



The European Institute for the PCB Community

EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.
Issue 21 – October 2019*

News from EIPC

Call for Papers EIPC Winter Conference Rotterdam, NL

February 13 & 14, 2020

In anticipation

Long before Power Point, there were blackboards. Now there are whiteboards in pretty well every school class-room, and teachers give presentations on them, fingering a touch-pad at the bottom edge to produce the next image. Before that there were flip-charts, where those with an artistic bent could draw pie-charts and whizz out a formula with a felt-tipped pen in no time at all. They needed stands and audiences were small as no one more than 5 rows back could see or read anything. But what has not changed is the demand for knowledge, however it may be delivered.

Delivering knowledge is one of the strengths of an EIPC Conference. Yes, yes, any conference does that, but then an EIPC Conference is NOT any conference, it is in the Premier League; it has international players, tends to have away matches in a variety of venues, has seats for all spectators, and invariably wins the day. Which is why they are holding their Winter Conference in Rotterdam, where guests will be dining in the magnificence of Football Stadium Sparta in the evening of the first day. There is more to Rotterdam than containers, and there is more to EIPC than circuit boards, so join the winning team by sending in your submission without delay.

Have a look at the list of targets on the attached, and send us your abstract.

Please may we have your abstract submission no later than November 1st! Please note: the number of attendees for the Bonus Programme to the Rotterdam Terminals is limited, on a first come, first serve basis, so make sure you are one of the first.

Please visit the EIPC website www.eipc.org for more info.
We look forward to hearing from you.

Yours truly,
The EIPC Team



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NEWS FROM THE UK



Microelectronics Packaging for Harsh Environments"

An IMAPS-UK Conference & Exhibition

covering applications for:

Space, Defence, Aerospace & Transport, Medical, Energy & Exploration

28 November 2019, Satellite Applications Catapult, Harwell, UK

The Conference will have 10 Technical Presentations with Sessions on:

- *Applications & Requirements*
- *Components & Materials*
- *Design, Manufacturing & Processes*
- *Reliability & Ruggedisation*

This event will also have a Table-Top Exhibition from related Companies

All the event details are now on the website www.imaps.org.uk

Registration is now open - use the www.imaps.org.uk on-line system to book your place.

For any other details or information please contact:

IMAPS-UK Secretariat

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Devon. TQ14 8SB UK

Tel: +44 0131 2029004

e-mail: office@imaps.org.uk

Ventec to Unveil autolam Base-Material Solutions for Automotive Electronics at Productronica 2019

At Productronica 2019 Ventec International Group Co., Ltd. (6672 TT) will be launching 'autolam' – a base material solutions set specifically curated for the diverse and unique requirements of automotive applications. The Ventec team will be on hand in Hall B3 at booth #244 for the launch and to showcase its unique laminate & prepreg capability across a very wide range of applications and budgets.

Automotive electronics technologies are evolving at an increasing rate with advanced driver-assistance systems, the electrification of major body and powertrain functions and in-car infotainment & broadband services access demands transforming our vehicles into the ultimate electronic devices. Paying attention to the properties of materials at the substrate level is the first step towards achieving the most stringent performance targets of today's automotive manufacturers. For designers and manufacturers of high-performance automotive electronics, 'autolam' offers the solutions demanded by the diverse and unique requirements of automotive applications today and in the future.

Product-highlights include:

VT-4B5 SP, an aluminum base laminate that ensures maximum thermal efficiency for direct-to-metal connections of electrically isolated heat sources and places dielectric insulation only where needed;

VT-4B5L, a high performance IMS material that offers excellent solder joint reliability and thermal conductivity of 4.0 W/mK.;

VT-4B5H, a metal base laminate material with high Tg (180°C) and thermal conductivity of 4.2 W/mK., ideally suited for applications such as LED lighting, power conversion, motor drives and power supply;

VT-4B7, a high performance IMS material for applications where maximum thermal conductivity and electrical performance are key. Specified at 7.0 W/mK., VT-4B7 is an affordably priced substrate that competes strongly with direct-bond copper (DBC);

tec-speed 7.0 & 7.1: High-speed, ultra-low-loss multilayer materials that offer excellent signal integrity for extremely high-speed applications. By combining low dielectric constant (Dk) for highly efficient power transmission with low dissipation factor (Df) for minimum signal loss up to high bit rates, tec-speed 7.0 & 7.1 can handle all in-car networking from MOST (Media Oriented Systems Transport) and FlexRay to multi-Gigabit Ethernet;

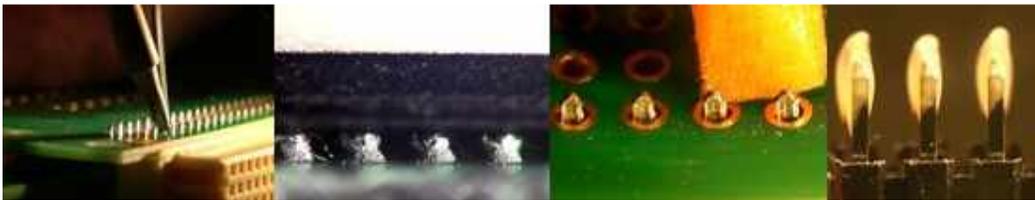
tec-speed 20.0: Few substrate materials can match the high-speed signal-handling performance of this ceramic-filled hydrocarbon thermoset material series. tec-speed 20.0 combines unrivaled high-frequency performance (Dk 3.00-3.48 / Df 0.002-0.0037), superior loss characteristics and highest reliability particularly demanded by automotive and 5G applications.

Ventec's Quality Management Systems are of course accredited with International Automotive Task Force (IATF) 16949:2016 quality standard. As these become increasingly stringent and aligned to even stricter aerospace industry requirements, thanks to Ventec's

AS9100D accreditation, automotive customers (including Ford, Tesla, VAG, Audi, Skoda, Seat, Volkswagen, Tata, Bentley, Daimler Benz, BMW, Renault-Nissan, Jaguar/Land Rover, McLaren Automotive) already rely on the company's aerospace standard supply chain for high reliability laminates and prepregs today.

For more information about Ventec's solutions and the company's wide variety of products, please visit www.venteclaminates.com

Low Temperature Soldering & QFN Webinars from Our Desk to You - We Show You How



Book online webinars with Bob Willis and secure your place or your teams training session. If the date or time does not suit your schedule its also possible to arrange special online training at a time and date that is better for your company

Webinars 2019

[Benefits of Low Temperature Solders & Process Concerns 11th November](#)

[QFN/LGA Design, Assembly Process Issues & Reliability Failures 2nd December](#)

New Webinars 2020

[Solder Paste Evaluation & Simple Tricks of the Trade 13th January](#)

[PCB Outgassing & How to Test Bare or Assembled Boards 10th February](#)



Assembly & soldering problems often occur in our industry and sometimes support to quickly identify and eliminate the true cause of production failures can be beneficial. This can be

achieved with technical support or an onsite examination of products or processes.
Alternatively sending examples of your failure can be a cost effective option to avoid on site visits, particularly if your manufacturing facility is in another country

We offer online support meetings with your team to help fault find your process of field failure

<https://www.bobwillis.co.uk/product/online-consultancy-meeting/>

Examination of product and supplier report assessment

<https://www.bobwillis.co.uk/product/half-day-consultancy-for-pcbsoldering-failures/>

Onsite process & failure assessment

<https://www.bobwillis.co.uk/product/one-day-consultancy-for-pcb-failures/>

Many different options offered to support your team with many years of our practical experience

Look forward to working with you and your team to improve process yields, solve failures and reduce manufacturing costs. Alternatively, why not arrange a in-house workshop or online webinar for your team, we offer the widest range of practical and hands on training courses in the industry [Click Here](#)

Many thank and all the best
Bob Willis



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ELECTRONIC INDUSTRY NEWS

iPhone, Galaxy S, Pixel: How smartphones evolved to dominate your life

We bet you couldn't quit your phone even if you wanted to.

BY ROGER CHENG

Steve Jobs' pitch for the original iPhone in 2007 as a phone, music player and internetcommunicator was a landmark moment in the tech world. It crystalized the iPhone's almost mythic reputation from the start -- remember the nickname, the Jesus phone? -- and helped usher in the idea that smartphones could be chic. But looking back, those three capabilities barely scratched the surface of what we can do with the modern smartphone.

What can you do with one now? *Everything.*

"We never imagined how a decade later iPhone would become such an essential part of our lives, from streaming TV shows and playing games, to finding directions when traveling, to managing health and fitness, to opening garages in smart homes, to sharing beautiful memories with stunning photos and videos," Phil Schiller, head of marketing for Apple, said in an email.

As CNET explores the impact of various technologies over the past decade, none has changed our lives as dramatically as the smartphone. When the original iPhone launched, and the first Android phone, the G1, followed in 2008, they were still the stuff of gadget enthusiasts with loads of disposable income. Even 10 years ago, at the launch of the Motorola Droid -- the first Android phone to enjoy mass appeal, thanks to a massive marketing blitz by Verizon Wireless -- we were just getting started with the potential that came with smartphones and mobile applications.

Nowadays we take for granted that we have a virtual supercomputer in our pockets. Our iPhones and Android handsets let us hail a car right to our location, draw from a library of hundreds of thousands of television shows and movies stored online, or livestream our silly antics to millions across the world. You can shoot down cartoonish avatars of your friends in Fortnite. They've literally been revolutionary, with secure messaging apps playing a role in

the Arab Spring movement in the early 2010s and the Hong Kong protests against China playing out today.

We never imagined how a decade later iPhone would become such an essential part of our lives. Phil Schiller, head of marketing for Apple

Think about it: What's the one thing you can't leave your home without? Chances are, it's your smartphone. It's become such a critical part of our lives that we're starting to question whether we're spending too much time on them. Tech giants like Apple and [Google](#) have even introduced ways to tell you how much time you're spending on your phone -- with apps found on the phone.

"It's astonishing how quickly we've gone from being astonished to having an always-connected supercomputer in our pockets to somewhat resenting having a supercomputer in our pockets," said Avi Greengart, an analyst at research firm Techsponential.

No matter where you stand on the spectrum of smartphone dependence, it's undeniable the staggering impact they've had on society, culture and how we live our lives.

"A lot has changed since 1.0," Stephanie Cuthbertson, director of Android, said during her [Google I/O keynote speech in May](#). "Smartphones have evolved from an early vision to this integral tool in our lives, and they are incredibly helpful."

Clumsy to coveted

Smartphones had been around for years before iPhones and Android handsets became the default mobile devices of choice. The white-collar crowd happily tapped on the physical keys of their BlackBerrys. Old-school gadget enthusiasts would've proudly shown off their Palm Treos or their "Pocket PC" phones (with a stripped-down version of Windows jammed behind a smaller screen). Never mind that these devices required a precise stylus to navigate.

In 2007, Jobs and the iPhone changed the meaning of a smartphone, making a touchscreen device intuitive -- and fun -- to use, thanks in large part to the full browser experience and tricks like pinch to zoom. It's the only phone that I could pull out at a bar and legitimately impress women with. (That still wasn't enough help.)

In July of 2008, Apple introduced its App Store, opening it up to third-party apps. Google would follow with the G1 smartphone (also known as the [HTC Dream](#)) and its own app store a few months later. The G1 catered more toward gadget enthusiasts and lacked the mass appeal of the iPhone, but it was no less influential as the launchpad for Android.

Today, there are more than 2.5 billion active Android devices out there, making Google's OS the most dominant platform in the world.

"Today, everyone has a smartphone, and that's amazing," said Peter Chou, co-founder and former CEO of HTC, which built the G1, who stood on stage with Google co-founders Sergey Brin and Larry Page when the device was unveiled.

Smartphones have evolved from an early vision to this integral tool in our lives, and they are incredibly helpful.

Stephanie Cuthbertson, director of Android

But it wasn't until the debut of the original Droid, which next month celebrates its 10th anniversary, that Android catapulted into the mainstream, thanks in part to a huge marketing campaign from partners Google, Verizon and Motorola.

Upping the ante even further, Samsung jumped into Android in 2010 with a willingness to build up its Galaxy S franchise by way of an even more impressive marketing push, which created the two-horse dynamic we see today (Apple vs. Samsung, Apple's iOS vs. Google's Android).

"It's exciting to reflect on 10 years ago launching the first Galaxy S smartphone," said Drew Blackard, head of product management for Samsung Electronics America. "Over the past decade, we've introduced a number of industry-leading innovations that have given our consumers a better mobile experience and changed the way we think about smartphones."

From fart apps to limitless videos

The explosion of smartphone demand wasn't driven just by increasingly advanced, and bigger, hardware. The handset's Swiss Army knife utility came from the sheer number of programs available to us. It took Apple's App Store and the Google Play Store about eight years each to surpass 2 million apps, from standbys such as Instagram and Angry Birds to obscure apps for bird watching.

It's easy to forget that the early experimental days included fart apps that raked in \$10,000 a day or useless virtual lighter apps. At that point Android, which initially didn't have the same oversight that Apple gave iOS, was a real Wild Wild West, with tons of junk apps.

That's a far cry from the utility of apps today. You pretty much can't get lost, thanks to Google Maps. Protestors use secure messaging platforms like Signal and WhatsApp to coordinate demonstrations. Uber and Lyft mean you're never stuck without a ride -- even a helicopter ride. Apps like Life360 or Disaster Alert can literally save your life.

Entertainment buffs, meanwhile, would need several lifetimes to watch the countless hours of programming found on apps from Netflix, Hulu, Amazon Prime Video and HBO Go, among others -- with new options such as Apple TV Plus and Disney Plus emerging all the time.

Societal changes

When Samsung unveiled the original Galaxy Note in 2011, the then-gargantuan 5.3-inch display provided rich fodder for endless mockery. Remember, the first iPhone had a 3.5-inch display.

Today, the original Note seems quaint in its diminutive stature. Samsung's latest, the Galaxy Note 10, rocks a 6.8-inch display, while the iPhone 11 Pro Max features a 6.5-inch display.

Nowadays, smartphones are almost too large to hold in one hand.

"The desire for more screen in your hand has exceeded the grasp of your hand," Greengart said.

When the world was transitioning to all-touchscreen phones, there was a constant debate about whether people could let go of buttons. Back in 2009, handset makers were still experimenting with different ways to cram QWERTY keyboards onto handsets, said Gartner analyst Tuong Nguyen. The G1, for instance, had a slide-out physical keyboard.

Many of us can now blind touch-type on a display by memory.

*The desire for more screen in your hand has exceeded the grasp of your hand.
Avi Greengart, an analyst at Techsponential*

Smartphones are also notable for what they've destroyed as much as what they've enabled. Those little supercomputers have left a wake of failed businesses over the years.

When was the last time you saw a point-and-shoot digital camera? Google Maps rendered GPS navigation systems irrelevant, and when I want to feel really old, I tell younger reporters about a time when I used physical (paper) Thomas Guide maps to get from one assignment to another. Apple's iPod and other MP3 players, [Cisco's Flip video cameras](#) and even voice recorders have virtually disappeared.

Outside of luxury fashion statements, wristwatches became a novelty until companies like Apple brought back the trend by offering smartwatches. They work by connecting to -- what else? -- your smartphone.

Rise of China

The smartphone revolution was radical enough that it destroyed an older generation of handset stalwarts. [Nokia](#) and BlackBerry were the kings of the mobile device -- and now neither of those companies makes phones, having licensed out their names to upstarts eager to make the most of once viable brands. US phone pioneer Motorola is owned by Chinese consumer electronics giant [Lenovo](#).

[Microsoft](#), which dominates PCs with its Windows software, couldn't [make Windows Phone work](#). HTC, the maker of the G1, has virtually disappeared from the scene.

While Samsung remains the king of the hill for smartphones and Apple remains the most profitable player, much of the action in the smartphone world is now coming out of China. Huawei, [embroiled in controversial claims by the US that it's a security risk](#), is the [world's second-largest smartphone maker](#), and that's without selling any phones in America. TCL, a Chinese company best known for budget [televisions](#), has the rights to make phones using the BlackBerry brand.

Many features, like the addition of multiple cameras, a pop-up camera or the use of slimmer bezels, emerged from companies like Huawei or smaller Chinese players such as Xiaomi, Oppo or OnePlus.

The inevitable backlash

The days when we'd get giddy over each new Android or iPhone release are gone. And though innovation is still on the horizon with the rise of 5G and foldable phones like the Galaxy Fold, enthusiasm has given way to a more critical look at how these tiny slabs of metal and glass have really affected our lives.

That little buzz or chime creates an almost Pavlovian need to check your phone, a phenomenon dubbed FOMO, or fear of missing out. It has critics worried that the generation raised on smartphones will be too glued to their screens to operate in the real world. After all, older generations are already hooked on their phones.

"We all seem more preoccupied with what comes out of those little screens than what is going on around us," said Carolina Milanesi, an analyst at Creative Strategies.

The very companies that serve up these time-sucking gadgets are working on apps and tweaks to their operating systems to minimize the amount of time you need to spend on the devices. Through its Screen Time feature, Apple's iOS 13 lets you control access to apps, and allows parents to manage their kids' activities better too.

In November, Google launched a Digital Wellbeing tool to offer many of the same kinds of controls. Part of Google's presentation at its I/O developer conference in May was focused on being smarter and quicker about addressing your needs.

"Looking ahead, we see another big wave of innovation to make them even more helpful," Cuthbertson said.

We've come a long way from simply making phone calls, playing music and browsing the internet.

Issue 21 – October 2019

NEWS FROM THE IPC

U.S. Electronics Manufacturers Grappling with Higher Costs from U.S. and Chinese Tariffs; U.S. Jobs and Investments at Risk

Almost 90 percent of U.S. electronics manufacturers are troubled by the higher tariffs imposed by the United States and China on each other's imports, and some are investing less in the United States and hiring fewer workers as a result.

These are among the results of a [survey](#) conducted by [IPC](#), a global association representing the electronics manufacturing industry, which queried its U.S. members between September 25 and October 2, 2019.

Among the survey results:

- On average, companies report they have seen tariff increases on 31 percent of the total dollar value of the products they import. Twenty-five percent of companies report over half of the dollar value of the products they import are facing higher tariffs.
- Some 69 percent of companies report lower profit margins as a result of increased tariffs, with a ripple effect of negative consequences: 21 percent report they are reducing investment in the United States, and 13 percent say they are cutting back on hiring and/or reducing headcount.
- More than a third of companies report they cannot increase their prices to cover the cost of higher import tariffs, due to various factors.
- Fifty-one percent of responding companies report they are now sourcing from countries other than China as a result of increased tariffs on Chinese imports.

“As the IPC research documents, rising tariffs are putting a painful squeeze on many U.S. electronics manufacturers,” said IPC Chief Economist Shawn DuBravac. “Many are facing supply-chain disruptions and steeper

costs from the tariffs that have been imposed to date, and the impacts will grow as the trade war drags on.”

“Our industry has longstanding concerns about some of China’s industrial policies, including government subsidies and intellectual property violations,” said IPC President and CEO John Mitchell. “But addressing unfair trade practices by ratcheting up tariffs is like using a sledgehammer to make orange juice. In both cases, it’s the wrong tool and makes a mess of the job.”

“We call on the governments of the United States and China to de-escalate the tariffs, focus on results at the negotiating table, and conclude agreements that address long-standing issues of concern to both sides,” Mitchell added. “We also call on all members of the World Trade Organization to restore that body’s ability to play its role as arbiter of international trade disputes, so that nations won’t feel a need to resort to tariffs to resolve trade disputes,” Mitchell said.



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INTERNATIONAL DIARY

TPCA Exhibition

23-25 October
Taipei, TW

EIPC @ Productronica 2019 Stand B3-529

12-15 November
Messe Munchen, Munchen, DE

HKPCA Exhibition

December
Shenzhen, CN

2020

EIPC Winter Conference Rotterdam, NL

Visit Terminals ECT Port Rotterdam

13 & 14 February
Rotterdam, NL

SMT Hybrid Packaging

5-7 May 2020
Nurnberg, DE

EIPC Summer Conference Örebro, SE

Visit Ericsson 5G Test Centre

16 & 17 June
Örebro, SE