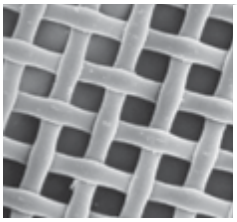
ISSUE 1
2017
INDUSTRIAL
GRAPHIC
TEXTILE

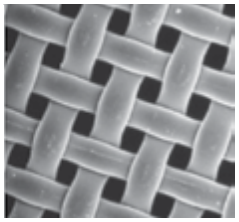
SPECIALIST printing worldwide

Digital, Screen & Pad Technology

SAATI

SAATI KNOWS DETAILS ARE IMPORTANT. GET THE FULL PICTURE WITH SAATI PRINTING HI-DRO MESH.


SAATI Hi-Dro Mesh


Standard Mesh


2 Passes of White Ink on Black Tee with SAATI HI-DRO Mesh 198.40


2 Passes of White Ink on Black Tee with Standard 196.55 Mesh

SAATI'S HIGH PERCENTAGE OPEN AREA MESH IS SPECIFICALLY DESIGNED FOR HIGH RESOLUTION TEXTILE SCREEN PRINTING.

SAATI HI-DRO is a high modulus, low elongation, monofilament polyester screen printing fabric with a proprietary surface treatment. This new range was constructed maintaining comparable mesh counts and using thinner thread diameters. It was developed to meet the increasing technical demands of garment and apparel decorators and is specifically designed to optimize both the ink deposit and detail.

KEY BENEFITS

- Better ink coverage with reduced ink consumption
- Achieve better details & halftone performance
- Faster print speeds and reduced squeegee pressure
- Less tendency for water-based inks to dry in screen
- Plasma treated to improve stencil adhesion & durability

For more information, contact SAATI on the web!

SAATI
www.saati.com
info.it@saatiprint.com
https://www.facebook.com/saatigroup
YouTube https://www.youtube.com/user/saatigrouptv

WELCOME

Happy 10th Anniversary to *Specialist Printing Worldwide!*

So here we are, 10 years on from our first issue and *Specialist Printing Worldwide* is deeply entrenched in the industry's global and regional communities, having bucked the general trend of trade magazines by still growing year-on-year in terms of content, readership and advertisers.

In today's dynamic world of almost endless amounts of information surrounding us, we're proud to be well-established as a unique provider of technical and educational material that for the last decade has assisted users of digital and screen printing systems during some of the most challenging conditions ever faced.

Technological advancements during this time have contributed to the industrial, graphic and textile sectors being more competitive than ever; having stayed close to our readership, I am very pleased to still be closely associated with a product that has consistently met and exceeded the expectations of our subscribers, advertisers and editorial contributors, as well as trade associations and event organisers. We are very grateful for all their support.

Despite dissemination of information changing significantly since 2007, feedback consistently tells us that our readership still strongly prefers to receive a paper magazine in their hands to read the types of technical and educational articles that we publish. We remain completely committed to mailing copies globally and have evolved to offer the best of both worlds with key editorial content regularly updated and made available to download online at www.specialistprinting.com

But we are not complacent and will continue to adapt to meet the industry's needs for many years to come. Please don't hesitate to get in touch with any comments as to how we can continue to improve… and if you are not a regular reader or advertiser, visit www.specialistprinting.com for details on receiving the next issue or to request media information.

Bryan Collings, Publishing Director, Specialist Printing Worldwide

WHY FUTURE DIVERSITY ISN'T JUST ABOUT NEW TECHNOLOGY

Sophie Matthews-Paul balances the value of analogue with digital in development terms

Typically, as we move into each New Year, across our industry most of us have a tendency to review events of the previous twelve months and assess where we are heading in the future. Unlike the situation a decade ago, of course, we are far less likely to be reeling from the surprise of a new and unexpected technology hitting the streets. But, while part of the reason for this is that we are all becoming accustomed to innovation and onward developments, we are now far more accepting of the products being introduced worldwide by manufacturers. Some of these might simply be extensions to existing ideas that are already in use; others lean more towards creativity that can be applied within the functional segments of print and are the results of the blend of the known and proven with new elements that are still in their infancy.

From an outside perspective onlookers can be forgiven for not noticing subtle changes to the technologies that are being introduced and used today. But this is a situation that applies across the board and not just to print. Refinements often sneak their way in to everyday products without our realising there are significant changes being carried out under the bonnet. If we look at the graphic arts market as a good example there is, as always, on-going development that makes its mark both on the analogue and digital sectors.

InPrint was a good example of an expo where screen-printing and digital developments sat side by side

THE VALUE OF TRADITIONAL METHODOLOGIES

The value of conventional presses doesn't go away as these still fulfil the requirements for generalised printed products that have been in demand for generations. Medium and long run jobs continue to reap the benefits only available from traditional methodologies, and everyone can take for granted that no compromises are required when it comes to generating special textures and colours, particularly in the screen-printing arena.

While machine design and build might not have changed dramatically in the past few decades it is here, in particular, that ancillary products have been privy to the greatest advances. Endorsement is shown frequently in *Specialist Printing Worldwide* where specialist articles prove that refinements and increased quality continue in terms of emulsions, stencils and meshes, as well as inks for specific and demanding requirements. In the ink-jet segment, versatility is also coming to the fore, showing how digital is moving forward into new environments far removed from pure graphics.

BEHIND THE SCENES

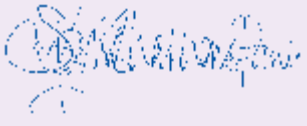
So, across all sectors, the traditional printing press in its many guises might not have changed much in principle – or in appearance – for many years but the work going on behind the scenes has continued relentlessly in order to keep abreast of desired quality, present day environmental needs plus health and safety essentials. The same is beginning to be noticed in wide-format digital printing devices where the basis for a well engineered and robust engine has continued as the primary platform for print production. However, the fine tuning of print-heads, nozzle performance, ink formulations and their relationship with the substrate is on-going, complemented by more advanced drying techniques, material feed and off-loading and the potential for automation.

Although technology is often newsworthy, it is gratifying to note that manufacturers involved in more traditional markets have not downed tools; nor have they given in to state-of-the-art solutions because rumour has it that digital is the only practical driver. Again, screen-printing continues to dominate in many areas where its sheer versatility cannot be challenged. This isn't to say, of course, that by incorporating the benefits of digital technologies, its limits can't be extended; combining the best of both worlds is becoming ever more commonplace, particularly in the industrial and functional market segments.

As an example, visitors to the InPrint expo, held in Milan last November, might have been expecting a show that concentrated totally on digital technologies. But this event certainly provided a strong platform for the screen process and endorsed the role it still plays in the production of many manufacturing processes.

PUTTING PRINT PROCESSES INTO CONTEXT

As 2017 gets well underway, many will certainly follow the belief that only digital technology can be at the root of innovation and versatility. But this ethos needs to be put into a clearer context because, ultimately, it is the capability of the final machine and its components that play the primary role in allowing more diversity across applications of all types and sizes. There is more than enough specialist development expertise to cover all sectors, plus opportunities to bring together both digital and analogue into one device or process to get the best of both worlds. With industrial and functional print rising to greater prominence in the public eye and altering the concept of many manufacturing principles across the board, this year should demonstrate continued harmony and growth across all industry sectors. ■



Sophie Matthews-Paul is an independent analyst and editorial consultant to Specialist Printing Worldwide

FOCUSING ON THE PRINTING SCREEN

50 YEARS

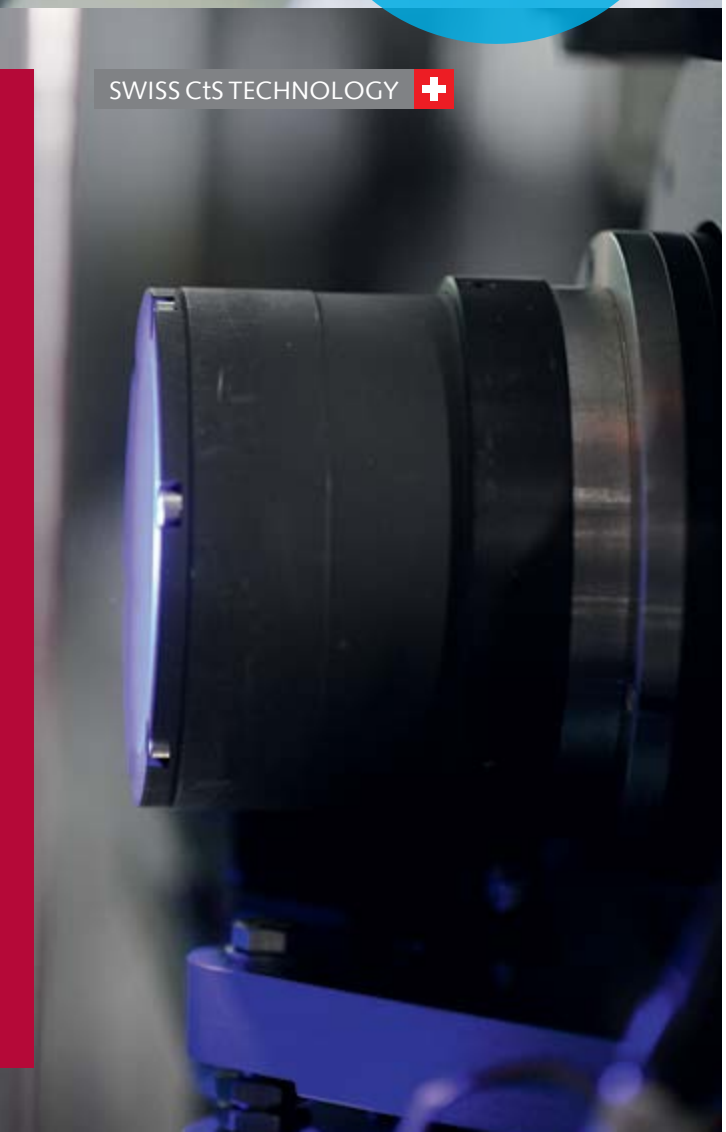
AUTOMATION

sets new standards in screen making. Whether you need solutions for **Industrial, Textile** or **Graphic** applications – the core of modern screen printing is always **«the perfect screen».**

Grünig

STRETCHING
COATING
WASHING

Grünig-Interscreen AG · CH-3150 Schwarzenburg
www.grunig.ch · mail@grunig.ch



DIGITAL CtS DIRECT EXPOSURE BROUGHT TO PERFECTION

TECHNOLOGY

the decisive factor permitting direct exposure on the screen, without compromising on quality. Your advantages? Elimination of processes, **film-free solution,** improved printing quality and **lower screen costs.**

SignTronic® AG

DIGITAL
SCREEN
MAKING

Sign-Tronic AG · CH-9443 Widnau
www.signtronic.com · info@signtronic.com

Chameleon
Business Media Ltd
Changing to meet your industry's needs

PLEASE NOTE NEW ADDRESS
Specialist Printing Worldwide is published by:
Chameleon Business Media Ltd,
22 Hartfield Road, Forest Row,
East Sussex RH18 5DY, UK.
Tel: + 44 (0)1342 322133
Fax: +44 (0)1342 322664
www.specialistprinting.com

Specialist Printing Worldwide (ISSN No: 2044-2319) is published quarterly by Chameleon Business Media Ltd, GBR and distributed in the USA by Asendia USA, 17B S Middlesex Ave, Monroe NJ 08831. Periodicals postage paid New Brunswick NJ and additional mailing offices. POSTMASTER: send address changes to Specialist Printing Worldwide, 701c Ashland Ave, Folcroft PA 19032.

STAINED SCREENS AND THE BEST WAY TO CLEAN THEM

David Parker shares his knowledge with a 'How to Guide' describing the importance of haze removal

Most ghost images are made up of microscopic residues on the mesh left over from the previous job. These residues not only prevent the stencil from adhering properly, they can even affect the way in which the ink flows through the mesh to cause a latent 'ghost' image in the print. Therefore it is very important that these residues are removed from the mesh during the cleaning process.

PREVENTION IS BETTER THAN CURE

Before going into detail about haze removal it is worth stating that a few simple steps can be taken to reduce, or even eliminate, the formation of screen haze and stains. Exposing screens correctly, cleaning them as soon as possible after printing and using the right screen wash, can minimise and even eliminate the need for an additional haze removal process, saving time and money.

IDENTIFYING THE TYPE OF STAIN

Typically ghost images come from one or more of the following – fused acetate ('locked-in screens') or diazo from the stencil, ink that has dried-in, ink staining of the mesh fibres or, even, mechanical abrasion of the mesh itself. Knowing the root cause of the stain will then help you choose the ideal haze remover to clean it.

Top tip: As a simple guide if the stain is the same as the print, then it has come from the ink and if it is a negative of the print, it has come from the stencil.

STENCIL STAINS

There are two types of stencil stains.

Diazo stains – diazo sensitisers are chemical dyes and are, therefore, very effective at dyeing polyester mesh. The yellow/brown stain left by diazo can easily be removed by using a sodium hypochlorite based haze remover. If the diazo stain is very noticeable, it is usually an indication that the stencil has been under-exposed.

Fused acetate stains – these are easily recognisable as a lightly coloured, translucent residue left on the screen where the stencil was. These stains can be removed using a sodium hypochlorite based haze remover activated with the recommended screen wash or 'activator'.

Top tip: It is much easier to remove stencil stains immediately after decoating the stencil whilst the screens are still wet. If they are allowed to dry out fully, then the acetate hardens and becomes more difficult to remove. Use the high pressure gun on both sides of the screen for the best effect.

INK STAINS

There are five main types of ink stains.

Dried-in ink – if the ink has been allowed to dry in the mesh after printing it is very easy to see. Most inks can be re-dissolved using an appropriate and effective screen wash solvent, which makes removing them straightforward. Stubborn stains may require a more aggressive high caustic and solvent haze remover.

Top tip: Applying a 'stain preventer gel' to the screen immediately after printing can make cleaning much easier.

Hardened ink – two-pack catalysed inks are notoriously difficult to remove, as they are formulated to be highly resistant once they have hardened. You will need to use an aggressive very high caustic and solvent haze

Use a chemically resistant brush to apply the haze remover

A high pressure gun in use

Always wear the correct PPE when handling chemicals

Usage	Haze Remover Type	STAIN TYPE			Working Time	Caustic Level	Solvent Level
		Ink Stains	Stencil Stains	Diazo Stains			
Every screen	Appropriate Screen Wash	8	2	1	2 mins	None	High
Regular use	'Quick Clean' Type (>95% solvent <5% Caustic)	10	5	3	5 mins	Low	High
	Sodium Hypochlorite based Products + 'Activator' Quick Method	4	4	8	5 mins	Low	Low to Medium
	Sodium Hypochlorite based Products + 'Activator' 12 hour method	9	10	10	12 hours	Low	Low to Medium
Occasional use	Caustic Products (>20% caustic)	9	8	10	10 mins	High	Low
	Combined Caustic and Solvent Products (>25% caustic)	10	10	10	8 mins	Very high	Medium

remover to have any chance of breaking these down. The longer the catalysed inks have been allowed to react the harder they will be to remove.

UV cured inks – screens that have been used for printing UV curing inks should not be left in a white light area as they will quickly harden and become much more difficult to remove. They will require either a sodium hypochlorite type haze remover with screen wash 'activator' or a high caustic solvent haze remover, to eliminate them. Therefore, it is best to store these screens under yellow safelight (go to www.macdermid.com/autotype, How to Guide – Coating PLUS Emulsions for advice on safelights).

Ink staining of the mesh fibres – some inks will actually dye polyester thread during printing. If this does happen the stain can only be removed with a sodium hypochlorite type with screen wash 'activator' or very strong caustic based haze remover. Although this type of stain does not reduce the mesh opening diameter it can cause problems during the exposure of subsequent stencils due to differential UV light absorption.

Mechanical abrasion of the mesh fibres – although not strictly mesh staining, these ghost images are quite rare and are typically caused by printing very long runs with an abrasive ink. For example, ceramic inks contain a glass frit which will micro-abrade the mesh as it flows through the image. If the screen is then re-used to print a sensitive ink, such as a transparent, then the previous image may appear in the print as a ghost. Haze removers will have no effect on this type of stain and it is best to discard the mesh after printing.

SAFE HANDLING

Haze removers are powerful chemicals and must be handled carefully. Always read the Safety Data Sheet before use and wear PPE when handling them. It is very important to always rinse off any haze remover with a low pressure spray before using the high pressure gun, otherwise you will atomise the chemical and expose the operator to this mist. Did you know, when atomised caustic lands on screens that have already been cleaned they will produce pinholes the next time they are used?

All caustics react with aluminium, so take care when applying the low viscosity haze removers to aluminium frames and do not leave in an aluminium scoop coater overnight.

Top tip: A high pressure gun should be classed as an essential piece of screen making equipment as it will save you time, money and materials in cleaning screens. A good quality industrial high pressure gun producing at least 75 bar will clean screens quicker and outlast the cheaper alternatives.

SUMMARY

It is always best to take a proactive approach to screen cleaning, to ensure that every screen is cleaned effectively before it is re-used. Knowing the type of stains and the best way to treat them will help you remove them as quickly and efficiently as possible.

The sight of a ghost image on your screen should not be ignored as this stain can, and probably will, cause you problems when that screen is next used, costing you time and money. ■

David Parker is Marketing Manager at MacDermid Autotype

Further information:
MacDermid Autotype Ltd, Wantage, UK
tel: +44 1235 771111
email: screen@macdermidautotype.com
web: www.macdermid.com/autotype

WHERE WE ARE AND WHERE WE'RE GOING

Ray Cheydleur explores the wide range of topics that encompass colour management

Ray Cheydleur

Industry veteran and colour expert Ray Cheydleur took time out of his busy schedule to speak to *Specialist Printing Worldwide* about a wide range of topics that should be of concern to any commercial printer. These subjects apply to all those that want to stay current on industry trends, improve quality and consistency, and be aware of what's next in the world of colour.

Specialist Printing Worldwide: What does Industry 4.0 mean in the world of printing and how did you see that reflected at drupa 2016?

Ray Cheydleur: Industry 4.0 can mean different things to different people but generally refers to the fourth industrial revolution, which incorporates trends in automation, data exchange, smart systems and the Internet of Things. Signs of this were all over drupa 2016, and I'm happy to say that X-Rite was right there in the thick of it with PantoneLIVE, ColorCert, CxF and Intellitrax 2 with closed loop press control.

With so much of the print industry transitioning to digital print processes, there is plenty of opportunity for smarter presses with smart front ends that can grab jobs and related specifications from the cloud, incorporate variable data and adjust specifications based on job criteria like substrates and printing technology, calibrate and colour manage with embedded and nearline measurement systems, and then validate the result against the print specifier's and/or brand owner's intent.

SPW: More specifically, how do you see the Industry 4.0 concept applying to workflow automation and the automation of colour management?

RC: Industry 4.0 is the combination of multiple interconnected technologies, and in commercial print, these fall into four broad categories. We have solutions available in each of the categories from a variety of suppliers that can address this requirement. I'll use examples from the X-Rite Pantone portfolio to give your readers a clearer idea of what I am talking about in each category.

1 **Tools for brand owners/designers.** These provide access to precise digitised spectral colour descriptions across substrates and printing technologies, and the ability to transmit them to the cloud to share with supply chain stakeholders. Here you have tools like PantoneLIVE and standards such as CxF (more on that later) that allow seamless communication of colour intent. Colorimeters like Pantone's Capsure and spectrophotometers are important for capturing spectral values from inspirational items.

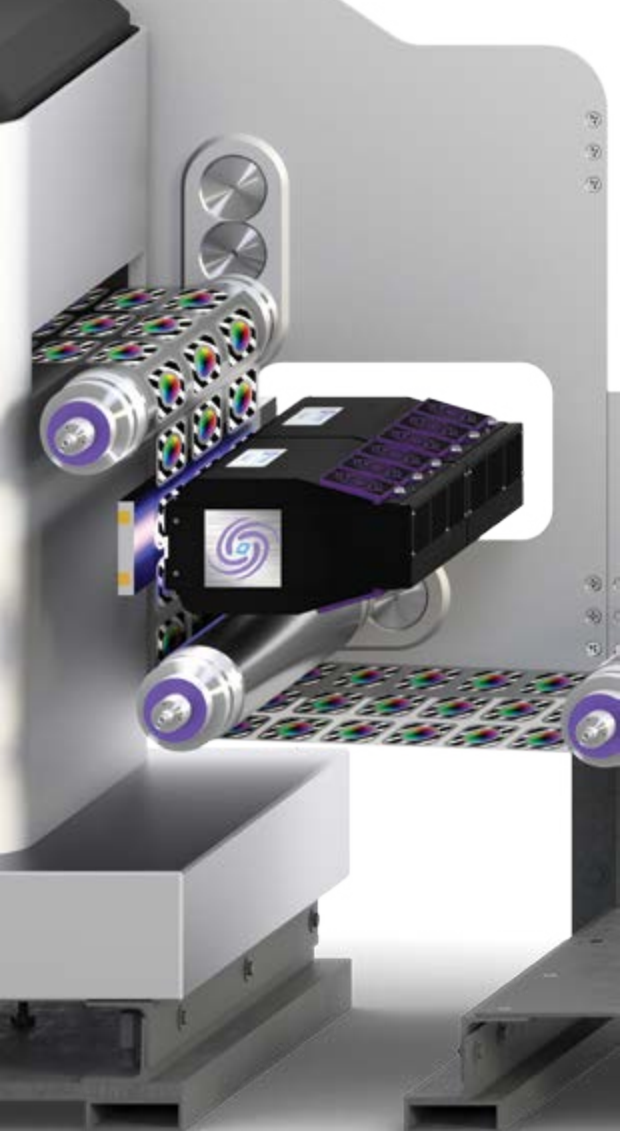
2 **The Cloud itself.** It acts as a communication and delivery mechanism but also as a repository of data that can be used to validate production but also inform every player in the production cycle, acting as the hub for each participant. The ColorCert Suite of statistical process control tools plays a role here, as does PantoneLIVE. These offer input and output validation for insertion into the process as needed.

