



The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 3 – January 2020*

NEWS FROM THE UK

Mark Your Calendar Now

IFS2020 - Future Horizons' Annual SC Industry Outlook & Forecast Proceedings Now Available.

The seminar proceedings (over 150 slides) are now available for purchase, either [call](tel:+441732740440) (+44 1732 740440), e-mail (mail@futurehorizons.com), fax (+44 1732 608045), on-line (www.futurehorizons.com) or by post (Blakes Green Cottage, Sevenoaks, Kent TN15 0LQ, England).

Our industry forecasts, methodology and analyses have consistently proved both accurate and insightful, second to no-one. For example, we were the ONLY industry analyst to correctly forecast the 2018 double-digit super-cycle growth, at a time when ALL other analysts were incorrectly predicting low, single-digit industry growth. Our analyses explained why we believed we were right; the ensuing events subsequently proved our analysis correct.

This was not good luck; low growth was never an option and we were not afraid to stick our necks out and go against the tide.

The seminar can also be held in-house for your convenience

Blakes Green Cottage, Sevenoaks, Kent, TN15 0LQ, 01732 740440



Our next Workshop event is

RelQual 2020

Quality and Reliability for Electronic Assembly

Thursday 6 February 2020 at TWI, Abington, Cambridge

Come and learn about:

New Product Introduction for Micro-Electronics by Allan Proudfoot of ALP Consulting

Practical Look at Design for Manufacture by Bob Willis

Holistic Approach to Achieving World Class Reliability by Martin Shaw of Reliability Solutions

De-risking New Product Introduction by Simulation by Borja Lazaro Toralles of MTC/Comsol

Component Technology: Profitable Lifecycles by Ian Stothers of Ultra Electronics

Participate in a Workshop Session, *where attendees will have the opportunity to discuss current quality issues and reflect on the most significant problems.*

[Register for RelQual 2020](#)

[Download the Event Brochure - RelQual 2020](#)

This Event is Sponsored



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IMAPS-UK Secretariat
125 High Street Chesterton,
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United Kingdom



MicroTech Annual Conference & Exhibition
"Advanced Packaging"
CALL FOR ABSTRACTS

Register at: <https://www.imaps.org.uk/events/microtech-2020-advancedpackaging/>

***Last Call for Abstracts - Deadline Friday 17
January 2020***

MT2020 Conference at RAL - Harwell, Oxon UK Thursday 19 March

2020

**WE INVITE SUBMISSION OF ABSTRACTS IN THE
FOLLOWING AREAS:**

- **SEMICONDUCTOR PACKAGING INDUSTRY TRENDS**
- **EMERGING PACKAGING TECHNOLOGIES**
- **THERMAL MANAGEMENT AND MATERIALS**
- **DESIGN AND PROCESS OPTIMISATION**

All abstracts received by 23:59 on **Friday 17 January 2020** will be evaluated by the Technical Committee. Abstracts covering a balanced range of the main conference topics will be selected and invited to provide an **Oral Presentation** (20 mins + 5 mins questions) or **Poster Presentation** (A0 Size) during the Conference. Some Poster Presenters may also be invited to provide a brief oral presentation to the full audience.

- Those wishing to present their work at Microtech 2020 should submit an abstract of approximately 200 words electronically to: secretariat@imaps.org.uk

**THIS IS YOUR CHANCE TO NETWORK WITH
ENGINEERS, ACADEMICS AND INDUSTRY EXPERTS**

A FULL "Call for Abstracts" DOCUMENT IS DOWNLOADABLE FROM
OUR WEBSITE [CLICK HERE](#)

Don't miss our next event

The RelQual 2020 Workshop 6 February 2020 at TWI, Cambridge

Quality and Reliability for Electronic Assembly

Just 4 weeks awayhave you booked your place?

[BOOK your RelQual 2020 Workshop place now ... click here](#)

For any other details or information Please contact:

IMAPS-UK Secretariat

125 High Street Chesterton, Cambridge,

CB4 1NL UK

Tel: +44 0131 2029004

e-mail: Office@imaps.org.uk



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NEWS FROM THE EIPC

The Needs for the Next-Generation Electronic Devices and changes in fabrication solutions for PCBs, PCBAs, Materials and Technologies.

