



IMI
EUROPE

Inkjet Summer School 2021

5-16 July 2021

Online Courses

ONLINE

The IMI Europe Inkjet Summer School 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 Mark Bale of DoDxAct. And Dr Tim Phillips of Catenary Solutions / IMI Europe.

Jetting Functional Fluids

Rheology, deposition, process & development

In this course you can learn how to develop a functional printing application, including inkjet printhead selection, formulating an ink with functional materials and jetting functional fluids onto a substrate. The course is led by Printed Electronics Ltd.

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 Chris Nicholas of Smart Chemistry UK and Dr Tim Phillips of Catenary Solutions.

Fluid Dynamics & Acoustics

How inkjet printing really works

The aim of this course is to couple the characteristics of droplet formation and landing, spreading and permeation to the acoustics of the fluidics of the printhead. The course leader is Prof Dr Frits Dijkstra, University of Twente, Netherlands.

Inkjet Drying & Curing

Hardware & chemistry for fixing inkjet inks

This course provides all the information you need about fixing inkjet inks, covering near-IR drying, UV curing and electron beam curing hardware, as well as the required chemistry. The course includes contributions from Adphos, Phoseon, IGM Resins, Catenary Solutions & Sherkin Technologies.

Selecting & Driving Printheads

Drive Electronics & Waveform

This course covers everything you need to know about the hardware and software required for driving printheads, including printhead selection, screening algorithms and waveform optimisation. The course is presented by experts from Meteor Inkjet.

Inkjet Academy

The Theory of Inkjet Technology

Monday 5 – Tuesday 6 July 2021

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 5 July 2021

13.20 – 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 Virtual Networking Reception

Tuesday 6 July 2021

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 Break

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 Mark Bale,

Director, DoDxAct, UK

Dr Mark Bale is the founder of DoDxAct Ltd in Somerset, United Kingdom where he consults in all aspects of inkjet R&D from ink formulation and manufacture through jetting & process integration to final application optimisation. His experience takes in production inkjet, wide-format graphics, labels & packaging, decorative surfaces, electronics manufacturing, product coding and 3D printing.



Dr Tim Phillips, Founder & Director

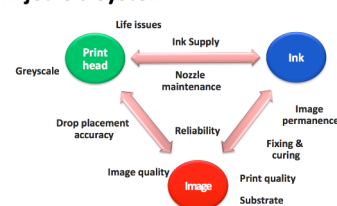
Catenary Solutions, UK

Tim Phillips has extensive experience in challenging inkjet integration projects, spending eight years working at Xenium 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.



INK JET ACADEMY

Ink jet is a system



Pretty much everything interacts with everything else

Fluid Dynamics & Acoustics

How Inkjet Printing Really Works

Wednesday 7 – Thursday 8 July 2021

COURSE FOCUS

Inkjet printing is a process of depositing on demand small droplets with a specified volume onto a precise location on a substrate. This definition covers a wide variety of applications like document printing, label printing, 3D printing, and functional applications like patterning of displays and biosensors. During the course we follow the ink all the way through the printhead, through droplet formation and on to landing on the substrate.

The course is mainly restricted to piezo-driven printheads jetting Newtonian inks, although the issue of viscoelastic inks will be discussed. A piezo-driven printhead is a set of acoustic cavities, the characteristics of which will be presented in the time (response to waveforms) and frequency domain.

The course is based on precise descriptions of the physical phenomena involved and on the derivation of the mathematical framework needed to solve the governing equations. Where possible the outcomes will be compared with experimental findings. Different mathematical methods will be presented to calculate the responses of different systems in the frequency and time domain. To describe correctly the behaviour of a printhead with a large number of narrow pitched nozzles, the long duct theory will be presented.

The aim of this course is to couple the characteristics of droplet formation and landing, spreading and permeation to the acoustics and microfluidics of the printhead. The knowledge conveyed during the course will enable the participants to analyse the behaviour of a wide variety of existing printheads and to support the development of new printheads and inks from a physics point of view.

