IMI EUROPE

Inkjet Winter Workshop 2020

27-31 January 2020
Hotel Ilunion Bilbao | Bilbao | Spain

The IMI Europe Inkjet Winter Workshop is the ideal way to learn more about key aspects of inkjet technology, from the basics through to advanced courses on inks, printheads and applications.

Inkjet Academy

Theory of inkjet technology

The Inkjet Academy 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 is presented by Dr Alan Hudd and Dr Simon Kew of Alchemie Technology.

Inkjet Ink Characterisation

Viscosity, dispersions, jetting & surfaces

This course covers rheology and surface tension measurements, particle and dispersion assessment, as well as drop visualisation and print quality analysis. Course leaders include KRÜSS, ImageXpert, Malvern Panalytical and TA Instruments.

Inkjet Ink Manufacturing

Manufacturing inks for performance & reliability

This course covers the issues of inkjet ink design, development and testing, scale-up for manufacture and manufacturing itself. It also covers ink plant design and commercial considerations. Course leaders include Dr John Tardrew of Screen GP IJC and Dr Tim Phillips of Catenary Solutions.

Digital Textile Printing

Printheads, images & colour

This course gives an introduction to digital textile printing markets and technology. The main applications for digital textile printing are reviewed, along with the key ink chemistries and integration considerations. Course leaders include Prof Marc Van Parys of University of Ghent and Dr Tim Phillips of Catenary Solutions.

Inkjet Inks: Materials & Applications

Inks & materials for digital applications

This course gives an overview of the different ink platform technologies in use today, with an emphasis on the practical aspect of materials selection and optimisation for the low viscosity requirement of inkjet printing. Key issues surrounding the integration of inkjet ink technology into industrial printing within a production environment will also be considered. The course is led by inkjet ink and application expert Dr Mark Bale of DoDxAct (formerly of Sun Chemical).

Single Pass Inkjet System Design

High speed inkjet system design

This course is led by Rob Rogers of Print3 Technologies (formerly of Fujifilm Dimatix and EFI Jetrion). It provides an introduction to the challenges of single pass inkjet printer design and process development. It gives a proven framework for development plus practical recommendations on key design areas, testing and solutions to common development mistakes.

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Inkjet Academy

The Theory of Inkjet Technology

Monday 27 – Tuesday 28 January 2020

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 27 January 2020

12.30 – 13.30 Registration

13.30 Course begins

Introduction to inkjet
- Course overview
- Types of inkjet technology
- Drop on demand technologies
- Thermal and piezo inkjet
- Ink technologies: aqueous, solvent oil, phase change and UV cure
- Materials and ink formulations
- Evolution of inkjet markets
- Desktop and Industrial markets
- Inkjet patents

Industrial inkjet printheads
- Continuous inkjet
- Summary of current piezo printheads
- Properties and key features
- Drop ejection frequency, crosstalk, reliability and life issues
- Choosing a printhead starting from the application performance
- Printhead trends such as Si-MEMS/TFH

Inkjet inks
- Inkjet ink design
- Understanding the inkjet printing process
- Reliability
- Drop formation
- Properties influencing piezo inkjet ink performance
- Testing an ink for reliability: methods & characterisation
- Materials and dispersion theory

17:30 Session ends

17:30 - 18:30 Reception

Join us for beers, wines and good company!

Tuesday 28 January 2020

08.30 Session begins

Creating a reliable industrial inkjet system
- Integration issues
- System design
- Ink supply
- Nozzle maintenance
- Drop break-off and placement accuracy
- Drop impact and spread
- Mist control
- Factors affecting print quality
- Printhead-ink-substrate
- Greyscale methods
- Drop detection
- Banding, single pass issues
- Drying effects
- Missing nozzle detection
- Missing nozzle compensation

12.30 – 13.30 Lunch

13.30 Session begins

Industrial inkjet markets
- The digital proposition and benefits
- Industrial inkjet business model
- Infrastructure barriers to entry
- The inkjet successes
- The numbers
- Future "stars"