3 **Customising content.** Increasingly content is customised using variable data to transform static printed matter into content that is relevant to the target audience, even down to an audience of one. From a colour perspective, customisation can also refer to the ability to bring colours in from the real world, validating them against Pantone or other standard values. It can also refer to the need to customise ink formulas for specific substrates and/or print technologies.

While X-Rite doesn't really provide much in the way of variable data solutions, InkFormulation Software plays a role here in ensuring customised ink colours that will deliver the design intent based on the target substrate and printing technology. Pantone Studio is also a way to bring in customised colours from the real world and validate them against Pantone and other specified values. ICC profiles can act as a customisation and transformation

Continued over

X-Rite's Capsure is a convenient hand-held instrument that captures spectral values



Dear Printer,

I can offer you higher yields and increased revenue.

Sincerely,

LED CURING
by Phoseon

Phoseon™ TECHNOLOGY
The Leader in LED Curing

- Proven Reliability
- Superior Performance
- Innovative Technology

www.phoseon.com/landing/uv-printing

The i1Pro 2 spectrophotometer

of the content to a specific output device.

4 **Hybrid output.** Print doesn't live in isolation but, rather, lives within a continuum of communication including social media, and other means of sharing and collaboration. Today we are already seeing content creation happening on smartphones and tablets using tools that can distribute work directly to a press or integrate content into desktop production. It is becoming more critical for colour to be consistent across all devices and output formats, digital and physical, in order to assure consistent colour across the entire workflow. To me, this is the most interesting piece. This is where PantoneLIVE plays a significant role, but also where we will see an expansion of ICC profiling using todays versions as well as the forthcoming iccMAX (discussed later) so that not only prepress monitors, proofers and presses are aligned, but also mobile devices so there is a consistent brand identify across all platforms. This is where applications like ColorTRUE and the i1 Publish family of products come into play.

SPW: What are the critical steps in any colour-managed workflow?

RC: Specific elements will vary from company to company and even job to job. But it starts with specification, choosing named colours or measuring real-world colours and bringing those colours into design. Next, a print-ready file with spectral colour definitions is generated. Proofing devices must be calibrated and profiled prior to creating proofs.

Prior to production, incoming materials, including ink and substrates, must be measured to ensure expected results. Finally, presses must be calibrated and either aligned with industry specifications or profiled, and printed output needs to be measured and monitored, with visual evaluation occurring under controlled lighting conditions. If all of these steps are followed, it takes the emotion out of colour evaluation and ensures a repeatable final product that satisfies the brand owner and makes the printing operation proud.

SPW: How often should ICC profiles be updated? What are the various conditions that would require different ICC profiles and why is that important?

RC: Anytime there is a change in either supplies or process, profiles need to be recreated or the situation that created the change needs to be corrected. In the case of digital presses, you may only need to calibrate the device to keep the profile valid. But sometimes the media or machine set-up has changed enough that you will need to build a new profile.

In the analogue world, new ink or substrates, or starting a new printing condition such as compliance with G7 or FOGRA, may require a new profile, although if you calibrate correctly, the ICC profile should remain valid. The biggest issue we see is when all the right tools are in place but they are not well-managed. This can result in trying to fix 'bad files or bad separations' rather than addressing the root cause of the colour issue.

It's important to make sure you are managing to the goals you are aiming for – all of them, and not just part of them. Especially in an analogue shop, it is common to analyse ink density and tone value, but you also need colorimetry and tolerance values as well or you aren't managing the whole story and may drift out of control without knowing it.

SPW: From a standards' perspective, what are some of the most recent advances that help companies specify, communicate, measure, manage and track colour throughout the print production workflow?

RC: For communicating colour, CxF is critical; originally developed by X-Rite and now incorporated as an international standard in ISO 17922, Parts 1 through 4, CxF provides a much easier way to validate colour accuracy from a machine process standpoint. It has quickly been picked up across the industry.

There is also a great deal of standards' work happening relative to PDF, especially as it relates to specifying post-processing such as associated processing steps post printing. The G7 methodology (not a standard) is prevalent in North America and Asia, but also in some parts of Europe. But more important is the near neutral calibration method, the method that G7 uses. This is publicly available in CGATS TR015 and incorporated in ISO/PAS 15339 Parts 1 and 2. The value here is that near neutral data sets can be applied across a wide range of printing technologies so that you are able to achieve a common appearance in hybrid manufacturing scenarios where multiple pieces from different printing technologies come together in a single job or project.

We are also seeing full-scale adoption of M1 measurement mode being encoded in FOGRA51, FOGRA52 and PSO as a result of ISO 12647-2, a common offset standard that has been updated from its earlier 2007 version.

Lastly, we are seeing new print standards, such as ISO TS15311, Parts 1 and 2, that are adding more metrics than just measuring density and dots, but also including appearance metrics, such as resolution, mottle, registration and more. This is due to a need for testable, verifiable metrics that can be applied to any kind of print. Part 1 of the standard is a definition of the metrics, and more are being and will be added over the next couple years. For that reason, much of this work is in Technical Reports with standards expected in three years or so when things stabilise more. Part 2 of the standard pulls the metrics from Part 1 that are appropriate to commercial print. As new tests are developed, validated and implemented they are incorporated into Part 1 and then Part 2 gets updated.

SPW: We've talked a lot about standards. What about certification programs? How important is it for printing companies to attain industry certification?

RC: Certifications are a conduit for organisations to implement ISO and country specific standards, encoding them in a way that makes it very straightforward as to what the expectations are for a particular industry segment. If a company is FOGRA, PSO or G7 certified, it validates that the company knows how to do certain types of activities, such as

Continued over

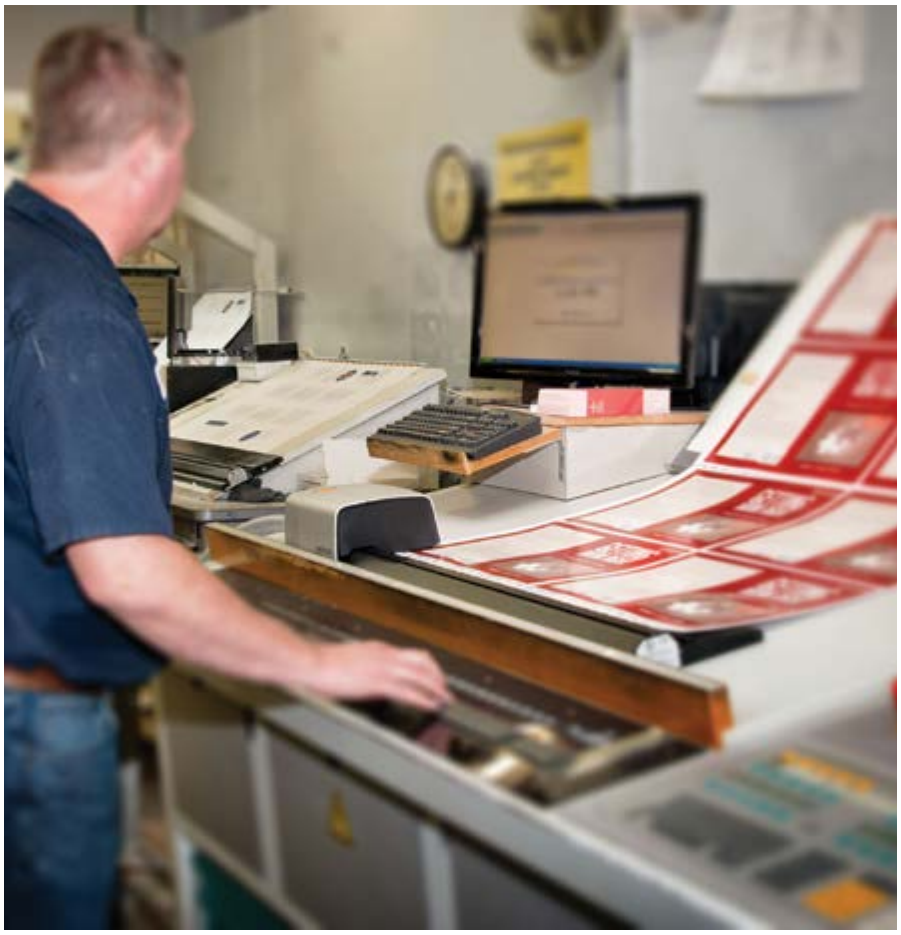
X-Rite's ColorCert monitor

CERTIFIED PRINT WORKFLOWS. WHERE PRECISION ACCELERATES SUCCESS.

Whether you're running a small commercial business, a franchise, or a multinational enterprise, there's an EFI™ Productivity Suite to help boost your efficiency. Our certified end-to-end workflows help you run your business at the optimal level of performance and fuel your success. Visit efi.com

LET US BE THE FUEL

efi®



The right suite of tools provides access to precise digitised spectral colour descriptions across substrates and technologie

calibration, and can deliver a repeatable process.

A further value is the level of trust that certification creates with customers. Customers can trust that the organisation can deliver consistent results that meet industry standards. But it also carries a level of obligation to maintain these practices over time. Most certifications are related specifically to production. What is different about the Pantone Certified Printer Program is that it looks at the overall structure of the organization and its ability to produce high quality work. It also requires development and implementation of documented standard operating procedures and incorporates quarterly quality reviews to ensure continued compliance.

SPW: We've covered a lot of ground. What's next for colour-managed workflows?

RC: We are in a very dynamic time, and there are many things underway. The most interesting are PQX, iccMAX, mobile control and new materials. I will touch on each briefly.

The first is Print Quality eXchange, or PQX. This was developed by IDEAlliance in a global effort and is now moving to ISO. It is the first of two parts of the production communication chain. PQX, which is closest to completion, is a standardised way of providing press room data to quality tracking systems.

Why is this important? Consider a printer who is doing work for multiple brand owners, and each brand owner has its own required format for quality data. Brand owners don't want to dig through data from 20 different suppliers in 20 different formats. They want a single, concise dashboard that manages all of their suppliers. With PQX, the printer can use whatever process control system is in place – such as X-Rite's ColorCert or GMI or whatever, and the information will be transferred to the brand owner in the format her system wants to receive.

Today, this can be accomplished with ColorCert ScoreCard Server; PQX allows printers to use their own choice of quality tracking and reporting across the entire customer base, while giving each customer the data in in a standardised format to drive the required reporting metrics of the customer. PRX (Print Requirements eXchange) will standardise communication in the other direction. It will be a standardised way for brands to send specification data down to the printer. Together, these will be very important for the industry and also tie in with Industry 4.0.

The second is iccMAX. This is the equivalent of ICC 5.0 and contains a number of things that will affect the print business, including ways to deal with non-traditional lighting. D50 daylight is the ISO lighting standard in commercial print, and today all of the ICC specifications are based on D50. But we are moving into a world where we will increasingly see LED lighting or, for industrial applications, D65 daylight. iccMAX, at its core, can understand spectral values for all types of illumination. So you could have a measured spectral value, for example, for LED lighting for a big box store chain and be able to ensure that packaging and other materials show up right in their lighting, while perhaps another customer is using fluorescent lighting or only cares about colour fidelity in daylight conditions.

This will allow you to make the appropriate conversions to meet all those needs. One thing is clear: As we move from traditional fluorescent or incandescent lighting conditions to LED, product colours will shift in store. iccMAX is a way to address that. It also includes new ways to look at appearance effects such as varnish or metallics that go beyond any of the standards we have today. For a full rundown of iccMAX, a visit to color.org/iccMax is in order.

By mobile control, I am referring to the need to have colour appear consistently across all devices and output. Mobile devices in particular are a challenge. We can calibrate them with ColorTRUE, but it's application specific. What really needs to happen to get adoption is to get more control at the operating system level, like we have today with ICC profiles for a Mac or Windows computer. The goal is to be able to capture and communicate with a mobile device and be able to rely on colour fidelity across the rest of the supply chain. There is also increasing demand to monitor the press room from mobile devices, and colour fidelity is important there as well.

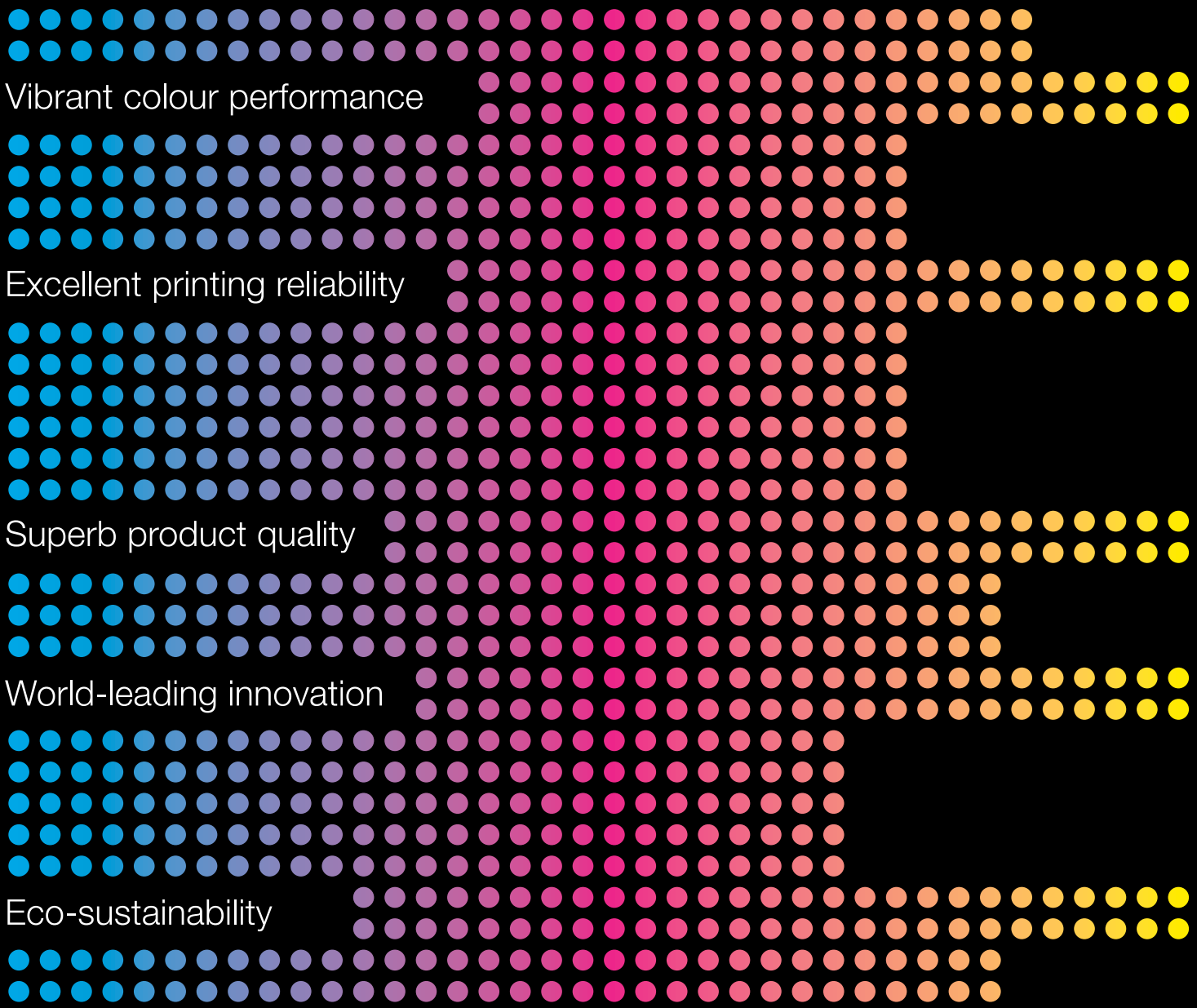
Finally, it's not just ink or toner on paper anymore. We are seeing demand for a wide range of new materials, and embellishments such as the raised print or metallic effects that can be delivered with solutions from the likes of Scodix, HP Indigo and Kodak. And there is also a great deal going on with colour in 3D printing as well. Over time, colour managing 3D printers will become a higher priority. ■

Ray Cheydleur is Portfolio Manager for Printing and Imaging Products at X-Rite Pantone, Chairman of the US Committee for Graphic Arts Technical Standards (CGATS), Chairman of the US Technical Advisory Group to ISO TC130 for Graphic Arts Standards, and Vice Chair of the International Color Consortium for Color Management (ICC)

Further information:
X-Rite Europe GmbH, Regensdorf, Switzerland
tel: +800 700 30001
email: monika.d@duomedia.com
web: www.xrite.com

SENSIENT

the digital textile development powerhouse



Sensient Imaging Technologies SA
Z.I. Riond-Bosson 8
CH-1110 Morges 2
Switzerland
Tel: +41 21 811 2300

Sensient Imaging Technologies
2515 N. Jefferson
St. Louis, Missouri 63106-1939
USA
Tel: +1 314 889 7600
Toll free: +1 800 325 8110

High performance solutions for every fabric

Elvajet® sublimation inks

XENNIA® direct-to-textile inks

Visit us at: www.elvajet.com
For more info: info@elvajet.com

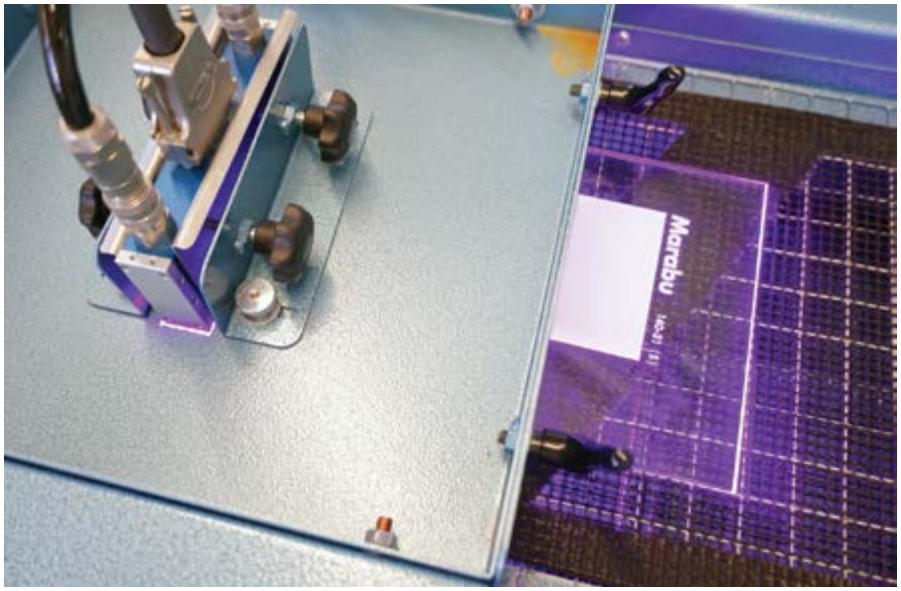
LED TECHNOLOGY IS GAINING GROUND

David Turner summarises its potential in UV-curable inks

Curing using UV LED has the potential for energy savings and to have less impact on the environment. There are strong arguments for and against this statement, but what is abundantly clear is that UV-LED is a viable option for at least some, if not all, situations where UV curing of inks and coatings is required.

It can be argued that the running costs of a conventional UV system are set against the need for the cooling of an LED set-up and that over temperature of an LED array can result in (best case) reduction of the LED life, if not a complete failure. An argument against mercury vapour lamps is the disposal responsibility of the used mercury, and the ozone generation caused by the system. These shortcomings on both sides can be overcome, but the end customer has to make a validity judgement as to whether or not LED is right for them.

Over the past five years, the buzzword in the industry has been LED curing. Whereas some UV ink systems can be pressed into service (pardon the pun) the need for specifically formulated LED cured products is essential. The safety and efficiency arguments are clear. An ink system that reacts fully with a narrowly defined spectral output must result in a coating where the risk of non-activated photo-initiators is not an issue. This may not be the case where a regular UV ink has been irradiated with only a narrow spectrum of UV energy.



Marabu has an ink solution for many applications where UV-LED curing is used

LED-CURABLE SCREEN-PRINTING INK

Marabu, as a leading, responsible ink producer has worked to produce specific LED curable inks for different industries and applications. The ink series Ultra Pack LEDC is specifically designed and produced for UV-LED curing in the container industry. The very flexible ink is suitable for screen-printing of both containers and for flat-bed printing of regular substrates used in the container market (PP, PE, PET, rigid PVC, and PC). The ink is high gloss, has brilliant colour shades, and is highly resistant to filling substances such as cosmetics or oils. It is a perfect ink solution for lots of application where UV-LED curing is used. ■

David Turner is Product Manager at Marabu

Further information:
Marabu GmbH & Co KG, Tamm, Germany
tel: +49 7141 691 360
email: tu@marabu.com
web: www.marabu-inks.com

WILL MASS-MARKET PACKAGING GO DIGITAL?

