portnertec

Newsletter | may 2019



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Vitronics Soltec



Foreword

It has been almost a year since our last Newsletter. So we are more than pleased to inform you again with this new Newsletter about the latest, greatest and what's coming up for the next few months.

Looking back we had another record breaking year. Partnertec has more than doubled its revenue over the last 2 years and we like to thank you all for your trust and confidence to make this possible. Last year we have strengthened our team with two more employees in sales and logistics and invested in new CRM software. All required to offer you best in class support in any area like sales, service and processes.

June last year we held our Partnertec Technology Day about Industry 4.0 together with our customer Rena at their brand new facility in Zundert. This successful Tech Day was well visited and resulted in some new projects. One of them ended in a complete new E-by-Siplace SMD production line at VDH in Roden which you can read more about in this newsletter.

As market leader we are also highly depending on the successes of our world class brands. So we are grateful to have such a great portfolio with market leading suppliers on board. All of our suppliers keep developing new products rapidly and follow the latest trends from which the most important trend is Industry 4.0

We are delighted to restart our cooperation with MEK Europe in sales. Especially because of their new and very advanced SPI and AOI systems. Their latest 3D AOI system is the market leader in programming easiness and reduces false faults dramatically.

Nordson Dage has just announced the release of their latest Explorer One X-ray machine, the first high end X-ray inspection machine in our industry that breaks the ''below 100k Euro price barrier"! During the next E & A show in May we like to share many more new products and we invite you to visit our special Partnertec seminar on Wednesday 15th of May about ''Smart Factory" with an honoured guest speaker from ASM, to share their vision on the future.

Later this year we will organize another Partnertec Day



From Tuesday 14th of May until Thursday 16th of May the complete electronics chain is united on the fair of Electronics & Applications 2019.

STAND 7B066

This year we focus on Smart Factory 4.0. In this digital world, full of high-tech possibilities, it's all about delivering maximum quality with maximum efficiency, flexibility and scalability. You can find us in the Electronics Production cluster, right in front of the Demo Square. On the joint Demo square we show the ASM DEK printer and ASM SIPLACE SX. Unlike other years, the trade gadget no longer rolls out of the demo production line, but there is an interesting electronic application for the visitors; the restyled FlexKlok.

Smart Factory 4.0

On Wednesday 15th of May we organize a special Seminar on Smart Factory 4.0 presented by Stephane LeRoux, Line Solutions Manager at ASM Assembly Systems.

How competitive are your production processes?

"In my recent talks with electronics manufacturers, the main discussion point has always been the same," says Stéphane Le Roux. "How can I optimize my manufacturing steps based on my specific production philosophy? How do I link the various workflows? Everyone wants to operate faster, more efficiently, and with fewer line stops. For us, considerations like these represent the starting point for the smart factory."

All of this is made possible by a multitude of new technologies. During the Seminar we will give you more inside information and answer your questions!

After the Seminar we would like to invite you on our stand 7B066 for a social drink.

Free Entrance

You can already register for a free entrance ticket. Check our Website to request a FREE Entrance ticket and the gadget; restyled FlexKlok. And to register for the special Smart Factory Seminar.

Looking forward to meet you at the E&A Show!

Partnertec, your partner in best all-round solutions!

www.partnertec.nl

NEW! Coating calculator by Humiseal

What do you think is the most expensive material to choose for conformal coating on printed circuit boards? UV or Silicone, right? Do you think that urethanes are also more expensive than acrylics? The following information may surprise you and change your cost concept of conformal coating boards. Most people think that coating circuit boards with UV and silicone type materials is expensive?

about ''Inspection". During this special seminar we will present live X-ray, AOI and SPI together with Nordson Dage and Marantz. All machines will be available to do live tests and hands on with one of your products. More information will follow soon on our Website and LinkedIn.



Enjoy reading and looking forward to see you at our booth during the upcoming E & A show in May.