Challenges to create a successful industrial inkjet solution
- Textiles
- Packaging and labelling
- 3D printing
- Decorative surfaces
- Coatings
- Life sciences
- Electronics
- "Additive" manufacturing processes

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

17.30 Course ends

COURSE LEADERS

Dr Alan Hudd

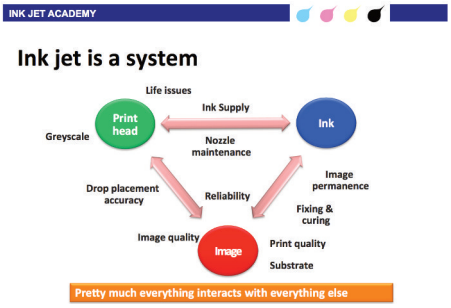
Chairman, Alchemie Technology, UK

Dr Hudd is Chairman 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

Managing Director, 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.



Digital Textile Printing
Printheads, Images & Colour

Monday 27 – Tuesday 28 January 2020

COURSE FOCUS

Over the last decade, digital textile printing using inkjet technology has been introduced and is growing rapidly, especially for apparel printing. Many of the technical and material challenges have been overcome and the increasing emphasis on cost saving, manufacturing flexibility and following market trends is generating a surge of interest.

This course will give an overview of the industry - the markets, applications and technology. The overall market dynamics and technology requirements for each digital textile application will be described. The required ink chemistries will be reviewed and their use in inkjet printheads and pre- and post-processing requirements detailed. Integration of inkjet technology within a production environment will also be considered, as well as the challenges of inkjet system design to make the process production-compatible.

Monday 27 January 2020

12:30 - 13:30 Registration

13:30 Course begins

Digital textile printing market and applications

Prof Dr em Marc van Parys, University of Ghent

- Segmentation of the market - home textiles, apparel, industrial applications & soft signage
- Growth of digital textile printing in the different segments
- Applications and key players
- Market developments under the influence of digital inkjet printing technology
- Business drivers
- Sustainability
- Future directions

17.00 Session ends

17:30 – 18.30 Reception

Join us for beers, wines and good company!

Tuesday 28 January 2020

09:00 Course begins

Digital textile inks

Speaker TBC

- Materials selection
- Dyes vs pigments
- Designing ink for industrial printheads
- QC and performance
- Application requirements
- Inkjet printing process
- Designing for digital
- Ink and fabric selection
- Processing requirements
    - Fabric preparation
    - Fixing
    - Washing
- Colour characteristics (ink and print)
- Ink maintenance and support requirements
-

12:30 - 13:30 Lunch

13:30 Session begins

Integration for digital textile printing

Dr Tim Phillips, Catenary Solutions

- Hardware integration
- Printhead technologies
- Printhead choices
    - Suppliers
    - Performance
    - Life issues
- System design
    - Ink supply systems
    - Nozzle maintenance
    - Designing for reliability
- Architecture options
- Printhead motion systems
- Web handling and textile transport
- Testing
- Print quality

17:00 Course ends

COURSE LEADERS

Prof Dr em Marc van Parys
Professor of Textiles, University of Ghent

Prof Van Parys is a Doctor in Chemistry and Professor of Textiles at University College Ghent and University of Ghent. He is Head of the Textile Department and the textile research Lab TO2C. Marc is also president of UNITEX (an SME association of Textile in Belgium and Netherlands), organiser of international congresses and chief editor of the UNITEX journal.

Marc is also a senior consultant and member of the board at Centexbel, as well as being owner and founder of TexZeppelin - a consultancy company dealing with emerging technologies including digital printing, UV-LED coating/printing, plasma and laser treatment and nanotechnology.

Dr Tim Phillips, Founder & Director
Catenary Solutions, UK

Tim Phillips has extensive experience in challenging inkjet integration projects, spending eight years working at Xennia Technology Ltd, the leading inkjet solutions company that was acquired by Sensient in 2015. This involved working with a wide range of companies developing technology for new applications including textiles, ceramics, packaging, décor and functional material deposition for printed electronics and biomedical uses. Tim founded Catenary Solutions in 2015 to bring this knowledge of digital solution development and marketing to a wider audience. Tim has also presented IMI Europe courses in the past including the Inkjet Academy and Inkjet Ink Manufacturing & Digital Textile Printing courses.

