IMI EUROPE

Digital Printing *Conferences 2005*

Sheraton Lisboa
Hotel & Towers

Lisbon
Portugal

Courtesy of Fuji Photo

13th Annual European Ink Jet Printing Conference

Tuesday 8th - Thursday 10th November, 2005

Join us for the biggest and best ink jet conference this autumn, with 23 presentations over two days, and complimentary Suppliers Forum and display space for registrants! This year we look at the new Scaleable Print Technology from HP, Kodak's ambitions for ink jet, the latest industrial printheads for scanning and single pass printing, the shake-out of media for photo printing and wide format, flat-bed printing, UV inks and curing including UV LEDs, plus updates on two of the major emerging applications for ink jet - textiles and printed electronics.

Speaker companies include:

AT&S	Konica Minolta
CEA	Olympus
Circatex	Pivotal Resources
Fujifilm Sericol	Ricoh Printing Systems
Hewlett-Packard	Spectra
IDTechEx	Stork Digital Imaging
Ilford Imaging	SunJet
Inca Digital	Thieme
IST Metz	Web Consulting
IT Strategies	Xaar
Kodak Versamark	Xennia Technology

UV Ink Jet Printing Course

Monday 7th - Tuesday 8th November, 2005

Want to learn more about formulating UV-curable ink jet inks, using and curing them? Experts in their fields will take you through all of the issues and get you up to speed on this 1½ day course.

Ink Jet Academy

Theory of Ink Jet Technology

Monday 7th - Tuesday 8th November, 2005

PIVOTAL RESOURCES
MARKETS ◆ TECHNOLOGY ◆ RESEARCH ◆ CONSULTANCY
XENNIA

A 1½ day comprehensive course describing the latest advances in ink jet and ink technologies, led by Mike Willis of Pivotal Resources & Alan Hudd of Xennia Technology. In seven years over 1,200 have attended this broad and up to date introduction to this fast growing technology

IMI EUROPE

IMI runs the largest and most comprehensive conference and seminar programme in the digital printing industry. Each year over 2,000 industry technical and management personnel from over 600 companies attend more than 20 programmes covering ink jet, thermal, laser, high speed digital printing, textile, industrial and other forms of digital printing.

THE PROGRAMME

IMI Europe brings together a major annual conference, plus the acclaimed course - The Ink Jet Academy and the UV Ink Jet Printing course. Each programme has been designed to give participants a thorough technical and marketing perspective of their industries, with presentations by acknowledged leaders in their field. Completely up to date, there is simply no better information available.

THE LOCATION

This autumn we have chosen Lisbon for our conference programmes. This one thousand year old city is the capital of Portugal. Built on seven hills and mirrored by the Tagus River, it was once the capital of a mighty empire that spanned five continents. There are reminders everywhere of its victories and defeats going back to the Roman times.

1.5 day course

Ink Jet Academy
Theory of Ink Jet Technology

Monday 7th - Tuesday 8th November, 2005

Sheraton Lisboa Hotel & Towers, Lisbon, Portugal

COURSE LEADERS

Mike Willis, Managing Director
Pivotal Resources Limited
Cambridge, 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-on-demand and continuous ink jet printing, electro-photographic technology, greyscale and colour reproduction methods and light sensitive materials.

Prior to founding Pivotal Resources, Mike was Director of Electronic Printing at Meta Generics. Mr. Willis was a founder member of Xaar - a spin-off company from Cambridge Consultants where Mr. Willis spent ten years working in a number of roles, culminating as Group Leader of Non-Impact Printing. Before that, he spent six years at Gestetner developing photocopiers.

Mr. Willis graduated from the Polytechnic of Central London with an honours degree in Photographic Sciences.

Dr. Alan L Hudd, President & CTO
Xennia Technology Limited
Royston, Hertfordshire, UK

In 1996 Dr. Hudd co-founded Xennia Technology; the world's first independent contract ink jet technology house dedicated to developing new ink jet inks for both the industrial and office ink jet industries.

