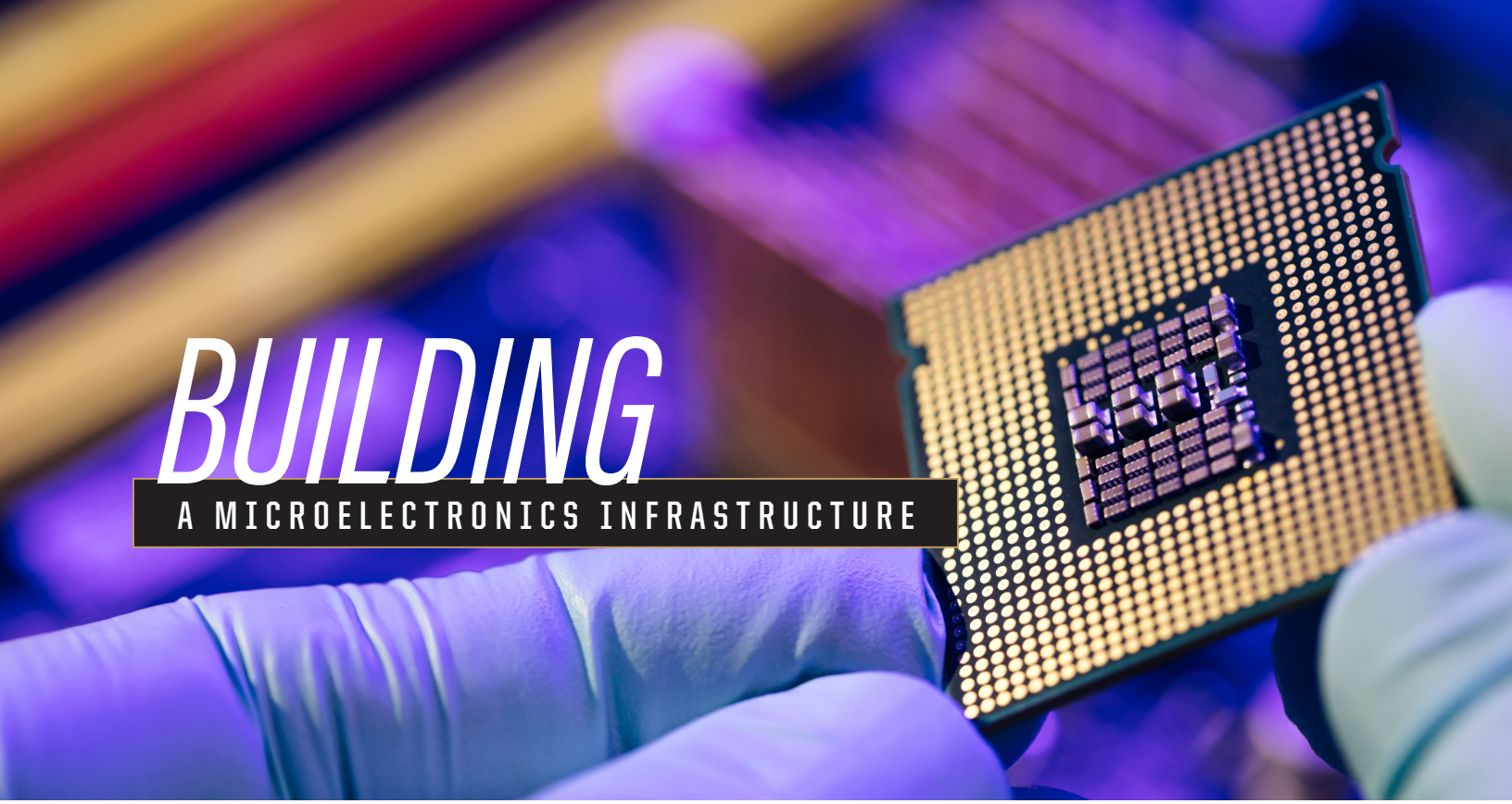

BUILDING
A MICROELECTRONICS INFRASTRUCTURE

The Microelectronics Lab of the Purdue Applied Research Institute (PARI) reinforces this critical science as the linchpin of national security, cutting across important areas from weapons systems to infrastructure.

Microelectronics technology spans critical areas, including weapons, information technology, sensing and warning systems, control of critical infrastructure, space applications and many more. With cross-functional teams, the PARI Microelectronics Lab (PML) drives innovation, solves complex technical challenges and develops state-of-the-art technologies to meet vital Defense Department needs. Our research and development efforts span design, modeling, simulation, fabrication, characterization and packaging of novel microelectronic technologies and devices.

PRIMARY FOCUS AREAS

Microelectronics in extreme environments
Developing chips and packaging for applications such as hypersonics and space that experience extremes in radiation, temperature, shock and vibration

Materials and processes
Optimizing processes for microelectronics fabrications and facilities to best meet national security needs

Modeling and simulation
Building validated software to streamline decisions and designs and accelerate technology development

Silicon photonics
Leveraging silicon photonics to develop integrated sensing, biomedical, automotive, aerospace, quantum and artificial intelligence applications

LOCATIONS IN

ODON, INDIANA

AND

WEST LAFAYETTE, INDIANA

LEARN MORE

PARI.PURDUE.EDU // PARI@PURDUE.EDU // @PARIPURDUE

PURDUE
APPLIED RESEARCH INSTITUTE

TRANSFORMING IDEAS INTO REALITY

1

Identify a technology need or product. The idea comes to PARI/ Purdue for development, what we call technology maturation.

2

We now have a prototype. Government laboratories try it out and rate its effectiveness. They offer adjustments and recommendations as needed.

3

Independent verification and validation is next. This is where the defense industrial base comes in. It further develops the technology or product under government contract.

4

Program executives take the technology or product to their respective offices for tryouts in real-world situations.

CAPABILITIES

Subject matter experts
PML staff researchers and the breadth of Purdue University faculty and staff to augment and consult with your team.

Access to world-class facilities
Classified laboratories, government and industry partner labs, and one of the largest academic cleanrooms in the country with complete microelectronic and packaging processing

Workforce development
Building a pipeline from academia to industry to fill specialized jobs in microelectronics

Research and development
Developing new designs through to modeling and simulation to create prototypes and test vehicles

PML'S KEY ADVANTAGES

- New lab facilities in renovated and accredited space for classified U.S. government work
- Alliances and partnerships with industry and the DoD to conduct applied research in targeted areas and build relevant microelectronics capabilities
- Partnership with Naval Surface Warfare Center, Crane Division for broad experimentation and resources
- Workforce development via training courses, web-based applications and internships
- Our experience and reputation for collaboration enable us to work seamlessly across government, industry and academia.

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