

### Materials, equipment, techniques and applications for inkjet fluids

### **Inkjet Academy**

### Mon 8 - Tues 9 April 2019

Knowledge of the technology behind any industry is essential to its development. The Inkjet Academy course covers the basic theory behind the many types of inkjet technology used today and aims to give your understanding of the industry an expert start.

The course will show you how printheads work, the materials used in their fabrication and the theory of their operation. You will also learn how inks are formulated and used, as well as about ink supply and support systems. The course examines how drops are formed, travel and behave on the substrate surface. Fundamental aspects of printer operation such as nozzle maintenance and print quality are also covered.

## **Inkjet Ink Characterisation**

### Mon 8 - Tues 9 April 2019

This course covers rheology and surface tension measurements, particle and dispersion assessment, as well as drop visualisation and print quality analysis.

The Inkjet Ink Characterisation course gives an excellent introduction to these essential areas of study, presented by industry experts from leading suppliers and institutions in the field. The course will give you the basic foundations as well as a more detailed understanding of the vital equipment and techniques.

This course will also include a visit to the KRÜSS laboratory.

### Inkjet Ink Development Conference

### Wed 10 - Thu 11 April 2019

Materials, equipment, techniques and applications for inkjet fluids.

The IMI Europe Inkjet Ink Development Conference is a two-day technical conference devoted to digital printing ink development and manufacturing. The event is aimed at inkjet fluid developers across applications including packaging, textiles, graphics, industrial and functional printing. The conference gives access to key suppliers and technology from the inkjet industry – everything that you need to develop and manufacture inkjet inks.

Topics for the event include colorants, material dispersion, resins & polymers, photoinitiators, additives and other materials, analytical equipment & techniques, processing & manufacturing equipment, jetting and surface behaviour and application case studies.

Who should attend: inkjet ink and fluid developers wishing to understand the latest developments in materials and technology.

# **Inkjet Academy**The Theory of Inkjet Technology

Monday 8 - Tuesday 9 April 2019

#### **COURSE FOCUS**

Understanding the basics is essential to any industry's development. The Inkjet Academy one-and-a-half day course covers the theory behind the many types of inkjet technology used today and aims to give your understanding of the industry an expert start.

The course will show you how printheads work, the materials used in their fabrication and the theory of their operation. You will also learn how inks are formulated and used, as well as about ink supply and support systems.

The course examines how drops are formed, travel and behave on the substrate surface. Fundamental aspects of printer operation such as nozzle maintenance and print quality are also covered.

The course assumes a basic scientific knowledge and is designed to provide useful background information for anyone entering the inkjet industry, seeking an update on today's technology or looking for further fields of development.

#### **Monday 8 April 2019**

12.30 – 13.30 Registration13.30 Course begins

#### Introduction to inkjet

- · Course overview
- · Types of inkjet technology
- · Drop on demand technologies
- · Thermal and piezo inkiet
- · Evolution of inkjet markets
- Inkjet patents

### Inkjet ink technologies

- Ink types: aqueous, solvent, oil, phase change & UV cure
- Dyes & pigments
- · Inkjet ink formulations

### **Drop production**

- · Thermal inkjet
- · Piezo inkjet
- · Continuous inkjet
- Bulk piezo
- Si-MEMS/TFP
- · Deposition requirements
- Drop ejection frequency
- Crosstalk
- Reliability
- Life issues

#### **Inkjet inks**

- Inkjet ink design
- Understanding the inkjet printing process
- Drop formation
- · Properties influencing piezo inkjet ink performance
- Testing an ink for reliability: methods & characterisation

17:30 Session ends 18:00 - 19:00 Reception

Join us for beers, wines and good company!

