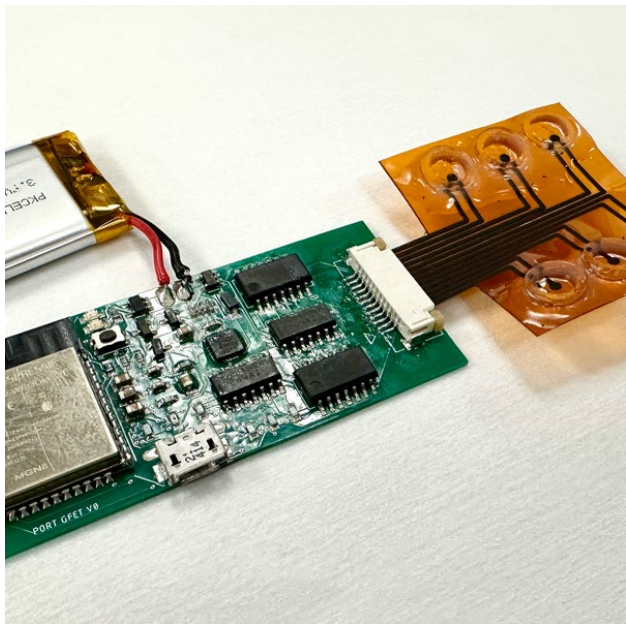
DISCOVERY COULD ELIMINATE
need to refrigerate vaccines and protein-
based drugs



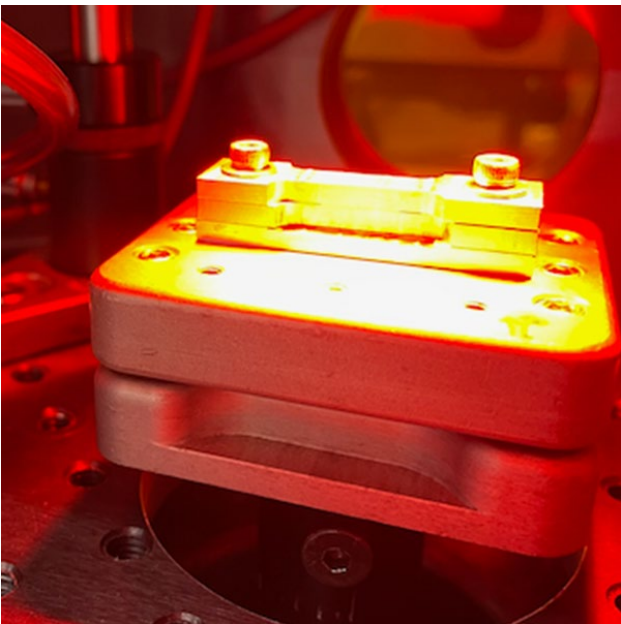
LEAD: PROFESSOR SCOTT MEDINA

Through a series of experiments, the research team replaced the water-based solution commonly used in protein-based medications with a perfluorocarbon oil and tested five different proteins with a range of health-related functions such as antibodies and enzymes.

[READ THE ARTICLE](#)



Biosensing platform
simultaneously detects vitamin C
and SARS-CoV-2



Getting over the hump to
improve fuel cell manufacturing

LEAD: PROF. JINGJING LI

A team led by researchers at Penn State has combined

LEAD: ASSOC. PROF. AIDA EBRAHIMI

By simultaneously detecting the virus and vitamin C levels, the test could help individuals and their health care providers decide on more effective treatment options.

[Read More](#)



Old wisdom meets new tech:
Traditional Chinese medicine
inspires pulse sensors

LEAD: ASSOC. PROF. HUANYU CHENG

A team led by Penn State researchers used principles of pulse monitoring in traditional Chinese medicine to design a pressure-sensing platform to identify the optimal pulse signal, which they combined with a machine learning model to also predict blood pressure.

[Read More](#)

observation and analytical modeling to identify the conditions that produce humping at high laser welding speeds and to adjust the process parameters to increase weld speed without causing surface irregularities.

[Read More](#)



Q&A: \$2.5M grant to help
reduce emissions, inefficiencies
in industrial systems

LEAD: ASSOC. PROF. BRIAN FRONK

A team led by researchers at Penn State recently received a \$2,491,443 grant from the Department of Energy's (DOE) Industrial Efficiency and Decarbonization Office (IEDO) to reduce emissions and increase thermal efficiency in industrial systems. The team, which includes researchers at Saint-Gobain Ceramics & Plastics Inc., plans to achieve these goals by developing a new ceramic heat exchanger.

[Read More](#)



AWARDS & RECOGNITIONS



**Three faculty receive Presidential
Early Career Award for scientists,
engineers**

Three Penn State researchers have been awarded the Presidential Early Career Award for Scientists and Engineers (PECASE), the White House announced on Jan. 14. The award is the highest honor the United States government bestows on early-career scientists and engineers.

[Read the full story](#)



**NSF CAREER Award supports
pursuit of 'soft' solutions for spinal
cord injuries**

Tao Zhou, assistant professor of engineering science and mechanics and of biomedical engineering in the Penn State College of Engineering, earned a five-year, \$660,000 U.S. National Science Foundation (NSF) Early Career Development (CAREER) Award for a project titled, "Soft Solutions for Spinal Cord Injury: Advancing with Injectable and Stretchable Hydrogel Electrodes."

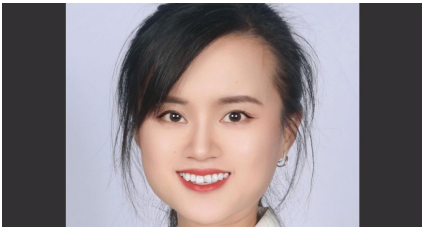
[Read the full story](#)



**Graduate student's materials
science research recognized by
national society**

Mingyu Yu, doctoral candidate in materials science and engineering at Penn State, recently received the Graduate Student Research Award from the professional society AVS: Science and Technology of Materials, Interfaces and Processing for innovative research in two-dimensional materials.

[Read the full story](#)



LIKE AND FOLLOW US:



This publication is available in alternative media on request. Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability or protected veteran status. UBR RES 24-10

Want to change how you receive these emails?
You can [update your preferences](#) or [unsubscribe](#) to be globally removed from all communications.



Our mailing address is:
Penn State Materials Research Institute
N-315 Millennium Science Complex
University Park, PA 16802