



SMTA
International

PRE-EVENT GUIDE

**ELECTRONICS MANUFACTURING
CONFERENCE AND EXPOSITION**

OCTOBER 20 - 24, 2024
ROSEMONT, ILLINOIS

smtai.org



**Co-located with:* **THE ASSEMBLY
SHOW**

October 20-24, 2024

Hey, Rosemont!

Are you ready to supercharge your career, connect with the sharpest minds in the industry, and have some serious fun along the way? We invite you to join us in Rosemont, Illinois, from October 20-24 for the highly anticipated SMTA International 2024!

This isn't just another conference—it's the event of the year for the electronics manufacturing and assembly industry. Picture this: five days packed with cutting-edge sessions, hands-on workshops, and an exhibition floor buzzing with the latest materials and equipment innovations. Whether you're looking to meet new suppliers, dive deep into the latest trends, or simply recharge your passion for the industry, SMTA International is where it all happens.

Imagine walking into a room full of industry leaders, peers, and innovators who are just as excited as you are to share their knowledge, swap stories, and collaborate on the future of electronics manufacturing. Whether you're a seasoned pro or new to the field, you'll find yourself surrounded by people who "get it"—who understand the challenges you face and are eager to share their solutions.

But it's not all business—we know how to have a good time, too! Rosemont is the perfect backdrop for both professional growth and some well-deserved fun. Between sessions, take a stroll around the vibrant city of Rosemont, enjoy a meal with new friends, or attend the SMTA 40th Anniversary Party. Our



goal is to make sure you leave with a head full of new ideas and a smile on your face.

What can you expect at SMTA International? For starters, our conference tracks are packed with practical strategies designed to boost your job performance and elevate your business efficiency. You'll find sessions tailored to every level of expertise and every niche of the industry. Want to know more about the latest advancements in electronics manufacturing? Or maybe you're searching for solutions to a specific challenge your company is facing? We've got you covered.

And then there's the Expo—the heart of SMTA International. It's here that you'll get up close and personal with the latest technologies, products, and services that are shaping the future of our industry. Whether you're scouting for new tools or just curious about what's out there, the Expo is your playground.

So why not join us? This is your chance to be part of something big—to connect, learn, and grow alongside the best in the business. We're gearing up for an incredible week filled with inspiration, collaboration, and a whole lot of fun. And the only thing missing is you!

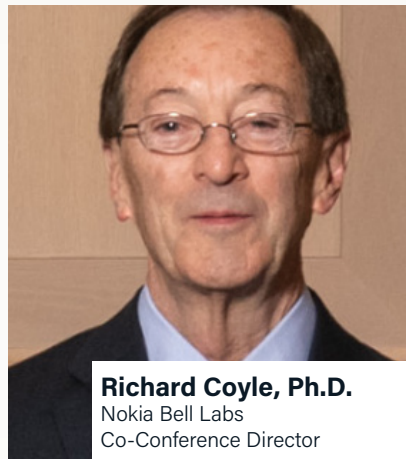
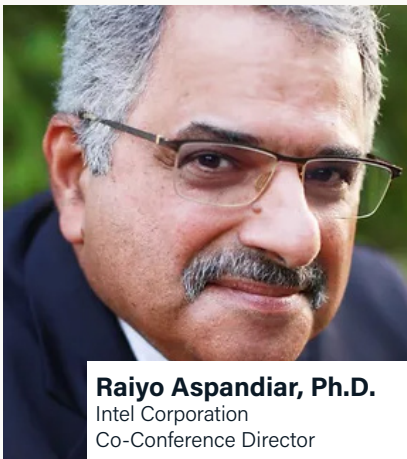
Mark your calendar, pack your bags, and get ready to be part of the excitement. Rosemont is calling, and we're saving a spot just for you at SMTA International 2024. Don't miss out on the premier event of the year!

www.smtai.org

Technical Advisory Committee

The distinguished SMTA International Technical Advisory Committee, comprising experts from all industry segments, designed the 2024 conference program to address the latest trends and developments in electronics manufacturing and packaging.

Conference Executives



Track Directors

Raiyo Aspandiar, Ph.D., Intel Corporation - **LTS Track Director**
Robert Boguski, Datest Corporation - **INS Track Co-Director**
Keith Bryant, KB Consultancy - **INS Track Co-Director**
Burton Carpenter, NXP Semiconductors - **APT Track Director**
Richard Coyle, Ph.D., Nokia Bell Labs - **RHE Track Co-Director**
Priyanka Dobriyal, Ph.D., Intel Corporation - **WLP Track Director**
Jeffrey Kennedy, ZESTRON Corporation - **MFX Track Director**
Robert Kinyanjui, Ph.D., John Deere Electronics Solutions Inc. - **RHE Track Co-Director**
Pradeep Lall, Ph.D., Auburn University - **AME Track Director**

Technical Committee Members

Colette Anctil, Collins Aerospace
Martin Anselm, Ph.D., Rochester Institute of Technology
Babak Arfaei, Ph.D., Apple, Inc.
Affawn Ashraf, AMD
Nilesh Badwe, Ph.D., Indian Institute of Technology, Kanpur
Mike Bixenman, DBA, MBA, KYZEN Corporation
Lars Boettcher, Fraunhofer IZM Berlin
Richard Brooks, Spartronics
Kevin Byrd, Intel Corporation
Bill Capen, Honeywell FM&T
Srinivas Chada, Ph.D., Project Kuiper-Amazon
Jean-Paul Clech, Ph.D., EPSI, Inc.
Marie Cole, IBM Corporation (retired)
Eric Cotts, Ph.D., Binghamton University
Maurice Dore, VALEO
Chloe Feng, Nokia Bell Labs
James Elliott Fowler, Ph.D., Sandia National Laboratories