John Corrall describes the apparent unlimited horizons for usability

The industrial ink-jet market, a sector I've worked in for 30 years, is gaining ground rapidly but is it answering the shifting demands of the printing industry? There is no doubt that there are considerable opportunities for growth, including in digital labels and packaging, but as always there are drawbacks and limitations with any new technology.

Since 1999 (ref), there has been a recognition in the world of 'marketing' that branding has its limits. Consumers are swamped by multiple brands. When every manufacturer tries to turn itself into a brand then inevitably the whole concept becomes devalued.

Combined with the rise of the smartphone and instant, on-line shopping, there is a belief that the trend is now firmly towards personalisation and customisation. Shorter runs are the norm, with a trend towards run lengths of one item. This is where digital printing, and particularly ink-jet, makes economic sense. But any high volume non-variable print will remain with conventional analogue print technologies, simply because digital print costs more.

In this new world, customisation becomes a very real need. Where everything is customised – your mobile phone, your clothing, your medicine – then the ability to print economically directly onto the finished product just before shipment is key. In our opinion today's label convertors should consider becoming print solution providers to their customers. Perhaps installing digital print units in their customers' sites – printing directly onto items that once needed a label.

PACKAGING REQUIREMENTS BECOME MORE DIVERSE

When many products are almost indistinguishable from the competition, the packaging may be the only way to differentiate. It may be the only way a manufacturer can make his product stand out from the crowd. Arguably even the most exciting and creative design of packaging won't appeal to everyone – the packaging needs to be different to appeal to each demographic group, or it may need to be modified to suit each city in which the product is sold or to make it topical and relevant to a particular consumer group. This need for variation may apply to the box for a diamond ring, or the box for a burger.

The need for something to catch the consumer's eye means that the packaging and labelling market remains an enticing prospect for commercial printers and is attracting forward-thinkers, but they must be careful in selecting the right equipment. The requirements for packaging are likely to continue to become far more diverse than they were even five or ten years ago. The packaging market now is usually looking for special effects so a customer will want to choose a print system capable of more than just CMYK.

John Corrall

However, the good news for printers is that they don't necessarily have to make a big investment to cope with new demands, be it in software, finishing kit or press adaptations or, indeed, new staff. Many printers are finding that they can simply install an ink-jet module onto an existing device, avoiding the need to invest in a complete new press. People who want to print on packaging at packaging line speeds won't be using a wide-format machine, which prints in terms of millimetres/minute, whereas commercial printers talk in terms of hundreds of metres/minute.

In single-pass printing the addition of variable information using ink-jet at high speed has been a reality for years. What is different is that modern ink-jet systems are far more capable than the older systems – I mean in terms of quality, print width, low-migration inks, white, colour and special inks such as fluorescent security inks.

SPECIAL EFFECTS BECOME THE NORM

Exactly what a packaging client will expect of its commercial printer depends on their relationship. I'd again argue that a lot of special effects will become more of the norm. For example, this is true with varnishes – particularly tactile or 3D, and metallic effects, particularly gold.

Here at IIJ, an industrial ink-jet specialist and the official sales and technical support centre for Konica Minolta products outside of Asia, we offer advice on any aspect of the use of ink-jet technology in industrial applications, providing complete solutions for the successful design and implementation of Konica Minolta's industrial print-heads which are renowned for high print quality and reliability.

We have meetings on site virtually every day with customers and have built up a good understanding of what is important for each customer – what they will need to understand

IIJ has built robots that can print on irregular-shaped objects

IIJ specialises in bespoke industrial ink-jet systems, including direct printing decoration – in this example on an egg box

IIJ's XYPrint 300

and what the problems will be. Exhibitions and shows are another good opportunity for discussions and demonstrations of live printing, such as with our XYPrint 300 system that was launched two years ago.

INK-JET TECHNOLOGY IS SPREADING OUT

It's our job to find out if digital print is really going to make sense for them. As well as the obvious print sample work, we spend a long time talking about how the ink-jet system would need to fit into their production line. We talk about issues like pre-treatment of the material, ink adhesion, resolution and print quality as well as post-print curing of the ink.

What we think is now happening in ink-jet technology is a rapid spread out into many different application areas. Thirty years ago, 'best before date' regulations caused a rapid expansion of simple, 'continuous' ink-jet printers that printed a low quality date code with smelly solvent inks. That market still exists but it's very mature and stable. Nothing much changes.

The same companies that were successful with date coding also introduced mechanical valvejet technology for outer-case coding. Typically, this is very low resolution, big-drop print onto brown cardboard boxes. Again, it's simply applying a code – it's not printing the full decoration onto the box.

Continued over

IIJ's XYPrint 300 system launched two years ago

UV fluorescent security ink showing white light and with UV light – colour rebalanced

SO WHAT HAS CHANGED?

Fundamentally the change is that piezo ink-jet technology has advanced. But perhaps, more importantly, inks for piezo ink-jet have become hugely more capable, and the price has reduced. Suddenly the economics makes sense.

How has the piezo technology advanced? Well, little more than ten years ago quality and reliability were best described as 'limited'. Drop sizes were too large for fine colours or details. But the key problem was reliability – the dreaded 'missing jet' problem. If many nozzles in a print-head go missing then you have to hide them and that means multi-pass print only. So, back then, piezo ink-jet was limited to wide-format machines. What changed is that the print-head quality improved but also the understanding of how to use the print-heads developed correctly. Suddenly it became possible to guarantee that all jets in a printer would fire reliably for some hours. Not that they would fail and restart again – that simply causes bad yields – but that they would keep working.

Once you have reliable printing then single-pass in-line becomes possible. From there the trend is inevitably towards faster and wider one-pass print systems. Print widths have grown from 36mm to 1.2m or more. Speeds have grown from less than 20m to typical speeds of perhaps 80 or 100m/minute, with some systems capable of around 300m/minute. Monochrome or spot colour systems gave way to full process colour.

Low migration UV-curable inks are completely 'safe' for food packaging

NEW GENERATION OF INKS

But, coming back to ink, in the last twelve years we have gone from simple oil-based inks that would only work on absorbent card, through UV inks, to low migration UV-curable inks that are suitable for 'accidental' food contact so suitable for use on the outside of a food bag or container. Now we are seeing new generations of inks that are completely 'safe' and could be used even, for example, on the plastic spoon that is supplied with your ice-cream.

We are also seeing a lot more use of security inks, for brand protection or for track and trace. For example, there are IR-readable inks or 'invisible' inks that only fluoresce at a specific light frequency.

But we must not forget that no-one will use ink-jet in packaging unless the economics make sense. Two things have changed that impact the economics – ink price and the need for variation.

If we need variation or short runs then digital print always has an advantage over 'conventional', in that there should be no need for plates or tooling and essentially zero set-up time. The move away from spot colour inks to process colour also removes an expensive, often highly skilled process, that can generate a lot of waste and replaces it with a simple calibration job on any new media to be printed. The down side of course is ink price. As an example, however, if we consider digital printing of wallpaper an ink-jet ink price ten times that of screen or offset ink actually results in a comparable cost-per square m of print. The elimination of waste ink, wasted media and wasted time compensates almost exactly for the higher cost-per-litre.

THE QUESTION OF REGULATIONS

Then there are regulations and Brexit. In Europe new rules came in about minimum font sizes on food packaging. Combine this with the need to have the nutrition information in the appropriate language and it means instead of two or even four languages on a package only one will now fit. This means product run lengths just reduced drastically, which means set-up costs for conventional printing just jumped.

And this is where the fall in ink-jet ink price is helping. A few years ago the 'street' price for good quality UV-curable ink-jet ink was perhaps £135/litre. Now it's usually around £75 and falling. And water-based inks might be half that price. But these prices are still several times those for 'conventional' inks. And who knows yet what will be the full impact, if any, of Brexit.

For every customer's project we have to calculate an accurate model – usually using the customer's own image files. We need to compare the true cost/print for digital versus their production costs today. Basically, it's the higher ink-jet ink cost versus the savings in set-up time and product waste. The output from the calculation is usually a simple number – the break-even run length. Armed with this – and knowing where the demand for variation is going – the decision to invest in digital or not is very clear.

In summary, then, the technology to use ink-jet throughout the packaging and printing industries industry is here. The important thing now is to keep a close eye on the improving economics. ■

Ref "No Logo, by Naomi Klein 1999"
https://en.wikipedia.org/wiki/No_Logo

Ref "the Dieline" 2014
http://www.thedieline.com/blog/2014/10/7/opinion-branding-is-dead-packaging-is-the-new-black

John Corrall is Managing Director of Industrial Inkjet Ltd

Further information:
Industrial Inkjet Ltd, Swavesey, Cambridge, UK
tel: +44 1954 232023
email: sales@industrialij.co.uk
web: www.industrialij.co.uk

FESPA 2017

Hamburg
8-12 May 2017

DARE TO PRINT DIFFERENT

FESPA Textile

FESPA Digital

FESPA Screen

Discover the diverse and creative world of wide format print technologies at the largest specialist print exhibition in **Hamburg, 8-12 May.**

REGISTER FOR FREE ENTRY USING PROMO CODE: FESA715

WWW.FESPA2017.COM

CO-LOCATED WITH

EUROPEAN SIGN EXPO

PRINTERIORS BRING INTERIORS TO LIFE WITH PRINT 8-12 MAY 2017 HAMBURG, GERMANY

PLATINUM PARTNER

efi

GOLD PARTNERS

MIMAKI durst Kornit Digital bonding matters

DIGITAL TEXTILE PARTNER

d·gen

UV MEASURING IN DIRECT CONTAINER PRINTING

Karlheinz Mohn discusses the importance of process control for a perfect result

The AKTIPRINT UV-Integrator CM

More and more branded companies ask for a safer production of their products. So the manufacturers of printing machines put their focus on the printing quality (monitoring the image and colour control). This helps the printer to prevent waste. Another important issue is to focus on the UV light technology for better and safer curing results. The brand new AKTIPRINT Integrator CM helps the printer to get detailed information on the curing process. The CM is a unique measuring instrument for the process control of these special applications.

Under the irradiation of a strong UV-light source the process of the perimeter feed hardening of UV-coating or UV-colour system runs as follows. The UV-radiation releases a chemical reaction. The photo initiators and other UV-reactive parts respond to other components of the colour and result in linking up the coating (drying process of the colour).

Display and operation

The AKTIPRINT CM is a new measuring instrument for direct container printing. This instrument is able to measure up to eight UV lamps in one pass and gives the results in UV dose (energy in mJ/cm²) and in intensity (power in mW/cm²).

MEASURING UV LIGHT IN DIRECT CONTAINER PRINTING

By the end of 2015 TECHNIGRAF had already launched the AKTIPRINT UV-Integrator CE Full-UV for measuring UV light in direct container printing (see the article in Specialist Printing Worldwide, Issue 1/2016). This easy operating instrument measures only the UV energy of one UV lamp. In practice the measurement of the UV-dose is mainly implemented and still state of the art.

Nevertheless the new AKTIPRINT CM Integrator is an improvement for measuring UV in special applications, because of measuring multiple UV sources in one pass. Optional software allows the visualisation of the results so they can be saved for the documentation of the UV parameters in printing processes. Via micro USB connector and cable it is possible to transfer the results to a computer.

There are two different ways of using UV-lights for the curing process – medium pressure mercury lamps and UV-LED (Light Emitting Diodes). Both technologies are very different and need varying recipes of the UV-colour system. The physical parameters for UV-Power (Intensity) und UV-Energy (Dose) as well as the emitted light wavelength can be determined for both technologies and are therefore comparable. Today the UV-LED and the mercury lamps have a range of applications for which they are being used and both are state-of-the-art.

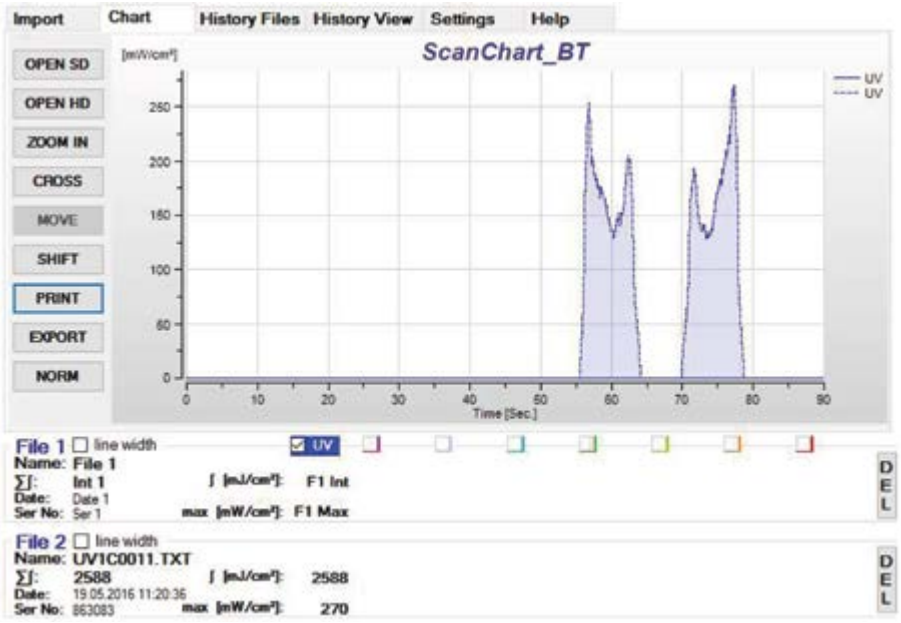
A GROWING MARKET SHARE IN UV-LED TECHNOLOGY

For the future all experts expect a growing market share of UV-LED technology. But what does it mean for measuring UV? Usually the maximum power peak of a UV-LED is higher than that of a mercury arc lamp. To measure UV-LED it is therefore necessary to use a different UV sensor. With the CM the user can choose between a sensor for 'Full-UV' (UV lamp) or for 'LED-UV' (UV light emitting diodes).

With the AKTIPRINT UV-Integrator CM and CE, TECHNIGRAF now offers two practicable, user-friendly solutions that meet customer requirements. Both UV-Integrators are calibrated according to DIN EN ISO/IEC 17025 and therefore fulfil the requirements of modern quality management systems. An integrated heat shield is an additional feature of these new UV-Integrators.

The adapter which is needed to use the UV-Integrators with a printing machine or a UV-dryer is not part of the supply and will be constructed according to customer demands. One or more further adapters can be ordered optionally.

The AKTIPRINT UV-Integrators CM and CE are special UV-measuring instruments which meet the demands of several applications like direct printing on containers. Once a year a recalibration is recommended, but no further consumables are needed. So the total costs of ownership are low and a real benefit for the user. ■



The visualised results of the measuring of two UV lamps in one pass

Karlheinz Mohn is Managing Director of TECHNIGRAF

Further information:
TECHNIGRAF GmbH, Grävenwiesbach, Germany
tel.: +49 6086 9626 0
email: k.mohn@technigraf.de
web: www.technigraf.de

The Matic Ares 6000 Plus automatic welding machine

HOW TO ELIMINATE WEAK POINTS IN WORKFLOW

Manuel Kalt explains how bottlenecks can be removed during finishing

Although ink-jet printers themselves are fast, with the use of wrong or too few finishing machines it can cost users a lot of time. With the help of targeted investments, many bottlenecks can be eliminated.

Just a few years ago, 20 square m/hour was considered very good productivity for a wide-format printer. Nowadays these printers are ten times faster so the print capacity is not a problem anymore. But this situation is moving the bottleneck to the finishing department which is still a very manual process. This problem can be solved, often with a not so big, targeted investment.

For example, by using a rotating carousel for media, stock material selection can be fine-tuned. How much time have you spent looking for a particular roll and finally not found it? The only solution is through ordering a new one – only to find, a few days later, the wanted roll? With Matic's Atlas V carousel, the problem can be solved easily. Immediately after delivery of the material, it can be loaded onto the carousel by just one person. This doesn't take long because a quick-release system, which is attached on both sides to the tie rods, simplifies handling. The material is thus stored clearly and is quickly accessible, and the storage itself is much more gentle than on a shelf because, for example, pressure points and damage to the material are both prevented.

Matic's Cronos automatic sewing machine

BOTTLENECKS WITH TEXTILE CUTTING

Many companies cut their prints using a manual hot cutter and ruler. This costs a lot of time and can still be faulty but both of these problems are solved by the Matic Helios laser cutter. It offers the right technology for all types of fabric. Clients working already in the soft signage market know that their fabric is far more difficult to handle than, for example, PVC.

Fabric has a life which means it will shrink, enlarge, get a bow effect, and so forth, during the printing process. This means the

cutting system has to realise the problem and compensate which is really difficult if you have the wrong cutting solution. Furthermore, if you have woven fabric it will fray and needs a hot cutting for a nice and clean edge. The Matic Helios is equipped with laser technology for cutting and sealing the edge as well as working with an independent laser projector to project the cut path onto your print. Using this system every cut will be 100% accurate and handling is much faster than by a common camera systems reading dots.

EFFICIENT WELDING AND SEWING

Many service providers process large PVC materials every day. The Matic Ares Plus is particularly suitable for this purpose because it folds seams automatically before welding. This process generates an enormous time saving compared to conventional methods. Furthermore, smaller banners can be placed next to each other and folded and welded together in a single process. The pockets can be adjusted in seconds from 25 to up to 90mm, without any stops being adjusted and up to 6m of material can be welded at one time. Since the machine is laterally open, it's also possible to weld greater lengths by pulling the material forward. With the 6m model, the same sized overlap or pocket can be completed within less than one minute.

The Ares Plus has pneumatically controlled stops and this means that the operator only has to align the material edge at the stop and press the start button, because the machine does the rest by itself. The control unit with touchscreen operation stores the welding parameters for up 70 materials, and the complete welding cycle can be programmed to increase user productivity and reduce operator mistakes.

For the processing of textile materials I recommend the Matic Cronos solution. This sewing machine works in a continuous sewing flow, with the material being transported by a conveyor belt. Every application can be pre-set which means that even unskilled operators can use the machine and produce a better quality than a skilled person at a manual sewing station. ■

Manuel Kalt is Area Sales Manager for Matic SA

Further information:
Matic SA, Barcelona, Spain
tel: + 34 93 2745006
email: marketing@matic.es
web: www.matic.es

The Helios laser cutter from Matic

HIGH-END TECHNOLOGY FOR DIGITAL PRINTING ON EDGE-BANDING MATERIAL

Dr Anke Pankoke expands on the potential of industrial ink-jet for production efficiency and décor quality

Almost everyone had to do it once – applying an edge belt on a furniture part with an electric iron. Or you were happy about not having to do it yourself because you bought a finished worktop with a high-quality edge. In both cases, it isn't necessary to come to a compromise with regard to optics. Thanks to digital printing, each décor request for surface and edge can be realised in high end quality.

As a machine and plant engineering company with focus on the woodworking industry, Hymmen has extensive know-how about the complete production procedures required by its customers. Due to the close interaction with them regarding the furniture and kitchen industry, very soon Hymmen developed a special field of application for its industrial digital printing technology for which there had been no solution on the market before. (For example, the industrial digital printing on edge belts, compare figure 1).

THE ADVANTAGES OF DIGITAL PRINTING ON EDGE BANDS

The substitution of gravure printing by digital printing provides a lot of advantages for customers: The digital printing can be incorporated in existing process chains of the décor industry as it enables individualised mass production, the quick reaction to market trends and customer requests, a shorter time to market, faster set-up times, lower storage costs, no material loss upon change of decor and, last but not least, new design options with regard to register lengths, levels of detail, and so forth. On request, this is matched 1:1 to the décor of the board surface – possibly finished by the same company. (For comparison of gravure printing and digital printing, see figure 2). Thereby, the whole line has a very compact design. We succeeded in accommodating the whole technology in a minimum amount of space, without having to give up the advantages of large digital lines, such as the automatic cleaning of print-heads.

Figure 1: showing cover closed (top) and cover open on the digital edge printing line Jupiter JPT-WS as a compact whole unit

THE VACUUM PRECISION CONVEYOR AS A RESULT OF ELABORATE R&D

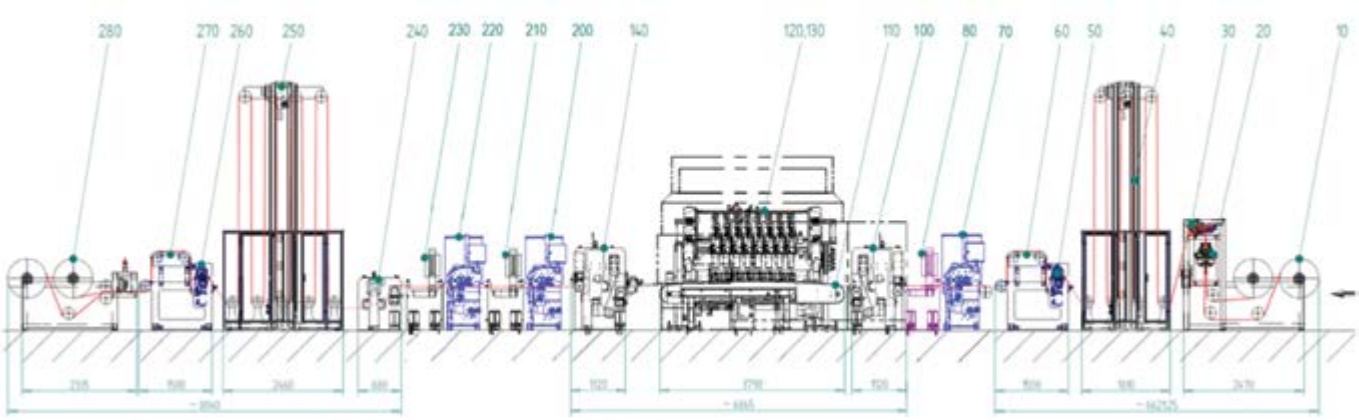
Two of the 32 digital printing lines sold by Hymmen are the special type Jupiter JPT-WS for digital printing on edge bands. Significant research and development efforts had been undertaken as we had to find a solution to handle the special features of the substrate. This was finally found in the curved high-precision conveyor for edge material.

