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Digital, Screen & Pad Technology

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WELCOME

With *Specialist Printing Worldwide* having been officially launched exactly 10 years ago at FESPA 2007 in Berlin, it's fitting that this commemorative issue features some of the very best material we have ever published.

The motivation to launch this magazine was to spread useful technical information to users of digital and screen printing systems on a regional and global scale. Educational material in the following pages is a good example of why *Specialist Printing Worldwide* is now well-established as required reading throughout the industrial, graphic and textile sectors. Screen, digital and pad printing techniques are all covered in detail, offering practical solutions to the everyday issues faced by our ever-growing readership.

We look forward to meeting readers at FESPA 2017 in Hamburg and if you picked up this issue at the show and don't usually receive a personal copy by post, you can subscribe (and also download technical material) at www.specialistprinting.com for an annual total of only €58 / $84 / £48. After reviewing the content in this issue, I am sure you will agree this represents excellent value for money!

Looking ahead, our issues in the second half of 2017 will be published to coincide with the SGIA EXPO in New Orleans and InPrint in Munich. If you are a manufacturer of equipment, consumables, technology or services that hasn't currently discussed technical editorial for consideration or ordered your advertisement, please contact one of our team on page two.

An integral member of that team is our editorial consultant and well-known industry figure, Sophie Matthews-Paul. As many of you may already know, Sophie is currently facing serious health issues and I am sure you will join me in wishing her all the best in the challenges ahead.

Bryan Collings, Publishing Director, Specialist Printing Worldwide

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HAZE REMOVERS AND HOW TO USE THEM

David Parker takes a further look at screen stains and how to deal with them

We are all aware that using dirty, stained screens can lead to low quality prints and expensive stencil breakdown. We are also aware of the wide range of stains that can be created due to the variety of inks, emulsions and stencils used in screen-printing. So how do you select the right cleaning product for the stain removal task in hand?

As discussed in the previous issue of *Specialist Printing Worldwide* (Issue 1, 2017), screen stains can be caused by a number of factors, such as dried-in inks, fused (locked-in) stencils and/or diazo stains. It is important, therefore, to choose a haze remover that is right for these stains and for the way your shop works. This guide answers many commonly asked questions about which type of haze remover to use and how to use it.

Firstly though, a word of caution. Haze removers are formulated using powerful chemical blends, so always read the Safety Data Sheet before use and make sure you wear the Personal Protective Equipment (PPE) that is recommended.

CAN I PREVENT MY INK FROM STAINING?

Most inks can be removed completely without staining the mesh, but only if they are cleaned immediately after printing with a good quality screen wash solvent.

Screen wash cleaning solvents are specially formulated to combine high cleaning power with a low evaporation rate, so they work efficiently and stay longer on the screen.

We recommend using the special screen cleaning brushes to apply screen wash solvents. These brushes have soft, chemically resistant fibres with flagged ends that help hold the solvent without dripping. They will not damage even the finest mesh fibres.

Always wear the recommended PPE (personal protective equipment)

A quality screen wash will dissolve most screen inks

Use an old coating trough to apply the low caustic cleaners

HOW TO USE SCREEN WASH CLEANING SOLVENTS

Brush the screen wash thoroughly into both sides of the screen until all the ink is dissolved and then immediately rinse with cold water before using a high pressure gun. It is important to rinse off all traces of the cleaning chemicals before you use the gun.

HOW CAN I REMOVE DIFFICULT INK STAINS?

Some inks simply stain the mesh fibres worse than others, or they have been left to dry into the mesh. So when you need a bit more cleaning power than a screen wash alone, you can use a special solvent/low caustic cleaner. The powerful solvent blend in this type of cleaner is combined with a low caustic content (less than 5%) to increase its cleaning efficiency.

HOW TO USE SOLVENT/ LOW CAUSTIC CLEANERS

Use the brush to work the cleaner into both sides of the screen, ensuring that all the stain is covered, wait five minutes and then rinse with cold water before using a high pressure gun.

WHAT IS THE BEST WAY TO REMOVE EVERYDAY INK AND STENCIL STAINS?

A low caustic/hypochlorite, general purpose haze remover is the ideal product for everyday use. These thickened liquids are a blend of low caustic (less than 10%) and hypochlorite that are 'activated' on the screen with a special screen wash solvent immediately before rinsing. They work exceptionally well on diazo and fused stencil stains and the application of the screen wash helps to remove dried-in ink stains, making them ideal as a general purpose cleaner for regular use.

'Activate' with a screen wash solvent

Use an industrial high pressure gun for best results

HOW TO USE LOW CAUSTIC/ HYPOCHLORITE CLEANERS

These are typically supplied as a thickened liquid so you can apply them to the screen with a brush. Or, for ease of use on larger screens, an old coating trough works really well as long as you rinse it out after use and don't expect to use it for coating emulsion again.

For optimum results it is best to allow the screen to dry overnight and then 'activate' it the following morning with a suitable screen wash solvent, rinse well with cold water and then finish off with a high pressure gun. This method is ideal if you have a number of screens that need to be de-hazed at one time.

For quicker haze removal of light stains, the coated screen can be 'force dried' with a cold (not hot) air fan and then 'activated' with a screen wash immediately before rinsing off and then blasting with the gun.

Finally, for very light stains, you can use the five minute method where you apply the haze remover to the mesh, followed immediately by the activator. You then mix the two on the screen with the brush. Wait five minutes before rinsing and then blasting. These low caustic/hypochlorite cleaners are

Continued over

probably the most versatile of the haze removers and, therefore, one of the most popular.

WHAT ABOUT REMOVING THE MORE STUBBORN INK AND STENCIL STAINS?

When multiple stains have been left to build up on the mesh, or you are using a 'difficult' ink, then it is best to select a medium caustic/powerful solvent haze remover (20% to 25% caustic). These are highly effective against most common screen stains and screens can even look 'like new again' in under ten minutes. These haze removers can also be 'activated' with a screen wash immediately before rinsing to help remove heavy ink stains.

HOW TO USE A MEDIUM CAUSTIC/SOLVENT HAZE REMOVER

Usually they are supplied as a thickened liquid making brushing onto the screen much easier than a conventional paste. Use the brush, or an old coating trough, to apply the haze remover to both sides of the dry mesh.

Leave on the screen for up to ten minutes and then rinse off with a low pressure water spray. Finally, blast the entire screen with a high pressure gun.

HOW TO REMOVE THE VERY DIFFICULT INK AND STENCIL STAINS

Occasionally you get a screen that you just can't get clean with conventional haze removers and it is time to wheel out the big guns. There are some very strong caustic and solvent haze remover pastes (>25% caustic) that are designed for occasional use on these very stubborn stains. Basically when nothing else works, that is the time to try these high caustic/solvent blend haze removers.

HOW TO USE HIGH CAUSTIC/SOLVENT HAZE REMOVER PASTES

It is usually most effective to apply these to a wet mesh using a brush as they are too thick to apply with a trough. Let them stand for an absolute maximum of eight minutes before rinsing off with a cold water spray, then use a high pressure gun. This type of haze remover should only be used occasionally as repeated application of a very strong caustic to polyester can weaken the mesh.

Important: as stated earlier, always read the Safety Data Sheet and wear the recommended PPE safety equipment when using any haze remover.

Summary: selecting which haze remover to use is a lot like choosing which kitchen cleaner to buy. It all depends on what you are trying to clean.

For example, you would use a mild detergent cleaner for work-tops, but you know that you will need a strong caustic cleaner for the oven. Some stains are simply harder to remove than others. The same is true for screen-printing.

Having a range of haze removers in your shop will ensure that you maximise the overall cleaning efficiency, whilst minimising the potential for mesh damage or operator risk.

Quite simply, choosing the right product for each job can save you time, money and quite a bit of frustration!

Finally, the costs of mesh re-stretching are often a significant proportion of screen making costs. Using the right haze remover to prolong screen life and to minimise quality issues can be one of the most cost effective decisions you can make. ■

David Parker is Marketing Manager at MacDermid Autotype

Use the special chemical brush to apply haze removers

Always rinse off first with a low pressure spray

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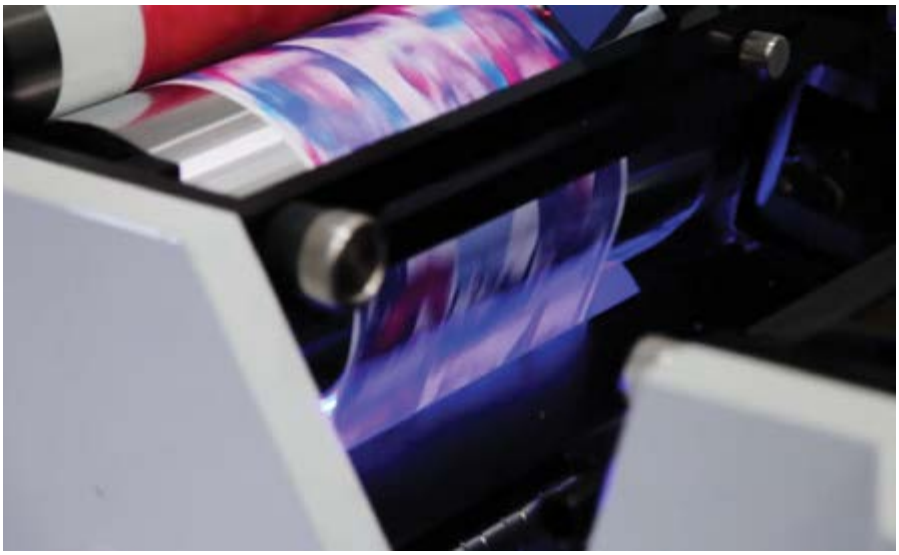
EMBRACING THE BEST METHODS FOR CURING

Rich Dunklee and Laura Maybaum discuss why they believe UV-LED is the ink of the moment

The uptake and popularity of UV-LED curing inks has been increasing over the past decade to a point where we can now say it is the ink of the moment. Businesses specialising in ink-jet, screen- and narrow-web printing have embraced LED (light emitting diode) curing technology for its lifecycle cost, environmental, and versatility benefits compared to mercury lamps can, and have, created outstanding graphics and displays as a result.

Printing companies, previously deterred by the initially higher price tag of UV-LED printers or retrofitted systems compared to those with traditional mercury lamps, are now appreciating the significant ROI available from their purchase. While the price of lamps and equipment has not declined, their energy output has increased, making it more viable replacement for a mercury curing unit. Studies have suggested that LED systems use 65 to 75% less energy than mercury lamps – indeed, most can be connected to a standard electrical current without the need for an expensive transformer.

Much of the efficiency in LED lamps is because almost all of the energy emitted is used for curing. With mercury arc lamps, a great deal of the energy emitted is lost to the unneeded output in visible spectrum or to IR output. With a reduction in heat and ozone production when compared to mercury vapour lamps, expensive ventilation and air handling systems are no longer required – and the cost and environmental considerations of lamp disposal are considerably decreased.



Print companies now appreciate the significant ROI with UV-LED

LOWER ENERGY AND REDUCED OVERHEADS

Moreover, LED lamps can last more than ten times as long as mercury lamps and, with no warm-up or cool-down time necessary, they are only on when they need to be. Lower energy use and emissions levels and lamps that are replaced and, therefore, disposed of less frequently also reduce overheads in the long term.

All this adds up to a gold – or green – star for printers who embrace the equipment. These come from the many end users and government regulations increasingly concerned with environmental friendliness, and impacts on the health of machine operators.

The use of standard electrical current and no requirement for ventilation systems also means a greater freedom in where UV-LED

Continued over

UV-LED inks are now viable for most commercial applications

Expensive ventilation and air handling systems are no longer required

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Studies suggest that LED systems use 65 to 75% less energy than mercury lamps

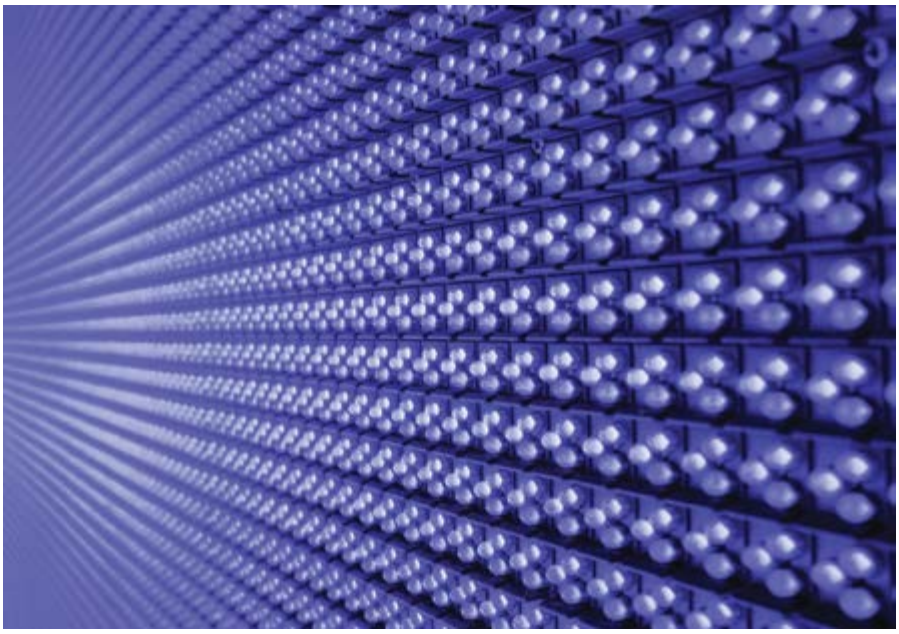
curing units can be placed within a press-room. This makes for greater workflow efficiencies and accessibility for businesses with smaller or inflexible premises.

Additionally, LED lamps impart far less heat to the printed surface than mercury arc lamps, allowing for a greater range of substrates to be used. Thinner, more heat-sensitive materials typically prone to shrinking or warping are now viable for commercial applications, from graphic display and packaging printing to industrial, label and container printing, potentially saving money and allowing for more creativity with output.

SIGNIFICANT QUALITY IMPROVEMENTS

Printers are, importantly, also seeing significant improvements to the quality of their work following the switch from mercury vapour to UV-LED inks, from more vibrant colours and sharper dots to better folding and lamination results. Print companies have also noted the faster turnover of output in general, with time saved each day with the new equipment. Both long and short production runs can be considered too, thanks to the lack of warm-up time.

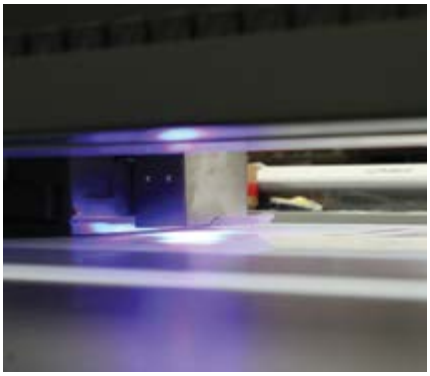
Hardware efficiency has certainly increased dramatically, and while it continues to develop, ink developers such as Nazdar Ink Technologies are working to overcome the few



UV-LED curing inks are now "the ink of the moment"

deficiencies that remain. For instance, LED systems continue to have a lower lamp power output – especially the cheaper lamps typically found on small inkjet machines. So Nazdar has formulated inks that compensate for the reduced lamp power. Many types of analogue printing equipment use UV-LED to pin the image between each colour print before completing the process with a traditional mercury vapour lamp at the end; Nazdar has developed products to create the best results using multiple cure methods. There are also complementary products – the Nazdar UV-LED curable range includes overprint inks that provide a backing colour or a protective clear surface on banner materials, clear inks for decorative, first surface texture effects on credit cards, high-gloss over-print varnish for labels and tags, imprintable coatings for use over water-based, solvent-based and UV-curable inks for labels, and more.

UV-LED inks still have the potential to grow with industry requirements



LED lamps can last more than ten times as long as mercury lamps

ISO-CERTIFIED FACILITY

Nazdar has been manufacturing UV-LED curing inks for flexographic, screen-printing and inkjet systems for almost a decade in its ISO-certified facility, but there are always new formulations to develop and improvements to performance and capabilities to be made – and that's part of what makes the technology so exciting. The industry is always moving; there are new print-heads, more resilient substrates, faster printers all being designed, and UV-LED inks still have the potential to grow with them. They are the hot inks of 2017 (without the high temperature lamps) but with room to evolve for the future. ■

Rich Dunklee is Global Market Segment Manager – UV Inkjet Inks and Laura Maybaum is Global Screen Market Manager at Nazdar Ink Technologies

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A HIGHLY RELIABLE INDUSTRIAL PRINTING METHOD

Patrick Brunner outlines today's progress in screen-printing

Progress in screen-printing has taken place across all relevant respects. Even within the last decade it has turned from being considered a process that is still part craftsmanship into a highly reliable industrial printing method.

There has been great impact with the development of direct exposing computer-to-screen technology, which led to a printing quality never seen before. Additional automation of downstream and upstream process steps has seen the dramatic rise in the efficiency of stencil making, particularly when formerly this was a mostly manual process. The reproducibility also rose strongly to a level formerly not known.

Textiles are popular applications for the screen-printing technology

DIMENSIONAL STABILITY

The introduction of low elongation polyester mesh, such as SEFAR PME, has allowed a dimensional stability in print. This has opened the door to screen-printing for many industrial applications such as the electronics and automotive sectors. In turn, this meant that screen-printing could be implemented as part of manufacturing processes which require very narrow tolerances regarding dimension stability to guarantee the functionality of an industrial product.

Low elongation mesh has also found followers in the T-shirt industry. Open mesh types with a low number of threads and small diameters, which remain tough even on high tension levels, allow high dense prints with smooth surfaces preferred to overprint additional ink layers.

Last but not least, with photosensitive emulsion pre-coated mesh, such as SEFAR PCF, combines highest quality, process reliability, reproducibility and lean stencil manufacturing. As a result, cleaning, coating and decoating processes are eliminated and this simplifies order planning. It speeds up the processing because procurement and inventory management of chemicals are eliminated. There is no longer any need for investment in cleaning and coating equipment and the efforts required for their maintenance and cleaning. This leads to less waste material.

APPLICATION VARIABILITY

Applications like screen-printing on plastic containers, labels, glass ware, promotional items and many other challenging print tasks are also able to expand their options with SEFAR PCF.

To cut a long story short, screen-printing has established itself very efficiently into industrial environments. Soon these demands led to print requirements such as those requiring high density ink coverage, brilliant colour shades and sharp printing edges. These were joined with the need for high physical, chemical or colour fastness and resistance plus thermal morphing abilities. As a result, screen-printing can acknowledge its well-established position within the fields of industrial printing tasks all over the globe. ■

Patrick Brunner is Product Manager - Screen Printing at Sefar AG

In-mould decoration produced using the screen-printing process

The automotive industry has benefited from screen-printing's quality

A typical screen-printed membrane switch panel

An example of a screen-printed circuit board

Cylindrical objects pose no problems for screen-printing

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WHY THERE ARE FEW BOUNDARIES WITH PAD PRINTING

Ralf Rübenach and Sabrina Kurz explain the versatility of this technique

Pad printing is an established indirect gravure printing technique for industrial and individual applications. Marabu GmbH & Co KG illustrates why pad printing hardly knows any boundaries in printing on varied surface structures and forms.

The first contact of the day to pad printing comes from the alarm clock's 'Snooze' or 'Off' button. Here you will find the fine detailed technical marks made with pad printing. After getting up, we might go into the living room to put on music or the TV, we turn on the coffee machine, then get ready to start the day by taking a shower, using toothbrushes and razors – we're constantly surrounded by technical marks.

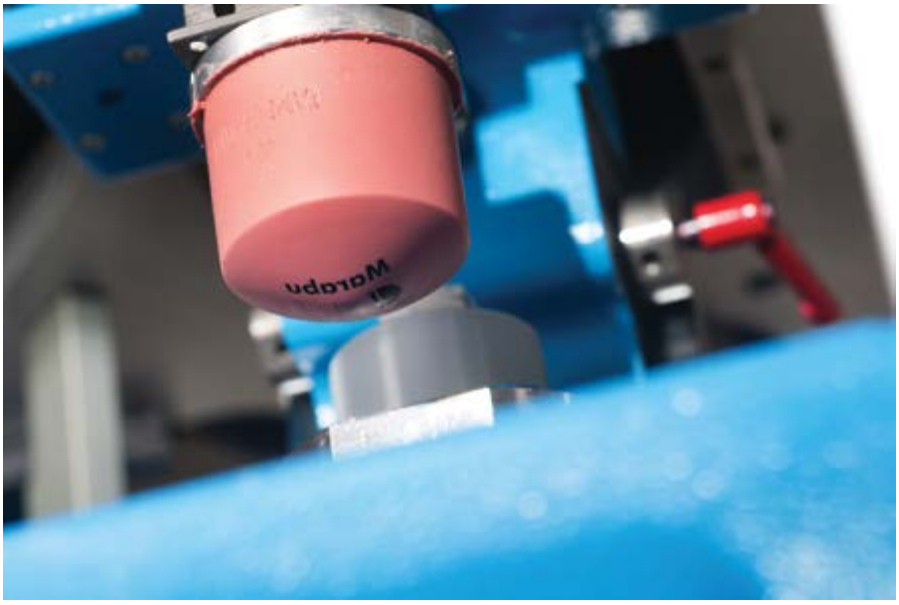
To this day, pad printing is the only technique with which print motifs can be transferred to complex three-dimensional objects without being distorted. Depending on the area of application and complexity, the corresponding cliché material is selected.

Conventional photo polymer or more resistant hard steel clichés are exposed and etched. But there are filmless alternatives where lasers etch ceramic, anodised aluminium, or coated cliché materials. The ink transfer is carried out using a print pad made from silicon rubber, which transfers the ink from the depressions in the cliché and applies it onto the substrate.

Pads exist in a variety of different shapes, sizes, hardness levels, and silicone qualities. Selecting the optimal pad is mainly dependent on the type of application and motive size. In general, the harder and steeper the pad, the better the print outcome. For the most part, the steep pad form and its rolling ability prevent air from being trapped in the ink film.

AREAS IN WHICH PAD PRINTING IS USED

Pad printing is mostly used when other printing techniques have reached their limits. Whether it is printing on raised or hollowed surfaces or precise and intricate details on dials or model railways, this printing technique has no problems. Its universal use on substrates such as glass, plastics, metals, ceramics, and wood makes pad printing a real handyman. The only limitation in comparison to screen-printing results from a lower ink film deposit. The technique is suitable for both large production quantities and for short print runs in various industries.