Attending an EIPC Conference in the middle of winter is becoming a tradition. It joins many other traditions, nay even ancient customs, such as Beating the Bounds. This is still observed in some English and Welsh parishes. Under the name of the Gangdays, the custom of going a-ganging was kept before the Norman Conquest. A group of old and young members of the community would walk the boundaries of the parish, to ensure that no farming was encroaching upon the 'common' land upon which livestock could be grazed. They were usually led by the parish priest and church officials, to share the knowledge of where they lay.

It's the words 'gang' and 'old and young' which resonated, along with the sharing of knowledge. For 'parish priest' you might think of Alun Morgan, our Chairman, and for 'officials' you could really only think of Kirsten, who is the only official we have. True, we have Directors, but they are invariably busy tending their own flocks.

So it would be really good if you could cut along to Rotterdam and join members of the PCB community and walk the boundaries of knowledge for a couple of days!

During the EIPC Winter Conference 2020, participants will learn how to meet and adapt to the changing needs of Europe and the global electronics market. Industry experts will explain the changes in the world-wide PCB supply chain for technology, materials and surface coating of printed circuit boards.

Bonus Programme:

Visit to the Hutchison Ports ECT Rotterdam and Network dinner The Castle, Sparta Stadium
First come, first serve!

We look forward to welcoming you in Rotterdam February 13 & 14!

[Registration form EIPC Winter Conference Rotterdam](#)

Conference hotel:

Van der Valk Hotel Rotterdam-Blijdorp
Energieweg 2
3041 JC Rotterdam
www.hotel-rotterdam-blijdorp.nl
info@rotterdam-blijdorp.valk.nl

For your hotel room reservation for the period: 12.02.2020-14.02.2020 please note the following conditions:

Booking code: BLI-GF17014 EIPC

Double room for single use including breakfast for 110.00 EUR/per night excl Tourist Tax

Double room including breakfast for 129.50/per night excl Tourist Tax

Please contact the hotel to make your hotel reservation via

info@rotterdam-blijdorp.valk.nl or call +31-102988777

Conference Programme Day 1, Thursday February 13		
The Needs for the Next-Generation Electronic Devices and changes in fabrication solutions for PCBs, PCBAs, Materials and Technologies		
08:00-08:30	Conference Registration and Table Top & Poster Exhibition build up	Table Top & Poster Display Area
08:30-09:00	Welcome by the EIPC President	Alun Morgan, EIPC, UK
Keynote Session 1: New Business & Market Outlook		Moderator: Alun Morgan, EIPC, UK
09:00-09:30	Business Outlook: Global Electronics Industry	Walt Custer, Custer Consulting, USA
09:30-10:00	TBC	Dr. Hayao Nakahara, NT Information Ltd.
10:00-10:30	5G - mmWave Technology Challenges for PCB Manufacturing	Johal Kuldip, Atotech Deutschland, DE
10:30-10:40	Panel discussion	
Session 2: Inkjet Technologies/Coating Technologies		Moderator: Emma Hudson, Emma Hudson Technical Consultancy, UK
10:40-11:00	Printed Electronics - Pushing the Limits	Dr. Andreas Albrecht, Cicor Group, CH
11:00-11:20	Development and processing of an ink jettable solder mask and the benefits of its use in PCB manufacture	Chris Wall, Electra Polymers, UK
11:20-11:50	30 minutes Coffee break	Table Top & Poster Display Area
11:50-12:10	Update on Inkjet Soldermask	Don Monn, Taiyo America, USA
12:10-12:30	New manufacturing technologies	Uwe Altmann, Orbotech, BE
12:30-12:40	Panel discussion	
12:40-13:40	Network Lunch	Hotel restaurant
Round table: Roadmapping and Standardization		Moderator: Tarja Rapala-Virtanen, EIPC, FI
13:40-14:40	Industry Roadmap	iNEMI, Grace O'Malley, UK
	Reliability and Standardization	Elmatica, Jan Pedersen, NO
	Standardization updates	Emma Hudson, Emma Hudson Technical Consultancy, UK