Trevor Galbraith, Global SMT & Packaging
Jie Geng, Ph.D., Indium Corporation
Saurabh Gupta, Intel Corporation
Sa'd Hamasha, Ph.D., Auburn University
Md Hasnine, Ph.D., Qorvo, Inc.
David Hillman, Hillman Electronic Assembly Solutions
Jason Keeping, P.Eng., Celestica, Inc.
Dale Lee, Plexus Corp.
Anna Lifton, MacDermid Alpha Electronic Solutions
Tanya Martin, CMP, SMTA
Andrew Mawer, NXP Semiconductors
Jayse McLean, John Deere Electronics Solutions Inc.
Adam Murling, Indium Corporation
Scott Priore, Cisco
Anto Raj, Medtronic
Gregory Vance, Rockwell Automation
Charles Woychik, Ph.D., NHanced Semiconductors

Conference At A Glance

What's on Sunday, October 20



Professional Development Courses

12:00pm	Registration Opens					12:00pm
1:00pm						1:00pm
2:00pm	PDC1 Cost Breakdown and Analysis of Microelectronics Packaging Technologies	PDC2 LTS 101: Manufacturing Process Guidance for Implementation of SnBi Based Low Temperature Soldering for Consumer Products	PDC3 Advanced Methods for Component Quality and Traceability Assurance in Electronic Assembly	PDC4 Failure Analysis of Electronic Devices	PDC5 Fundamentals of Thermal Interface Materials	2:00pm
3:00pm						3:00pm
4:00pm						4:00pm
5:00pm						5:00pm

Conference At A Glance

What's on Monday, October 21



Track Key

Advanced Packaging (APT)
Additively Manufactured Electronics (AME)
Low Temperature Solder (LTS)
Manufacturing for Excellence (MFX)

Professional Development Course (PDC)
Reliability and Harsh Environments (RHE)
Test and Inspection (INS)
Women's Leadership Program (WLP)

7:00am	Registration Opens						7:00am
8:00am							8:00am
9:00am	PDC6 Intermetallic Compounds (IMCs) Basic Metallurgy and Impact on Product	PDC7 Analytical Techniques in Electronics Manufacturing: Theory, Applications, and Data Interpretation	PDC8 SMT Process Engineering - Advanced Topics for Experienced Engineers and Technical Leaders	PDC9 Artificial Intelligence - Opportunities, Challenges and Possibilities	PDC10 Assembly: Best Practices for Improving Manufacturing Productivity	AME1 Additive Electronics Applications	9:00am
10:00am						AME2 Processes for Additive Manufacturing	10:00am
11:00am							11:00am
12:00pm							12:00pm
1:00pm							1:00pm
2:00pm	WLP Invited Keynote Presentations and Panel			AME3 Interconnects and Non-Conformal Additive Circuits			2:00pm
3:00pm							3:00pm
4:00pm	WLP Round Table Discussion- Past Innovations, Present Challenges, and Future Trends in Electronics Manufacturing			AME4 Additive Electronics Manufacturing			4:00pm
5:00pm							5:00pm
6:00pm	WLP Connection Reception						6:00pm

Conference At A Glance

What's on Tuesday, October 22



Track Key

Advanced Packaging (APT)
Additively Manufactured Electronics (AME)
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Professional Development Course (PDC)
Reliability and Harsh Environments (RHE)
Test and Inspection (INS)
Women's Leadership Program (WLP)

7:00am	Registration Opens			7:00am	
8:00am				8:00am	
9:00am	PDC11 Master Class on Ultra HDI PCB Technology: Innovations in Materials and Methods	INS1 New Developments in AI, Machine Learning, and Machine Vision Applications in Test and Inspection	RHE1 Solder Joint Reliability	MFX1 Reliability Challenges	9:00am
10:00am					10:00am
11:00am		INS2 Unique Materials and Lab-Based Inspection and Test Applications	RHE2 Reliability Aspects of High Performance Components	MFX2 Large Panel Assembly	11:00am
12:00pm					12:00pm
1:00pm		INS3 Evolution and Trends in Current Xray Inspection Applications and Technology	RHE3 Reliability and Cleanliness	MFX3 Design and Sustainability	1:00pm
2:00pm					2:00pm
3:00pm					3:00pm
4:00pm	Electronics Exhibition	INS4 Challenging AOI Applications	RHE4 Thermal Shock and Thermal Cycle Testing Comparisons	MFX4 Solder Pastes and Interconnection Materials	4:00pm
5:00pm					5:00pm
6:00pm					6:00pm
7:00pm					7:00pm