#### **Tuesday 9 April 2019**

08.30

Course begins

### Drops in flight

- Drop placement accuracy
- · Drop break-off
- Drop impact and spread
- Mist control

### Inkjet ink materials and dispersions

- Range of materials and ink chemistries
- · Evolution of inkjet inks
- · Evolution of dyes
- · Pigments and dispersion technology
- · Dispersion theory
- · Polymers and additives
- · Processes and manufacturing

### System design issues

- · Ink supply
- · Nozzle maintenance
- Mist control

#### **Substrate & interactions**

- · Papers and coated papers
- · Films, rigid substrates
- Bleed and intercolour bleed
- Pre and post coatings
- Adhesior
- · Requirements versus applications
- Drying
- UV curable materials
- Monomers
- Oligomers
- Photoinitiators
- UV curing
- · e-beam curing

12.30 – 13.30 Lunch13.30 Session begins

#### Print & image quality

- Factors affecting print quality
- Printhead-ink-substrate
- Greyscale methods
- · Drop detection
- · Banding, single pass issues
- Drying effects
- Missing nozzle detection
- Missing nozzle compensation

#### **Inkjet applications**

- Coding, marking, mailing, addressing
- Wide format graphics
- Industrial decoration décor & laminates
- · Ceramic tiles
- Textiles
- Commercial printing
- Labels & packaging
- · Printed electronics, bio-medical & 3D printing

### **Emerging technologies**

- Kodak Stream
- Memjet
- HP PageWide technology
- · Landa Nanography
- · Lead-free piezo
- · Speed & resolution trends

17.30 Course ends

#### **COURSE LEADERS**

Mike Willis, Managing Director

Pivotal Resources, UK

Mr Willis founded Pivotal Resources, a consultancy in the digital printing industry, in 1995. He has experience in a wide range of technologies and markets including drop-ondemand & continuous inkjet



printing, electro-photographic technology, greyscale & colour reproduction methods and light sensitive materials. Prior to founding Pivotal Resources, he was Director of Electronic Printing at Meta Generics. He was a co-founder of Xaar and before that, he spent six years at Gestetner developing photocopiers.

### **Dr Alan Hudd, Director** Alchemie Technology, UK

Dr Hudd is Director and co-founder of Alchemie Technology, an independent contract development and consultancy company to the industrial inkjet industry. Alchemie is developing



and commercialising a range of novel printhead technologies through its joint venture company, Jetronica. Dr Hudd was the Founder and Managing Director of Xennia Technology from 1996 to 2012.

#### **Dr Simon Kew**

Alchemie Technology, UK

Dr Kew leads Technology and Business Development at Alchemie Technology. He has over 15 years of experience in new product and process innovation applied to chemistry-enabled products.



Dr Kew works across industries including consumer goods, foodstuffs, chemical and pharmaceutical sectors. He specialises in delivering innovation using digital manufacturing technologies including inkjet printing and additive manufacturing technologies.

## **Inkjet Ink Characterisation**

### Viscosity, Dispersions, Jetting & Surfaces

Monday 8 – Tuesday 9 April 2019

#### **COURSE FOCUS**

Development of high quality inks and fluids for inkjet applications requires state-of-the-art characterisation equipment and techniques. From fundamental ink properties such as viscosity and surface tension, which have a crucial impact on jetting performance, through analysis of particulates dispersed within the ink, understanding these properties is key to getting the best out of an ink development project. In addition, it is vital to understand how the developed ink actually behaves, both on ejection from the printhead and when landing onto the substrate of choice.

The Inkjet Ink Characterisation course gives an excellent introduction to these essential areas of study, presented by industry experts from leading suppliers and institutions in the field. The course will give you the basic foundations as well as a more detailed understanding of the vital equipment and techniques.

### **Monday 8 April 2019**

12.30 – 13.30 Registration13.30 Course begins

#### Jetting and print quality analysis

Paul Best, ImageXpert

- · Introduction to drop analysis
- How is in-flight analysis used?
  - Drop formation
  - · Reliability
  - Misting
  - · Nozzle-to-nozzle consistency
  - · Drop measurement
- Simple application examples
- Overview of techniques
- Fundamental measurements
- Practical demonstration
- · Introduction to print quality analysis
- How is print quality analysis used?
  - Dot properties
  - Line properties
  - Solid area quality
  - · Colour registration
  - Ink interaction
- · Overview of techniques
- Practical examples

17:00 Session ends18:00 - 19:00 Reception

Join us for beers, wines and good company!

