Highlights of Purdue Computes

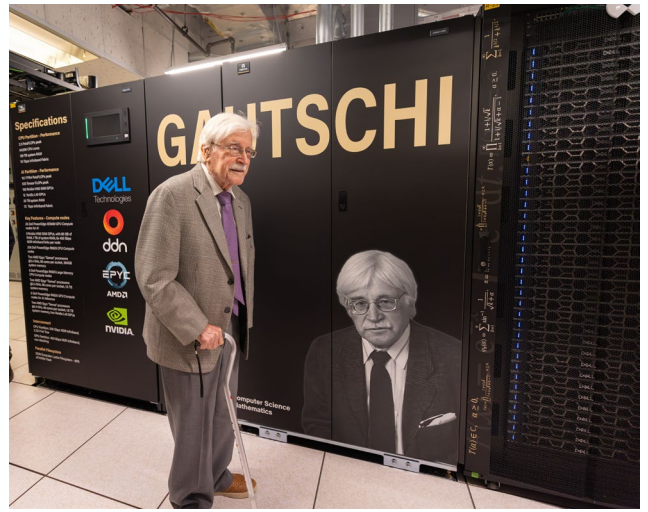
Strategic Pillar Reports 2024-25

PURDUE UNIVERSITY®

Purdue Computes: Computing

- **Largest undergraduate STEM enrollment in U.S.**

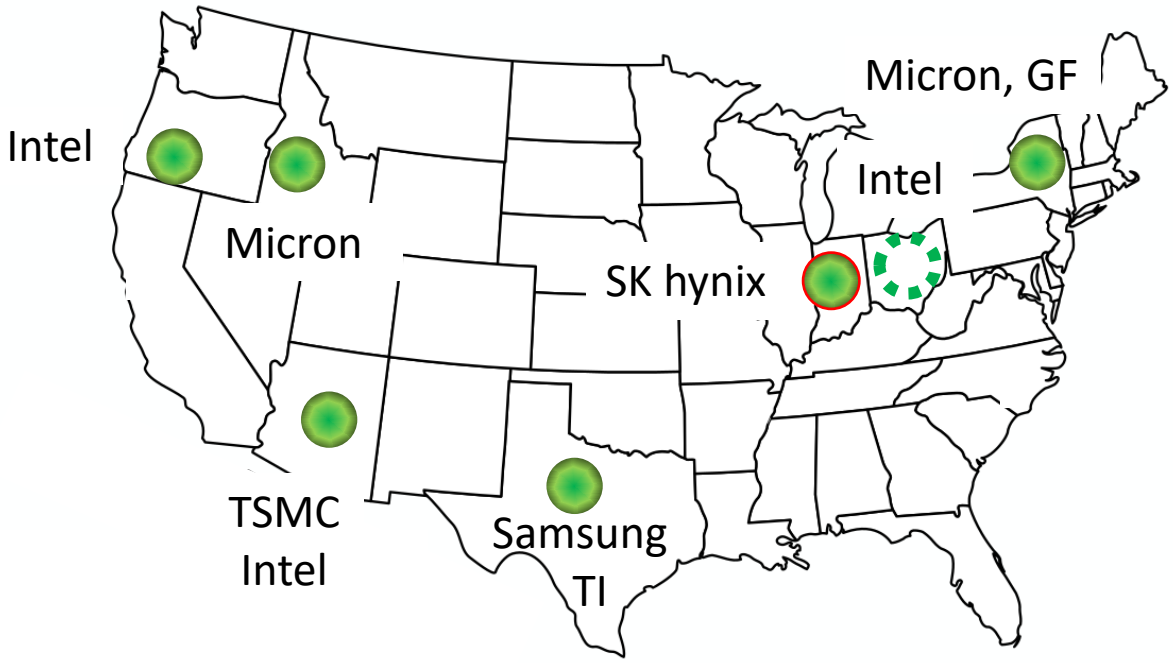
- **Top National Rankings:**
  - CS/Cybersecurity: #6
  - CS/Software Engineering: #10
  - Electrical Engineering: grad #7
  - Computer Engineering: grad #8



- **New AI Computing Resources – Gautschi cluster**
  - Performs quadrillion calculations per second
  - #7 among U.S. universities
  - High performance compute clusters served more than 3,800 faculty and graduate students and 66 departments

Purdue Computes: Semiconductors

Purdue now leads one of 5 clusters in U.S.