Conference At A Glance

What's on Wednesday, October 23

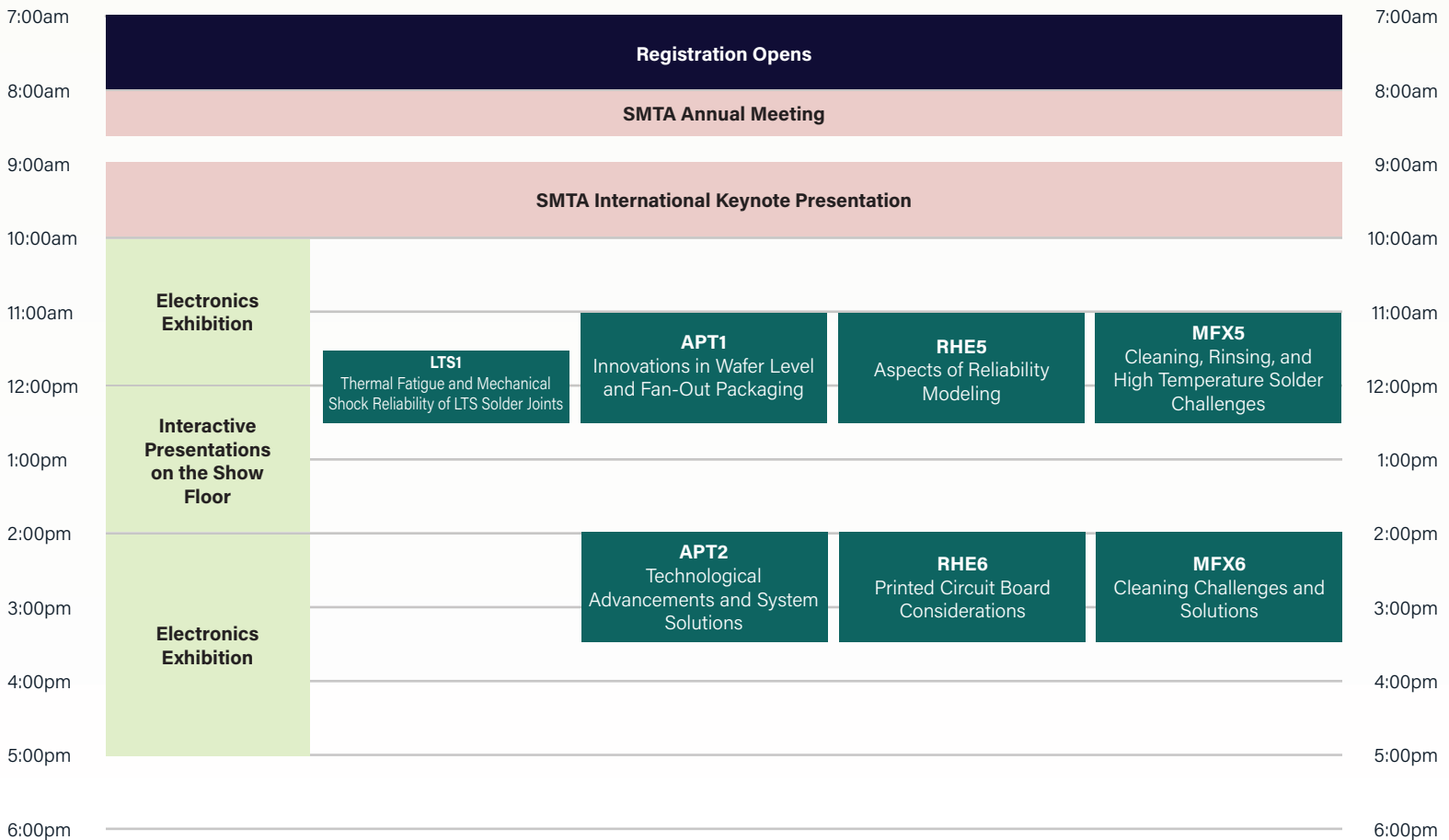


Don't miss out!

Track Key

Advanced Packaging (APT)
Additively Manufactured Electronics (AME)
Low Temperature Solder (LTS)
Manufacturing for Excellence (MFX)

Professional Development Course (PDC)
Reliability and Harsh Environments (RHE)
Test and Inspection (INS)
Women's Leadership Program (WLP)



Conference At A Glance

What's on Thursday, October 24



Don't miss out!

Track Key

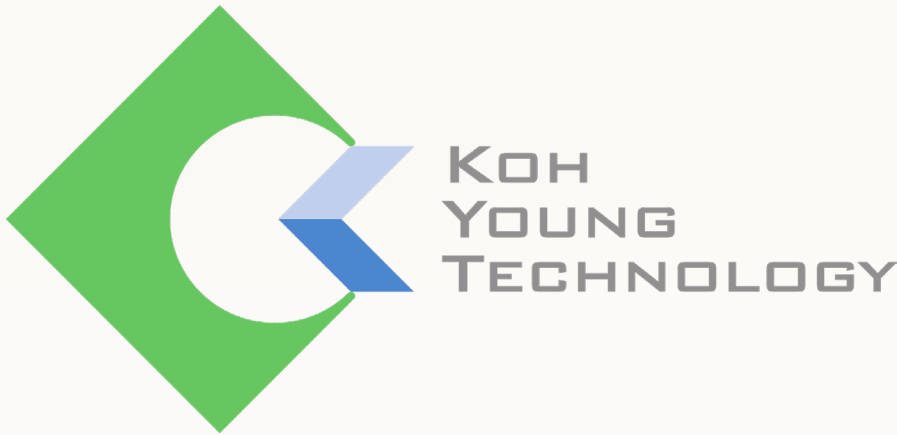
Advanced Packaging (APT)
Additively Manufactured Electronics (AME)
Low Temperature Solder (LTS)
Manufacturing for Excellence (MFX)

Professional Development Course (PDC)
Reliability and Harsh Environments (RHE)
Test and Inspection (INS)
Women's Leadership Program (WLP)