Tim graduated from the University of Cambridge with an MA Honours degree in Natural Sciences, and completed his PhD in liquid crystal physics and chemistry at the University of Bristol. More recently he studied for an Executive MBA at the University of Warwick.

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Inkjet Ink Characterisation

Viscosity, Dispersions, Jetting & Surfaces

Wednesday 29 – Thursday 30 January 2020

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.

Wednesday 29 January 2020

08:00 - 09:00 Registration

09:00 Course begins

Monitoring and controlling pigment particle size

Dr Diogo Fernandes, Malvern Panalytical

- Understanding the links between particle size and ink performance
- Overview of light scattering techniques for
- measuring particle size
- Pros and cons of different measurement techniques and approaches
- Practical examples

Evaluating and improving dispersion stability

Dr Stephan Cairns, Malvern Panalytical

- Understanding stability mechanisms for ink
- dispersions
- Factors controlling stability – particle size, steric
- effects, zeta potential and viscosity
- How to make stable dispersions – selecting the right approach for your ink
- Practical examples

Assessing the impact of polymer structure on ink performance

Dr Diogo Fernandes, Malvern Panalytical

- Understanding the role of polymers for inkjet
- applications
- Correlating polymer properties with polymer solution behaviour including viscosity
- Measuring molecular weight, molecular structure and intrinsic viscosity
- Practical examples

12:30 - 13:30 Lunch

13:30 Session begins

Optimising ink rheology for printing applications

Dr Carlos Gracia Fernández, TA Instruments

- 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

17:00 Session ends

17:30 - 18:30 Reception

Join us for beers, wines and good company!

Thursday 30 January 2020

09:00 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

12:30 Course ends

COURSE LEADERS

Dr Diogo Fernandes, Product Technical Specialist
TA Instruments, Spain

Dr Diogo Fernandes has been awarded a Forensic Chemistry BSc degree from ISCSEM, Portugal, and a doctoral degree in Materials Science from the University of Central Lancashire in 2017, where he explored different methods to synthesise and characterise novel types of carbogenic nanoparticles.

Dr Stefan Cairns, Product Technical Specialist
Malvern Panalytical, UK

Stefan completed a PhD at the University of Edinburgh, specialising in ring opening polymerisation, where he became an expert in monomer, polymer and catalyst synthesis, and characterisation. He has a first-class honours degree in Chemistry from University College Dublin and previous industrial experience working at Akzo Nobel.

Dr Carlos Gracia Fernández, Responsible for Applications: Rheology and Thermal Analysis
TA Instruments, Spain

Carlos graduated in Physics from Santiago de Compostela University, Spain in 2000. He then completed Master's degrees in Applied and Condensed Matter Physics, and a PhD in Applied Physics. Since 2007 he has been a senior scientific support specialist in rheology, thermal analysis and thermophysical properties at TA Instruments.

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

Thomas studied physics in Cologne and Barcelona. He received his PhD degree in experimental physics at the University of Cologne. In 2012 he joined KRÜSS 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 seven years' experience in teaching surface science.

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.

Inkjet Inks: Materials & Applications

Inks and Materials for Digital Applications

Wednesday 29 – Thursday 30 January 2020

COURSE FOCUS

Building on the back of the success of wide format graphics applications, industrial inkjet printing has penetrated many market areas by utilising a wide range of different ink chemistry approaches.

This course gives an overview of the different ink platform technologies in use today, with an emphasis on practical aspects of materials selection and optimisation for the low viscosity requirement of inkjet printing. Looking from the application viewpoint the potential ink solutions are compared and contrasted. Key issues surrounding the integration of inkjet ink technology into industrial printing within a production environment are also considered.

The course is aimed at developers wishing to adopt inkjet technology in their industrial production processes, or those who are already skilled in one area and are looking to understand the wider potential of inkjet chemistries available.

