



The European Institute for the PCB Community

## EIPC SPEeDNEWS

*The Weekly On-Line Newsletter from the European Institute of Printed Circuits.  
Issue 6 – March 2020*

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### NEWS FROM CZECH REPUBLIC



**Seica S.p.A. will be participating at Amper 2020, Brno-Czech Republic, March 17 – 20 2020, Hall F, Booth 3.02, Brno Exhibition Centre**

*Strambino, Italy, February 2020. Seica S.p.A. unique and unusual solutions will be displayed at Amper 2020.*

Seica will showcase their latest products again at Amper Fair in the Czech Republic, in PBT Rožnov Booth, **Hall F 3.02**, visitors could see the performance of the **Pilot V8**, the most extensive flying probe test platform on the market, and the versatility of the **Compact RT**, a fully automatic Rotary Table tester system.

The two Seica NEXT> SERIES systems, the new generation of Seica systems are featuring a renovated and sleek look thanks to the new materials of the chassis.

The **Pilot V8** is the most extensive flying probe test platform on the market, with up to 20 mobile resources. The standard test probes can each apply up to 2 A current and the system can be configured with high-resolution cameras for automatic optical inspection, barcode and data matrix reading, laser sensors, capacitive probes, pyrometers, optical fiber sensors for LEDs, mini-fixtures for boundary scan and On Board Programming. Shown in its fully-automated version, compatible with any standard assembly line, the Pilot V8 Next is engineered for medium/high volume production, and can be configured to satisfy the full range of different board test requirements. Other available features include the HR option, which extends the performance to probing of extremely miniaturized devices (down to 30 µm), and the HF option with high-frequency probes, able to measure signals at frequencies over 1.5 GHz. The Pilot V8 XL version expands the standard work area of 610 x 540 mm to 800 x 650 mm, to accommodate and test “extra-large” boards.

The **Compact RT** is designed to provide the maximum productivity in any Robotic Process Automation (RPA) scenario. It is ideal for medium/high volume production, 450 mm wide and perfect to provide immediate in-line robot integration to reduce the impact of DUT loading/unloading times. The system can work in automatic mode (by robot/cobot) or manual mode (by operator). Due to its versatility and its modular design, different automated handling line concepts can be implemented; more systems can be aligned or can be placed in circle.

Configurable for in-circuit, pre-functional, functional and combinational testing as well as on-board programming, this solution has the modularity needed to provide tailor-made test performance for the specific requirement with all of the advantages of a standard platform.

All of the solutions on display include **Seica's VIVA NEXT software platform**, which is able to provide intelligent integration with all aspects of the customer's manufacturing processes - data collection, traceability, interaction with MES, repair operations. All of the Next> series systems have Canavisia's Industrial Monitoring solution on board, for remote monitoring of current and voltage consumption, mains supply, temperature, light indicators and other parameters useful to indicate correct operation. This solution provides information for predictive maintenance and, in general, to render the systems compatible with today's Industry 4.0 standards.

. [www.seica.com](http://www.seica.com)



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---

### ELECTRONIC INDUSTRY NEWS

Coronavirus Expected to Cause Five-Week Product Shipment Delays, Says Electronics Manufacturing Industry

Electronics manufacturers anticipate at least a five-week product shipment delay from suppliers due to the coronavirus epidemic, according to [a survey](#) conducted by IPC, a global electronics manufacturing association. The group says shipping delays from China and other countries where the virus has spread are already having negative impacts on manufacturers.

Roughly 65 percent of manufacturers report their suppliers expect, on average, a three-week delay. However, electronics manufacturers expect delays to be longer than what their suppliers are currently quoting. On average, executives expect shipment delays to be at least five weeks.

“The delays will likely have ripple effects for the rest of the year,” said John Mitchell, IPC’s president and CEO. “The longer China is affected by the epidemic, and the more it spreads to other parts of the world, the supply chain will experience more and varied strains and disruptions.”

An overwhelming majority (84 percent) of electronics manufacturers and suppliers are worried about the epidemic’s impact on their business operations. Delays in receiving supplier inputs can lead to factory downtime, higher average costs, transportation bottlenecks, pressure for alternative sourcing, delayed sales, and delayed prototyping that slows the introduction of new products.

“In most cases, it’s not easy for manufacturers to switch suppliers, if that’s what turns out to be necessary,” added Mitchell. “Securing alternate sources requires an investment of significant time and money that must be weighed against the value gained.”

IPC surveyed industry professionals at electronics manufacturing companies, including original equipment manufacturers (OEMs), electronics manufacturing services (EMS) companies, and printed circuit board (PCB) fabricators. Almost half of the survey respondents represent the contract electronics manufacturing services (EMS) industry. This segment performs an estimated 25 percent of North American electronics manufacturing for OEMs. The survey was conducted between February 11–16, 2020.



Tesla has '6 years lead over Toyota and VW' in electronics, says new Model 3 teardown

[Fred Lambert](#)  
[@FredericLambert](#)

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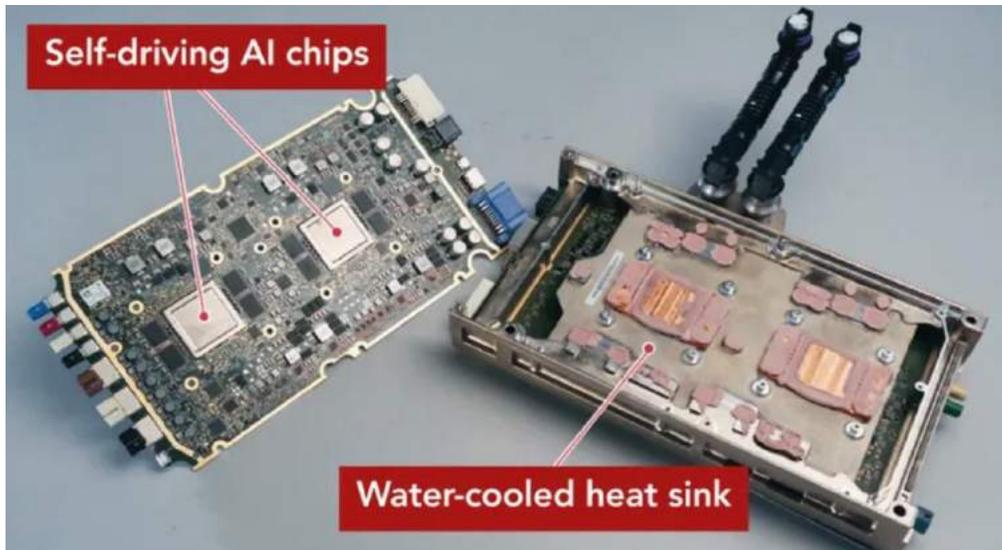
A new Tesla Model 3 teardown ordered by the Nikkei Business Publications came to the conclusion that Tesla is "6 years ahead of Toyota and VW" when it comes to electronics.

Tesla has impressed many engineers who dared to take apart a Model 3. After its own [Tesla Model 3 teardown](#), Munro and Associates thought of the vehicle's electronics as a masterpiece and [a German engineering firm was also quite impressed after reverse-engineering the Model 3](#). Now Nikkei Business Publications, a Japanese media outlet, conducted its own Model 3 teardown and it was also impressed by Tesla's electronics.

They wrote in a [report](#): *"What stands out most is Tesla's integrated central control unit, or 'full self-driving computer.' Also known as Hardware 3, this little piece of tech is the company's biggest weapon in the burgeoning EV market. It could end the auto industry supply chain as we know it."* Engineers from Japanese automakers were apparently also involved in the teardown: *One stunned engineer from a major Japanese automaker examined the computer and declared, "We cannot do it."*

The Full Self-Driving computer they are talking about was released in April of 2019 and therefore, the other teardowns didn't involve the new equipment. When launching the new system that powers its Autopilot and other advanced features in its cars, Tesla claimed that it was ["objectively the best chip in the world"](#). They claimed it can perform 144 trillion operations per second, manage 2,300 frames per second, and do it all while consuming less power.

Nikkei shared a picture of the system:



They estimate that such computers won't make their way in competitors until 2025:

*"This kind of electronic platform, with a powerful computer at its core, holds the key to handling heavy data loads in tomorrow's smarter, more autonomous cars. Industry insiders expect such technology to take hold around 2025 at the earliest."*

You would think that if other automakers wanted to invest in developing their own advanced computing platform, they could do it with their vast resources. However, Nikkei gave a strange reason why this will not happen: *"The real reason for holding off? Automakers worry that computers like Tesla's will render obsolete the parts supply chains they have cultivated over decades, the engineer said. Such systems will drastically cut the number of electronic control units, or ECUs, in cars. For suppliers that depend on these components, and their employees, this is a matter of life and death."*

They believe that other automakers "feel obliged to continue using complicated webs of dozens of ECUs" while Tesla is able to take a more "clean slate" and vertical approach to electronics.

#### *Electrek's Take*

Really, that's going to be their excuse for being behind Tesla's technology? They don't want to negatively affect their suppliers? Look, no one wants anyone to lose their jobs, but they will lose them anyway if everyone stops buying their cars because Tesla is just running with all of it.

The real reason is that traditional automakers have all moved to a supply chain-heavy model where they don't have expertise in electronics and instead focus on other vehicle

components, like engines, chassis, suspensions, etc. It also results in very long product cycles so innovations happen on long timeframes. Tesla took a different approach by vertically integrating a much higher percentage of parts, especially those it deems critical, like the on-board computer and electronics, and adopting an innovation cycle much more similar to the tech industry.



Tesla

Tesla is a transportation and energy company. It sells vehicles under its 'Tesla Motors' division and stationary battery pack for home, commercial and utility-scale projects under its 'Tesla Energy' division.



Tesla Model 3

The Tesla Model 3 is the first vehicle built on Tesla's third-generation platform. It aims to reduce the entry price for electric vehicles while not making any compromise on range and performance. The Model 3 starts at \$35,000 in the US and deliveries to employees and company insiders began in mid 2017 - customer deliveries begin in late 2017.



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### EUROPEAN ELECTRONIC INDUSTRY NEWS

#### Europe unveils a new plan to compete with Silicon Valley

**London (CNN Business)** Europe knows it fell behind the United States and China on the technologies that dominated the past decade. Now it has a plan to catch up. On Wednesday, the European Union unveiled plans to create a single market for data that will help its companies compete on the next round of tech innovations and curb the power of data giants such as Facebook ([FB](#)) and Google ([GOOGL](#)). Officials also released a paper on artificial intelligence, proposing first-of-their-kind rules to govern the technology's use.

"Whoever does business [here] needs to respect our rules and values," Margrethe Vestager, the EU commissioner leading the charge on tech issues, said at a press conference. By leveraging the massive amounts of data generated within its borders, the European Union hopes to foster a fresh wave of development in industries such as transportation and health care, while levelling the playing field for the smaller companies currently unable to compete with large US and Chinese firms.

"We recognise that we missed the first wave or the first battle," Commissioner Thierry Breton told reporters. But Europe has the tools required to "win" the next phase, since the region hosts "the strongest and largest industrial base," he continued.

Plus, Europe has regulatory teeth. It's already investigating how Google, Facebook and Amazon ([AMZN](#)) use data and has fined Google €8.2 billion (\$8.9 billion) since 2017 for antitrust violations. Its data protection rules enacted in 2018 have set a new global standard. The European Union also intends to jumpstart a debate on regulating AI. The bloc said that it intends to scrutinize AI applications that are deemed to be high risk in the same way it ensures cars, toys and cosmetics meet certain standards.



EU Commissioner Margrethe Vestager speaks at a press conference following the release of the bloc's strategy on data and a white paper on artificial intelligence.

The paper stopped short of proposing a temporary ban on facial recognition technology in public spaces. But the European Union did pledge to launch a "broad" debate on what circumstances, if any, justify the use of AI that processes biometric data in public. The paper suggests that companies operating in Europe will need to ensure their AI systems aren't biased and involve human oversight.

The announcements come just days after Mark Zuckerberg visited Brussels to meet with EU leaders. The Facebook CEO said he supported increased regulations from governments on data use, privacy and managing content.

But the question of who is legally accountable for the content posted on tech platforms remains contentious. In a paper released this week, Facebook said it does not support laws that seek to hold platforms liable for content posted by users.

That could set the company on a collision course with the European Union, which plans to roll out legislation by the end of the year compelling US tech giants to better address issues such as hate speech and election interference.

"It is very clear that we have the ambition to say you have a responsibility when you are a content provider, one way or another," Vestager said Wednesday.

Guntram Wolff, the director of Bruegel, an economic think tank based in Brussels, said the challenge for the European Union will be to move beyond regulation into the industrial policy space. With no spare room in the bloc's budget, it will need to rely on coordinated action from member states, he said.

"I have no doubt the European Union can deliver on regulation," he said. "But I think that's only part of the story. There is the investment side. There is the enforcement side. There is the entrepreneurship side." These areas, Wolff said, are "not the traditional strengths of the European Union."



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---

### NEWS FROM THE UK



Pre-Conference Workshop on X-Ray and SAM Inspection at Cupio Ltd, Basingstoke  
Wednesday 18 March 2020



*What lurks inside your electronic modules? Bring your own samples to be inspected  
by state of the art X-Ray and Scanning Acoustic Microscopy at the IMAPS-UK*

*Microtech Pre-Conference Workshop.*

*For any other details or information Please contact:*

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## NEWS FROM NORWAY

### **Elmatica CEO approved member of the Swedish Cyber Defence and Export Control groups**

“We are pleased that Didrik Bech is willing to contribute time and effort to the collective work of the groups “ ,says Robert Limmegård, Secretary general at SOFF.

The amount of cyber-attacks on companies is rising, and the jungle of defence regulations pushes the need for Compliance Control in front. This has led to an increased focus in the defence industry to learn more about Cyber Security and Export Control.

“We are very pleased that Elmatica has joined both our Cyber Defense Group and our Export Control Group. The engagement from our member companies are crucial for the development and enhancement of the market. We are pleased that Didrik is willing to contribute time and effort to the collective work of the groups”, says Limmegård.

Certified for FAR, DFARS and ITAR - starting to work on CMMC

Last year Bech was Certified in FAR, DFARS, ITAR, Advanced ITAR and Cyber Security by the Federal Publications Seminars (FPS) in Washington, presented at several defence seminars in the Nordics and has started working on implementing the new CMMC regulations. “SOFF is establishing a valuable and important arena for the Swedish Defence Industry to meet, learn and discuss. We appreciate the effort they put into further enlightening the field of Cyber Security and Export Control, and are honoured to be able to share our knowledge and experience, says Bech.

The Cyber domain is in a continually evolving landscape “The industry is set on meeting new challenges and as an association, the knowledge of the companies are an important contribution to how we as an association can promote the best policies, practices, and innovation needed to ensure that an effective market supports our Armed Forces”, says Limmegård.

Limmegård specifies that the work carried out within the fields of cyber defence and export control are two of the most important groups. “Especially with new national and European cybersecurity legislation and a new set of cybersecurity standards developed by the US Department of Defense (DoD), the cyber domain is in a continually evolving cyber landscape”,

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### NEWS FROM THE USA

#### **PCB West 2020 Exhibition Floor Sold Out for 9th Year in a Row**

February 26, 2020 | UP Media Group

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The exhibition floor for PCB West has sold out for the ninth straight year, UP Media Group Inc. said today. The annual show, the largest conference and exhibition for printed circuit board design, fabrication and assembly in the Silicon Valley, returns to the Santa Clara (CA) Exhibition Center on September 8-11.

The event includes a four-day technical conference and one-day exhibition. The September 2019 event attracted more than 2,500 registrants.

“We are pleased to announce the exhibition floor for PCB West is sold out for the ninth straight year,” said Frances Stewart, vice president of sales and marketing, UPMG. “Our exhibitors continue to count on us every year to deliver an outstanding event and targeted audience.”

Now in its 29th year, this year’s show will feature 110 booths showcasing the leading companies in the PCB industry, including the top CAD and CAM vendors and top names in printed circuit fabrication and electronics assembly.

For information about attending, visit [pcbwest.com](http://pcbwest.com).



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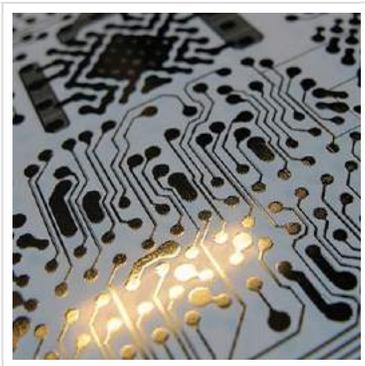
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### PCB INDUSTRY NEWS

#### PCB Conductive Ink Market to Reach \$2.4 billion in 2020



According to an extensive research by [IDTechEx](#), the market for conductive inks will reach USD 2.4 billion in 2020. Only three applications account for 95% of the value of conductive inks - the printed bus-bars and fingers on PV solar cells, external heating applications for cars (demister) and touchscreen edge electrodes.

For years, new applications are working for conductive ink at a variety that will be implemented gradually commercially. These market opportunities will be in the spotlight at [Printed Electronics Europe 2020](#), which will take place in Berlin from 13 to 14 May 2020, with more than 2,500 participants and more than 250 speakers covering the wide range of opportunities. Many will have a cumulative annual growth rate (CAGR) of several hundred percent by 2025.

In this article, Raghu Das, CEO of IDTechEx, evaluates some of these opportunities.

#### **Material Opportunities for 5G**

**The Opportunity:** By 2025, the value of 5G connections will be USD 303 billion worldwide.

**The Problem:** 5G systems use higher frequencies such as 28 GHz and 39 GHz for data transmission at the highest speed, which are significantly higher than the frequencies typically used in a mobile phone from 0.7 GHz to 2.5 GHz. This leads to a greater potential for electromagnetic interference (EMI) between the components so that they have to be "shielded" accordingly. Another important trend is the rise of multi-chip packages, in which connectivity and other matrices in a single package. In such cases, internal EMI shielding and compartmentalization may even be required.

**The Solution with Printed Electronics:** Sprayed, coated or printed solutions are in the test and in early production and they offer uniform coverage of components at higher production speeds and at potentially lower costs. At Printed Electronics Europe 2020 there will be a meeting on material opportunities for 5G, including advances in EMI shielding.

### **Material Opportunities for Power Semiconductors in Electric Vehicles**

**The Opportunity:** In 2025, 126 tons of die-cast material will be needed for electric vehicles.

**The Problem:** The market for electric vehicles is expanding. As a result, the power module market for all types of electric vehicles with semiconductor technologies such as SiC and GaN is growing. The trend is towards higher power densities, which is expressed in higher operating temperatures of 170 to 250 degrees Celsius. The materials used in the service packages have to cope with these higher temperatures.

**The Solution with Printed Electronics:** Silver offers high conductivity and a high melting point in comparison to conventional materials for semiconductor mounting. Nanoparticle silver is already used by some EV manufacturers as part of the die casting system. Printed Electronics Europe 2020 will offer sessions on die casting materials as well as materials for heat management in electric vehicles.

