BRINGING THE ADVANTAGES OF ADVANCED COMPOSITES TO INDUSTRY AND CONSUMERS

IACMI (Institute for Advanced Composites Manufacturing Innovation), a Manufacturing USA® institute, accelerates research and development in advanced composites to lower costs and increase efficiencies for all manufacturers.

Manufacturing USA, a public-private partnership with 14 manufacturing institutes across the nation, connects companies, academic institutes, non-profits, and local, state, and federal entities to solve industry-relevant advanced manufacturing challenges in new technology areas with the goals of enhancing industrial competitiveness and economic growth and strengthening national security.

Technology Focus Area

Advanced composites are two or more materials fused together to produce tailored properties in a lightweight format. Using composites rather than conventional materials such as steel provides greater potential for weight savings, energy efficiencies, and recycling opportunities. Materials like carbon fiber-reinforced polymer composites are of critical value in delivering high strength-to-weight ratios in vehicles, compressed gas storage, and wind energy/turbines. IACMI members are developing new technologies that lower the cost, time and energy required to produce these composites while increasing the material's recyclability.

Approach to Innovation and Collaboration

IACMI brings together partners in government, industry, and academia to share resources and co-invest in accelerating the development of advanced composites. This is done through:

Access to world-class research and development facilities and resources, including workforce training

Providing scale-up research and deployment opportunities: IACMI's Scale-Up Research Facility (SURF) located in Detroit, MI is focused on developing materials processing for lightweighting and joining of composites to other lightweight materials in vehicle structures that provide enhanced safety and fuel savings for consumers

Over 30 Projects that address lowering carbon fiber-reinforced polymer costs, reducing energy and improving composite recyclability into useful products

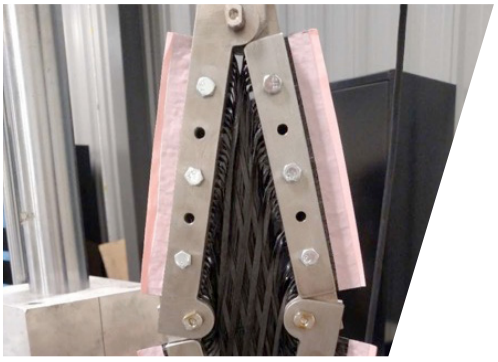
Building an Advanced Composites Manufacturing Workforce through workshops, online courses, internships, and community engagements at partner facilities

LEARN MORE + CONNECT WITH IACMI

Knoxville, Tennessee
865-974-8794
memberinfo@iacmi.org
iacmi.org

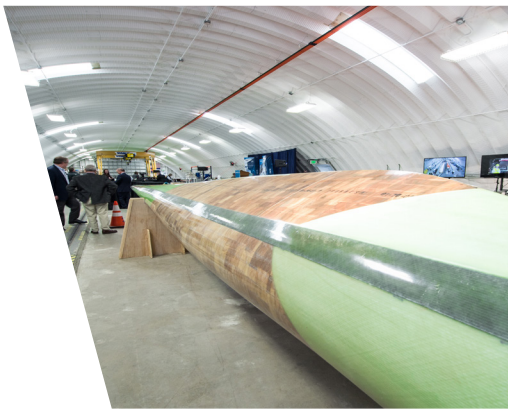
COLLABORATIVE PROJECT EXAMPLES

"Tapping into the innovation of small and medium-sized organizations, like Fibrtec, and the forging of public-private partnerships through IACMI's framework are accelerating the insertion of structural composites in the auto industry. It's a fantastic opportunity for companies like ours to have access to world-class resources not normally available." – Robert Davies, CEO, Fibrtec



THERMOPLASTIC COMPOSITES: The first phase of a project led by DuPont in partnership with Fibrtec and Purdue University validated the creation of a new carbon fiber composite manufacturing process that combines flexible coated FibrflexTM with DuPont's Rapid Fabric Formation technology and a polyamide resin. The resulting product exhibited improved fabric formability compared to traditional woven materials. This discovery can ultimately decrease cost for carbon fiber composite structures, making them easier to adopt in automotive and other high-volume industries, as well as reduce embodied energy and lead to the creation of more jobs.

WIND BLADE PROTOTYPE WINS CAMX COMBINED STRENGTH AWARD: An IACMI-produced nine-meter wind blade prototype was recognized for solving a recycling problem that impacts composites and advanced materials. The prototype is a small-scale version of a utility-scale multi-megawatt blade and is a result of collaboration between national labs, universities, and 11 industry partners. Fabricated and assembled at the National Renewable Energy Laboratory's (NREL) National Wind Technology Center, the prototype used new materials and processes with potential for commercialization to reduce production times and cost and increase durability, recyclability and energy-efficiency.



ROAD2COMPOSITES: Nearly 180 current and future technicians and engineers in the auto composites industry participated in this workshop, Road2Composites: Scaling Up Innovation. Attendees learned about advances in composites and their integration into automotive, aerospace, recreational, and other sectors. They also studied scale-up processes through demonstrations of unique equipment and explored lightweighting in the auto industry through the use of carbon fiber incorporation for vehicles via automation and additive manufacturing.

"Mafic has really enjoyed the connective and creative environment within the IACMI community. We have established productive partnerships and customers that have helped build our foundation for future growth including our new US facility, currently under construction in North Carolina. The facility is set to create over 100 new jobs making products that are currently featured in several IACMI projects." – Jeff Thompson, Head of Sales and Marketing, Mafic SA