Wednesday, Sept. 6, 2017

REGISTRATION / BREAKFAST - Diamond Ballroom Sponsored by American Chemistry Council

8:00-8:30 OPENING REMARKS (Including Best Paper and Scholarship Awards Sponsored by MEDC) - Rani Richardson, 2017 SPE ACCE Chair - Diamond Ballroom

8:30-9:00 KEYNOTE 1 – Diamond Ballroom: David Erb, Senior R&D Program Manager at the University of Maine Advanced Structures and Composites Center Road Mapping of Structural Thermoplastics and Manufacturing Research at the University of Maine

9:00-10:00 EXHIBITS (no sessions) / JUDGING FOR STUDENT POSTER COMPETITION (Hall C)

10:00-10:30 SESSION 1: ADVANCES IN THERMOPLASTIC COMPOSITES - PART 1 OF 5

Anthony Coppola, General Motors
Fabrication and Crash Testing of Carbon Fiber Reinforced Thermoplastic Composites for Automotive Energy Absorption Applications

David Erb & Madeline Wehrle, Univ. of Maine Advanced Composites & Structure Center / John Saiz, Principal Industrial Fellow - Univ. of Cambridge
CMIST Roadmap Refinement 1: Roadmap Process Overview

10:30-11:00 David Erb & Madeline Wehrle, Univ. of Maine Advanced Composites & Structure Center / John Saiz, Principal Industrial Fellow - Univ. of Cambridge
CMIST Roadmap Refinement 2: Define Application Areas

11:00-11:30 SESSION 1: ADVANCES IN THERMOPLASTIC COMPOSITES - PART 2 OF 5

Masaya Matsushita, Yuh Co., Ltd.
Laminar Structure and Destuction in CFRTP Using Carbon Fiber Nonwoven Fabric

Yousoo Han, University of Maine
Characterization of Engineering Grade Wood Plastic Composites and their Properties for High Performance Applications

David Erb, Univ. of Maine Advanced Composites & Structure Center, Development of a Thermoformed Rear Differential Cover Made From Recycled Carbon Fiber

11:30-12:30 LUNCH (Hall C) Sponsored by Michigan Economic Development Corporation (MEDC) / JUDGING FOR BEST COMPOSITE PARTS

12:30-1:00 SESSION 5: ADVANCES IN THERMOPLASTIC COMPOSITES - PART 2 OF 5

Norbert Mueller, Engel Austria GmbH
T-RTM Technology and Processing of Thermoplastic Tapes - Two Technologies Managing a Common Challenge

Timo Huber, Fraunhofer ICT
Structural Thermoplastic Lightweight Design for Automotive Mass Production: Compression Molding of UD Tapes and LFT

1:00-1:30 David Erb, Univ. of Maine Advanced Composites & Structure Center, Development of a Thermoformed Rear Differential Cover Made From Recycled Carbon Fiber

1:30-2:00 SESSION 6: ENABLING TECHNOLOGIES - PART 2 OF 4

Dan Rozelman, Henmecke
 Hollow HP-TRM Carbon Fiber Parts

Leo Fifield, Pacific Northwest National Laboratory
Predictive Engineering Tools for Injection Molded Long Carbon Fiber Thermoplastic Composites

2:00-3:00 SESSION 9: ADVANCES IN THERMOPLASTIC COMPOSITES - PART 3 OF 5

Palanivel Swaminathan, Lanex
Mass Production Applications with TepeX®, a Lightweight Thermoplastic Woven Composite

David Erb & Madeline Wehrle, Univ. of Maine Advanced Composites & Structure Center / John Saiz, Principal Industrial Fellow - Univ. of Cambridge
CMIST Roadmap Refinement 3: Organize and Prioritize Application Areas

2:30-3:00 Nobuhiro Matsumoto, Mitsubishi Gas Chemical Co. Inc.
Xylenediamine Derived Polyamide Resin for High Mechanical Strength Composite Material

3:30-4:00 David Erb & Madeline Wehrle, Univ. of Maine Advanced Composites & Structure Center / John Saiz, Principal Industrial Fellow - Univ. of Cambridge
CMIST Roadmap Refinement 3: Organize and Prioritize Application Areas

4:00-4:30 Rajendra Prasath Palanisamy, Michigan State University
Structural Health Monitoring: Influence of Stress Fields in Propagation of Guided Waves in Composites

4:30-4:45 break

4:45-5:00 Uday Vaidya: Student Poster Competition Winners – Diamond Ballroom Sponsored by Asahi Kasei

5:00-5:30 SESSION 11: VIRTUAL PROTOTYPING & TESTING - PART 3 OF 5

John Moreton, Baylor University
Non-Destructive Inclusion Detection and Quantification for Carbon Fiber Laminated Composites with Pulse-Echo Ultrasonic Lens