### **Printable Nano-Thin Flexible Electronic Material for Future Touchscreen Devices.**

Researchers from Australia's RMIT University have developed an ultra-thin and ultra-flexible electronic material that could be printed and rolled out like a newspaper, for the touchscreens of the future. Its touch-responsive technology is 100 times thinner than existing touchscreen materials. To create the new conductive sheet, the team used a thin

film common in mobile phone touchscreens and shrunk it from 3D to 2D, using liquid metal chemistry.

The nano-thin sheets are readily compatible with existing electronic technologies and because of their incredible flexibility, could potentially be manufactured through roll-to-roll (R2R) processing just like a newspaper. The research, with collaborators from UNSW, Monash University and the ARC Centre of Excellence in Future Low-Energy Electronics Technologies (FLEET), is published in the journal Nature Electronics.

According to lead researcher Dr. Torben Daeneke, an Australian Research Council DECRA Fellow at RMIT, most of the current-gen mobile phone touchscreens are made of a transparent material, indium-tin-oxide, which is very conductive but also very brittle. Thus, in their research, the team has taken an old material and transformed it from the inside to create a new version that is supremely thin and flexible. It can be bended, twisted, and could be made far more cheaply and efficiently than the slow and expensive way that is currently being used to manufacture touchscreens. Turning it two-dimensional also makes it more transparent, so it lets through more light. This means a mobile phone with a touchscreen made of this material would use less power, extending the battery life by roughly 10%.

#### Turning an Old Material into New

To create a new type of atomically-thin indium-tin-oxide (ITO), the researchers used a liquid metal printing approach. An indium-tin alloy is heated to 200C, where it becomes liquid, and then rolled over a surface to print off nano-thin sheets of indium tin oxide.

These 2D nano-sheets have the same chemical make-up as standard ITO but a different crystal structure, giving them exciting new mechanical and optical properties. As well as being fully flexible, the new type of ITO absorbs just 0.7% of light, compared with the 5-10% of standard conductive glass. To make it more electronically conductive, you just add more layers.

Dr. Torben Daeneke said that it's a pioneering approach that cracked a challenge that was considered unsolvable. There's no other way of making this fully flexible, conductive and transparent material aside from their new liquid metal method.

## Bringing the Tech to Market

The research team has now used the new material to create a working touchscreen, as a proof-of-concept, and have applied for a patent for the technology. The material could also be used in many other optoelectronic applications, such as LEDs and touch displays, as well as potentially in future solar cells and smart windows.

The researchers received supports from RMIT Microscopy and Microanalysis Facility (RMMF) and MicroNano Research Facility (MNRF), the National Computational Infrastructure National Facility, the Pawsey Supercomputer Centre and the Melbourne Centre for Nanofabrication (MCN) in the Victorian Node of the Australian National Fabrication Facility (ANFF).

Issue 6 - March 2020

## NEWS FROM THE CPCA

### **International Electronic Circuits Exhibition (Shanghai) 2020 Postponed**

China Printed Circuits Association

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Dear Exhibitors and Prospective Visitors:

To prevent the spread of pneumonia epidemic of new coronavirus infection in Wuhan, Hubei and other areas, Shanghai has scaled up the response to major public health emergencies to Level 1. According to the "Notice on further strengthening the prevention and control of pneumonia caused by new coronavirus infection in Shanghai" released by Shanghai Municipal Committee of the Communist Party of China and Shanghai Municipal People's Government, crowd gatherings shall be minimised, and large-scale public activities shall be cancelled. To protect the health and safety of our exhibitors and visitors, China Printed Circuits Association (CPCA), Hong Kong Printed Circuits Association (HKPCA) and Shanghai YingZhan Exhibition Service Co., Ltd has issued exhibition postponement notice on JAN 30 2020.

After the negotiation with the National Exhibition and Convention Center (Shanghai), **the 2020 International Electronic Circuits Exhibition (Shanghai) will be held in the National Exhibition and Convention Center (Shanghai) from June 22 to 24, 2020.** Please be assured that the original venues and the pre-selected booths are unchanged.

