

Indiana

Driving composites innovation through digital technologies

IACMI—The Composites Institute centers our Design, Modeling and Simulation (DMS) Area in Indiana. By quantifying cost-saving processes, materials, and best practices, the digital tools and technologies at this Purdue University facility are helping shorten the development cycle and decrease the cost of composites manufacturing.



IACMI's Design, Modeling and Simulation Area supports world-renowned researchers and capabilities, supporting essential and innovative industry growth in Indiana.

Facility Hosts and Partners

The **Composites Manufacturing & Simulation Center (CMSC)**, a Purdue University Center of Excellence, occupies over 30,000 ft² of the Indiana Manufacturing Institute (IMI) in the Purdue Research Park. Additionally, the Thermwood LSAM Research Laboratory at Purdue University is being established within the CMSC facility.

Key IACMI partners include Carver, Dallara, Dassault Systemes, Evonik, IDI Composites International, Lincoln Electric, Quality Vision International, and Wabash.



Research Features

Key Equipment and Technology:

- Manufacturing equipment for development of workflow simulation:
 - Extrusion deposition additive manufacturing
 - Autoclave processing of continuous fiber systems
 - Compression and injection molding of discontinuous fiber composites
 - Hybrid continuous/discontinuous fiber systems
- Composites Virtual Factory HUB
- Digital twin, digital thread and model-based engineering technologies
- Large-scale additive printer and 5-axis additive trimmer

Recent projects:

- Composites manufacturing simulation and validation
- Composites additive manufacturing performance prediction
- Mechanics of structure genome

Key Staff Members

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