Pad printing is the only technique with which print motifs can be transferred to complex three-dimensional objects

Glass and ceramic factories manufacture high-quality bottles, decorate figures, and print their brands on dishes. Pad printing is also used for marking extremely concave or convex objects, such as light bulbs. Beverage producers use this technique to place their brand logos onto bottle caps. The print runs required here can be accomplished in a cost-efficient manner with high-speed rotary printing machines.

In the textile industry, pad printing is a printing technique which is becoming increasingly prevalent. Information, such as washing instructions, is printed directly onto the textile and is an improvement from troublesome and abrasive transfer labels and sewn-in labels. Manufacturers of sports items also print on their elaborately designed trainers in order to specifically highlight the design. Pad printing is used in the automotive industry, starting with speedometer needles and different control elements such as the turn signal control, right up to the decoration of alloy wheels.

Other industries that value the technique include the cosmetic, toy, and advertising media industries. One of the most sensitive sectors is the printing of baby items such as pacifiers, baby bottles, and baby accessories. In this area the use of many substances, such as BPA and PAH, is limited by extremely low threshold values and is stringently monitored.

TECHNICAL REQUIREMENTS FOR INK SYSTEMS

Requirements set for printing inks are varied. In order to be successful in the market, printing inks now must display high covering ability, adhesion, flexibility, as well as good chemical and mechanical resistance.

It is vital for reputable ink manufacturers, such as Marabu, to continually adapt to ever-changing legal requirements of their products and their use. To be able to print on different substrates such as ABS, PU, glass, and metals, selecting the right ink system and a suitable pre-treatment is also important. Currently one- or two-component solvent-based ink systems are used. With few exceptions these are user-friendly and dry at room temperature. Just like other printing techniques, there are also UV-hardening pad printing inks. However, for optimal ink transfer solvents cannot be completely eliminated. Recently, another system with water-based pad printing inks, particularly for sensitive products, has become the focus of development.

WHAT DOESN'T FIT IS MADE TO FIT

In the pad printing sector, the pre- and post-treatment of printing substrates plays a significant role in achieving optimal ink adhesion, particularly with polyolefin. Pre-treatment can be carried out in different ways. The most conventional method is flame treatment, whereby a reliable and good result can be achieved on almost all polyolefins. Some plastics also need treating with flame or possibly with primers, corona, or plasma treatment. With glass, next to flame treatment, there is also pre-treatment with silane. Since the production conditions have changed increasingly over the years, the possibilities for post-treatment have also become increasingly effective. As well as conventional drying, near infra-red (NIR) has emerged as an effective possibility for high-tech applications.

TAKING THE LEAD WITH COLOUR INNOVATIONS

As a leading manufacturer of pad printing inks, Marabu not only places value on the quality of its products, but also on the applications. Decades of experience ensure that the consumers can rely on the Marabu pad printing colours for the highest application security. Marabu faces the challenges of the market with colour solutions that are tailored exactly to the current machines on the market and demanding printing materials.

The universally applicable and resistant TPGL pad printing colour system shows its full strength, for example, in the decoration of glass. Tampa Glass TPGL achieves brilliant, precise colour shades. Toys, baby items and, even, medical accessories are sensitive products that represent special requirements for product safety. It must be guaranteed that no dangers are posed to consumers by the substrate itself or by the selected print colour. For this purpose, Marabu provides its pad printing colours, Tampa Tex TPX and Tampa Plus TPL, which meet the strict requirements of sensitive products. The printing colours correspond with EN71-3, and are low in PAH and BPA/BPS. At the same time, they offer good resistance and a broad scope for application. Tampa Tex TPX was originally developed for textile printing and is especially suited as a substitute for sewn-in or transfer labels, and is increasingly used with other substrates such as plastic and wood. ■

Ralf Rübenach is Product Manager and Sabrina Kurz is Technical Service Manager at Marabu

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THE IMPORTANCE OF CREATING THE PERFECT FINISH

Daniel Bischof puts digital flatbed cutting in focus for adding value

Varnishes, custom colours, foil stamping, lamination – when it comes to finishing graphics, these are the processes that immediately come to mind. Too often cutting is just an afterthought and that's a mistake. As with all other finishing methods, the purpose of digital cutting is to 'perfect' a product, at least according to the dictionary definition. It is high time, therefore, to put digital flatbed cutting in proper focus as a method for adding value and creating perfectly finished products.

At first glance, cutting printed boards, sheets or, even, rolls of fabric seems easy enough. Not so. As many different materials as there are, there are just as many specific cutting requirements. Soft or hard, rigid or flexible, heat-sensitive, prone to distortions – the diversity of materials and their specific cutting parameters keeps growing, and so do the applications for which these materials are used. However, there is one process all displays, banners, posters, point-of-purchase and just about any other printed graphics have in common – the finishing step that involves cutting. The cutting process can be purely functional or provide a way to further enhance or embellish the product.

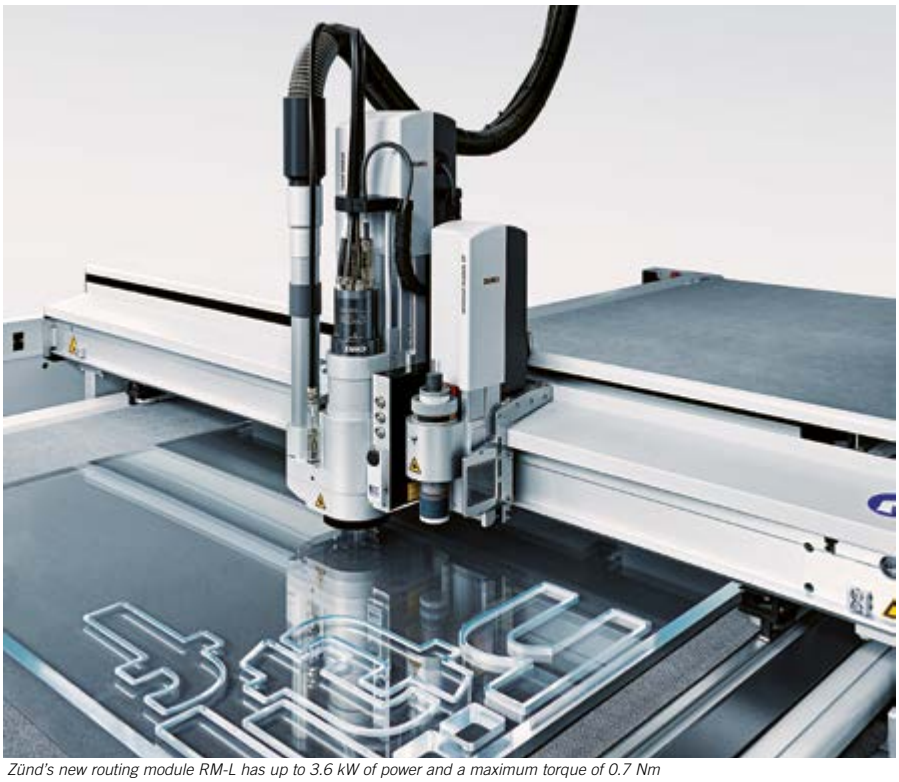
Digital cutting is a part of the art of finishing that, depending on the substrate, demands a considerable amount of technical knowledge and experience. Even so, the user is no longer required to possess these pre-requisites. In fact, this is an area where Zünd Cut Center, Zünd's highly intelligent and user-friendly CAM software, can take over. An integrated material database contains optimal cutting parameters for every conceivable material and application, which ensures the best possible processing methods and corresponding parameters are used every time. For effective finishing, manual cutting has mostly become a thing of the past. Only digital cutting and a fully integrated, end-to-end workflow is able to deliver consistent, repeatable, top-quality finishing results.

CUTTING AND MORE

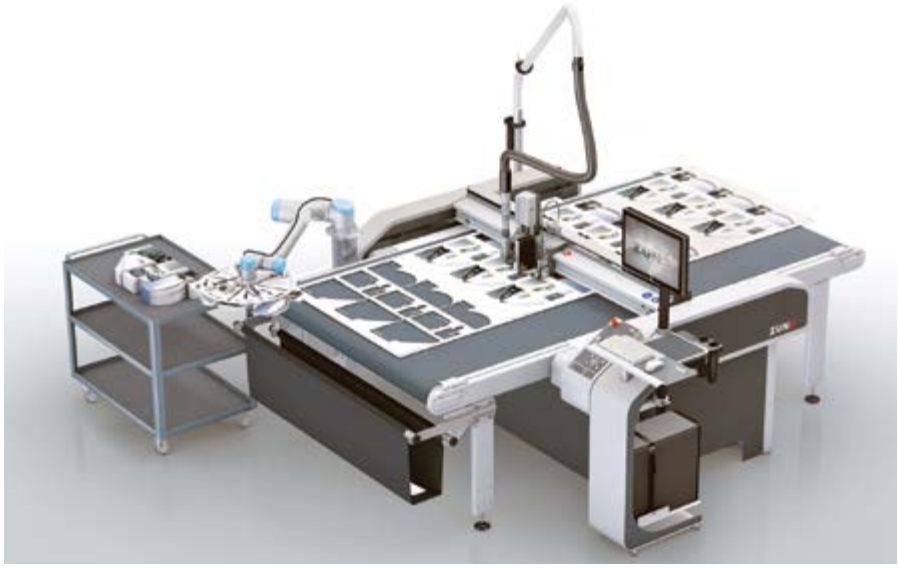
Are automation and the resulting profitability and flexibility also part of the finishing equation? Yes they are – indirectly, at least. Graphics finishing can be costly and frequently occurs in small batches. This makes efficient, cost-effective finishing methods especially important. The ability to finish 'batch size one' quickly and economically, with guaranteed fast turn-around times and impeccable quality, are just a few of the demands today's print service providers put on their finishing equipment. This is where the modular design of all Zünd cutting systems plays a critical role. It provides users with the options to adapt their cutting solutions any time to meet specific production requirements.

Zünd's headquarters in Altstätten, Switzerland

Zünd cutting systems can grow right along with the demands they need to meet. PSPs



Zünd's new routing module RM-L has up to 3.6 kW of power and a maximum torque of 0.7 Nm



The Zünd Cutter S3 M-800 with picking robot

are investing in an open production system that can keep up with growing individual demands for material-handling automation and ever more diverse processing methods. Aside from the traditional methods using a variety of standard cutting tools, processes for further enhancing product finishes include routing, creasing, perforating, kiss-cutting, and V-cutting. All tools and modules can be switched in a matter of seconds.

Productivity and process reliability are critical factors when remaining competitive in today's challenging economic conditions. Modern digital cutting systems provide users with the flexibility to react quickly and dynamically to changes in customer demands. With automated production lines, even SMEs are able to produce economically and provide top quality – with a Zünd G3 cutter, for example. An automatic sheetfeeder loads the materials, while a collaborative robot takes care of picking and off-loading. Job retrieval, too, occurs automatically, with a camera system that captures printed QR-codes and automatically opens the corresponding cut files in Zünd Cut Center ZCC.

Zünd tackles the issue of productivity from every angle – through simple integration in existing production environments, for instance. This enables the user to build a continuous, end-to-end production workflow. At the same time, Zünd cutting systems are extremely reliable and known for their continual uptime. Minimal interruptions in production are yet another way in which Zünd cutters boost overall productivity. Furthermore, Zünd supports the user in providing automation for individual production processes. In routing applications, for example, the fully automated router bit changer ARC keeps set-up time and effort to a minimum and significantly increases process reliability. Non-stop production is another important characteristic of state-of-the-art cutting systems. Various options are available for loading/unloading both rolled and sheeted/board materials, which means material handling can be made a largely autonomous function. The same goes for picking/off-loading cut parts with a collaborative robot. For many wide-format applications, the fully automated board-handling system BHS is a highly dependable solution for automatic loading and off-loading/stacking.

PERFECTING YOUR WORKFLOW

Modular, high-performance cutting systems are used in very diverse applications. Common to all, however, is the constant pressure to remain competitive while preserving margins. Customers react to these conditions with continuous innovation and lean, fully automated manufacturing processes. The innovative technology solutions Zünd offers are designed specifically to meet these requirements, and high-performance cutters are the perfect solution for increasingly digital production environments. They are extremely versatile, offering the ability to process a wide range of diverse materials on one and the same machine. And, thanks to their modular design, they can adapt quickly and easily to changes in customer demand.

In conclusion, all of these possibilities make digital cutting systems ideal tools for finishing printed graphics. They offer new perspectives in the pursuit of additional business opportunities. ■

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THE IMPORTANCE OF POINT-OF-PURCHASE BETA TESTING IN RETAIL

Giacomo Zoppi discusses how to gain in-store traction

Picture yourself in an immense aisle – you are looking forward to finding something new to taste for dinner. You search for something that tantalises your appetite but, the more you look around, the more you feel like this mesmerising abundance makes you bewildered. Then, all of a sudden, the magic happens – there it is! You've found it!

But wait – was that really you? Well, you've no doubt about who physically made the action but, if we focus on whether it has really been you willingly and rationally picking that precise product up among all those other possible choices, the reality could be pretty much counter intuitive.

In fact, recent research from Nielsen Media in analysing consumers' decision-making behaviour, showed that, on average, 60% of the purchasing decisions are taken in store or even at the shelf. The question is: "How is that possible?" There are undoubtedly factors such as tastes, price and switching costs that influence and contribute to drive consumers' purchasing decisions. But the game doesn't just stop there.

GAINING TRACTION

Point-of-purchase and sign kits are one aspect where companies at every level are increasingly gaining traction when it comes to influencing in-store decisions. The reason is simple – given the fact that the majority of the buying decisions are taken while looking at the product mix, the store becomes the last chance for a company to make its products stand out, appeal to the consumer and eventually persuade him to purchase his/her usual product or take a flier to try out a new one. In this process packaging, shelving, and in-store promotional materials' customisation becomes paramount.

The same research found out that a well optimised in-store sign kit can yield up to

Elipack's features include simple design options

A flexible cutting solution is crucial when delivering custom branded packaging

5.5% more conversions, compared to a one-size-fits-all approach. The value is therefore clearly there. Key drivers for success for a point-of-purchase material that converts into greater sales are innovation, appeal and distinctiveness. The latter is the most important variable as it affects the likelihood of a product standing out from the overall selection available.

THE 'GO TO' CHOICE

We live in a world where basically everything is customisable and even a tiny change or adjustment may alter the extent to which consumers perceive or notice the presence of a specific product. Customising the point-of-purchase material is, therefore, the 'go to' choice of many companies to enhance corporate message distinctiveness.

The benefits of point-of-purchase material customisation are clear. Brands can make their presence much easier to notice that this, in the longer run, translates into greater brand awareness, higher likelihood of sales and potential try-outs from new customers. Tailored point-of-purchase allows a company's offering to stand out from the competition. Instead of what happens on the shelf, where every product is surrounded by the alternatives delivered by a whole bunch of competitors, on a dedicated display there is no competition around. And, like it has previously been reported, seeing as the purchasing decision is very likely to be taken at the aisle level, then foreclosing the competition from the potential customer's sight can certainly pay huge dividends.

REAPING GREATER MARGINS

Additionally, surveys have shown that the 51% of consumers who are offered products with customised packaging have a higher perception of the value of the offering itself that translates into the possibility for the company to reap greater margins. Customised point-of-purchase even affects customer loyalty at both brand and retail level. A consumer is more likely to re-purchase a product of a given brand for which he or she associates an easy and quick in-store purchasing experience. (It may sound unrelated but the vast majority of consumers who are spending money on Amazon say they are doing so because of how simple the purchasing process is compared to average in store experience.)

The flip side of the coin, however, is represented by the fact that optimising point-of-purchase material development is not a straightforward process. Actually, optimisation

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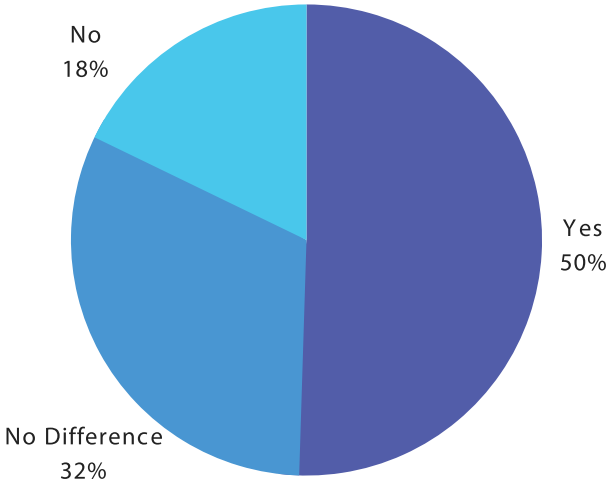
Percentage of buyers who believe specially printed or customized packaging makes a product more valuable



Source: Shorr Packaging - 2016 E-Commerce Packaging Preference Survey

Positive data confirms the value of optimised point-of-purchase

Buyers who would purchase from a retailer again if provided with custom-branded packaging

Source: Shorr Packaging - 2016 E-Commerce Packaging Preference Survey

Customised packaging increases customer loyalty

should be seen as a continuous cycle which should include the testing of different sign kit versions. These kits should then be tested in different locations and displayed to see how different target segments react. Those processes, albeit crucial for true optimisation, are time consuming especially considering we are living in a business world where time to market is a dramatic key success factor for bottom-line product success.

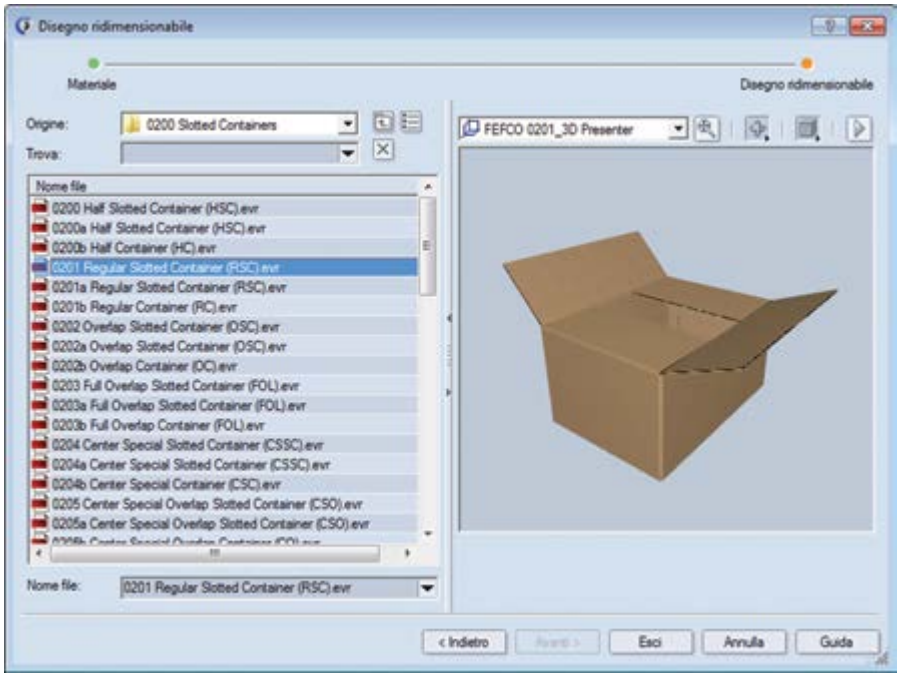
PITCHING A CHOICE OF VERSIONS

Time to market can effectively be reduced through the right implementation of both software and hardware technologies. On the one hand a software like Elitron's Elipack Designer Suite can help a company to quickly and autonomously design its own packaging and display versions. Or, likewise, it can assist a digital printing provider to create different point-of-purchase material versions to pitch at his customers for dedicated campaigns starting from its parametric libraries.

The software also allows users to come up with, and export, different animated 3D versions of each version thanks to a plug-in with Adobe Illustrator and, even, apply different textures and print-outs. Additionally, it is possible to automatically generate assembling animated videos for quick training of in-store staff and perfect implementation at retail level.

If, on the one hand, thanks to software like Elipack Designer, versioning becomes effortless and more customer driven at the design stage then, on the other, the different concepts need to come to life. Today's digital printers and automatic digital cutting solutions like Elitron's Kombo SD+ are the focal point for easy and quick versioning. The advantages of digital solutions have long been put on display – reduced costs of short runs, quick turnarounds and the possibility of mass customising the production process.

Therefore, getting point-of-purchase optimisation right shouldn't be rocket science any longer. The benefits of such a proposition are clearly there and it should represent a key driver of differentiation both for companies and, even more, for those print providers which are looking to shift their focus towards the needs of more value orientated and less volume demanding customers. Software and technology are the enablers to seamlessly achieve the value behind point-of-purchase optimisation. The question is not "why go for it" – but "when". ■



CAD tools simplify sampling assessment

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ADDING VALUE DIGITALLY TO PRODUCTION PROCESSES

Dr Simon Daplyn discusses the advantages of etching

Digital printing technologies are well established in transforming industries requiring a print on a product. The adoption of digital printing is growing exponentially from mature markets such as graphic arts to strong growth areas including textiles and labels. On the back of these success stories there is a further revolution, with inkjet printing ever more considered as the go-to technology to deposit a functional or performance material onto a substrate within a production process, rather than as a tool purely considered for decoration. Evolution of inkjet technologies is allowing users to trust the technique as a reliable and flexible solution capable of adding real value to businesses.

DIGITALLY PRINTED ETCH RESIST

Acid etching is a widely used process for creating texture or features onto a range of metal-based substrates in industries such as flooring emboss plates and PCB manufacture. Etch resist processes were often considered as slow and inconsistent in their output but digitally printing an etch resist ink can transform production speed and accuracy whilst reducing waste and manual interventions. Additionally this digital process will carry the widely accepted benefits of adopting digital printing technologies such as faster turnarounds, greater design freedom, extremely high flexibility and productivity. All of these factors contribute ultimately to a more efficient process, increasing value and saving money.

A three-step acid etching process

A critical factor to ensure success is managing the ink within a process. The way any ink or functional fluid works within a specific inkjet printhead and with the associated software is central to maximising the image quality, accuracy and ultimate output of the finished product. This, in combination with the ink/substrate interaction, must be carefully controlled to a level that allows consistent and reliable production.