7:00am	Registration Opens				7:00am
8:00am					8:00am
9:00am	LTS2 Electromigration in Tin-Bismuth Solders	APT3 Package Modeling and Simulation	RHE7 Pb-free Solder Alloy Reliability	MF7 SIR Practical Studies	9:00am
10:00am	Electronics Exhibition	LTS3 Unique Low Temp Soldering Processes and Quality Control Methods	APT4 Advanced Materials and Process 1	RHE8 Material Specifications for High Performance	10:00am
11:00am			MF8 Solder Processes	11:00am	
12:00pm					12:00pm
1:00pm		LTS4 Innovative LTS Material and Process Developments to Overcome Assembly	APT5 Advanced Materials and Process 2	MF9 Printing and Printing Processes	1:00pm
2:00pm					2:00pm
3:00pm	SMTA International Concludes				3:00pm
4:00pm					4:00pm

Thank You, Sponsors

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Bronze Sponsor



Event Sponsors



Congratulations to the 2023 SMTA International Conference Award Winners

Best of Proceedings Award

Richard Coyle, Ph.D., Nokia Bell Labs
"A Collaborative Consortia Project to Assess the Effect of Thermal Cycling Dwell Time on the Reliability of High-Performance Solder Alloys"

Honorable Mentions:

Pradeep Lall, Ph.D., Auburn University
"Study of the FCBGA Package Interfaces Reliability Under Monotonic and Fatigue Loads after Sustained High Temperature."

Keith Sweatman, P.E., Nihon Superior
"A Path to Ductile Low Temperature Solders for Mass Production of Electronic Assemblies."

Prabjit Singh, Ph.D., IBM Corporation
"Comparison of Electromigration in Tin-Bismuth Planar and Bottom Terminated Component Solder Joints."

Best Practical and Applications Based Knowledge Award

Maurice Dore, VALEO
"Managing Thermomechanical Behaviour in Automotive Electronics."

Honorable Mentions:

David Hillman,
Hillman Electronic Assembly Solutions
"Intermetallic Compounds in Solder Alloys: Common Misconceptions."

Chrys Shea,
Shea Engineering Services
"Performance Comparison of Contemporary Stencil Coatings and Under Wipe Solvents on 0.4mm BGA Packages."

Electronics Exposition

Hall B, C, and D

October 22 - 24, 2024



Free to attend!

Meet the trailblazers of electronics manufacturing at SMTA International! Our exhibitors showcase the latest innovations, solutions, and expertise that are shaping the industry's future. Don't miss this chance to connect with top companies and explore groundbreaking technologies. Join us for an unforgettable experience on the show floor and discover the possibilities that await your business!

Current SMTA International Exhibitors

- AIM Solder
- Akrometrix, LLC
- Allfavor Technology
- Alltemated
- American Standard Circuits, Inc.
- Amitron Corporation
- ANDA Technologies, Inc.
- AOI Systems
- Apollo Seiko
- Aurora Boardworks
- BlueRing Stencils
- Botron Company, Inc.
- Brady Corporation
- BTU International
- Conductive Containers, Inc.
- Creative Electron, Inc.
- CTI Systems
- Dymax Corporation
- EPS Worldwide Pvt. Ltd.
- ESSEMTEC USA
- EVS International Ltd.
- Fenix Manufacturing Solutions, LLC
- Finetech
- Fuji America Corporation
- Glenbrook Technologies, Inc.
- Global SMT
- Guangzhou Leichen Equipment Technology
- Hanwha Techwin Automation Americas, Inc.
- Heraeus Electronics
- I-Connect007
- Indium Corporation
- Inovaxe Corporation
- IPC
- Japan Unix
- JBC Tools
- KIC
- Koh Young America
- KOKI Solder America, Inc.
- Kurtz Ersä
- KYZEN Corporation
- Lindstrom Tools
- LPKF Laser & Electronics
- MacDermid Alpha Electronics Solutions
- Magnalytix
- MaRC Technologies
- Metallic Resources, Inc.
- MicroScreen, LLC
- Mid America Taping and Reeling, Inc.
- Mirtec Corporation
- Murray Percival Company
- Mycronic, Inc.
- Nihon Superior Company, Ltd.
- NSW Automation Sdn. Bhd.
- Omron Inspection Systems
- Panasonic Connect
- PARMI USA, INC.
- Pillarhouse USA
- Printed Circuit Engineering Association
- Process Sciences, Inc.
- PVA TePla OKOS
- RBB Systems
- ROCKA Solutions
- Saki America, Inc.
- SASinno Americas
- Sciencscope
- Screaming Circuits
- Seika Machinery, Inc.
- Shenzhen KHJ Technology Co., Ltd
- Siborg Systems, Inc.
- Smart Splice, LLC
- SMarTsol Technologies
- SMT Today
- SMTXTRA
- Solder Star, LLC
- Sourceability
- SPEA America
- Specialized Coating Services
- Stannol North America, LLC
- StaticStop a division of SelecTech, Inc.
- Staticworx
- StenTech, Inc.
- Summit Interconnect
- Technimark
- Teknek
- Test Research, Inc.
- Texmac/Takaya, Inc.
- Thermaltronics USA, Inc.
- Tintronics
- Trans Tec America
- Transforming Technologies
- Universal Instruments
- U.S. Tech
- Vaccount by Visiconsult X-Ray Systems & Solutions
- Viscom
- ViTrox Technoloiges Sdn. Bhd.
- WNIE
- Xdry Corporation
- Xtreme Series Auto Dry Cabinets
- ZESTRON
- Zymet, Inc

Women's Leadership Program

Monday, October 21 | 1:30pm-6:00pm

A Journey Through Technology Past - Present - Future

Invited Keynote Presentations | 1:30pm - 3:00pm

AI Era - Work, Life, Technology, Leadership, and Women

Jennie Hwang, Ph.D., H-Technologies Group

Advancements in AI From Then to Now

Mandy Long, BigBear AI

Panel Discussion | 3:00pm - 3:45pm

The panel aims to highlight the contributions of remarkable women who have made significant impacts to the industry, championed diversity, and played pivotal roles in advancing SMTA while on the Board of Directors.