Maurits van der Laken Managing Director Partnertec HumiSeal developed a coating calculator that allows you to calculate the number of boards coated per litre and the cost per board. This is a simple but very effective tool to compare costs when looking at different coating technologies. HumiSeal manufacture pre blended materials that can be used directly from the can in selective and spray coating systems.

For more information please contact Sander Loonen - Process Sales Engineer: sloonen@partnertec.nl



www.humiseal.com



partner in exploring technology



Hydrophobic Coatings: Select the Ideal Dispensing Method and Equipment

There are many examples of hydrophobic surfaces in nature - lotus leaves, shark skin, and butterfly wings are just a few. These surfaces feature unique self-cleaning abilities and super hydrophobicity. As with many technological advancements, scientists have taken a cue from nature to develop hydrophobic and superhydrophobic coatings that protect everyday surfaces and electronics. These coatings actively "repel" water - preventing corrosion, electrical shorts and more.

How? When a drop of liquid contacts a surface, it creates a "contact angle" - the angle formed between the edge of the drop and the surface it rests on. The higher the contact angle, the more likely a liquid is to "bunch up" and roll off a surface. A surface contact angle greater than 90 degrees is hydrophobic and a contact angle greater than 150 degrees is superhydrophobic - not easily wetted. Conversely, a hydrophilic surface is easily wetted.



You don't need to look far to find usage examples. Fabrics, glass, and ship hulls are protected by hydrophobic coatings to prevent wetting and biofouling. Space heating, refrigeration, air conditioning and electrical power are key industries that rely on hydrophobic coatings to protect equipment from corrosion. Technological advancements and affordability continue to promote their adoption.

Electronics Manufacturing: The Scope of Applications Continues to Widen Mobile phones, wearables, IoT devices, tablets, cars and medical devices all contain electronic circuits and metal interconnections that are highly susceptible to damage when exposed to moisture. The low wettability of hydrophobic surfaces decreases the potential interaction between water and sensitive components - delivering the next evolution in electronics water-proofing.

If you're considering hydrophobic coatings for your electronics application, follow these steps:

1. Select the coating material.

Work with your fluid supplier to identify the optimal hydrophobic coating material for your application.

2. Select the equipment.

Depending on the application, it might be necessary to dispense coatings selectively or over larger areas. For the best

ASM delivers the Integrated Smart Factory on all levels

The mission of ASM Assembly Systems (ASM) is to implement and support the smart SMT factory at electronics manufacturers worldwide. ASM solutions such as SIPLACE placement and DEK printing systems support the networking, automation and optimization of central workflows with hardware, software and services that enable electronics manufacturers to transition to the smart SMT factory and enjoy dramatic improvements in productivity, flexibility and quality.

ASM's spectrum of interfaces and integration components extends across five levels from the machine to the horizontal and vertical integration of line processes to factory control with MES solutions to cloud-based networking of globally distributed plants.

On the machine level, ASM offers its OIB interface, which allows access to all relevant ASM machine data. For the seamless monitoring of board data, ASM banks on the IPC-Hermes 9852 standard. It can be used to track and trace circuit boards across machines from different manufacturers via a single UID scan. Board-level status and process information can be added and tracked at any time.

For the control of relevant workflows around its SMT lines, ASM offers planning, programming, optimization and control software tools up to SMT-specific material flow control with ASM Material Manager. For electronics manufacturers who want to integrate equipment from other suppliers, ASM supports communication via the IPC CFX standard, which can be used to link machine to factory-wide control systems.

