

Empowering collective strength to combat COVID

Since early 2020, IACMI innovation partners and consortium members have demonstrated creativity and resilience in support of multiple COVID-19 response initiatives. These efforts have spanned timeline and manufacturing scales and have addressed regional and national needs, from reconfiguring production lines and supply chains for large volume production of N95 filter materials to leveraging digital tools to accelerate redesign of components and tooling for large volume production of PPE and COVID diagnostic testing supplies.



"We greatly appreciated IACMI's assistance in convening the right experts in its consortium, America Makes and the Manufacturing Extension Partnership to help us align our efforts to quickly create a scalable 3-D printed ventilator splitter valve that could capably quadruple ventilator capacity for emergency uses."

Dan Beattie, Global Affairs Director at Dassault Systèmes

Securing Future of U.S. Manufacturing

IACMI is one of 16 Manufacturing USA Institutes securing the future of the U.S. Manufacturing Industry (manufacturingusa.com).



Collective Impact

- 1,600+** Total Projects
- 400+** Patents & License Agreements (Issued, applied for or pending)
- 270+** Technologies advanced toward commercialization
- 175,000+** participants in Institute training & workforce development programs

Organizational Excellence Award

The Society for the Advancement of Materials and Process Engineering (SAMPE) North America has recognized IACMI with its SAMPE 2021 Organizational Excellence Award. The award recognizes organizations from industry, academia, and/or government that exemplify the best of SAMPE from within the advanced materials and process community as a whole. "IACMI has set a high standard for innovation and creativity in advancing material and process engineering," says SAME President Jerome Berg.



IACMI – The Composites Institute
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University, State, Regional, National Laboratory, & Association Partners



The Institute for Advanced Composites Manufacturing Innovation (IACMI) is managed by the Collaborative Composite Solutions Corporation (CCS). CCS is a not-for-profit organization established by the University of Tennessee Research Foundation. As a Manufacturing USA Institute, IACMI was established by the U.S. Department of Energy's Advanced Manufacturing Office in the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE).

202110



Convene. Connect. Catalyze.

Institute Outcomes

Driving innovation in advanced composites through networking, collaboration and workforce development



IACMI – The Composites Institute is a 130+ member community of industry, universities, national laboratories, and federal, state, and local government agencies working together to **improve everyday lives through the power of composites**. Our mission is to convene, connect and catalyze the composites community to accelerate advanced composites design, manufacturing, technical innovation, and workforce solutions to enable a cleaner and more sustainable, more secure, and more competitive U.S. economy. A Manufacturing USA institute, IACMI is supported by the U.S. Department of Energy's Advanced Manufacturing Office, as well as key state and industry partners. Advanced composites provide strength and stiffness while being very lightweight. These characteristics provide advantages in many transportation, energy, and infrastructure applications. Greater deployment of advanced composites can offer benefits, such as providing safer, more energy-efficient vehicles. IACMI is working to drive the large-scale adoption of advanced composites in diverse markets.

Connecting innovation and workforce development

IACMI is uniquely and systematically connecting innovation and workforce assets across multi-billion dollar industries positioned for significant future domestic and international growth. IACMI is helping make the U.S. a leader in the manufacture of these strategic materials and accelerate the growth of their markets.

The power of a collaborative ecosystem

IACMI has established a community throughout the composites supply chain, including support for small and medium enterprises (SMEs). More than 50% of IACMI members are SMEs, leveraging their unique specializations to collaborate with one another, larger organizations, and technical experts.

Building supply chain-based frameworks for decision making

IACMI provides production-relevant environments for innovation, establishes supply-based frameworks for decision making, and educates and trains the workforce in support of the needs of the U.S. manufacturing and composites industry.

Driving economic growth in the U.S.

Through 50+ IACMI collaborative and industry led technical projects, member companies have developed more than 25 new, commercially available products. These products have helped lead to the creation of 3,000 jobs, million of dollars in facility expansion, and economic growth for the companies, as well as their manufacturing partners. IACMI has created an ecosystem of innovation that meets commercial needs, serves national security, and drives national economic growth.



IACMI – The Composites Institute creates an ecosystem of innovation to drive commercial outcomes that lead to economic growth.

Vision & Mission Statement

Vision: Improving everyday lives through the power of composites.

