The European Institute for the PCB Community

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A MOST INTERESTING CONVERSATION

A Conversation with industry Icon Pete Starkey

December 13, 2023

Marcy LaRont, PCB007 Magazine

After spending a week at productronica 2023 with Pete Starkey, it became quite clear that Pete is something of an icon in the printed circuit board industry. I knew I had to spend some time talking to him specifically about the history, progress, and future of the bare printed circuit board. It was fascinating, humbling, and very educational. I think you'll agree.

Marcy LaRont: Pete, you have seen the beginnings of the bare printed circuit boards. How did you get your start?

Pete Starkey: I got into printed circuit manufacture by a roundabout route, and the English weather played a part. Working as a lab assistant in the research division of a company engaged in synthetic fiber manufacture, I studied applied chemistry at the local polytechnic. I got a good degree and became a research chemist, working on projects requiring an understanding of organic and polymer chemistry. Although the company had always been heavily committed to the production of textile fibers for tire reinforcement, it followed the trend towards steel-belted radial tires and bought into a steel tire cord manufacturing joint-venture.

I took on a research project studying the chemistry and metallurgy of a continuous electroplating process for steel wire and effectively became the company's technical expert by default, mainly because no one else understood much about high-speed cyanide brass plating. So, from a background of organic and polymer chemistry, and because of my

“specialist” metal finishing experience, I was “encouraged” to take a technical management position in the manufacturing plant.

The factory was 40 miles away from my home. The only transport I had was a motorbike and it rained every day. I was in my 20s and married with a family, so I found a job closer to home in Coventry, working with a metal finishing company specializing in gold plating at a time when the electronics industry had a growing requirement for gold-plated connectors. As their head of research, I helped to develop gold electroplating processes, both for the company’s use in-house and for sale as proprietary processes to printed circuit manufacturers. We also had opportunities to supply the printed circuit people with processes for copper and tin-lead plating, as well as with cleaners and etchants.

The company had been an agent for an American supplier of a proprietary process for electroless copper plating. This was the magical chemistry that facilitated the through-hole plating of printed circuit boards, a technology revolution that enabled interconnection of circuits on both sides of the board. A couple of enterprising guys broke away and set up a UK subsidiary of the American supplier of this electroless copper chemistry, offering their proprietary processes to the high end of the printed circuit manufacturing industry. And when the opportunity arose, I joined the company as a technical service chemist.

A Changing Landscape

LaRont: What was the PCB industry like at that time in the UK?

Starkey: There were 400–500 PCB shops in the UK, most of them mom-and-pop shops, because it was fairly inexpensive and simple to make PCBs. You could lash up a screen-printing assembly, rig up a basic etching facility, buy the resist and screen-print the pattern, then etch away the copper. With a drill, you could drill the holes, and if you had a saw, you could you cut the profile. That was basic printed circuit board manufacture.

LaRont: This was occurring in parallel in the United States.

Starkey: The high end of the industry in those days was plated through-hole, and the chemistry for producing plated through-hole was a proprietary magic. The margins on that chemistry were substantial, but that process didn’t always work reliably. You would provide a company with logical process instructions, but the process would go wrong, of

course. They needed technical service, and I had become a tech service bloke.

LaRont: Decades later, plants lived and died by their “tech service blokes.”

Starkey: In those days, you got a telephone call from a guy saying his electroless copper had just turned a funny colour and was very fizzy and plating-out out on the tank. Rather than rush out to teach the guy some chemistry, we would ask basic questions like, “Have you had a thunderstorm?” When he said he had, we would answer, “Oh, they don’t like thunderstorms.” These things sort of had a mind and a life of their own.
Because so many people didn’t know what they were doing, they were prepared to pay a lot of money for this chemical magic. Part of what they were buying was the service of some guy who would fix what went wrong, so that gave me the opportunity to travel quite a bit. I had an interesting life, travelling long distances and fixing other people’s problems.

That was my beginnings in the printed circuit board industry and with advanced printed circuit board technology.

LaRont: This was, in essence, the beginnings of “advanced packaging.”

Starkey: Yes, and the industry was undergoing a fundamental change. In the beginning, most of the big shops were OEM captives that developed most of the technology. But they were making their own products and weren’t so accountable at the end of the line, so they tended to be expensive and inefficient. But in terms of making printed circuit boards, they could afford to buy the equipment and the processes, so they pushed the technology.

