Booth #534

Understanding Tomorrow's Innovations Today

PRESENTED BY:

Booth #534 IPC APEX EXPO
San Diego Convention Center
January 24 - 26, 2023

TUESDAY, JANUARY 24

Time	Session
10:00 AM	**SHOW FLOOR OPENS**
10:30 AM	**Insulectro's Technology Village** Michael Creeden, Technology Director, Insulectro
11:00 AM	**DuPont Automotive Solutions** Greg Roettger, Sr. Key Account Mgr, DuPont
11:30 AM	**Cutting Tools for Advanced Materials and HDI** Joe Negron, Sales Manager, Kyocera
12:00 PM	**Making Intelligent Materials Selection** Michael Creeden, Technology Director, Insulectro
12:30 PM	**Metallization & Imaging Processes for IC Substrates** Erik Reddington PhD, Commercial Leader, DuPont
1:00 PM	**Pacothane Lamination Assist Product Overview** Lahcen Khiyaty, Product Dev & Technical Mgr, Pacothane
1:30 PM	**New Plating Chemistry** Carl Colangelo, DuPont
2:00 PM	**What's needed after the CHIPS Act?** Shane Whiteside, President & CEO, Summit Interconnect
2:30 PM	**Optimize Collaboration with your PCB Manufacturer** Lawrence Romine, VP of Sales & Marketing, Altium®
3:00 PM	**PE Trends Driving Innovation at Micromax™** Hee Hyun Lee, Micromax™ Lead Research Scientist
3:30 PM	**Modeling Materials for Signal Integrity** Neil Chamberlain & Eric Bateham, Polar Instruments
4:00 PM	**Lamination Basics** Chris Hunrath, VP of Technology, Insulectro
4:30 PM	**TerraGreen® 400G2, 400G, & 400GE** Michael McMaster, Director HSD Materials, Isola Group
5:00 PM	**Introduction to PCB Copper Foil** Michael Coll, Chief Operating Officer, Denkai America
5:30 PM	**Flex Materials in Outer Space: "Failure is not an option."** Geoff Leeds, DuPont Flex Laminates Product Mgr, Insulectro
6:00 PM	**SHOW FLOOR CLOSES**

WEDNESDAY, JANUARY 25

Time	Session
9:00 AM	**SHOW FLOOR OPENS**
9:30 AM	**Insulectro's Technology Village** Michael Creeden, Technology Director, Insulectro
10:00 AM	**Tool Selection for Flex/Rigid-Flex Drilling & Milling** Russell Reynoso, Design and Engineering Mgr, Kyocera
10:30 AM	**New DuPont Resist for SAP/mSAP** Chris Cha, Technical Service Consultant, DuPont
11:00 AM	**Microvia Reliability** Geoff Leeds, DuPont Flex Laminates Product Mgr, Insulectro
11:30 AM	**Metallization & Imaging Processes for IC Substrates** Erik Reddington PhD, Commercial Leader, DuPont
12:00 PM	**High-Speed Circuits with Advanced Micro Packaging** Michael Creeden, Technology Director, Insulectro
12:30 PM	**PE Trends Driving Innovation at Micromax™** Hee Hyun Lee, Micromax™ Lead Research Scientist,
1:00 PM	**15 Emerging Predictions for Advanced Electronics** Michael Creeden, Technology Director, Insulectro
1:30 PM	**Cutting Tools for Advanced Materials and HDI** Joe Negron, Sales Manager, Kyocera
2:00 PM	**DuPont Automotive Solutions** Greg Roettger, Sr. Key Account Mgr, DuPont
2:30 PM	**Optimize Collaboration with your PCB Manufacturer** Lawrence Romine, VP of Sales & Marketing, Altium®
3:00 PM	**Introduction to PCB Copper Foil** Michael Coll, Chief Operating Officer, Denkai
3:30 PM	**High Temperature Lamination and Fusion Bonding** Chris Hunrath, VP of Technology, Insulectro
4:00 PM	**Ormet™ Solving Design Challenges** Michael Creeden, Technology Director, Insulectro
4:30 PM	**Tool Selection for Flex/Rigid-Flex Drilling & Milling** Russell Reynoso, Design and Engineering Manager,
5:00 PM	**TerraGreen® 400G2, 400G, & 400GE** Michael McMaster, Director HSD Materials, Isola Group
5:30 PM	**Pacothane Lamination Assist Product Overview** Lahcen Khiyaty, Product Dev & Technical Mgr, Pacothane
6:00 PM	**SHOW FLOOR CLOSES**

THURSDAY, JANUARY 26

Time	Session
9:00 AM	**SHOW FLOOR OPENS**
9:30 AM	**15 Emerging Predictions for Advanced Electronics** Michael Creeden, Technology Director, Insulectro
10:00 AM	**New Plating Chemistry** Carl Colangelo, DuPont
10:30 AM	**Data Collection: The 4.0 Way** Geoff Leeds, DuPont Flex Laminates Product Mgr, Insulectro
11:00 AM	**High-Speed Circuit-Advanced Micro Packaging** Michael Creeden, Technology Director, Insulectro
11:30 AM	**Paste with Ultra-Thin Foils for Build-Up HDI** Chris Hunrath, VP of Technology, Insulectro
12:00 PM	**SHOW FLOOR CLOSES**

Always Teaching, Always Learning

Power Chats are tightly packed presentations never exceeding 13.5 minutes!