The stage is now set for an even bigger opportunity:
To become the heart of the Silicon Heartland

5-year goal:

To create a major, new U.S. semiconductor cluster consisting of:

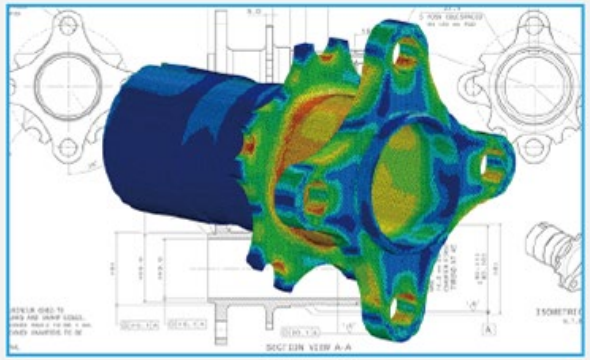
- Manufacturing
- Supply chain partners
- Design

- Workforce development
- Research & innovation
- Start-up ecosystem

With the critical mass needed to support national security, grow Indiana's economy, and expand opportunities for Purdue students and faculty for years to come.

Purdue Computes: Physical AI

- **Institute for Physical AI: one example below**
- Catalyzing the Development of Digital Twins and their data repositories
  - Lead Academic Center for Digital Twins for semiconductors and advanced packaging
  - Digital Twin and Robotic Information Center
  - Digital Twin for Manufacturing
  - Digital Twin for Oncology
  - Digital Twin for Agriculture and Forestry
  - Digital Twin for Nuclear Reactors
- Expanding the Post-doc Program
- Fostering growth of Centers

Conventional Simulation	Digital Twin Analysis
	
Predicting behavior under the expected environment and conditions	Predicting future phenomena and state changes of actual objects
Technical R&D, product design	Optimal operation and maintenance in use

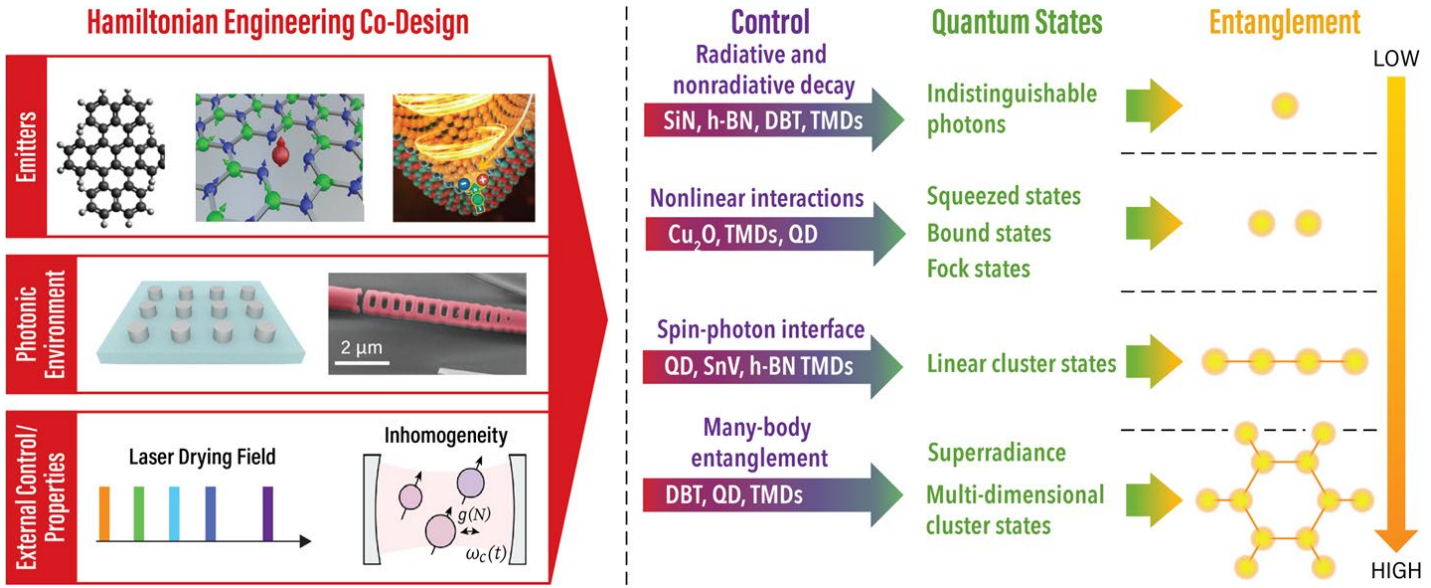
A Closer Look at Digital Twins, Virtual Factory Models that Expand the Potential of Their Real Counterpart | Murata Manufacturing Articles

Purdue Computes: Quantum (one example below)

QUPIDC

QUANTUM PHOTONIC INTEGRATED DESIGN CENTER

Led by Purdue University
8 partners and 17 PIs
13. 9M/4 years
30+ students/postdocs



To discover, design, and realize robust many-body entangled photon and matter states through multi-scale co-designing strategies in heterogeneous solid-state photonic systems.

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