



## Day 1 - Sustainability

### 10:00 AM - Plenary Panel - Fostering Environmentally Conscious Material Development to Meet Consumer Demand and Satisfy Regulatory Requirements

The United States has expressed its commitment to reducing its carbon footprint. This is evident from the recent move to re-join the [Paris Climate Agreement](#) which from a regulatory perspective is a step towards environmentally conscious initiatives such as [energy efficiency for consumer products](#) and [carbon emission targets](#). [Consumer behavior](#) has also been trending towards environmentally sustainable products though affordability and convenience are key priorities. For materials manufacturing and development this presents the common goal of providing affordable, environmentally sustainable products. Given the diversity of products in use and the range of applications it can be challenging to know how best to approach this shift. It could be the use of bio-content, recycling and repurposing or looking to simplify multi-material design for post-consumer disassembly. The supply chain is looking to best understand how to move towards environmentally conscious development and this session will make sure no organization is left behind. Balancing environmentally conscious material development whilst also remaining cost competitive will set the tone for 2021 and beyond.

#### Points to be discussed:

- Exploring different environmentally friendly material development techniques and strategies
- Discussing how different organizations have made progress in reaching the common goal of environmentally conscious material development
- Outlining requirements are being set by end user organizations and how this may impact material development

#### Speakers

**Lee Polance**, Vice President, Global Technology, Engineering Adhesives, H.B. Fuller

**Steve Sopher**, Technical Director, JSP

**Marty Muenzmaier**, Sustainability and External Affairs Leader, Cargill Bioindustrial Group

**Anne Brown**, Head of NA Product Development & Technical Customer Service, Loctite

## **10:45 AM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor**

## **11:25 AM - Panel Discussion - How to Effectively Increase the Share of Bio-Content Mass in your Product Whilst Meeting Application Specifications**

Despite the [drop in oil price as a result of the pandemic](#) the consumer demand for environmentally friendly [material solutions is growing](#). One such solution is the production of bio-content or bio-based materials. Regulatory pressure and consumer demand are very much a driving factor for development which makes them a priority for the materials sector. This session will explore how to meet the requirements of the environmentally conscious consumer and the development challenges that bio-content manufacturers have faced.

### **Points to be discussed:**

- Exploring how to increase the bio-content mass in a product and the effect on its mechanical properties
- Looking at the available uses of bio-content and its potential to take on new application development
- Understanding the quality and material properties of bio-based materials to make sure they can fulfil application requirements

### **Speakers**

**Scott LeFavour**, Technical Business Development Manager, Cardolite Corporation

**Ryan Hunt**, Co-Founder and CTO, ALGIX, LLC

## **12:10 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor**

## **1:10 PM - Presentations - Overcoming Product Fatigue Through Alternate Manufacturing Methods and Material Property Improvement**

Material fatigue occurs as a product is used over time and begins to lose its intended shape or structure. Fatigue can therefore impact the life expectancy of a component and its value to a consumer. In a vehicle for example, interior components that fatigue could need to be replaced as they can become uncomfortable and no longer function correctly.

A solution to this challenge may lie in exploring new material design such as lattice structures. So resilient are these structures that they have been used to [reinforce concrete](#). This level of durability could enable advancements in foam material development. Lattice structures can be fabricated through additive manufacturing methods which offers a more precise method of manufacture than foams. The combination of new material design and increased design precision may aid in the development of products to challenge current durability standards.

**Points to be discussed:**

- Outlining the specific requirements for applications most vulnerable to material fatigue
- Enabling the design of materials with novel design structures to offer greater durability
- Overcoming production imperfections and faults through additive manufacture to produce more reliable end products

**Speakers**

**Erika Berg**, Director, Application Development, Carbon

**Walter Voit**, CEO & Founder, Adaptive3D Technologies

**1:50 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor****2:30 PM - Presentations - Facilitating Complex Product Assembly and Disassembly Through Adhesive Debonding Techniques**

The assembly of complex electronic circuitry components is a painstaking process, [often requiring the temporary bonding of delicate substrates](#). The debonding process can be achieved by thermal, chemical, mechanical methods or by laser and each method is applicable depending on the products application. For example, if the substrates are fragile then the precision debonding of a laser is likely to be more effective than a mechanical or chemical process. Debonding also provides an opportunity to break down multi-material products and allow for the separated components [to be recycled or reused](#).

As a relatively new technology debonding leaves the manufacturing and processing community with much to learn about the potential for debonding as a tool for complex production methods. If a material is heat sensitive, then thermal debonding could warp and lose its mechanical properties. This session will explore how to navigate this technology and explore the needs of manufacturing and processing engineers to ensure they are equipped for the task at hand.

**Points to be discussed:**

- Ensuring the selected method of debonding is suitable for the particularities of the application
- Discovering the requirements of engineers looking to implement debonding into their production process
- Understanding the potential for debonding to be used as a method of implementing circular economy in packaging solutions

*Speakers to be announced soon.*

**3:10 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor**

## 3:50 PM - Panel Discussion - Industry Spotlight: Celebrating the Importance of a Diversified Workforce

The future of manufacturing and engineering is reliant on a new and enthusiastic generation of talent. A diversified workforce enables fresh perspectives and can help to address concerns of an [STEM recruitment shortage](#).