Together with large industrial companies, ASM has also built the ADAMOS IIoT platform, a cloud platform that takes the specific requirements of manufacturing companies into account. Using ADAMOS, electronics manufacturers can advance their multi-site integration with e.g. monitoring and predictive maintenance solutions that connect all manufacturer's locations across the globe.



result, the equipment capabilities should align with the coating material properties and the selectivity requirements for your application. Nordson ASYMTEK offers a variety of equipment solutions, including the following jetting and atomized spray coating options:

Selectivity	Application Requirements	Suggested Method	Suggested Equipment
Highly Selective	Dispensing into narrow gaps and around small form factors	Jetting	IntelliJet [®] Jetting System
Area Coating	Coating larger areas Thin coating requirement	Atomized Spray Coating	SC-350 Spray Applicator

Additional options are available for needle dispensing and film coating methods.



www.nordson.com



Two-Component (2K) Dispensing Opportunities

Two-component (2K) dispensing, traditionally used in automotive assembly, has evolved into a viable and advantageous opportunity for a wider range of applications. This is great news for high-volume manufacturers looking for improved fluid performance to support new applications and output demands. Today's thermal interface, structural adhesive, encapsulation, gasketing, and sealing materials provide design engineers with a host of options. And we have the equipment, expertise and global support to get your 2K dispensing process up and running. This article highlights the advantages of 2K dispensing and the importance of accurate metering and mixing.

Key 2K Dispensing Benefits

- 1. The immediate dispense of freshly mixed material delivers better results. Fluid life is maximized and flowability and adhesion are improved.
- 2. It can offer a cost effective, efficient alternative to thermal pads. When thermal pads are used to fill gaps between surfaces that require thermal contact, manufacturers must stock and manage pads of various sizes. When fluid dispensing is used for this purpose, you only need to stock the fluid to accommodate every gap dimension vertical or horizontal.
- 3. It's flexible. You can adjust the dispense to meet diverse application requirements. For example, it's easier to "fine-tune" the ratio of material A and material B to achieve specific curing times and hardness targets. A variety of fluids, processes and substrates are also supported.
- **4. Faster curing speeds and low or room temperature cures are possible.** This advantage can significantly increase output, expedite product shipments and avoid exposing sensitive electronics to high temperatures. Depending on the chemistry, some materials can achieve 100% cure without the need for additional curing methods.
- Expensive, time consuming logistics are minimized.
 Two-component materials do not require pre-mixing, extensive temperature control or specialized transport.

2K the Right Way

Controlling metering and mix ratios is critical to any 2K dispensing application. These aspects affect the dispense quality, adhesion, cure and ultimately the longevity of a product. Our solutions rely on positive displacement metering technology and integrated process controls such as Mass Flow Calibration for 2K materials (patent pending). This enables the dispense of consistent volumetric ratios of part A and part B materials - day after day.

Solderstar: New thermal profile validation system - 'Smartline-X'



Solderstar launches its new Smartline-X thermal profile management system.

Smartline-X is a web-powered platform that automates thermal profile verification across an organization's manufacturing sites. Data can be received from reflow ovens, wave/selective soldering machines and the vapor phase process using Solderstar's comprehensive range of profile measurement devices and the Smartline-X system.

This new product provides more than process traceability alone, it is a complete management system for thermal profile scheduling, verification, storage and reporting. Live views notify users when profiling is required, along with current process conditions. Real-time SPC charting and Cpk

calculations are provided, allowing fine tuning and trend plotting of every parameter captured.

At the heart of Smartline-X is a flexible rules and scheduling engine, process rules can be defined to validate any profile captured by the process control team, these rules can be as advanced or as simple as an engineer requires. Additionally, each soldering machine being monitored can have its own inspection schedule defined to match a customers preferred profiling regime.

All profile data, process rules and reporting are managed centrally via a web-based document store, capable of holding millions of thermal profiles. This centralized approach minimizes ongoing support costs along with simplifying any data backups required.

Smartline-X can be deployed on a local server or via a cloud-based provider, the platform utilizes the latest web technologies and interfaces with a full API made available to exchange data with factory management systems where required.

solderstar*

_ www.solderstar.com

Product preview

Partnertec will feature Indium Corporation's void-reducing Indium8.9HF Solder Paste series to help customers Avoid the Void® at Electronics and Applications, 14-16 May, in Utrecht, Netherlands.