TWO LINE VARIANTS: INLINE AND OFFLINE

The digital printing line JPT-WS is available in two production widths of 230mm and 560mm, with a differentiation between these variants inline and offline. Both types are available for integration within an existing edge band production line with extrusion and liquid coating machines. Printing takes place on a single track, which is borderless over the whole edge band at a maximum effective printing width of 205mm and 410mm respectively. In the case of the inline variant, the primer, basic lacquer and, if required, the texture are applied on the edge belt. The digital printing is followed

Synthetic edges	Gravure printing	Digital printing
Inline operation possible	usual	possible
Offline operation possible	possible	possible
Usual maximum printing width	400 mm	410 mm / 205 mm / 137 mm
Loss of time due to change of decor (roller change, color change)	high	low
Loss of material due to change of decor (edge band, flushing losses...)	high	low
Color-matching/re-matching time requirement	high	low
Printing on textured material	conditionally possible	possible
Storage/roller costs	necessary	not necessary

Figure 2: the comparison between digital and gravure printing



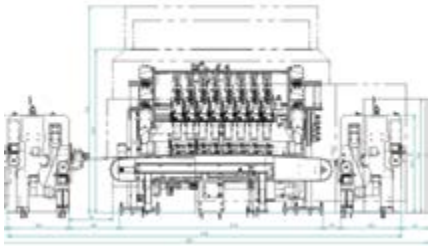


Figure 3: inline and offline layouts

by the coating lacquer and profiling, as this was not carried out before. At the end of production, the edge band is wound up on rolls and supplied to the end customer.

However, these lines can be also installed offline as independent printing machine. In this case it contains a rewinding and an unwinding station (compare figures 3a and 3b). All edge printing lines are very compact and do not need a lot of space in the production area. With the calender in front of the digital printer and the calender behind it and the vacuum precision conveyor, the wide line installed inline is approx. 7.50m long, 3.70m high and 2.70m deep, for example. With a printing speed of 25 to 50m/minute, edge belts of up to 4mm thickness can be printed. The edge band travels approximately 13m in the Hymmen line, including the 'loops' along the calender. If this happens with a speed of 50m/second, the belt is digitally printed and dried within 16 seconds. The materials to be processed are PP, ABS or PVC edge bands before or after they are cut to size.

TECHNICAL AND ECONOMIC HIGHLIGHTS

In addition to the high precision conveyor which ensures the flatness of the substrate by means of the vacuum suction, the digital printing machine for edge bands offers further technical highlights. The modular width extension implies flexibility with regard to the printing widths. The self-recovery function ensures a very high line availability. Calenders within the Hymmen line enable a decoupling of the web tension within the digital printer from the web tension in the periphery. The greyscale technology ensures a

Continued over

Figure 4: detail of the integrated UV drying of the surface and print-heads from the bottom

Figure 5: The core of Hymmen's digital printing know-how is in the ink units

print image is reliable and uniform in high-definition quality up to the edge border, while the colour management is easy to handle at the same time. A maximum ten colour rows with six print-heads side by side, as in 60 print-heads altogether, can be installed. The UV colours of CMYK x 2 and two special colours (typically white) are used. Finally, a UV-LED drying technology is used, saving resources (compare figure 4).

The line control and programming are generated in-house, just like for all Hymmen lines. The special know-how about ink supply and print-head activation, which we have developed ourselves, are already successful on the market. The print units consist of countless single parts which have already been installed in-house more than 600 times (compare figure 5). Not for nothing, our company calls itself 'Your established partner for industrial ink-jet'.

But Hymmen is not only pioneering technically and technologically with the digital printing lines. Also from an economic view, the lines represent a highlight – exemplary calculations and practical experience have shown that even without financial evaluation of the advantages, like storage cost reduction (capital commitment), logistics costs reduction, omission of costs for cylinder production, shortening of the internal processing time (time to market), the production is absolutely economically beneficial in cost when compared with gravure printing.

The result is that Hymmen digital printing technology offers an amazing optical deep structure of each possible edge décor (compare figure 6) and, where applicable, also with textured haptics. These can hardly be distinguished from genuine wood, with the highest décor quality like the surface, reproducible any time, and all in a highly flexible and economic production process. ■

Figure 6: Digitally printed edge bands showing décor variants

Dr Anke Pankoke is Head of Marketing and PR at Hymmen

Further information:
Hymmen GmbH Maschinen und Anlagenbau,
Bielefeld, Germany
tel: +49 521 5806 0
email: info@hymmen.com
web: www.hymmen.com

Integrated handling and die-less cutting with the Kombo TAV-R

THE IMPORTANCE OF PROCESS AUTOMATION FOR TODAY'S PRINTING INDUSTRY

Giacomo Zoppi outlines the benefits of removing finishing bottlenecks

The evolution and rapid growth of electronically automated technologies has been affecting printing volumes on a large scale and is posing challenges to the printing industry as a whole.

In a time when productivity and workflow efficiency are even more crucial in order for companies to survive, the implementation of highly automated equipment is getting increasingly bigger traction on a daily basis.

Therefore, to maintain their profitability, the strategy that many companies are undertaking is that of bringing the printing in-house thanks to the availability of more affordable digital printing solutions and increased finishing equipment automation.

Printers are facing a market that demands them to be cost effective while also assisting customers in the time to market of their customised projects by being capable of quickly providing them with a result in the shortest time possible.

THE TECHNOLOGICAL EVOLUTION

As of today, the technological evolution has considerably affected the graphics and packaging industry with new digital technologies that are increasingly replacing the conventional printing and cutting techniques. While digital printing has reached intriguing levels of quality and productivity, the automatic cutting industry has come up short, until now, in keeping the pace up.

Finishing equipment has in fact always been considered the bottleneck in the workflow by many printers because of:

1. The lack of integration with the overall production workflow as many suppliers are not yet diversified or have mistakenly neglected what happens previously along the process.
2. The lack of highly automated and user-friendly machines has always been due to the lack of investments focused on this production stage because of its perceived low added value
3. The presence of error-prone human touch points in this stage of the process which meant a high volume of scrap and higher re-work rates

INCREASING MARKET SHARE WITH AUTOMATION

In this scenario of almost impossible success, those printers that are aiming at increasing their market shares must succeed at achieving a complete automation of the finishing process as it would yield the following competitive advantages thus responding to each and every current market demand:

1. 24/7 operational efficiency thanks to increases in productivity, shorter set-up times and changeovers
2. Less manual labour that easily translates into fewer errors, less need for training and overall higher quality output
3. Shortened turnaround times that can better allow higher customisation
4. Improved logistics thanks to a more flexible and smoother layout

Elitron, an Italian company specialising in the production and marketing of software and systems for automatic cutting, has now made this leap a reality. The advantages attainable are thanks to the die-less cutting system, named Kombo TAV-R, with integrated material handling. ■

Giacomo Zoppi is a member of the marketing department at Elitron IPM Srl

Further information:
Elitron IPM Srl, Monte Urano, Italy
tel: +39 0734 842221
email: giacomo.zoppi@elitron.com
web: www.elitron.com

DIGITAL TEXTILE INKS

MADE IN ITALY

J-Teck3 is an Italian brand producing innovative & eco-friendly digital inks for graphic and textile applications. It is recognized as a world specialist in dispersed dyes for sublimation and direct printing on polyester fabrics. J-Teck3 produces inks for any kind of print heads available on the digital textile market. It is part of JK Group SPA, a Dover Company.

www.j-teck3.com

Visit us @ FESPA ASIA
Bangkok 15-17 February
Hall 98 - Stand 13-302

JTECK3™

true digital

MORE THAN INK ON A CAN

Marc Graindourze discusses industrial ink-jet for direct container printing

UV ink-jet printing is the ideal solution for printing direct-to-shape. It perfectly matches the trends and needs of the growing packaging market, these being shorter product cycles, customisation and variation, and less waste.

Ink-jet printing has become the major print technology for wide-format applications (posters, billboards etc.). In this segment UV ink-jet is the fastest growing technology because it offers high-speed and reliable printing, as well as high image quality and high image durability (adhesion, scratch resistance, solvent resistance, and so forth).

UV ink-jet printing is, however, not limited to typical sign and display jobs. It is also suited for many other applications where print is part of the product, such as a phone cover or an interior decoration panel. For these 'industrial printing' applications, both printing solutions based on wide-format printing (multi-pass printing) and printing solutions based on customised single-pass solutions are being used. The reach for industrial printing is growing everyday as new possibilities are being explored, tested and implemented.

MEETING THE NEEDS OF THE PACKAGING MARKET

The packaging market is a growing business segment, too, for obvious reasons. For their products to stand out on the shelves, brand owners attach more and more importance to attractive designs, product diversification and even seasonal variations. All this leads to shorter product cycles for almost the same product volumes. Also, packages need to contain lots of consumer information these days (just think of nutritional tables or allergen information), which can be region- or market-dependent. Conventional printing is the most efficient method only when printing high volumes, as it requires extensive pre-press work to create a master (typical a printing plate, flexo sleeve or gravure cylinder), and thus comes with a considerable set-up time. Digital printing is not hampered by these constraints and is more suitable for shorter run lengths, mass customisation and variations.

The packaging world is a much segmented market, where a wide range of materials are used (glass, rigid or flexible plastics, metal cans, laminates, foils, paper and board), in many different shapes (bottles, cans, tubes, pouches, bags, and many more). This requires a range of printing solutions that either print during a pre-step (such as printing on roll or sheets) before the packaging is finalised, or that print direct-to-shape on the packaging in its final format.

Direct-to-shape or direct container printing allows decorating at the last possible moment and results in significantly lower waste. It is the ultimate solution for efficient packaging production if the printing machinery is precisely adapted to the container shape and if the ink is tuned both to the printing system and to the functional needs of the specific container.

This is where UV ink-jet printing enters the stage, offering a series of advantages. UV inks allow for printing directly on the container, without the need of a label or an ink-receiving layer or primer. Applications include direct printing on containers for the packaging of general non-food related products, as well as for food and beverage packaging. However, both types of application require a dedicated UV ink design.

SAVING TIME, MONEY AND THE ENVIRONMENT

Direct container printing is a sustainable process as it invokes fewer production steps and dependencies. It avoids the production and transport of label material, while introducing build-to-order workflows, which reduce overproduction, warehousing, recycling or scrapping of overstock or waste of label material and printed labels.

The digital printing process can be in-line or off-line, in or close to the packaging line or at a nearby partner. There is only a short set-up time as there is no need for a master. Run lengths can be fully variable taking into account the exact print amounts needed, thus eliminating waste and, also, because the first print is ready for use. Also printing just-in-time becomes possible. UV curing is very energy efficient and there are no VOCs released from the ink during the curing step.

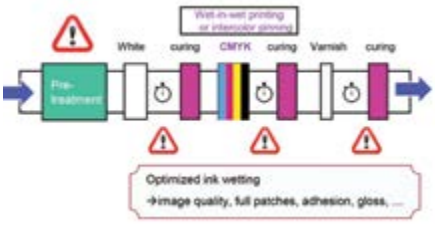


Figure 1: The print process from an ink perspective

Last but not least, the brand owner and the consumer profit from digital printing through improved versioning, easy communication in different languages, health information and customisation.

DIRECT CONTAINER PRINTING – THE PROCESS

Digital direct container printing with UV ink-jet is based on customised single-pass print solutions (certainly when high output is needed for production printing), and the handling of the container shape is a crucial aspect. For constant image quality it is important to handle the surface in such a way that the throwing distance (distance between the print-head and the substrate) is constant and precise – preferably in the range of 1 to 4mm. The print process and ink formulation are tuned towards both jetting performance and functional requirements of the decoration on the container. Often a pre-treatment is used on substrates which are difficult when it comes to ink wetting and/or ink adhesion.

Next to the shape and surface requirements, the ink is an extremely important component in the process as it offers colour, quality and jettability. UV ink-jet inks comprise the compounds that are needed for the photochemical reaction that is

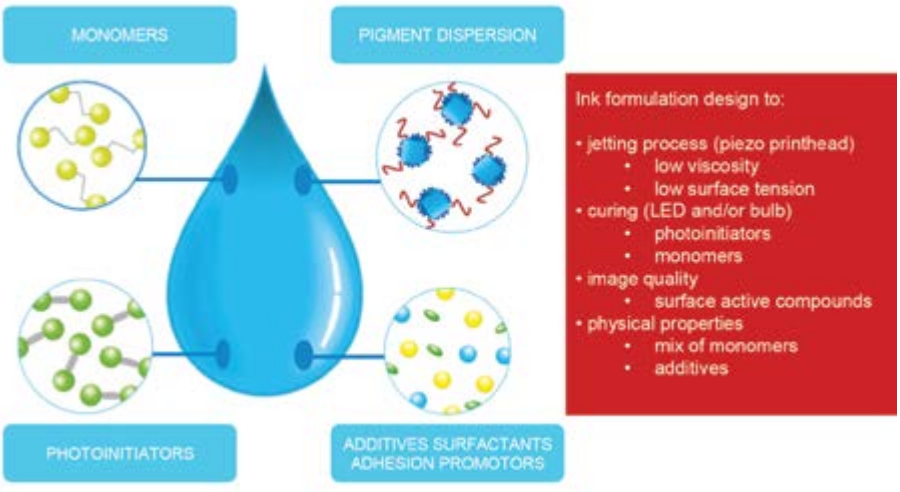


Figure 2: UV ink-jet ink formulation basic compounds

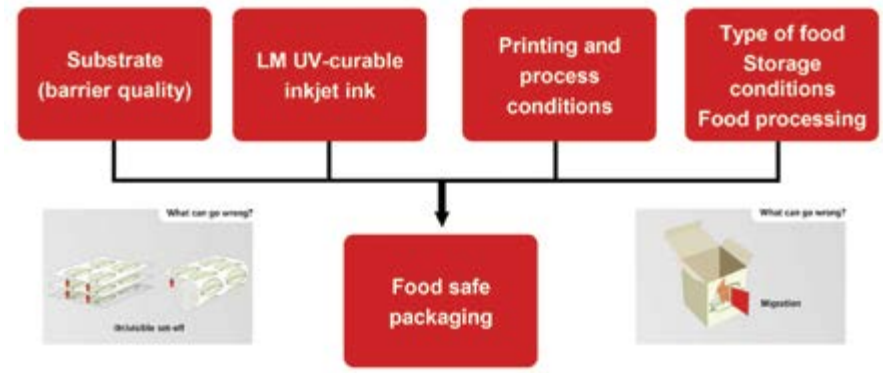


Figure 3: Food-safe packaging printing requires a controlled process

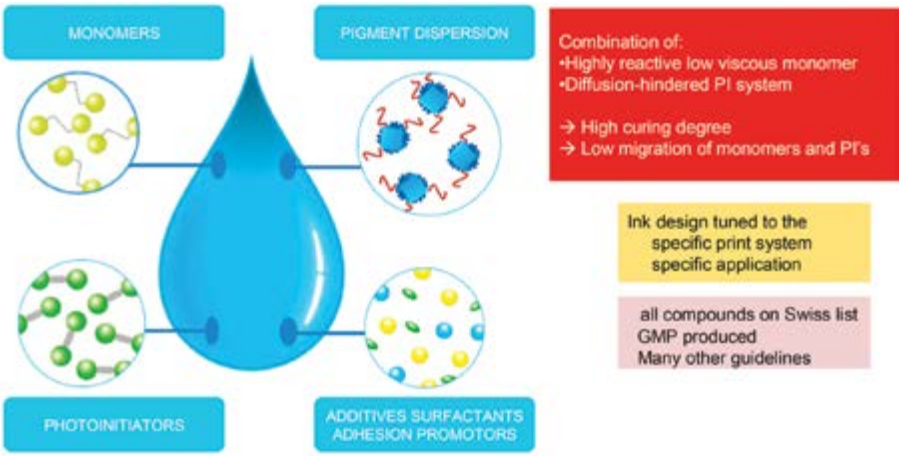


Figure 4: All compounds are designed to result in low-migration levels and, for ink-jet, are also designed to have low viscosity

started by the exposure to UV light – monomers and photoinitiators. The photoinitiators form radicals when exposed to UV light. These radicals in turn start up the polymerisation of the monomers. The UV ink derives its colour from the pigment dispersion. Many additives are needed to achieve the required quality, including surfactants, in-can stabilisers, adhesion promotors, etc.

LOW-MIGRATION INKS TUNED TO GUARANTEE SAFE FOOD AND BEVERAGE PACKAGING

Since food and beverage packaging accounts for a dominant share of printed packaging, it is very important that food safety is guaranteed. Standard UV-curable ink-jet inks are not suited for direct printing on food packaging (unless for small ink amounts, such as only printing a batch code or expiry date). The so-called low-migration UV-curable ink-jet inks however are well suited, given they are correctly used on a food-safe container. Agfa has developed unique and patented low-migration ink concepts for printing directly on food packaging.

UV ink-jet inks need to have low viscosity to be able to be jetted through the small nozzles of the print-head; typical viscosity is 10-15 cP at 40 degrees C. To achieve this, the standard UV ink-jet inks are based on reactive low molecular weight monomers and photoinitiators resulting in a curing degree not higher than 95% (conversion % of monomers to polymer). Un-reacted monomers and photoinitiators may still migrate through the substrate and/or set off to the food side when it gets in contact with the printed side (for example, by stacking printed food cups). As a consequence standard UV ink-jet inks are not suited for printing directly on food packaging.

Both the compounds and the formulations of UV ink-jet ink that is used for printing directly on food and beverage containers (=low-migration or LM ink) need to meet specific requirements in order to comply with legislative guidelines (e.g. the Swiss Ordinance Lists – concerning the ink compounds allowed for food packaging printing, or TSCA (USA) and REACH – concerning the formulations). The purity of the ink compounds is an important factor in the LM ink formulation for it to be free of solvents, heavy metals and so forth, and they are selected based on low toxicity, low skin irritation, etc. This is especially important when selecting monomers and photoinitiators. And still the initial constraint of low viscosity for the jetting process through the small nozzles of the print head is an important selection criterion, limiting the use of high molecular weight compounds.

The design of the LM UV ink-jet inks needs to aim for both a high degree of curing, in order to have low residual amounts of ink compounds that may migrate in the cured ink layer, and the use of compounds that are low in viscosity but cannot migrate. LM UV ink-jet inks need the combination of low viscous yet highly reactive monomers with diffusion-hindered photo-initiators. The result is that the polymerisation degree is very high and that migration is low, inherent to the design of the LM ink.

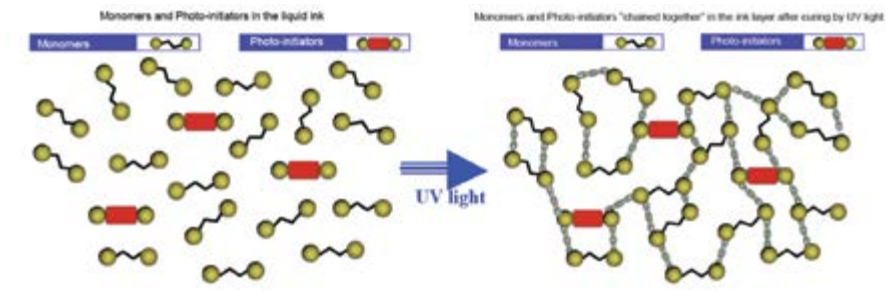


Figure 5: Schematic representation of polymerisation of liquid ink by UV curing

LOW-MIGRATION INKS – REALITY CHECK

Today Agfa's LM UV ink-jet inks are being used for many different types of direct printing. Take printing on PET beverage bottles as an example – Ultra-thin PET bottles are becoming more and more popular these days. The dedicated LM ink is designed for high image quality when directly printed on PET (no label, no pre-treatment), good physical properties (adhesion, flexibility, scratch resistance), food safety (low migration), while it should also allow for recycling (in the existing recycling processes).

Other examples include direct printing on plastic food/beverage containers (polypropylene substrate, which has low barrier quality, taking into account stacking of the printed containers shortly after printing, as well as adhesion and scratch resistance), and direct print on HDPE (high density polyethylene) closure caps (immediate adhesion on the caps, low migration, high image quality). Each of these applications requires specific LM inks to meet the various functional requirements. This is only possible by fine-tuning the LM ink formulation case by case. A growing number of projects for direct food container printing are being explored today. ■

Marc Graindourze is Business Development Manager Industrial Inks at Agfa Graphics

Further information:
Agfa-Gevaert NV, Mortsel, Belgium
tel: +32 3 444 2111
email: paul.adriaensen@agfa.com
web: www.agfa.com

SOCIAL RESPONSIBILITY CAN PROMOTE YOUR BUSINESS

Chuck Nall explores the raison d'être for effective CSR

Twenty years ago very few businesses carried out any social responsibility practices. In fact, it was viewed with financial distain as an added cost without any ability to add sales or increase profits. Now social and environmentally responsible companies are often sought out by a majority of Fortune 500 companies as preferred companies. The ability to promote responsible marketing is now a strategic advantage for both small and large businesses.

