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**PennState**  
Materials Research  
Institute

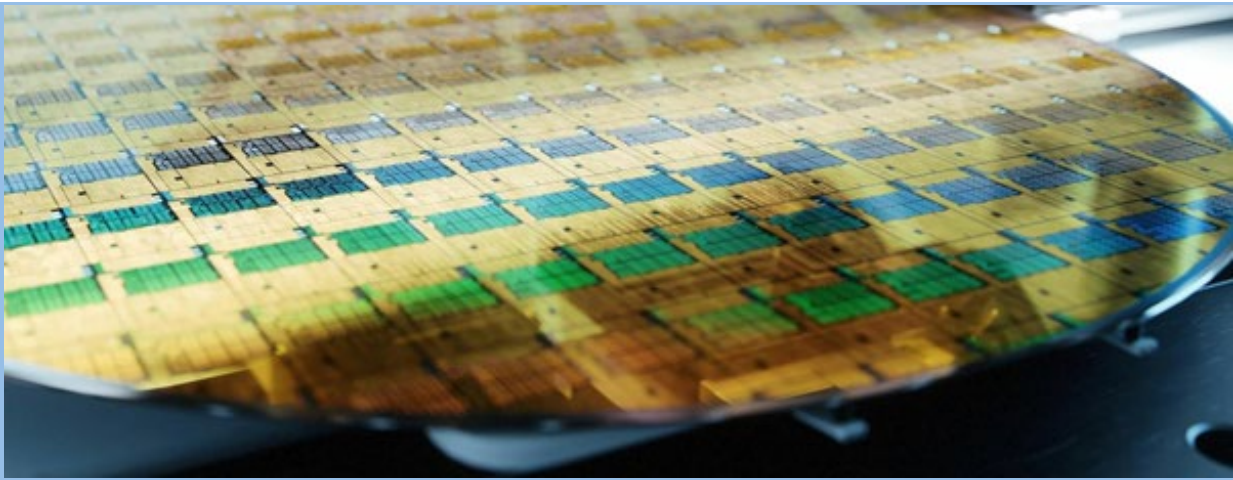
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## FEATURED STORY



# HOW CAN ADVANCED CHIPS PACKAGING help design the future of semiconductors?

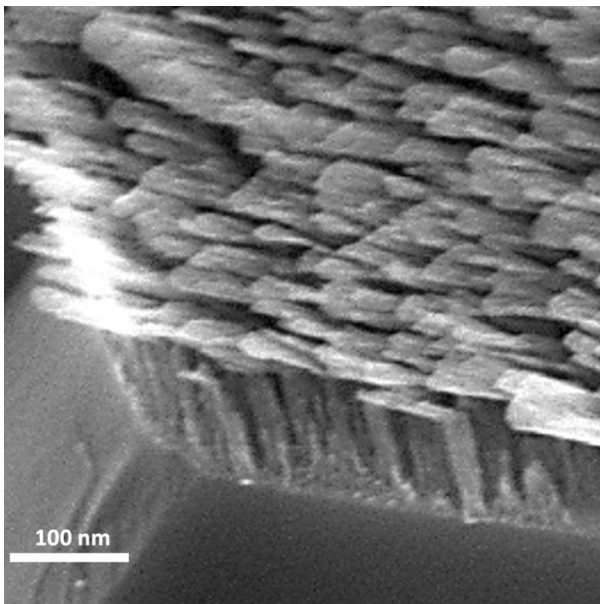


PROFESSOR MADHAVAN SWAMINATHAN  
LIANG PROFESSOR DANIEL LOPEZ

In a Q&A with Penn State News, Swaminathan and Lopez, both affiliated with the Penn State Materials Research Institute, discussed the future of chip manufacturing and advanced packaging and how Penn State-led initiatives help turn innovations in the lab into reliable domestic production.

[Read this featured story ⇒](#)

## OTHER NEWS



### Shining a light on molecules: L-shaped metamaterials can control light direction

**LEAD: ASSOC. PROF. CHRISTOS ARGYROPOULOS**  
Researchers fabricated an optical element that uses a forest of tiny, antenna-like nanorods, seen here, that together create a metamaterial able to control the spin of light. The



### \$4M NASA grants to support UV and X-ray astronomy

**LEAD: PROF. RANDY McENTAFFER**  
Penn State astronomers were awarded two grants to develop, fabricate and test improved diffraction optics that could allow next-generation space telescopes to explore objects that are fainter and farther away in the universe.

metamaterial nanorods appear to be shaped like the letter “L” when seen at the nanoscale.