LaRont: They probably didn’t know that they were running inefficiently and wasting so much money.

Starkey: Right, not until some budding entrepreneurs said, “We can do this much more efficiently, and more cost effectively too. We can also make a big profit.” That’s when a whole subcontract industry set up in parallel to the OEM shops, marking a major shift, and shaping the future of electronics manufacturing.

LaRont: How was that relationship between the OEM and the independent PCB shop in those early times?

Starkey: OEM shops jealously guarding their IP would still produce in-house even if it cost them a lot of money. But those who just wanted PCBs to maximize their operating profits said, “If I shut down my board shop and sub out to people who know what they are doing, I can save an awful lot of money.” That led to both some very big contract shops, and a lot of small subcontract shops.

I was in 20 different board jobs a week and saw how they did things. Back then, if you showed an interest, they were happy to show you what they were doing. So, I learned, and while I was careful not to give away trade secrets, I developed a very broad understanding of the technology and best practices for plating.

LaRont: As the plated through-hole technology took hold, what other technology were you seeing?

Starkey: We started to see multilayer boards, which was the next technology step beyond the through-hole board, and those proprietary processes were very sophisticated and expensive. Like the plating chemistries, all manner of materials were becoming proprietary. We moved on from screen printed resists to these magic things called “photoresist.” Photoresists were brilliant because we could start with a photographic master, then coat our circuit board with a liquid polymer solution that we painted, rolled, or coated onto the surface. Using our photographic master, we UV-exposed the pattern and developed the image ready for etching.

Then some bright Americans developed dry film, which meant you didn’t have to worry about getting the coating thickness right and trying to do something with this very sticky flypaper. It was all done for you on a proper coating line, in someone’s proper clean room. You just bought it on a roll and put it on your circuit board using heated rollers. The technology of the materials was mostly proprietary and if you were a PCB manufacturer, you were prepared to pay the high price because you were buying the convenience, repeatability, and the technical service. If something went wrong, it was the tech service bloke who was wearing out his Ford Cortina driving 60,000 miles a year to fix your process.

LaRont: It seems not much has changed. Manufacturers pay the price for convenience and repeatability that comes from cutting edge machines and product lines which translate to higher product quality, less scrap, and

faster process times—ultimately, all investments toward a higher bottom line.

Starkey: Absolutely. I continued to learn my trade and was being offered technical management jobs. In the late ’70s, I was offered a position with a startup company founded by some ex-supply-house guys who really knew what they were doing—as opposed to a number of PCB manufacturers who didn’t have a clue. These guys also had some money and were in touch with potential buyers. I had set up the chemistry in their PCB shop, and a short time later, I joined the company as employee number 11 or 12. We were a very successful quick-turn prototype shop in the Midlands of the UK. At that time, if you could turn the boards around quickly and get them right the first time, there was a lot of money in making circuit boards.

LaRont: What was the landscape like in terms of prototype vs. volume?

Starkey: The volume went to the big shops because that wasn’t your business, but you could get £100 a square foot for basic double-sided plated-through prototypes, and considerably more for multilayer. For quick turnaround, you could almost name your own price. If you didn’t have the capacity or the capability, you didn’t take the job. The customer looking for a cheap job could go to the chap down the road who probably didn’t recognize the limits of his capability, and if that chap couldn’t turn the job round quickly or get it right first time, it could take a couple of weeks each time he tried to re-make it. We knew our processes and materials, understood our limitations, and worked within them, often completing jobs within 24 hours, and we were really successful at that time.

The Issue With Standards

LaRont: What about standards? You were developing and living best practices, but were standards developing?

Starkey: In the early days, the principal players were OEM shops that weren’t that bothered about standards other than their own, because they were making the boards for their own use. Some standards were developing outside of that: various safety standards, British Standards, and international standards. Non-OEM PCB manufacturers could certify that their product met specified standards. If you were an OEM, you could place your work outside the company with confidence. Someone else would check, inspect, test, and certify that his product complied. So, for the first time, the OEMs had other choices.