Wednesday 29 January 2020

08:00 - 09:00 Registration

09:00 Course begins

Introduction & context

- How inkjet ink has evolved
  - Sustainability & the drive back to water
- The modern process
  - Ink as the enabling technology
- Market considerations
  - OEM versus aftermarket supply
- Basic ink chemistry comparison
  - What's inside
  - The influence of the printhead
- Making sure it's right
  - Checking the basic properties

12:30 - 13:30 Lunch

13:30 Session begins

Ink types & materials choices

- Radiation-curable
  - The ubiquitous all-rounder
  - Focus on free radical UV
- Aqueous
  - Function takes over from simple colours
- Solvent
  - From hard CIJ inks to 'Eco' graphics
- Oil
  - A good option for absorbing substrates
- Hot-melt
  - A great route to process resilience
- Hybrids
  - Clever chemistry as the best of both worlds

17:00 Session ends

17:30 - 18:30 Reception

Join us for beers, wines and good company!

Thursday 30 January 2020

09:00 Course begins

Application examples – ink selection

- Practical examples of ink selection by application area, e.g.
  - Wide format graphics
  - Production print
  - Textiles
  - Ceramics
  - Decor
  - Corrugated board & paper packaging
  - Flexible (plastic) Packaging
  - Electronics
  - 3D printing
  - Electronic Materials

12:30 Course ends

COURSE LEADER

Dr Mark Bale, Director
DoDxAct, UK

Mark Bale is the director of DoDxAct, an inkjet technology consultancy specialising in process engineering, head-fluid optimisation and laboratory prototyping of inkjet processes for a range of industrial applications. He received his MPhys in physics (1997) and his PhD in Nanoscale Physics (2001) both from the University of Birmingham. Having worked in Sun Chemical's UK Inkjet R&D Labs for 10 years he brings ink expertise and process knowhow to the application of ImageXpert laboratory equipment to solve real life inkjet printing challenges.

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Inkjet Ink Manufacturing

Manufacturing Inks for Performance & Reliability

Thursday 30 - Friday 31 January 2020

COURSE FOCUS

This course is designed for those wishing to develop or source inkjet inks, or interested in commissioning their development and manufacture. It will help you understand the issues of development and testing, scale-up for manufacture and the manufacturing processes themselves, as well as covering the potential business models for an ink formulation or manufacturing company.

As well as being of interest to inkjet technologists, managers will benefit from an understanding of the inkjet ink manufacturing process to set realistic project and revenue plans and decide whether to develop and manufacture in-house or source externally.

Thursday 30 January 2020

12:30 - 13:30 Registration

13:30 Course begins

Critical aspects of inkjet systems design
- Printheads
- Ink
- Ink systems
- Motion control

Ink formulation considerations for manufacturing
- Inkjet ink ingredients
- Inkjet ink design & requirements

Creating robust material specifications
- Dyes
- Pigments
- Polymers
- UV cure materials
- Functional materials
- Solvents
- Additives

17:00 Session ends

17:30 - 18:30 Reception

Join us for beers, wines and good company!

Friday 31 January 2020

09:00 Session begins

Testing protocols & validation for manufacturing
- Optimisation & testing
- Test schedules
- Protocols
- Testing for reliability & robustness
- Relationship with printer
  - Printhead
  - Colour tables
  - Ink management system

Ink manufacturing
- Quality control processes
  - QC laboratory infrastructure
  - QC laboratory equipment
- Scale up for manufacture
  - Lab processes
  - Pilot plant trials
  - SPC parameters

Inkjet ink requirements
- Jet break-up
- Nozzle plate inspection
- Drop velocity & volume
- De-cap & latency
- Expanding printing & lifetime
- Image quality analysis

Manufacturing & ink plant requirements
- Layout
- Equipment selection
- Manufacturing practices
- Quality standards

12:30 - 13:30 Lunch

13:30 Session begins

Manufacturing processes
- Mixing regimes
  - Water based inks
  - Solvent based inks
  - UV-cure inks
- Milling processes
- Filtration systems
- Degassing
- Purification
- Bottling
- Packaging

Commercial considerations
- Markets
- Strategies
- Costs
- Positioning
- Value chain

17:00 Course ends

COURSE LEADERS

Dr John Tardrew, R&D Inkjet Technologist
Screen GP IJC, UK

John has over a decade of inkjet ink development experience, with extensive knowledge of the full ink development process from formulation design for specific applications through to full scale commercial production. After graduating from the University of Bristol with a MSci in Chemical Physics he began his inkjet career as a development chemist at Domino Printing Sciences. More recently he worked at Xennia Technology (now part of Sensient) for 6 years as an ink and systems developer and project manager before joining Screen GP IJC Ltd in 2017 as a R&D Inkjet Technologist.