Corporate social responsibility (CSR) is now the fabric of consumer behaviour. This has changed larger companies and, in turn, thousands of contractors. In fact companies that do not address CSR, regardless of whether it will be a part of marketing, could possibly lose business. As a majority of consumers are millennials, CSR is a major utility of sale.

LOCAL CUSTOMER BASES

Many imaging and printing companies serve very local customer bases. These companies do not outsource in foreign markets and nor do they employ personnel from these markets. How then can CSR become part of a marketing programme? The answer is primarily the use of a promotional tool featuring 'best practices' of your business. Bring CSR to the front of your marketing campaign by:

1) Showing environmentally sourced materials and how these materials are environmentally friendly.
2) Feature clean and employee friendly areas.
3) Appeal to consumers who seek socially conscious products and companies.

These are easily accomplished by moving these practices to the attention of your customers. Don't assume that these areas are known to your customers. Feature many of the practices and products your company currently offers.

Don't assume that CSR is confined to the materials and products used in your business. Focus on your people. People relate to people. Be the CSR company that says "Our people are important". Feature employee welfare, like flexible schedules. Starbucks is a perfect example of using employee welfare as a marketing 'event'. It promotes the fact that employees with at least 20 hour schedules are eligible for company paid medical insurance benefits. Customer trust can be an identity point through your practices with your employees. This can be a marketing asset.

WORK-LIFE BALANCE

Do you have programs for flexible hours for employees? Do you offer child care programmes or flexibility? It is proven that work-life balance is relatable to your customers.

WORKPLACE DIVERSITY

This was once completely overlooked. Do you have cross cultures and have both men and women in management? These important features are not generally known by your customers unless you get 'out in front' with your marketing.

WORKPLACE IMPROVEMENTS

Is your workplace clean, well lit and refreshing? With many of your competitors this may not be the case. If you are a progressive leader in work-place improvements, it will reflect not only in marketing, but in customer tours. If you have added machinery or materials that are environmentally friendly they are great marketing talking points, especially with millennial decision makers.

Being a progressive CSR company creates confidence between potential employees and your company. These

features are also invaluable tools in attracting top talent to your company. As top talent is increasingly difficult to attract, CSR works equally well to promote your company.

CSR as a marketing feature begins with an honest assessment of where your company stands. Chances are your company has moved in this direction as part of normal competitive demands. If you need to address CSR it will show up in your assessment. Sometimes the stark reality of looking at competitors and an honest appraisal of 'where you stand' against them is what a company needs. Looking at a company that you should emulate may be useful. Don't confine your evaluations to just true competitors, but to leaders in CSR.

HONEST LOOKS

Corporate Social Responsibility begins with an honest look into your company, making changes if necessary and then moving the profile of your CSR to the front of the shop and marketing. Corporate Social Responsibility improves daily operations, employee relations, improves recruiting of top job candidates and ultimately creates sales. ■

Chuck Nall works in sales at Easiway Systems

Further information:
Easiway Systems, Delano, Minnesota, USA
tel: +1 612 418-1582
email: mr.chucknall@gmail.com
web: www.easiway.com

DOUTHITT

CONVENTIONAL OR CTS - DOUTHITT HAS THE OPTIMAL SOLUTION!

NEW DISTRIBUTION PARTNER WITH SIGN-TRONIC!

The world's leading screen image technology from your trusted resource in North America.

Model CTS Digital Screen Imager

No film required - just print the image directly on the screen and expose. Print head technology with solid ink enables better image detail, density, and consistency in a fast robust system. Call us to see if CTS is right for you.

Model DMAX **Model DMZ**

Douthitt's self contained screen exposure systems provide the bestvacuum contact and the best registration. Combined with our focused reflector metal halide printing lamps, our units offer the sharpest resolution, best unifomity, shorter exposures and completely hardened emulsion.

Model Sahara Screen Dryer

Uniform air and heat to insure fast and complete drying of screens. Digital temperature control. Any size available.

Olec Olite & Theimer Violux Lamps & Parts in Stock!

Contact us for more information on Douthitt's complete line of Exposure Units, Vacuum Frames, CTS Imagers, Dryers, Inspection Tables, High Wattage UV Printing Lamps, Integrators and Blankets for any vacuum frame.

Visit us at www.douthittcorp.com

SGIA

Once you've seen it you'll never be satisfied until you own it

THE DOUTHITT CORPORATION

Call Toll Free 1-800-DOUTHIT(T) • www.douthittcorp.com

Phone 313-259-1565 Fax 313-259-6806 E-Mail em@douthittcorp.com

NOTIFICATION OF HAZARDOUS MIXTURES TO POISON CENTRES IN EUROPE

Gabriele Heller outlines the criteria for submission requirements

Gabriele Heller

Article 45 of the CLP regulation requires all member states to appoint bodies responsible for receiving information on mixtures enabling them for emergency health response. Also implementation of a new Annex to CLP harmonising the content of the submissions to the nominated bodies is outlined in this article. A draft of this Annex VIII has been published in 2016 and has been discussed and voted by the REACH committee in September. As the member states voted in favour, but only by a qualified majority rather than unanimously, it is still possible for the EU commission to block the draft, but this is not very likely.

Basic requirements set out in the draft:

- Who has to submit?
  Importers and downstream users are obliged to submit information.
- Who receives the submission?
  The 'notified body', usually the poison centre, of the member state where the product is placed on the market.
- For which products is a submission required?
  Submission is required for all mixtures for industrial, professional and consumer use classified as hazardous according to CLP with regard to their human health and physical effects.
- How is the submission done?
  The submission consists of a .xml (eXtensible Markup Language) file to be submitted to the nominated body (poison centre) of the member state where the product is placed on the market. It has to be in the language of that member state, unless this state permits the use of another language, too.
- When do submissions have to be done?
  Consumer products: From January 2020
  Professional products: From January 2021
  Industrial products: From January 2024
  submission of industrial products has to be done placing a product on the market. Products already notified at local PC in accordance with current requirements before end of those deadlines have to be newly submitted from 1 January, 2025. Significant change of mixtures formulation requires an updated submission.

WHICH INFORMATION MUST THE SUBMISSION CONTAIN?

The submission has to contain the identification of the submitter and the product, the hazards' identification and some additional information on physical properties and packaging, plus the chemical identity and concentration of components. All identified components, no matter whether they are classified hazardous or not, have to be listed. For industrial products, however, a 'reduced submission' is possible, containing only the components listed in section 3 of the Safety Data Sheet. The use of this reduced submission is only possible if the company provides a phone number achievable 24 hours, seven days a week for the poison centre where they can ask for the full composition data in case of an accident.

ARE GROUP SUBMISSIONS POSSIBLE?

Yes, under certain conditions – if all products covered have the same hazard classification, belong to the same product category, and concentration of all substances are in the same concentration range. Maximum allowed ranges depending on classification of the ingredient are contained in the Annex. Fragrances and colorants can be summarised under the generic name when they are not classified for health hazards of major concern, and the content in the mixture does not exceed 5% in case of fragrances and 25% in case of colorants.

As most of the products used in our industry are classified as hazardous for health and/or physical effects this requirement again is a challenge for the ink makers. Be prepared! ■

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

ESMA
Driving Print Excellence

Further information:
Marabu GmbH & Co KG, Tamm, Germany
tel: +49 7141 691 116
email: he@marabu.com
web: www.esma.com/www.marabu.com

ETeH BSW 379.302.001

Gallus Rotascreen: give your products that sensual touch

The recipe for greater, faster success: Gallus Rotascreen. With rotary screen printing, your labels become truly eye catching, point of sale decision tools. Add to this the option of combining screen with flexo, letterpress and offset and you really do open up whole new dimensions for your customers' products in the simplest way possible, because Gallus rotary screen can easily be integrated into all new or existing machine systems. From film to finished stencil you are ready to print in under 30 minutes!

gallus

Success and security for the labelprinter

Gallus Ferd. Rüesch AG
Harzbüchelstrasse 34
CH-9016 St. Gallen
Phone +41 71 242 86 86
Fax +41 71 242 89 89
www.gallus.ch

A partner of Heidelberg

SEFAR® **PME**

The best performing screen printing mesh

Functional layers and conductive paths in highest quality printed with SEFAR® PME 130/330-30Y

In the fast lane with the highest efficiency and quality printed with SEFAR® PME 110/280-35Y

Clear and durable signs and inscriptions printed with SEFAR® PME 150/380-30Y

© Danielson Europe BV

Sefar AG
Hinterbissaustrasse 12
9410 Heiden – Switzerland

Phone +41 71 898 57 00
Fax +41 71 898 57 21

printing@sefar.com
www.sefar.com

SEFAR

THE SHIFT FROM REVOLUTIONARY TO EVOLUTIONARY DIGITAL INNOVATION

Steven Harnie, an ESMA Expert, believes the market hasn't seen the last of new developments

Steven Harnie

When will the next revolutionary technology hit the digital print market and what will it be? It's a question that kept us busy for many years, one we still would like to be answered preferably several times a year. But as digital printing becomes more mature it seems to be less exciting. Is the end of digital print revolution near? I strongly believe that we have not seen the last of it yet, but new developments will probably appear less frequently. I also believe that we can appreciate the current state of our market more if we look at it from another perspective, as a market that has grown in value through years of work by many individuals and companies.

COMPLEXITY OF DIGITAL PRINT TECHNOLOGY

As solutions are added, choices become harder and integration more complex. Print producers in Europe rely heavily on service and quality, possible only if high quality solutions from several sources are integrated perfectly into an efficient production work-flow. Finding these solutions in a very competitive market can be a time consuming and challenging task. Especially when switching traditional high volume production lines to digital print solutions, the whole work-flow from pre-press to finishing has to be re-evaluated. A consultant can be useful to guide you through the process and provide unbiased information about the different technologies. But transmitting very complex information requires effort and time. Digital printing is complex because it is a relatively new technology that has not been fully developed yet. The many parts which have been created have not been assembled into a coherent and fine-tuned structure. As a consultant I am specialised in creating production work-flows for industrial and textile printing companies, and I spend most of my time connecting different technologies into one efficient ensemble. I can assure you that we are still far away from plug-and-play.

ACCURATE COLOUR REPRODUCTION

Printing saturated or bright colours is nice but it does not make money. What you need is accurate reproduction of the graphic data provided by the customer. To do so, you need to be able to reproduce colours accurately possibly on several application specific systems (different printers, inks, substrates etc). You cannot reproduce colour accurately even with the perfect printer/ink/RIP-software combination, firstly because they do not exist and, secondly, because accurate colour reproduction is achieved by integrating the different products correctly into a compatible and performant production process which is also dependent on external parameters like substrate quality, spectrophotometers, reference colours (eg Pantone, RAL, Color Passport), colour standards (CIE, ISO), viewing and lighting conditions (D50, D65) and others. In order to explain all issues that arise when we apply all parameters, I would need to write a very thick book and many have been written already on the subject.

SPECTROPHOTOMETERS AND REFERENCE COLOURS

As an example, I would like to explain one issue with spectrophotometers and reference colours. Spectrophotometers are calibrated with reference samples, usually in the form of ceramic tiles. These reference tiles are copies of a master set which comes with measurement values made with an accurate lab-quality spectrophotometer (each set has slightly different measurement values). The calibration of spectrophotometers is required because they use different light sources and different photometers (electronic part that measures light) from different manufacturers. The ceramic tiles are measured by the manufacturer of the spectrophotometer and the correction is programmed into the firmware of the device. But, even after calibration, there are differences between the values measured by different devices because the calibration is usually done on a white tile or by averaging measurements of additional colour tiles. This issue is known and has been tentatively addressed by X-Rite through the XRGA standard where the differences are recorded in three-dimensional colour space to improve the so-called inter-

Continued over

Colour calibration for industrial textile application

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.

With over 100 years of experience we have both the products and the know-how to make your job easier.

Free online How to Guides
autotype.macdermid.com/how-to-guides

MacDermid AUTOTYPE

instrument agreement. Since the XRGA standard was developed by one leading manufacturer others have been reluctant to adopt it.

Reference colours are also measured with spectrophotometers producing slightly different measurement values than the devices used during the colour calibration of your printer (linearisation and ICC profiles). During an evaluation I recorded colour differences with an average ΔE*00=1.26 and max ΔE*00=4.70 between the values provided by the manufacturer of the reference colours and the values produced by several favourite spectrophotometers used for colour profiling of digital printers. These values are close to the deviation tolerances proposed by Fogra for digital printing applications and we have not even started to characterise the substrates and inks on a digital printer. Throwing different spectrophotometer geometries and optical brighteners into the calculation would make the results even worse. Through averaging of several measurements on very unstable substrates like textiles, we manage to get the fluctuations down to around max ΔE*00=2 which is lower than the inter-instrument differences.

If you get complaints about colour differences between reference colour swatches and the output of your digital printer, it is not entirely the fault of the company providing the colour calibrations. The fundamental tools used by the digital printing industry are maybe not as rock solid as we think … yet.

STANDARDISATION

Digital printing still relies on offset printing standards which are not very well adapted to digital printing applications. Initial steps have been taken to create standards for digital printing, by Fogra for example, but this topic needs more attention. Colour accuracy has been debated for a long time and is difficult to achieve even on stable and controlled systems, but colour reproduction with pre-defined tolerances must be possible. Defining tolerances for specific print technologies and creating certifications that allow print companies to prove that they are within industry specifications could reduce a lot of discussions, production downtime and waste of materials.

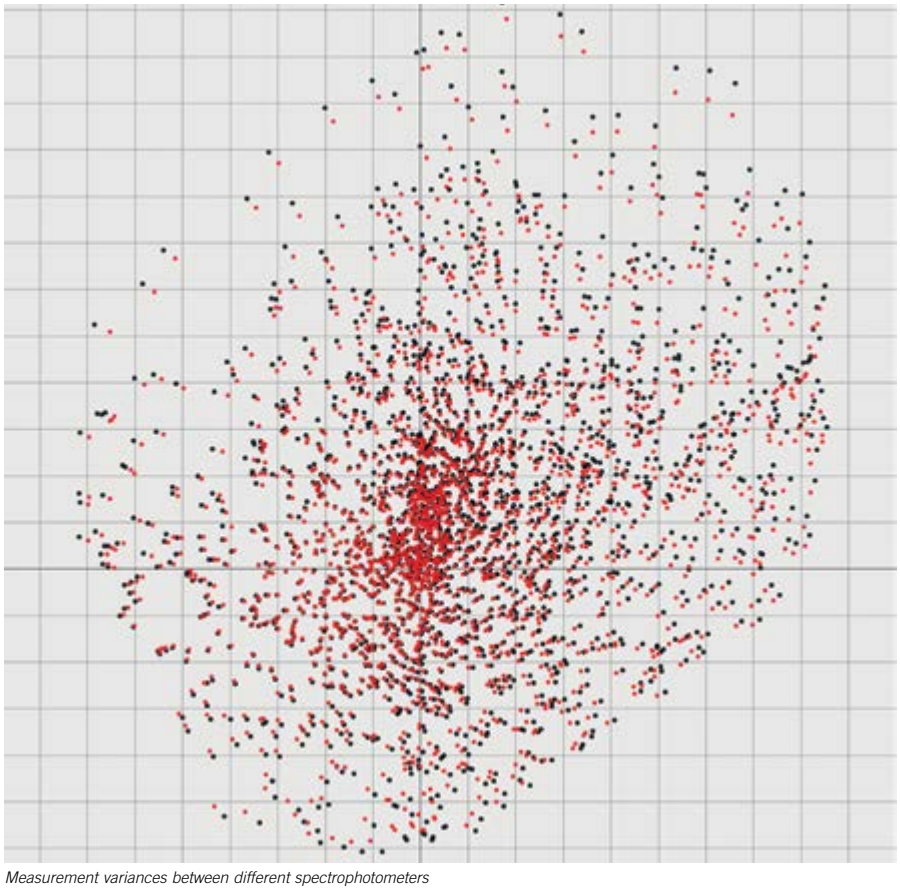
Colour specifications for digital inks do not exist yet; colour gamut is very different between brands, making it difficult to produce the same colour results on different printers. The specification of colour properties by ink or application type would greatly improve colour reproduction and consistency between different printers. One of the reasons why standardisation of digital inks has not happened until now, is because the print-head technology is still advancing too fast. New print-heads are introduced regularly and ink manufacturers have to concentrate on the development of compatible inks, an expensive and time consuming process. Another reason is that inks have to be adapted to very specific applications. This is a sensitive subject and will raise a lot of negative reactions but we should at least leave it open for discussion and evaluate the possibilities.

PRODUCTION AUTOMATION

As the market share of digital printing increases dramatically every year, so does the volume produced. The manufacturers of digital print solutions seem to cope well with the requests for faster printing systems but can you feed these production lines efficiently with the current software solutions from a web-to-print application? Soon you will run into several issues. Can you still rely on graphic artists to prepare the graphic designs? Will your printer operators be able to manage the input and ready everything for printing? How will you manage the administration of hundreds or thousands of print jobs? Production automation for digital printing applications is definitely worth taking a closer look at. Software developers are already reacting to the demands of the market. MIS and ERP systems are being developed for digital print work-flows, RIP-software developers are starting to provide connectors for existing ERP solutions, as well as XML-driven hot folders for fully automated image manipulation and file preparation. I expect full production automation to be a fact for most of the digital print companies within the next ten years.

CONCLUSION

Market trends are ultimately driven by demand. If you are the owner of a digital print company, you can follow the market trends but you also have the power to push the market into a certain direction. My question is this: "What do you need most – new innovative technologies that allow you to stand out in the market or an efficient and stable production workflow that allows you to be competitive?" Due to the limitations of an article I only raised a few issues concerning digital printing that need a closer look, that is if we want digital printing to become a reliable and efficient technology of the future. ■



Measurement variances between different spectrophotometers

Steven Harnie is an ESMA Expert and a specialist in digital print technologies

ESMA
Driving Print Excellence

Further information:
Printrix BVBA, Halle, Belgium
tel: +32 470 52 36 90
email: info@printrix.eu
web: www.printrix.eu

ESMA, Sint-Joris-Winge, Belgium
tel: +32 16 894 353
email: info@esma.com
web: www.esma.com

A RENAISSANCE IN SCREEN-PRINTING

Claudio Moffa talks to *Specialist Printing Worldwide* about trends

Sakurai's Claudio Moffa

Specialist Printing Worldwide: Please explain a little of who you are and your background
Claudio Moffa: I have been involved with the print industry for many years now and am both inspired and fascinated by the continued innovation for industrial screen-printing and technology. My initial education was in aviation engineering and I guess I have a natural passion for high-grade engineering which is why I'm happy to be the Branch Manager for Sakurai Europe, based close to London.

Allied to my inquisitive nature and interest in innovation, I like to help people achieve growth with their business. So when I am with my customers these three elements come together – my interest in engineering, the excellence of Sakurai technology and my enthusiasm for helping people generate new possibilities for their business.

SPW: What do you aim to achieve with Sakurai?
CM: Continued growth in demand for screen-printing generally and, of course, in Sakurai's technology in particular!

Over the past two years and we have seen incredible growth in demand in Europe for our technology. For example, in 2015 to 2016 we achieved growth of almost 300%! (From eleven units to 32) And we are expecting to beat that again this year!

SPW: Why has this growth occurred?
CM: I think there are three key reasons:

1 Whilst many focus only on the growth in digital ink-jet, screen-printing, particularly for industrial printing, is also growing in demand for industrial applications.
2 We prefer to educate and inspire our customers so they grow their business and as a result we also grow.
3 Lastly our customers really appreciate and trust the performance and quality of the Japanese made Sakurai screen printing machines.

SPW: For industrial print, what do you regard as the main opportunity?
CM: Industrial print is experiencing continued growth for screen-printing. In a variety of industries, screen-printing remains the key process due to its efficiency, quality and speed, which cannot be matched by digital. The process is so good and the output such high quality, I cannot see a time where it is replaced. But there is a need for education, as I do not think the full potential is being realised. Screen-printing is the best printing option for functional and industrial printing applications such as automotive, smart technology, pharmaceutical and packaging, and it can provide amazing special effects with specialist inks. This can also add a lot of impact to paper based print applications.

So, from adding a perfume smell to a package, heat sensitive ink to a T-shirt or a gloss or metallic finish to a package, screen-printing can really add the 'wow' factor, and this is something we want to remind people of.

SPW: What trends do you see as important for screen-printing?
CM: Automation has become a key trend and issue. There is no doubt that manufacturing is changing and there is demand for products to be made as well and as efficiently as possible. Screen-printing has to respond to this change by giving manufacturers excellent quality printing that can be produced at high speed whilst being as efficient and as easy as possible. Industrial printers really appreciate the potential of automation, which is made possible by digital technology. Some may be surprised to hear this, but screen-printing can benefit from digital technology as well!

SPW: What do you see as the main problems and challenges for screen printing?
CM: I think that screen-printing does not 'shout' as loud as digital and this gives people the impression that it is not as innovative. And this is wrong. Screen-printing is really pushing the boundaries with highly innovative applications such as smart technology and in mould decoration in automotive production. So I think as an industry we need to get better at promoting the power and value of screen-printing to inspire and educate more customers.