LaRont: Who was creating the standards at this point?
Starkey: Initially, the primary generator of PCB standards in the UK was the Post Office for their first-generation telecom systems. If you had Post Office D2398 approval, you could write that on your delivery documents, and it was a measure of your status.

The British Standard 9760 series was supervised by the Ministry of Defence, and there weren't many companies approved in the early days. But if you were qualified, it put you in a higher status category. You could certify your work and attract a more refined customer base.

A Shift in the Market
LaRont: For a long time, we had mostly captive OEM shops. Did this shift toward subcontractor options for bare printed circuit boards create a totally different market, or at least, a significant redistribution of market share?

Starkey: In the late 1970s and early 1980s, many OEMs realized they couldn't run their shops cost effectively in a competitive market. Most closed their shops, unless they were doing work that was particularly sensitive or confidential. The printed circuit board industry became a subcontract industry.

We were not afraid of being pioneers and the UK became a technology leader. I admired those who saw an opportunity to advance themselves or the technology by doing something different. There was a bit of a risk attached to it, and a lot of people won't take that risk. They would just sit on the fence and wait for someone else to take the plunge. If the risk-taker fell on his back, the fence-sitters were tough critics. If he was successful, they'd jump off the fence and run after him. But the risk-takers saw the fence-sitters coming and were already several steps ahead.

Because we were profitable, we could buy equipment as well as get involved in our local trade and professional associations. We worked with specialists and suppliers to advance the technology, which was a big challenge for the industry in the beginning. The OEMs had driven the technology, and when they drifted away, the advancement of technology was left to the supply houses. This worked when the supply houses were making big money, but if they weren't, they couldn't afford the big R&D programs. At this time, there were almost as many supply houses as mom-and-pop PCB shops.

LaRont: How long did you stay with that board company?
Starkey: I stayed 15 years, working as technical director and even as interim managing director. Inevitably, the owners saw other opportunities and when the company was acquired in the mid-1990s, I left. This was when I started my career in technical editing.

Drivers of Technology
LaRont: There were some definite turning points that drove technology and business models. Tell me about the trends you saw.

Starkey: When I first started, a "fine line" was .015", and that was difficult to do on a screen printing machine, but the skilled operators knew how to do it, so we depended on them. Of course, that trend has been getting finer and finer with HDI and ultra-HDI packaging.

LaRont: Did telecom really drive that?

Starkey: Yes, but it was the computer people who drove it first due to their operating systems and need for computer chips. Military and aerospace did not drive technology, which is different than what we are seeing today. They built for reliability and over-engineered their boards to that end. The IT folks making computing devices were the first real drivers of technologies since they wanted to get more functionality in less space.
The next big turning point for technology was driven by telecom. This is very specific memory for me because it happened right around the time I got my first D2398 British Telecom approval. There was still no such thing as a mobile phone; everything was hardwired, with great big telephone exchanges and miles and miles of wires to support them. Then we had the revolution of the mobile phone, this thing that wasn't connected to the exchange by wires. The first-generation mobile phones were big and clumsy, but over time they developed into finer, smaller tools with increasingly more functionality. So, I believe the mobile telecom industry has driven a lot of technical development.

LaRont: What was the next fundamental change?

Starkey: The next fundamental change was the microvia. In the UK, we were using mechanical drilling machines instead of the fancy American laser drilling machines. You know, I come from the Midlands of England. My dad was a toolmaker, and so was his dad. We know about drilling holes. But you couldn't drill holes small enough or quick enough with a mechanical drilling machine to satisfy the requirements of these clever new

telecommunications devices, and a new generation of laser drilling equipment was developed specifically for PCB manufacture. Much of the microvia technology came out of Japanese OEMs. There probably weren't any standards associated with laser drilled microvias at that time, but the Japanese OEMs could write their own standards because they were they were producing it for their own purposes. They weren't selling printed circuit boards, but rather electronic devices and end products, so that's where much of the microvia technology originated.

LaRont: At what point did you get your first laser drilling machine?

Starkey: We decided to do a technology mission to Japan and were able to finance it through the UK's Department of Trade and Industry (DTI) on condition that we disseminated what we had learned to the UK PCB industry upon our return. So, we went and we explored microvias, and because of our DTI connections, we made contact with some high-level Japanese officials to learn more about this new technology. I remember that being a big change point for our industry. Since that time, most changes have been incremental developments with equipment, materials, and processes.