The Indium8.9HF series is a proven product that delivers no-clean, halogen-free solder paste solutions designed to produce low-voiding –plus enhanced electrical reliability and improved stability– during the printing process.

Under optimal process conditions, this series:

- Exceeds all requirements for enhanced electrical reliability and SIR performance
- Demonstrates consistent printing performance for up to 12 months when refrigerated
- · Maintains excellent printing and reflow performance after remaining at room temperature for one month
- Delivers excellent response-to-pause, even after being left on the stencil for 60 hours



At Nordson ASYMTEK we are proud to offer our customers complete solutions that include the right equipment and the technical application expertise to ensure proper setup and process performance. With our 2K solutions, you'll also benefit from:

- Proven, dedicated dispensing software to run your application
- Customizable, integrated solutions to fit your unique process needs
- A global support network for your service needs



- · Resists premature flux spread to prevent surfaces from oxidizing
- Performs with both Pb and Pb-free alloys

The Indium8.9HF Solder Paste series provides a unique oxidation barrier technology that eliminates HIP and graping defects, making them perfectly suited for automotive assembly and a variety of electronics assembly applications. In fact, the product meets HKMC MS184-01 testing criteria Type B, one of the toughest automotive criteria to ensure reliability.

Indium Corporation is a premier materials manufacturer and supplier to the global electronics, semiconductor, thin-film, and thermal management markets. Products include solders and fluxes; brazes; thermal interface materials; sputtering targets; indium, gallium, germanium, and tin metals and inorganic compounds; and NanoFoil®. Founded in 1934, the company has global technical support and factories located in China, Malaysia, Singapore, South Korea, the United Kingdom, and the USA.



www.indium.com



partner in exploring technology

VDH Products B.V. One of the world's leading manufacturers

VDH is creative, innovative and has a will of its own. The key to their success is being different, delivering top quality products with highly motivated personnel who are always fully involved with their customers. With a product range of more than 20000 different products (standard and custom made) and the fact that it is supplied in more than 65 countries, VDH claims to be leader in all situations where relative humidity, temperature and pressure are critical parameters.

Started 40 years ago with the development and production of electronic controllers and now delivering personal climate control systems in the most luxurious yachts throughout the world. Whether it is the food industry, transport sector or the process technology, VDH Products guarantees top quality measuring instruments and control systems. They know their clients' markets and are well aware of the dynamics and technological challenges.

VDH is focussing on niche markets and custom-made solutions, where a small business is just as important as a multinational. Thanks to their collaborations with, among others, universities and start-ups, they succeed in being a few steps ahead of the competition. Being on top is also making sure they meet the high demands of their partners.

Six years ago there was the first glimpse of the concept for a new pick & place machine. There were four possible candidates where everybody could do the job; placing components, high speed, with maximum accuracy.

During the selection process, they realised it wasn't only about a new Pick & Place machine, but also the extensive software integration, traceability and Smart Remote, which became much more important. At the end of 2017, VDH Products B.V. came into contact with Edwin de Blauw of Partnertec B.V., who introduced ASM Smart#1 SMT Factory and what it could do for them.

Most importantly, with the new production line, it is possible to quickly change over from one product to another with a minimum of downtime.





Henk Westera of VDH Products commented; "Partnertec's strength is that we worked very closely to find the perfect solutions and machine park which fits our requirements and unique specifications." The Smart #1 SMT Factory operates with highly flexible and fully networked manufacturing solutions that adapt automatically to product changes. A highly developed automation system makes the work of the employees on the factory floor a lot easier. Intelligent software supports VDH's specific workflows and IT-systems are no longer there to just provide information, but to help and assist with autonomous process optimization.

VDH has invested in a complete new Smart Factory SMD line, which perfectly match their requirements and specifications.