#### **Tuesday 9 April 2019**

09.00

Course begins

### Optimising ink rheology for printing applications

Mats Larsson, Malvern Panalytical

- Understanding the importance of fluid rheology for inkjet printing
- Basic rheology theory viscosity and viscoelasticity
- Rheological test methods for inkjet inks and processes
- Practical examples

### Basic property measurements - surface tension

Dr Thomas Willers, KRÜSS

- · Surface tension introduction
- Relevance to droplet formation and spreading in inkjet printing
- Interplay of surface tension and viscosity in drop formation
- · Impacts on wetting
- How to optimise ink-substrate adhesion and spreading
- · Interfacial rheology and its relevance to drying
- Theories and methods of measurement compared and contrasted
- Application examples from inkjet industry

12.30 – 13.30 Lunch13.30 Session begins

### **KRÜSS Laboratory Visit**

The visit will consist of a laboratory tour, and interactive demonstration of the following:

- Fully automatic determination of surface and interfacial tension using
  - · force tensiometry
  - drop shape analysis (pendant drop method)
- Dynamic surface tension measurement using the bubble pressure method
- Contact angle measurement using the Wilhemy-Method
- Optical contact angle measurement
- Mobile fully automatic determination of a substrate's surface free energy
- Optical contact angle and wetting analysis of plsize droplets
- Contact angle from the top: measuring the CA in cavities
- Novel liquid needle dosing technique for optical contact angle measurements
- Interfacial rheology using the oscillating drop method

17:00

Course ends & return to the hotel

#### **COURSE LEADERS**

#### **Paul Best, Director of Engineering**

ImageXpert, USA

Paul is Director of Engineering at ImageXpert Inc. and lives in Nashua, NH USA. Prior to joining ImageXpert, Paul worked as an Optical Engineer and Team Lead at NASA's Jet Propulsion Lab. Paul received his Bachelor's



degree in in Mathematics and Computer Science from Wheaton College, and his Master's degree in Physics from California State University, Los Angeles.

### Mats Larsson, Technical Product Specialist - Rheology

Malvern Panalytical, Sweden

Since 2010, Mats has been responsible for technical and application support to customers for the Malvern rheometers product line. He is also involved in rheology training and seminars.



### Dr Thomas Willers, Head of Applications & Science

KRÜSS, Germany

Dr. Thomas Willers studied physics in Cologne and Barcelona. He received his PhD degree in experimental physics at the University of Cologne. In 2012 he joined KRÜSS GmbH at its headquarters in



Hamburg where he is now head of the department for Applications & Science. He is responsible for the KRÜSS Application Labs as well as teaching activities and now has more than five years' experience in teaching surface science.

Wednesday 10 - Thursday 11 April 2019

The IMI Europe Inkjet Development Conference is a two-day technical conference devoted to digital printing solution development. The event is aimed at inkjet developers across applications including packaging,

textiles, graphics, industrial and functional printing. The conference gives access to key suppliers, technology and advances from the inkjet industry.



### **Technical Advisory Board**

The conference is guided by a Technical Advisory Board consisting of key industry figures, including:



**Dr Simon Daplyn**Marketing Manager
Sensient Imaging Technologies



**Dr Thomas Willers** Head of Applications & Science KRÜSS



**Frank de Jonge**Sales Director
Adphos



**Dr Tim Phillips**Managing Director
IMI Europe

### Wednesday 10 April 2019

09.00 – 10.00 Conference registration 10.00 Morning session begins

Using high performance colorant dispersions to create opportunities for aqueous inkjet applications



**Dr Hamid Shirazi** Segment Marketing Manager, Fujifilm

High performance colorant dispersions are one of the key factors in developing inkjet applications and driving

the growth in industrial and packaging inkjet markets. The performance requirements of colorant dispersions are multidimensional. They are not only limited to formulation stability, reliable jetting and printing, but also deliver the critical to quality (CTQ) parameters of the intended end use applications. A "Life of an Inkjet Drop" methodology has been used as a tool to outline the requirements and role of colorant dispersions throughout the value chain starting from a pigment dispersion concentrate to a final printed product. Examples of different market applications outline what some of those requirements are and how a high-performance dispersion technology can deliver them.