MATERIAL SELECTION

Microvia Reliabiity
Microvia reliability has been a significant challenge to the microelectronics industry for over 20+ years. The packaging industry worked its way through these problems in the early 2000's, but with PCB density approaching the same scale with different manufacturing techniques a different approach is needed. Join this quick-lecture to review findings, failure mechanisms, and how materials all affect microvias to help guide your own investigations.
Geoff Leeds, DuPont Flexible Laminates Product Manager, Insulectro

Introduction to PCB Copper Foil
Copper foils have evolved to meet the needs of tomorrow's designs and consumer applications. Supporting product miniaturization, automotive electrification and seamless connectivity between user and device. Explore with us the initial basics of copper production, PCB foil characteristics from an industry leader Denkai America with 45 years of production history.
Michael Coll, Chief Operating Officer, Denkai America

Flex Materials in Outer Space: "Failure is not an option."
The final frontier, a harsh environment where your PCBs need to deliver orbit after orbit. Whether you are launching a probe into the plane of the ecliptic or just into LEO (Low Earth Orbit), the right materials for your PCB can make or break the mission. We will review the environmental factors, design considerations, and electrical needs of your PCB designs.
Geoff Leeds, DuPont Flexible Laminates Product Manager, Insulectro

Paste with Ultra-Thin Foils for Build-Up HDI
Build-up processing for HDI PCBs has become commonplace but requires multiple passes through many of the manufacturing steps. Ormet® sintering paste can be used in many ways to change the process sequence & save lamination & plating steps. This presentation will discuss combining the paste with ultra-thin foils to both reduce plating steps, improve microvia reliability, & enable fine line imaging with conv. equipment.
Chris Hunrath, VP of Technology, Insulectro

New DuPont Resist for SAP/mSAP
DI6100 is designed to target customers who need the mSAP process. It has a better adhesion while it has 20% less stripping time. SD1000 has excellent fine line adhesion and resolution on ABF and low roughness substrates.
Chris Cha, Technical Service Consultant, DuPont Interconnect Solutions

Lamination Basics
New to PCB Fabrication or just a Designer that would like to know more about materials. This short presentation will cover some of the behavior, properties, and uses of PCB dielectric materials. This is a great presentation to see before some of the other "Power Chats" to get the most out of the information.
Chris Hunrath, VP of Technology, Insulectro

TerraGreen 400G2, TerraGreen 400G and TerraGreen 400GE
Are you looking for the next generation of material that has better electrical, CAF and thermal performance? Do you need a material that uses ultra-smooth copper foil that reduces conductor losses while maintaining interlaminar bond strength? Learn about Isola's newest series of halogen free, extremely low loss laminate and prepreg products.
Michael McMaster, Director High Speed Digital Materials, Isola Group

CHEMISTRY

New Plating Chemistry
DuPont's proprietary technology is used to deposit a variety of metal coatings on various substrates. The process is known for its high quality, consistent results, and ability to deposit metals such as nickel, cobalt, and gold. The plating chemistry is typically used in the aerospace, automotive, and electronic industries. Learn about our new products.
Carl Colangelo, DuPont Interconnect Solutions

DESIGN

Making Intelligent Materials Selection
We Design For: DFSolvability, DFPerformance, DFManufacturability
Our circuits have competing perspectives, requiring balanced material decisions. We should not let one perspective compromise the other needs. All three perspectives must be considered because they all play a part in the design, manufacturing, and performance of our end products. You would not let someone select your component values, why would you let someone select your material values.
Michael Creeden, Technology Director, Insulectro

Ormet™ Solving Design Challenges
Learn how this proven technology that has been used in Cell Phones for decades can be used on todays high-speed circuits to remove parasitic via stubs, reduce HDI board costs by 75%, improve producibility for high aspect via challenges from 18/1 down to 5/1, and improve routing resources on dense circuit boards significantly.
Michael Creeden, Technology Director, Insulectro

Modeling Materials for Signal Integrity
Join us as we model signal integrity with a focus on materials. We will cover parameters that affect impedance and insertion loss in relation to PCB design and documentation. Polar utilizes it's 45+ years of industry experience to continually develop tools that simplify and enhance the design, fabrication, and testing of PCBs.
Neil Chamberlain, Global Product Manager & Eric Bateham, Product Specialist - Polar Instruments

Optimize How You Collaborate with your PCB Manufacturer
We all need to interface with our manufacturers, regardless of if we work on a team or alone. Communication is usually done through long email threads. Not only is this hard to follow, but its unmanaged, and outside of the design space. Join Altium, where you'll discover how you can best communicate and collaborate with your manufacturer.
Alexander Tamari, Altium®