ASM E-by-DEK

Totech

- Printer
- Pick&place
 ASM E-by-SIPLACE
- Reflow Oven
 Vitronics Soltec Centurion 820
- Board handling NUTEK
- Humidity Cabinet



The SMD line consist of two placement machines, each capable to mount the majority of VDH's SMD components at high speed using a very flexible 12 nozzle turret rotating head, resulting in a combined IPC mount speed of almost 30.000 components/hr. The second machine can also mount odd shaped components such as large connectors and high SMD parts. This has reduced VDH's amount of manual placements significantly.

The intelligent E-feeders in combination with additional change-over tables allow very fast change-overs. The line is equipped with all features for full traceability to secure high quality. ASM's E-by-DEK printer offers high quality and high speed printing without compromises to flexibility.

ASM's Smart software also allows production of New Product Introductions on the same production line, with minimum disturbance

The line is completed with Vitronics Soltec latest Centurion reflow oven. The robust oven offers perfect stable thermal profiling in combination with highly reduced energy consumption. The equipment is linked together with clever NUTEK board handling-equipment to offer sufficient buffering to keep the line running at optimized speed.

Henk Westera also commented: "The new SMD line was plug 'n play, it converted very quickly and this

was due to quality preparation and communication."

The next step in the process has been made. VDH Product has now the resources to produce 4x faster and smarter, there are new opportunities for growth, and they can focus on broadening in the market all over the world.

However, this is not the end, they say. 'We still need to look ahead and continuously improve the production line. Leading the market also means being first in development. VDH Products wants to be a frontrunner, not Industry 4.0 but 5.0 is the goal!'

VDH Products B.V. In control of your business!



www.vdhproducts.com

NEW: AutoSIR2+ and AutoCAF2+ Optimising Test Flexibility

SIR and CAF testing have become significant demands by the industry in the drive to improve and enhance electronic circuit reliability.



As an example, the evolution of Electric Vehicles and Driverless technology AKA EV's, show that the 3 phase developments will be 470V; 850V and 1,250V continuous operation. Testing under these conditions requires extreme health & safety precautions, especially as the tests are performed in damp / heat chambers at typically 850C / 85% RH for up to and beyond 2,500 hours.

Other applications however, show demand for ultra-low voltage testing at <2V but using circuits incorporating ultra-fine conductor spacing of \sim 40 μ m. This requirement demands measurement systems that are capable of reliably measuring at pico-Amps levels.

Gen3 has a continuous product development program to meet the ever-changing demands of both our existing and new customers. We are proud to introduce the new AutoSIR2+ and the AutoCAF2+ instruments.

These incorporate new and greatly improved software that provides superior flexibility and which also permit simultaneous tests at up to 4 different voltages. The user can select 3 voltages from the choice of 0V; 3.3V; 5V; 10V; 12.5V; 15V; 50V and 100V. In addition, by using an external power supply, an additional test may, simultaneously, be run at up to 1,250V.

Artificial Intelligence in AOI reduces programming time and avoids "false calls"



At the end of 2018 Partnertec and MEK Europe announced their new cooperation in the supply of SPI and AOI systems for Electronic Assembly. Partnertec explains why they have such great confidence in cooperating with MEK and announces one of the most revolutionary developments in AOI.

One of the greatest challenges in programming AOI (Automatic Optical Inspection) systems is the detection of all non-conforming placements, especially those related to solder joints, without creating a long list of ''Falls Calls"- detected issues that are NOT true errors.

The industry has always faced this problem and has had to accept that the more accurately you wish to measure, then the more false judgements a system will make. It commonly results in long debugging time and complex programming.

Usually, implementing a new AOI system takes several months and the ongoing creation of new programmes to increase its reliability is very labour intensive. A programmer can override programs and instruct a machine to accept all boards or reject all components and solder joints, depending on the settings in the program.

