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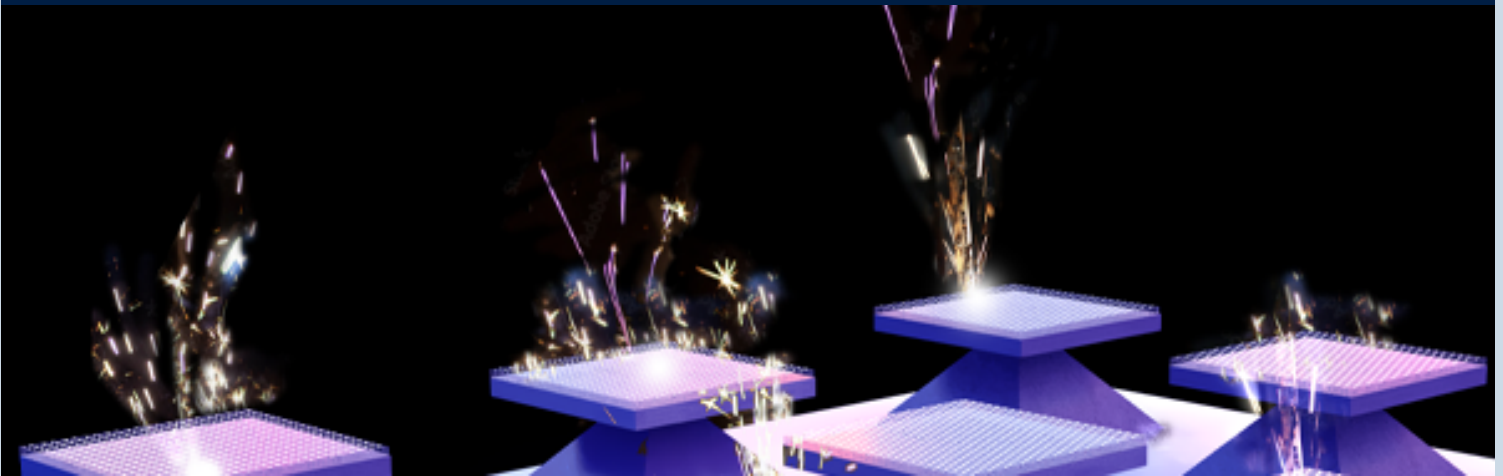
**PennState**  
Materials Research  
Institute

E-materials

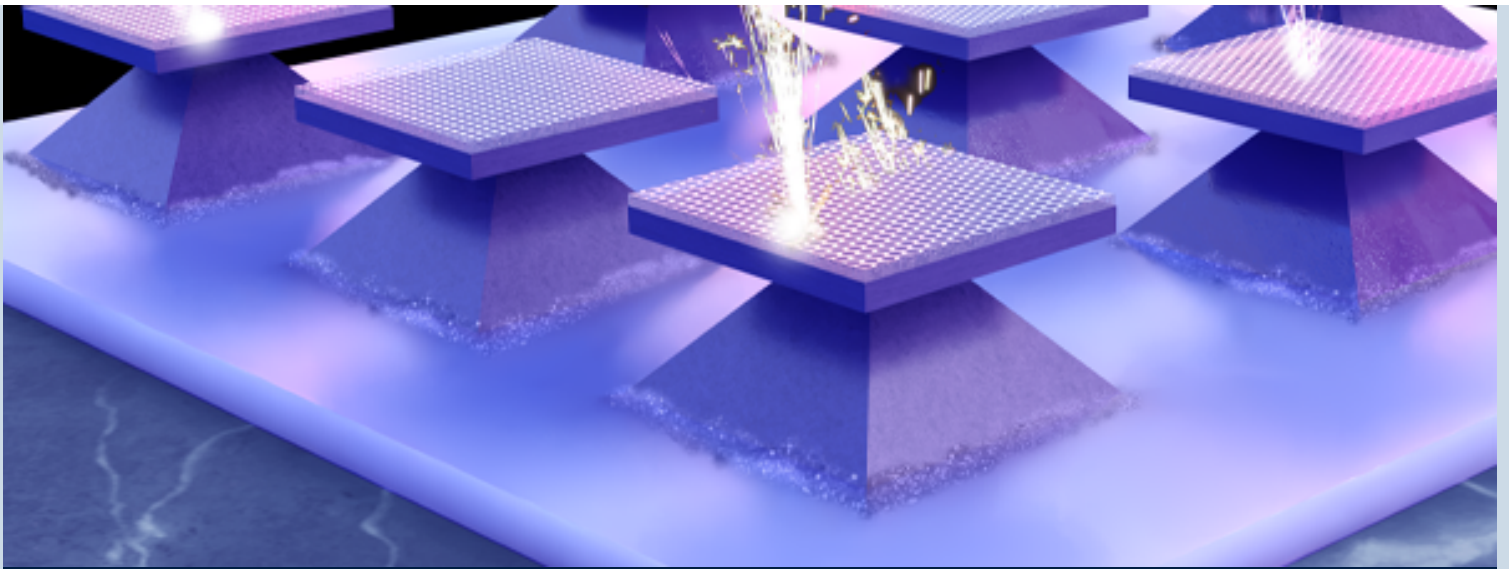
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## FEATURED STORY