Session 3: Material technology - Reliability - Environmental Technology		Moderator: John Fix, Taiyo America, USA
14:40-15:00	High Frequency Dk & Df Test Methods Comparison	Martin Cotton, HDP User Group, UK
15:00-15:20	TBC	Alun Morgan, Ventec Group, UK
15:20-15:40	Reliable, high temperature stable materials are becoming increasingly more important	Volker Klafki, Technolam, DE
15:40-16:00	Quo vaditis Flame Retardants? How can we meet ever more stringent performance and sustainability demands?	Adrian Beard, Clariant Germany, DE
16:00-16:20	Analytical determinations of unreacted TBBPA flame retardant in printed wiring boards	Dr. Sergei Levchick, ICL-IP, USA
16:30-19:00	Departure & Visit Factory Hutchison Ports Rotterdam	
19:30	Network Dinner Sparta Stadium "The Castle"	
22:30	Return Valk Hotel Blijgaarde	

Conference Programme Day 2, Friday February 14

The Needs for the Next-Generation Electronic Devices and changes in fabrication solutions for PCBs, PCBAs, Materials and Technologies		
Session 4: New technologies / Design		Moderator: Martyn Gaudion, Polar Instruments, UK
09:00-09:20	Recent development on Design & Manufacturing of Lab on PCB Devices	Dr. Despina Mochou, University of Bath, UK
09:20-09:40	Direct Imaging	J-P Birraux, First EIE, CH
09:40-10:00	New innovation for PCB registration improvement	Hans Fritz Inpeko/ SAT Electronic GmbH
10:00-10:10	Panel discussion	
10:10-10:40	30 minutes Coffee break	Table Top & Poster Display Area
Session 5: Manufacturing Technologies and New Processes		Moderator: Oldrich Simek, Pragoboard, CZ
10:40-11:00	Vecs; How to increase efficiency	Joan Tourné, Nextgin Technology, NL
11:00-11:20	InPulse 3 - A New Horizontal Cu Plating System for mSAP/amSAP Technology	Mustafa Özkök, Atotech, DE
11:20-11:40	Thermal Management Solutions using PCBs	Mike Tucker, Shenzhen Kinwong Electronic, CN
11:40-12:00	Green Fab	Laurent Nicolet, SCHMID Group, CN
12:00-12:15	Panel discussion	
12:15-12:25	President closing remarks - End of Conference Day 2	
12:25-13:30	Network Lunch	Hotel restaurant



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ELECTRONIC INDUSTRY NEWS

The Long Goodbye of Wi-Fi Has Begun

Local 5G networks could replace the familiar wireless standard

By Stacey Higginbotham

In ten years, we won't need Wi-Fi.

At least, that's what [Azhar Hussain](#), the CEO of IoT company [Hanhaa](#), told me on a phone call late last year. He thinks the end of Wi-Fi is nigh because he believes that allocating spectrum in smaller chunks will let municipalities, universities, and companies create private 5G cellular networks. The convenience of those networks will impel companies to choose cellular connections over Wi-Fi for their IoT devices.

There's reason to think Hussain is right, at least for higher-value devices, such as medical devices, home appliances, and outdoor gear like pool-cleaning robots. [Zach Supalla](#), the CEO of [Particle](#), a company that supplies IoT components to businesses with little experience building connected products, says more than half of the IoT devices in Particle's cloud that use cellular connections are also within range of a Wi-Fi network. Supalla says that companies choose cellular modules over Wi-Fi because the modules are easier to set up and businesses can better control the consumer experience.

Wi-Fi devices are notoriously difficult to connect to one another, or pair. To get a connected product on their home Wi-Fi network, consumers must often pair with a software-based access point before switching the device over to their own network.

This process can be fraught with errors. Even I, a reporter who has tested hundreds of connected devices, fail to get a device on my network on the first try roughly a third of the time. To make it easier, [Amazon](#) and [Google](#) have both created proprietary onboarding

processes that handle the setup on behalf of the user, so that when consumers power their devices on, they automatically try to join their network.

However, device manufacturers still have to implement both Amazon's and Google's programs separately, and that requires know-how that some companies don't possess. Thankfully, Amazon, [Apple](#), and Google are now working on a smart-home standard that may simplify things. But the details are scant, and any solution they develop won't be available until 2021 at the earliest.

When you're faced with multiple Wi-Fi ecosystems, cellular is just easier, Hussain says. Cellular networks cost more now because you have to install radios on the devices and pay a subscription to use the cellular network. Hussain sees those costs coming down, potentially even disappearing, given time.