Panelists (Time Served on SMTA Board of Directors)

Moderator: Michelle Ogihara, Seika Machinery (2011-2016)

Debbie Carboni, KYZEN Corporation (2014-2020)

Marie Cole, IBM Corporation (2008-2013)

Priyanka Dobriyal, Ph.D., Intel Corporation (2023-Current)

Eileen Hibbler, SMTA (2016-2018)

Tanya Martin, SMTA (Global Executive Director)

Julie Silk, Keysight Technologies (2019-Current)

Frances Stewart, PCEA (1996-1998)

Round Table Discussions | 4:00pm - 5:00pm

Join experts and fellow attendees to explore the evolution and innovation of the different electronics manufacturing sectors.

Connection Reception | 5:00pm - 6:00pm

We'll conclude the Women's Leadership Program with our annual Connection Reception. This gathering provides a relaxed atmosphere to continue the conversations from the earlier segments of the WLP, fostering new and renewed connections across the SMTA community of organizers, speakers, exhibitors and attendees.

Open to everyone and FREE to attend! Register for this program when completing your SMTA registration.



REGISTER HERE

EMAC Workforce Development Efforts

Room 50

October 22, 2024 | 3:30pm - 5:00pm

Free to attend!



Embrace the Opportunity to Collaborate, Innovate, and Grow — **Together**

Introducing the Electronics Manufacturing Assembly Collaborative for Workforce Development (EMAC). This initiative provides a collaborative resource to connect academia, manufacturers, workers, and job seekers with education programs to develop skills for careers in electronic manufacturing. Join us in shaping the future of the electronics manufacturing industry.

SMTA Membership Booth (#2853)

Wednesday, October 23

SMT Basics: PCB Fab, ESD, Soldering Materials, Thermal Management & Cleaning

11:15am - 12:45pm

Supply Chain

1:30pm - 2:00pm

From Fab to Assembly

2:15pm - 3:00pm

Thursday, October 24

Innovating Education Session: Exploring a New Video Course Format

10:15am

Workforce Development - How to Get Involved

12:30pm

Passport Program



Meet Manufacturing Technology Experts on the Expo Floor

Calling all Young Professionals and those new to the industry! Join us at SMTA International during our interactive in-expo networking event, Passport to the World of SMT!

HOW IT WORKS

After picking up your passport during the kick-off meeting, you can think of yourself as an “Explorer” in the world of SMT. Your goal is to collect stamps from “Champions in designated booths on the show floor. You can introduce yourself, learn about the specific technology or process, ask questions, and exchange business cards.

You can visit champions at your convenience during show hours on Tuesday and Wednesday. Collect as many stamps as you can by 1pm on Wednesday for your chance to win a prize.

PARTICIPATE

During registration for either the conference or the expo, be sure to select the **FREE** add-on called “SMTAI24 Passport In-Expo Networking Experience.” If you’ve already registered and want to add it, contact SMTA Headquarters.

Come to the SYP Passport Program Launch Meeting on **Tuesday, October 22 at 5:00pm** at the SMTA Booth #2835 to collect your passport and hear from industry experts about how to make the most out of your travel experiences through the world of SMT!

Explore the following SMT technology at the SMTAI expo:

- Solder Paste Deposition and Inspection
 - Solder paste, stencils, printers, SPI
- Mass Soldering
 - Reflow, wave, selective, robotic, laser
- Automated Optical Inspection
 - Pre-or post-placement, PTH, conformal coating
- Cleaning
 - Equipment and materials for PCBAs, stencils, misprints
- X-Ray and Other Post-Reflow Testing
 - Transmission, tomography, AXI, ICT, flying probe
- Rework/Hand Soldering
 - Hand tools, rework stations, optical equipment



[REGISTER HERE](#)



Win the *grand prize*

Apple iPad

Travel to all participating exhibitor booths and submit your filled passport for a chance to win the Grand Prize drawing of an Apple iPad!

40TH ANNIVERSARY PARTY
smtai.org/special-events



BACK TO 1984

A decorative graphic consisting of a grid of colored dots (red, orange, yellow) arranged in a pattern that resembles the rear window of a car, positioned to the right of the word "BACK".

STEP INTO A TIME WARP AND
BUCKLE UP FOR A JOURNEY BACK TO
WHEN IT ALL BEGAN

TICKETS: \$40
(INCLUDES ACCESS TO THE PARTY,
BITES, BEVERAGES, AND FUN)

OCTOBER 23 | 6:30 - 9:00PM
KINGS DINING AND ENTERTAINMENT CENTER

COSTUMES ENCOURAGED - GOOD VIBES REQUIRED

SMT Process Certification Course

Technologies change at the speed of light, and competition and expectations are forever increasing. This comprehensive program will provide the course, study materials and examination allowing you to be recognized as an SMTA Certified Process.

SMTA Certification is intended for manufacturing and process engineers. Additionally, production, design, test and quality engineering personnel, as well as SMT assembly managers who want to confirm their current competence at a fundamental level of overall process technology should also consider participating.



Schedule

Tuesday, October 22
Course (8:30am-5:00pm)

Wednesday, October 23
½ day of course + exam (8:30am-5:00pm)

Thursday, October 24
All day exam (8:30am-5:00pm)

Registration Fees (pricing in USD)

Member: \$1300

Non-Member: \$1500

Includes test and study guide with workshop

Attendees must be 18+ years of age, unless pre-approved.