Wednesday 7 July 2021

08:50 - 09:00 Registration

09:00 Course begins

General introduction

- Introduction on physics & mathematics
- Basic concepts (single degree of freedom system)
 - Waveforms
 - Fluid dynamics
 - Mathematics

Different piezo designs

- Helmholtz theory and waveforms (two and five degree of freedom systems)
 - Single nozzle printheads
 - Multi-nozzle devices

12:30 - 13:30 Break

13:30 Session begins

Theoretical considerations

- Long duct theory
- Droplet formation
- Speed of sounds
- Damping
- Refilling

17:00 Session ends

17:00 - 18:00 Virtual Networking Reception

Thursday 8 July 2021

09:00 Session begins

Further considerations

- Maximum jetting frequency
- Drag on droplets
- Droplet impact and spreading
- Jetting of viscoelastic inks
- Examples: polyLED display printing, printing of biomolecules (co-authored by Dr Anke Pierik, Philips Research)

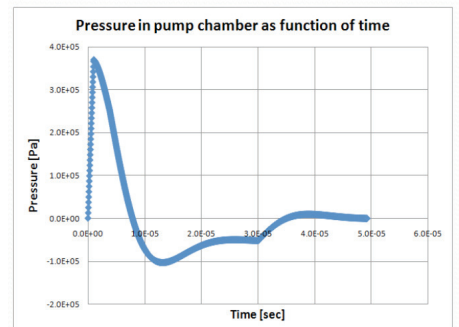
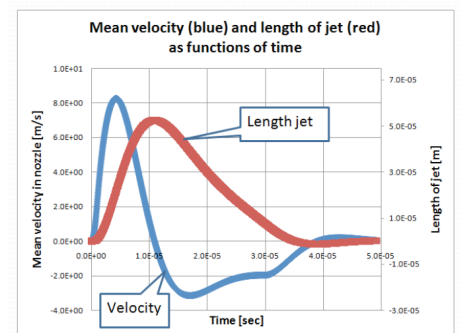
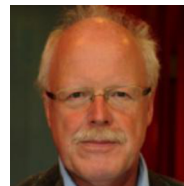
12:30 Course ends

COURSE LEADERS

Prof Dr J Frits Dijkman

University of Twente, Faculty of Science and Technology, Netherlands

Prof Frits Dijkman is professor of biomedical applications of inkjet technology at the University of Twente, Netherlands. He has worked with Philips Research for more than 30 years and his main area of interest has been inkjet technology for consumer and non-consumer applications, such as PolyLED display manufacturing and the printing of biomolecules.



Sponsorship Opportunities

Our online **sponsorship package** gives you a 15 min presentation slot to showcase your company and its products. You can make a presentation about your company or demonstrate your products and equipment over Zoom, with the opportunity to take questions from interested parties.

The session is available at no charge to Summer School attendees and also to other interested people. The sessions will be promoted via our email and social media channels.

To discuss our sponsorship packages or any other requirements please contact Tim Phillips via email tim@imieurope.com.

ONLINE SPONSORSHIP PACKAGE €250 - Limited slots available

- 15 minute presentation slot (free to join for Summer School attendees plus others)
- Mention as event sponsor in all event emails to our 20,000+ database
- Mention as event sponsor in the introduction to each course
- Company logo and profile on event website
- Discounted price for additional slots

Jetting Functional Fluids

Rheology, Deposition, Process & Development

Thursday 8 – Friday 9 July 2021

COURSE FOCUS

There is no doubt that digital deposition of fluids containing functional materials, using inkjet heads is an extremely attractive proposition: being able to place a tiny and highly controlled amount of fluid to a few microns of placement accuracy has the potential to transform conventional manufacturing processes. Whether the functional fluids have electronic, pharmaceutical or other attributes, the challenges of getting them to “jet” with suitable performance and to functionalise on the target substrate are common headaches for the material deposition community.

In this course we will focus on the practicalities of inkjet printing of these challenging fluids. We will consider in detail the basic building blocks of a material deposition inkjet system: the inkjet printheads, the ink or fluid, the motion platform and the substrate. We will look at the methods available to create printed structures that deliver the required performance. In addition we will provide a background on fine-tuning inks and their jetting waveforms to improve performance. The course will also provide a sometimes salutary background on the conventional manufacturing capabilities that must be matched for material deposition by inkjet to move into large scale production environments.