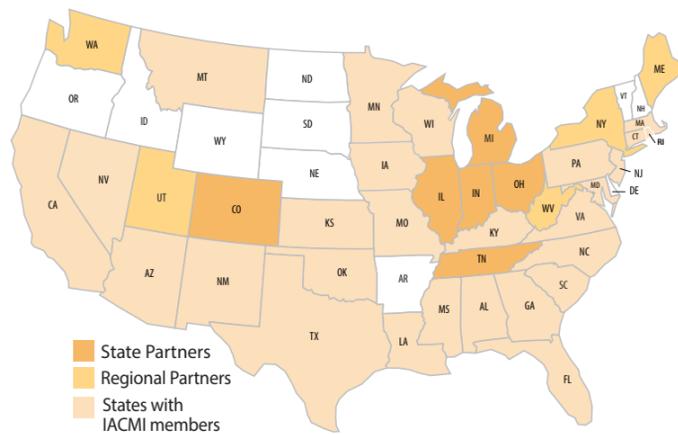
Mission: Convene, connect and catalyze the composites community to accelerate advanced composites design, manufacturing, technical innovation and workforce solutions to enable a cleaner and more sustainable, more secure, and more competitive U.S. economy.

Creating an Innovation Network

50+ IACMI technical projects

90+ IACMI members participating in technical projects

\$150M+ IACMI's R&D value to date



150+ IACMI Members served

68% of companies are SMEs

Impacting Economic Development Across the U.S.

\$400M Investment in 8 states for Scale Up Facilities

3,000 Jobs announced

\$150M in Research & Development Value

50+ Collaborative and industry-led technical projects

90+ 90+ IACMI members participating on technical projects

25+ New products commercially available because of IACMI collaboration outcomes

Lead With Infrastructure

In 2021, IACMI and a team of public-private partners built the first fiber reinforced polymer vehicle deck bridge in Tennessee. Due to the use of technologically advanced composites, the bridge deck system requires less installation time, reduces energy costs during construction and has a 100-year lifespan.



Serving Workforce Needs

100+ Internships with industry collaboration

2,000 Composites training participants

9,000+ K-12 Students engaged in composites training & STEM outreach

100% IACMI interns who graduated with a job offer in industry or acceptance into a graduate program

Successfully Meeting Goals for National Security Interest

- Demonstrating technologies greater than 80% recyclability or reusability of fiber-reinforced polymer composites in 5 years, on the path to greater than 95% in 10 years
- Reducing production costs of carbon fiber composites by over 25% in 5 years, on path to over 50% in 10 years
- Reducing embodied energy carbon fiber composites by 50%, on path to 75% in 10 years.
- Achieving large-scale adoption of innovative material and manufacturing technologies



Driving Commercialization

Steelhead Arkema	Vertical Axis Wind Turbine with Thermoplastic Composite Blades
Successful demonstration of small-scale vertical axis wind turbine using reformable thermoplastic carbon fiber composites.	
BASF Dura	High Speed Layup and Forming of Automotive Composite Components
Development of thermoplastic tape layup system capable of six plies, 48" x 48" in one minute cycle times, increasing options for hybrid molded structures.	
Vartega Ford Michelman	Closing Loop on Automotive Carbon Fiber Prepreg Manufacturing Scrap
Enhancement of Vartega's patented recycling process, with focus on downstream formatting of the recycled carbon fiber. In commercial production of fiber pellets for compounding and 3D printing filament, with sales realized.	
Local Motors Techmer	Development of Large Scale Additive Manufacturing for Structural Applications
Creation of improved 3D printing compounds with supporting data, with over 20 new formulations of Techmer's Electrafil line of products. Year-over-year doubling of sales volumes for past 3 years.	

Check out more IACMI project outcomes at iacmi.org/projects

IACMI Working Groups: Robust model of involvement for members



IACMI has developed a robust model of involvement for our member organizations to engage in R&D work across the spectrum of composite materials and technologies. These six initial working groups afford our members the opportunity to explore in-depth an area of particular interest to them.

U.S. DEPARTMENT OF **ENERGY** | Office of **ENERGY EFFICIENCY & RENEWABLE ENERGY**
 ADVANCED MANUFACTURING OFFICE

IACMI was established in 2015 by the Advanced Manufacturing Office in the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE).