Welcome to the 72nd Electronic Components and Technology Conference (ECTC)

Special Sessions

Program Chair
Karlheinz Bock – TU Dresden

ECTC Special Sessions / Schedule

Session #	Special Session Topics	Chair/Co-Chair/Moderator	Date	Time
1	ECTC Special Session - MicroLED Display Technology: High Volume Manufacturing (HVM) Progress and Challenges	Chukwudi Okoro (Corning, Inc.) and Benson Chan (Binghamton University)	Tuesday, May 31	8:30 a.m. – 10:00 a.m.
2	ECTC Special Session - Selected Topics of IEEE EPS Heterointegration Roadmap (HIR)	Amr Helmy (Univ. of Toronto)	Tuesday, May 31	10:15 a.m. – 11:45 a.m.
3	ECTC Special Session - Meeting Next Generation Packaging Challenges: Chiplets to Co-Packaged Optics.	E. Jan Vardaman (TechSearch International, Inc.)	Tuesday, May 31	1:30 p.m. – 3:00 p.m.
4	ECTC Special Session - How will IC substrate technology evolve to enable next generation Heterogeneous Integration schemes for high performance applications?	Kuldip Johal (Atotech Group) and Bora Baloglu (Amkor)	Tuesday, May 31	3:30 p.m. – 5:00 p.m.
5	IEEE EPS President's Panel - State-of-the-Art Heterogeneous Integrated Packaging Program	Kitty Pearsall (EPS President, Boss Precision, Inc.) and Christopher Riso (Booz Allen Hamilton)	Tuesday, May 31	7:45 p.m. – 9:15 p.m.
6	ECTC/iTherm Diversity Panel - Solving Diversification Challenges and Workforce Retention Issues	Kim Yess (Brewer Science), Christina Amon (iTherm), Francoise Von Trapp (3D InCites)	Wednesday , June 1	6:30 p.m. – 7:30 p.m.
7	2022 ECTC Plenary Session - Digital Transformation - The Cornerstone of Future Semiconductor and Advanced Packaging Growth	Rozalia Beica, (AT&S) and Jean Christophe Eloy (Yole Developpement)	Wednesday , June 1	7:45p.m. – 9:15 p.m.
8	IEEE EPS Seminar - Interconnect Technologies for Chiplets	Yasumitsu Orii (NAGASE) and Shigenori Aoki (Lintec)	Thursday, June 2	8:00 p.m. – 9:30 p.m.
9	ECTC Young Professionals Network Panel	Yan Liu (Medtronic) and Adeel Bajwa (Kulicke and Soffa)	Tuesday, May 31,	7:00 p.m. - 7:45 p.m.

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC
The 2022 IEEE 72nd Electronic Components and Technology Conference

Accelerating the Power of Data Infrastructure with Cloud-Optimized Silicon

Keynote Speaker
Chris Koopmans
Marvell

Over the past five years, Marvell Technology has transformed from being a broad, consumer-oriented company to an industry-leading data infrastructure semiconductor solutions provider. Data infrastructure is a large, fast-growing market that powers our global economy and is crucial in advancing our society. This keynote session will discuss why and how Marvell transformed itself to data infrastructure. The presentation will share insights into how data infrastructure is converging into the cloud, the emerging cloud-optimized silicon era and the technology areas the industry must tackle to accelerate the power of data infrastructure with cloud-optimized silicon.

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC

The 2022 IEEE 72nd Electronic Components and Technology Conference

State-of-the-Art Heterogeneous Integrated Packaging Program

Tuesday, May 31, 2022, 7:45 p.m. – 9:15 p.m.

Chairs: Kitty Pearsall, EPS President –Boss Precision, Inc. and Christopher Riso, Booz Allen Hamilton

2022 ECTC Panel Session

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC
The 2022 IEEE 72nd Electronic Components and Technology Conference

Co-Chair
Kitty Pearsall
EPS President–
Boss Precision, Inc.

Co-Chair
Christopher Riso
Booz Allen Hamilton

Panelist
Darren Crum
Modernization Microelectronics

Panelist
John Sotir
Intel Corporation

Panelist
Ted Jones
Qorvo Inc.

State-of-the-Art Heterogeneous Integrated Packaging Program

The EPS President’s Panel at this year’s ECTC explores the Department of Defense (DoD) State of The Art (SOTA) Heterogeneous Integrated Packaging (SHIP) program. The primary goal of the SHIP program is the development of a sustainable business and operational model for addressing government needs in the Microelectronics (ME) packaging industry. SHIP will leverage the expertise of commercial industry to develop and demonstrate a novel model to ensure sustained DoD access to secure heterogeneous integration, advanced packaging, and test of SOTA advanced packaging and create a catalog of solution components which consist of both die and package components, IP, protocols, tool sets, and design/manufacturability and test methodologies. The session will describe present and future technology implementations for both SHIP Digital and SHIP RF.

Digital Transformation - The Cornerstone of Future Semiconductor and Advanced Packaging Growth

Wednesday, June 1, 2022, 7:45p.m. – 9:15 p.m.

Chair: Rozalia Beica - AT&S, Moderator: Jean Christophe Eloy - Yole Developpement (FR)

We cordially thank our special session sponsor AT&S

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC
The 2022 IEEE 72nd Electronic Components and Technology Conference

Chair
Rozalia Beica
AT&S

Moderator
Jean Christophe Eloy
Yole Developpement

Panelist
Carolyn Evans
Intel

Panelist
Doug Yu
TSMC

Panelist
Mike Rosa
Onto Innovation

Panelist
Seoung Wook Yoon
Samsung

Digital Transformation - The Cornerstone of Future Semiconductor and Advanced Packaging Growth

Panel discussions with industry experts and executives across the supply chain, with global participation, to address the impact of digital transformation on our industry, industry dynamics and future trends. Main topics that will be addressed:

- Digital transformation impact on economies and industries
- How are companies preparing for digital transformation in the semiconductor and packaging industry
- Industry trends & applications driving semiconductor adoption and growth of advanced packaging
- The economics of packaging vs. SoCs
- Industry dynamics: business model evolution, investments, supply challenges and disruption

AT&S

MicroLED Display Technology: High Volume Manufacturing (HVM) Progress and Challenges

Tuesday, May 31, 2022, 8:30 a.m. – 10:00 a.m.

Chairs: Chukwudi Okoro – Corning Inc, USA and Benson Chan – Binghamton University, USA

2022 ECTC Special Session 1

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC The 2022 IEEE 72nd Electronic Components and Technology Conference

Co-Chair
Chukwudi Okoro
Corning Inc.

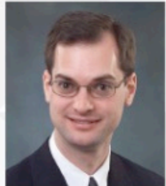
Co-Chair
Benson Chan
Binghamton University

Panelist
John Kymissis
Lumiode

Panelist
Eugene Chow
PARC

Panelist
Falcon Liu
Playnitride

Panelist
Chris Bower
XDisplay



Panelist
Sean Garner
Corning Inc

Panelist
Eric Virey
Yole Developpement

MicroLED Display Technology: High Volume Manufacturing (HVM) Progress and Challenges

Liquid crystal display (LCD) and organic light-emitting diode (OLED) displays are the leading technologies in today's display industry. With continuous interest in performance improvements in areas including higher dynamic range, wider color gamut, lower power consumption, and borderless designs, however, emerging microLED display technology offers several potential advantages. Combinations of these potential advantages apply to applications such as AR/VR, tiled displays, smartwatches, and automotive displays. While progress in these technology areas has been demonstrated at the R&D level, technical challenges exist to transition the emerging microLED technology into industry pilot or manufacturing scales. Some of these challenges include, microLED fabrication, transfer assembly, light management, backplane architecture, device design and integration, and much more.

This panel session aims at addressing the progress and the remaining challenges associated with the commercialization of cost-effective microLED enabled display technology. This will be tackled with the help of a panel of microLED technology experts having diverse areas of expertise.

Selected Topics of IEEE EPS Heterointegration Roadmap (HIR)

Tuesday, May 31, 2022, 10:15 a.m. – 11:45 a.m.

Chair: Amr Helmy (Professor at U of Toronto)

We cordially thank our special session sponsor EMD

EMD ELECTRONICS

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC
The 2022 IEEE 72nd Electronic Components and Technology Conference

Chair
Amr Helmy
Professor at Univ. of Toronto

Speaker
Seoung Wook Yoon
Samsung

Selected Topics of IEEE EPS Heterointegration Roadmap (HIR)

This panel session will focus on the hardware design and packaging approaches that can enable scaling Machine Learning and AI systems in SiP by utilizing heterogenous integration as a tool to expand the capabilities of SiP. Aspects including system design and architecture, CMOS chip design, hybrid integration methodologies, interconnect approaches will all be discussed in this panel

More speakers to be confirmed soon.

EMD ELECTRONICS

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC
The 2022 IEEE 72nd Electronic Components and Technology Conference

Meeting Next Generation Packaging Challenges: Chiplets to Co-Packaged Optics.

Tuesday, May 31, 2022, 1:30 p.m. – 3:00 p.m.

Chair: E. Jan Vardaman, TechSearch International, Inc.

We cordially thank our special session sponsor Zymet

2022 ECTC Special Session 3

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC
The 2022 IEEE 72nd Electronic Components and Technology Conference

Chair
E. Jan Vardaman
TechSearch International, Inc.

Speaker
Kevin O'Buckley
Marvell

Speaker
Raja Swaminathan
AMD

Speaker
Ming Zhang
Synopsys

Speaker
Ravi Mahajan
Intel Corporation

Speaker
Sandeep Razdan
Cisco

Meeting Next Generation Packaging Challenges:
Chiplets to Co-Packaged Optics.

The next generation of advanced packaging will see greater adoption of heterogeneous integration in the form of chiplets as we move into the 3nm semiconductor node. The design, assembly, and test of packages will become more complex, new substrates may be required, and with 3D formats, the move to hybrid bonding is anticipated. Energy requirements in datacenters and performance needs are driving the adoption of co-packaged optics. This panel will discuss changes in the infrastructure required to meet these needs, including the role that the foundry and the OSAT will play. New material requirements will be addressed, the importance of co-design will be highlighted, the need for new thermal solutions will be discussed, and changes in the test approach will be investigated.

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC

The 2022 IEEE 72nd Electronic Components and Technology Conference

How will IC Substrate Technology Evolve to Enable Next Generation Heterogeneous Integration Schemes for High Performance Applications?

Tuesday, May 31, 2022, 3:30 p.m. – 5:00 p.m.

Chairs: Kuldip Johal – Atotech Group and Bora Baloglu – Amkor

We cordially thank our special session sponsor AT&S

2022 ECTC Special Session 4

Co-Chair
Kuldip Johal
Atotech Group

Co-Chair
Bora Baloglu
Amkor

Panelist
Rahul Manepalli
Intel

Panelist
SangHyoun Lee
Amkor Technology Korea

Panelist
Markus Leitgeb
AT&S

Panelist
Habib Hichri
Ajinomoto Fine-Techno USA Corp.

Panelist
Frank Bruening
Atotech

How will IC Substrate Technology Evolve to Enable Next Generation Heterogeneous Integration Schemes for High Performance Applications?

The Electronics industry continues to push the limits of silicon and advanced packaging especially for applications in AI and MI that use high performance computing with HBW memory. These types of applications are the key drivers for higher I/O counts and decreasing bump pitch. This increase in I/O density continues to accelerate as silicon process note geometry continues the shrink, enabling more use of silicon interposers, to prevent this gap increasing the IC substratemanufactures also need to follow suit in terms of enabling higher I/O density while maintaining the cost advantage. The objective of this special panels session, is to have range of industry experts from OEM, OSAT, IC substrate manufacturing and material process/ equipment, to discuss how IC susbtrate technology can evolve to enable shrinkage of features (Line/ space, via/Pad) enabling increase I/O density for next generation high performance applications.