**ATOM-THIN MATERIAL**  
could help solve chip manufacturing problem



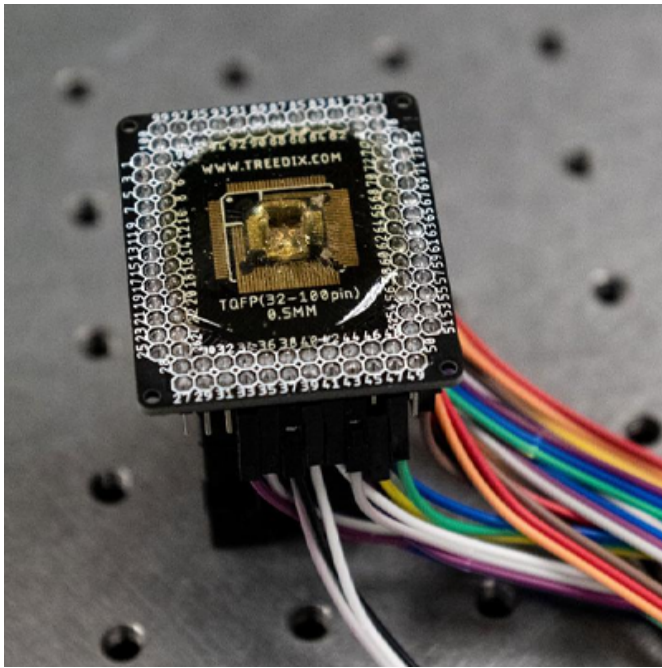
## LEAD: PROF. SAPTARSHI DAS

Making computer chips smaller is not just about better design. It also depends on a critical step in manufacturing called patterning, where nanoscale structures are carved into materials to form the circuits inside everything from smartphones to advanced sensors.

To create these patterns, engineers use a hard mask, a thin, durable material layer that protects selected regions while the exposed areas are etched away.

[READ THE LEAD STORY](#)

## OTHER NEWS



## Novel sensing technology 20 times more responsive, even in liquids

**LEAD: ASSOC. PROF. AIDA EBRAHIMI**

Researchers at Penn State have designed a new type of field-effect transistor that can facilitate responsive and versatile sensing, even in liquid-rich environments like the human body. Sensors built with the team's transistors were up to 20 times more sensitive to various chemical and biological signals, like hazardous chemicals in water or the levels of dopamine in the brain, than other sensors built with comparable transistor designs.

[Read More](#)

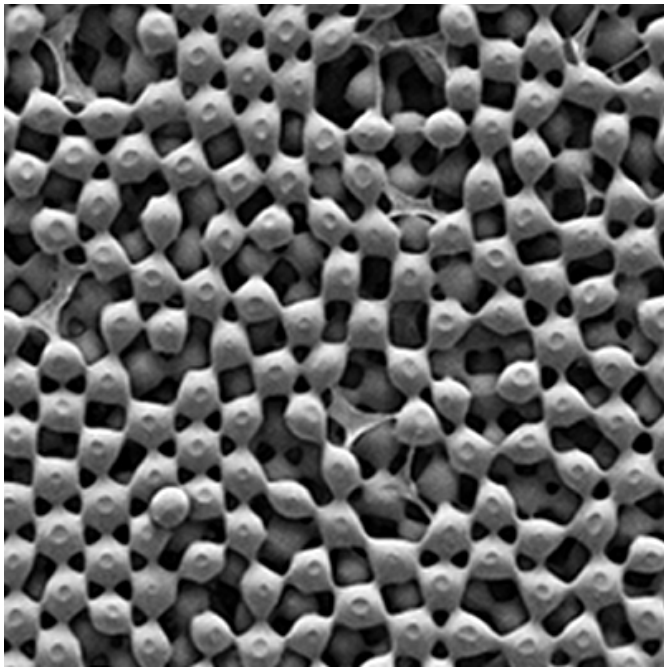


## Penn State physicist Jainendra Jain to lead new institute in India

**LEAD: PROF. JAINENDRA JAIN**

By supporting sustained research, dialogue, and global exchange, the new research institute aims to nurture a new generation of physicists equipped to drive transformative progress in fundamental science and contribute meaningfully to the global scientific community.

[Read More](#)



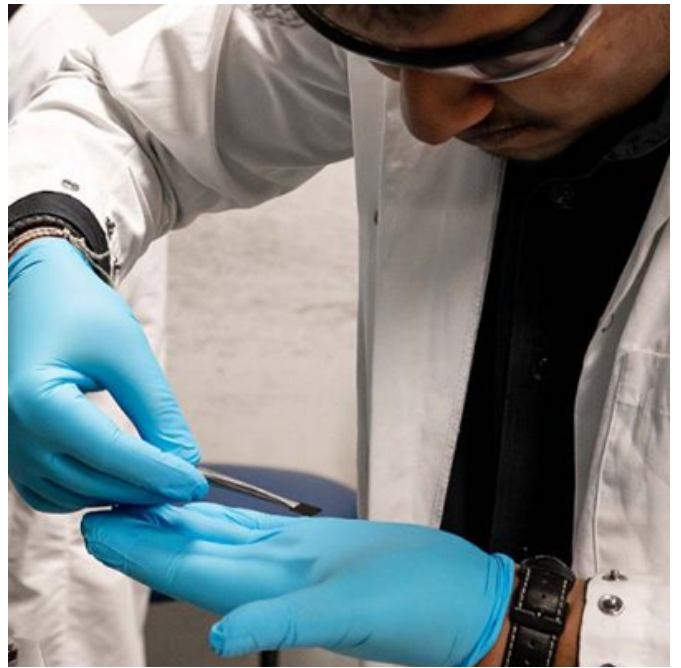
## Q&A: Gassing up bioengineered materials for wound healing

