



May 16-17 • Composite Vehicle Research Center • Lansing, MI

Presented by Composites One in Partnership with IACMI

An Automotive and Transportation Workshop focused on Scale-up, Lightweighting

Fuel efficiency, design freedom, and manufacturing efficiency have been driving transportation and automotive materials and process development toward composites for years. Composites materials and processes offer many other advantages for every vehicle on the road. Join us for this two-day workshop presented by Composites One in partnership with the Institute for Advanced Composites Manufacturing Innovation (IACMI), as we present some of the latest industry developments. This workshop is dedicated to demonstrating composites for both transportation (lower volume) and automotive (higher volume). Whether you make buses or pickup trucks, SUVs or Humvees, race cars or sedans, we have something for you at Road2Composites!

Workshop Address:

Composite Vehicle Research Center (CVRC)
2727 Alliance Dr.
Lansing, MI 48910

Networking Reception:

Please join us for a networking reception and supper-by-the-bite overlooking Spartan Stadium at the Huntington Club on Tuesday, May 16, from 6:00 p.m. - 9:00 p.m.

Michigan State University - Huntington Club

535 Chestnut Rd.
East Lansing, MI 48824

Road2Composites is Sponsored By:



Road2Composites is Presented By:



YOUR WORKSHOP AGENDA

Workshop Hours:

Tuesday, May 16: 8:00 a.m. - 5:00 p.m.

Wednesday, May 17: 8:00 a.m. - 12:00 p.m.

Session 1: Scale-Up

Tuesday, May 16: 8:00 a.m. – 12:00 p.m.

Design Considerations for Composites

Automotive Design and Manufacture:

The presentation will focus on the process to design and manufacture an automotive vehicle. Styling and Architecture, Body-In-White, Powertrain, Closures, Materials, Product Development Cycle, Body and Paint and Trim Shops will be covered in the presentation. Another key area to be covered in the presentation will be current hurdles to high volume composite implementation in the automotive industry.

Presented By: Dan Houston, IACMI/MSU

Virtual Visit to the Vehicle Scale-up Facility, Corktown Detroit

Presented By: Lawrence T. Drzal, PhD, Director, IACMI Vehicle Technology Area

Rapid Prototyping

Owens Corning's Modeling Toolbox to Expedite Composite Application Development

Presented By: Dr. Amol Vaidya, Global Innovation Leader, Owens Corning and Dr. Guang Sheng, Senior Engineer, Owens Corning

Design, Prototyping and Pre-production in Automotive

Presented By: Pat Cunningham, National Sales Director, SikaAxson

Rapid FRP Mold Construction Methods...Building a Class A Mold in a Day

Demo Materials Used: OptiPLUS 040-8091 and Polycor Tooling gel coat; VectorFusion Stitched CSM and 3612 triaxial; 3A Finishmat and Soric; UI Initiator.

Presented by: Rick Pauer, Application Manager, Polynt Composites

Additively Manufactured Composite Tooling – Progress and Challenges

Additive manufacturing is uniquely suited to reduce lead time and cost of tooling in many manufacturing areas. The presentation will focus on recent advances and remaining challenges in small and large scale additive manufacturing of composite tooling for hand layup, VARTM, autoclave and compression molding and injection molding. Processes and materials used in 3D printing will be discussed along with examples of applications.

Presented By: Vlastimil Kunc, Polymer Materials Development Team Lead, Oak Ridge National Laboratories

Material Innovation Through Quasi 3D Woven Materials for Hi Strain Performance

This talk will explain how Hi Strain rate characterization of 2D and 3D woven materials can be used to increase the energy absorbing properties of composites. Computational approaches for prediction of hi strain rate properties will be discussed. The presentation includes a demonstration of bi-axial and tri-axial weaving.

Presented By: Professor Dahsin Liu, MSU on Impact and 3D Weaving

Composites Testing

Multifunctional Composite Materials: A New Opportunity to Utilize Composite Materials

This talk will describe the composite materials analysis, characterization, fabrication and testing resources available at MSU in conjunction with IACMI and illustrate a current development that can add other properties (electrical, thermal, barrier, etc.) to the mechanical properties of composites.

Presented By: Professor Lawrence T. Drzal, MSU

Electromagnetic Sensors for Rapid NDE of Composites

This talk focuses on Nondestructive Testing (NDT) of composite materials using low frequency electromagnetic methods. The sensors are low cost, non-contact and measure the dielectric properties of the low loss GFRP samples. The inductive probes driven by a sinusoidal waveform of frequency up to few MHz can be used for rapid, non-contact inspection of CFRP samples.

Presented By: Professor Lalita Udpa on NDE

MSU Tour

Take a tour of the Michigan State University Composites Facility.

YOUR WORKSHOP AGENDA

Session 2: Large Parts

Tuesday, May 16: 1:00 p.m. – 5:00 p.m.

Processes for Large Parts

Demo Session: Infusion (VIP Process)

Step-by-step demonstration as a small part is prepared for infusion. 3A Composites will discuss lamination and Infusion materials used and the benefits of incorporating 'Kits' into your process. Magnum Venus Products will also demonstrate their new automated infusion injection system.

Presented By: Corbett Leach, Lead Technical Support Manager, Composites One; Eric Heilshorn, 3A / Lantor; Andrew Hedger, Product Line Manager of Closed Molding, MVP; and Mike Barnard, Technical Advisor, Gougeon Brothers, Inc. PRO-SET

Creating Reusable Vacuum Bags

Join this live demonstration of creating silicone reusable vacuum bags. The various design consideration and the actual application of the SWORL spray applied silicone will be shown. The use and maintenance of the bag will also be demonstrated with a live infusion of a part.