Ultra HDI Pavilion

Join us at the first Ultra HDI Pavilion, where industry leaders will converge to explore the cutting-edge advancements in Ultra-High Density Interconnect (UHDI) technology.

Tuesday, October 22

Networking and Social Time

4:00pm-7:00pm

Listen to the SMTA DJ while exploring the UHDI pavilion

Wednesday, October 23

UHDI Test Board Design and Reasoning

10:00am-10:20am

Chrys Shea, Shea Engineering

DoD Demand and Why We Need UHDI

10:30am-11:15am

Tina Landon, NSWC Crane

Fabrication Materials for UHDI

11:30am-11:50am

Paul Cooke, AGC

Fabrication Processes for UHDI

12:00pm-12:20pm

John Johnson, ASC

Stencil

12:30pm-12:50pm

Greg Smith, Blue Ring

Materials (ultra fine powders)

1:00pm-1:20pm

Gayle Towell, Aim Solder

Inspection

1:30pm-1:50pm

TBD

Component Placement

2:00pm-2:20pm

TBD

Cleaning and SIR

2:30pm-2:50pm

Bill Capen, Honeywell FM&T

Lab to Fab - Working Session

3:00pm-4:00pm

Elliott Fowler, Ph.D., Sandia

National Laboratories

Chrys Shea, Shea Engineering

Networking

4:00pm-5:00pm

Thursday, October 24

Additive Fabrication Options: What's the big deal?

10:00am-10:30am

Paul Cooke, AGC

It Depends PCB Design Trade Off's

11:00am-11:30am

John Johnson, ASC

Problem Solving - Tackling Technology Advancement

12:00pm-1:00pm

Panel

Additively Manufactured Electronics (AME)

Monday, October 21, 2024

Metal Organic Decomposition (MOD) Inks and Films for Electromagnetic Interference (EMI) Shielding and Semi Additive Process (SAP)

AME1

Mike Vinson, Electroninks

3D Aerosol Jet Printed Interconnects on Bare Die

*Tom Rovere, Lockheed Martin

Sensors and Process-Performance Interactions for Additive In-Mold Electronics in Automotive Applications

AME2

*Pradeep Lall, Ph.D., Auburn University

Current Minimum Micro Bump Size Using Gravure Offset Equipment

Douglas Schardt, Komori America Corp

Additive Manufactured Electronics for Next Generation Microelectronics

Kenneth Church, nScript, Inc.

SMT Processing using Printed Anisotropic Conductive Epoxy for Direct Die Attach of Wire-Bondable Chips on Flexible Additively Manufactured Electronics

AME3

Madhu Stemmerman, Sunray Scientific

Interconnecting and Soldering to Printed Ink Metallization using Photonic Processes

Harry Chou, Ph.D., PulseForge

In-Mold Electronics: An Additive Manufacturing Approach for Integrated, Robust and 3D Electronics

Rahul Raut, MacDermid Alpha Electronics Solutions

Breaking Barriers: Advancing Electronics Tooling and Pallet Manufacturing with Additive Manufacturing

AME4

Dan Migely, Impossible Objects

Supercooled Solder Pastes in Low Temperature Attach Applications

Yifan Wu, Ph.D., Indium Corporation

AI-Powered Real-Time Inspection for Electronic Component Assembly

Sean Bouskila, Cybord

Advanced Packaging (APT)

Wednesday, October 23, 2024

The Renaissance of Electronics Packaging in the United States

*Charles Woychik, Ph.D., Nanced Semiconductors

APT1

Panel Level Package (PLP) - Scaling up Fan-Out Packaging

*Burton Carpenter, NXP Semiconductors

Development of a High-Density Adaptive Redistribution Technology for Embedded High I/O Components

*Lars Boettcher, Fraunhofer IZM Berlin

Innovative Intelligent System Architectures for Heterogeneous Integration Assembly

*Glenn Farris, Universal Instruments

APT2

Making Cost-Effective Design Decisions For Microelectronics Packaging

Amy Lujan, SavanSys Solutions

Component Obsolescence or Unavailability... Solved

Greg Papandrew, DirectPCB

Thursday, October 24, 2024

The Next Generation of Si-Interposers

*Charles Woychik, Ph.D., Nanced Semiconductors

APT3

Potted Assembly Interfacial Reliability and Predictive Models Under Inclined 25000g Mechanical Shock

*Pradeep Lall, Ph.D., Auburn University

Numerical Modeling of Board Warpage During Solder Reflow: a Comparison of PCB Modeling Methodologies

Josh Akman, Ansys

Advanced Packaging (APT)

Thursday, October 24, 2024

Cu Conductive Paste as Via Filling Materials for Through Glass Via (TGV)

Yoshinori Ejiri, Resonac Co., Ltd.

APT4

Advancing Bonding Techniques for Electronic Interconnects: Eco-Friendly Cu Nanoparticles and Cu-SAC Hybrid Paste

Albert Wu, National Central University

Non-Toxic Stabilization for Mixed Reaction Gold

Sandra Nelle, Atotech Deutschland GmbH & Co. KG

Beyond the Technical Data Sheet

Deborah Hagen, Ph.D., Sandia National Labs

APT5

2nd Generation of TIM

Mina Yaghmazadeh, Ph.D., SJ Electronics

Thermal Performance Comparison Between Liquid and Pad Thermal Interface Material

Rita Mohanty, Ph.D., Henkel Corporation

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- » JOB RESOURCES
- ...AND MUCH MORE



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Test and Inspection (INS)

Tuesday, October 22, 2024

Machine Vision-Based Plated Through Hole Defect Inspection Model for Large-Scale PCB Manufacturing Industries

Jinal Prajapati, Watson Institute for System Excellence, Binghamton University

INS1

Artificial Intelligence and its Role in Improving Automated Optical Inspection

Edward Pechin, Vitrox USA

Machine Learning-Based Server Testing and Debugging Model for Large-Scale PCB Manufacturing Industries

Soujanya Nagaraja Rao Malur, Binghamton University

Using True 3D to Optimize Your Dispensing Process: A Journey Toward Zero Defects

Daniel Perry, Koh Young Technology, Inc.