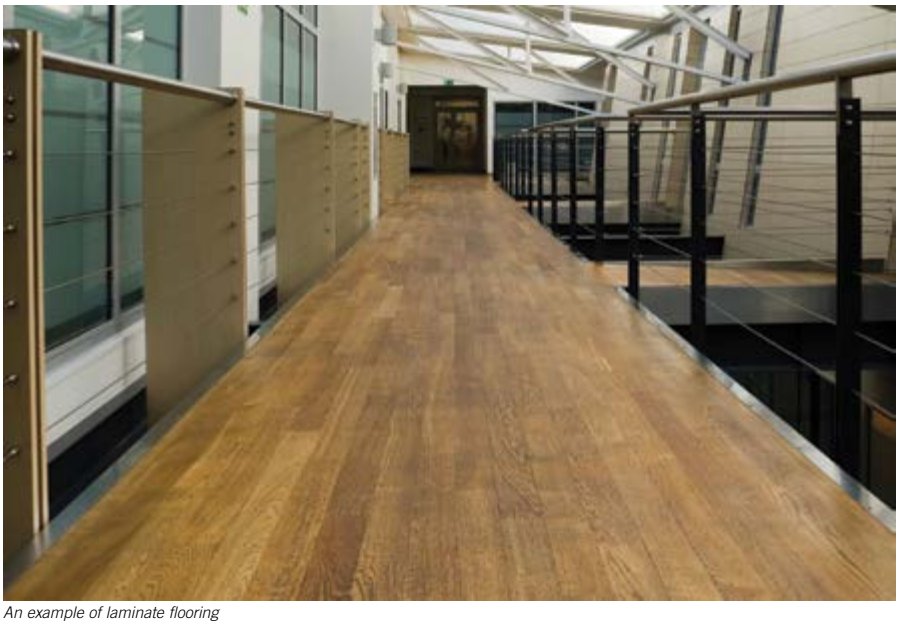
Sensient's platform of SensiJet Pyrite is a functional etch resist ink designed to work in real production environments. SensiJet Pyrite has been optimised to offer excellent adhesion when printed onto stainless steel and other metallic substrates and can be tuned to meet specific application requirements. Pyrite shows excellent resistance to typical acid etches.

ADDED VALUE FOR FLOORING PRESS PLATES

Digital printing is a viable technology for the laminates industry and has already transformed industrial production. The next step is to match the quality of the textured finish to that of the natural effect design. Many wood laminates carry a generic texture to create the illusion of real wood. Digitally printing the texture pattern can also allow

Continued over

An etched steel woodgrain press plate



An example of laminate flooring

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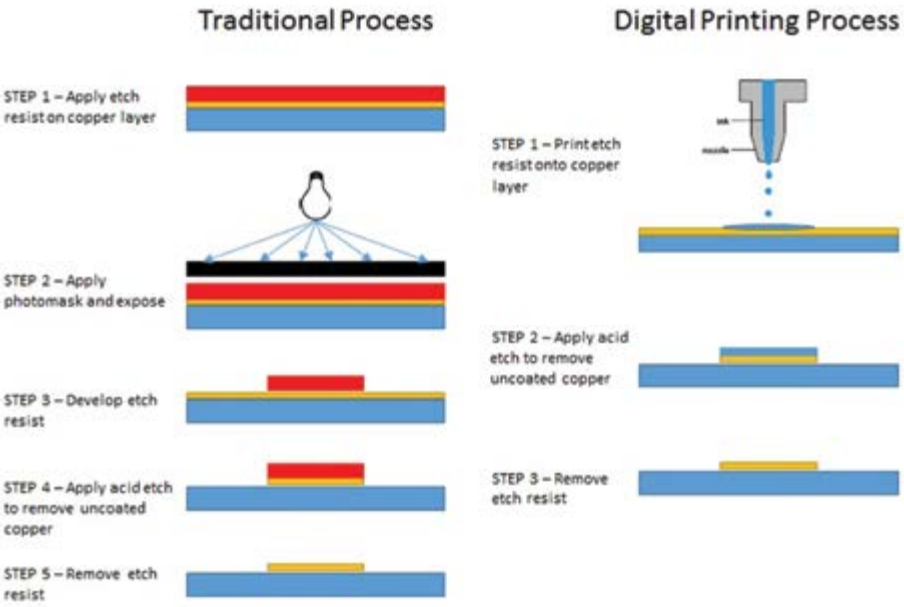


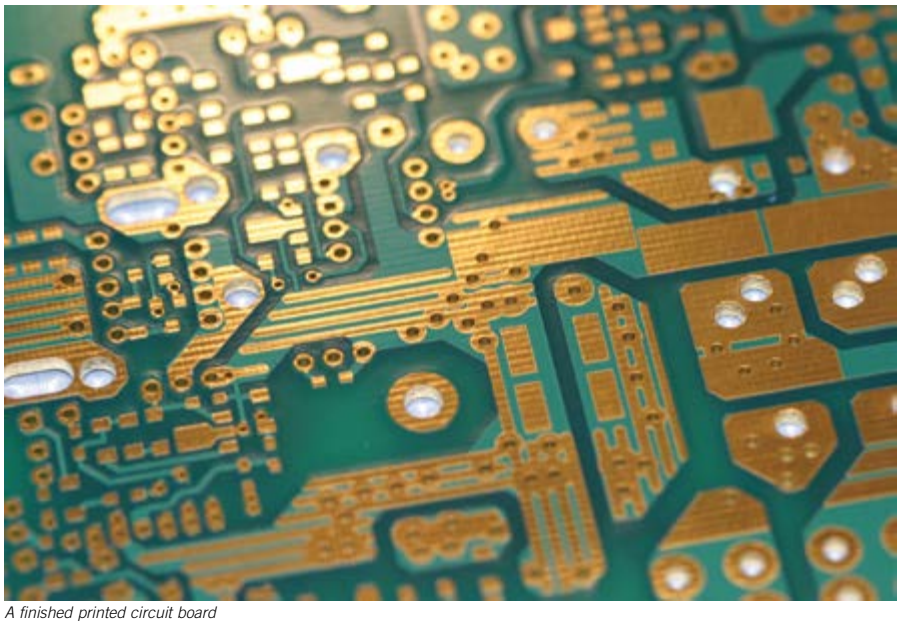
This schematic shows a conventional versus a digital etching process

exact matching of the texture with the design offering a true match to a natural wood. Specially formulated UV-curable inks are printed in the required design onto a large steel plate and cured instantly in-line allowing highly accurate details to be preserved.

Once printed, the steel plate is immersed into an acid bath (typical acid etch solutions include sulphuric acid and chromic acid), where the metal is etched in the non-printed areas leaving the design as a surface relief. The ink can then be stripped using caustic soda leaving a highly valuable press plate. Such a plate is placed on top of a processed laminate flooring structure under high pressure to emboss a texture to the final product. Digitally printing the relief pattern takes the imaging step of the process from several hours (often days) to minutes with a greatly reduced waste and increased feature accuracy.

DIGITISING PCB PRODUCTION

Another industry ready to embrace digital printing on an industrial scale is manufacture of PCBs. Digitally printing an etch resist solution can substantially reduce the time taken to create the PCB circuit. Directly printing the etch resist onto the copper layer eliminates the need for a more commonly used photomask as well as their associated costs in development and storage. Removing the need for such a photo development process step has additional benefits in reducing consumption of water, energy, waste treatment processes and maintenance down time. In an etch and strip process in single or multi-layer PBC production, digitally printing the etch resist ink is a cost effective and more accurate solution and is compatible with traditionally used acid etch solutions such as ferric chloride and copper chloride. On completion of the etching process the ink layer is removed, leaving the accurate pattern of copper track. Digital printing can open up the possibility for greater flexibility in production, with costs per piece being very similar for a one off as a run of thousands. This flexibility and on demand production has the potential to allow producers to explore the potential to offer additional value without compromising profits.



A finished printed circuit board

FURTHER POSSIBILITIES

Digitally printed etch resists can open up further markets to exploit the significant benefits offered by this technology. Key beneficiaries could be those using conventional process such as photochemical machining, etch masking or other processes to create products or intermediates manufactured using a chemical milling process. Digitisation of the chemical etching process allows highly accurate chemical etching of sophisticated patterns and images of metal substrates in markets and industries, which will benefit greatly from the global trend for customisation.

TRANSFORMING INDUSTRIAL PRODUCTION

Digital printing is a viable technology for many industries and has already transformed production processes in several markets. It is an established technology for the decoration of ceramic tiles and textiles; adopters are reaping the significant benefits that digital printing has to offer. Niche markets are now opening and growing rapidly due to the possibility for users to benefit from using digital printing to apply functional fluids and add real value to products and processes. The key to using an inkjet process successfully is managing and optimising the ink solution to meet the specific application requirements. With the right ink and process, digital technology can transform many manufacturing practices. ■

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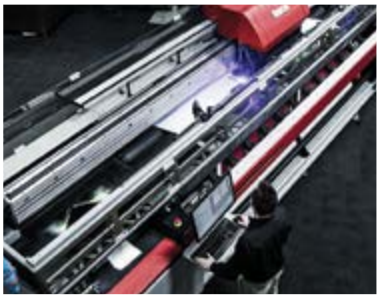

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NEW MARKETS AND NEW OPPORTUNITIES

Josh Hope discusses industrial printing with *Specialist Printing Worldwide*

The benefits of utilising digital printing technologies are endless. There's immediate feedback during testing – no need to create a set of printing plates or screens just to try a new technique or design revision. The technology is accessible and user friendly with a short learning curve. So, if digital printing is already a piece of cake, why not expand into an area often called 'industrial printing', which can include customisation and personalisation of manufactured goods, or component printing.

Specialist Printing Worldwide: What are the benefits of adding industrial printing – printing that is added to a product that was manufactured in a separate process – to a wide-format shop's current offerings?

Josh Hope: With the wide range of UV inks and adhesion promoters, there are endless possibilities for expanding the capabilities of a UV flatbed printer that was previously just doing traditional signage. This can bring additional revenue as well as expand the addressable markets. By working with manufactured products that are already in high demand, adding customisation is a great way to offer differentiation for that market and add value to an already premium item.

SPW: What's the best way for a print service provider to approach a possible industrial opportunity?

JH: If the PSP already has a UV flatbed printer, it's a simple task to start testing on common products such as promotional items – USB drives, phone cases, and chargers – to see which materials work best with their current UV ink sets. Or add a smaller benchtop UV flatbed printer, which offers a great way to get into the industrial printing market with a low cost of entry while still having very high quality and throughput.

SPW: What are the most trending applications in industrial printing today?

JH: Phone cases, chargers, and USB drives have always been very popular. The hot item this year seems to be stainless steel beverage containers. The ability to personalise them with a name, logo, or sport's team makes for a great business opportunity. Some printer manufacturers offer options for printing directly onto cylindrical objects. We also see great potential where the 'maker' market meets a creative market. Boutique guitar effects' pedals are a perfect example of this. Custom electronics made in short runs with digitally printed graphics are a very hot item.

SPW: You've worked with a lot of shops as they develop solutions for the unusual needs that industrial clients sometimes have. What are some of the common issues that shops encounter when working with unfamiliar materials and applications?

JH: In the industrial printing market, we are usually talking about UV inks. And with UV, the main issue is adhesion – finding the right combination of ink, substrate and, in some cases, adhesion promoter. We recommend looking for a printer that offers a wide range of UV inks with different flexibilities to best meet their needs.

Digital printing can also be used to print component pieces such as membrane switch panels.

SPW: Where do you see industrial printing in the wide-format digital print marketplace in the next five to ten years?

JH: The drive now is for increased automation and decreased touches in the production process. We will continue to see workflows evolve to enable customisation and personalisation at all levels. Variable data, web to print, and automated loading and unloading will all be very exciting to watch evolve. The need to control processes and reduce production costs consistently drives the interest in automation, both in hardware and workflow products. Savvy customers looking to compete with larger companies or find additional ways to increase profits will inevitably turn to automation as a tool to drive change.

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Various items on which a Mimaki UV flatbed can print – nearly anything.

Texture on an object is produced using layers, in this case clear UV ink

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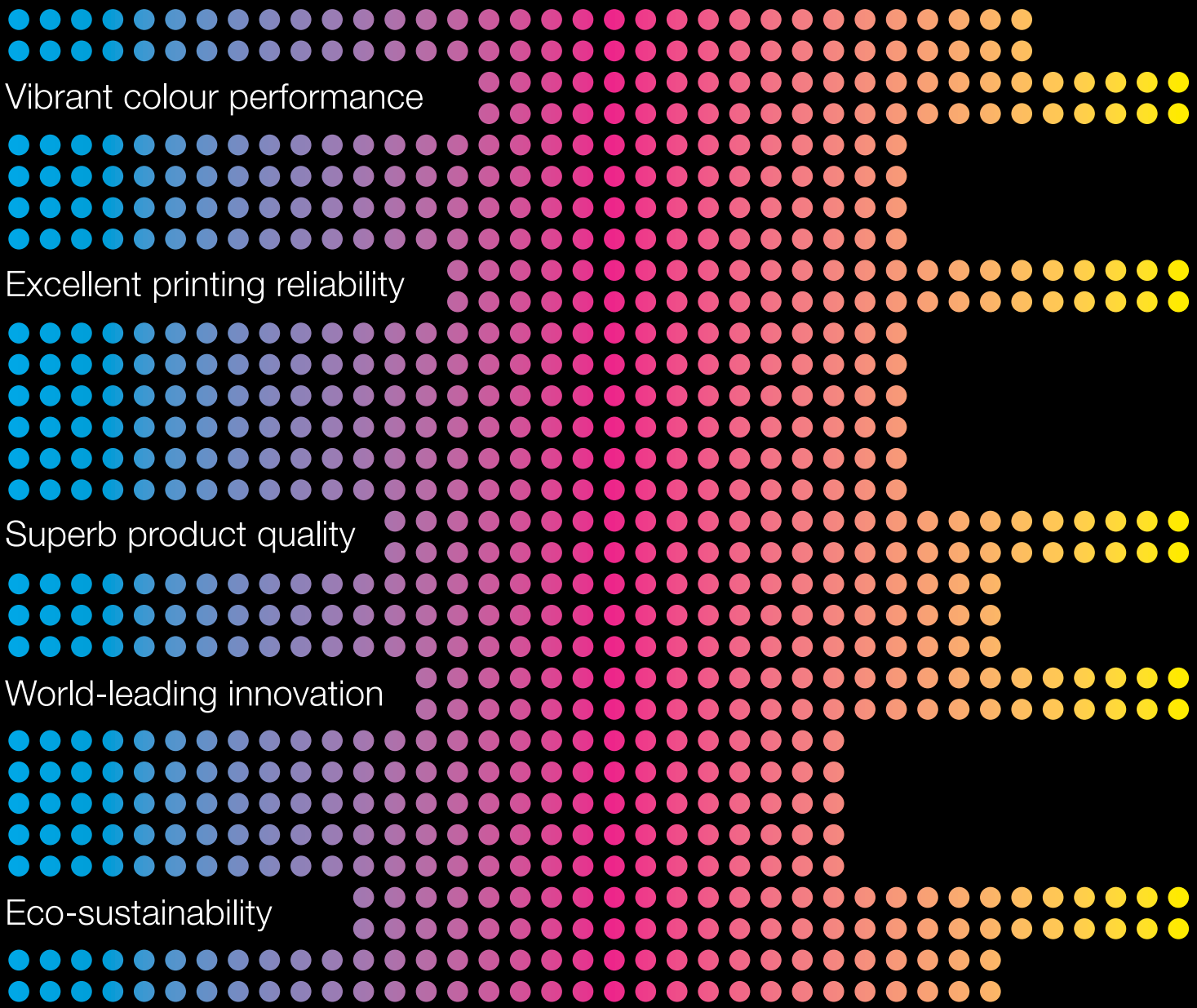

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SPW: Let's focus for a bit on automation. It was arguably the dominant trend at drupa last June and Mimaki showed a very interesting technology preview on this front. Can you explain it for readers who weren't there?

JH: Mimaki showed two examples of hardware automation at drupa. The first was a continuously running demo of the UJF-7151 plus UV-LED flatbed printer imaging DVD media with clear UV inks to build up a texture. The process was fed by a fully automated robotic arm, which both loaded and unloaded the media from the printer. During the unload process the media was also sorted onto multiple spindles. We also showed a video of the JFX200-2513 UV LED flatbed printer running a jig based board job that was loaded and unloaded via a fully robotic arm.

SPW: Many printers think that automation means installing new equipment. But, as you know, it also involves being more efficient with what you have. What are some of the common workflow challenges you see when working with customers?

JH: The drive to do more with less is showing up in all areas of the printing industry. Automating processes and reducing touches can increase productivity and reduce waste, which can lead to higher profitability. We are seeing customers address this at many levels. In some cases, it is taking advantage of existing functionality that may have been ignored in the past such as using hot folders to assign predetermined print conditions. Even this small step reduces the time needed to set up a job, or bypasses it altogether. Using templates or RIP jig functions is another way to automate processes and affect the bottom line.

Industrial meets signage – UV inks designed specifically for thermoforming applications

SPW: One of the common themes we hear is that many printers are fighting pricing pressures, even as runs become shorter and more complex. What can printers do to set themselves apart?

JH: Automation is one big part of being profitable in a very competitive marketplace. Automation also drives the ability to be agile in the products they deliver and the way in which they're delivered. Just-in-time production is another key, combined with lean manufacturing practices. Reducing inventory to blank items that can be ordered as needed via a web-based storefront then processed and customised through an automated workflow – taking advantage of technologies such as variable data – can result in an extremely competitive business model.

UV printing directly onto 'stompbox' blanks to create lucrative, custom electronics.

SPW: What market trends do you find exciting now we're well into 2017?

JH: We can't really talk about industrial print without addressing 3D printing, which continues to be a technology that many are watching and, honestly, trying to determine how and where it fits. Although 3D has a likely place on the horizon as a technology for the mainstream, the barriers for practical application continue to be quality (both finished feel and colour) and cost. As with digital printing, I fully expect we will see 3D technology evolve; but, unlike digital inkjet, my opinion is this evolution will be measured in years instead of decades.

Getting back to what's on the horizon in the near term, the growth potential in the industrial printing space is exciting. There are so many complementary technologies available now at a scale that we have never experienced in the past, in both cost and capability. For example, combining digital UV inkjet printing with laser cutting enables even a one-person company to begin making products at an amazingly low cost of entry into a market. If that process is automated from ordering to fulfilment, they can be competitive with companies having much greater investments in workforce and equipment. Being a part of that market transformation is extremely exciting – the possibilities are endless. ■

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SCREEN-PRINTING IS THE PROCESS OF CHOICE FOR INDUSTRIAL PRINTING APPLICATIONS

Gérard Rich explains why customers push this process to the limit and beyond

The challenges of computer-to-screen (CTS) imaging have been analysed in R&D and Lüscher has developed a range of technologies to improve screen stencil-making. The resulting X!Tend software is presented in this article as one element of these technologies, fully integrated within the Lüscher CTS system. It measurably extends the range of imaging capability of CTS systems for digital stencil preparation no matter which emulsion or capillary film is used.

INTRODUCTION

A bigger fraction of screens is still imaged with film (and film setters). Imaging the emulsions with CTS devices and digital data, however, is gaining momentum and will replace film down the road.

We use, indifferently, the abbreviations CTP (Computer to Plate) and CTS (Computer to Screen) in this article.

Lüscher has made, over the years, extensive CTS imaging tests for its customers in the areas of screen for rotary and flatbed printing. Customers very often push us to the limits of the imaging processes and this is why we investigated the means to better image screen emulsions and photoresists on our range of CTP devices.

This effort led to the development of the X!Tend software that is proposed to our customer base as an integral part of our CTP imaging system.

In the following chapters, we will explain how the desired result of improving imaging performance is achieved. See separate feature panel on page 32 for basics about the Lüscher UV Laser imaging system.

THE CHALLENGES OF SCREEN EMULSIONS IMAGING

The first challenge is that the CTS imaging is the reverse of argentic film imaging (figure 1).

This is not trivial as the film, the emulsions (and the mesh) are scattering light during imaging and the results will be different. For negative elements, film imaging has an edge and, conversely, CTS has an edge for positive elements on screens.

Negative elements are however more critical for screen-printing applications.

The second challenge is that there are two chemical processes to be triggered by UV laser light. First, the emulsion has to be cross-linked in order to become insoluble during wash out and, secondly, the bond to the mesh has to be guaranteed for a safe production on press.

In order to achieve a strong bond, due in particular to light absorption in the depth of the emulsion, it may be necessary to increase the level of imaging energy beyond what would be desirable to simply crosslink the emulsion in its thickness. This may limit the imaging performance significantly and, in some instances, dramatically.

The third challenge is that, because most emulsions pre-existed recent CTS laser systems, the UV laser light absorption in the thickness of emulsions, at the laser wavelength, may be too high to get the job done easily. This requires sophisticated CTP imaging strategies whose discussion is beyond the scope of this article.

These three challenges have been addressed successfully by the Lüscher Technologies R&D with three technologies unique in this field:

- High resolution imaging
- X!Tend software
- Specialised imaging strategies

THE STANDARD CTS IMAGING RESULTS

With a special test file having line thicknesses from 10 to 200 microns in steps of 10 microns (figure 2), several high performance emulsions from different suppliers on different mesh types have been tested and evaluated quantitatively by microscope measurements of actual line widths generated on screens.

The file is printed as such and also inverted for CTS output. As already mentioned, negative lines are more critical for the applications considered here.

Please note that it is also necessary to have a close look at the TIFF output of the RIP as, in most instances, the line width written by the RIP may differ from what is in the original PDF or AI file. This is an additional

Continued over

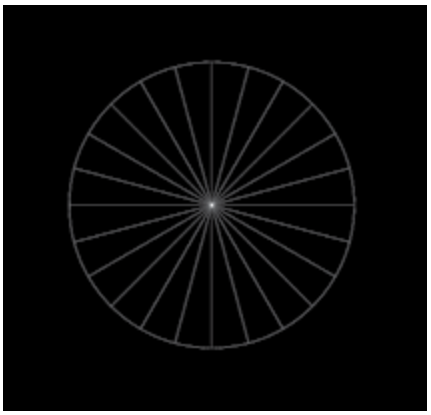

Figure 1

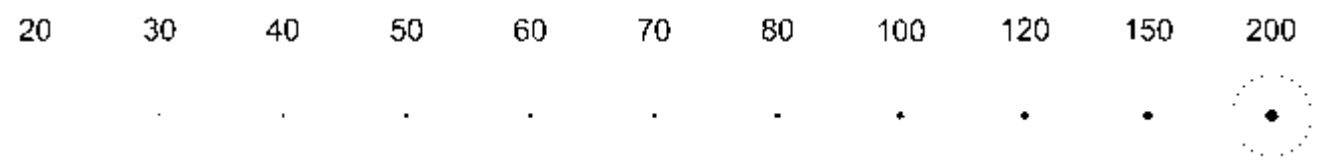

Figure 2

SCREEN PRINTING ‘HOW TO GUIDES’ ONLINE

Fed up with dirty screens?