Solving Diversification Challenges and Workforce Retention Issues

Wednesday, June 1, 2022, 6:30 p.m. – 7:30 p.m.

Chair: Kim Yess - Brewer Science/ECTC) and Christina Amon - Univ. of Toronto/iTherm, Moderator; Francoise von Trapp - 3D InCites

We cordially thank our special session sponsor Brewer Science

Co-Chair
Kim Yess
Brewer Science
ECTC

Co-Chair
Cristina Amon
Univ. of Toronto
ITherm

Moderator
Françoise von Trapp
3D InCites

Panelist
Bina Hallman
IBM

Panelist
Antoinette Hamilton
Lam Research

Panelist
Najwa Khazal
Service Technology Centres Americas, Edwards

Panelist
KT Moore
Cadence

Solving Diversification Challenges and Workforce Retention Issues

The microelectronics industry is in the midst of a workforce crisis that began long before we heard the word: COVID 19. Companies are desperately seeking new young talent while simultaneously trying to retain the workforce they've worked so hard to build. By 2022, it's well understood that a diverse and inclusive workforce improves innovation, productivity, and the bottom line, yet companies in the microelectronics industry struggle to recruit both women and under-represented minorities to fill thousands of open positions.
In this discussion, we will address these challenges head on with some practical advice from the trenches. Each of our panelists bring real-life experience associated with attracting and retaining a diverse and inclusive workforce, and they are ready to share tips. So come prepared with your questions and leave with actionable items.

2022 ECTC IEEE EPS Seminar
Interconnect Technologies for Chiplets

Thursday, June 2, 2022, 8:00 p.m. – 9:30 p.m.

Chairs: Yasumitsu Orii - Nagase, Japan and Shigenori Aoki - Fujitsu

ECTC Special Session EPS Seminar

IEEE ELECTRONICS PACKAGING SOCIETY

ECTC The 2022 IEEE 72nd Electronic Components and Technology Conference

Co-Chair
Yasumitsu Orii
Nagase, Japan

Co-Chair
Shigenori Aoki
Lintec

Panelist
Ravi Mahajan
Intel

Panelist
Akihiro Horibe
IBM Research Tokyo

Panelist
Yu-Hua Chen
Unimicron

Panelist
Shin-Puu Jeng
TSMC

Panelist
Yu-Po Wang
SPIL

Panelist
Hideyuki Nasu
Furukawa Electric

Interconnect Technologies for Chiplets

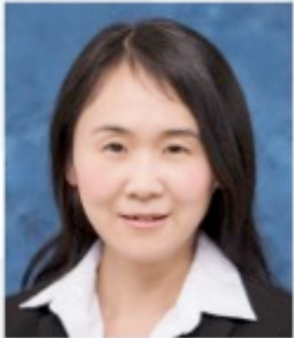
For 50 years, the number of transistors that could be squeezed onto a piece of silicon had increased on a predictable schedule known as Moore's law. However, the Moore's law is reaching to the end. The new approach comes with "chiplets" which is something like high-tech Lego blocks. Instead of carving new processors from silicon as single chips, semiconductor companies assemble them from multiple smaller pieces of silicon—known as chiplets.
This EPS Seminar will discuss the several interconnect technologies for Chiplets such as Silicon Bridge, Advanced Interposer, Fan-out wafer-level packaging, and optical interconnection. It will feature 6 panelists and each panelist will present a short set of slides followed by panel discussion.

ECTC Young Professionals Networking Panel

Tuesday, May 31, 7:00 p.m. - 7:45 p.m.

Chair: Yan Liu (Medtronic) and Adeel Bajwa (Kulicke and Soffa)

All Young Professionals and Graduate Students Welcome



Co-Chair
Yan Liu
Medtronic

Co-Chair
Adeel Bajwa
Kulicke and Soffa

Join your peers for a session designed with you in mind. You'll network with industry professionals, ECTC leaders, EPS members, and others students as you team up for activities to leam more about packaging-related topics all the while engaging with top professionals. Make this opportunity a priority! Come and take advantage of meeting face to face with industry leaders and top profes-sionals, ask career questions, and get to know what industry has to offer!