Thursday 8 July 2021

13:20 - 13:30 Registration

13:30 Course begins

The basic components of an inkjet system for functional fluid deposition

- Heads
 - Choice of inkjet heads
 - Material compatibility
 - Drive electronics and systems
 - Selection criteria for inkjet heads
- Inks
 - Basic tests for potential inkjet inks and re-formulation options
 - Jetting methods to evaluate ink performance
- Inkjet platform
 - Buy or build?
 - Fundamental choices when deciding on a system
 - Accuracy and compensation methods
 - Control software considerations
- Substrate
 - Fundamentals of the substrate – ink interaction
 - Practical substrate characterisation
 - How to optimise your patterning
 - Surface treatment options
- Functionalising
 - Making the printed fluid into the printed “thing” you need
 - Thermal vs photonic methods for nano-metal materials
 - UV methods for dielectric type materials

17:00 Session ends

17:00 - 18:00 Virtual Networking Reception



Friday 9 July 2021

09:00 Session begins

Inkjet image fundamentals

- A primer on printing bitmap images (when you really want a nice vector)
 - What is a bitmap?
 - Encoders and drive systems
 - Resolution and image conversion
 - Dealing with image artifacts
 - Software techniques

Ink delivery and ink management systems

- Filtration, heating/cooling, degassing and ink delivery
- Customised and commercial ink delivery systems

12:30 - 13:30 Break

13:30 Session begins

Practical applications and case studies

- Examples and lessons learnt
- Hands on with inkjet components

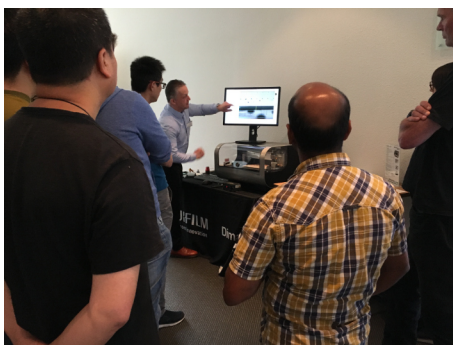
Moving functional printing to industrial scale

- System considerations, yield requirements and cost modelling

An overview of material deposition and printed electronics using inkjet

- Things that can (and maybe cannot) be done

17:00 Course ends



COURSE LEADERS

Dr Neil Chilton, Technical Director

Printed Electronics Limited
Neil has more than twenty years' experience in the field of electronics and electronic components. After completing his BSc and PhD in Physics, his technical career took him to Japan where he worked for four years at the advanced materials research division of Nippon Steel Corporation. After returning to the UK he joined Europe's then largest printed circuit board manufacturing company where he was later part of an MBO team and technical director. In 2006 together with co-founder Dr Steve Jones, he started Printed Electronics Limited to focus on the practical use of inkjet for manufacturing electronic interconnects, devices and systems.



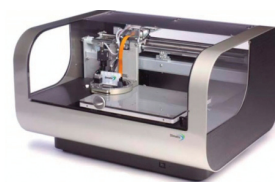
Dr Clare Conboy, Formulation Chemist

Printed Electronics Limited
Clare has more than 20 years' experience of formulating and characterising fluids for spray and printing applications. This includes many years of working with inkjet inks for piezo and thermal DOD printheads, initially for graphics and in recent years for materials deposition applications, including a diverse range of materials including metals, inorganics and adhesives in a range of solvent systems. Following completion of a PhD in Chemistry, she has worked for a number of organisations with a focus on inkjet technology, including Xaar and Plastic Logic. Clare has been involved with Printed Electronics Limited since its establishment.



LIVE DEMONSTRATIONS

As part of the course, Neil will be carrying out demonstrations using a Dimatix DMP deposition system - your chance to see this deposition platform in action, including built in drop-watcher.