Zhaoqiu Wang, Baylor University
The Applicability of Simplified Viscoelastic Fluid Model to Predict Extrudate Swell and Fiber Orientation in Fused Filament Fabrication Nozzle Flow

5:30-5:45 SESSION 12: BONDING, JOINING & FINISHING - PART 3 OF 3

Erik Stitt, Michigan State University
Surface Treatment of Thermoplastic for Use in Reversible Multi-Material Joints

5:45-7:15 COCKTAIL RECEPTION (Fireside Room) Sponsored by Hexion

7:15 Conference Adjourns for the Day

Sponsored by MEDC
<table>
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<th>Time</th>
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<tr>
<td>8:00 - 8:30</td>
<td><strong>KEYNOTE</strong> – Diamond Ballroom: Dale Brosius, Chief Commercialization Officer, IACMI – The Composites Institute</td>
</tr>
<tr>
<td>8:30 - 9:00</td>
<td><strong>SESSION 13: SUSTAINABLE COMPOSITES - PART 1 OF 2</strong></td>
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</table>
|           | Kyriaki Kalaizinidou  
Georgia Institute of Technology  
Cellulose Nanocrystals For Lightweight Sheet Molding  
Composites Compounds  |
| 9:00 - 9:30 | **SESSION 14: OPPORTUNITIES & CHALLENGES WITH CARBON COMPOSITES - PART 1 OF 2**:  |
|           | Dr. Bharati Balizepalli  
The Dow Chemical Company  
High Quality Carbon Fiber Epoxy Prepregs for a Wide Range of Reinforcement Architectures  |
| 9:30 - 10:00 | **SESSION 15: ADVANCES IN REINFORCEMENT TECHNOLOGIES - PART 1 OF 1**:  |
|           | Robert Brüll  
Institute for Textile Technology of RWTH Aachen University  
Suitability of Basalt Fiber Reinforced Polyamide-6 for Crash-Related Automotive Components  |
| 10:00 - 10:30 | **SESSION 16: NANOCOMPOSITES - PART 1 OF 2**:  |
|           | Ezatollah Amini  
University of Maine  
Effect of Adding Cellulose Nanocrystals (CNC) on the Mechanical and Thermal Behavior of Acrodur® Biocomposites  |
| 10:30 - 11:00 | **BREAK / EXHIBITS (no sessions) (Hall C)**  |
|           | **Sponsored by Plasan Carbon Composites**  |
| 11:00 - 11:30 | **SESSION 17: BUSINESS TRENDS & TECHNOLOGY SOLUTIONS - PART 1 OF 1**:  |
|           | Volker Plehn, Kevin Lange  
Toray Automotive  
Future Trends for High Performance Materials in Structural Components for Existing and Alternative Propulsion System  |
| 11:30 - 12:00 | **SESSION 18: ENABLING TECHNOLOGIES - PART 4 OF 4**:  |
|           | Andrew Maxey  
Vartega, Inc.  
Fabrication of A Recycled Tow Carbon Fiber Overwrapped Pressure Vessel  |
| 12:00 - 1:00 | **SESSION 19: ADDITIVE MANUFACTURING & 3D PRINTING - PART 1 OF 1**:  |
|           | Dr. Roger Assaker  
e-Xtreme! engineering  
Using Additive Manufacturing Simulation to Enable Confident Lightweight Automotive Design  |
| 1:00 - 1:30 | **SESSION 20: ADVANCES IN THERMOPLASTIC COMPOSITES - PART 4 OF 5**:  |
|           | Badin Pinpathomrat  
Kyoto Institute of Technology  
Mechanical and Adhesive Properties of Insert Injection Molded Aramid/Nylon Composites  |
| 1:30 - 2:00 | **SESSION 21: OPPORTUNITIES & CHALLENGES WITH CARBON COMPOSITES - PART 2 OF 2**:  |
|           | Amit Chaudhary  
The Dow Chemical Company  
Method to Utilize Aligned Carbon-Fiber Prepreg Trimm Scrap for Structural Applications  |
| 2:00 - 2:30 | **SESSION 22: VIRTUAL PROTOTYPING & TESTING - PART 4 OF 5**:  |
|           | Constantine Bauer  
Math2Market GmbH  
Micromechanical Simulation of a Multifunctional Hybrid Composite with Continuous Steel and Carbon Fiber Reinforcement  |
| 2:30 - 3:30 | **SESSION 23: NANOCOMPOSITES - PART 2 OF 2**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 3:30 - 4:00 | **SESSION 24: ENABLING TECHNOLOGIES - PART 5 OF 5**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 4:00 - 4:30 | **SESSION 25: SUSTAINABLE COMPOSITES - PART 2 OF 2**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 4:30 - 5:00 | **SESSION 26: ADDITIVE MANUFACTURING & 3D PRINTING - PART 2 OF 2**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 5:00 - 6:00 | **SESSION 27: THERMOPLASTIC COMPOSITES - PART 5 OF 5**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 6:00 - 7:00 | **SESSION 28: ENABLING TECHNOLOGIES - PART 6 OF 6**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 7:00 - 8:00 | **SESSION 29: SUSTAINABLE COMPOSITES - PART 3 OF 3**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 8:00 - 9:00 | **SESSION 30: THERMOPLASTIC COMPOSITES - PART 6 OF 