Find out how to get your screens like *new* again with our latest step-by-step ‘How to Guide’ to Haze Removal. We have an extensive library of How to Guides covering all stages of the screen making process showing you how to get the very best results from your screens.

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source of discrepancies that has been obviously eliminated here.

The typical result on screen emulsions for fine graphics applications is shown in figure 3.

The imaging is on MultiDX! at a resolution of 5080dpi and the graph in figure 3 has, on the horizontal axis, the theoretical (negative) printing line widths in the TIFF file.

The actual line widths (orange curve) on the screens are shown on the vertical scale and the results are analysed as follows:

- There is a gap between the actual line width and the theoretical width (green line) that is significant
- There is a lower limit of imaging at about 40 microns as thinner lines are not developed properly.

THE IMAGING RESULTS OBTAINED WITH THE X!TEND SOFTWARE ACTIVATED

The result on the same screen emulsion as above with the same file is shown in the next graph (figure 4).

The imaging was under identical conditions on MultiDX! at a resolution of 5080dpi with a user defined X!Tend software setting.

The results are analysed as follows:

- X!Tend almost perfectly corrects the line width (green) which is now equivalent to the file requirements
- The lower limit of imaging is pushed down to 30 µm.

The main quantified benefits of X!Tend become obvious when looking at figures 3 and 4.

Other imaging results compared for fine graphical elements are presented in comparative terms on page 33.

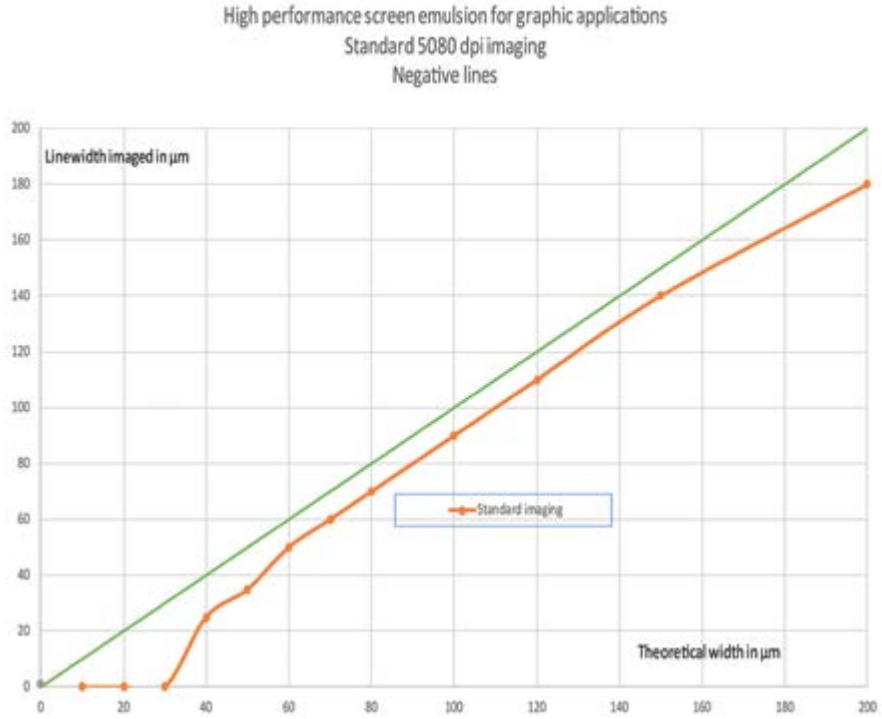

Figure 3

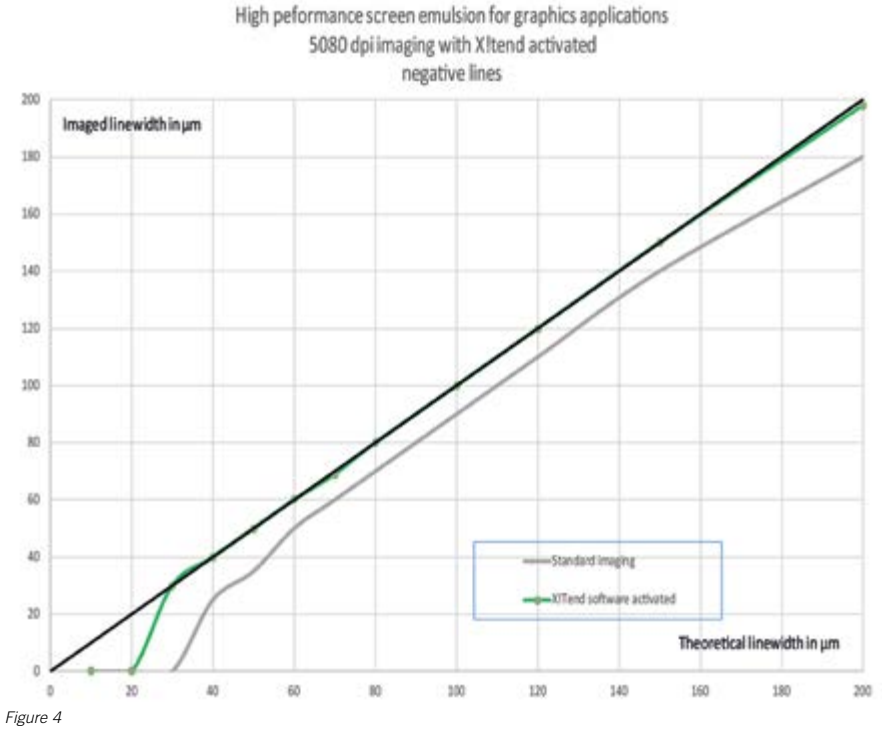

Figure 4

KEY FEATURES AND B ENEFITS SUMMARY:

The X!Tend software is extending the range of imaging capability of any emulsion or capillary film and increases fidelity of digital image reproduction on screen.

The X!Tend software widens the window of imaging energy applicable to any emulsion. More laser energy without loss of imaging quality will make the screen more robust and potentially more durable on press.

The software parameters are stored into templates for maximum comfort in production, and can be selected, or not, specifically for types of jobs and the range of emulsions used in production.

The software is resolution independent. With higher resolution however, the “unit of account” of the CTS (ie – the pixel) is smaller which means that the X!Tend correction can be tuned in finer steps.

The X!Tend software is using standard TIF input. There is no need for changes in the prepress department. The desired effects are obtained by simple user specific settings.

The selection of settings is based on standard CTS imaging results where deviations between the input file and the result on screens can be measured. It is a kind of ‘finger print’ for stencil making. There are rules of thumb that can be called on as well.

The TIF input is manipulated ‘on the fly’ during imaging and the data is generally inverted as well ‘on the fly’ in the same step without any loss in imaging speed.

While it is desirable to widen small negative graphical elements as demonstrated here, it is mandatory not to affect small positive elements, such as shadows and positive fine lines, that need to be imaged properly and must not vanish. They will print negative for screen applications.

The results shown here for thin emulsions for graphic applications can be transposed for thick emulsions or capillary films for industrial applications involving deposition in screen-printing of thick layers. It is applicable as an example to the generation of 3D relief effects with screen-printing.

The graphics used for those applications will be coarser in scale but the involved

Continued over

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CTS Emulsions • Screen Making Equipment and Devices

JAPAN - USA - CHINA - SINGAPORE - KOREA - TAIWAN - EUROPE

mechanism is the same with bigger corrections to be applied for bigger graphic elements.

You may find pre-press software that is doing a fraction of what X!Tend is offering. X!Tend does the job professionally, completely, automatically and for all graphical elements (including raster zones) at any scale.

The focus in this article is on screen-printing applications; imaging of (negative or positive) photoresists for etching and electroforming applications fall into a similar category with the same benefits.

CONCLUSION:

X!Tend is a professional tool to measurably improve the imaging of silk screens (rotary and flatbed). It is open in design with user-defined settings totally integrated in the output computer and software of Lüscher CTS devices.

It is qualified for a wide range of emulsions and capillary films and is applicable as well for negative or positive photoresist applications of any type. ■

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web: www.luescher.com

BASICS ABOUT LÜSCHER UV LASER IMAGING

Lüscher introduced UV laser imaging in 2007 for a whole range of applications. It immediately replaced lamp-based systems due to better performance and stability.

The Lüscher system is based on individual laser diodes controlled by digital data scanning the surface of screens to directly harden the emulsion.

The laser diodes are coupled individually to optical fibres carrying the energy to the raster plate and the optic.

The laser light of the whole set of diodes is collected on the raster plate at the entry focal plane of the optic and focused by the optic onto the screen surface.

The diameter of the fibres, the design of the raster plate and the design of the optic determine the resolution of the CTS system with a broad range of possibilities from 600 to 10000dpi and beyond.

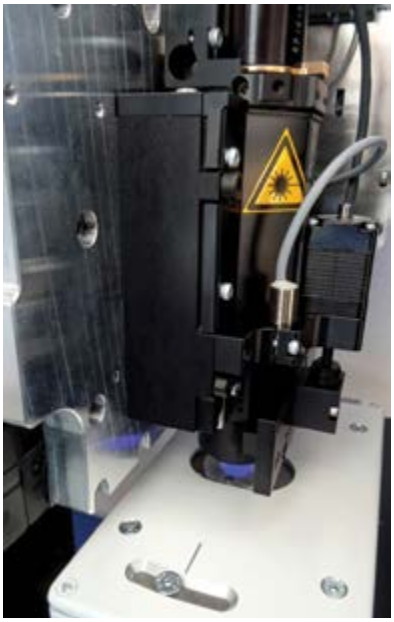
The laser light is highly collimated and penetrates straight into the material leading to sharp accurate imaging results with no possibility of undercutting.

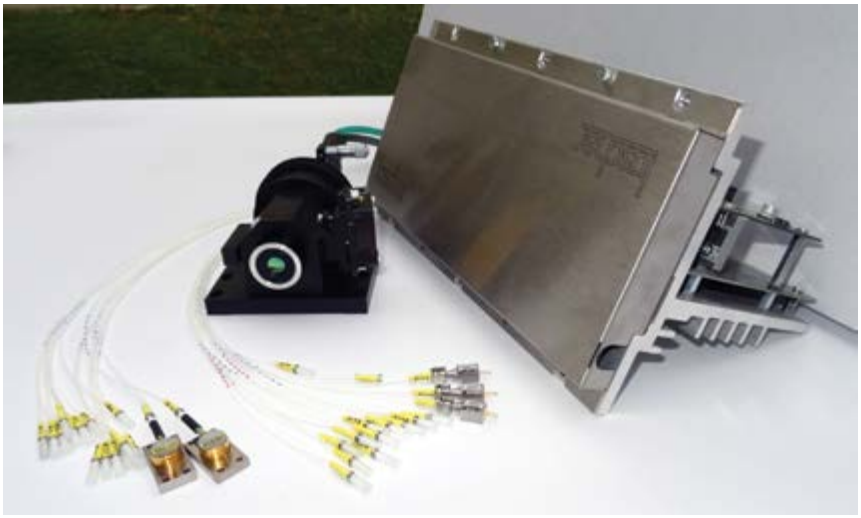
Lasers are permanently controlled for power and the process control is total with no deviations possible.

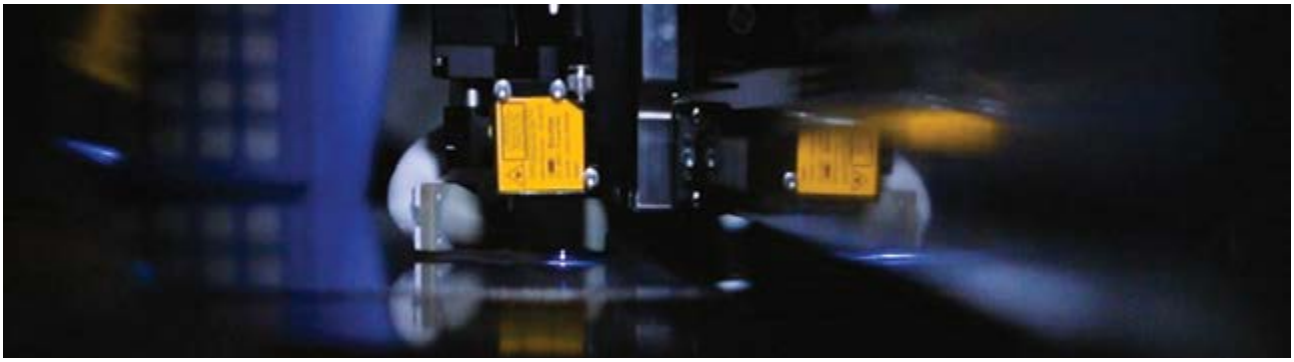
The digital input of MultiDX! is a one bit TIF file. When the pixel is on locally, the laser is on and the emulsion will be cross-linked.

Lüscher has already sold in excess of 150 Flatbed MultiDX! Systems with a large portion of them imaging UV sensitive emulsions, resists or films. ■

Picture of UV laser diode with fibre coupled


Complete mounted optic assembly with laser measurement box and focus system


Picture of an electronic module controlling lasers, laser fibre bundle and optic.



OTHER IMAGING RESULTS COMPARED FOR FINE GRAPHICAL ELEMENTS

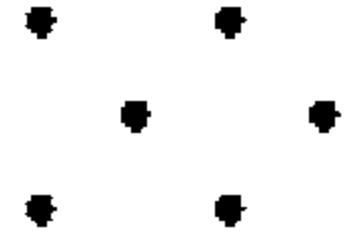
The modified file used for CTS output will lead to an accurate text reproduction on the imaged screen

Example of fine text (the pixel structure gives the scale). File prepared for argentic film imaging

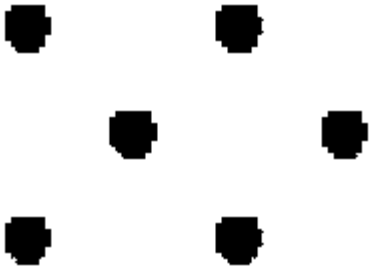
Example of fine text (the pixel structure gives the scale). File modified on the fly by the X!Tend software

Example of fine text (the pixel structure gives the scale). File additionally inverted on the fly as well for output on CTP

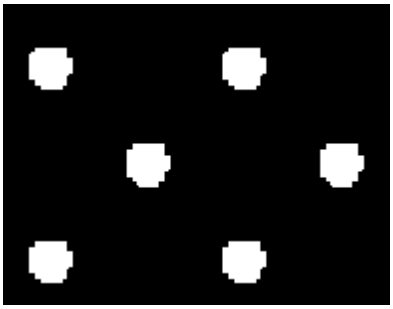
The modified file used for CTS output will lead to an accurate 4% dot on the imaged screen



Example of raster zone (the pixel structure gives the scale). File prepared for argentic film imaging

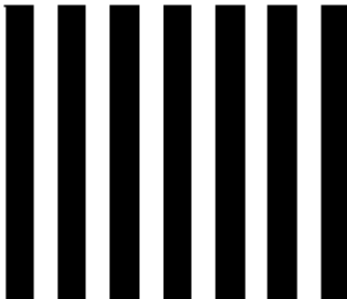


Example of raster zone (the pixel structure gives the scale). File modified on the fly by the X!Tend software

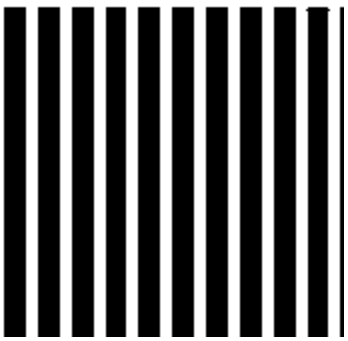


Example of raster zone (the pixel structure gives the scale). File additionally inverted on the fly as well for output on CTP

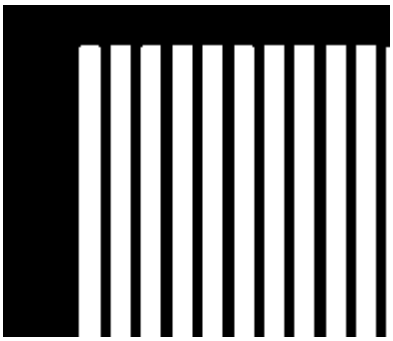
The modified file used for CTS output will lead to an accurate 4% dot on the imaged screen



Example of alternative lines (the pixel structure gives the scale). File prepared for standard argentic film imaging



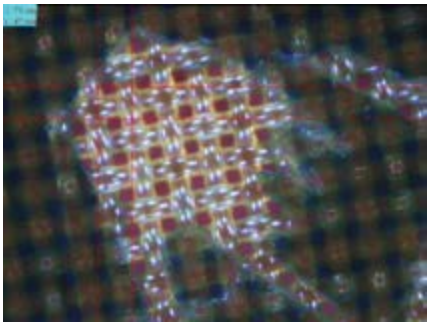
Example of alternative lines (the pixel structure gives the scale). File modified on the fly by the X!Tend software



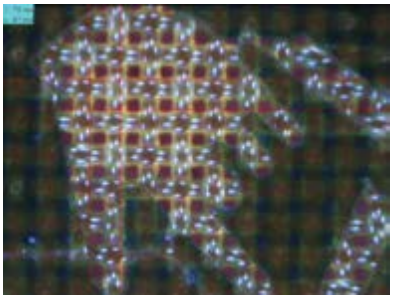
Example of alternative lines (the pixel structure gives the scale). File additionally inverted on the fly as well for output on CTP

As you can see, the fingers in standard exposure mode are gone. The X!Tend exposure is significantly improved

Extract of TIF file as prepared for CTS output



Standard CTS exposure result



X!Tend exposure result

KEEPING AN EYE ON ENERGY CONSUMPTION

Laurel Brunner emphasises the need for leaner and greener production methodologies

Printing companies are on a constant quest to improve cost management. Energy is a major expense, so awareness of the contribution power consumption makes to the cost of production is rising. Many buyers of production presses are starting to consider electricity consumption and replaceable component costs as part of their investment planning.

Printers must deliver the best results possible, while meeting ever more demanding customer expectations and complying with environmental regulations. But the balance between the cost of production and acceptable margins can be fragile. Reducing electricity usage is a means of lowering production costs and improving margins. It's also central to lean and green business models.

The EFI VUTEk GS2000LX Pro 2m production-level LED printer

LEAN AND GREEN

The digital printing industry and its markets are embracing lean and green production. Lean operations make for less wasteful, more profitable businesses because they are based on concepts of resource management efficiency, process control and reducing any type of waste throughout the supply chain. Lower electricity usage can increase margins, without compromising production values. Energy efficiency can add value to the printing machine, lowering a printing company's overall cost of ownership. Recognising this, manufacturers are introducing new digital printing devices with reduced electricity requirements and improved performance.

Performance is about more than the printing heads or media handling, since many factors contribute to the energy footprint of a printing system. The machine's size and output format, imaging technology, requirements for primers and coatings, ink types, the number of colours, overall system configuration and drying or curing technology, can all affect electricity requirements and usage. The use of LEDs to cure UV inks and coatings, for instance, requires much less electricity than the mercury arc lamps traditionally use for UV curing.

UV CURING INKS

Rapid output technology advances, often using UV curable inks, are encouraging shorter runs with higher unit values for each piece of print in the print run. UV curing inks contain photoinitiators that respond to specific wavelengths of UV light. They are formulated to rapidly respond to the UV energy without compromising the printed colour vibrancy, adhesion, durability and flexibility. The latest digital printing technologies can print on textiles, ceramics and 3D objects as well as exotic substrates such as thin films and metals. Print buyers and their service providers love the idea of printing anywhere on any surface using these technologies and can be confident that the results will be excellent.

UV ink characteristics should not compromise the printing system's performance. UV curing inks used in digital printing systems must be formulated to perform well on all sorts of surfaces, and not run the risk of causing damage to the print-head. It is also important to achieve full curing of the inks, or there might be health implications. Meeting all of these requirements

Dutch print business JMC Signmakers reduced its energy consumption by 75% by moving up to an LED-cured VUTEk printer

places considerable demands on the technology, particularly if it is also to follow the principles of lean and green production.

Rather than drying as conventional inks do, UV curing inks are cured using thermal energy. This energy has traditionally been provided by mercury arc lamps. But manufacturers keen to lower the cost of ownership for their customers, are opting to cure their inks using Light Emitting Diodes (LED) which are gaining in popularity. As the technology evolves and improves, it is gradually supplanting mercury arc curing for a growing range of applications.

LED-ING THE WAY

Energy consumption is probably the biggest driver for the move to this technology, but both consumables and performance costs are also factors. LED curing requires far less energy than the mercury arc lamps traditionally used for UV curing and so create less heat. The gas discharge lamps rely on an electric arc that passes through vaporised mercury to generate intense light in the UV areas of the spectrum. It can take four to seven minutes for these lamps to fully warm up, so they generally stay on when the printer is switched on, even though the printing machine may not actually be running. This incurs an electricity cost to the printing company and cuts the productive lifespans of the lamps. Mercury arc lamps for UV printing last about 1,000 hours, compared to LEDs, which are only on when needed and, as a result, can last for up to 10,000 hours.

LEDs require no warm-up time and use around 20% of the energy required by high-powered mercury arc lamps. This makes LEDs very attractive as a means of reducing the overall electricity requirement of a production printing system. The choice of LEDs over arc vapour lamps can also have a positive impact on indirect costs, because LEDs are far kinder to sensitive substrates than conventional lamps. This can mean reduced waste and remakes, all of which positively impacts the electricity bill.

Depending on how they are configured, LEDs, which can be tuned to produce specific wavelengths of UV light, produce little, if any, heat so there are very few substrate constraints. Even extremely delicate lightweight films survive the LED curing process, because LEDs generate insufficient thermal energy to damage or distort them. The heat mercury arc lamps produces severely constrains the range of delicate substrate options a designer can consider for print media projects. And thermal energy produced as a by-product of curing with mercury arc lamps is wasted energy. This needlessly increases energy costs and emissions for the print producer, so using LEDs for UV curing reduces energy usage and lowers the cost of ownership especially, in the short run wide format digital printing sector.

TAKING CONTROL OF ENERGY CONSUMPTION

Despite the recent fall in the price of oil, energy consumption still makes a substantial contribution to print media production costs. It also has a negative effect on a company's environmental footprint, so it makes sense to improve device and component performance. The LED example shows us that low energy technologies play a major role in improving the environmental impact of print. They help reduce costs because using low energy components helps to bring down a printing system's electricity needs.