MEK Europe have launched a new AOI system that will change the AOI scene completely:

- Engineer independent, exceptionally fast, automatic programming
- Self-learning algorithms for solder-joint inspection using Artificial Intelligence
- Dramatically reduced programming time
- Far fewer "fall calls" and less debugging time
- · More reliable inspection results



The full 3D ISO-Spector M1A delivers a self-learning algorithm for solder joint inspection that will detect any deviation outside the expected standard appearance of a solder joint. A proprietary solution with Artificial Intelligence is continuously and centrally monitoring production and adjusting hundreds of tolerance values where needed to maximize detection and minimize false calls. The programmer does not have to specify the specific inspection locations, light settings or acceptance criteria. This not only reduces programming time, but more importantly removes the often-unpredictable human variable to ensure that the inspection results are more reliable. Those that wish to overrule the machine settings can still do so, but experience has proven that this is very rarely needed. Typically programming a new part number requires only 1 to 2 minutes and part numbers can be stored in the library to reduce programming time for future NPI's.

The Gen3 Systems AutoSIR2+ system represents a dramatic improvement over existing SIR test alternatives, and its shielded precision electronics allows for state-of-the-art accuracy resistance measurements to be made up to 1014Ω .

Feedback from one of our customers: "The IsoSpector M1 detected true errors that we did not know we had and we are no longer bothered with 'faulty messages about non-existent problems"

Please check the website for more information or contact Partnertec for more info. www.marantz-electronics.com/full-3d-aoi-iso-spector-m1a

We will show the M1A AOI machine at Electric & Automation trade-show in Utrecht.



www.marantz-electronics.com



www.gen3systems.com

partner in exploring technology



High-end x-ray inspection, below €100k!

Prove Your Quality with the New DAGE Explorer[™] one

The new Explorer[™] one X-ray inspection from Nordson DAGE system delivers proof of the quality of your product before it leaves the factory, reducing costly returns from the field and the associated damage to reputation and future business.

Perfect Images

Designed specifically for the electronics industry Explorer one offers market leading image quality, allowing features as small as 2 µm to be seen. Over 30 advanced filters bring out the sharpest images and show the finest details allowing you to find defects faster.



Confirm BGA reflow quality, quantify voiding and find defects such as head in pillow, bridging and open joints.



Multicolor LED with blown bond wire and detached die



Inspect QFN and QFP solder quality and pad voiding.

European Distributor of the Year Award 2018

Wednesday 12th of December the Disbtributor meeting of Vitronics Soltec were held at the headquarters in Oosterhout. During this meeting Partnertec received from Frank van Erp, Sales Director EMEA, the European Distributor of the Year Award 2018.

Frank van Erp, Sales Director EMEA;

"It is with pleasure we announce Partnertec has been awarded as distributor of the year 2018 for Vitronics Soltec. They have achieved a remarkable 85% market share on reflow which is very unusual for a small but solid area. Partnertec is continuously shaping its organisation to meet tomorrow's market demand, something that gets recognized by its suppliers and customers. Despite what marketeers say a lot of our business is still build on trust and that requires a reliable and ethical behaviour, do what you promise and mean what you say, something we recognise in working with Partnertec throughout their organisation. Also towards us as a supplier that trust and reliability is there which makes it all so much easier. We express our gratitude for their contribution to our success and we look forward to strengthen this going forward."

Easy to operate

Operators can perform quality inspection quickly, easily and with minimal training. Explorer one gives real-time feedback so you can navigate around products and find defects fast. Automated inspection routines ensure fast throughput when inspecting batches of boards.

Explorer one is fast to install and offers a super compact footprint. It reduces downtime and costs due to its maintenance free, oil free QuadranNTTM filament free transmissive X-ray tube. The unique double oblique angle detector geometry inspects 300 x 300mm boards from every side without requiring a size restricting circular rotation table. It keeps the board orientated up, whichever side you look at it from. The sample is never rotated or tilted!





Partnertec likes to thank Vitronics Soltec with their great support in achieving this prestigious award.