Thank you, Microsoft
LaRont: Where did you go next?
Starkey: Do you know what really got me involved in technical writing and editing? PowerPoint. Thank you, nice people at Microsoft.
I had helped develop a company to be a technology leader, and part of my exit agreement was a non-competition clause. But I would go to the trade shows and the conferences, and I kept in touch with what was happening. I used my initial training as a chemistry student and research chemist to write competent technical reports. I had good relationships with the trade associations.

In the early days, a technical paper at a conference was a written paper with perhaps the benefit of a slide projector or flip chart. But with these PowerPoint decks, the presenters would just review their PowerPoint and you no longer had that nice, bound paper copy. People (like me) who previously took it for granted that they would have a written record of the proceedings of a conference no longer had the benefit of this information.

But the fact that this bloke, Pete Starkey, could scribble notes and write meaningful summaries and would come to your conference anyway

because he was a member of your institution—well, that probably got me into the journalistic side of this business.

LaRont: I know I speak for everyone when I say we are grateful that you got into that side of the business.

Starkey: I've been able to meet some interesting people who were not very conventional, but ended up adding the most value to the industry. I've got an entrepreneurial spirit, and I'm drawn to the adventurers. You start to associate with them, and you're hooked. This is how I have been paid since leaving my "real" job in the mid-'90s; I've lived on my wits ever since.

LaRont: Pete, you are a true gem in this industry, and it has been beyond my pleasure to spend this time with you. Thank you for your service and your perspective.

Starkey: Always a pleasure.

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ARTIFICAL INTELLIGENCE NEWS

Europe agrees landmark AI regulation deal

BRUSSELS/LONDON/STOCKHOLM, Dec 8 (Reuters) - Europe on Friday reached a provisional deal on landmark European Union rules governing the use of artificial intelligence including governments' use of AI in biometric surveillance and how to regulate AI systems such as ChatGPT.
With the political agreement, the EU moves toward becoming the first major world power to enact laws governing AI. Friday's deal between EU countries and European Parliament members came after nearly 15 hours of negotiations that followed an almost 24-hour debate the previous day.
The two sides are set to hash out details in the coming days, which could change the shape of the final legislation.

"Europe has positioned itself as a pioneer, understanding the importance of its role as a global standard setter. This is yes, I believe, a historical day," European Commissioner Thierry Breton told a press conference.

The accord requires foundation models such as ChatGPT and general purpose AI systems (GPAI) to comply with transparency obligations before they are put on the market. These include drawing up technical documentation, complying with EU copyright law and disseminating detailed summaries about the content used for training.

High-impact foundation models with systemic risk will have to conduct model evaluations, assess and mitigate systemic risks, conduct adversarial testing, report to the European Commission on serious incidents, ensure cybersecurity and report on their energy efficiency.

GPAIs with systemic risk may rely on codes of practice to comply with the new regulation.

Governments can only use real-time biometric surveillance in public spaces in cases of victims of certain crimes, prevention of genuine, present, or foreseeable threats, such as terrorist attacks, and searches for people suspected of the most serious crimes.

The agreement bans cognitive behavioural manipulation, the untargeted scrapping of facial images from the internet or CCTV footage, social scoring and biometric categorisation systems to infer political, religious, philosophical beliefs, sexual orientation and race.
Consumers would have the right to launch complaints and receive meaningful explanations while fines for violations would range from 7.5 million euros ($8.1 million) or 1.5% of turnover to 35 million euros or 7% of global turnover.

Business group DigitalEurope criticised the rules as yet another burden for companies, on top of other recent legislation.
“We have a deal, but at what cost? We fully supported a risk-based approach based on the uses of AI, not the technology itself, but the last-minute attempt to regulate foundation models has turned this on its head,” its Director General Cecilia Bonefeld-Dahl said.

Privacy rights group European Digital Rights was equally critical.
“It’s hard to be excited about a law which has, for the first time in the EU, taken steps to legalise live public facial recognition across the bloc,” its senior policy advisor Ella Jakubowska said.

“Whilst the Parliament fought hard to limit the damage, the overall package on biometric surveillance and profiling is at best lukewarm.”
The legislation is expected to enter into force early next year once both sides formally ratify it and should apply two years after that.