[Read more ⇒](#)



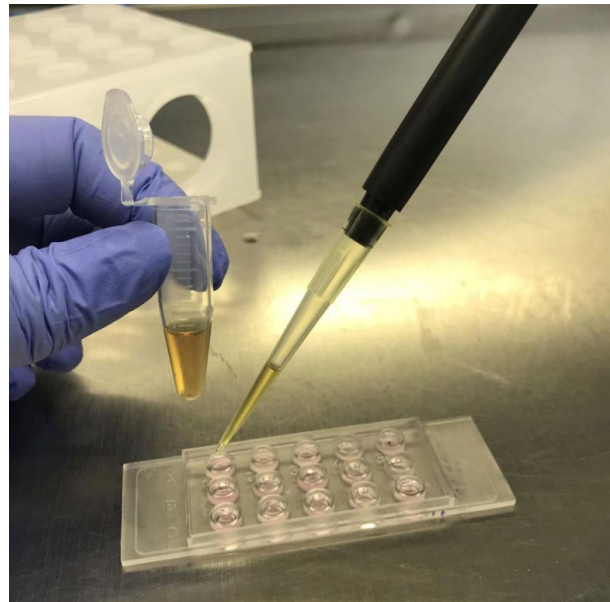
## ‘Better than graphene’ material development may improve implantable technology

**LEAD: PROF. DIPANJAN PAN**

Researchers at Penn State have made the material potentially more useful by imparting chirality — or handedness — on it, which could make for advanced sensors and implantable medical devices.

[Read more ⇒](#)

[Read more ⇒](#)



## Method for producing sulfur compounds in cells shows promise for tissue repair

**LEAD: ASST. PROF. URARA HASEGAWA**

A team led by Penn State scientists have developed a new method to generate the compounds — called polysulfides — inside of cells, and the work could potentially lead to advances in wound treatment and tissue repair.

[Read more ⇒](#)

### Evan Pugh University Professorship



#### MRI Director Clive Randall named Evan Pugh University Professor

Clive Randall, distinguished professor of materials science and engineering and director of the Materials Research Institute at Penn State, has been named an Evan Pugh University Professor. The Evan Pugh University Professorship is the highest distinction bestowed upon faculty by Penn State.

[READ MORE](#)

### Annual PPG Elevator Pitch Competition



#### 2024: 10th Annual PPG Elevator Pitch Competition Winners

Sponsored by PPG Industries, the 10th Annual Elevator Pitch Competition is an opportunity to pitch your research in TWO minutes or less, using no more than four supporting slides. Graduate students will briefly convey their research to a curious and technically diverse audience in hopes of taking home CASH PRIZES and developing new COLLABORATIONS.

[THE WINNERS PITCH](#)



# 2024 MATERIALS DAY - SAVE THE DATE



## CONVERGENCE of MATERIALS, DATA, MANUFACTURING and the HUMAN DIMENSION



October 29-30, 2024  
MaterialsDay  
2 0 2 4

**October 29 - 30, 2024**

University Park, Pennsylvania

### Convergence of Materials, Data, Manufacturing, and the Human Dimension

Block off Oct. 29-30 on your calendar for the 2024 Materials Day, Penn State's marquee event for the materials research community. This year's theme is **"Convergence of Materials, Data, Manufacturing, and the Human Dimension."** With this theme in mind, the event will feature **keynote speakers**, **breakout sessions**, graduate student **poster sessions**, industry-sponsored **tabletops**, lunch, and several **networking opportunities**.

[DETAILS & KEYNOTE INFORMATION](#)

ADD TO CALENDAR



## Biomaterials and Nature-Based Solutions

Join LiMC<sup>2</sup> on June 13-14, 2024

### Achieving a Sustainable, Decarbonized and Climate-Resilient Built Environment

This Workshop is open to Penn State participants interested in research at the intersection of building materials, nature-inspired materials design, and the social, environmental and global impact of the built environment on the climate crisis.

[Details & Registration](#)

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