We will keep monitoring the epidemic situation of infection while continuing the communication and consultation with the relevant departments and keep you informed. We apologize again for the inconvenience caused by the delay in the exhibition! We wish you can make appropriate updates and adjustments successfully.

We are very confident to bring a more important industry event to exhibitors and visitors after the outbreak. Therefore, we will do our best to provide follow-up services for exhibitors and visitors. If you have other questions or need more assistance during this period, please contact us directly.

Thank you for your understanding and support for the exhibition over the years!

Shanghai YingZhan Exhibition Service Co., Ltd.

## NEWS FROM THE HKPCA

### **15th ECWC Call for Papers: "Bridging Technology Sharing Innovation" 27 February, 2020 | EIPC**

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Abstracts are due for the 15th Electronic Circuits World Convention.

The 15th Electronic Circuits World Convention (ECWC15) is the most notable international PCB symposium held every three years in different cities around the world. In the last 40 years, members of the World Electronics Circuit Council (WECC) have taken turns to host this conference.

HKPCA is honored to host ECWC15 in 2020. The conference is scheduled to begin in Hong Kong on November 30, 2020 and conclude at the international Electronics Circuit Exhibition in Shenzhen on December 2, 2020.

The ECWC15 team seeks local and international papers for this event.

To submit an abstract

1. Download the [ECWE15 Abstract Submission Form](#).
2. Email your abstract to [ecwc15@hkpca.org](mailto:ecwc15@hkpca.org) as soon as possible.

If your abstract is selected, your paper could be selected by the ECWC15 program committee to receive the ECWC15 Best Paper Award. The awards ceremony will take place on December 2, 2020.

Topics of interest for ECWC15 are in the areas of Management and Technology. The following are some example subjects within each of these discipline areas.

#### **Technology**

- Design and Development Tools—Materials, Components and Traceability
- Manufacturing—(*Equipment, Technology, Process Development, Automation*)
- Quality, Test and Life Cycle Management
- PCB Processes—(*Chemical Technology, Mechanical Technology, Optical Technology*)
- Packaging Technology—(*System in Packaging, Wafer-Level Packaging, Panel-Level Packaging*)

- Surface Mounting, Assembly and Interconnection
- Energy Harvesting/Green Energy
- Application-specific Areas—(*Automotive Electronics and Electromobility, Industrial and Power Electronics, Aerospace and Defense, Medical Electronics, Consumer Electronics*)
- Advanced and Emerging Technologies—5G requirements on PCBs
- Smart Living Applications—E-Textiles/Smart Textiles—Printed Electronics/Printed Hybrid

### **Management**

- Global Market Trends and Outlook—Supply Chain Management
- Environment, health and Safety—Business Models and Strategy
- Certification and Qualifications—Total Cost of Ownership and Overall Equipment Efficiency (OEE)
- Industry 4.0/Smart Manufacturing—Traceability/Blockchain

Please send your questions about the call for abstracts to [mandawong@hkpac.org](mailto:mandawong@hkpac.org) or [amandali@hkpca.org](mailto:amandali@hkpca.org).



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---

### INTERNATIONAL DIARY

2020

**KPCA Exhibition**

22-24 April  
Korea

**EIPC @ SMT Hybrid Packaging**

5-7 May  
Nurnberg, DE

**HDP-EIPC Automotive Seminar hosted by Ventec**

12-14 May  
Frankfurt, DE

**JPCA Exhibition**

June  
Tokyo, Japan

**EIPC Summer Conference Örebro, SE**

**Visit Ericsson 5G Test Centre**  
16 & 17 June  
Örebro, SE

**FED Conference**

17-18 September  
Augsburg, Germany

**IPCA Expo**

23-25 September  
India

**TPCA Exhibition**

21-23 October  
Taipei, Taiwan

**EIPC @ Electronica 2020**

10-13 November,  
München, Germany

**ECWC15, WECC World Electronics Circuits Council**

30 November-2 December  
Shenzhen, China

**HKPCA Exhibition**

2-4 December  
Hong Kong, China