### Inkjet printing for packaging: Technical analysis



**Dr Mark Bale**Director, DoDxAct

Over the last 10+ years the printing of labels and corrugated sheets have been the point of access for inkjet OEMs looking to gain a

foothold in the packaging sector. The management of print quality through the successful integration of ink, printhead and process, such as the right maintenance

methodologies, is critical to success. Through a combination of print sample analysis and laboratory-scale print experiments we look at the challenges involved with implementing different ink types into packaging applications and how the evolution of the platform technologies of ink and head is enabling the next generation of hardware with flexible packaging firmly in its sights for Drupa 2020.

### Opportunities and challenges for inkjet printing of food and pharmaceuticals



**Dr Simon Daplyn**Marketing Manager, Sensient
Imaging Technologies

From the introduction of date coding onto eggs to the digital images found on birthday cakes, printing onto food and

pharmaceutical products has long been established. There are now thousands of food and pharmaceutical items printed every day. In today's market, the demand for personalisation and traceability for items such as baked goods, pills and capsules is greater than ever before. However, there are many challenges in formulating digital inks for these applications and a number of risks to be considered from micro contamination, heavy metals, pathogens or adulteration. This talk will look at the market, ink development and manufacturing challenges and the application needs.

Refreshment Break

### Wednesday 10 - Thursday 11 April 2019



### Inkjet printing for pharmaceutical applications



Olga Kiefer Heinrich Heine Universität Düsseldorf Innovative technologies capture the markets in all sectors. But why not "misuse" an established

technology to fulfil innovative approaches in highly regulated markets?! In recent years inkjet printing was discovered by the pharmaceutical science and industry not only as a labelling tool for anti-counterfeit medicines but also as a potential manufacturing technique of on-demand personalised medicines. In contrast to the printing industry, the drug-loaded inks and appropriate substrates have to be manufactured in a sufficient pharmaceutical quality. That means no harmful or toxic components are allowed. This talk will discuss the changes, recent progress and key challenges of inkjet printing from the pharmaceutical point of view.

### Panel discussion: Inkjet development - challenges and opportunities

- Inks for packaging regulatory issues
- Inks for food and pharmaceutical applications
- Topics arising

The panel will be chaired by Dr Simon Daplyn, Marketing Manager, Sensient and include industry experts from the conference Technical Advisory Board and conference presenters.

13.00 – 14.30 Lunch

14.30 Afternoon session begins

### Waveform optimisation and latency



Paul Best
Director of Engineering,
ImageXpert
Development of quality
inkjet inks and waveforms
requires state-of-the-art
characterisation equipment

and techniques. In order to optimise the ink, as well as jetting conditions and waveform, it is vital to understand how the ink actually behaves, both when ejected from the nozzles and after it hits the substrate. We overview measurement of ink, waveform and substrate performance, using real-world data and images from automatic sweeping and analysis tools. We cover automatic waveform sweeps, drop tracking and sustainability data, and discuss how this information can be used for optimisation. We also provide a survey of other key equipment for inkjet development, including dropwatcher, ink supply, print controller, mist extractor, tools for head autopsy and belt or linear stage for creating test prints.

## First experimental study using a novel device for characterising drop formation, drop substrate interaction, and wave form optimisation



**Dr Thomas Willers** Head of Applications & Science, KRÜSS

The challenge of reducing the thermal treatment conditions required for metal oxide thin films to enable deposition

on flexible, plastic substrates has proven to be a significant barrier to creating novel devices using inkjet printing. In this talk the use of preformed crystalline nanoparticles in active matrix will be discussed and results from the development of two active matrices presented. Properties of a variety of formulations including modified metal alkoxides in functional alcohol with and without glyme stabilisers will be reviewed to highlight the optimum compositions of inks for future testing. Some printed pattern results using the highest potential inks will also be included to demonstrate the advantages of the approach that have been achieved to date.