SPW: With digital ink-jet growing so much are you concerned at all about the future of screen-printing?
CM: Not at all. As I have already said, screen-printing will remain the dominant process for many applications. All of the InPrint Show survey results point to digital ink-jet playing a unique role that creates new value, not by replacing the conventional process.

SPW: What kind of application areas do you see as growing for screen-printing?
CM: Obviously both smart technology and automotive will continue to grow as this market continues to evolve and innovate. I also think that packaging will see growth for screen-printing, particularly for luxury products as special effect printing provides retailers and FMCG brands the ability to stand out on the shopping shelf and reflect the high quality values and the prestige of the brand.

SPW: What do you believe is important for future growth?
CM: I think as an industry and technology we need to be open minded to new ideas of development. We can't always focus on the way we do things now and think this is the best we can get. So being open minded to discussions with other companies to develop new technologies that enable new possibilities is a positive and logical thing to do.

In addition, we must educate and inspire our customers of the amazing possibilities of screen-printing. Without inspiration and help none of us grows, and working in partnership is the best way to yield positive results for the industry. ■

Claudio Moffa is Branch Manager London Office and UK and Europe Sales Manager of Sakurai

Further information:
Sakurai Graphic Systems Corporation London Branch, Hounslow, Middlesex, UK
tel: +44 208 577 5672
email: info@sakurai.co.uk/ marketing@sakurai.co.uk
web: www.sakurai.co.uk

MURAKAMI

Manufacturer of Innovative Technologies
for Screen Printing Processes and Materials

"Expose the Quality"

MURAKAMI
www.murakami.co.jp
www.murakamiscreen.com

One Company

Serving the Global Screen Printing Market

EMULSION CAPILLARY FILM PRECISION STENCILS SCREEN MESH EQUIPMENT

Photovoltaic • Printed Circuits • Textiles/Garments • Large Format Graphics
Ceramics • Nameplates • POP Displays • Signage • Textiles/Roll to Roll
Bottle Decorating • Posters • Glassware • Automotive Industry
Touch Screen Panels • Membrane Switches • High Density Prints
CTS Emulsions • Screen Making Equipment and Devices

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

MacDermid Autotype's Autohaze Extra offers exceptional cleaning performance

For rapid acting haze remover that delivers exceptional cleaning power, Autohaze Extra is a powerful new addition to the Autotype range of haze removers. It has recently been launched by MacDermid Autotype.

This rapid acting haze remover is easy to apply and has been formulated to deliver outstanding results. It is now simple to have 'like new' screens ready in just ten minutes.

The product's exceptional cleaning performance works on a range of stains from industrial to textile inks and graphic inks to stencil stains. ■

Screens are 'like new' again in less than ten minutes

Autohaze Extra is easy to apply with a brush

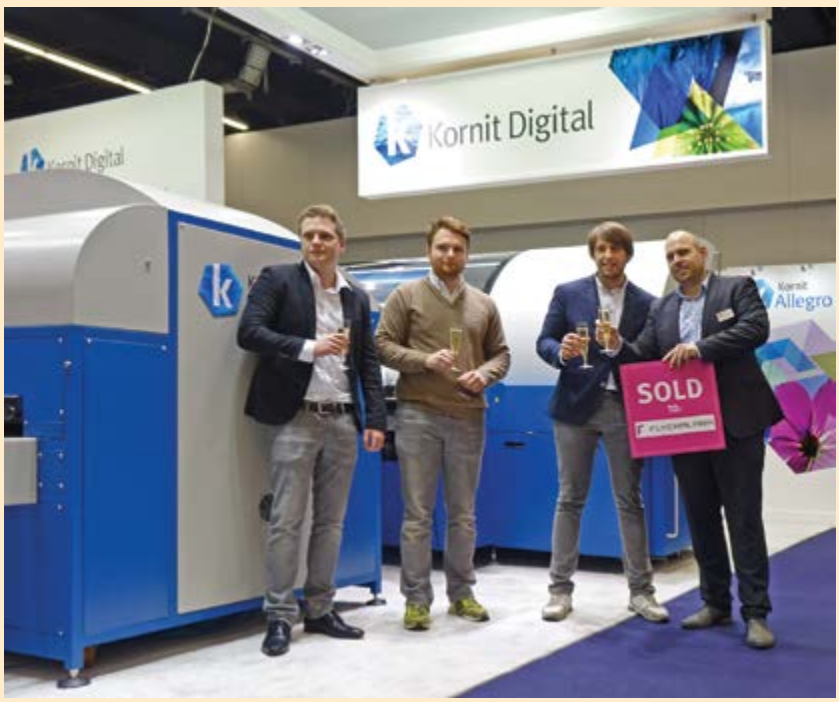
Flyeralarm extends its fabric range with Kornit Allegro investment

Flyeralarm has started the new year with a strategic investment in a Kornit Digital Allegro roll-to-roll digital textile printing system. This new machine generates a new opportunity for the company to extend its product and material range by offering direct print to material such as cotton, organic cotton, silk and polyester.

"Once again we're first in the industry with the innovative solutions to offer something unique and outstanding for our customers at a competitive price," states Igor Zanovskiy, Managing Director of Flyeralarm. The deal was signed at the recent Heimtextil international trade fair in Frankfurt for home and commercially used textiles.

The first products planned for printing on the Allegro will include fabrics by the metre, retractable banners, tablewear, and chairs. Using ecological colours, the printing process is environmentally friendly and customers can also send individual inquiries for reel material or any other special requirements to Flyeralarm's customer service centre.

With the delivery of the machine Flyeralarm believes it will gain a competitive advantage by being able to print on a broad range of fabrics with a short delivery time and outstanding quality. As well as the Kornit Allegro Flyeralarm has also purchased a Kornit Storm II direct-to-garment printer which will further strengthen the position of its position in the textile printing business. ■



From left, celebrating the signing of the Kornit Allegro, are Flyeralarm's Christoph Wolter, Moritz Eckl and Igor Zanoskyi (Managing Director), with Sander Lossie (Sales Manager, Kornit Digital)

Amazon selects Kornit Digital systems for on-demand textile production

Kornit Digital has announced that, following previous purchases by Amazon, it has been selected to deliver a large number of on-demand textile production systems in support of the company's Merch by Amazon program. As the apparel market transitions to short cycle on-demand customised garments, Kornit is focused on providing a fully personalized garment decoration solution with ultra-fast turnaround times.

"We are excited to have been selected as a garment printing solution provider for Amazon, and look forward to the business potential this relationship represents," says Gabi Seligsohn, CEO of Kornit. "Kornit Digital is at the forefront of the digital direct-to-garment market, and we believe that Amazon's decision is great testament to that. We are deeply committed to the success of our business with Amazon and reiterate our commitment to all of our customers to stay at the forefront of the DTG market and continue to provide them with the most advanced, cost effective production solutions."

Through this agreement, Kornit will deliver the company's flagship high-productivity system, the Avalanche 1000, to support Amazon's expansion of production capacity for the company's Merch by Amazon service. A self-service program for developers, Merch by Amazon is the simple way for content creators to increase revenue through the sale of T-shirts.

"Customer demand for graphic T-shirts offered through Merch by Amazon continues to grow rapidly, and more developers and content creators join the service every day," states Miguel Roque, Director, Merch by Amazon. "Kornit's ability to deliver solutions and support that meet our high quality and high volume manufacturing requirements will help us to continue expanding program capacity to meet customer requests." ■

KIWO's Fineline system provides perfect stencil technology for electronic and solar screen-printing

Requirements are for even higher aspect ratios of printed lines in the solar industry or the use of abrasive silver conductive pastes with even higher print runs demand peak performance from the screen-printing stencil.

To meet these and other challenges, simply coating a fabric with emulsion is no longer sufficient. Therefore KIWO now offers a complete system, with which the stencil for different requirements can be optimised further.

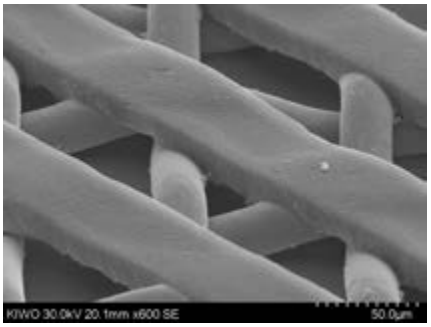
To form the base-coat of each Fineline stencil, a high-resolution emulsion should be used. For this, KIWO recommends AZOCOL Z 170 FL and – developed further for even higher chemical resistance properties than its predecessor – AZOCOL Z 177 FL. For special requirements (for example, the use of aggressive solvents) or even higher print runs, the use of AZOCOL Z 173 FL-H is recommended. This can be chemically post-hardened with KIWOSET FL.

After base-coating, ESTELAN D 271 TopCoat can be used for post-coating on the printing side. This has the advantage of further improving the stencil's Rz value – which is especially important when printing fine lines, so that they can be deposited with sharp edges on the substrate. Secondly, it reduces the tackiness of the emulsion surface, so that expensive exposure films can be better protected and therefore used more often. A special feature of this top coat is also to serve as a sort of protective varnish, which protects the stencil against mechanical attacks during the printing process.

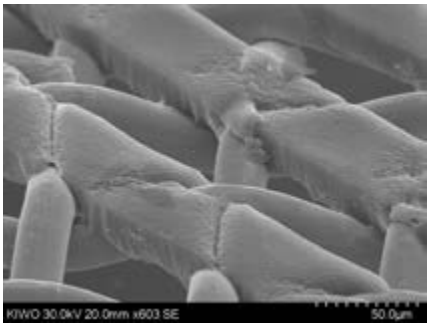
In the solar sector, it is particularly important that the printed lines have a uniform topography, so that their resistance remains as small as possible and electricity can flow unhindered. Accordingly, the paste release of the stencil must be very good. To improve this, KIWO offers KIWOMIX RA 1750. Here, the exposed emulsion surface is chemically altered, so that the paste can better pass through the printing channel and thus form a homogeneous line on the substrate. In addition, due to the efficient release properties, so-called 'bleeding' effects and paste consumption during the cleaning process are greatly reduced.

The system described above facilitates the production of an individual stencil appropriate for countless requirements, because the products can be purposefully combined with each other. ■

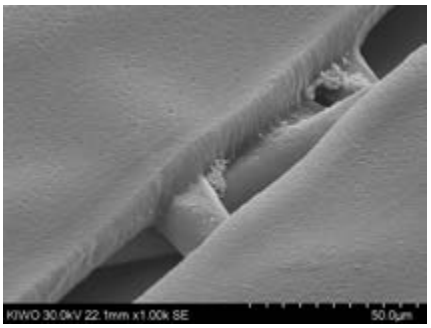
AZOCOL Z 170 FL, a 20µm line printed on a multi-crystalline silicon wafer



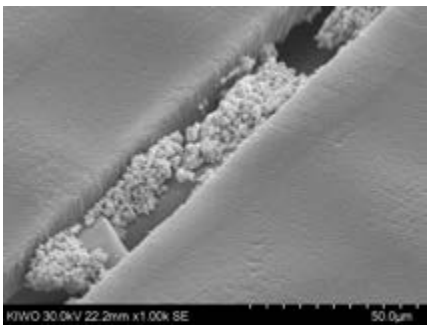
AZOCOL® Z 173 FL-H



Competitor's emulsion



Paste-release property with KIWOMIX RA 1750



Paste-release property without KIWOMIX RA 1750

Greater functionality from Sawgrass's newly updated CreativeStudio

Sawgrass's CreativeStudio Online Designer and Print and Color Manager software has been newly updated. It now provides sublimation decorators with better functionality, increased efficiency and new tools that make creating products faster and easier.

"We worked closely with CreativeStudio users to determine which features and functions would be most helpful for their businesses," states Mike McEvoy, Sawgrass's Director of Marketing Communications. "It is important to us that we continue to develop what is fast-becoming an essential tool for many sublimators, and deliver it in the languages they are most comfortable with. We want CreativeStudio to provide as much value as possible to our customers, so that they can grow their businesses and find success on every avenue they explore with sublimation."

CreativeStudio now offers several enhancements to streamline workflow and productivity. These include options to conserve media with manual or automatic grouping of multiple jobs, an on-screen image scale indicator, easier file-to-print workflow and improved functionality with My Templates and My Images options.

The new version of CreativeStudio is now available in English, German, French, Italian, Japanese and Spanish, for easier access by customers worldwide. CreativeStudio also now supports VJ 628 printers using Dual CMYK, Pro Photo and Pro Photo XF inks. Templates and images for products up to 610mm will also be included in the CreativeStudio library. ■

CreativeStudio now enhances workflow and productivity

IMI Europe's event programme is underway for the first half of 2017

IMI Europe Ltd's European conference and course programme for the first half of 2017 is already well underway, following its first Winter Workshop which took place in Barcelona and comprised a series of three technical courses. The dates and location for its flagship Digital Print Europe event, as well as further events, will be announced shortly.

The IMI Europe Inkjet Engineering Conference and IMI Europe Inkjet Ink Development Conference take place from 14 to 16 March, 2017 at Aquatis Hotel, Lausanne in Switzerland. Building on last year's successful new technical event, the IMI Europe Inkjet Ink Development Conference, a new one-day Inkjet Engineering Conference is being added. The two events are aimed at the ink-jet development community, and will contain a fully curated programme of invited talks by leading experts from industry and academia.

From 12 to 16 June, the IMI Europe Inkjet Summer School is being held at the Novotel Ghent Centrum, Ghent in Belgium with a series of six technical courses, each of 1.5 days duration. The IMI Europe Inkjet Summer School allows developers to get an in-depth look at a particular area of technology with leading technical experts in each field. The line-up for 2017 will include the world-famous Inkjet Academy and other courses covering important aspects of ink-jet technology.

"We are pleased to announce our event programme for the first half of 2017," comments Dr Tim Phillips, Managing Director IMI Europe. "With an excellent programme of technical course and conference content, we believe we are well-placed to continue our leading role in the on-going development of the ink-jet digital printing community, which has been such an engine for growth over the last few years." ■

Mimaki adds Kebab option to the new UJF MkII printer range

Mimaki has made its Kebab option available for the new UJF-3042MkII and UJF-6042MkII, its latest generation of UV flat-bed printers. Using rotary rollers, the Kebab option enables printing directly onto a wide range of cylindrical objects and is also available for the UJF-7151plus printer. The UJF-3042MkII is compatible with the Kebab MkII model, while the MkII L model is suitable for use with the UJF-6042MkII and the UJF-7151plus printers.

This device enables high quality printing on cylindrical products with diameters from 10mm to 110mm, including wine and water bottles, seals, candles, cosmetics bottles and more, making it possible and affordable to produce on-demand original products in short or even individual runs.

The Kebab option has opened up new business and revenue streams in sectors such as the cosmetics industry, where regulatory requirements differ between countries. It also makes one-off, direct-print labelling affordable, be it for a personalised product or as a gift. Mimaki also highlights the wine bottle sector as a growth area with commemorative and celebratory personalised prints proving popular.

The new UJF-3042MkII and UJF-6042MkII printers feature print speeds that are 20% faster than its predecessors. These machines, like most printers from Mimaki, also have the ability to use different types of inks, thus supporting a very wide range of applications. In addition to the durable inks that adhere well to glass and other substrates taking advantage of the Kebab option, LUS-120 inks can also be used for printing on soft material surfaces such as membrane switches or wallet smartphone cases, since they can stretch up to 170% without cracking when pressed or folded.

Moreover, the LH-100 rigid inks are perfect for accessories or stationery products that have to withstand high levels of abrasion. These inks, when used with Mimaki's PR-200 ink-jet primer, are also an excellent choice for printing on glass, metal and resins, which has traditionally been difficult for UV-curable inks. With Mimaki Clear Control (MCC), the clear varnish can be used to both highlight areas with spot or flood coating, as well as to deliver embossing with multiple passes.

To support increased productivity and profitability for sampling, retail and printing business, the new UJF-3042MkII and UJF-6042MkII printers have the ability to print on objects up to 153mm thick at higher speeds. The new range has advanced mechanical functionality, featuring a print table that moves during printing to reduce printer vibration, deliver precise dot placement and enable high quality printing on a wide range of objects and materials.

The printers are designed to deliver easy operation with automatic detection and cleaning of clogged nozzles, substituting good nozzles for printing during this process. This allows constant printing and reduces waste due to defective nozzles. Mimaki Circulation Technology (MCT) circulates white inks at regular intervals to prevent pigment sedimentation that can lead to nozzle malfunction. Especially important in retail environments; the fully enclosed print table improves safety while maintaining print quality by keeping dust and other contaminants out of the system. ■

Mimaki's Kebab option enables printing around the circumference of cylindrical items

Latest software update on Jetrix printers brings user friendly experience

Some of the complex challenges of wide-format printing have been simplified further with the newest GUI update rolling out across the complete Jetrix KX printer range. Specifically developed with the operator in mind, the latest software update offers an enhanced user experience with several improvements.

These include the ability to set the lamp power on a scale of 1 to 9, which means the printer delivers much more precision in terms of adaptability to suit the media type. The higher scale is better suited to robust firm media, whereas the lower scale enables a substrate traditionally impacted by high temperatures to be successfully printed. There is also a new flood tool which enables the user to print a flood white or black layer without the need to create a separate layer within the artwork file.

Encouraging the most effective media use and therefore directly delivering cost savings, the system also facilitates the ability to easily map and move images around. The result is an efficient use of the printing space, with the very minimum amount of media used for the job.

Finally, a critical element in any print production job is time. This latest GUI delivers a practical application which nests images enabling duplication without the need for massive RIP files every time. This means less time spent in pre-production. ■

Software updates bring easier usability to Jetrix printers

Natgraph Now focuses on new products and applications

International distributors gathered in Nottingham for Natgraph Now 2016 which took place in November. The objective was to align and train the company's colleagues on the very latest products and applications with excellent feedback confirming that it was an interesting and effective event. The results shows that this will enable disbributors to proceed with confidence into new applications within their own countries.

Natgraph Now 2016 was attended by 25 sales professionals from 20 countries and three continents for a comprehensive timetable including sessions on applications, industry specific challenges, dedicated equipment specifications and future developments. Visitors were able to enjoy informative technical presentations from Natgraph's experts and industry specialists including Thieme GmbH's Christian Schweikert who discussed flat glass, Steve Heath from Perfectos Printing Inks Co Ltd who concentrated on textile transfers, with biosensors being covered by David Steele, former Lifescan Director of Product Development.

Kevin Northcott of Apollo Colours Ltd discussed credit cards and security, with FIM automotive covered by Kevin O'Hara of MacDermid Autotype Ltd, membrane switches by Claudia Bauer of Marabu GmbH and cylinder press developments by Claudio Moffa of Sakurai Graphic Systems Corp.

Factory tours explained the major changes under way at Natgraph with a completely new factory layout and investments in new machinery to improve efficiency. Colleagues were able to see for themselves the changes in the business and the energy being made to drive efficiency, reduce lead-times and remain ahead of the competition.

The evenings were an opportunity to relax and included a tour of the gruesome Galleries of Justice Museum in Nottingham. The team recreated an 1832 trial which saw Sakurai's Claudio Moffa (aka Valentine Marshall), sentenced to transportation to Australia for despicable crimes. Bon Voyage Claudio!

Factory tours were part of the Natgraph Now package

Natgraph's distributors left the event with new focus, fuelled by the knowledge and insights into potential new markets, armed for even greater success. ■

Wifac and Durst in Benelux distributor agreement

Industrial ink-jet specialist Durst is building important new business opportunities across Benelux in a co-operation agreement with Wifac, expert in label and packaging knowledge across the European countries and further afield. With offices in Belgium and The Netherlands, Wifac will also be the supply point for inks and consumables for all Durst Tau systems.

Wifac's knowledge in local customer sales and service support is part of the distributor deal involving Durst's label and packaging businesses. The Durst Tau 330 and 330E digital ink-jet systems are complemented by low migration and low odour inks suitable for primary food packaging, as well as pharmaceutical sectors.

Durst and Wifac have already hosted two customer and industry events to explain more details about the collaboration. The first was at Affligem in Belgium, and the other was at Wifac's premises in Mijdrecht, between Utrecht and Amsterdam.

Robbert Amse, Wifac's Press and Packaging Sales Director, says: "Durst has an enviable reputation in the marketplace for providing high quality ink-jet products across a range of markets. In view of our international drive and continual expansion, especially in the label and packaging industry, this collaboration is a logical step forward for us and offers Durst an important opportunity for business growth into these new markets."

"This is part of a wider strategic plan to ensure that we have local market presence and opportunities in Benelux through a company that is widely respected in the industry both for current and future customers," comments Mike Englander, Durst Phototechnik's Business Development Manager, Labels & Packaging Printing. ■

The Durst Tau will now be available across Benelux from Wifac

Wikoff Color introduces oil-based litho process series

The research and development team at Wikoff Color has introduced what it describes as a surprisingly different process series for the commercial printing market. While Divergent is formulated for conventional lithographic printing, its performance is anything but ordinary. This revolutionary approach to oil-based ink formulation has shown outstanding results on press, solving many of the familiar issues that litho printers have come to expect with this chemistry.

For users looking to print at reduced water levels with the same quality performance, Divergent has been formulated for optimal printing with greatly reduced water levels. On average Wikoff customers are able to cut water settings by 8 to 10%.