**LEAD: ASSOC. PROF. AMIR SHEIKHI**

**LEAD: PROF. DINO RAVNIC**

Biomaterials are specifically engineered to support tissue, nerve and muscle regeneration across the body, yet physicians and researchers have limited control over the size and connectivity of the internal pores that transfer oxygen and vital nutrients to where they are most needed. To solve this problem and better support tissue regeneration, a team at Penn State has designed a new class of tunable biomaterials.

[Read More](#)



## Tiny thermometers offer on-chip temperature monitoring for processors

**LEAD: PROF. SAPTARSHI DAS**

The semiconductor chips driving modern-day computer processors are covered in billions of individual transistors, each of which can overheat under stress, causing steep drops in performance. To address this, a team led by researchers at Penn State has developed a microscopic thermometer, smaller than an ant's antenna, that can be integrated onto a chip to accurately track temperatures.

[Read More](#)

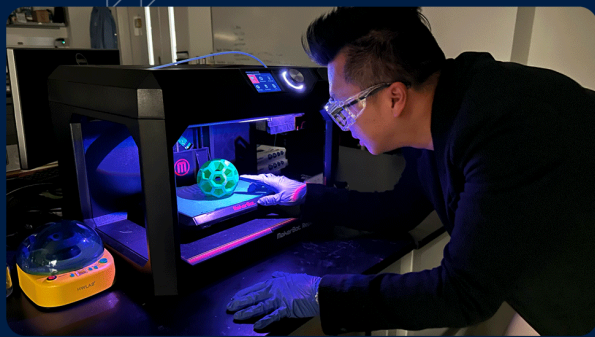


## LAB SPOTLIGHT SERIES



### 2026 Lab Spotlight Series

The Materials Research Institute highlights its interdisciplinary research, education, industry collaboration, and students through our Lab Spotlight Series. The series is designed to educate our community about the impact of our



Tak Sing Wong | Research Group  
**LAB SPOTLIGHT**

research groups within the institute via the incredible work of our labs and the people who work in them.

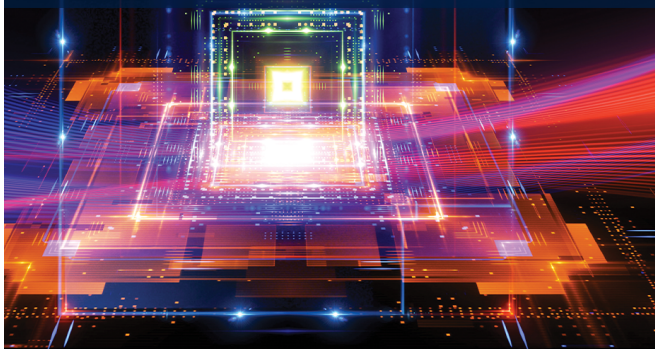
[Explore Lab Spotlights](#)

## EVENTS

**WEBINAR**  
April 8, 2026  
1:00 - 2:00 p.m. ET

### Optimizing Glass Surfaces for Manufacturing

From root causes to real solutions



### April 8, 2026 Webinar: Optimizing Glass Surfaces for Manufacturing

Penn State's glass research ecosystem enables partners to address surface-driven performance challenges, from rapid, targeted analyses to long-term fundamental research collaborations.

**Join this live session** to learn more, share your thoughts, and ask questions to our expert panelists.

[Details & Registration](#)

## 2026 CIMP-3D Practicum

Penn State Center for Innovative Materials Processing  
through Direct Digital Deposition (CIMP-3D)

**WHEN:**  
June 23 - June 25, 2026

**WHERE:**  
CIMP-3D Guion S. Bluford Jr. Building  
230 Innovation Blvd., State College, PA 16803



#### WHY:

A three-day hands-on metal additive manufacturing practicum, plus two hands-on case studies provided by industry partners.

For information and to register for the **CIMP-3D Practicum**, please visit the event website here.

[Details & Registration](#)

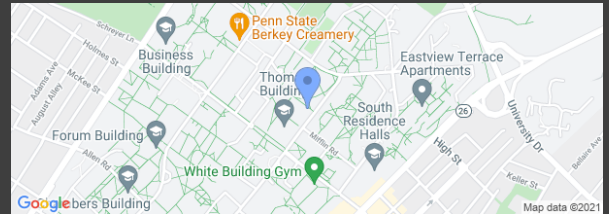
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