### Manipulating printhead waveforms: Tools and techniques



Matthew Pullen
Product Manager Drop
Watching Solutions, Meteor
Inkiet

The choice of printhead driving waveform can make the difference between

dazzling success and dismal failure for any industrial inkjet system. The topic of waveforms can seem complex and baffling given the myriad of printhead types, all driven in unique ways, together with a seemingly infinite variety of fluids. What is a waveform and how is it created? Can waveforms be optimised for specific applications? This talk will provide answers to these questions and more, with emphasis on the special tools and techniques required to manipulate waveforms.

#### **Refreshment Break**

## Rheology and other techniques, importance to inkjet ink and inkjet printhead design



**Mats Larsson** Product Technical Specialist, Malvern Panalytical

Inkjet inks must exhibit desirable rheological behaviour across the diverse conditions experienced

during printing. Inks must be stable at the low shear stresses encountered during storage while meeting exacting flow and transfer performance targets at the extreme shear rates generated during printing. Inks and inkjet nozzle design are affected by many different aspects like viscosity, viscoelasticity, surface tension and particle size/concentration/density. Different aspects will be discussed in terms of ease of printing and ink stability. Results of different types of viscosity measurements and their impact on inkjet behaviour are presented. Different techniques that aid understanding inkjet printhead functionality and inkjet design are presented.

### Panel discussion: Ink characterisation equipment

The panel will be chaired by DrTim Phillips, IMI Europe and include industry experts from the conference Technical Advisory Board and conference presenters.

#### **Sponsors' Forum**

17.30 - 18.00

Hear short presentations from the event sponsors

#### Reception

18.00 – 19.30 Join us for wine, beer, canapés and good company!

### Wednesday 10 - Thursday 11 April 2019



### **Thursday 11 April 2019**

09.00

Morning session begins

## Understanding complex rheology of inkjet inks and linking its dynamic properties to jetting performance



**Dr Tri Tuladhar** Principle Consultant, Trijet

Optimising bulk properties of inkjet inks to printhead specifications alone are no guide to achieving reliable jetting. Any minor changes

in ink components or batch variations and process conditions can drastically change high frequency complex rheology and extensional rheology. We will discuss the influence of ink components on complex rheology and hence the jetting behaviour and present novel rheological tools capable of quantifying complex rheology of inkjet at conditions like those during printing. These techniques provide useful tools in ink formulations, differentiate between apparently identical inks which show different jetting behaviour and recommend optimum jetting temperature and print frequency.

### Multiscale modelling of drop dynamics in the inkjet printing process



**Prof Herman Wijshoff** Océ Technologies / Eindhoven University

To comply with the increasing and diverging requirements for today's inkjet technology, a fundamental understanding

of the underlying processes is very important. It is essential that decisions can be made based on theoretical, numerical or experimental models as firm basis for further product development. We develop the experimental techniques, numerical codes and theoretical frameworks in close collaboration with academic research groups. Some highlights of this research program will be presented e.g. the quantitative detection of misting down to 1 femtolitre drops with a laser-induced fluorescence technique, the evaporation-induced segregation process within a single sessile drop with confocal laser microscopy and the migration of drops on a thin liquid layer with digital holographic cameras, supported by numerical simulations and theoretical evaluations.

### Pulsation-free air micropump for ink control



Dr James McCrone
Managing Director, TTP Ventus
Precise control of meniscus
pressure is important to
delivering a high level of
reproducibility within and
between printheads, thereby

avoiding visual defects in the images they print. Present meniscus control systems are relatively large and complex however, limiting print system design flexibility and performance. TTP Ventus offers a solution to this problem through its range of gas micropumps. Pulsation-free flow means that dampers and accumulators are no longer required, while rapid response and precision enable unrivalled meniscus control. In addition, modular system architectures are made possible by the pump's small size. This talk will describe present meniscus control systems, introduce our pumps, and provide examples of new meniscus control architectures that they enable

#### Refreshment Break

### New acylphosphinoxide photoinitiators for water-based formulations and inks



Gianni Casaluce Researcher, IGM Resins With increasing awareness about the environmental impact of industrialisation, waterborne UV-curable coatings have gained

considerable importance due to their many advantages such as being environmentally benign, fast drying, low VOC, viscosity-controlled and low odour. In this rapidly evolving segment, many photoinitiators (PI) needed for UV curing aren't water soluble or compatible, stunting the growth of this attractive slice of business. IGM Resins has created a new line of water soluble/compatible acylphosphine oxide-based photoinitiators that are key enablers of progress in this growing segment of the UV curing industry and in particular in water-based inks. This IGM presentation will focus on new developments and PI solutions for waterborne UV curable systems with some preliminary evaluation results.