In order to make fair comparisons of the energy consumption of different devices, buyers need a common reference for measuring the energy usage of a printing system. This is especially important for the production digital printers used in a wide variety of on demand applications. Many projects printed digitally are produced in very short runs and as the run length falls, so the electricity cost required to produce each copy rises. A quantification of unit costs must factor in electricity usage calculations. But without a standardised way of quantifying electricity usage, it is almost impossible to accurately compare the energy performance of different digital printing technologies.

Fogra, the German graphic arts research association, has

Continued over

recognised this. In 2014 Fogra established the Fogra Energy Efficiency project to develop a means of quantifying the electricity usage of digital production printing machines. Fogra has passed this work to the International Standards Organisation (ISO) which is in the process of completing and publishing it. ISO 20690 is expected to be available in 2017.

WHAT'S IN ISO 20690?

ISO 20690, currently under development, specifies how to measure in Watts and kiloWatts the electricity small and large format digital presses use. The standard does not apply to digital presses designed to print on substrates other than paper, but it is anticipated that standards for other substrates will be forthcoming.

The standard defines a typical printing configuration as including the digital front end (DFE), the printing unit itself, the paper feeder (sheet or web), paper delivery unit, external cooling units necessary for the printing system, curing and drying units, and so on. For the purposes of ISO 20690 a digital printing system includes the DFE with colour management functions, raster image processing (RIP) and the press settings. This is where the output resolution, speed, colours, number of passes, substrate width, drying, curing and print mode are specified.

The printing system may also include additional equipment, such as finishing technology, which will contribute to the power consumption measurements. To comply with ISO 20690, measurements must be done with a power line analyser with a storage function. The device should be able to capture voltage values across a range of measures and within plus or minus one per cent accuracy. The sampling rate must be at least five kilohertz. The measurements are made over a period of time that is suitable for the printing engine speed and application. This can vary substantially across devices and applications, so the measurement time has to be fully documented. Measurements only start once the machine is stable and fully warmed up, and ready to run at operating temperature. Measurements are based on production of a specified number of square metres per hour, or on a specified number of A4 sheets. For ISO 20690, details of the reference measurement unit are still being worked out but these are the basic details.

PRINTING MODES

One of the difficult things about taking measurements is making sure that they are representative of the production situation. In stand-by mode the printing engine is switched on, but not running so no printing is taking place. In print-ready mode a printing engine will switched on, fully warmed up and ready to run immediately, but still no printing is taking place. Production mode, which is the mode we care about for electricity usage, is when the machine is printing. It must be printing in a way that can be considered to be typical for the business sector or application. The printing engine must be producing work that is representative and in this condition the power consumption is expected to be stable with no peaks or ramps. This is the consumption rate that is measured for both quality and productivity modes.

The electricity consumption of a digital printing device depends on many factors. These include the type and age of the printing machine, the print mode, printer settings, drying and curing settings, ambient conditions including room temperature and humidity. According to ISO 20690 and the Fogra recommendations, measurements should be based on a defined production unit such as fifty B3 sheets or 100 square m. Energy use should be measured for both the most productive machine configuration and for the configuration that delivers the highest quality, because the electricity usage may differ for each.

Quality mode requires printing a reference test print, such as the Altona test suite from the European Colour Initiative, a user group working with bvdm, the German print industry association. The same test form can be used for measurements in productivity mode, and doing so will also demonstrate that the device is fit for purpose. The colour values of the output should be measured and must meet professional expectations.

THE IMPORTANCE OF DOCUMENTATION

If the measurements are to comply with ISO 20690 and in order to make fair and equitable comparisons of energy quantifications, full documentation of the testing process is required for both production and quality modes. The documentation should report the printing device manufacturer and model, the output format, ink or toner type, the printing mode (productivity or quality) and its configuration, plus the power requirement and specific energy input. In addition to this information the documents must reference the substrate and its width, the number of colourants and passes, output resolution, print mode (single or bidirectional), drying and curing methods, the overall printed area size, and of course the details of the system's productivity. Other details such as the time to print, can also be noted in the documentation.

Documentation is key to ensuring transparency and comparability. It confirms the details of the printing configuration, such as for example simplex or duplex, the format size, the test form used and so on. Large format machines will need to impose a reference test form and how this is done must also be documented. Details of the measurement device along with proof that it is

Lamp Type / Lamp Intensity	Arc (watts)	LED (watts)	Power Savings (watts)	% Saving
100%	12.0	3.0	9.0	75%
50%	7.0	1.6	5.4	77%
20%	3.0	1.0	2.0	67%

A sample comparison demonstrates UV versus LED energy usage

correctly calibrated, for instance with a test certificate, must also be included in the documentation.

BENEFITS TO PRINTING COMPANIES

Companies with an eye to emissions and waste management, will be able to use this document to understand how to compare the energy management of digital printing systems. With ISO 20690, operating costs and carbon footprinting data are easier to calculate. This is useful for carbon offsetting and for calculating the carbon footprint of print media products according to ISO 16759 for the quantification and communication of the carbon footprint of print media products. It is also a useful support for compliance to ISO 14001 for energy management systems. ISO 20690 supports efforts towards greater process control and process accountability, and contributes directly to a printing company's bottom line. ISO 20690 allows buyers to compare production digital printing systems using a common reference.

BENEFITS TO MANUFACTURERS

Using a standard method for measuring electricity usage establishes a common benchmark for manufacturers of digital printing systems.

ISO 20690 allows manufacturers to quantify and compare the electricity usage of their digital printing devices unambiguously and transparently. It will aid investment decisions for future developments and provide data for Life Cycle Analysis (LCA).

BENEFITS TO THE ENVIRONMENT

Although quantifying electricity usage is not simple, it is a necessary part of calculating carbon footprints. It is also necessary as the graphic arts industry moves towards a circular economy. ISO 20690 can be used to track electricity efficiency improvements over time or with technology generations. It can be used in conjunction with ISO 16579 to accurately calculate the carbon footprint of print media, and as an aid to fulfil ISO 14001-compliant environmental policies. Improved quantification of the environmental impact of print also encourages the use of printed matter.

CONCLUSION

Electricity management is not part of the printing industry's collective mind-set. However, unit electricity costs make a substantial contribution to the prices of raw materials and the cost of print media production. Whether the production unit is defined as 1000 A4s or 15 square m of substrate, printers can use ISO 20690 as a guide for their technology investment planning.

ISO 20690 can be used to benchmark energy performance for different machines over time. This is a useful indicator of technical progress in the printing industry and a means of evaluating possible improvements in future technology generations. A manufacturer who prioritises energy efficiency will be able to demonstrate this commitment, using ISO 20690 test results as the reference. ■

Laurel Brunner is Managing Director of Digital Dots

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UNDERSTANDING THE ANOMALIES ASSOCIATED WITH TDG REQUIREMENTS

ESMA
Driving Print Excellence

Gabriele Heller explains the CLP Labelling of Transport Packaging – CLP Article 33 (2)

Gabriele Heller

CLP Article 33 (2) requires that the outer packaging of a package not subject to labelling according to the rules on the transport of dangerous goods must be labelled in accordance with CLP regulation's requirements. This particular requirement is problematic for suppliers using one transport package to send different products with different CLP classification, but not requiring TDG labelling to their customers, as they would have to label such a package with all labels of the products contained.

Many printing inks are not subject to transport of dangerous goods regulations but, nevertheless, have to be classified as hazardous according to CLP and, thus, require an according label. Also it is not unusual that customers order more than one or two different products, but only one or two containers of each of those products. Thus, a transport packaging destined for a certain customer often contains a certain number of products with different CLP classification and labelling.

ADDITIONAL WORK AND HIGHER COSTS

In this case the transport packaging, according to the current requirement of CLP article 33 (2), would have to be labelled with all the labels also affixed to the containers inside the transport package. This requires the labels and the information on which labels have to be affixed to be available at the packing station, requiring additional work for the related stuff to affix those labels, resulting in higher costs for packaging and transport.

For distributors the problem is even more worse, as usually they don't have access to CLP labels for all the products they store and distribute.

TRANSPORT LEGISLATION

ECHA now has drafted an updated version of the 'Guidance on labelling and packaging'. In this new, updated version a new sub-paragraph 5.4.2 has been added to Article 5.4 ('Interaction between the CLP and the transport labelling rules'). The title of 5.4.2 is 'Packaging used for consolidation of supply packaging during transport'. It outlines that CLP rules apply to all layers of packaging used for supply purposes, and that any further packaging may fall under the definition given in the transport legislation: 'The outer protection of a composite or combination packaging together with any absorbent material, cushioning and any other components necessary to contain and protect inner receptacles or inner packaging'.

Thus article 33 (2) of CLP should be interpreted as meaning that labelling according to CLP is required for the outermost layer of packaging that remains when the transport packaging is removed – and this means that transport packaging is out of the scope of CLP article 33 (2). For storage, however, the transport packaging has to be removed; otherwise the CLP label(s) have to be added to the (former) transport packaging.

SOLVING THE PROBLEMS

So, after publication, this new sub-paragraph will solve the problems for ink manufacturers and distributors outlined above.

Concerning publication of new ECHA guidance, a guidance draft has to undergo a consultation process, following the steps:

- Consultation of a Partner Expert Group (PEG)
- Consultation of ECHA's committees and/or forum
- Concluding consultation of the European Commission and the relevant Competent Authorities.

The new 'Guidance on Labelling and Packaging' has already passed the PEG consultation and was forwarded to the committees in January. If the draft passes this consultation step, it is to be expected to be published by the middle of the year, as the Competent Authorities participating in the last consultation step foreseeably will not have a problem with this sub-paragraph. The suggestion for this new paragraph originally came from the CASG-LG (Competent Authorities Sub Group on Labelling and Packaging). ■

Gabriele Heller is Chairman of ESMA's Health, Safety and Environmental Protection Committee and Senior Manager Product Safety at Marabu

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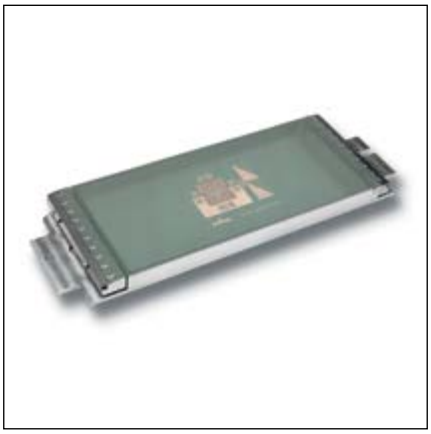

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A STICKY STORY

Simon P Clifford stresses the relevance of today's adhesive technologies

There is, today, an infectious fungus spreading throughout most screen-printing shops. At first look it is only visible in the immediate area around the press where it takes on the form of a soft furry coating, infiltrating every nook and cranny of your press. Before long, it has spread to the dryer and then very quickly makes its way onto the walls and floors, infecting the light fixtures and ceiling on the way. What is this strange 'Star Trekian' creature that is overtaking your ship, I mean shop? Is it fall-out from some secret government weapons test, or is it something closer to home?

You interview everyone in your shop. Maybe it's coming from the art department, or the dark room, or even from the screen reclaiming area. In desperation you talk to your top man, the 'Big Kahuna', the 'Squeegee Puller'… your press operator! You ask him: "Well, what do you think?" In true technical printing jargon, he replies: "Dunno boss." As you walk away totally befuddled, you notice that inauspicious can of adhesive that he has grasped between his knees.

You watch and, in one supersonic movement, he grabs the can, sprays the pallet and returns it to his trusty knee holster. But wait – what is that fine mist that you see floating past his face? Could this be the unlikely source of this 'bubonic' type plague that has infected everything that you hold dear in your shop? You bet it is!

If this colourful yet dramatic narrative sounds just a little bit to familiar, then you may be suffering from what is commonly known as "glue build up @#$$". Why does this happen? Aerosols typically use flammable gasses as propellant and these, by nature, are lighter than air. When the can is sprayed, you are relying on the force of the spray to transfer the adhesive to the pallet. In tests, only approximately 50% of the adhesive gets on the pallet. The rest simply floats away to settle where it will. When you add this sobering statistic to the inaccuracy of the person spraying, the cost of aerosol, the cost of cleaning up the over-spray, and then factor in the environmental and health implications, the long term cost of using aerosols is much higher than the simple cost per can.

What can you do? Obviously the amount of over-spray and associated problems are related directly to the amount of aerosol you are using. If you are only using a few cans per year then your over-spray problem will be minimal. If you are going through six or more cans/month then you need to make some changes in how you apply glue to the pallet. Accurate handling of the aerosol can eliminate some over-spray, as will careful masking of the floor and machine around the loading station.

The simplest way to eliminate the problems associated with aerosol adhesives is to eliminate the aerosols themselves. Alternative products do exist that will perform as well as, or even better than aerosols. There are available three basic alternatives:

1. Double sided pallet masking tape
2. Water-based direct apply spreadable adhesives
3. Water-based bulk sprayable adhesive systems.

The first, double sided tapes, similar to pallet mask tape, tend to be very expensive and do not hold up very well under long term use or flashing. For very short runs they can be

Continued over

A press covered in adhesive and lint

Apply manual adhesive

Aerosol being sprayed on large pallet

Manually applying adhesive TB-HV

useful; however, cost and longevity are a problem along with the time involved for their applications.

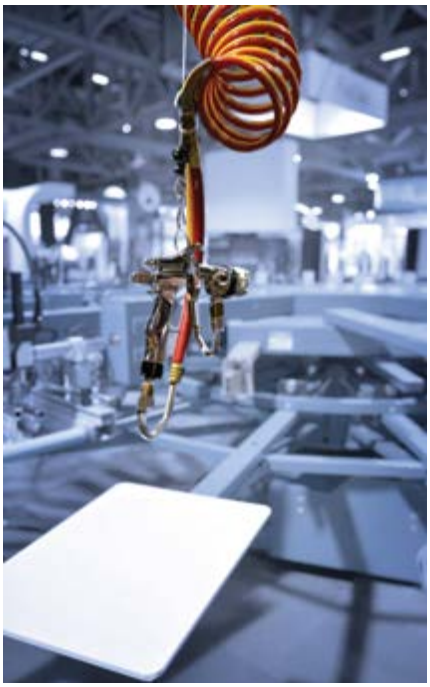
TROUBLESOME ADHESIVES

Direct apply adhesives can be troublesome as the dry times vary. A good tip is to apply a good base of adhesive and flash each pallet off so the adhesive is dry. Once in full swing the pallets warm up so this will help with re-application. As you print, typically less adhesive is require when re-applying. Direct apply are a mixed bag – some are very good while others offer only mediocre adhesion; the latter group also has a tendency to transfer to the garment. A good test is to see if you can roll the dried adhesive off the pallet with your finger. If you can, then you can bet that some of it will end up inside or on your shirts.

Look for high solid water-based acrylics as these will give you the thinnest layout and fastest dry times. If a solvent-based adhesive is used, you re-visit a lot of the environmental and health problems associated with aerosols. With this in mind, Tekmar manufactures a product called TB-HV that is formulated using a high solid (65%) micro-emulsion acrylic. It spreads super thin and dries in seconds. Its superior bonding virtually eliminates transfer but still allows an easy peel of the shirt.

The third alternative is by far the most desirable replacement for aerosol. There are systems available that can apply both water and solvent-based bulk adhesives directly to the pallet. Some of these are air-driven and others are airless electric. The airless units apply a very controllable spray of adhesive. However, as a result of not using air, they often have the disadvantage of applying it wet rather than dry. This delays the printing process and can cause transfer of adhesive to the shirt. This problem is far more prevalent when spraying the more desirable, water-based adhesives. Solvent based adhesives often are high in VOCs (volatile organic compounds) and, due to the nature of being lighter than air, solvents are normally

An example of a small bulk adhesive applicator


A hanging gun positioned over a pallet

Tekmar's target AV-1 adhesive overspray vacuum

flammable, once again adding to the 'floating adhesive' problem.

Imagine a system that could spray a long lasting, instant tacking, water-based adhesive onto the pallet with virtually no over-spray. These systems do exist and are available now from Tekmar. A spokesman for the company reports that 4.55 litres (one gallon) of its bulk water-based adhesive, replaces a minimum of six dozen (six cases) of 0.45 litre (16 ounce) cans of spray tack. The TB range of adhesive applicators is designed for all size operations, from small single manual press shop to companies running multiple automatic presses. The all water-based adhesives line includes the industry standard TB-10 for T-shirts and fleeces, TB-EZ for PPF (polyester performance fabric), a special formulation of the TB-EZ (TB-EZX) developed to meet the strict Nike protocols and TB-15 for embroidery appliqué adhesion. What makes this system unique is the utilisation of its HVLP (high volume low pressure) technology.

HVLP allows the adhesive to be applied with a large volume of air, at low pressure. This ensures that the adhesive is sufficiently dry for continuous loading of shirts, without the blast of air that would normally force adhesive all over the printing press and all over the shop.

Obviously even the most fastidious operator is still going to have some adhesive miss the pallets. For this eventuality, Tekmar has also developed the AV1. This is a compact box that sits under the unload station and has a downdraft fan that draws any errant adhesive through a replaceable filter panel so that it doesn't end up all over the floor and base of the press. For a few dollars a week the area under your press can also be virtually adhesive free.

Tekmar has thousands of installations at work all over the globe and has become the benchmark for bulk adhesive systems. Shops using these types of systems experience faster production, cleaner premises, less adhesive left on garment and a far more environmentally friendly and safe working environment. Aerosols are old technology that no longer belongs in the screen-printing workplace. The future is water-based adhesive technology delivered in a cost effective, environmentally safe manner. ■

Simon P Clifford is President of Tekmar

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BUILDING A HOT BUSINESS

Specialist Printing Worldwide joins a conversation with Lars Nilsson, Fredrik Skanselid and Tommy Forsberg about an inspiring growth story

Inspiring stories of creativity and growth seem solely focused on digital printing these days. But things are starting to change, not least the recent reports of growth from Sakurai. Lars Nilsson recently spoke to a Swedish company called Hot Screen, poised to invest in five new Sakurai machines, and discovered another growth story from the world of screen-printing.

Lars Nilsson: Fredrik – I understand that Hot Screen, based in Southern Sweden, is a real growth success story for screen-printing. Do tell us more?

Fredrik Skanselid: We think screen-printing has gone a bit backwards and want to use the approach of other industries to get across the key points and values of screen-printing. It still has huge potential and perhaps as digital grabs the attention, only a few people are seeing this. Since 1999, Tommy Forsberg has been in charge of development and production at Hot Screen. I purchased the company with my wife only three years ago. Our previous work was unrelated to the print sector having a track record from investment and helicopters.

Since the acquisition, we have introduced lean production and improved our environmental performance as well. We think that our print shop today is one of the most modern in terms of lean production, automation and environment. I also think how we work together as a team is unique, as well as our focus on the environment. Screen-printing uses a lot of water but we now have a system that recirculates and cleans the process water. All water leaving Hot Screen is crystal clean and Ph neutral. The new factory is designed using power that is self-supplying, and everything is recirculated, we are self-supplying regarding heating and hot water to our factory.

Owners of Hot Screen, Anna Skanselid with CEO Fredrik Skanselid

LN: Why did you choose to buy Hot Screen in particular?

FS: We were looking for a business with strong growth potential but also one with a great team already in place. And we got this right, I think. We were looking for production companies that had an interesting position in the market and one we could grow. By coincidence we were looking at the heat transfer business and we had the possibility to do this deal with Hot Screen.

The company had a turnover of €4 million, 18 employees and a smaller factory – 10km from where we are now. We acquired Hot Screen in January 2014. Together with Tommy and the rest of the staff it was clear we had plenty of possibilities. But we needed a new factory in order to create real lean production and the space to grow.

We were able to add all the machines we felt necessary to optimise our production and included all the staff in this discussion. We created a layout with a lean concept. Then we invited architects to lay out the building the machinery and production.

Now we are turning over €7 million and employ 31 people.

LN: So the business is focused on garments?

FS: Our particular niche is an environmentally certified and approved industrial washable heat transfer for work clothing and leisure. The main market is Sweden, Finland and Norway, but the trend is growing and we are moving towards the rest of the European market. Employers pay for workers' clothing so they like to have the branding on it. Generally, branding is on the increase, so clothing is a key element here.

We only deal with the image heat transfer itself. We then supply to print companies that deal with the actual image printing. Our resellers do that. We do all the big chains

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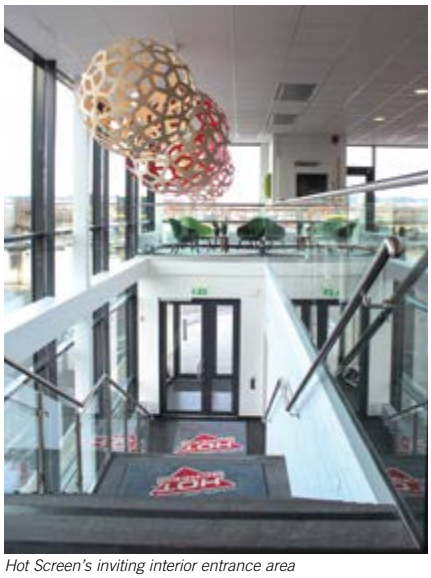

Hot Screen's inviting interior entrance area

Hot Screen's impressive premises in Fjärås, Sweden

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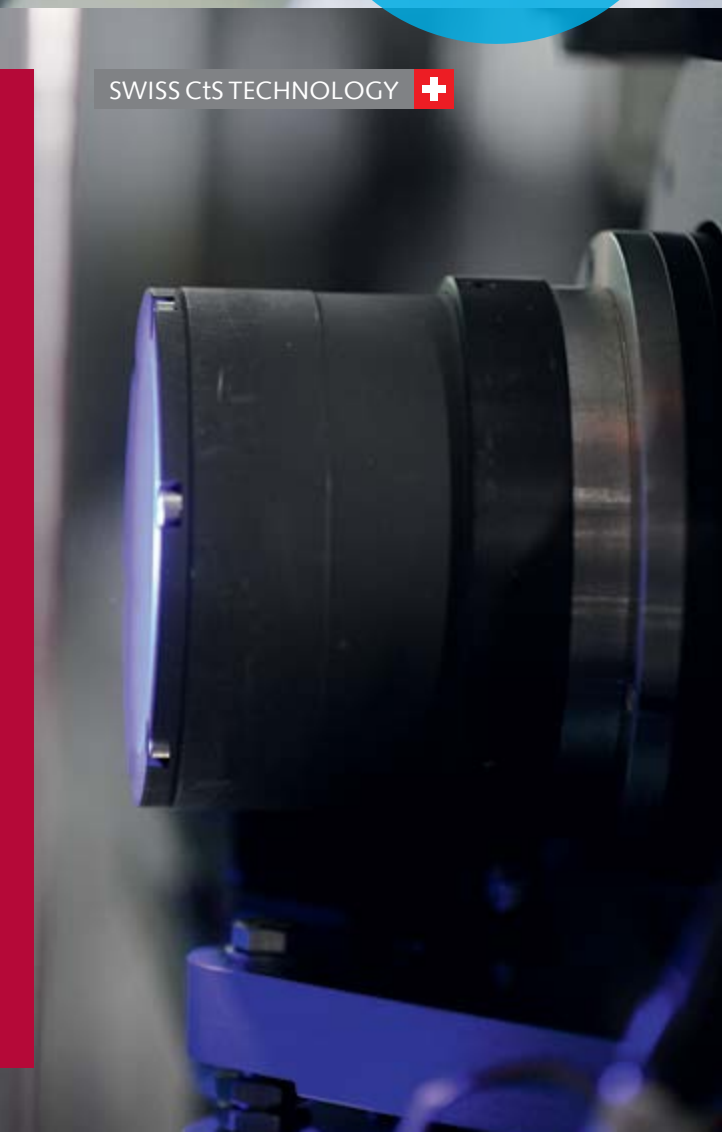

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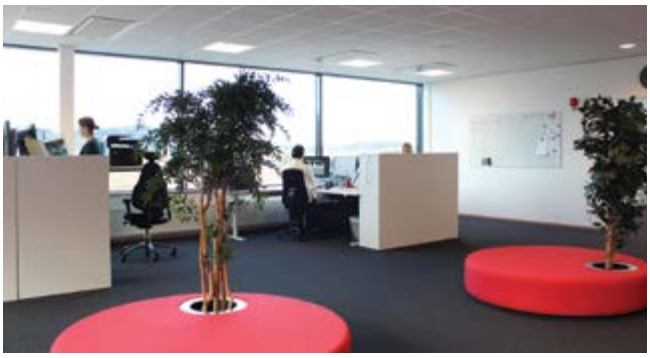

The customer service area at Hot Screen

work and this keeps us pretty busy. At the moment we do 80,000 transfers per day.