Vitronics Soltec

www.itweae.com

www.partnertec.nl



Zestron Academy Presents

Through exclusive Partnership with ZESTRON we can offer high qualified cleaning product which are applicable on various applications. Zestron offers the world's leading cleaning media, but even more important focused on being an architect for reliable cleaning processes within electronic an metal parts cleaning application.

In 2019 Zestron is going to roll out 5 seminars to improve your cleaning processes.

Seminar Application and Utilisation of **Protective Coatings for Electronic Assemblies** 25th -26th June 2019

A large number of modules are installed in the terminal devices without protective coatings and operate fault-free throughout their entire service life. In an increasing number of cases, the module is used with greater electrical sensitivity or even under difficult conditions. The safe function of an assembly is then only ensured by means of a protective coating. The GfKORR working group "Corrosion protection in electronics and micro engineering" produced a guideline for the application and properties of a protective coating in cooperation of designers, producers, coaters and users of electronic construction groups. The aim of the seminar is to teach the participants about this guideline and the collected knowledge from the working group, so that a comprehensive and fundamental understanding of coatings and their possible applications for the functionality of electronic assemblies is achieved.

Zestron Academy

8

Zestron Consult, Coach and Guide you on the subject of reliability of electronic assemblies.



With Trainings - face-to-face or online, lectures and Technology Coachings,

Agenda

23-24 MAY

PROCESS DAYS - PRINTING & STENCILS

Everything you need for a solid printing process. This high-intensity workshop focuses on the interaction of SMT paste printing, stencil design, and printing materials. Day 1 covers stencil technologies and printing materials, while Day 2 concentrates on the printing process itself with special emphasis on the printer and its options.

25-26 JUNE

UTILISATION AND FABRICATION OF PROTECTIVE COATINGS FOR ELECTRONIC ASSEMBLIES



Assembly System

Learn how to avoid corrosion-related malfunctions by coating electronic assemblies to increase device reliability and life-time.

4-5 JULY **MIDSPEED DAYS**



Small and medium-size users in the midspeed segment have special equipment requirements. They also want to benefit from the innovation leader's experience in various industry segment. This custom-designed event brings them together with knowledgeable production experts - with a strong focus on practical applications.

SEPTEMBER 2019 **INSPECTION DAY - by PARTNERTEC**



We are pleased to invite you for Partnertec Inspection Day. This Seminar is organized in cooperation with our partners ASM, MEK and Nordson. During this 1-day seminar we will inform you about the latest trends and technologies on SPI, AOI, X-Ray and ACI. More information will follow soon on our Website and LinkedIn!

5-6 SEPTEMBER

ASM'S VISION OF THE LIGHTS-OUT FACTORY



Are you planning to invest in technology and equipment and/or looking for orientation on upcoming technical developments? The future of electronics production is called the 'lights-out factory'. In this workshop, we present -a few weeks before the Productronica -a look at future systems and technologies and show you what is already possible (and necessary) today. Armed with this information, you will be able to advance to the lights-out factory economically and in stages.

9-10 OCTOBER

TECHNICAL CLEANLINESS IN ELECTRONICS

Learn which purity requirements apply to the automotive sector and which methods are relevant for measuring and assessing technical cleanliness.

10-11 OCTOBER

PROCESS DAYS - PRINTING & STENCILS

Everything you need for a solid printing process. This high-intensity workshop focuses on the interaction of SMT paste printing, stencil design, and printing materials. Day 1 covers stencil technologies and printing materials, while Day 2 concentrates on the printing process itself with special emphasis on the printer and its options.





Zestron have been sharing their knowledge of cleaning and reliability of electronic assemblies for more than 10 years.

From Professionals - For Professionals.



www.zestron.com/academy

12-15 NOVEMBER PRODUCTRONICA - MÜNCHEN



Productronica is THE leading international trade fair for the development and manufacture of electronics. It is the only place in the world where you can find the entire value chain in electronics manufacturing, all of Industry's key players and the latest development and innovations!

More information can be found on our website: www.partnertec.nl/agenda



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