

MICHIGAN



Lightweighting vehicles through composites technologies

ACMI – The Composites Institute calls Michigan home through a core partner: Michigan Economic Development Corporation (MEDC).

More than 75% of all the U.S.'s automotive R&D occurs in Michigan. A focal point of research and development in this area are composites technologies that offer both significant weight savings and high-volume manufacturing.

Facility Hosts and Partners

The IACMI Scale-up Research Facility (SuRF) in Detroit is in a unique position in the United States composites ecosystem to develop and scale emerging composites materials and manufacturing technologies, prototype multi-functional composite components at full-scale, and demonstrate at high-volume cycle times. The SuRF is an integral asset to the evolving future mobility ecosystem in the City of Detroit.

Companies that have been involved in projects at the SuRF include VW, Ford, General Motors, BASF, Dow, Teijin Automotive. Equipment partners have included Litzler, Milacron, Schuler, and Fill.



Research Features

Key Equipment and Technology:

- Integrated molding cell with:
 - High-pressure resin transfer molding/liquid compression molding system
 - 4,000-ton compression molding cell
- Automated tape laying (ATL) machine
- 3,000-ton injection molding/overmolding cell
- Prepreg line for novel prepreg material production
- Rapid heat-cool system
- Plasma treatment
- Compounding
- Prepreg slitting, chopping, and laminating equipment

Recent projects:

- OEM-qualified epoxy resin system for high-volume automated manufacturing applications
- Injection molding with low-cost textile-grade carbon fiber
- Design and manufacture of lightweight composite liftgate including parts consolidation

Technical Area Advisor

Raymond Boeman, PhD
Director, SuRF
rboeman@iacmi.org