LN: So you have increased production hugely in this time. How have you achieved this?

FS: I guess we have the focus on one product and we improve upon it. The markets that are growing well seem to be the specialist printing sectors that serve niches. The printer that has trouble is the one who is trying to do many things as his attention is too divided.

We have gained business from some of the producers and we have the expertise, capacity and environmental credentials. It is harder for the companies to compete with our delivery time, cost and quality.

The larger companies we are working with are forced to use us as we have the right qualifications for the environment so they are obliged to choose us. We will have ISO 9001 and ISO 14001 by May of this year and I don't think a lot of heat transfer print shops have this capability.

LN: So when buying a business such as Hot Screen what is the key value you are investing in?

FS: In one word, I have to say it is the people. We saw quickly that there was potential with the people. There were already a lot of good ideas, but much was not possible to act upon, due to the old structure. But we came in with an open mind and it just started to bubble. As we have got leaner, we have been able to grow and improve our production. It was clear the company was boiling with good ideas but was not able to do it all. We like the Google feeling, that happy people make happy products. We have a joint energy about what we do, we are all really committed, we like to have music, chill out areas, a gym, a car wash facility and we have all created this environment which fosters team spirit. They have a feeling how they like to work, what kind of furniture, what kind of desk and everything. So it is an environment created by all of us. For example, the guys who work with the machine decide where it goes and what kind of machine we need to invest in.

LN: Why Sakurai technology?

FS: We are replacing all of our machines and we are moving to a fleet of Sakurai machines, basically because we think it is the best. It

One of Hot Screen's five new Sakurai SD MS80 servo driven machines

The company's research lab

is the Servo driven machine, the MS80. Its makes a big difference to efficiency and quality. It is faster, more precise and allows more adjustment than the traditional machines. It has some unique features like prolongation of print impression. You can do a lot of interesting effects to allow printers to do the job really well. The quality improvement takes us a big step forward by doing this. And our four-colour process means we can increase resolution. The image is much higher resolution than before and comparable with digital printing. And the screen-printing technique beats the digital printed heat transfer in the aspects of wash ability, speed and environmentally factors speaking, it beats any of the competitors hands down. And this, therefore, improves the economic performance. The technology lowers error of margins, as the precision is so good. There are fewer registration problems.

It is also adaptable. We tend to run 50 to 100 piece job runs. We think it is also easier to set up the registration quicker and better. What you can do after adjustment is very compelling. So you can save a job that may have been a wasted doing it with an old-fashioned cylinder press to compensate for any mistakes through the shrinkage of sheets or the placement of pictures onto the frame.

By investing in Sakurai, the machines don't vary; they make the same quality and this is good to achieve a great standard. For me it is so simple, for the future we may have twelve machines, having great production and achieving the great same standard is really important and a great advantage instead of having varying machines from different companies that complicates things and doesn't make it lean.

One thing to say when we did the investment with Sakurai is that we think that their machinery is several years ahead of the competition. We also have several cylinder presses and we have one

Continued over

Part of the company's generous pre-press area

Hot Screen has its own internal waste water treatment plant

The spacious and efficient production floor at Hot Screen

Sakurai from 1998 and it is still the best machine we have in the whole fleet. This says a lot about the quality. This is important to mention we have a number of other machines that are newer, but still not as good as the Sakurai machine.

What is also important is the pre-press machinery supplied by Grünig and SignTronic as this works well with Sakurai technology and is a vital part of the whole process. Then, in terms of drying, the Natgraph product is very important too. Our strategy is to partner with the key producers so that we all work together to mutual success with the best partners in the market and get a great tool box of expertise. Lars Nilsson from Marabu, too, is an important cooperation in our success.

Nilsson is Managing Director of Marabu Scandinavia, responsible for Scandinavia, UK and The Netherlands and is an approved distributor for Sakurai equipment sales in Sweden. He has, along with Ulf Nilsson (no relation) developed a strong partnership with Hot Screen.

Specialist Printing Worldwide: Lars – explain your experience please and how you think the market has changed?

LN: I have been involved for 25 years with screen-printing joining in 1985. In 2001 I became Managing Director of Marabu for Scandinavia.

Screen-printing is in a big change. Traditional graphic printing is more or less disappearing due to digital and, before this time, it was increasingly under threat from offset.

However, one of the fastest growing applications is the textile transfer business.

The high-end computer-to-screen section in Hot Screen's pre-press facility

Still a lot is produced with screen even though printers may have digital available. Even if something is printed digital in four-colour, screen-printing is still needed. Direct printing to garment is to be replaced by textile transfer. The growth for direct, to workwear and sportswear is growing this business.

One of the key advantages of digital may be short run, but you can do this with screen-printing. So, whilst we hear so much about the development of digital printing, is screen-printing developing also?

Of course, screen-printing technology has changed considerably over the years and it has improved. As well as this, pre-press has also improved. The companies with the screen-printing technology that have the most modern pre-press, modern machines and drying, are heat transfer. It is very modern, sophisticated and industrial.

When I started in the business, textile printers might typically work out of a garage. Today these guys are the most advanced – more so than any other graphic printer in the past.

The printer that Hot Screen uses is the Sakurai servo driven MS80, driving all the sequences differently. With the direct servo you do not have the acceleration, as there is no gearing. You reach the optimum print speed before you reach the printed area and you keep it stable until the job is finished. Before you might have had to print 60 colour sheets, so this will save a lot of registration sheets and there is a huge saving.

SPW: Tommy - why is selling screen-printing equipment somehow more straight forward?

Tommy Forsberg: In screen-printing, because it is a more mature technology, people tend to know what they want. Digital is different. One may want speed and single-pass without really having a thorough knowledge of the technology. So people are more likely to make wrong choices and you still get people comparing apples and pears. This isn't their fault; it is just a factor with an evolving technology market.

SPW: So what makes Hot Screen different?

TF: Fredrik is an entrepreneur never making compromises with improvements for environment, staff or productivity. The change of four fully working cylinder printing machines to four new Sakurai MS80DS is a true proof for that, even if it works, he is willing to invest to make it perfect.

SPW: What is your view of Sakurai equipment?

TF: I can only say from what I understand is the best in the market. This is a stable name in the market. We have there the ability to support the customers. In all of the years I have worked, with Sakurai equipment there is never a breakdown – the machines just run and run. If you think of the thin material market, to win this business, you need to be using a cylinder machine, and Sakurai is simply the best. ■

Tommy Forsberg is Production Manager and Fredrik Skanselid is CEO/Owner at Hot Screen. Lars Nilsson is Managing Director of Marabu Scandinavia

Hot Screen has its own in-house gym

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A highly qualified, motivated and flexible workforce is the basis for success at Grünig-Interscreen

FIVE DECADES OF SCREEN PREPARATION SPECIALISATION

Grünig-Interscreen AG celebrates its 50th anniversary as a specialist supplier of screen preparation technology for the international screen printing industry in 2017. The following contribution highlights the company's history and present-day activities

The screen printing process and the industry that employs this technology have changed markedly since Hans-Ulrich Grünig established a small business in 1967 to design and manufacture specialist screen preparation equipment. Over the intervening 50 years, the process has been exposed to various tendencies, changes and challenges, while Grünig-Interscreen has evolved from being a purely mechanical one man operation into a high-tech business, serving the specialist needs of customers throughout the world.

The company's history can be traced back to 1967, when Hans-Ulrich Grünig started his own company in Switzerland in a small garage. It was here that he built the world's first screen coating machine in 1978. A year later, he developed and manufactured the industry's first automatic coating machine (model H-41), after which the first systems for automatic washing and de-coating were developed and installed worldwide in 1983.

Then, in 1984, the origins of Grünig's current G-WASH series of products can be found. In 1992, the period of co-operation (to develop and manufacture equipment) for Harlacher ended when Grünig decided to create its own brand and products for the international market.

FAMILY MANAGEMENT CONTINUITY

It was in 2002 that Marcel Grünig, who represents the next generation of the Grünig family, took up the reins and started to run the business. This transfer of management control was marked by the construction of a modern production shop, a revision to the company's branding and the appointment of Andreas Ferndriger as a member of the executive management team. Three years later, a revised corporate design and identity were implemented, devoted to the 'stretching/coating/washing' disciplines.

As a Swiss family enterprise, Grünig subscribes fully to the principle of self-development and manufacture.

The company's core competences 'stretching/coating/washing' are based on Swiss professionalism and quality. 'Made in Switzerland' is not employed simply as an empty phrase but as a commitment that is implemented wholeheartedly by the organisation and its workforce. Today, a clear and dynamic market presence rounds off the overall picture of Grünig.

The world's first screen coating machine was built in a small garage by Grünig in 1978

STRETCHING

Grünig has been building stretching equipment in all sizes and designs for 50 years. During this period, several thousands of stretching machines have been developed in every

Continued over

Since 2002, Marcel Grünig and Andreas Ferndriger have jointly managed Grünig-Interscreen and Sign-Tronic in a turbulent economic environment

possible technical variation, from purely mechanical, pneumatic and electronic versions up to fully automatic stretching systems.

The company's latest design covers the area of automatic gluing. Optimal co-ordination between the glue system used and the stretching equipment guarantees significant cost savings, while maintaining quality at a consistently high level.

G-STRETCH 275 is a fully automatic stretching machine with automatic UV gluing and LED curing processes. A special feature of this design is the fact that, in addition to all customary meshes, this machine is also capable of handling pre-coated PCF meshes.

COATING

Since Grünig's development of the first automatic coating machine in 1979, thousands of systems have been implemented throughout the world. Whenever the need arises to enhance, standardise and automate the individual screen making processes, automatic coating is usually the first and most important step to be taken.

In all customer markets, major efforts are undertaken to improve print quality and reduce costs by standardising the processes employed. In this context, screen preparation is of the utmost importance. A perfect screen is recognised as a mandatory prerequisite to achieve these goals.

The G-COAT 415 system delivers in-line automation for the automatic coating and drying of printing screens. This equipment provides the standardised application of direct emulsion or capillary films with absolute precision.

WASHING

Screen automation is another central and important aspect, especially in the field of screen cleaning. Grünig's extensive product range offers ideal solutions for all customer segments and sizes, irrespective of whether they require a single compact plug and wash machine, if they need to handle small XS up to extremely large XXL formats, or if the optimal answer to their needs involves global in-line automation solutions, which are becoming increasingly important.

For more than 30 years, modular concepts have enabled Grünig to offer tailored solutions

The company's core competences, 'stretching/coating/washing' are based on Swiss professionalism and quality

to match customer requirements. The company's G-WASH 170XM series is a modular installation concept for all washing processes: Automatic de-greasing, washing, de-coating and developing of printing screens of any size.

STRATEGIC PARTNERSHIP

In September 2011, Marcel Grünig and Andreas Ferndriger acquired a shareholding in Sign-Tronic AG of Widnau. This led, in June 2013, to acquiring 100% of the organisation's share capital, with the intention to ensure the optimal utilisation of synergies, to improve the competitive positioning of both companies and to offer screen-printers systematic and customised professional solutions for their various needs.

Separate headquarters are maintained in Schwarzenburg and Widnau and despite the close working relationship that exists between both companies, they remain legally independent entities. Marcel Grünig is the CEO of Grünig-Interscreen AG, whereas Andreas Ferndriger is Managing Director of Sign-Tronic AG and Sales and Marketing Director of Grünig-Interscreen AG.

The highly motivated personnel of both companies make the best possible use of the manifold synergies available to build a joint future. A dynamic team spirit has developed, making common appearances – such as during the FESPA 2017 trade fair in Hamburg – normal occurrences for members of staff.

All activities are co-ordinated and focused on automatic screen making. According to the shared motto 'The perfect screen', ingenious, customer-specific overall solutions are designed to cover all different customer requirements.

Sign-Tronic STM-TEX-PRO-10 film-free, in-line CtS screen making guarantees not only

STM-TEX-Pro-10 film-free CtS in-line screen making

G-STRETCH 275 fully automatic stretching machine with automatic UV gluing and LED curing processes

good screen quality but also unbeatable cost reductions. This technology features CtS direct exposure, combined with automatic screen development, blow-off/preliminary drying and feeder technology.

FESPA 2017 ATTENDANCE

The FESPA 2017 exhibition on 8-12 May in Hamburg provides an excellent opportunity for Grünig-Interscreen AG and Sign-Tronic AG to fly the screen printing flag, with a view to offering customers the necessary tools to ensure their future success in this challenging field of screen-printing.

The key message of this joint trade fair appearance is 'The perfect screen'. To this end, each of the essential processes of standardised screen preparation in the field of stretching/gluing, coating/drying, CtS direct exposure and developing/washing/cleaning including water treatment will be presented on the joint exhibit. Visitors will discover that modular concepts are available for virtually every possible application, plant size, format and budget.

INNOVATIVE TEAM SPIRIT

Highly qualified, motivated and flexible staff members are the basis for any company's success. Grünig can call upon several long-term staff members who are distinguished by a high degree of identification. The company's regular anniversary events have become a cause for celebration. Here and on the occasion of international distributor meetings, for example, it is apparent that flexibility and professionalism, humour and a zest for life are the hallmarks of Grünig and its workforce.

Grünig-Interscreen AG can be expected to remain a small but global player in the screen printing business. ■

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WHERE DIGITAL AND TRADITIONAL TECHNOLOGIES MEET SUCCESSFULLY

Quality and precision are the top priority for Budapest-based promotional specialist

There are 15 different types of printing technologies being used in-house by Anda Present Kft to serve its customers properly with a focus on quality and precision. The company prides itself in using the most up-to-date technologies to manufacture its products to the highest possible standard and with the greatest precision. This approach gives it what it believes to be a unique position in the marketplace. And the approach is paying off.

Some time ago, only half of the hall of Harbor Park Logistics Centre was occupied by Anda Present's manufacturing and logistics centre, with its goods being stored on about 8,000 pallets, one of the largest stocks of gifts in Central and Eastern Europe. However, the company which has seen annual growth of 15 to 20% and emphasises its ability to fulfil orders quickly from inventory, will soon need the entire hall to accommodate the expansion of its operations.

"We work in two shifts from 6:00am to 10:00pm, and we plan to increase our storage area by another 2,000 square m," explains Peter Seres, Operational Director for the company. "Our growth has resulted in the space we are currently using becoming too small for us. With this expansion, the increased volume of our stocks and printing capacity will be so significant by the end of the year that our market-leading position will be further strengthened in Hungary and at an international level as well."

BRINGING PRODUCTION IN-HOUSE

Seres states that, historically, the company required a large circle of suppliers and subcontractors to meet its production volume demands. However, that presented so many challenges in terms of control over the process, quality and turnaround time that the company has decided to bring the whole spectrum of production in-house in order to enhance its competitive advantage. "We regularly attend professional exhibitions abroad to learn about the most-up-to-date technologies," he says. "And we make investments in added capabilities on an on-going basis, an approach that is relatively unusual in our business. These days, two-thirds of our 115 production employees only deal with printing, and lack of professional training in that area can present a serious challenge. In order to tackle this issue and ensure we have a suitable work force, we recruit our young colleagues directly from their schools and later train them within the framework of our own educational and career programme with a focus on tampon and screen-printing. This approach ensures a talented and professional staff prepared to meet or exceed customer expectations."

Anda Present's duo of Mimaki UJF flat-bed printers

SEASONALITY AND SPECIAL EVENTS

For Anda Present and the promotional products industry in general, peak seasons are winter and summer. Promotional product sales increase in the pre-Christmas season when companies often present their employees with promotional gifts. As far as printing is concerned, the period between March and July is the most active. This is the period where Anda Present sees the most requests for the personalisation of gifts, probably because of demand for the distribution of promotional gifts in public places during the summer, with companies placing their orders ahead of the season to prepare for it.

In addition to seasonal products, Seres points out that Anda Present also has products that are popular throughout the entire year, independent from any seasonality. These are typically related to sports and desired by fans, including applause sticks and

Continued over

flags that can be attached to cars or to rear view mirrors.

Another driver of change in the volume of orders is the occurrence of major events, such as the Sziget Festival or the European Football Championship. Seres adds: "In addition, national elections generate a spike in demand. As a wholesale company, this demand is reflected in the volume of orders placed by our retailers."

To take advantage of these opportunities, Anda Present offers special gifts associated with these venues, often associated with national culture such as Vuvuzelas at the World Soccer Championship in South Africa. The company's catalogue of products includes sport and leisure items related to the current year that are routinely offered to its partners. In honour of the European Football Championship, those special items include jersey-shaped key holders, objects in the shape of a football, applause sticks, clappers, whistles and access wristbands. Each of these products can be incorporated into programs that add an interesting promotional aspect to a sporting event.

FINDING THE BALANCE BETWEEN ANALOGUE AND DIGITAL

Anda Present continues to monitor industry developments in order to maintain its leadership position and take advantage of the ability to develop new offerings. This includes both replacing and augmenting conventional technologies. One means of accomplishing this is attending trade fairs like FESPA. Seres also counts on dealers and distributors to keep him up to date.

He comments: "We have been partnering with Nyomdaker Kft, the distributor for Mimaki here in Hungary, for some time. We buy our UV LED printers from them exclusively. When we launched our new line of products, we assessed the printers that were available in the market, and Mimaki solutions proved to be the best. We use an older UJF-3042 and newer equipment from the HG series for printing objects." The Kebab option (UJF-3042HG) is suitable for 360 degree direct printing on cylindrical objects, which makes it perfect for producing promotional items or gifts.

Seres adds: "To extend our capacity, we just purchased a large JFX200, a flatbed printer for our new production operation in Kalocsa. Its table with an adjustable height of 5cm, as well as its excellent printing quality, means that it can be used for printing products, as well as for labelling boards of raw materials in the manufacturing of our unique products."

A typical product that can be produced by the Budapest-based company

For an optimised production platform, Anda Present also looks for newer technologies that can be paired with traditional technologies, supplementing or sometimes replacing them, especially since digital technologies can be easier to staff. "Lack of a skilled workforce for the traditional technologies can be challenging. There are fewer places where the traditional technologies of the printing industry are taught these days; and as a result, it is increasingly difficult to find properly qualified workers," Seres states.

"To remedy this situation, we also train colleagues in-house," he continues. "Printing using traditional technologies can be a complex process – for tampon printing, we need to mix paints, prepare plates and set up machines. With modern UV LED printing, the preparatory process is done on a computer, and it is easier to find talented people here than for traditional printing processes. For that reason, we are seeking investments in digital technologies that can replace the older analogue processes, eliminating many of the workforce issues."

An example of blending analogue and digital technologies is the pairing of tampon printing with UV LED printing technology. The latter, as Seres points out, still has a lot of limitations with tampon printing being more flexible and versatile than doing the same work using UV LED. "With digital technology a limitation is the fact that the object to be printed cannot cover any part of the print-head. For the printing of T-shirts, digital printing is too slow for the volume of printing required by us, and/or its ink cost is too high, even though we mostly use only one colour.

"In the case of printing mugs, we use the traditional process which is often used for ceramics, where we apply the print using screen-printing and we then cure it in a furnace at a high temperature. In parallel, we also label mugs using digital dye sublimation printing, which allows us to offer photo quality with a fast turnaround.

In light of this, Seres sees an ongoing role for both analogue and digital technologies into the future, with newer digital technologies supplementing traditional technologies instead of entirely replacing them, either due to price or production speed. He adds: "When we leverage our professional knowledge against our customers' requirements, traditional and digital technologies complement each other perfectly, allowing us to use the most suitable technology for the given product. In my opinion, traditional technologies will not disappear. However, they will continue to be modernised by adapting some techniques from newer technologies to augment their performance." ■

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Trelleborg opens new polyurethane 'Center of Excellence'

A new applied technologies operation has been inaugurated by Trelleborg in its new purpose built, state-of-the-art facility in Retford, UK. Enhancing its polyurethane manufacturing capabilities, it provides a Center of Excellence for the company's diversified polyurethane component manufacturing, bringing together experience, innovation and technology under one roof.

Trelleborg manufactures the market-leading Unitex squeegee range, which are made at the new facility. They have excellent resistance to modern UV and solvent-based ink systems, which ensures that a consistent print-edge is maintained over long print runs covering the full breadth of screen-printing applications, including electronics, graphics, textiles, glass, bottles and containers.

Ulf Berghult, CFO, Trelleborg Group and Councillor Jim Anderson, Bassetlaw District Council, took part in a ribbon cutting ceremony to officially open the facility. He states: "Bassetlaw is fast becoming a home for some of the most innovative, diverse and successful international companies and, as an authority, we are thrilled that Trelleborg has chosen Retford in which to expand its business.