Inkjet Drying & Curing

Hardware & Chemistry For Fixing Inkjet Inks

Monday 12 - Tuesday 13 July 2021

COURSE FOCUS

The Inkjet Drying & Curing course is intended to cover all of the necessary hardware and ink chemistry for fixing inkjet inks. The course will cover drying of aqueous and solvent inks, comparing different possible methods and including near-infrared (NIR) drying, ultra violet light (UV) curing and electron beam (EB) curing. The course covers both hardware and chemistry in detail. The drying section will review the ink drying process, including adhesion, penetration into the substrate, rub resistance and print quality. The differences in behaviour on porous and non-porous media will be discussed.

Wavelength, absorption characteristics of inks, typical substrates and coatings will also be covered. The advantages and disadvantages of potential ink drying techniques will be reviewed.

The course gives an in-depth introduction to the UV curing process and its relevance to digital inkjet printing. The course introduces the fundamental chemistry and hardware required, assessing the pros and cons of each type available on the market. Finally the emerging technique of EB curing will be introduced, and its potential advantages reviewed.

Monday 12 July 2021

13:20- 13:30 Registration

13:30 Course begins

Drying aqueous and solvent inks

James Burbidge, Adphos Innovative Technologies

- Introduction
 - What is dry, and how dry is dry?
 - Ink makeup
 - Differences in inkjet heads and resulting chemistry
- The principles of:
 - Wetting & Setting
 - Absorption in Porous & non-porous Media
- Paper and ink characteristics
 - Spectral absorption of inks
 - Spectral absorption of paper
- Defining durability, liquid removal and measuring it
 - What are we measuring
 - Test procedures
- Comparison of systems
 - Drying processes
 - Dryer designs
 - Homogeneity due to focusing and airflow management
- Application examples
 - Machine layout and its influence

17:00 Session ends

17:00 - 18:00 Virtual Networking Reception

Tuesday 13 July 2021

09:00 Session begins

UV curing fundamentals

Rob Karsten, Phoseon Technology

- Introduction to UV curing
 - The UV curing process
- Characterising UV sources
 - Wavelength
 - Peak irradiance
 - Energy density
 - Air-cooled systems
 - Water-cooled systems
- Application areas
 - Full cure
 - Pinning
 - Low migration
- Benefits of UV curing
- Latest advances in UV technology

UV curing considerations

Dr Tim Phillips, Catenary Solutions

- Physics of UV curing
- UV source comparison
- Safety considerations
- Integration challenges
 - Heat management
 - Stray UV
- Oxygen inhibition
- Single pass/multipass systems

12:30 - 13:30 Break

13:30 Session begins

Electron beam curing

Donal O'Sullivan & Adam Strevens, Sherkin Technologies & i4inkjet

- Introduction to electron beam (EB) curing
 - The EB curing process
 - Chemistry and physics
 - EB Sources
 - Lamps
 - Systems
- Characterising EB Sources
 - Beam current
 - Dose
 - Voltage
 - Power
- Application areas
 - Conventional printing
 - Inkjet printing
 - Coating and varnishes
 - Migration results
- Benefits of EB curing
- Comparison with UV technology
- Future perspectives

UV cure chemistry

Dr Stuart Palmer, IGM Resins

- UV cure mechanisms
 - Free radical
 - Cationic
- Photoinitiator chemistry
- Monomer chemistry
- Oligomers and additives
- Curing issues
 - Oxygen inhibition
 - Other issues
- Print quality effects with UV inks

17:00 Course ends

COURSE LEADERS

James Burbidge, Technical Director Europe - Print Technology

Adphos Innovative Technologies, Germany



James has had much experience in his many years in the digital printing field. He now enhances the performance & productivity of production lines by integrating Adphos technology into the process.

Rob Karsten, Regional Director EMEA

Phoseon Technology, USA



Rob Karsten is the Regional Director EMEA for Phoseon Technology, the world leader in UV LED technology. He has been with Phoseon from the beginning and has been responsible for building their business in Europe.

Dr Tim Phillips, Founder & Director

Catenary Solutions



Tim has extensive experience in challenging inkjet integration projects, developing technology for new applications including textiles, ceramics, packaging, décor and functional material deposition for printed electronics and biomedical uses.

