

TENNESSEE



Establishing an environment for innovation

Tennessee's strong manufacturing and advanced material ecosystem helped bring about the creation of IACMI—The Composites Institute. In addition to hosting our headquarters, this state is home to five facilities within the IACMI innovation environment network and serves as the hub for our Composite Materials and Process Technology Area.

As an ardent contributor to Tennessee's innovation and manufacturing heritage, IACMI leverages our capabilities to support continued economic growth.

Facility Hosts and Partners

The **Fibers and Composites Manufacturing Facility (FCMF) at the University of Tennessee, Knoxville (UT)** enables student researchers to collaborate with industry to solve problems through testing and product development.

The **IACMI Collaboration Facility** houses key IACMI staff members and serves as an innovative incubator and collaboration space for IACMI members and students.

The **Carbon Fiber Technology Facility** at Oak Ridge National Laboratory (ORNL) offers a flexible, instrumented melt-spinning and carbon fiber line for demonstrating advanced technology scalability.

The **Manufacturing Demonstration Facility at ORNL** collaborates with industry to reduce risk and accelerate development and deployment of energy-efficient manufacturing processes and material systems.



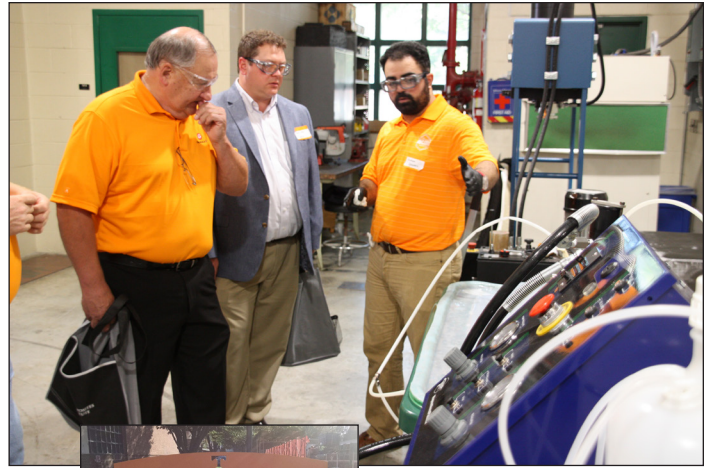
The **Laboratory for Systems Integrity and Reliability (LASIR)** at Vanderbilt University combines modeling and simulation tools, sensing and control techniques, and risk and reliability analytics to improve performance of manufacturing systems.

Academic and state support for IACMI's Tennessee initiatives include East Tennessee Economic Council, Mississippi State Community College, Roane State Community College, the state of Tennessee, University of Tennessee, Knoxville, and Vanderbilt University. Key IACMI members involved in Tennessee innovation initiatives include 4XTechnologies, AOC, BASF, Bossard, Composite Application Group, Composites Coalition, Dow, Endeavor Composites, HTS Hot Stamp, JR Automation, Magnum Venus Products, Minifibers, Nissan, Owens Corning, PPG, Prisma Renewable Composites, Techmer Polymer Modifiers, Teijin, and Volkswagen.

Research Features

Key Equipment and Technology:

- Carbon fiber production line
- Extrusion line for yarn and melt-blown web production
- Silicon Carbide fiber line
- Pultrusion line
- Big area additive manufacturing and 3D printers
- Sheet molding compound production line
- Robotically directed fiber preforming
- Resin transfer molding (RTM) system
- Structural reaction injection molding (SRIM) system
- Hybrid additive-compression molding (AM-CM)
- Long fiber thermoplastics (LFT) and overmolding
- Thermoforming and thermostamping



Technical Area Advisors

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Recent projects:

- Collaborative project to expand material options and additive manufacturing (3D printing) consistency
- Optimization of carbon fiber production for high-volume manufacturing
- Reclaimed carbon fiber-reinforced automotive part