TECHNOLOGY

Data Collection: The 4.0 Way
Artificial Intelligence, Data Science, Neural Networks, time-series data bases – the new buzz words for PCB manufacturing. These new-to-our industry tools are powerful and can drastically help improve PCB quality and manufacturing capabilities. There are fundamentals to these tools you need to understand to help navigate these waters, avoid the pitfalls, and usher in the "4.0" revolution. Bring a note book and brush up on your statistics! There won't be a quiz.
Geoff Leeds, DuPont Flexible Laminates Product Manager, Insulectro

High Temperature Lamination and Fusion Bonding
High temperature thermoplastic materials have found their way into PCB builds. They have some unique signal characteristics as well as applications in flexible circuit technology. In this chat we will discuss some of the material sets, lamination, and other processing at the PCB fabricator.
Chris Hunrath, VP of Technology, Insulectro

High-Speed Circuits with Advanced Micro Packaging
As circuit speeds increase, they are being packaged in smaller form factors such as µBGAs and Chip-scale on-board usage. The package design world will eventually merge with the standard board level technology to support micro-assembly. The use of mSAP has been used in a limited fashion but it is growing. Learn how the industry must adapt to meet these required challenges of µTraces interconnection that must perform for Signal Integrity needs and be built with reliable yields.
Michael Creeden, Technology Director, Insulectro

Metallization and Imaging Processes for IC Substrates
Join me in this discussion of how we use materials technology to meet the ever more challenging requirements of IC substrate fabrication. Challenges include the generation of finer lines and spaces, stronger adhesion of a seed layer of electroless copper into cavernous blind vias, and achieving void free electrolytic copper viafilling of blind vias at high current densities.
Erik Reddington PhD, Commercial Leader, DuPont Interconnect Solutions

DuPont Automotive Solutions
The rapidly evolving electric and autonomous automobile industries are challenging designers to find innovative solutions for power electronics, battery management, e-motor power distribution, ADAS, LIDAR, heating, rapid charging and even lighting. Examine DuPont's material portfolio and see how it helps reduce systems size and weight, provides thermal management solutions, and improves electromagnetic compatibility.
Greg Roettger, Sr. Key Account Mgr, DuPont Interconnect Solutions

Cutting Tools for Advanced Materials and HDI
This presentation discusses recommendations for drill, end mill, and router products for HDI and advanced material technologies. Optimal tool selection in turn will promote improved signal integrity. Along with these recommendations, Mechanical HDI drilling solutions will be discussed. Mechanical HDI drilling provides an alternative approach to Laser drilling which expands HDI capacity through mechanical means.
Joe Negron, Sales Manager, Kyocera

Cutting Tool Selection for Flex & Rigid-Flex Drilling & Milling
Discussion centers around the quality of machining with various options offered according to the board technology. Tool selection can have a significant impact on quality output, we will highlight specific cutting tool geometries designed for flex and rigid flex.
Russell Reynoso, Design and Engineering Manager, Kyocera

PE Industry Trends Driving Innovation at Micromax™
Celanese Micromax™, formally DuPont MCM, unveils a new portfolio of products for the printed electronics market. Based on market research and feedback from customers, the Micromax™ team has developed a suite of electronic inks that target consumer electronics applications that utilize Printed Electronics for materials like heaters, touch sensors, busbars, and EMI shielding. Learn how the new Micromax™ electronic inks can meet customer needs for bendability, low temperature curing, direct printing, and more.
Hee Hyun Lee, Micromax™ Lead Research Development Scientist, Celanese Micromax™

Pacothane Lamination Assist Product Overview
This short presentation is a comprehensive look at Pacothane conformal products detailing the attributes of each, benefits and the right selection based on the need of PCB lamination which includes Rigid Multilayer, Rigid/Flex, Cover-layer Flex, Flexible Multilayer.
Lahcen Khiyaty, Product Development & Technical Manager, Pacothane

VISION

What's needed after the CHIPS Act? The Way Forward for Microelectronics
The passage of the CHIPS Act is a strong first step towards reshoring microelectronics manufacturing. What's needed now is further legislative action to support America's Printed circuit board industry. Join us for a discussion of the efforts underway and learn how your company can influence policymakers in Washington.
Shane Whiteside, President & CEO, Summit Interconnect & Spokesperson for PCBAA

Insulectro's Technology Village
Insulectro is known throughout the industry for being the leading laminate material distributor in the fabrication sector. However, Insulectro does so much more as they meet so many of the material and process needs for all the fabricators across the North American continent. Come spend time in our Technology Village to meet our team members and learn the innovative ways we partner in your fabrication success.
Michael Creeden, Technology Director, Insulectro

15 Emerging Technology Predictions for Advanced Electronics
Technology is advancing at an accelerated pace. What historically took decades to evolve is now happening at a much more rapid pace. We as an industry must be ready to meet these challenges. Insulectro is ready to guide and support your advanced circuit needs through product innovation, fabricator support, along with design and reliability education.
Michael Creeden, Technology Director, Insulectro