Covid-19 has seen a disproportionate number of minority workers unable to [return to their jobs](#). Women in the US workforce, for example, ended 2020 with [5.4 million fewer jobs](#) than had been held in February of the same year whilst men lost 4.4 million. Roughly 10 million workers in the US were dependent upon paid child care services which [lost 4.5 million](#) positions over the course of the pandemic. This session will explore how best to ensure a diverse workforce is able to return to work and how to increase recruitment in the future. It is also a chance to celebrate the achievements of the diverse North American workforce in STEM roles.

### Points to be discussed:

- Seeing opportunities for STEM role fulfillment with the next diverse generation of talent
- Celebrating the achievements of Women and Minorities in engineering and manufacturing roles
- Looking at short-term and long-term solutions to unemployment, how to get the workforce back on track

### Speakers

**Kristen Hall**, Regional Account Manager - Mobile Emissions Catalysts, BASF

**Cheryl Thompson**, Founder and CEO, CADIA

## 4:30 PM - End of Day 1

# Day 2 - Applications & Manufacturing

## 10:00 AM - Panel Discussion - Offsetting Competing Objectives for Thermal Management, Acoustic and Shock Absorption Applications

Whether you are insulating a vehicle or battery, constructing a home or refrigerator there is a constant desire to increase the efficiency of thermal management systems. Doing so can increase the energy efficiency of a product and provide crucial thermal dissipation to prevent damage to the component and its user. Acoustic and shock absorption are often a necessary accompaniment to thermal management and can increase both consumer satisfaction and safety. The better a material is at achieving one of these goals, the more you must compromise another. Often the tradeoff in properties is at the cost of a component's lifespan, it is important to maintain material durability to ensure its longevity. This session will explore how material development can increase the efficiency of these key characteristics whilst ensuring they do not come at the cost of its durability or lifespan.

**Points to be discussed:**

- What are the key requirements for thermal management, acoustic and shock absorption applications?
- How best to strike a balance between the competing objectives to optimize material composition?
- How might durability and lifespan of materials change during property optimization?

**Moderator**

**Edwin Pope**, Principal Analyst, IHS Markit

**Speakers**

**Fouad Mohammad**, Principal Engineer- CFD & FEA, Bergstrom Inc.

**Tim Vokes**, Senior Applications Engineer II, Parker LORD

**10:45 AM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor****11:25 AM - Panel Discussion - Fulfilling Concise Consumer Requirements by Encouraging Bespoke Production for Luxury Applications**

For standard, low cost products, mass production is often the most efficient way to meet the demands of the market. For luxury products however, there are stringent requirements for manufacturing which justify the allocation of extra time and resources due to the premium charged to the consumer. The consumer is paying a higher premium for a luxury product and accept a higher standard of quality which could relate to the comfort, density, aesthetic, or other characteristics that must be factored in at the design phase. Material and design engineers therefore require a thorough understanding of a materials specifications and the parameters of its customization in order to meet the expectations of the consumer. This session will explore the requirements of the luxury consumer, how to make sure a product is able to meet these requirements and outline them to the design team.

**Points to be discussed:**

- Outlining the requirements of bespoke production to satisfy the demand from luxury applications
- Re-examining the communication process for production and data sheet specifications

**Speakers**

**Garrett Getter**, Product Manager - Saddles, Grips and Tapes, Specialized Bicycle Components Inc.

**Kevin McCarthy**, Development Manager, Foam Creations Inc

**12:10 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor**

## 1:10 PM - Presentations - Adhesive Selection 101: Selecting the Correct Adhesive and Surface Preparation to Maximize Production Efficiency

There are a wide range of adhesives on the market, each with their own set of properties and advantages. It is important to make sure that the optimal adhesive is selected for an application as not doing so could result in choosing an adhesive that cannot withstand the requirements of the application which could result in product failure. The type of substrates being bonded has an impact on the adhesive's properties, as do the requirements of the application. Certain materials require surface preparation to prime them for the bonding process. This session is designed to make sure that you are not compromising the quality of your product by using the incorrect adhesive. Adhesive manufacturers will be available to discuss the best way to approach and application and material, design and research & development experts will outline case studies to help showcase the range of challenges in the marketplace.

### Points to be discussed:

- Discovering the best possible adhesive for the demands of the application
- Learning what surface preparation technologies are available and how they interact with various material properties
- Assessing the mechanical properties of various adhesives to better understand potential production challenges

### Speakers

**Cyrielle Kolbecher**, Technical Service Engineer, Bostik, Inc.

**Norman Otto**, European Adhesive Specialist, WEICON

**Jason Allington**, VP & General Manager, ASI, Division of Thermal Technologies, Inc.

## 1:50 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor

## 2:30 PM - Presentations - Understanding the Benefits of Material Pigmentation and Increasing Efficiency During Production

Material pigmentation can help to manage heat dissipation and provide a diverse aesthetic portfolio when creating end products for the consumer. It can also help in the development of multi-materials as each component can be easily identified during prototyping and assembly.