In trying to reduce waste, Divergent rapidly achieves users' desired colour upon start-up and restarts, significantly reducing downtime and waste. It also remains stable from start to finish, even on biggest jobs.

"My customers love this ink," says one of Wikoff Color's sales experts. "One of my commercial market customers was the first to test this ink set out of R&D. The pressroom manager loved the transfer performance and the way it effortlessly came back up to colour after the press tripped off. He kept asking me when it was available to start selling, because he wanted to switch as soon as possible." ■

GIS adds Konica Minolta print-head modules' capability to expanding product range

Global Inkjet Systems is now offering its flexible drive electronics for the new Konica Minolta KM1800i and KM1024i double-head modules. The pre-aligned modules enable 720dpi (KM1024iSAE-C for aqueous inks) and 1200dpi (KM1800iSHC-C for solvent, oil and UV-curable inks) and are used in the successful Konica Minolta Nassenger SP-1 single pass textile printer and the KM-1/ KM-C cut sheet printers respectively. Konica Minolta (KM) is now offering these modules to OEM machine builders and system integrators.

The GIS HIB-KM-1024i and HIB-KM-1800i Head Interface Boards, which each drive two print-heads, complement the new modules and provide complete print-head and waveform control.

"The trend to higher resolution single pass continues, and these new modules enable integrators of KM heads to build higher capability systems," says Debbie Thorp, Business Development Director at GIS. "The modules are commercially proven in KM's own production systems." ■

Sensient and Engico announce water-based ink-jet for digital printing of corrugated board

Sensient Imaging Technologies, a division of Sensient Technologies Corporation, and Engico, a company specialised in advanced technology for corrugated packaging, have introduced an innovative 100% water-based solution for direct digital printing on compact and corrugated cardboard.

The Aqua series of printers developed by Engico enables box-makers, commercial printers and point-of-sale professionals to print and deliver just-in-time and 1:1 cardboard boxes. The combination with inks developed specifically by Sensient under its Sensijet SX technology offers easy processing and printing for indoor and outdoor applications. For this solution, inks can be applied directly onto the cardboard material, not requiring any pre-coating. The ink layer maintains its full integrity and properties upon folding or forming of the box.

The pigmented water-based inks developed under the Sensijet SX platform are odourless, VOC-free and highly resistant. They have been formulated for use in printers equipped with piezo-electric print-heads, for applications such as sign and graphics, decoration, packaging and others.

"Sensijet SX constitutes a truly novel platform in Sensient's portfolio of technologies," comments Jérôme Jeanneret, Managing Director Inks Europe. "We are particularly proud of the solution developed in collaboration with Engico which marks a new step in our aim to offer our customers revolutionary products and solutions to allow them to grow their business with improved performance and sustainability." ■

Messe Düsseldorf reconstructs southern section

The supervisory board and the shareholders of Messe Düsseldorf GmbH have approved plans for the complete reconstruction of the South Entrance and, subsequently, Hall 1. Werner M Dornscheidt, Chief Executive Officer of Messe Düsseldorf GmbH, states: "We can now implement our masterplan for the complete modernisation and renewal of the premises at our home base – and indeed, as always, without subsidies."

The investment amount for this southern section is €140 million. In all, Messe Düsseldorf will invest around €636 million until 2030. The work will start in May 2017, after interpack, and should be completed in summer 2019. The design has been created by the Düsseldorf-based architectural company, slapa oberholz pszczulny architekten.

The new South Entrance will give Messe Düsseldorf a contemporary presence directly on the banks of the River Rhine with a view towards Düsseldorf. Trade fair visitors and convention delegates will be welcomed by a new illuminated and translucent canopy, 7,800 square m in size and about 20m high. It will be a powerful architectural icon at this highly visible point of the exhibition centre.

Jurek Slapa, Managing Partner at sop architekten, says: "The canopy gives the Düsseldorf Exhibition Centre a new face and an unmistakeable address in a unique position between the Rhine and the Nordpark. At the same time it integrates the existing convention centre, CCD, ensuring a sensitive approach to existing structures." With its length of 170m and a width of 93m, it will offer plenty of space for trade fair visitors and convention delegates before they even reach the exhibition centre or convention.

The South Entrance will be open towards the Forecourt across a completely glazed front, 93m in length. More than 2,000 square m of space will accommodate all the necessary services, such as cash desks and cloakrooms. The first floor will have a glass-enclosed meeting room protruding into the foyer, affording a view of the entrance area right up to the forecourt. Moreover, the entire foyer can be used for events. The forecourt will accommodate the entrance to an underground car park with 300 spaces as well as bus stops and the taxi rank.

At 158m in length, 77m in width and comprising more than 12,000 square m, the new Hall 1 will be roughly the size of Halls 8a and 8b. This new hall will meet the high technical standards of the entire exhibition centre. It will be accessible via seven gates, and it will allow suspensions from all ceilings and also the supply of facilities to stands from the hall floor. On its first floor, the hall will have six meeting rooms with 200 square metres, each accommodating up to 198 persons. Messe Düsseldorf 2030: Strategies for the Future

Dornscheidt explains that massive changes have taken place in the trade fair sector during the last 15 to 20 years. On the one hand, he says, the sector has developed into a global industry, so that trade fair themes are now organised on a worldwide scale. On the other hand, leading trade fairs of various industries have turned into meeting points of a globalised business scene. ■

Esko Device Manager improves productivity for repro specialist

A UK reprographic and plate-making specialist is enjoying greater operational visibility and smoother workflow following its implementation of Esko's Device Manager for flexo plate making. VCG-Connect, Bury, is one of Europe's leading providers of digital reprographics and photopolymer printing plates. With a well-respected history in the flexographic industry, it provides services to many of Europe's largest printers and brand owners.

Device Manager bridges the gap between the pre-press department and the plate room. By pushing operational control upstream to the pre-press department, the plate-room operations are better integrated with the pre-press work-flow. Device Manager allows the imaging devices to be utilised at maximum capacity and the possibility to balance workloads. It tracks jobs, monitors machine status, merges plate production, reports on utilization and planning and gives machine visibility on workload.

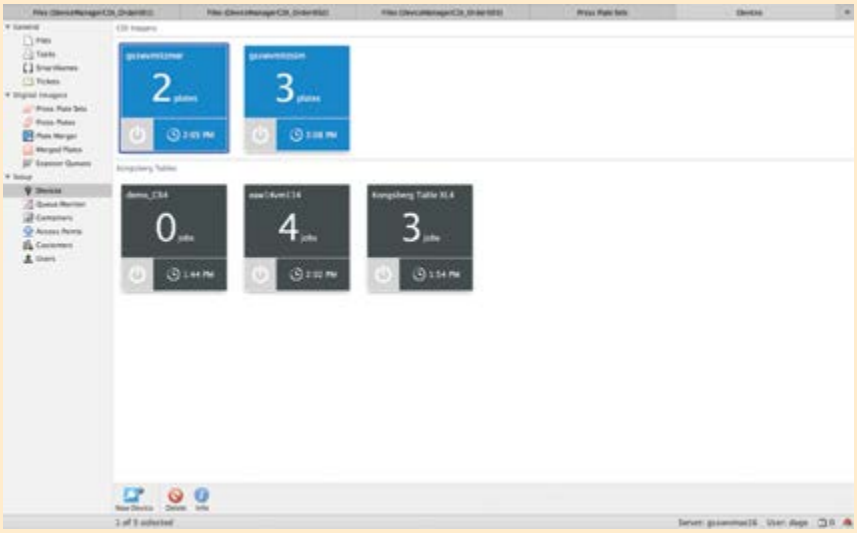
Additionally, Device Manager allows VCG-Connect to have a clear indication of production workload to reduce cycle times and manage short production runs intelligently. Moving from a plate-based view to a job-based view reduces lost time when searching for jobs and separations, increasing efficiency. At the same time, improved visibility prevents long idle time in production and the ability to reassigning jobs among platesetters allows more plates per hour to be produced.

As a result, VCG-Connect can prepare quotes with reliable data, plan production from intuitive dashboards, reduce device idle time and maintain continuous production.

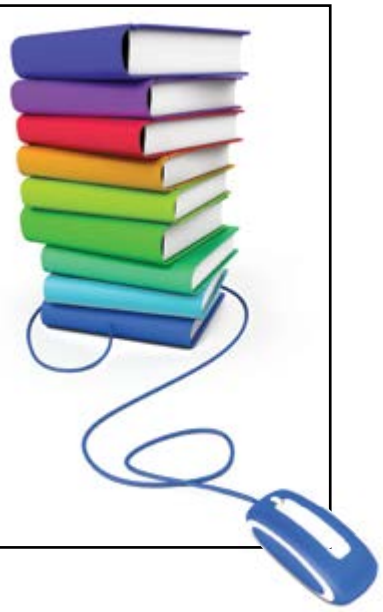
VGC-Connect also uses Esko Automation Engine to automatically execute pre-press functions in the background and, through integration with Device Manager, forward jobs directly to the plate-maker. The company has further streamlined production with the addition of the Automated Flexo Platemaking Module to Automation Engine. This also automates repetitive tasks based on order data to reduce the amount of time spent on jobs, enabling greater flexibility, streamlining production and reducing the potential for error.

"Device Manager is the result of collaboration with customers from day one in order to ensure we have the right priorities for the right reasons," states Robert Bruce, Esko Flexo Product Manager. "Having this open approach to product development allows us to create solutions that better address the production needs of customers today, staying ahead of market needs.

"For example, the instant visibility that Device Manager gives customers provides them with access to an up-to-the minute clear view of production. They can see if any action is required or how to better maximise their production," continues Bruce. "Fast turnaround jobs can easily be accommodated, allowing a more flexible approach to a demanding workload. Together, this functionality creates a much more efficient production environment, and our customers can be confident that they are as productive – and thus as profitable – as possible." ■



Esko's Device Manager for flexo plate making



ACKNOWLEDGING THE CHANGING SHAPE OF THE INDUSTRY

Michael P Fox reflects on trends emerging from 2016's meetings and activities

David Landesman

Mike Fox

NASMA held its fall executive forum meeting in the Washington DC area in October. The meeting, hosted by the Specialty Graphic Imaging Association (better known as SGIA), attracted senior executives and managers from the major North American manufacturers to the speciality print industry. The proceedings began with a networking dinner at the historic Gadsby's Tavern in Old Town Alexandria (where George Washington, John Adams, Thomas Jefferson and their contemporaries dined regularly) and continued the next day at SGIA headquarters in Fairfax, Virginia.

The highlight of the meeting was SGIA's new President and CEO Ford Bowers's presentation on SGIA's place in the print industry and his industry outlook. Ford shared his vision for SGIA in a changing print industry landscape. He described the industry as it is today and laid out the tectonic shifts we can expect in the coming few years. Ford plans to position SGIA so it is more inclusive of its core constituencies – graphics and textile, digital and screen – and can best serve the newly evolving specialty print markets.

CLOSER SGIA AND NASMA COLLABORATION

NASMA's executive committee and members welcome Ford's interest in a closer collaboration between SGIA and NASMA. Relations between NASMA and SGIA have always been strong – NASMA member companies are active SGIA members. This renewed and stronger collaboration brings the printer community (represented by SGIA) and many of its major manufacturers (NASMA) closer together. This closer association and on-going consultation with SGIA will allow our member-suppliers to respond and support the printer community's changing needs more effectively. We look forward to Ford's and SGIA's active participation in our upcoming forum meetings.

Marci Kinter, SGIA's Vice President of Government and Business Information, followed Ford's presentation with an update on regulatory issues affecting the print industry. The update covered major new US federal regulatory initiatives – most notably, OSHA's Globally Harmonized System (GHS) and revisions to EPA's Toxic Substances Control Act – and the increasing number of state and local regulations. The important takeaways were that the regulatory landscape is evolving quickly, becoming more complex and touches every segment of the print industry. The uncertainty now is whether and how the enforcement of these new regulations will change under the new presidential administration.

NORTH AMERICAN PRINT MARKET SURVEY

A regular feature of NASMA forum meetings is the informal North American print market survey. Our fall meeting survey revealed that most participating companies sales grew in 2016 and expect that growth to continue in 2017. Most of the participating companies also project increased hiring and marketing spending in the coming year. The optimism was somewhat muted when it came to capital equipment investments. While there was a slight bias towards increased capital spending in 2017, most companies are planning to hold spending to current levels.

Planning for NASMA's spring 2017 meeting is already underway. The meeting, to be hosted by International Coatings, will be in southern California on 6 and 7 April.

NASMA welcomes new company participation. NASMA is an informal executive forum that meets twice a year (spring and fall) where key executives in the printing industry spend off-line time to network, hear from customers, learn from other expert resources, and have the opportunity to discuss non-competitive issues that affect us all. There are no dues – just a nominal meeting registration fee to cover expenses. To be eligible for NASMA membership, companies must be manufacturers and suppliers to the print industry and be either North American based or have a significant operating presence in North America. Companies that haven't yet participated must be referred by an existing member company to NASMA's executive committee for consideration and approval. Members of the executive committee are David Landesman (Lawson), Mike Fox (Nazdar), Gary Gayton (Kiwo-Ulano), Steve Kahane (International Coatings), Shane Waltmire (Dynamesh) and Steve Duccilli (ST Media). ■

Michael P Fox is President of Nazdar

Further information:
Nazdar, Shawnee, Kansas, USA
tel: +1 913 422-1888
email: mfox@nazdar.com
web: www.nazdar.com

GLASSPRINT 2017

As Europe's leading event for the decoration of glass, the seventh GlassPrint conference and exhibition will take place in Düsseldorf, Germany on 29–30 November 2017, directly after the Direct Container Print conference

Decoration is a key process in the manufacture of architectural, automotive and hollow glass, and adds considerably more value to the end product. GlassPrint 2017 is a two-day event that will present anyone involved with this important and expanding sector with the latest trends and developments for the decoration of all types of glass.

Powered by glasstec, GlassPrint 2017 follows on from the 2015 event that was deemed an outstanding success by the record audience of approximately 200 international glassmakers, glass decorators, end-users, brand owners and leading suppliers.

ADVANCED TECHNOLOGIES

Returning to the spacious and easily accessible Radisson Blu Scandinavia Hotel in Düsseldorf, presentations at GlassPrint 2017 will offer delegates the latest information on advanced technologies for glass decoration, including:

- Flat glass keynote presentation from a representative of Glass for Europe, the trade association for Europe's manufacturers of building, automotive and solar energy glass.
- Hollow glass keynote presentation from a representative of FEVE, the European container glass federation.
- New directions in heavy metal free inks.
- Innovations in digital and screenprinting.
- Advanced machinery technology.
- Efficient pre-press technology.
- GlassPrint LIVE expert panel discussion.

GlassPrint will be staged immediately after the Direct Container Print conference that introduces printers, packaging manufacturers and brand owners to the potential of direct to shape container decoration on plastics (visit www.dcp2017.org for more information). Discounted GlassPrint and DCP early-bird registrations are available on both event websites.

PROVEN TRACK RECORD

GlassPrint 2015 delegates travelled from 26 different countries, not only from throughout mainland Europe and the UK, but also from long distance destinations such as China, Japan, Korea, Kuwait and the USA. Visitor feedback indicated that 99% of attendees considered the standard of the conference programme to be good and 95% confirmed that the presentations would be useful to their business.

98% of attendees also stated that meetings in the accompanying tabletop exhibition would be useful to their business. At GlassPrint 2017, specialist suppliers of equipment, consumables, technology and services will again display the latest developments in inks, pre-press technology, printing equipment and supplies.

Exhibitors will cover the latest developments in inks, pre-press technology, printing equipment and supplies

ORGANISERS AND SPONSORS

As well as being powered by glasstec, in recognition of its importance in the global glass event calendar GlassPrint is sponsored by Deutsche Glastechnische Gesellschaft (DGG), glassglobal.com, SGCDpro and the SGIA. The event is jointly organised by:

Chameleon Business Media - publisher of *Specialist Printing Worldwide* and *Glass Worldwide,* the leading journal for all sectors and regions of the international glass industry. www.cbm-ltd.com

ESMA - a European association for specialist printing manufacturers of screen, digital and flexo technology. Members are manufacturers of machinery, equipment, software or consumables. www.esma.com ■

POSITIVE FEEDBACK

A selection of comments from some GlassPrint 2015 attendees include:

- "There was a lot of important information for me." *Satoshi Kashiwabara, AGC Glass Group (Japan)*
- "The presentations as well as the exhibition were very useful to learn about new technologies and products in the glass printing industry." *Yves Lallemand, Schott (France)*
- "As a glass decorator, GlassPrint 2015 was a key event for us." *Gérard Monney, Univerre Pro Uva SA (Switzerland)*
- "GlassPrint 2015 provided an important possibility to meet the most important experts in glass decoration and have an overview on future scenarios." *Simone Baratta, Bormioli Luigi (Italy)*
- "The show has evolved into an important event that perfectly complements glasstec in the biannual calendar." *Dr Christian Maas, KBA Kammann (Germany)*
- "It was one of the best GlassPrint events since they started. We got exactly the contacts we expected." *Patrick Brunner / Roland Drach, Sefar (Switzerland)*
- "Very interesting market study of the development of flat and container glass printing." *Stefanie Schumann, Canon (Germany)*
- "Excellently organised and well attended conference." *Stefan Zaeh, Proell (Germany)*
- "A varied programme and high attendance - this is THE event in Europe for the glass industry." *Debbie Thorp, Global Inkjet Systems (UK)*

GlassPrint 2015 attracted a record audience of approximately 200 international glassmakers, glass decorators, end-users, brand owners and leading suppliers

Further information:
tel: + 44 1342 315032
email: sales@glassworldwide.co.uk
web: www.glassprint.org

The Inkjet Conference

Inkjet Engineering & Inkjet Chemistry

TheIJC.com

THE WORLD'S LARGEST INKJET EVENT

24-25 OCTOBER 2017 in Swissôtel Düsseldorf/Neuss

For engineers, chemists, R&D managers, OEMs, printers, distributors, innovators, researchers, brand owners and decision makers.

MORE THAN A CONFERENCE

With over 400 participants from across the entire supply chain, TheIJC is the meeting point of industry and research. The networking arena with 70 tabletops buzzes with technical and commercial information exchange. Featuring an exquisite sit-down dinner, the event generates new business ideas and partnerships.

BEST TECHNICAL CONTENT

TheIJC prides itself on the technical and educational content of the presentations and was nominated for Best Conference Development at International Association Awards. Using a mobile app, the audience gives their direct feedback and chooses the Best Speaker on each track.

PRESENTATIONS ONLINE

Can't wait until October? TheIJC YouTube channel features more than 50 recordings from previous conference editions. Subscribe to **www.youtube.com/theijc** and have a pretaste of the highly technical content.

BOOK NOW AT WWW.THEIJC.COM

EARLY BIRD RATES VALID UNTIL 30 JUNE 2017

TRAINING AND APPLIED RESEARCH

The Inkjet Training programme organised by the iPrint Institute complements and supports TheIJC. The lab-based courses cover all aspects of inkjet technology and let participants experiment with state-of-the-art equipment. The Inkjet Conference and the trainings are the competence centre for inkjet engineering and inkjet chemistry. The next training takes place on 20 March 2017 in Fribourg, Switzerland. Go to **www.theijt.com** for more details.

FIRST SRI LANKAN EXPO PROVES TO BE A BIG SUCCESS

Focus on screen-printing draws in strong visitor numbers

The first Screen Print Sri Lanka (SPSL) exhibition and technical seminars concluded successfully, taking place during the first three days in December at the Sri Lanka Exhibition and Convention Centre, Colombo. The show shared with co-located events Sublimating Ideas Expo, Label Show and Dyes & Chem.

With more than 40 exhibitors, the event received some 2,500 visitors from the garment industry, screen-printing, digital printing, plus the offset litho and label sectors, not only from Sri Lanka but also other Asian countries. With this success, Aditya Exposition Pvt Ltd, the organiser of many successful exhibitions for more than two decades, including the regular Screen Print India, considers it has added one more feather to its cap.

Screen-printing was one of the processes covered comprehensively at the show

LIGHTING THE LAMP AND CUTTING THE RIBBON

On the first day, leaders from Indian and Sri Lankan printing industry jointly lit the lamp and cut the ribbon to mark the inauguration of the first Screen Print Sri Lanka exhibition. This took place in the presence of invited guests, exhibitors and visitors. Devang Sheth, director of Aditya Expositions, warmly welcomed everyone.

"I admire the keen interest of scores of visitors who took time out to visit Screen Print Sri Lanka expo despite the fact that currently it is the busy production season in Sri Lankan garment industry. Some of the companies made it a point to send their production staff to give them exposure to new technologies and techniques in garment decoration as a whole," comments Sheth. "Most of the visitors thanked me personally for organising the expo. They said this was the first exhibition ever held in Sri Lanka exclusively focusing on screen-printing.

"They expressed their satisfaction, especially because there were so many leading global suppliers who showcased their range of products, directly or through their Sri Lanka representatives," Sheth continues. "I am also delighted to note that most of the exhibitors expressed their satisfaction with the footfall and the quality of visitors and also about our overall arrangements. Many of the exhibitors said they could generate many leads and also establish contact with new customers."