That's because he's anticipating a future where universities, businesses, and municipalities set up their own cellular networks using spectrum obtained through new spectrum auctions, such as the [Citizens Broadband Radio Services \(CBRS\) auctions](#) occurring in the United States in June. Cellular equipment makers are already building gear and testing these private networks in factories and offices. If new roaming plans are developed to allow devices to come onto these local networks easily, similar to joining a Wi-Fi hotspot, cellular connectivity will become practically free.

Even if Hussain's vision doesn't come to pass in the next 10 years, the costs of low-data-rate cellular contracts will continue to drop, and that could still eventually put the nail in the coffin for Wi-Fi. And I mostly agree: I think there are plenty of reasons to believe that Wi-Fi will never disappear entirely, but I do think small cellular networks will take its place in our lives.

Gartner Forecasts Global Device Shipments Will Grow 0.9% in 2020 5G Mobile Phones' Market Share Will Grow Rapidly, From 12% in 2020 to 43% in 2022

Worldwide shipments of devices — PCs, tablets and mobile phones — will total 2.16 billion units in 2020, an increase of 0.9% from 2019, according to Gartner, Inc. In 2019, global shipments of devices totalled 2.15 billion units.

"2020 will witness a slight market recovery," said [Ranjit Atwal](#), research senior director at Gartner. "Increased availability of 5G handsets will boost mobile phone replacements, which will lead global device shipments to return to growth in 2020."

The worldwide mobile phone market is on course to grow by 1.7% in 2020 (see Table 1). Shipments of smartphones were weak in 2019, recording a 2% decline year over year, but are expected to grow in 2020, particularly in Greater China and emerging markets in Asia/Pacific.

Gartner estimates that 5G models will account for 12% of mobile phone shipments in 2020, and that will reach 43% by 2022. “From 2020, Gartner expects an increase in 5G phone adoption as prices decrease, 5G service coverage increases and users have better experiences with 5G phones. The market will experience a further increase in 2023, when 5G handsets will account for over 50% of the mobile phones shipped,” said Mr. Atwal.

Table 1

Worldwide Device Shipments by Device Type, 2020-2022 (Millions of Units)

Device Type	2020	2021	2022
Traditional PCs (Desk-Based and Notebook)	178.279	169.891	161.672
Ultramobiles (Premium)	72.529	76.789	80.036
Total PC Market	250.807	246.680	241.708
Ultramobiles (Basic and Utility)	138.712	134.255	132.465
Computing Device Market	389.519	380.935	374.173
Mobile Phones	1, 776.779	1, 771.242	1, 756.936
Total Device Market	2, 166.298	2, 152.177	2, 131.109

Due to rounding, some figures may not add up precisely to the totals shown.

Source: Gartner (January 2020)

Global PC Market to Decline in 2020 and Beyond

Even after experiencing a [return to growth in 2019](#), PC shipments are still forecast to decline in 2020 and beyond. Through 2020, this market will be affected by the end of the migration to Windows 10.

After three years of growth in the professional PC market, replacement levels will decrease. However, there will be opportunities for professional PC replacements through 2020. The Chinese government launched the locally manufactured “secure and reliable PC” initiative, which stalled in 2019, but such initiatives should gain momentum in 2020.

In addition, there is a “long tail” of upgrades from small and midsize businesses across emerging regions as they react to Microsoft’s withdrawal of support for Windows 7 on 14 January 2020. Gartner estimates that one billion PCs will have migrated to Windows 10 through 2020 — around 80% of all PCs in use.

“The PC market’s future is unpredictable because there will not be a Windows 11. Instead, Windows 10 will be upgraded systematically through regular updates,” said Mr. Atwal “As a result, peaks in PC hardware upgrade cycles driven by an entire Windows OS upgrade will end.”

Gartner clients can read more in [“Forecast: PCs, Ultramobiles and Mobile Phones, Worldwide, 2017-2023, 4Q19 Update.”](#)



Issue 3 – January 2020

NEWS FROM THE IPC

Industry responds favourably to New Trade Deals

U.S. government approval of two trade deals this week has drawn favorable response from the electronics industry. Trade organizations applaud the USMCA agreement and characterize a “phase one” deal with China as a good first step.