Governments around the world are seeking to balance the advantages of the technology, which can engage in human-like conversations, answer questions and write computer code, against the need to put guardrails in place.

Europe’s ambitious AI rules come as companies like OpenAI, in which Microsoft (MSFT.O) is an investor, continue to discover new uses for their technology, triggering both plaudits and concerns. Google owner Alphabet (GOOGL.O) on Thursday launched a new AI model, Gemini, to rival OpenAI.

The EU law could become the blueprint for other governments and an alternative to the United States' light-touch approach and China's interim rules.

Arm CEO Fears Humans Could Lose Control of AI

December 10, 2023
By Tom Mackenzie and Angela Feliciano
Bloomberg

"The thing I worry about most is humans losing capability" over the machines, said Rene Haas, Chief Executive Officer of Arm Holdings Plc, when asked what keeps him up at night when he thinks about artificial intelligence. "You need some override, some backdoor, some way that the system can be shut down."

Haas, who was speaking to Bloomberg in a wide-ranging interview from the company's Cambridge, UK, base knows a thing or two about machines. By his estimate, 70% of the world's population touches Arm-designed products in some way. It's a reminder of the company's rare status as a UK-born global tech titan - even if it is now majority owned by Masayoshi Son's Softbank Group Corp. in Japan, and listed in New York.

As Haas considers the potential downsides to artificial intelligence, he's determined that Arm's next chapter will see the company proving as essential to the generative AI revolution as it's been to smartphones, where its semiconductors are ubiquitous.

"I think it will find its way into everything that we do, and every aspect of how we work, live, play," said Haas, who this year oversaw the company's $54.5 billion initial public offering. "It's going to change everything over the next five-to-10 years."

Haas, who became CEO in February last year, has been trying to lessen Arm's dependence on the shrinking smartphone industry by getting its technology into areas such as personal computers, servers and electric vehicles. The company is also offering more complete designs to phone customers, aiming to get more revenue per device sold.

It's a market where Arm is already omnipresent. Its instruction sets are embedded in processors that run virtually all of the 1.4 billion smartphones

sold every year, with more than 99% using either Arm designs or its technology.

Now it's cloud data centres where Haas sees exciting opportunities, however. Large language models such as OpenAI and Google's Bard require huge amounts of storage and data capacity and he's targeting a 50% market share globally in the years ahead.

But ambition itself of course doesn't guarantee success, and whether Arm proves to be central to the future of AI remains to be seen. Until now, the main beneficiary of the boom has been Nvidia Corp., whose stock has soared more than 200% this year amid investor giddiness over prospects for the industry.

Still the possibilities could be vast, with Arm seeing the revenue opportunity growing to $28 billion by 2025, expanding at a rate of 17% per year from now, according to a video presentation in September by Chief Financial Officer Jason Child.

Haas also has his focus set on dominating so-called edge computing, when systems run off devices in the home or office, rather than from a centralized cloud.

"As these edge devices get smarter and smarter, and more technology is being stuffed into that pocket, that's a very good place for Arm," Haas said, noting the company's leadership in energy-efficient designs.
China is both an opportunity and risk for Arm, which gets about 25% of its revenue from the world's second-biggest economy. The company's revenue totaled about $2.7 billion in its fiscal year 2023.

Arm needs to navigate US restrictions on the shipment of high-end chips to the country, while maintaining its market share and protecting its intellectual property. Tech CEOs with exposure to China "all run a very fine line these days," Haas said.

"I think CEOs 10 years ago didn't talk to government officials with nearly the frequency that we do today," he said. "So we comply with all the export controls, whether it's from the US or other parts of the world."

And while the company adjusts to changes in the Chinese market, Haas said a more immediate concern is access to talent, particularly in the UK.
Britain remains central to the future of the company, but politicians shouldn't lose sight of the need for tech companies to bolster their ranks with overseas talent, he said.

"We were born here, we intend to stay here," Haas said. "Please make it very easy for us to attract world class talent and attract engineers to come and work for Arm."