Dr Tim Phillips, Founder & Director
Catenary Solutions, UK

Tim Phillips has extensive experience in challenging inkjet integration projects, spending eight years working at Xennia Technology Ltd, the leading inkjet solutions company that was acquired by Sensient in 2015. This involved working with a wide range of companies developing technology for new applications including textiles, ceramics, packaging, décor and functional material deposition for printed electronics and biomedical uses. Tim founded Catenary Solutions in 2015 to bring this knowledge of digital solution development and marketing to a wider audience. Tim has also presented IMI Europe courses in the past including the Inkjet Academy, Inkjet Drying & Curing and Digital Textile Printing courses.

Single Pass Inkjet System Design

High Speed Inkjet System Design & Process Development

Thursday 30 - Friday 31 January 2020

COURSE FOCUS

This course provides an in-depth introduction to the real world challenges of high speed single pass printer design. The course focuses on five key areas:

Printer Development Process

Jetting Process

System Integration & Design Process

Printhead & Ink Selection to Match Printing Application

Application Process Development

High speed single pass production printer development is very challenging. This course provides a proven framework for printer development plus practical recommendations on key design areas, testing and solutions to common development mistakes. The course will assist those undertaking design or implementation of inkjet systems by providing critical insights to the design and implementation process. It also provides the knowledge and understanding to ask the right questions of vendors in the inkjet system selection and installation process.

Thursday 30 January 2020

12:30 - 13:30 Registration

13:30 Course begins

High speed printer development: Challenges & markets
- Why digital printing?
- Inkjet vs. conventional printing: the secret is the cost curve
- Current & emerging single pass markets

Printer development process: Key areas of focus
- Overview of product development: key points system architectures
- Process development basics: marriage of printhead, system, ink formulation & substrates to meet market requirements
- Market requirements & engineering specifications

Jetting process & effect of ink properties
- Slow motion video of jetting
- Printhead inputs & outputs diagram
- Rectified diffusion: what is it & why does it result in reliability issues?
- Flow-through vs. non-flow through printheads
- Jetting effects of critical variables

Overview of drop placement error budgets
- Common sources of errors
- Error budgets concept
- Banderly Curve: Determining drop placement errors
- Printhead mounting errors
- Substrate transport errors
- Statistical method to calculate system errors
- Sample calculation for single pass system (An
- Excel spreadsheet will be provided with sample calculations)

17:00 Session ends

17:30 - 18:30 Reception

Join us for beers, wines and good company!

Friday 31 January 2020

09:00 Session begins

Sub-system design
- Encoder design
- Printhead mounting
- Print electronics integration
- Drying/curing
- Technical areas: key points

Ink supply design
- Non-recirculating
- Vacuum feed
- Pump feed
- Ink recirculating systems
- Constant pressure
- Recirculating pump feedback systems
- Low cost systems
- White ink and high pigment load inks

Design of transport systems
- Belt-based systems
- Web-based systems
- Sheet-fed systems
- Printing on 3D parts

Printhead selection to match printing application
- Common printhead specifications
- Application requirements: rotary printing, large print gap, interstation drying, substrate movement, etc.
- Known constraints / issues for specific printheads
- Fit between printheads and applications

12:30 - 13:30 Lunch

13:30 Session begins

Ink selection to match printing application
- Ink types and vendors
- Recently developed ink types
- Application requirements; open time, pigment loading, drying time, etc.
- Method to identify potential vendors and select best vendor
- Ink price negotiation strategies and risks
- Recommended ink testing