"The Council's Regeneration and Investment Team have worked closely with Trelleborg prior to, and during, the planning stages to ensure that this Center of Excellence is based in Bassetlaw and, as industry leaders in a number of different fields, including polyurethane manufacturing, we wish Trelleborg continued success."

Berghult adds: "By combining our local expertise from several Trelleborg facilities in the area into one, we will reduce our footprint and environmental impact on the local area. Our investment into this facility demonstrates our long-standing commitment to accelerating performance for our customers both locally and globally."

"It is essential that we are best placed to meet the growing demands of our customers, not only in terms of capacity, but in terms of developing innovative, cost-effective solutions that provide the upmost quality and performance," confirms Ray Cann, Managing Director for Trelleborg's applied technologies operation in Retford.

"We are now located in a modern facility with expanded capabilities and services. By heavily investing in the upgrade of our existing equipment we will be able to develop a next generation of new ground-breaking products and will ensure we continue to provide industry-leading solutions that guarantee peace of mind."

The opening ceremony took place during March and was attended by local dignitaries, senior management from Trelleborg Group and its applied technologies operation, as well as all employees.

Trelleborg's new Center of Excellence

The facility in Retford consolidates four sites – one in Retford, two in Coventry and one in Knaresborough – into a single facility. It combines the experience and expertise that has made these facilities successful to date. Constructed using lean manufacturing principles and with a focus on environmental efficiency, the 7,225 square metres (77,765 square ft) facility will manufacture the current product portfolio of Trelleborg's applied technologies operation. ■

Sakurai to launch game changing MS110-DDS screen-printing machine

CEO Mr Sakurai will host the unveiling of the MS110-DDS at FESPA 2017

Sakurai, world leader in cylinder screen-printing machines, will host the official European unveiling of its 'revolutionary' MS110-DDS production unit in May. The features of this new technology are centered around the direct servo drive which is capable of significantly enhancing print precision due to the cylinder mechanism and improved pressure. This is making it a compelling proposition for all types of screen-printing applications.

According to UK and Europe Sales Manager, Claudio Moffa: "The introduction of this machine represents a significant step forward for screen printers as many aspects of production are improved. The direct servo motor improves precision and adds flexibility to production. As the drive is a direct servo technology it is gear-less and enables high quality printing without backlash. All of these factors are already proving very popular with our customers."

CEO, Mr Sakurai will host the formal unveiling of the MS110-DDS during FESPA 2017. The launch signals further commitment by Sakurai into screen-printing which underlines the continued potential of the process for paper, textile and industrial based applications.

The new system introduces innovative technology that improves sheet edge accuracy with an optional CCD Camera Sheet Alignment System. This attention to enhanced output minimises the contact and abrasion on the conveying sheet. Additionally, the system allows for large sheet printing with a maximum sheet size 1140 x 788mm. To supplement flexibility and efficiency, the printability on thin material and scratch resistance are much improved to a width of 100µm, which was previously considered to be very difficult for a cylinder press to achieve.

Moffa concludes: "This amazing system was launched in Japan at our open house in April. The response from our customers has been tremendous. This has led to a number of orders as the machine adds tremendous productivity whether you are a graphic printer, a heat transfer printer, or an industrial printer. We are excited to be showing this machinery for the first time at FESPA in May and look forward to the interest that this will generate from existing and new customers. We know that this machinery is a unique and game changing platform that will help to put screen printing innovation back on the map." ■

Phoseon lights the way with FireJet FJ100 and FireLine FL400

Phoseon Technology has released the updated FireLine FL400 LED curing solution, which increases the power of the system by 25% - up to 24W/cm². The FireLine FL400 is designed for the most demanding printing, coatings and adhesive curing applications and is now available with increased performance. The solution is scalable to support custom length options, and offers exceptional optical uniformity for consistent and reliable curing for the most demanding industrial printing applications.

Phoseon Techology also increased the peak intensity of the FireJet FJ100 LED curing solution by 50%, up to 12W/cm². The FireJet FJ100 provides an ideal combination of size and power for space constrained environments requiring high intensity curing performance. With WhisperCool and TargetCure technology, the FJ100 provides reliable, consistent performance at a quiet operating level. ■

Phoseon's FireJet FJ100 and FireLine FL400

Kornit Digital launches Avalanche R-Series with ink recirculation system

Global market leader in digital textile printing technology, Kornit Digital has launched its new Avalanche R-Series with ink recirculation system. The Avalanche platform is the company's flagship direct-to-garment printing system, with the two most recent configurations being the Avalanche Hexa, with six-colour-plus white support, and the Avalanche 1000, which has been designed for uncompromised speed.

Both systems are available commercially in a new R-Series version, with a recirculating ink system as the primary innovation. This technology, which Kornit already uses in the Storm series, the Allegro and the Vulcan, optimises print quality, reliability and ink efficiency of the new Avalanches. As a result, users of the Avalanche R-Series benefit from up to 20% ink savings and faster system availability after the start-up process.

The new R-Series versions have replaced the current systems. The capabilities of the R-Series are also available for existing Avalanche Hexa and Avalanche 1000 installations as an upgrade. The Kornit Avalanche Hexa R-Series includes six colour channels plus white, for a wider gamut and improved spot color handling. Users can easily reproduce the true colours of licensed sports teams and accurately match corporate logos with fiery reds, warm yellows, deep blues and greens, vivid purples and many more. ■

The new Avalanche R-Series

Shell to lead ASTM printing inks task group

Johnny Shell, Vice President of Technical Services, SGIA, has been named chairman of ASTM Task Group D01.56, 'New Printing Inks'. This ASTM task group stems from Committee D01 – 'Paints and Related Coatings, Materials and Applications.'

The task group is charged with developing test methods and standardisations for printing ink and other related coatings. Its charge also applies to the preparation of surfaces to which such coatings are applied, coating-substrate systems and paint application tools.

As chairman, Shell will organise the task group and its activities, establishing its missions and goals and managing tasks. "By my serving as chairman, SGIA can facilitate and ensure proper test methods for the inks our industry uses," he says. "This is an area that impacts every printer, every day."

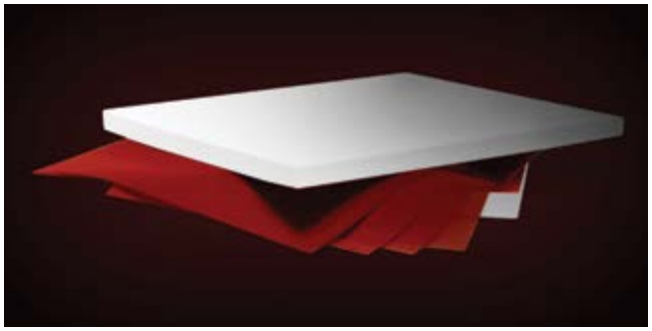
Shell has more than 30 years' experience in printing, ranging from optical media manufacturing to graphics and apparel printing. Since 1999, as SGIA's Vice President of Technical Services, he has been educating the industry on the capabilities and viability of printing technologies. He is a frequent speaker at workshops, industry events and trade shows, and often appears in industry publications. He is also a member of the Academy of Screen and Digital Printing Technology.

ASTM International is one of the largest voluntary standards-developing organisations in the world. A not-for-profit organisation, it provides a forum for the development and publication of international voluntary consensus standards for materials, products, systems and services. Its volunteer members, including producers, users, consumers, government and academia from more than 140 countries, develop technical documents used in manufacturing, management, procurement, codes and regulations for dozens of industry sectors. ■

New Quick Film from Chromaline speeds up production

Chromaline has introduced Quick Film, a 100% pure photopolymer capillary film engineered for the textile printing industry. It can be used as a capillary film or easily laminated with any Chromaline textile emulsion. Quick Film not only has excellent imaging properties, it offers fast and consistent application. It also speeds up production, reduces labour and is extremely easy to register.

Quick Film is available in 381 x 432mm (15 x 17 inch) sheets, is supplied in a 50-sheet box, is red in colour, and is 40 microns thick. Applying Quick Film is simple, fast and can be applied to the screen in many different ways, with no pinholes and precise coating. ■



Excellent imaging properties from Chromaline's new Quick Film

drupa 2020 moves forward by seven days

The dates for drupa will be brought forward by one week so that the event now runs from 16 - 26 June 2020. This was agreed by the drupa Committee and Messe Düsseldorf at their meeting on 15 February 2017. The key argument for this decision was the fact that, in some European countries as well as German states, the summer holidays would have already started during the initially planned dates of 23 June to 3 July 2020. By changing the dates Messe Düsseldorf is responding to requests voiced by both exhibitors and visitors alike.

Explaining the move, Werner Dornscheidt, President and CEO of Messe Düsseldorf, states: "When we decided to stick to the four-year cycle of drupa in consultation with the leading representatives of the industry during drupa 2016, the majority of holiday dates had not been published yet.

"Now we are really pleased that we can offer this solution although there is hardly any room for manoeuvre in the packed trade fair year of 2020. The fact that we agreed on a more compact stand construction period also contributes to holding the entire trade fair in June. And we are delighted to be able to act in our customers' interest by kicking off one week earlier than originally planned." ■

Global Inkjet Systems co-founder passes away

Jim Brotton

Jim Brotton, Global Inkjet Systems Co-Founder and Director, has passed away aged 69. He co-founded Global Inkjet Systems (GIS) as Technical Director with Nick Geddes, Managing Director, in November 2006. His expertise in electronics, alongside his Cambridge-based network of contacts and dedication to his work and colleagues, were instrumental in helping GIS achieve its ten years of innovation and continued success in the industrial inkjet market today.

Jim was a strategic and innovative technologist and manager with a business focus. He held a Joint Hons in Physics & Electronic Engineering from the University of Manchester and was a Chartered Engineer and Member of the Institute of Engineering and Technology.

He managed technology-based projects, portfolios, programmes and companies for more than 40 years, from 1979 spending much of the time running high technology companies around Cambridge. This included three start-ups – Syscon Ltd, Syscon Vision Ltd and PM Resource Ltd.

Delivering technology solutions into companies such as The British Library, GCHQ, Ministry of Defence, Royal Ordnance Factory, Tektronix UK and the Medical Research Council, Jim also created a portfolio management infrastructure for the Department of Health and a Benefits Management System for the Home Office, managed two pan-European business programmes. He had two products showcased on the BBC series Tomorrow's World.

Jim was a team leader and motivator, with a flexible attitude and capability. He was a builder of bridges and remover of barriers, with a calm and tenacious nature, high rate of achievement, delivering results and creating order out of chaos. He will be sadly missed by his colleagues at GIS.

Nick Geddes, Managing Director of GIS, says: "My over-riding memory of Jim is his always positive outlook on life, which was reflected in his approach to work. Many of us saw him as a friend and mentor, with an exceptional ability to get things done. His skill, optimism and belief in GIS helped us through many challenges and with him we have celebrated many successes. As co-founder, his invaluable contribution during the early years of the company helped set its course and spirit. We will miss Jim greatly and will continue to take the company forward as he would have wanted us to do." ■

Screen GP partners with TagG Informatique to develop press

Screen Graphic and Precision Solutions Co, Ltd (Screen GP), the world's leading manufacturer of high-speed inkjet presses, has partnered with TagG Informatique (TagG) to develop a fully-native IPDS controller for the Truepress Jet520 HD and Truepress Jet520NX high-speed inkjet presses.

For many variable data/transactional applications, the ability to output AFP/IPDS is essential and TagG, France, specialises in building high-specification, super-fast controllers. The solution, developed for Screen, allows the Truepress continuous inkjet printers to run at full speed no matter how complex the data. A key feature is the ability to connect to existing legacy workflow and output management systems in a completely transparent way.

Another benefit is that users can also sit the TagG controller on the same server infrastructure as the Screen EQUIOS software. This combination will allow users to process both legacy AFP/IPDS as well as being able to use the EQUIOS colour tools when outputting PDF. Both data formats have benefits and the option for native output through a single controller provides the best of both worlds.

The IPDS controller is already available for the Truepress Jet520 and EX-Mono models in the Truepress Jet520 Series and will be released for the HD and NX models later this year. ■

Screen's Truepress Jet520 HD

Sakurai sales results show strong growth in Europe

Sakurai has announced sales figures for 2015/2016 showing an upturn in sales of almost 300% in Europe, underlining significant growth in demand for their screen-printing machines. This increase in sales coincides with the joining of Claudio Moffa as Branch Manager of Sakurai located close to London. Moffa joined Sakurai in 2015 after a spell working for Marabu Italia and has been in his post for two years now.

With a background in engineering and a passion for innovation, Moffa has made a significant impact for Sakurai, and praises the heritage and excellence of Sakurai technology and machinery. He states: "Sakurai has a great reputation for products that are designed with a deep knowledge of what our customers need. I am very confident in the performance of all of Sakurai's products, as I know how this high quality machinery can produce new business for our customers. This could mean improved efficiency, or it could mean unlocking new potential by rediscovering the amazing power of screen printing."

In addition to a continued commitment to manufacture high quality screen-printing equipment, the company has introduced a new customer partnership strategy. This initiative is designed to help customers optimise performance with the machinery, and by creating innovative applications that enable greater profit.

"I think our recent success demonstrates a genuine renaissance in screen-printing as we are helping our customer base to benefit from the potential that has always been possible," Moffa concludes. "The fact is that screen-printing achieves results that other print processes cannot compete with. This includes special effects, unrivalled accuracy, durable finish and industrial speed. All of which is very compelling. Our vision is to continue to enhance our direct partnership programme by working closely with customers to help them rediscover the power of screen-printing, creating new business opportunity and increasing profit." ■

Sakurai's Claudio Moffa

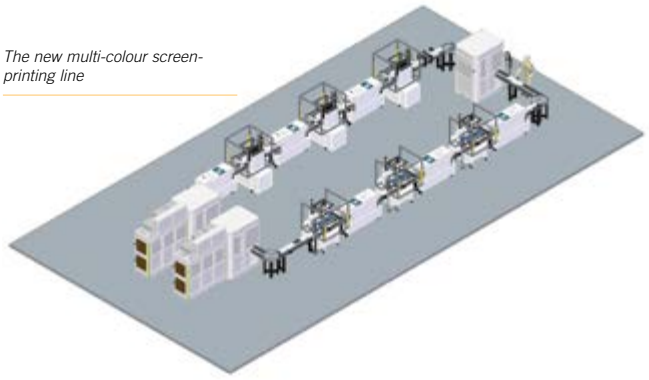
ESC introduces Smart innovative screen-printing concept

ESC's skills in customised machine construction is now resulting in a new multi-colour screen-printing line which is specifically designed for industrial applications. The number of colours is variable with four and six-colour colour systems produced to date.

The particular advantage is the modular conception of this intelligent printing line. Designed primarily for the automotive industry and white goods' production, ESC states that flexibility is a matter of priority and it has already been introduced successfully to these areas. Conceived for use on plastics, metal, glass, wood and other substrates, it can be adapted to the special requirements of the customer. The combination of different technologies results in high cycle output with exact register precision and it creates, due to its energy efficiency, low operating costs.

The machine has a fully automatic material placement and removal via a robot-supported tray server. Integrated print image control, the latest UV- and K-NIR drying technology, RFID monitoring of the workpiece holders are also significant state-of-the-art equipment features. Corona, plasma or antistatic systems allow an individual surface treatment and the line can be produced with digital or pad printing heads as an option.

Thanks to its on-going process of digitisation the printing line has the latest production monitoring capabilities. As well as the central control with a master control cabinet, there are existing decentralised control units at every manufacturing cell. Printing and drying data of the different jobs can also be stored at these cells. In addition, the multi-colour line has web-based remote access that covers the complete system as well as a digitised set-up. This means that a product changeover can easily be carried out, bringing crucial market benefits to the user. ■



The new multi-colour screen-printing line

New inkjet ink from Nazdar Ink Technologies has market-leading adhesion

The 730 Series, a flexible UV inkjet ink with market-leading adhesion on a wide range of flexible and rigid substrates, has been released by Nazdar Ink Technologies. Because of its exceptional levels of flexibility and durability on a wide range of substrates, plus its superior edge-chipping resistance properties, Nazdar's 730 Series is ideal for both outdoor and indoor use and is designed and packaged for use in a wide variety of printer models. Typical applications include banners, window graphics, pressure-sensitive vinyl, point-of-purchase displays, backlit acrylic signage and substrates that require router, knife- or die-cutting.

For exterior uses, the Nazdar 730 Series offers proven long-term performance against the effects of UV degradation and colour fade, with consistent colour density values and high-intensity colours. In common with all Nazdar formulations, the 730 Series provides quality equal or superior to OEM inks at a lower price point, with the CMYKLcLm, white and clear colour set available in one, five and eight litre containers.

"The new Nazdar 730 Series ink features outstanding adhesion to a wide range of substrates, including flexible materials and acrylics of all grades and qualities," says Rich Dunklee, Global Market Segment Manager – UV Inkjet Inks Nazdar Ink Technologies. "It's just one of our inks specially formulated to make sure signage and display businesses produce the highest quality output without the high overheads of OEM products." ■

Nazdar 730 Series inkjet inks are ideal for many rigid and flexible substrates

InPrint USA releases report on market opportunities for inkjet print technology in packaging

Simon Edwards, Vice President of Sales & Marketing for Tonejet

Mark Hanley, founder of IT Strategies

Anticipated growth for industrial, digital inkjet print technology for production in functional, decorative and packaging printing sectors remains strong and buoyant, according to a new survey and report produced by IT Strategies for InPrint USA: The Industrial Print Show. 74% of survey respondents felt that the packaging sector has the greatest amount of expected growth in 2017.

InPrint USA defines industrial print as 'using print technologies within the process of manufacturing'. It refers to a procedure whereby ink or another substance is printed onto a product for either functional or decorative purposes, like packaging.

The survey to gather the research for the report analysis was conducted in January 2017 with 162 respondents from around the world. The survey and report were designed to gather insights on the growth potential of inkjet industrial print in the packaging sector, analyse market penetration to date, and identify any challenges that may prevent further adoption.

The report offers analytical insight from Mark Hanley, founder of IT Strategies and Simon Edwards, Vice President of Sales & Marketing for Tonejet, the Global Packaging Partner for InPrint. Hanley and Edwards shared additional market insight and case studies on the industrial inkjet market at the Global Industrial Inkjet Conference at InPrint USA in Orlando.

"The value of print for packaging globally is $296 Billion," says Hanley. "Digital currently represents $3.26 Billion. So rates for growth are set against a relatively low level of digital penetration thus far."

Survey respondents feel speed and flexibility are the main reasons inkjet industrial print solutions will play a larger role in packaging in the near future.

"Much of the discussion and interest thus far seems to have been focused on the possibilities of personalisation as the kind of 'sexy way' to showcase the value of digital," Edwards adds. "But the logistical cost for doing this is way too high. In my view, the value is not in personalisation but in the variability and efficiency digital provides production."

Some other highlights of the survey and report include that the segments that perceive growth for the industrial print market to be between 1 to 5% has more than doubled from 13.07% in 2016 to 29.63% in 2017. Almost 50% of responders believe that inkjet will play a larger role in packaging within the next two to five years, while ink chemistry remains the biggest single challenge for new applications with inkjet.

Flexible packaging, labels and direct-to-shape packaging segments have the most potential to invest and adopt industrial inkjet solutions. Almost 32% of respondents feel flexibility and speed offer the most value for digital printing for packaging. Respondents felt that two of the biggest barriers to greater market adoption are that brands and retailers are too focused on digital print quality matching and analogue printing, as well as that the supply chain is too heavily invested in analogue technology so it is resistant to change.

A complementary copy of the full survey and report can be downloaded from www.inprintshow.com/usa/industrial-print/white-paper/ ■

UK's first EFI VUTEk 5r installed at Hollywood Monster by CMYUK

The UK's first EFI VUTEk 5r printer has been installed at Hollywood Monster's Birmingham headquarters. Supplied and installed by EFI distributor CMYUK in February 2017, the West Midlands-based display specialist selected the 5m wide machine for its ability to meet the productivity levels required by its rapidly expanding retail customer base.

Featuring high-quality output with 7 picolitre greyscale imaging in resolutions up to 1,200dpi, the new VUTEk 5r model offers the fastest throughput in its class, giving Hollywood Monster the ability to maximise quality, performance and efficiency.

Other standout features of the EFI VUTEk 5r printer include powerful LED-curing technology, unique feature sets such as easy and accurate double-sided backlit and blackout printing, carriage height adjustment and wrinkle analyser to avoid head strikes. It can handle rolls up to 750kg, and incorporates a raft of other well thought-out operator friendly features that make the 5r intuitive to use.

The EFI VUTEk 5r printer also features an inline X-Y finishing system for cutting and slitting, which enables the production of trimmed-to-size print straight from the printer. Hollywood Monster is now maximising its production time, with a fast print system and less downtime between jobs, thanks to this integrated cutting function.

Hollywood Monster's Birmingham factory

Simon McKenzie, Managing Director at Hollywood Monster, explains: "Prior to the EFI VUTEk 5r installation, we would typically move printed output over to a cutting table for finishing. However, the 5r model's X-Y cutting eliminates that process, removing significant delays.

"It's not unusual for us to print off hundreds or even thousands of banners for big events. Previously they would all have needed trimming on our cutting table, or – dependent on size – even by hand. That entire process is now completed on-the-fly during the print process. It's a huge productivity boost."

"Being a long-time UV-LED printer user, we already expected increased reliability, instant on/off curing lamps, the ability to print sensitive and thin materials, reduced costs of replacement lamps and reduced energy consumption," McKenzie continues. "However, the EFI VUTEK 5r goes beyond that and delivers a number of new features aimed at running cost and waste reduction, including higher ink efficiency and a reduction in media wastage – just 40cm of wasted material per load. ■

Vastex eases pallet changes with wall-mounted new rack

Vastex International has introduced a new wall mount pallet rack for organising and storing of screen-printing pallets. Also known as a pallet tree, the unit is constructed from heavy-gauge carbon steel with a durable baked-enamel finish, and measures 137cm tall x 16.5cm wide x 30.5cm deep. Vertically-aligned 5mm holes in the rear frame member allow fastening to any wood, metal or masonry wall.

"The new rack allows operators to keep pallets in a convenient location for quick and easy pallet changes while consuming less floor space than self-standing and mobile pallet racks," states Mark Vasilantone, Vastex's president. It accommodates up to six pallets of Vastex V-2000HD, V-1000 and V-100 Series presses, as well as most other makes using available adapters. The rack can be assembled in less than one hour, and is warrantied for one year.