### VMOX – The new vinyl monomer for UV inkjet applications



Giovanni D'Andola Business Development Manager, BASF BASF recently added a new product to its broad functional vinyl monomers portfolio: vinyl methyl oxazolidinone, called

VMOX. Compared to standard reactive diluents, VMOX has significant technical benefits such as being liquid at room temperature with a very low viscosity of 4 mPa/s, a low odour and favourable toxicological profile. VMOX's high reactivity and good adhesion properties on several plastic substrates creates opportunities for innovative formulations. The talk will review VMOX's capabilities and early application results.

12.00 - 13.30

Lunch

13.30

Afternoon session begins

### High purity acrylate monomers



**Kenji Kikuta**Monomer Overseas Sales
Section, Osaka Organic
Chemical

Acrylate monomers are the most common reactive diluent for UV/EB inkjet technology.

However, usually they contain many kinds of oligomeric impurities due to the fundamental instability of the acrylate moiety during the synthesis process. Those impurities induce higher viscosity of the material because they have a higher molecular weight than the monomer itself. Osaka Organic Chemical has a proprietary distillation facility to offer higher purity, lower viscosity acrylate monomers than other manufacturers. This presentation shows how high purity acrylate monomers are good for UV/EB inkjet systems with the intention to motivate new business ideas.

Wednesday 10 - Thursday 11 April 2019

### The impact of drying technology on image quality and substrate compatibility



Frank de Jonge
Sales Director, Adphos
Cost and compliance of the
ink are key factors to consider
when high performance inkjet
print-systems are positioned
to replace analogue printing

presses. Whether in book-printing, transactional, textile or packaging, in comparison with UV and E-Beam cured inks, water-based inks have advantages in cost and compliance. Water-based inks achieve certification for food- and skin contact, both in primary food packaging and in hygienic products or apparel. But what to do with the water after the ink hits the substrates? Adphos specialises in the drying and curing of water- and solvent-based inks. We explain the principle of near-IR drying and compare it with hot air and mid-wave IR drying performance. We will share our experience at drying of water-based inks on different substrates like paper, metal or flexible film.

Refreshment Break

### Substrate wetting additives for aqueous single-pass inkjet inks



**Dr Vedran Durasevic** Head of Digital Inks, Evonik

Stabilised pigment dispersions and substrate wetting additives are the most important building blocks formulators use in design of ink systems.

They will determine jetting behaviour of an ink and dictate sustainability of the process. Selection of wetting additives in industrial inkjet is governed by strict formulation principles that have to be followed to achieve optimum drop spread within given time. This talk will focus on associating general chemical composition of surfactants with their behaviour in low viscosity aqueous ink systems. Experimental data that demonstrates theoretical division of surfactants into 'static-/dynamic- surface tension reduction' and 'super-wetter' additives that do not support stabilisation of foam will be shown.

### Media qualification for high speed inkjet



**Dr Alice Zhang**Print Specialist, Ricoh UK
Products

Media is one of the key factors in an inkjet system. It affects print outputs such as run-ability, dry time, image

quality and post finishing results. There are different types of inkjet technologies in the current market that allow the user to print on various types of media, such as paper, plastics, cardboard, foil etc. Paper is the most common substrate used by high speed inkjet systems. So how is paper made? Why is paper important in an inkjet system? How can we choose the right paper to meet customer requirements? How do we handle paper during printing? This talk will focus on paper knowledge and print quality assessment in order to answer all these questions.