If materials are to be produced in a wider range of colors then production machinery must be cleaned between each use to prevent contamination. Determining how to effectively pigment large batches of product in different colors without slowing throughput remains a challenge. This session will explore options for overcoming this challenge to efficiency and outlining the advantages of pigmentation.

### Points to be discussed:

- How can the pigmentation of materials be efficiently incorporated into large scale production to meet end user specifications?
- What benefits can the pigmentation of materials bring to its mechanical properties?
- What are the requirements of the end user market for material customisation?
- Increasing the efficiency of large batch colouring colour contamination to maintain throughput

## Speakers

**Reuben Correia**, New Product Development Manager, Adhesives & Inks, Birla Carbon

## 3:10 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor

## 3:50 PM - Panel Discussion - Automation Implementation: Increasing Throughput Whilst Reducing Waste and Remaining Cost Efficient

With the rise in price and [demand for raw materials and resins](#), reducing scrap and waste from production has become an increasingly important challenge for the manufacturing community. Making sure that all available material is being utilized is key to meeting the [growing demand for materials in the automotive sector](#). Automation presents a method to address these challenges though any extra cost must be justifiable in the current climate. This session will examine the needs of manufacturing, processing and automation engineers and explore what technologies could offer solutions to the question of waste.

### Points to be discussed:

- Increasing the efficiency and maximizing throughput with automation
- Reducing waste through minimization of scrap material
- Determining the cost efficiency of industry 4.0 for your production process

## Speakers

**Larry Saidman**, Chief Technologist - R&D, Nordson Corporation

## 4:30 PM - End of Day 2

# Day 3 - Regulation & Testing

## 10:00 AM - Presentations - Regulation Run Down: Remain One Step Ahead of Regulatory Updates

A change in administration and a global emphasis on environmental regulation have raised questions as to what changes may be introduced within the United States. Remaining vigilant on these updates is key to ensuring a product will be eligible across the country. This session will explore the regulatory impact upon different aspects of the material development process. This can range from volatile organic compounds (VOCs) to Hydrofluorocarbon (HFC) blowing agents and the clean air initiative and will help you to ensure that your product will remain within regulation.

**Points to be discussed:**

- Ensuring that products can continue to meet regulatory specifications
- Remain up to date on how volatile organic compounds (VOCs) will be regulated globally and its effect on your organization
- Stay ahead of blowing agent regulation change to make sure you can continue to operate across the United States

**Speakers**

**Ernest B Wysong PhD**, Global Technology Leader, Opteon™ Spray Foam & Panel Applications, Chemours Fluoroproducts

**Nao Nakamura**, Technical manager, TOYO INK AMERICA, LLC.

**Margaret Sheppard**, SNAP Program Team Leader, U.S. Environmental Protection Agency

**Stephen Wieroniey**, Director; Center for the Polyurethanes Industry, American Chemistry Council

**10:55 AM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor****11:35 AM - Presentations - Preventing Adhesive Failure Through Data Analysis and Precision Product Assembly**

During product assembly the failure of an adhesive can lead to costly delays and reduce throughput. Failure can also occur during the life span of a product which reduces the reliability and overall worth of the product. There are a number of potential causes for failure; there may have been a problem with the curing process, the mixing of material or surface preparation may have been carried out incorrectly. These variables require further scrutiny to reduce the number of unknown variables and isolate the error. This session will explore case studies of what errors have been experienced and show how data analysis could help to increase processing efficiency and pinpoint the concern.

**Points to be discussed:**

- Outlining the quality requirements of key application areas
- Exploring how data analysis can aid in the isolation of errors in the production line
- Overcoming consistency and quality challenges in the adoption of manufacturing processes

**Speakers**

**Brad Tuft**, Research Scientist, Dow Chemical

**Andrea Browning**, Product Manager, Polymers and Soft Matter, Schrodinger, Inc

**12:30 PM - Cleaning Break - Opportunity to Explore Exhibits on the Show Floor**

## **1:30 PM - Presentations - Cashing in on New Global Markets by Adhering to Global Testing Standards and Certifications for Material Development**

Understanding the nuances of material testing standards and requirements across different geographical regions is paramount to begin material exportation. The European Union, for example, demands CE conformity for its imported products which means the development process and consequent material testing must be reviewed to ensure its compliance. These are not standards enforced within the United States but meeting them present manufacturers with the opportunity to distribute their products worldwide. This session will explore how these standards could have a short-term impact on how your material development and testing but a long-term impact on your export opportunities. The United States government also offer grant money to help make this transition, how to qualify for this will also be addressed.

### **Points to be discussed:**

- Understanding global standards for export opportunities and how to adapt your material development to meet them
- How to make sure your product meets global testing standards to take full advantage of the global marketplace
- Staying abreast of the European Union's standards and how to potentially qualify for government grants to help the transition

*Speakers to be announced soon.*

## **2:25 PM - End of Day 3**

*Smarter Shows reserves the right to amend speakers, topics and scheduling at any time. This document is updated regularly to reflect such changes.*