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NEWS FROM AUSTRIA

AT&S Erlebniswelt Grand Opening: Microelectronics to touch

With the interactive AT&S Erlebniswelt in Leoben, "Experience Economy – made in Styria" has added another highlight to its offering. The opening at the location of the leading supplier of high-end printed circuit boards and IC substrates is an important step for the Styrian flagship project. Starting in January 2024, the world of microelectronics, which usually remains invisible, can be experienced with all senses at AT&S. Visitors can expect a variety of multimedia features, including a flight through a printed circuit board at the 3D cinema, interactive layer models of substrates and printed circuit boards as well as LED conducting paths that react to their environment. The line tour through the production area also follows a completely new script.

After a three-year conception and development phase, the new interactive experience tour of AT&S is a strong statement of the Styrian "Experience Economy" programme.

Interested visitors can enjoy a close-up experience of the global technology group with all senses. The new tour adds to the existing spectrum of 50 participating businesses ranging from small and medium-sized enterprises to leading companies and world market leaders located across Styria.
Multimedia journey of discovery for all age groups

At AT&S Erlebniswelt in Leoben, visitors can visually go to AT&S locations all over the world, get to know our customers' high-tech products, "meet" many of our international employees from 68 countries and use a job portal with career opportunities. As a highlight, AT&S Erlebniswelt features a 3D cinema with a simulated flight through a printed circuit board. These

impressions kick off the presentations and the line tours – guided tours through the manufacturing departments.

“We are proud to offer a multimedia discovery tour together with our partners and AT&S Erlebniswelt starting today”, says AT&S CEO Andreas Gerstenmayer. “Our technology is indispensable for many areas of everyday life, but is usually invisibly built into components. With our Erlebniswelt experience tour, we give visitors the opportunity to see, feel and experience our highly complex technology. Our innovations help connect, support and protect people and drive the Green Transformation.”
Role of the creative partners in the three-year conception and implementation phase

Creative Industries Styria, which ensures the high quality standard of the tours, acts as an intermediary between companies and the creative industry in this project. In the implementation of its Erlebniswelt, AT&S relied on the expertise of look! design, an agency for visual communication, space & scenography, and Ars Electronica Futurelab, a laboratory and atelier for future systems, both of which play a leading role in AT&S Erlebniswelt.

“Our interactive stations allow visitors to immerse themselves analogically and digitally in the high-tech world of AT&S. Bringing AT&S Erlebniswelt to life was an exciting journey marked by excellent collaboration with AT&S and the Ars Electronica Futurelab, and many smart topics that can now be experienced”, says Stefanie Schöffmann, CEO of look! design.

Gerfried Stocker, CEO of the Ars Electronica Futurelab: “The successful integration of the media art design into the architecture of the building and its interior as well as the interaction with people is a perfect symbol of the omnipresent and far-reaching penetration of our living environments with digital technology and of the manifold opportunities it brings us.”

Christoph Ludwig, Managing Director of Steirische Wirtschaftsförderung (SFG), reports that the Styrian flagship project “Experience Economy” has attracted 4 million visitors since 2009. He puts particular emphasis on the quality aspect: “We now have 51 ‘Experience Economy’ businesses, and there could be many more. But we put quality ahead of quantity. To see that you can fly through a printed circuit board at the 3D cinema here is wonderful – and it’s definitely a door to the future, also for our programme.”

Facts about the tour
Duration: approx. 90 minutes
Languages: German & English
Age: from 10 years
Group size: max. 15 people, large groups/school classes by arrangement
Entrance: free of charge
Location: AT&S NewWorkingWorld, Fabriksgasse 13, 8700 Leoben
Bookings: starting in January at www.erlebniswelt-wirtschaft.at
AT & S Austria Technologie & Systemtechnik Aktiengesellschaft – Advanced Technologies & Solutions

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NEWS FROM GERMANY

Lackwerke Peters presented the new MYC50 coating machine in the showroom as part of the Peters Coating Innovation Forum

As part of the Peters Coating Innovation Forum (PCIF), Peters presented the new MYC50 coating machine in the showroom. “We can use the high-tech system to demonstrate to customers how the coating process works in their production,” explains application technologist Hartmut Giesen.

Peters’ partner Axxon Mycronic has provided the production machine on permanent loan. The Swedish company delivered the machine weighing almost one ton, from the Stockholm region by sea via the port of Hamburg to Peters’ headquarters in Kempen on the Lower Rhine.