Presented By: Jim Noonan, Technical Support Manager, Composites One

Monocoque vs. Assembled

Multi-Material Joining of Composites

The talk will focus on challenges and limitations of bonded and mechanical fastening techniques for multi-material joining and possible solutions to overcome them. Additionally, the use of integrated experiments and simulations to assist in the development of novel joining techniques, associated measurement tools to validate the models and development of design tools will be presented.

Presented By: Professor Mahmoodul Haq, MSU

Adding Process Enhancement and Structural Integrity to Automotive Body Panels

Presented By: Eric Heilshorn, Product Manager, Lantor/ 3A Composites

Adhesive Joining

High Performance Structural Adhesives for Bonding Composites, Plastics, Metals

Presented By: Matt Brandli, President, Engineered Bonding Solutions, LLC | ACRA LOCK

Lightweighting

Compression Molding of Carbon Fiber SMC for Automotive Lightweighting

Presented By: Justin McClure, Application Engineer, A. Schulman, Engineered Composites Division

Advances in SMC for Vehicle Lightweighting

Presented By: Dan Dowdall, Global Business Development Manager – Transportation, Ashland LLC

C-PLY™- Let the Part Decide

Thin ply carbon fiber fabric solutions from Chomarat

Presented By: Chris Mikesell, Sales Manager, Chomarat North America

FST in Public Transportation

Intumescent Composite Systems for Mass Transit Applications (Non-Halogenated)

Demo Materials used: FireBlock gel coat (In mold and/or post applied) on FRP part UI Initiator.

Presented By: Rick Pauer, Application Manager, Polynt Composites

Structural Cores for Weight Reduction, Sound Dampening, and Fire Codes in Trains, Buses and Subways.

Presented By: Eric Heilshorn, Product Manager, Lantor/ 3A Composites



Be the Best! Enroll in a CCT Program!

The Certified Composites Technician (CCT) program is the industry's gold standard for composites training. It is designed to strengthen industry standards, elevate production performance, upgrade individual levels of knowledge and skill and offer public recognition to those who demonstrate a prescribed level of expertise in a specific composites specialization.

YOUR WORKSHOP AGENDA

Session 3: High Volume Composites

Wednesday, May 17: 8:00 a.m – 12:00 p.m.

Elium® – Liquid Thermoplastic Composite for Automotive Applications

A review of the general Elium technology and the advances for Fast RTM/short cycle time systems.

Presented By: Dana Swan, Business Development Scientist, Arkema Inc.

Prepregs: Out-of-Autoclave and Into the Press

The new Snap-Cure System is used for high rate composite component production and cure in five minutes or less. Snap-Cure resin in a molding process is aimed at the automobile industry's typical 100,000 part per year production target.

Presented By: Scott Schuster, National Sales Manager - Prepreg Materials, Gurit Composite Materials

Demo Session: Light Resin Transfer Molding (LRTM) Process

Light Resin Transfer Molding (LRTM), a versatile process that is perfect for a variety of parts. This session will showcase the advantages that Light RTM has to offer those considering converting to closed mold. The discussion will center on a dynamic demonstration of advanced troubleshooting techniques using a glass table that will allow those in attendance to view the resin flow live.

Presented By: Doug Smith, President, RTM North, Travis Irvin, North America Sales Manager, Chomarat; Rick Pauer, Application Specialist, Polynt; and Mike Barnard, Technical Advisor, Gougeon Brothers, Inc. PRO-SET

Maximizing Throughput through Release System Selection

Many factors affect proper release system selection in composite molding such as tooling type and finish, operating temperature, application technique, molding process and material composition. In this talk, Chem-Trend will present its consultative and experienced approach to product selection as it pertains to numerous materials and processes used in the automotive and transportation industries. Whether molding parts for prototype, first article inspection or high volume production, this talk will aid you in manufacturing more parts, better and faster.

Presented By: Sam Dethloff, Aerospace & Composites, Industry Technical Manager, Chem-Trend, L.P.

Tailored Fiber Alignment (TFA)

Tailored fiber alignment involves placing the fiber tows precisely in the load-path thereby maximizing the load-carrying capacity of resulting components and structures. This fiber alignment/placement techniques allows fiber tows to be placed around holes and generates net shapes (eliminates cutting, additive process). In this work, use of tailored fiber alignment in joining of composites and eliminating/reducing the effects of holes will be presented. A demonstration of the process will be given.

Presented By: Professor Mahmoodul Haq, MSU

Thermoplastics

Molding with Thermoplastic Fibers and Hybrids: Thermoplastic composites the wave of the future.

Presented By: Dan Alter, Advanced Composites Sales Specialist, Composites One

Boundless Flexibility for Thermoplastic Composites

Presented By: Al Hollenbeck, Chief Operating Officer, Concordia Fibers

Enhanced Strength and Toughness with Unique Urethane Acrylate Resins

Presented By: Al Horsman, Engineer, Scott Bader Inc.

TRAVEL

Road2Composites will be held at the Composite Vehicle Research Center (CVRC), May 16-17, 2017.
Travel arrangements should be made to fly into Lansing, MI (LAN) or Detroit, MI (DTW).

Workshop Address:

2727 Alliance Dr.
Lansing, MI 48910

Hotel Accommodations

Recommended hotel accommodations are listed below.

Hampton Inn and Suites - Lansing West

900 North Canal Road
Lansing, Michigan, 48917
(517)999-7900

REGISTRATION

To register for the workshop visit www.michiganworkshop.eventbrite.com or complete the form below and email to rachel.menges@compositesone.com

Name: _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Email Address: _____

Phone Number: _____

Are you a U.S. Citizen? Yes _____ No _____

Do you have food related allergies? Yes _____ No _____

Will you be traveling to this event? Yes _____ No _____