6**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 9:00 - 10:00 | **SESSION 31: ADDITIVE MANUFACTURING & 3D PRINTING - PART 3 OF 3**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 10:00 - 11:00 | **SESSION 32: THERMOPLASTIC COMPOSITES - PART 7 OF 7**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 11:00 - 12:00 | **SESSION 33: ADDITIVE MANUFACTURING & 3D PRINTING - PART 4 OF 4**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 12:00 - 1:00 | **SESSION 34: THERMOPLASTIC COMPOSITES - PART 8 OF 8**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 1:00 - 2:00 | **SESSION 35: ADDITIVE MANUFACTURING & 3D PRINTING - PART 5 OF 5**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 2:00 - 3:00 | **SESSION 36: THERMOPLASTIC COMPOSITES - PART 9 OF 9**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 3:00 - 4:00 | **SESSION 37: ADDITIVE MANUFACTURING & 3D PRINTING - PART 6 OF 6**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 4:00 - 5:00 | **SESSION 38: THERMOPLASTIC COMPOSITES - PART 10 OF 10**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
| 5:00 - 6:00 | **SESSION 39: ADDITIVE MANUFACTURING & 3D PRINTING - PART 7 OF 7**:  |
|           | Mehdi Tajvidi  
University of Maine  
Where Nano and Sustainable Meet: Opportunities and Challenges for Automotive Applications Using Cellulose Nanomaterials  |
| 6:00 - 7:00 | **SESSION 40: THERMOPLASTIC COMPOSITES - PART 11 OF 11**:  |
|           | Dr. Helen Lentzakis  
Nanopore  
Graphene Enhanced Polymer Nanocomposites  |
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<th>TIME</th>
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<tr>
<td>8:00</td>
<td>Dr. Patrick Blanchard</td>
<td>Ford Motor Company</td>
<td>Completing The Transition From Metallic To Multi-Material Automotive Solutions - Challenges and Opportunities</td>
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<tr>
<td>9:00</td>
<td>Marianara Desiree Reale Batista*</td>
<td>Michigan State University</td>
<td>Hybrid Cellulose-Inorganic Reinforcement Polypropylene Composites: Lightweight Materials for Automotive Applications</td>
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<td>9:30</td>
<td>Probr Guha</td>
<td>Coats Performance Materials</td>
<td>Weight Reduction in Automotive Components</td>
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<tr>
<td>10:00</td>
<td>Hong Xu</td>
<td>Hanwha Azdel, Inc.</td>
<td>Light Weight Reinforced Thermoplastic Composite with Improved Formability</td>
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<td>10:30</td>
<td>John Fialka</td>
<td>Styrolution</td>
<td>New Material Solution for Lightweight Design</td>
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<td>Michigan State University</td>
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<tr>
<td>11:30</td>
<td>Joyanta Goswami</td>
<td>Georgia Institute of Technology</td>
<td>Glass Fiber/Nanocellulose/Unsaturated Polyester Resin Composite: Processing, Properties and Potential for Automotive Applications</td>
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<td>12:00</td>
<td>Douglas Gardner</td>
<td>University of Maine</td>
<td>Mechanical Properties of Hybrid Basalt, Carbon Fiber-Filled Recycled Polypropylene and Polymide 6 Composites</td>
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<tr>
<td>12:30</td>
<td>Michel Champagne</td>
<td>National Research Council Canada</td>
<td>Lightweight D-LFT Cellulose-Based Composites for Semi-Structural Applications</td>
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<td>1:00</td>
<td>Daniel Park</td>
<td>Fraunhofer Project Center for Composites Research</td>
<td>New Developments in Polyurethane Sheet Molding Compound</td>
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<tr>
<td>1:30</td>
<td>Dr. Ian Swentek</td>
<td>Hexion</td>
<td>Methods to Improve Mechanical Performance of Carbon Fiber Epoxy SMC</td>
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<tr>
<td>2:00</td>
<td>Nebel Meirson</td>
<td>Fraunhofer Project Center for Composites Research</td>
<td>Investigation of Mechanical Property Differences Between Composites Produced Using Vacuum Assisted Liquid Compression Molding and High Pressure Resin Transfer</td>
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**EXHIBITION HOURS:**

- **Wednesday:** 9:00 a.m. to 5:00 p.m.
- **Thursday:** 8:30 a.m. to 5:00 p.m.
- **Friday:** 8:30 a.m. to 1:30 p.m.