At the PCIF, the MYC50 attracted the attention of Peters’ in-house exhibition visitors during the practical demonstrations in the conformal coating technical showroom. “The trade visitors were able to see the benefits of the machine in the customer/manufacturer/Peters triangle,” explains Giesen.

“The advantage of using the MYC50 is that components can be selectively coated in one single pour,” reports Arjen Koppens, Director of Sales at Axxon Mycronic. “Selective” means that the conformal coating is not applied to the entire surface of assembled PCBs, but only where it is actually needed - in one single process. This saves resources and time, is environmentally friendly and less energy-intensive than the usual coating processes in industrial plants.

“Customers can visualize the added value they are buying for their company when they rely on the MYC50,” says Detlef Paschke, Head of Technical Service at Peters Research.

The user controls via a software-supported coating program how and where the conformal coating is applied. The process is also monitored digitally, so that the machine operator has great flexibility to initiate the desired production processes individually and automatically. The programs on how to perform the final coating process in the end can also be written offline and uploaded to the on-site computer of the coating unit in the second step.

The prototype of the MYC50 was developed by Axxon Mycronic five years ago, reports Arjen Koppens. The Scandinavian manufacturer then continuously optimised the system, which measures 120 cm wide, 165 cm high and 150 cm deep, and adapted it to the requirements of the European and US markets. According to the Director of Sales, the production machine is not only interesting for sectors such as automotive, medical and aerospace, but also for other industrial sectors.

The Dutchman, who is based at Axxon Mycronic’s EU coating center in Eindhoven, also points out the sustainability aspect: “Maintenance is extremely low-threshold, there are virtually no chemicals involved in the cleaning process and the energy consumption of electricity and compressed air is kept as low as possible.”

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NEWS FROM ISRAEL

Eltek placed purchase orders for $4.5 million in connection with the expansion of its production capabilities.

Eltek Ltd. announced today the placement of purchase orders totalling $4.5 million for state-of-the-art machines, software, and a comprehensive service contract, with most deliveries scheduled for the first quarter of 2024, in connection with its planned expansion of its production capabilities. These purchase orders are in addition to the three production lines ordered in August 2023. The first production line is on its way to Eltek and it is scheduled be installed during the beginning of the first quarter of 2024.

“The capital investments outlined in these purchase orders align with Eltek’s strategic vision and commitment to enhancing operational efficiency, expanding technological capabilities, and aligning with future product portfolios. The purchase orders also underscore the Company’s dedication to upgrading its engineering capabilities to maintain a competitive edge in the dynamic PCB market. These strategic investments are integral to our broader Company vision. By focusing on operational efficiency and staying at the forefront of technological advancements, we aim to not only meet but exceed the evolving needs of our customers,” commented Eli Yaffe, CEO of Eltek.

About Eltek
Eltek - “Innovation Across the Board”, is a global manufacturer and supplier of technologically advanced solutions in the field of printed circuit boards (PCBs) and is an Israeli leading company in this industry. PCBs are the core circuitry of most electronic devices. Eltek specializes in the manufacture

and supply of complex and high-quality PCBs, HDI, multilayered and flex-rigid boards for the high-end market. Eltek is ITAR compliant and has AS-9100 and NADCAP electronics certifications. Its customers include leading companies in the defence, aerospace and medical industries in Israel, the United States, Europe and Asia.

Eltek was founded in 1970. The Company's headquarters, R&D, production and marketing center are located in Israel. Eltek also operates through its subsidiary in North America and by agents and distributors in Europe, India, South Africa and South America.
For more information, visit Eltek's web site at www.nisteceltek.com

International Diary

2024

EIPC Winter Conference
Visit Schweizer Electronic AG
Schramberg/Villingen-Schwenningen, Germany
Tuesday 30 & Wednesday 31 January

EIPC Technical Snapshot Webinar
Registrations via www.eipc.org
March

EIPC @ ECWC16 WECC
Anaheim, USA
April 8-11

EIPC Technical Snapshot Webinar
Registrations via www.eipc.org
May

EIPC Summer Conference
Visit ESTEC
Noordwijk, The Netherlands
Tuesday 4 & Wednesday 5 June

EIPC Technical Snapshot Webinar
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September

EIPC Technical Snapshot Webinar
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October