Dr Stuart Palmer, Sales Manager

IGM Resins, UK



Stuart worked in UV-curing technology at Autotype and Fujifilm SIS. He then spent 10 years working in chemical distribution. He joined IGM Resins, a company dedicated to producing raw materials for UV curing, in 2008.

Donal O'Sullivan, Managing Director

Sherkin Technologies, UK



Donal has extensive experience in the implementation and support of electron beam-based processes. He has been steering electrons to deliver industrial solutions in food packaging, flexible electronics, medical devices, and semiconductors, for over 25 years.

Adam Strevens, Director

i4inkjet, UK



Adam has previously worked at Cambridge Display Technology Ltd. and Xaar Plc. He is now Director of i4inkjet Ltd. which provides the inkjet industry patent review service 'Directions' and offers inkjet consultancy under 'Pivotal inkjet resources'.

Inkjet Ink Manufacturing

Manufacturing Inks for Performance & Reliability

Wednesday 14 – Thursday 15 July 2021

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.

Wednesday 14 July 2021

08:50 - 09:00 Registration

09:00 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

12:30 - 13:30 Break

13:30 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

17:00 Session ends

17:00 - 18:00 Virtual Networking Reception

Thursday 15 July 2021

09:00 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

12:30 Course ends

COURSE LEADERS

Dr Chris Nicholas, Founder & Director
Smart Chemistry, UK

Chris worked in the R&D labs at Kodak, before joining Xenxia Technology as EU Program Manager. He then worked at Tonejet Ltd as Lab Manager where he set up an Ink R&D Lab and Dispersion Manufacturing Facility.



Chris founded Smart Chemistry Ltd in 2018 as a Chemical Technology Consultancy, offering advice & services to help companies with all aspects of Industrial Inkjet Technologies, from Materials deposition, Contract R&D to Scale up and Manufacturing. Chris has worked on a wide range of inkjet applications, including Textiles, Packaging, Smart Technologies and Security printing.

Dr Tim Phillips, Founder & Director
Catenary Solutions, UK

Tim Phillips has extensive experience in challenging inkjet integration projects, spending eight years working at Xenxia 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.



Selecting & Driving Printheads

Drive Electronics & Waveform

Thursday 15 - Friday 16 July 2021

COURSE FOCUS

The Selecting & Driving Printheads course covers everything you need to choose a printhead for your application, select the appropriate electronics and software to utilise those printheads, and optimise drive waveforms to get the most out of your printhead/ink combination.

This course will analyse the major printhead technologies and manufacturers, with their pros and cons discussed in the context of important applications.

The way printhead driving software works with the printhead will then be reviewed, including vital aspects such as screener and RIP. Then the use of printhead drive waveforms will then be detailed, including aspects such as greyscale. The interaction between the ink & ink system and the printhead will also be covered and illustrated with case studies.

Thursday 15 July 2021

13:20 - 13:30 Registration

13:30 Course begins

Printhead selection

- Printhead technologies and impact on ink selection
- Specifications vs application needs

Use of advanced RIPs and screening

- Getting the best from your inkjet system
- Print quality improvement via clever software techniques

17:00 Session ends

17:00 - 18:00 Virtual Networking Reception

Friday 16 July 2021

09:00 Session begin

Introduction to printhead waveforms

Waveform optimisation tools 1

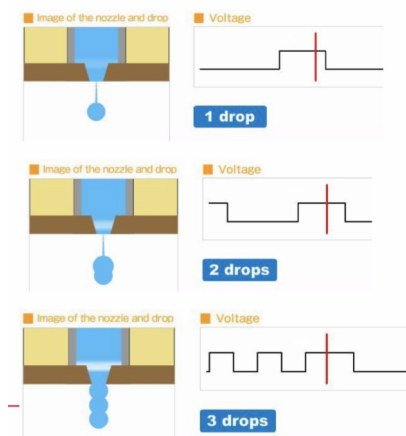
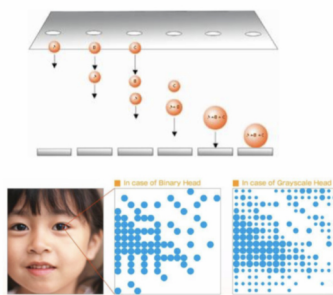
- Use of greyscale
- Impact of throw distance
- Know your process window
 - Mapping voltage and frequency response
- Know your limitations and process levers
 - Latency
 - Ink system influence