INS2

Calibration of Tweezer Meters Enabling Sub-1pF and Sub-1nH Measurements

Michael Obrecht, Ph.D., Siborg Systems Inc.

A Survey of the Sources of Ionic Contamination as Measured by Ion Chromatography During Electronics Manufacturing

*Adam Klett, Ph.D., KYZEN Corporation

Review of the Latest Developments of the X-ray Inspection Technology for PCBAs and Microelectronics Designs

Evstatiin Krastev, Ph.D., Nordson

INS3

A Close Look at BGA Measurements, IPC Guidelines, and X-ray Inspection

Nick Fieldhouse, M.S., Omron Inspection Systems

X-Ray Inspection of Voids in SMT Production: Testing Strategies with 3D-AXI for Optimal Process Control

Eric McElmurry, Viscom USA

Pre and Post-Solder AOI for THT

John Johnson, EAP

INS4

Impact of Solder Paste Sheen on AOI Error Rates: A Comparative Study

Gayle Towell, AIM Solder

Low Temperature Solder (LTS)

Wednesday, October 23, 2024

Thermal Cycle Fatigue Life of Low Temperature Solders

*Michael Osterman, Ph.D., CALCE/University of Maryland

LTS1

Thermal Cycling Hybrid, Homogeneous, and Resin Reinforced Low Temperature Solder Ball Grid Array Interconnects at a High Homologous Temperature

*Raiyo Aspandiar, Ph.D., Intel Corporation

Thursday, October 24, 2024

Microstructural Evolution During Electromigration in Eutectic Tin-Bismuth Bottom Terminated Components Solder Joints

*Prabjit Singh, Ph.D., IBM Corporation

LTS2

Progress in the Understanding and Prediction of Bismuth Electromigration in Functional Motherboard Solder Joints

*Kevin Byrd, Intel Corporation

Effect of Temperature and Current Stressing on Low Temperature Solder BGA Drop Performance

Alyssa Yaeger, Ph.D., Universal Instruments

Low Temperature Solder "Reverse Hybrid" Method to Simplify Tin-Bismuth Solder Conversions

*Kevin Byrd, Intel Corporation

LTS3

Investigation of Compatibility and Mechanical Reliability in Low Temperature Soldering for Ball Grid Array Components

Watson Tseng, Shenmao Technology Inc.

Unique Quality Control for The Success in Product Level Certification of Low Temperature Soldering with SnBi Based Alloy

Kok Kwan Tang, TechLeap PLT

Low Temperature Solder (LTS)

Thursday, October 24, 2024

Effects of Dynamic Warpage on the Solder Joints of Large Plastic Ball-Grid Arrays Assembled with LTS

LTS4

*Francis Mutuku, Ph.D., Indium Corporation

Wave Soldering the Lower Temperature Solder- A Case Study

*Keith Sweatman, Nihon Superior Co., Ltd

Soldering Challenges Caused by Warpage and Deformation of Large-Size Server Integrated Circuits

*Ron Lasky, Ph.D., P.E., Indium Corporation, Dartmouth College

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Sustainability is a Key Parameter for Material and Chemistry Choices for Next Generation Electronic Assemblies

Kunal Shah, Ph.D., Lilotree

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DRAM Damage Due to X-Ray Inspections Post PCB Assembly

Surabh Gupta, Ph.D., Intel Corporation

Case Studies of Harsh Application Environments, the Unforeseen Situations

*Christopher Genthe, *Kelly Flanagan, Rockwell Automation

iNEMI Board Assembly-Press Fit Technology Roadmap of 2023 and 10 years Beyond

*Paul Wang, Ph.D., MiTAC Computer Technology

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Large Form Factor Surface Mount Technology Process Demonstration

*Raiyo Aspandiar, Ph.D., Intel Corporation

Examination of Cutting Edge Quality and the Influences of Laser Depaneling

Jake Benz, LPKF Laser & Electronics North America

Sustainable and Strategic Design to Combat Component Unavailability

*Kathryn Ackerman, Sourceability

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Design for Manufacturability - Perspectives from a Manufacturing Engineer

David Spitz, Ansys, Inc.

Design For Excellent (DFX)

Hikmat A. Chammas, Honeywell FM&T

Predicting Delivery Reliability of Logistics Forwarders: A Machine Learning Approach for Forwarder Selection and Evaluation Process

Sai Srikanth Reddy Kolli, Watson Institute for System Excellence, Binghamton University

How AI Can Accelerate R&D for Solder Paste Formulations

Melanie Mathon, Inventec Performance Chemicals

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Requirements for the Filler Material Solder Paste for Combinations of Different Technologies (SMT, COB, FC, and LE)

*Joerg Trodler, Dipl.-Ing., Trodler-EAVT

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Electronic Assembly Rework Best Practices When Building to a No-Clean and Cleaning Conditions

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*Mike Bixenman, MBA, DBA, Magnalytix, LLC

A Case Study on Assembly Process Optimization of 0201 BTC Diodes for High Temperature Reflow

Prathik Rudresh, Vicor Power

An Investigation in Rinse Water Sustainability

*Ram Wissel, KYZEN Corporation

Cleaning Under Bottom Terminated Components - Importance of Good Rinsing

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*Vladimir Sitko, PBT Works s.r.o.