Here’s what the IPC said:

“The electronics manufacturing industry welcomes the U.S.-China “phase one” trade deal being signed in Washington, and the pathway it offers to resolution of broader issues,” said Chris Mitchell, vice president of global government relations at IPC. “The deal leaves many issues unaddressed including cyber security, structural economic reforms, and the high level of tariffs that are still in place on many products that are traded in our industry. ”

As documented in a recent IPC study, many IPC members are feeling the pain of higher costs, supply chain disruptions, administrative hassles, and reduced access to the Chinese market as a result of the U.S.-China trade conflict. trade deal, components, chip industry, trade war, tariffs, U.S., China

The industry applauds the U.S. Senate for approving the U.S.-Mexico-Canada Agreement (USMCA) with broad bipartisan support, Mitchell said in a different release. “As soon as President Trump signs the legislation, which is expected within days, it will enter into force.”

With electronics exports making up over 30 percent of U.S. exports of manufactured goods, natural resources and energy exports to Mexico and nearly 20 percent of such exports to Canada, USMCA will pave the way to continued prosperity for electronics manufacturers, U.S. workers and consumers, Mitchell added.

“The pact will bolster the industry’s confidence in making investments in human resources and equipment in all three nations.”

Last May, IPC released a study that found the total value of U.S. electronics trade with Canada and Mexico was \$155.5 billion in 2017, with trade in electronic systems and components being especially important to the North American automobile industry. Mexico imports 34 percent of U.S. printed circuit board production—larger than the next four largest markets combined.

Comments from the SIA:trade deal, USMCA

The Semiconductor Industry Association (SIA) applauded Senate approval of the U.S.-Mexico-Canada Agreement (USMCA), which passed with strong bipartisan support.

SIA represents U.S. leadership in semiconductor manufacturing, design, and research, with members accounting for approximately 95 percent of U.S. semiconductor company sales.

“Congressional approval of the USMCA is a major win for free trade and America’s global leadership in semiconductors and the technologies they enable,” said John Neuffer, SIA president and CEO. “The agreement will help ensure that more products researched, designed, and made in America – including semiconductors – can flow to customers around the world. We applaud the Administration and Congress for negotiating and approving this landmark agreement.”

The USMCA incorporates several top U.S. semiconductor industry priorities, including new rules preventing parties from unfairly restricting trade of commercial encryption products, more robust protections for trade secrets and other types of intellectual property, commitments to protect the free and open flow of data across borders, and new rules aimed at ensuring state-owned enterprises compete fairly and transparently.

SIA also supports a range of USMCA provisions related to counterfeit enforcement, forced localization, competition policy, and trade facilitation, Neuffer added. "These new and higher-standard norms and disciplines will serve as important benchmarks for shaping global trade rules that preserve and strengthen the digital economy."

Canada and Mexico are strong U.S. trading partners in semiconductors and are critical players in the semiconductor supply chain. The U.S. has solid semiconductor trade surpluses with both Mexico and Canada at \$6.77 billion and \$1 billion, respectively.

“The ‘phase one’ trade agreement signed with China “helps ease uncertainty in the semiconductor industry, and we hope it provides a stepping stone to a more comprehensive deal between the world’s two largest economies,” Neuffer said in a separate release. “We applaud the important progress made today and urge both sides to continue negotiations to reach a phase two agreement that ensures a level playing field in China and tackles some of the thornier issues, such as state subsidies that can massively distort the marketplace.”



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INTERNATIONAL DIARY

2020

IPC/APEX Expo
3-6 February

EIPC Winter Conference Rotterdam, NL
Visit Terminals ECT Port Rotterdam
13 & 14 February
Rotterdam, NL

CPCA Exhibition
16-18 March

KPCA Exhibition
22-24 April

EIPC @ SMT Hybrid Packaging
5-7 May 2020
Nurnberg, DE

JPCA Exhibition
June

EIPC Summer Conference Örebro, SE
Visit Ericsson 5G Test Centre
16 & 17 June
Örebro, SE

FED Conference
17-18 September

IPCA Expo 2019
23-25 September

TPCA Exhibition
21-23 October

EIPC @ Electronica 2020

10-13 November

ECWC15, WECC World Electronics Circuits Council

30 November-2 December

Shenzhen, CN

HKPCA Exhibition

2-4 December