Process development: The marriage of printhead, system, ink formulation and substrates
- Common process variables that are tuned for an application
- Process testing & equipment
- Ink/substrate interaction
- Process development: key points

Vendor & outside resource management
- Key vendors
- Advice & services vendors provide – an under-utilised resource
- Overall design & development management plan

Discussion of attendee's projects
- Attendee's projects & issues they are experiencing
- Rob Rogers will be available after the course for private discussion on specific projects

17:00 Course ends

COURSE LEADER

Rob Rogers, Founder & President
Print3 Technologies, USA

Rob Rogers is the Founder and President of Print3 Technologies, a one stop shop for contract engineering and technical consulting, assisting clients to rapidly bring world class inkjet products to market. Rob has been involved in the inkjet industry for over 15 years, where he has been responsible for a wide range of inkjet production printing systems including high speed on-press variable data printers, an inkjet label printing press, a one hundred part per minute container printer, flooring printers, a solar cell deposition system and many others. He has consulted for Heidelberg, Mark Andy, and many confidential clients. His team has recently designed and built a print engine for a confidential Fortune 500 company that was demonstrated at the DRUPA trade show. Rob graduated from Kansas State University with a degree in Mechanical Engineering.

IMI EUROPE

How to register

Please register on-line via our website: **www.imieurope.com**

Registration for the IMI Europe Inkjet Winter Workshop is priced per person, per course, with discounts available if more than one ticket is booked at the same time.

The registration fee includes a lunch during the full day of your course, an evening reception and refreshments during breaks.

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

On-site registration is possible, with payment taken in cash and with a €200 addition to the ticket prices above.

Number of Tickets	Price Per Ticket
1	€ 895
2	€ 785
3	€ 715
4	€ 665
5	€ 625
6	€ 590
7	€ 565
8	€ 540
9	€ 520
10	€ 500

Discounts

If you would like a quotation please email **enquiries@imieurope.com** with your requirement. Where multiple discounts apply we will allocate the two largest discounts to the total.

Booking policy

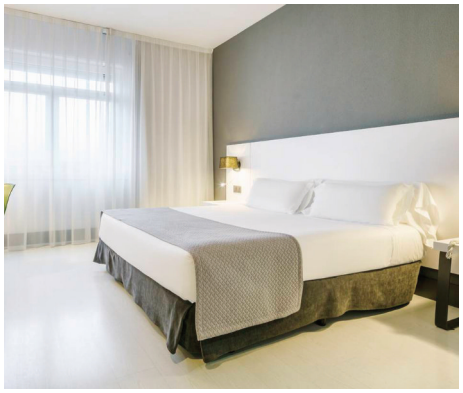
Cancellations will receive a 50% refund if made more than two weeks prior to the start of the event (i.e. on or before 13 January 2020). After this time, no refunds can be made, but your registration may be transferred to another IMI Europe or IMI Inc event at no charge. Name changes for a registration 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 Winter Workshop 2020 will be held at the Hotel Ilunion Bilbao, Spain. The hotel is located perfectly in the centre of Bilbao, just 15 minutes from the Guggenheim Museum. The hotel is also very near San Mamés football stadium, the Museum of Fine Arts and Doña Casilda de Iturrizar park.

The IMI Europe Inkjet Winter Workshop is a non-residential course, so accommodation is the responsibility of individual delegates. We have reserved a block of rooms at the Hotel Ilunion Bilbao at a preferential rate for event delegates of €91.96 per night. Rates include breakfast, WiFi and tax.

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



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	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00
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							Digital Textile Printing					
Tuesday 28 January		Inkjet Academy				Lunch	Inkjet Academy					
		Digital Textile Printing					Digital Textile Printing					
Wednesday 29 January	Registration	Inkjet Ink Characterisation				Lunch	Inkjet Ink Characterisation				Reception	
		Inkjet Inks Materials & Applications					Inkjet Inks Materials & Applications					
Thursday 30 January		Inkjet Ink Characterisation				Registration	Inkjet Ink Manufacturing				Reception	
		Inkjet Inks Materials & Applications					Single Pass Inkjet System Design					
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