12:30 - 13:30 Break

13:30 Session begins

Waveform optimisation tools 2

- Waveform development case study
- PrintFlat case study
- Theory in action: DropWatcher live demo



COURSE LEADERS

David Heath, Technical Sales Manager

Meteor Inkjet, UK

David has been involved with digital printing for over a decade, supporting and bringing to market a variety of industrial solutions including large web, ceramics, direct to textile and ink delivery systems. Joining TTP in 2014, David soon moved to TTP Meteor, now Meteor Inkjet Ltd. Meteor Inkjet is the leading independent specialist in industrial inkjet printhead driving solutions. Collaborating with all major printhead manufacturers, Meteor supplies production ready electronics and software used by printer OEMs and print system builders world-wide. Meteor Inkjet has its headquarters just outside of Cambridge, UK and is a wholly owned subsidiary of Global Graphics (Euronext: GLOG). Prior to Meteor Inkjet, David began his career in the RAF as a Ground Radio Electrician working on advanced radar systems, infrastructure and communications.



Matthew Pullen, Product Manager – Drop Watching Solutions

Meteor Inkjet, UK

Matt is a veteran of the inkjet industry with more than 15 years' experience in a wide array of digital print applications including optoelectronics, additive manufacturing, ceramics, labels and packaging. His work has included formulation and process development for inks and coatings, process scale-up and printhead waveform development. In 2017, Matt joined Meteor to work on pre-sales technical engagement and customer support. He now manages Meteor's DropWatcher and Waveform Development efforts with a keen interest in accelerating OEM time from lab to fab. Prior to Meteor Inkjet, Matt worked for Xaar, Solar Press, Cambridge Display Technology, Plasmon and Huntsman in a variety of technical and customer-facing roles. He is a chemist by training and holds a Six Sigma Green Belt.





How to register

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

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

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

Number of Tickets	Price Per Ticket
1	€ 450
2	€ 400
3	€ 360
4	€ 340
5	€ 315
6	€ 295
7	€ 280
8	€ 270
9	€ 260
10	€ 250

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 21 June 2021). 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.

Extra Information

We will be using an online event platform from which we will be running the courses via zoom meetings. Zoom is widely available meeting software that is free to download. We recommend you use the download (app) version, which is available for PC, Mac and mobile platforms. See Zoom Help for more information.

If your internet connection is suitable for streaming video you should have no problems - if you are limited in bandwidth you will have the option of using audio only and following the slides on the downloaded version. We recommend you use computer audio for the session - either speakers or headphones to hear and the computer microphone if you need to speak (you can use text chat as well). You can test this before the meeting starts.

Please ensure you have logged in and joined the meeting at least 10 minutes before the course is due to start to ensure we can keep to our scheduled timings. During the course presentations you will be able to ask questions both publicly (either verbally or with group chat) and privately (with chat directly to the course presenter which they can answer later). There will also be group chat options during the breaks so you can network with the presenters and other registrants.

Timetable

	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00
Monday 5 July							Inkjet Academy				
Tuesday 6 July		Inkjet Academy				Break	Inkjet Academy				
Wednesday 7 July		Fluid Dynamics & Acoustics				Break	Fluid Dynamics & Acoustics				
Thursday 8 July		Fluid Dynamics & Acoustics					Jetting Functional Fluids				
Friday 9 July		Jetting Functional Fluids				Break	Jetting Functional Fluids				
Monday 12 July							Inkjet Drying & Curing				
Tuesday 13 July		Inkjet Drying & Curing				Break	Inkjet Drying & Curing				
Wednesday 14 July		Inkjet Ink Manufacturing				Break	Inkjet Ink Manufacturing				
Thursday 15 July		Inkjet Ink Manufacturing					Selecting & Driving Printheads				
Friday 16 July		Selecting & Driving Printheads				Break	Selecting & Driving Printheads				