The technical seminars were well attended by printers wanting to gain knowledge

LEADING NAMES PARTICIPATE

Some of the leading companies who took part in the exhibition included Grafica Flextronica, Skyscreen, Ninehearts, NBC, JK Garments, Indian Dyes Sales Corp, Antler General Industries, Colorcroma, CöLöRs, Devraj Rangwala, Domex, Impress Apparels Machines, Ingrin Printing & Graphic Academy (INGRIN), JK Garments, Knowell Corporation, Kumar Textile Industries, Multi Colour Premium Ink & Chemicals, Panorama Screen, Standard Holdings, Unifold, Weera Industries, Winson Inks, Zibo Paper Tech and many others. Some of these companies represent global brands of repute.

The range of products showcased by these companies featured screen-printing (textile and graphics), digital, sublimation printing machinery, pad printing machinery, finishing equipment, associated printing inks and consumables, screen making equipment and tools, paper and non paper substrates, UV special effects, heat transfer printing inks and chemicals, heat press, transfer papers, plus other solutions, which covered the entire gamut of garment decoration in particular and screen-printing in general.

"During a random interview, most of the

Visitors included those from the garment, screen-printing and digital printing segments, plus the offset litho and label sectors.

exhibitors expressed that, although they already have few customers in this island country, by participating in this expo, they could get wider exposure to Sri Lankan garment/printing industry to expand their business further since the local market is growing," Sheth continues. "They were glad to participate in Screen Print Lanka expo since in the past no such opportunity existed."

EXHIBITORS' GET TOGETHER

The organiser also hosted an exhibitors' get-together on the first evening of of the exhibition at Hotel Renuka, Colombo. This was attended by more than 100 guests who were welcomed by Sheth. On this occasion, the lead sponsors of the exhibition and speakers of various technical seminars, plus association supporters, were honoured with mementoes.

Naveen Gupta, the new general secretary of IPAMA, organisers of forthcoming PrintPack 2017 at Noida, was a special guest at this evening. While complementing Sheth for organising the screen-print exhibition overseas, he states: "Exhibitions like this benefit the printers at large. I invite all Sri Lankan printers to visit Print Pack 2017 at Noida in large numbers to see new technologies in action."

While delivering a vote of thanks Sheth wholeheartedly thanked all the exhibitors and the Sri Lankan printing industry for supporting the exhibition. "Without the local support our exhibitions would not have been successful," he comments.

POPULAR TECHNICAL SEMINARS

The interest of Sri Lankan garment printers wanting to gain knowledge was such that all the technical seminars by three eminent speakers received good attendance. Charlie Taublieb of Taublieb Consulting, who is also a member of ASDPT, USA, conducted three seminars on 'Multi-colour Printing on Dark Garments', 'Four Color Process' and 'Creative T-Shirt Printing & Enhancing Techniques'. At frequent intervals of the three days exhibition, he also performed live demos of direct-to-garment printing at his 'Charlie's Corner' which was very popular with garment printers.

Bhargav Mistry, Director of DMI, conducted a seminar on the 'Secret of Producing Digital-Like Quality Prints in Textile Screen Printing' where he also touched upon the entire screen making process theoretically. He showed on screen some of the important aspects of pre-press and colour management, plus spot colour process file separation. The seminar on 'Migration of Fabric Dyes to Prints is a Common Phenomenon where Polyester or its Blends are employed' was presented by Suneth Jayasumana of Antler General Industries (P) Ltd, Sri Lanka, was also well attended.

"In line with the 'Make in India' concept, as an Indian exhibition organiser we could prove our capability by organising the expo for the first time in Sri Lanka. By any standards, for an Indian event company, this exhibition was a great success," concludes Sheth. ■

Further information:
web: www.screenprintsrilanka.com

QUALITY AND INNOVATION AT THE HEART OF ITALY

Milan proves to be a successful venue for third edition of InPrint

Milan, at the end of November, hosted the first InPrint Italy, the only exhibition dedicated exclusively to industrial print technology, Held at the MiCo Milano Congressi exhibition centre this event for the industrial print sector welcomed visitors from all over the world. Leading international companies and the most innovative SMEs from both the manufacturing and the print sectors had the opportunity to exchange advanced technical knowledge and to explore new partnerships in the country's most important market place.

A total of 2,900 visitors came to meet 118 exhibitors from 13 countries to discover the latest and best in the three sectors of industrial printing covering functional, decorative and packaging. While 69% of visitors were from Italy, 31% were international from 56 countries. Following those from Italy, the majority were from Germany, Switzerland, the United Kingdom, France and Spain. There were also a considerable number from non-EU countries including the USA, China, Russia, India, Japan, Australia, Korea, Argentina and South Africa.

FIRST-TIME VISITORS

The event was attended by a unique and large percentage of visitors who had not attended previous InPrint Shows in Germany. In so doing this achieved the organisers' aim of creating new business opportunities and growing industrial print. Visitors were looking for customised systems and technology solutions from the manufacturing and print sectors.

Networking was a popular feature, bringing together several segments of the printing process

Almost 65% of attendees were from the printing industry. Among those, digital (33.7%), inkjet (24.2%) and screen printing (19.8%) were the areas most represented. 26% of visitors came from the manufacturing side, mainly from the textiles, plastics, electronics, mechanical engineering and automotive sectors, while 9% were from packaging.

Leading companies in a large variety of industry sectors visited the show. These included Panasonic, Olivetti, Philips and Siemens (electronics), Daimler AG, Mercedes-Benz, Groupe PSA and Reydel Automotive (automotive), Louis Vuitton, Fendi and Giorgio Armani (luxury goods) plus D. Swarovski KG, Yoox, Luxottica, The Swatch Group and Pininfarina Extra (fashion and design). Market leaders looking for solutions for their specific needs also attended the event from packaging (Adobe Systems and Kiko Milano) to the food sector (A Loacker and Lindt & Sprüngli) and many other diverse applications (Franco Cosimo Panini, Bormioli Luigi, Clementoni, Airbus and Kodak) plus Roland, Xerox, HP and OKI (printing machinery).

There was strong support for the extensive seminar and conference programme

PRIME AREAS OF INTEREST

Decorative printing was the prime area of interest for 32.7% of visitors, followed by functional (31.5%), packaging printing (20.3%) and 3D printing/additive manufacturing (15.2%). Machinery and printing systems, print-heads, materials and substrates were among the most sought-after products and services.

The organisers conceived InPrint Italy as a highly innovative exhibition showing cutting-edge technology and, with this in mind, they received very positive feedback from exhibitors who reported visitors as being of a very high calibre. The show statistics also showed the high level of responsibility of the attendees from executive management and managing director level (22.3%), research and development (15.5%), planning and design (7.8%) to purchasing, procurement and

It was reported that visitors were of a very high calibre

contract buyers (6%). The objective of the show was to bring together creators and so called early adopters, who came from all over the world, in the most important market place in Italy.

COMPREHENSIVE EVENT PROGRAMME

Of added value for participants in the exhibition was the opportunity to be able to network across several segments of the printing process. New partnerships and ideas for new solutions arose, encouraged by visitor demand and by the InPrint Italy seminars and conferences.

The exhibition was supported by an extensive seminar and conference programme comprising around 60 sessions in the three days of InPrint Italy. Quality was the common link throughout, with numerous sessions offering a comprehensive overview of future developments in the industry. The contributions by leading experts in the field, sharing their knowledge in the three fields of application – functional, decorative and packaging printing – were highly appreciated by a total of 640 participants. Particularly successful were the Tech Talks, with debates around key technical topics such as inks, print heads and integration.

Ways of looking into the future were a recurring theme of this first edition in Italy, helped by the Great Innovations Competition won by Alchemie Technology for their Digital Powder Printing. Heidelberg was awarded Highly Commended with the launch of the industrial direct-to-shape inkjet machine, the Omnifire 1000. For the first time organisers introduced the InPrint Founders Award in memory of Paolo Capano, former Managing Director of INX Digital Italy and an inspirational figure in the development of industrial printing technology. The award recognises leadership, entrepreneurial spirit and collaboration and was presented to Cefla JetSet.

A RETURN TO ITALY IN 2018

A second edition of InPrint Italy has been confirmed and it will take place once again at the MiCo Milano Congressi in November 2018. One third of available floor space has already been reserved by returning exhibitors. Among them are some of the leading companies in the industry such as Heidelberg, Fujifilm, Mimaki, Kyocera, Ricoh, Ceradrop, Gruppo Tecnoferrari and Sensient.

Ahead of the next event in Italy, FM Brooks, part of Mack Brooks Exhibitions group, is organising two more InPrint shows. First is an event running from 25 to 27 April 2017 in Orlando, USA, while the second takes place from 14 to 16 November 2017 in Munich, Germany. ■

Further information:
FM Brooks, Leatherhead, Surrey, UK
tel: +44 1727 814 400
email: visit@inprintitaly.com
web: www.inprintitaly.com

THE GROWING PAINS OF INDUSTRIAL INK-JET

Marcus Timson outlines the challenges presented by this digital print segment

Marcus Timson

Throughout 2016, InPrint Show ran a number of surveys, panels and seminar sessions with the aim of sharing insight with the ink-jet and manufacturing community to promote growth in industrial printing. What is clear from all of the information is that the speed of growth within industrial printing is fast outpacing other traditional print segments.

For example, results from the recent InPrint Décor Survey suggest that growth is expected to be well over 10% with many (nearly 40%) believing growth to be in excess of 15% per annum. The industry is busy and buoyant; however there remain challenges for technology and commercial development, because where there is growth, there are bound to be growing pains.

MERGERS AND ACQUISITIONS INDICATE MARKET IN DEVELOPMENT

2016 saw a plethora of mergers and acquisitions particularly within the industrial ink-jet segment, suggesting a market that is growing but in a state of change, requiring support and resources to sustain healthy growth. This is likely to continue. It proves a point that larger, more established companies see the potential in industrial ink-jet printing, and they want to be part of this growth market. It also underlines that companies that are innovative tend to be smaller and entrepreneurial. In particular, for integration these entrepreneurial skill sets are important in order to solve complex technical and commercial problems for end-user customers.

INTEGRATING INK-JET ISN'T EASY OR FAST

When in discussion with end users who are attempting to integrate ink-jet into their production, it seems that this is considerably harder and takes longer than they had imagined at the start.

The problem is that 'digital' generally challenges sectors that have heavily invested in analogue technology over many years and therefore tend to have a conservative culture that is resistant to change. Added to this, many view digital as a replacement technology and mistakenly believe that conversion will therefore be easy and fast. This is down to the image that 'digital' has attained in that it permeates everyday life, and generally makes it easier. This makes it a challenge for the integrator who has to manage expectations by informing and educating the customer, whilst overcoming technical challenges and making a profit.

MORE COLLABORATION REQUIRED FOR CONTINUED GROWTH

The industrial sector is challenging industrial ink-jet and printing in general to meet difficult technical demands. Therefore collaboration is essential in order for effective integration. Respondents to our surveys and in our discussions felt that this is a key industry issue. They unanimously felt that all parts of the supply chain should openly collaborate and that failure to do so only slows digital conversion and growth.

There are two broad approaches to integrating digital ink-jet – a closed system where the end user works with one supplier who could perhaps provide an end-to-end solution or the end user will work with a number of different suppliers but with one company responsible for integration.

BRIDGING A KNOWLEDGE GAP

The fact is that there is a knowledge and skills gap and, as industrial print continues to grow, this gap is more likely to widen. This is in some part a natural result of a fast evolving market and that the structure of the market is not fully formed. Where there is not a structured market, there are very few well established channels to sell to customers who have a clearly defined need. Customers may know that they want to invest in digital ink-jet but they do not know how to and with whom they should be working.

INKS ARE A KEY ISSUE

Linked to a need for greater collaboration, it was widely agreed in the surveys, panels and discussions, that engineering is driving innovation for new applications. This doesn't mean ink manufacturers are not dynamic or innovative. However, speculatively creating a new ink without an engine to drive the ink is difficult. The challenge for ink manufacturers is therefore to respond quickly to demand or strike up strategic partnerships with OEMs to make inks for evolving applications. Better communication and collaboration and a more open approach would likely help matters.

FLEXIBILITY IS COMPELLING

It seems that, regardless of the application type and manufacturing industry, it is flexibility that ink-jet provides which is deemed to be more compelling for production than personalisation or customisation. In an InPrint webinar hosted last year, Ralf Ehrlich of PAS was one of the panelists. PAS prints onto home appliances with customers such as Bosch, and in the past five years it has developed digital ink-jet production. The company has found that, whilst the capability for customisation is there, this has not driven increased demand for ink-jet printed white goods. The value of digital is the flexibility that ink-jet has added to production in that it can run multiple jobs per day which adds competitiveness, speed to market and variability.

ECONOMIC BENEFIT CRUCIAL TO SPEED OF ADOPTION

Building upon the previous point of flexibility to take it one step further, all respondents and interviewees think that if a clear economic benefit exists, particularly in the short term, then change and digital conversion will be quicker. Many discussions highlighted the ceramics industry ink-jet revolution. Most of the market is waiting to see which application sector will experience the next ink-jet revolution. In my opinion, ceramics is an outlier in that there were a unique set of circumstances at play within the ceramics (too numerous and lengthy to mention here) that came into play that are not likely to materialise in other sectors in exactly the same way.

MORE ENTREPRENEURS REQUIRED TO ACCELERATE ADOPTION

For the developing community, whilst technical knowledge is really important for effective integration of ink-jet, it is most

Continued over

InPrint USA is North America's only exhibition for industrial print technology used in advanced packaging and manufacturing. Come to InPrint USA to see cutting edge innovations and meet with experts to learn the latest in inkjet applications for package printing on any surface.

Co-located with ICE USA
INTERNATIONAL CONVERTING EXHIBITION

YOU'RE INVITED.

Visit **inprintshow.com/usa** to register for InPrint USA 2017 now and save 30% on registration fees.

INPRINT USA
INDUSTRIAL PRINT SHOW
ORLANDO APRIL 25-27 2017

InPrint USA launches first exhibition for industrial print for North America

Melissa Magestro, Executive Vice President of Mack Brooks Exhibitions Inc

Running from 25 to 27 April in Orlando, Florida, InPrint Show USA is the next opportunity to connect with key leaders and innovators for industrial print production. This is the only dedicated industrial print event for North America and is co-located with ICE USA which is North America's leading event for the converting industry.

InPrint is the exhibition for industrial print technology for advanced packaging and manufacturing. The unique event has become the key marketplace in Europe for state-of-the-art functional, decorative and packaging printing in industrial production. The InPrint show comes to the US for the first time, focusing on connecting manufacturers who use print as a key component of the manufacturing process with leading brands in the fields of industrial specialtiy, screen, digital, ink-jet and 3D technology print solutions.

"This show, uniquely focused on solutions to integrate print technologies into manufacturing and is much needed as the US manufacturing market expands," says Melissa Magestro, Executive Vice President of Mack Brooks Exhibitions Inc, the show organiser. "InPrint USA is a very specialised, focused show aimed at manufacturers, who need complex, customised, co-operatively designed system solutions in order to reduce cost and waste, increase supply chain efficiency, and generate new possibilities and revenue in industrial production."

Highlights include:

- Leading brands – exhibitors will showcase the equipment, tools, and services for printing on metal, plastics, foils, textiles, glass, ceramics, woods and other substrates.
- Complimentary access to more than 40 educational presentations.
- Complimentary access to the Global Industrial Inkjet Conference. This high-level conference will profile excellence, news and insights on the market opportunity for industrial ink-jet and the challenges that may need to be overcome.
- Free access to ICE USA, the co-located International Converting Exhibition, where manufacturers will showcase their latest equipment and technology from all key areas of converting such as web coating, laminating, slitting, rewinding, coating, pouch making and many more.
- Two industry network receptions.

Exhibitors include: Afford Inks, Agfa Graphics, Alchemie Technology, Amica Systems, Apex-Desco Machine Company, Colorgate Digital Output Solutions, Collins Inkjet, Cruse Spezialmaschinen GmbH, CyconJet – Industrial UV Inks, Diversified Printing Techniques, Inc., dlp imaging corp, DPS Innovations LLP, Dubuit America, Easeprint, EFI, Engineered Printing Solutions, ESC Europa-Siebdruckmaschinen & Co.KG, Excelitas Technologies, Factronics USA LLC, Fimor North America, FUJIFILM, Global Inkjet Systems, Heidelberger Drucksmachinen AG, I.T. Supplies, ImageXpert, INC., Inca Digital Printers Ltd, Inkcups Now, Innovative Digital Systems, Integrity Integration, INX International Ink Co, ITNH Inc., Kao Collins, Kothari Infotech PVT LTD (KITL), LogoJET, Marabu North America, Memcon North America, Mimaki USA, Nazdar Ink Technologies, Phoseon Technology, Proell, Inc., R2R Print Solutions B.V., Roland DGA, Seiko Instruments USA, Sensient Imaging Technologies SA, Sensor Films Inc., STAEDTLER Mars GmbH & Co, Sun Chemical – SunJet, Thieme Corporation, TTP Meteor Ltd, TTP Plc, Wikoff Corporation and Zünd America Inc.

effective when knowledge is accessible to the entire supply chain. Whilst the technical challenges are not inconsequential, the developing community would also benefit with a greater number of entrepreneurial individuals to help connect opportunity, creating new value and convincing customers to take a commercial risk on ink-jet. Leadership is required and people who can build teams, inspire customers and attract investment are crucial. This is particularly important for effective integration.

NDAS ARE HOLDING BACK PROGRESS

Lastly, a 'bugbear' of mine in particular is that industrial ink-jet is awash with NDAs which prevent the sharing of success that would help to grow the market. From a communication perspective, how do you convince customers to try something new when you have no tangible proof of success that can be shared with them? Of course you can share information without being specific, but I am not convinced this is overly compelling. Similarly, it is understandable that customers want confidentiality but surely this is holding back progress? Solving this problem would add value and accelerate adoption as 'success attracts success' and this builds confidence and trust. ■

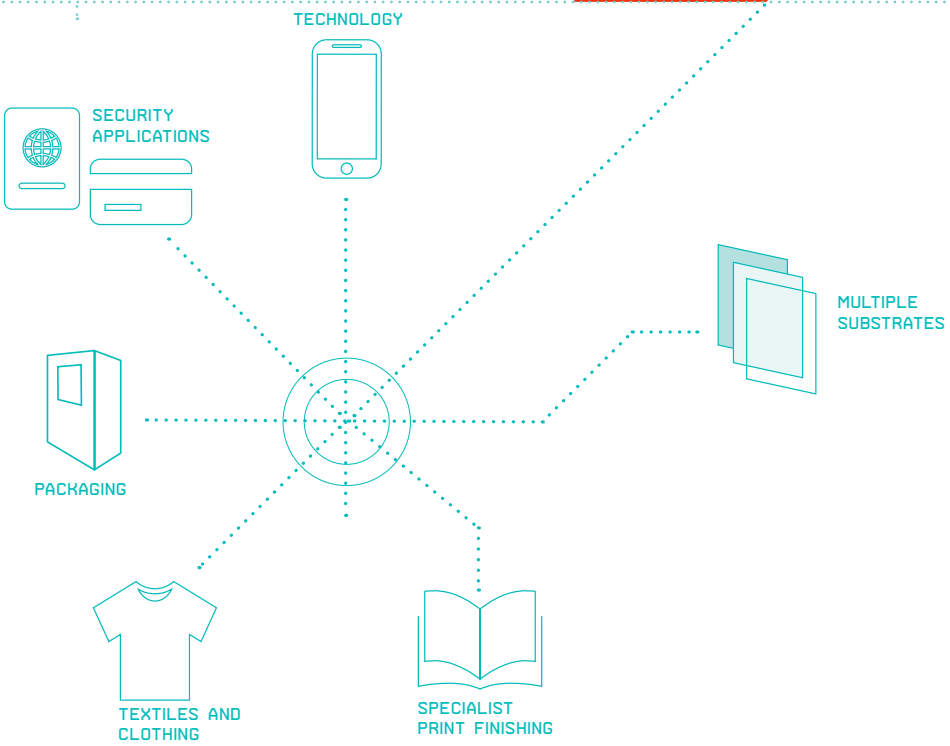
Marcus Timson is co-founder of InPrint

Further information:
FM Brooks, Leatherhead, Surrey, UK
tel: +44 1372 370 854
email: marcus.timson@mackbrooks.com
web: www.inprintshow.com

INDEX TO DISPLAY ADVERTISERS

Outstanding performance. Exceptional support.

Our range of precision screen printing machines set the industry standards. But this is not all we do . We work with our customers so that they can grow their business. We also constantly innovate and push the possibilities of screen print. Our aim is to grow the whole industry for the benefit of everyone.



Why not find out more about what you can do to improve your production and profit?

Call us or email us for a no obligation discussion about our business partnership programme.

+44 20 8577 5672
sales@sakurai.co.uk
sakuraiuk.co.uk

Sakurai
INSPIRING OUTPERFORMANCE

FAST CONSISTENT EASY

Quick Film

PHOTOPOLYMER CAPILLARY FILM

Quick Film is a pure photopolymer capillary film ideal for the textile printing industry. Quick Film can be used as a capillary film or it can be easily laminated with any Chromaline textile emulsion.

Request Sample Pack
Complete Form Today!

chromaline®
SCREEN PRINT PRODUCTS

Follow us!

www.chromaline.com
(800) 328-4261

An IKONICS Company | ISO 9001 Certified | NASDAQ Listed: IKNX

170131