16.00 Conference ends

## **Upcoming Events 2019**

### **Inkjet Summer School**

10-14 June 2019

The Møller Centre, Cambridge, UK

A selection of high quality 1.5 day technical courses on topics of interest within inkjet printing, including the world-famous Inkjet Academy. The IMI Europe Inkjet Summer School is the ideal way to gain a more detailed understanding of a specific technology area, with six courses presented by experts in their field:

- Inkjet Academy
- Fluid Dynamics & Acoustics
- Inkjet Ink Characterisation
- Inkjet Colour Management
- Jetting Functional Fluids
- Inkjet Drying & Curing

### **Inkjet Printing India**

17-18 September 2019

Courtyard Marriot International Airport Hotel, Mumbai, India

#### **Inkjet Printing Conference**

New developments in digital printing solutions

The Inkjet Printing India Conference is a one-day conference devoted to digital printing solution development across key applications including packaging, flooring, graphics, industrial and functional printing. The conference gives access to key suppliers, technology and advances from the inkiet industry.

#### **Inkjet Ink Manufacturing Seminar**

Manufacturing inks for performance and reliability

This course covers the issues of inkjet ink design, development and testing, scale-up for manufacture and manufacturing itself. It also gives an introduction to ink plant design and commercial considerations. The course is led by Dr Tim Phillips of Catenary Solutions (formerly of Xennia Technology).

### **Digital Print Europe**

7-10 October 2019

Courtyard by Marriott Berlin City Centre Hotel, Berlin, Germany

The IMI Europe Digital Printing Conference 2019 is the strategic business and technical conference for the digital inkjet printing industry. With market briefings from leading analysts, updates and views from industry pacesetters, perspectives from key end users and new technology introductions from inkjet innovators. Our flagship strategic event is the ideal place to find out the latest news from major companies, while exploring business opportunities by networking with top executives across the industry.

Market Reports Live briefings will give you the opportunity to hear the latest developments in key technologies and applications.

The world famous Inkjet Academy will cover the basic theory behind the many types of inkjet technology used today and aims to give your understanding of the industry an expert start.











### **Inkjet Ink Development Conference 2019**

### **Inkjet Ink Development Conference 2019**

- · Attendance at all sessions
- Presentation pdf files
- · Two lunches
- · One evening reception
- · Coffee breaks
- IT Strategies "The Numbers" report

Standard fee: €995

Under 25s & Academia fee: €695 On-site registration: €1,195

#### **Discounts**

We have a discounted ticket price of €695 for those in academia as well as under 25s.

If you register for either the Inkjet Academy or Inkjet Ink Characterisation course as well as the Conference, there is a €200 saving on the total fee (€100 saving for those claiming the academia rate).

### Inkjet Academy or Inkjet Ink Characterisation Courses

- · Attendance at all relevant sessions
- · Course reference binder & pdf presentations
- One lunch
- · One evening reception
- Coffee breaks

Standard fee: €895 Under 25s & Academia fee: €695 On-site registration: €1,095

#### **Hotel Reservations**

Hotel reservations and charges are the responsibility of each conference registrant. We have negotiated a discounted room rate of €135 until 11th March 2019, after which hotel bookings and prices are subject to availability.

Please find instructions on our website **www.imieurope.com** 

### How to register

Please register on-line via our website:

#### www.imieurope.com

We will check availability and email your registration confirmation together with an invoice with payment details.

### **Booking policy**

Cancellations will receive a 50% refund if made more than two weeks prior to the start of the event (i.e. on or before 25 March 2019). After this time, no refunds can be made, but your registration may be transferred to another IMI Europe or IMI Inc event at no charge. Name changes for a registration may be made at any time, free of charge, but please let us know before the event so we can update our records.

### **Location and hotel information**



The **IMI Europe Inkjet Ink Development Conference** is being held at the Crowne Plaza Hotel - City Alster in Hamburg, Germany.

The Crowne Plaza is a 4 star business hotel, located near Aussenalster Lake with fantastic connections to the city centre as well as to Hamburg Airport. The hotel offers 285 comfortable rooms, a restaurant, an all-day bar and fitness centre.



The hotel accommodation booking rates are subject to availability and include breakfast and taxes. See our website for more details on the venue.

To book your accommodation at the hotel with the special rate please see the instructions on the **venue page** of our website.



#### Crowne Plaza Hotel - City Alster

Graumannsweg 10 22087, Hamburg Germany

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