Optimizing Cleaning Strategies for Advanced Packaging Technologies with Low Standoff Components

*Ravi Parthasarathy, M.S.Ch.E., ZESTRON Corporation

*Patrick Lawrence, ITW EAE

*Evan Griffith, Indium Corporation

Using Technical Cleanliness Assessments to Reduce Manufacturing Defect

Shelia Hamilton, Teknek

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Aerosol Jet Printing, A Promising Emerging Technology for Printed Electronics (Potential SIR Patterns)

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Jaime Regis, Ph.D., Honeywell FM&T

SIR (Surface Insulation Resistance) The Good, The Bad, The Ugly

*Chrys Shea, Shea Engineering Services

Aerosol Printing SIR Patterns on Real World Components. The Potential for Value-Added Real-World Data

Jaime Regis, Ph.D., Honeywell FM&T

Fluxless Reflow Technology for Combination Fine-Pitch and SMT-Level Component Attach

MFX8

*Evan Griffith, Indium Corporation

Reduction of Condensate Residues in the Reflow Process by Targeted Control of Chemical Reactions

*Viktoria Rawinski, Rawinski GmbH

How Choosing the Right Cored Wire Can Optimize Automated Soldering Performance

*Westin Bent, MacDermid Alpha Electronics Solutions

Meeting the Challenges of Ultra-fine Feature Printing and Reflow Through Optimization of Pb-free Solder Paste

MFX9

*Tony Lentz, FCT Solder

Investigation of Overprinting BGA Pads: It Should Print Better Than This!

Jeff Schake, ASMPT

The Hidden Cost of Cheap Under Screen Paper Vs Long Term Reliability of Mission Critical Assemblies

Louis Diamond, Honeywell FM&T

Reliability and Harsh Environments (RHE)

Tuesday, October 22, 2024

The Effect of Thermal Cycling Dwell Time on Reliability of High-Performance Pb-Free Solder Alloys

RHE1

*Richard Coyle, Ph.D., Nokia Bell Labs

Investigation of the Mechanical Strength of Solder Joints at Elevated Temperature

Mathias Nowottnick, University of Rostock

Evaluating Reliability Enhancement of Polymer Reinforcement and Solder Alloy Combined Material Sets on Board Level Assemblies

*Anna Lifton, Macdermid Alpha Electronics Solutions

Next-Level Reliability: Enhancing Automotive Electronics with a Pb-Free Thick Film and Solder Combination

RHE2

Victoria Delissio, Heraeus Electronics

RF Multi Chip Module (MCM) Reliability Considerations for Mil-Aero Applications: Interconnects and Interposers

Martin Goetz, Ph.D., Northrop Grumman Mission Systems

Board Level Reliability Testing of RF Packages

Mumtaz Bora, Psemi

The Relationship Between Cleanliness and Reliability of Circuit Assemblies Employed in Harsh Environments

RHE3

*Mike Konrad, Aqueous Technologies

Influence of Salt Contamination and RH on Creep Corrosion of Immersion Sliver (ImAg) Board

Donghyun Kim, Ph.D., Nokia Bell Labs

Developing the Pass/Fail Metrics when Testing Functional Components at Elevated Temperature, Humidity, and Bias

*Mike Bixenman, MBA, DBA, Magnalytix LLC

Thermal Shock Testing of High-Reliability Mixed BGA Solder Joints

RHE4

*Jayse McLean, John Deere Intelligent Solutions Group

Thermal Shock versus Thermal Cycle with Respect to Electronics Performance - Some Discussion Points

*Anothny Rafanelli, Ph.D., P.E., Rafanelli Engineering

A Comparison of Thermal Cycling and Thermal Shock for Evaluating Solder Joint Reliability

*Richard Coyle, Ph.D., Nokia Bell Labs

Reliability and Harsh Environments (RHE)

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A New Efficient and Easy-to-Use Thermomechanical Reliability Model for Lead-Free Solder Joints

RHE5

Jean-Baptiste Libot, Ph.D., Hooke Electronics

Use of AI to Predict the Compatibility Between Solder Paste Residues and Coatings

Melanie Mathon, Inventec Performance Chemicals

Comparative Study for Solder Joint Performance Under Shock for ENIG and ENEPIG Surface Plated Tester PCBs

RHE6

Agustin Vasquez, Ph.D., Intel Corporation

The Effect of Board Design on the Drop Shock Performance of Lead-Free Solder Alloys

Saddam Daradkeh, Ph.D., Auburn University

Exploring Thermocouple Attachment Techniques for PCB Thermal Profiling

Miles Moreau, KIC

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Thermal Cycling Reliability of Third-Generation Alloys Considering the Effect of Solder Paste Volume and Surface Finish

RHE7

Alakayleh Abdallah, Auburn University

Unraveling the Next-Generation High-Reliability Lead-Free Solder Alloy

*Anna Lifton, MacDermid Alpha Electronics

Thermal Cycling and Drop Shock Test Program for Defense-Purpose High Performance Lead-Free Solder Alloys

Menghong Wang, Ph.D., Auburn University

Solder Performance and Reliability Assurance Project - Solder Performance and User Handbook for Defense Systems

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Improving Reliability of High Performing PCB With Advanced Conformal Coating Use

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