Vastex offers more than 20 types of pallet in a range of sizes for screen-printing on T-shirts, all-over T-shirts, long sleeves, pant legs, hoodies, caps and brims, umbrellas, koozies, signage and hard goods.

The company also manufactures three series of manual screen-printing presses for start-up to high-volume commercial applications, as well as athletic numbering systems, screen registration systems, infrared conveyor dryers, flash cure units, screen exposing units, screen drying cabinets, washout booths and complete screen-printing shop systems. ■

Vastex's new Wall Mount Pallet Rack consumes less floor space

M&R Compliance Certification awarded to Easiway Systems

Easiway Systems has been awarded sole M&R Compliance Certification for chemicals to be used in its Eco-Tex automatic screen cleaning and reclaiming system. Renowned for its eco-driven, sustainable, chemical products for the screen-printing industry, this compliance has been awarded for chemicals to be used in the M&R Eco-Tex screen cleaning and reclaiming equipment.

This world-wide accreditation is the result of two years of research, development and field testing. Easiway is the sole recipient of this exclusive honour, which ties the warranty of the equipment to the Easiway chemical products.

Easiway's CEO John Schluter states: "The synergy between professionally engineered screen reclaiming equipment and scientifically advanced chemical systems has finally been bridged. Screen-printers have taken notice and the results to date have been nothing short of excellent." ■

M&R's Textile Product Manager, John Murray, presents the certification to Easiway's President John Schluter

Expansion for InkTec with the addition of Trend Srl as Italian partner

InkTec has expanded its distribution network with the appointment of Trend Srl as exclusive partner for the Italian market. Trend is one of the most important distributors of products and technologies for the area and this partnership offers a significant addition to InkTec's expanding European network.

This marks a considerable development for InkTec as it is focused on rapidly broadening their distribution network across Europe, particularly for inks and media. As a result, the company is actively looking at a number of key markets with a view to establishing similar relationships in regions where it has previously had limited exposure.

The relationship with Trend, with its range of more than 5,000 wide-format printing products, includes many leading international brands and this means it is an ideal distributor for targeting the Italian market. As a result, Trend is strongly positioned to market and supply InkTec's comprehensive range of solvent, aqueous and textile inks alongside its equally extensive media ranges. ■

InkTec produces a broad range of solvent, aqueous and textile inks

Bauernfeind is Durst's first water technology customer for Delta WT 250

The very first commercial user of Durst's game-changing water technology is Bauernfeind Print + Display which has now secured several deals with a global brand to print corrugated display packaging. Family company Bauernfeind, an early adopter of digital, will be increasing its €2 million turnover by 25% a year with the new technology. The growth will come from customers in new target markets such as cosmetics, pharmaceuticals, food and beverage – all of whom now benefit from eco-friendly printing on the Delta WT 250, the first flatbed system based on the FEFCO Award winning Durst Water Technology for Multi-Pass and Single-Pass announced at drupa.

Managing Director of Bauernfeind, Thomas Bauernfeind states: "In the past some markets have not been possible because of the odour in certain packaging and other display products using UV ink. But now a whole new world of opportunities has opened up. As one example, one of the world's major drinks brands has been so impressed that they have started using display packaging products printed on our Delta WT 250 system. It's odourless, there's no migration and it produces outstanding results.

"We are extremely confident that this, as a complementary technology, will be central to our ambitious growth plans that involve increasing our turnover by 25% a year going forward," continues Bauernfeind. "We expect the return on investment to be within two years."

Full production started during February and delivery times for customers are now measured in days, not weeks. Typical run lengths on the new machine are between 100 and 500, but can easily be 1,000. The majority of the direct printing is on coated corrugated boards, as well as some carton and other fibre substrate applications like Honeycomb boards. ■

Delta WT 250 system

Sixtieth anniversary for International Coatings

Steve Kahane.

International Coatings, leader in the development of textile screen-printing inks and a pioneer in the production of vinyl and urethane plastics, speciality coatings and adhesives, and traffic paint, is celebrating its 60th anniversary. International Coatings was founded in 1957 by Herbert A. Wells, a chemist who previously helped develop Elmer's Glue, and its first products were custom industrial plastic and adhesive compounds. During the course of the next 60 years, International Coatings stayed true to its roots as a plastics' compounder, pioneering numerous advancements in plastics, coatings and adhesives. Today, International Coatings manufactures a wide range of branded and custom-formulated plastic compounds for the apparel, traffic marking, water filtration, aerospace, sports and recreation, medical and adhesives markets worldwide.

The company entered the textile screen-printing industry in the early 1960s. Many of the products developed by Wells and International Coatings remain industry standards to this day. Its high-performance nylon inks and its classic low-bleed whites are industry favourites and have helped establish the company's reputation. International Coatings recently expanded its product offerings to include traffic paints and markings, meeting the growing demand for quality products within that industry.

"We at International Coatings are thrilled to celebrate 60 years of successes," says Stephen Kahane, International Coatings' President. "We know that our growth, longevity and success come from our loyal stakeholders – our customers, distributor partners and employees. We are particularly proud that our Diamond Anniversary represents 60 years of continuous family ownership and management.

"Looking ahead, International Coatings is committed to continued innovation, quality products and outstanding service to our distributor partners and customers," Kahane concludes. "We recognise that our success comes from customers' success." ■

TheIJC 2016 brought together some 400 participants

EXPECTATIONS SOAR FOR A RECORD-BREAKING YEAR

First details revealed for fourth edition of industrial inkjet game changer

The world's biggest inkjet event, TheIJC (The Inkjet Conference), returns on 24 - 25 October 2017 to the Swissôtel Düsseldorf, Germany. An increasing number of new companies have already confirmed and revealed their presentation titles raising expectations for a record-breaking year.

BUILDING THE FUTURE SINCE 2014

Entering its fourth edition, TheIJC is organised by ESMA with the on-going support of drupa and the sponsorship of MS Printing. The organisers have praised the educational and match making aspects of the event.

"This conference has become a game changer for the industrial inkjet community. It is a platform where the finest development companies, big players and aspiring start-ups initiate projects for all possible market applications," says Peter Buttiens, CEO of ESMA. "The two-day, two-track format generates real business opportunities, as repeatedly confirmed by participants since the very first edition of TheIJC."

Steve Knight, co-founder of the conference, emphasises: "Since 2014 TheIJC provides a venue for those who build the future – of inkjet engineering and inkjet chemistry – but also the future of manufacturing in general. Future trends are notoriously difficult to predict but following core technology developments allows us to envision the equipment of tomorrow.

"This year at the conference we see an increased networked community," Knight continues. "Those that are building the future do not do so in isolation – whether inks, printheads, data path software or integration, we work with technology partners, and the meeting point where we present our latest technology is TheIJC."

NETWORKING ARENA FILLS QUICKLY

As the meeting point of the industry, TheIJC attracts hundreds of attendees coming from all over the world. For two days OEMs, brands, engineers, chemists, researchers and all technology users gather together with the suppliers – printhead manufacturers, ink producers, software and hardware designers. By the second week of March, some 45 companies had already booked a tabletop in the networking arena which traditionally buzzes with business talks, culminating at the sit down networking dinner at the end of the first day of the conference.

Each year, the event features a balanced line-up of long-time supporters alongside first-time exhibitors. From the ten new exhibitors

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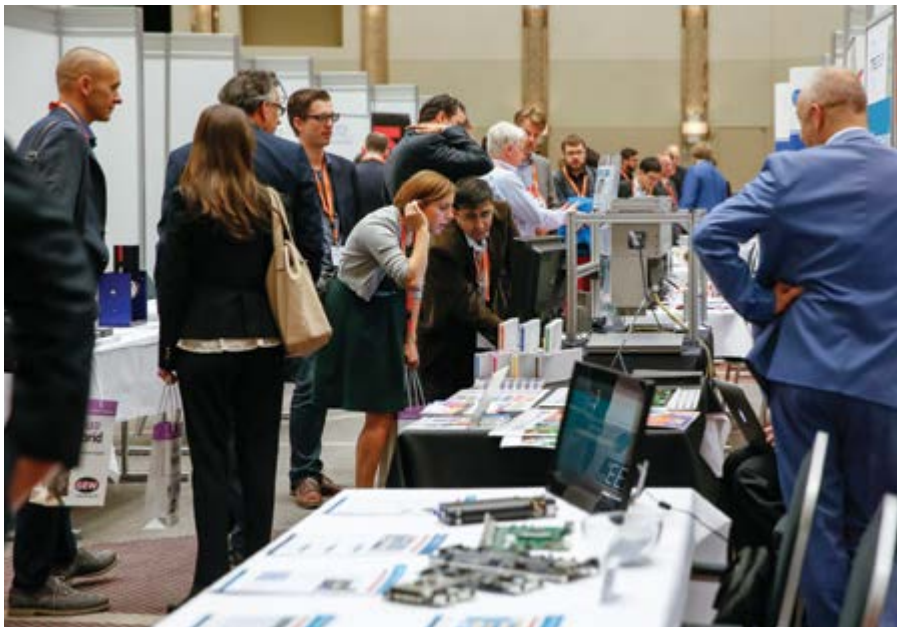

The busy networking arena at last year's conference

and speakers in 2017 attendees can expect to hear and see more about thermal inkjet in industrial applications, advanced integration know-how, specialised ink manufacturing technology and new niche applications.

BROAD SCOPE OF PRESENTATION TOPICS

Following on the successful format of the previous years, TheIJC offers 25 hours of technical talks which address topics ranging from printheads and ink improvements to inkjet in packaging, textiles and pharmaceuticals. Speakers who have confirmed their attendance so far are all acknowledged experts in their fields, including those from renowned research institutes. Professor Simon Gaisford from University College London will talk about inkjet printing for control of pharmaceutical polymorphism while Professor Marc Van Parys (TexZeppelin, UC Ghent) will explain how to make digital technologies accessible for textile SMEs. Dr Kerstin Gläser will present Hahn-Schickard Society's research of inkjet and aerosol jet in the field of micro technology.

Presenting for the first time at the conference, HP Printhead Division will provide details of its thermal drop-on-demand (DOD) technology for industrial print. Other titles include:

- "Brand colour communication in digital printing workflows" and "Colour management in digital surface decoration" by ColorGATE
- "Bubble-free ink for digital printing – membrane degassing with advanced module design" by 3M
- "Digital coatings: Markets and technologies" by TTP
- "Filtration, degassing and oxygen measurement technologies for inkjet printing applications" by Pall
- "How surface science equipment can advance inkjet technologies" by Krüss
- "Image enhancement techniques" by Global Inkjet Systems
- "Instantaneous and low thermal stress inkjet post-processing" by Adphos
- "Multi-purpose picodrop dosing system for fast and easy testing of ink-substrate interactions and printing behaviour" by Dataphysics
- "New technologies to monitor pigment properties in the process and in the final product" by Microtrac
- "Ultrasonic production of nano-size dispersions and emulsions" by Hielscher Ultrasonics
- "Widening the window – Powerdrop's approach to opening up inkjet" by Archipelago Technology

PLANNING AHEAD

TheIJC 2017 will feature 50 presentations, an exhibition of 70 tabletops and an expected total of more than 400 attendees. Limited tabletop slots are still available upon request. Further programme updates and delegate booking are available at the website (until 30 April 2017 early-bird rates apply).

Recorded presentations from previous conference editions can be viewed at www.youtube.com/theijc. ■

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INDEX TO DISPLAY ADVERTISERS

MORE TIME TO SEIZE GROWTH OPPORTUNITIES

Revised dates will accommodate broader spread for Kenya's leading expo

Organisers have confirmed that Screen Print East Africa will now be held from October 29 - 31, 2017 at Visa Oshwal Centre, Nairobi, Kenya, with co-located events Sublimating Ideas Expo, Sign Expo and Label Show. The Screen Print India exhibition, an immensely popular business-to-business show concept with a successful track record spanning more than two decades, is being extended to East Africa this year. The expo, entitled Screen Print East Africa, will now be held in late October at Visa Oshwal Centre, Nairobi, Kenya, with co-located events Sublimating Ideas Expo, Sign Expo and Label Show.

The dates have been revised due to the elections announced, as well as because of requests from leading brands that needed to wait till the new fiscal year begins to allocate the amount required. This three-day international show will cover a wide range of segments such as screen-printing, textile, digital, label and sublimation printing, providing a rare opportunity to seize business growth opportunities.

The Kenya Economic Report 2016 focuses on recent performance of Kenya's economy, medium term prospects, and how fiscal decentralisation can support the realisation of the goals of devolution – especially socio-economic development. According to the report, Kenya's growth prospects remain positive and robust. The economy is projected to have expanded at a rate of 5.9% in 2016 and, further, to 6.2% in 2017. This is predicated on a stable macroeconomic environment, improved security environment, and structural reforms that enhance the business environment in the various sectors of the economy.

PRUDENT POLICIES

The slowdown in economic growth that was experienced in 2014 was reversed in 2015, which recorded a growth rate of 5.6% compared to 5.3% in 2014. Kenya's economy is projected to grow at a rate higher than the Sub-Saharan Africa (SSA) average. Growth is expected to continue to be driven by investment and household consumption, and a stable macroeconomic environment through prudent fiscal and monetary policy.

Kenya's overall governance performance has improved. Notable achievements include the institutionalisation of performance contract system and innovative service delivery initiatives such as Huduma Centres.

Manufacturing in Kenya accounts for 65% of the industrial sector real GDP. The sector is improving in absolute terms with regard to indicators such as sector value added and formal employment. To address high production costs, the Government has embarked on key energy and infrastructural projects that are yielding positive results. Kenya's position in the World Bank's 'doing business ranking' improved from position 129 in 2015 to 108 in 2016. The domestic retail and wholesale trade sector has been evolving with greater concentration of firms, as well as developments in electronic commerce, making Kenya a regional business hub.

Screen Print India has always been among the world's leading and Asia's finest exhibitions with a sustained track record since 1994. The East Africa foray has been envisaged after considerable research and interface with members of the printing industry in that country. It will be a win-win situation for all those who are part of these four printing industry segments.

Kenya's growth prospects remain positive and robust

BROADENING THE HORIZONS

The show will provide exhibitors with a dedicated, focused platform to broaden their business horizons. Visitors will have a rare opportunity to experience how the printing industry from across the globe congregates in East Africa.

The exhibitor profile at Screen Print East Africa 2017 will encompass technology drivers, knowledge transferees, manufacturers, distributors, dealers, service providers and allied, contributing to any process of screen-, textile, digital, sublimation and label printing.

Continuing the strong traditions of the parent brand, Screen Print East Africa 2017, with co-located events Sublimating Ideas Expo, Sign Expo and Label Show to be held concurrently will attract visitors from across Africa as well as delegations from countries across the globe. These will generate focused footfalls that are genuinely interested in exploring business opportunities and new technologies.

Visitor profiles will comprise leading industrial screen-printers, technicians, consultants, professionals, entrepreneurs, products and service providers to end-users who are employing screen-, textile, digital, sublimation and label printing as a substantial part of their processes.

TAPPING THE POTENTIAL

Everyone knows that the screen-printing industry has tremendous potential. The need of the hour is to tap that potential and grow in tandem with the industry. Networking on a formal and informal level, keeping oneself updated on the latest developments, joining hands with new business partners and attending knowledge seminars are crucial steps. Being at Screen Print East Africa 2017 will provide opportunities for all this and more.

Screen Print India's sustained track record, plus the fact that it is presented by a reputed event organiser – Aditya Exposition (P) Ltd, ensures much-needed confidence for exhibitors and visitors. It has taken place bi-annually in Mumbai since its inception two decades ago. ■

Further information:
web: www.screenprinteastafrica.com

WHY PRINTERS SHOULD DARE TO PRINT DIFFERENT

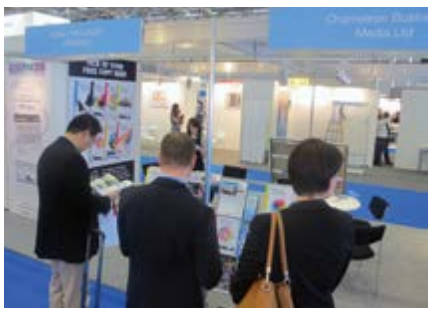
Global expo unites innovation, education and inspiration across screen, digital and textile print

The new message 'Dare to Print Different' is FESPA's inspiration to its print community, and the strapline for the multichannel marketing campaign for FESPA 2017, the global print expo, which this year comes to Messe Hamburg, Germany from 8-12 May.

"Dare to Print Different is a statement of our confidence in the entrepreneurialism of our global speciality print community," explains FESPA Divisional Director, Roz McGuinness. "When printers head to FESPA 2017 in May, we want them to arrive with the ambition to explore and identify something that could expand their boundaries and give them fresh impetus. Every feature we incorporate into FESPA 2017 is designed to show PSPs the many avenues of opportunity available to them, and to leave them invigorated with new ideas to apply in their business."

Dare to Print Different celebrates the rich technology and materials' innovation that is always at the heart of FESPA, and its role in helping printers to fulfil their potential and differentiate themselves through new products and business models. The campaign theme is brought to life visually with a striking image of a robotic hand releasing a brilliant butterfly – expressing the critical role of technology in enabling creative print applications, and expanding print's potential as a medium of visual communication and decoration.

Textiles are a growing part of expanding print's potential



Meet the Specialist Printing Worldwide *and ESMA teams on stand number A4-D5 at FESPA 2017*

Roz McGuinness with FESPA colleagues Neil Felton (CEO) and Sean Holt (General Secretary)

THREE DISTINCT ZONES

Like previous flagship FESPA events, FESPA 2017 includes three distinct zones devoted to screen, digital wide-format and textile printing, encouraging printers and sign-makers to explore the full spectrum of applications including graphics and soft signage, industrial print, garments and promotional items, interior décor, surface decoration and vehicle wrapping.

A single visitor ticket covers FESPA 2017 and the co-located European Sign Expo event for non-printed signage, making it easy for visitors – whether their core business is in print or signage – to investigate the potential to diversify into new service or application areas.

Visitors interested in the growth potential from interior décor applications will also benefit from free access to Printeriors, a hotel-themed showcase featuring printed interior décor elements created using a range of technologies, processes and materials to realise innovative design concepts.

700 UNDER ONE ROOF

Together, the three events give visitors access to some 700 international exhibitors under one roof. It confirms this as the most comprehensive environment for speciality printers and sign-makers seeking out product innovations to support their business development.

"We know that discovering new products is the primary reason that thousands of business owners and senior managers commit to visiting FESPA year on year," adds McGuinness. "The Hamburg event will certainly fulfil those expectations, with many major vendors already signalling that FESPA 2017 will be their foremost product launch platform in 2017."

While considering the new products on show, visitors can also maximise the value of their time at the event to support their investment planning by accessing the wealth of independent expertise within the free onsite educational programme.

TIME FOR NETWORKING

In addition, FESPA's active networking programme will help visitors to find peers who can share their own real-world experiences and guide their decision-making.

The FESPA 2017 event website is now live and visitors can register immediately online to obtain entry free of charge to the event, and ensure that they are kept updated as the full event programme develops. ■

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web: www.fespa2017.com

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Member companies came together in March for the 27th ESMA General Assembly

TOGETHER WE ARE STRONGER

New ESMA chairman introduced his agenda during the association's General Assembly in Lisbon, Portugal

Staged for the first time in Lisbon, member companies came together in March for ESMA's 27th General Assembly to set future goals, elect a new chairman, vice-chairman and an Honourable Ambassador, as well as to network with the Portuguese printing community.

The event started with Rudi Röller being awarded the Honourable Ambassadorship of ESMA, the European Specialist Printing Manufacturers Association. One of the founding members of the organisation, its chairman for two terms of office and former Executive Board Member of Kissel+Wolf (KIWO), Röller emphasised in his acceptance speech the importance of cooperation between the members: "Future growth can only be reached in close collaboration of suppliers and manufacturers. ESMA has built an excellent platform for that".

The ceremony was followed by keynote presentations delivered by Professor Arben Merkoci from the Catalan Institute of Nanotechnology who highlighted the role of functional printing in production of biosensors for diagnostics, and Ana Paula Cecilia from Integraficas who described the current landscape of the Portuguese printing market. Both talks stimulated vivid conversations between ESMA members and invited representatives of the local industry during the networking dinner which closed the day.

Rudi Röller was awarded the Honourable Ambassadorship of ESMA by outgoing Chairman Oliver Kammann

After officially opening the General Assembly, Oliver Kammann of K-Flow handed over the ESMA Chairmanship to David Parker from MacDermid Autotype. "It is the balance of both internal cooperation and external communication that provides the real benefits to our members", said Parker about the advantages of ESMA membership in his exposé. "For some companies, it is the ability to discuss the scope and implementation of demanding European health, safety and environmental legislation. For others, it is the provision of highly focused, technical seminars with tabletop exhibitions. And for others, it is the ability to network with suppliers of allied materials in their market segments."

Further changes in the association's board included Debbie Thorp from Global Inkjet Systems being elected vice-chairman, as well as Gabriele Heller from Marabu and William Shorter from MacDermid Autotype now heading the Health, Safety & Environmental Protection and the Marketing & Promotion committees respectively.

The General Assembly abounded in new project ideas and productive discussions about the roll-out of events already planned for 2017, including The Inkjet Conference (24-25 October), Direct Container Print (27-28 November), GlassPrint (29-30 November) and Expert Team activities, as well as the brand new ESMA Academy (first course scheduled for early July).

The key to success of all these undertakings lies in the joint support of the member companies. "Imaging technology has changed over the years but what ESMA offers transcends the individual applications or technologies used by our members, as cooperation and communication are common to all, irrespective of what markets our particular companies serve. The simple slogan 'together we are stronger' captures the very essence of ESMA ethos", concluded David Parker.

The next General Assembly of ESMA will take place in Dublin, Ireland in early March 2018. ■

David Parker, new ESMA Chairman

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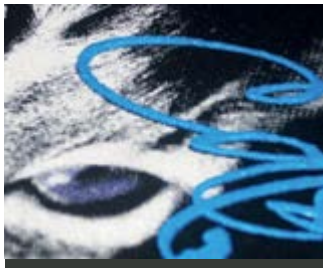

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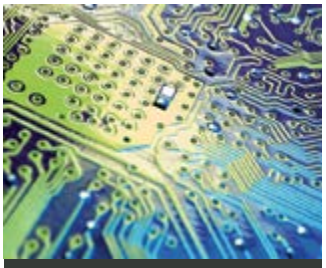

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