In 1987 Alan joined Domino Printing Sciences and spent eight years as the Fluids Technology Manager, developing a wide range of ink jet ink for diverse applications and is credited with a number of patents and significant innovations within the industrial ink jet industry. Prior to Domino, he spent almost eight years with the Ministry of Defence and Royal Ordnance in the UK, developing new solid polymer rocket propellants for air to air missiles.

Dr. Hudd graduated with B.Sc. Honours degree in Chemistry and Physics, M.Sc and Ph.D research degrees in Polymer Chemistry from Manchester University.

PIVOTAL RESOURCES
MARKETS ◆ TECHNOLOGY ◆ RESEARCH ◆ CONSULTANCY

XENNIA

THE THEORY OF INK JET TECHNOLOGY

The Ink Jet Academy provides a programme and format to get an expert start in the ink jet industry, to get an update or to open up new ink jet fields.

Understanding the fundamentals is a prerequisite to any development. The Ink Jet Academy offers a one and one-half day course covering the basic theory of all the diverse types of ink jet technology in use today. Learn how the printheads work, what materials are used in their fabrication and the theory of operation. Learn about inks and media, how they are formulated and the supply and support systems. This course assumes a basic scientific knowledge and will provide a useful background to anyone entering the ink jet industry or seeking an efficient update of ink jet technology.

MONDAY NOVEMBER 7, 2005

8:00 a.m. - 9:00 a.m. Registration

9:00 a.m. Opening session

INTRODUCTION
- Course overview
- Types of ink jet technology
- Brief history
- Drop on demand technologies
- Thermal & piezo ink jet
- State of the art
- Office & SOHO markets & applications

INDUSTRIAL APPLICATIONS
- Industrial drop on demand
- Continuous ink jet
- Industrial applications

INK TECHNOLOGY
- Evolution of ink jet inks
- Ink jet ink formulations
- Ink types & properties
  -Aqueous-based
  -Oil-based
  -Solvent-based
  -Phase change
  -UV curable

DOD PRINTHEAD DESIGNS AND VENDORS
- Thermal ink jet
- Piezo ink jet
- Moving wall technology
- Printhead vendors

1:00 - 2:00 p.m. Lunch

MATERIALS FOR INK JET INKS
- Critical materials
- Colorants
- Polymers
- Solvents and additives
- Dispersants
- Vendors & ink distribution chain

DOD PRINTHEAD DESIGN CONSIDERATIONS
- Drop ejection frequency
- Crosstalk
- Printhead life
- Temperature control
- Drop placement accuracy
- Considerations for page arrays
- Greyscale techniques
- Drive waveforms

MEDIA & PRINT QUALITY
- Paper & coatings
- Drying mechanisms
- Light & waterfastness
- Non-paper media
- The 3 factors affecting print quality
- Technologies to improve print quality
- Improving image quality

5:30 p.m. Session closes
7:00 p.m. Reception

TUESDAY NOVEMBER 8, 2005

9:00 a.m.

UV CURING TECHNOLOGY
- Chemistry of UV curing
- Ink formulation issues for piezo DOD
- UV curing systems

SYSTEM DESIGN ISSUES
- Nozzle maintenance
- Drop detection
- Filling/bubble removal
- Ink supply and replacement

INSTRUMENTATION FOR INK JET DEVELOPMENT
- Reliability
- Jet characteristics
- Quality control

FUTURE DEVELOPMENTS
- Evolution of current technology
- New developments
- Status and developments of ink technology

1:00 p.m. Adjournment

UV Ink Jet Printing Course

Monday 7th - Tuesday 8th November, 2005

1.5 day course

Sheraton Lisboa Hotel & Towers, Lisbon, Portugal

COURSE FOCUS

As ink jet printing continues to make technology advancements in product functionality, cost performance, print quality and color printing capabilities, the interest in utilization of UV-based ink jet systems is expanding rapidly. IMI's UV Ink Jet Course is designed to provide thorough coverage of basic UV chemistry, curing, issues critical to UV-based ink jet systems implementation and how UV technology has been implemented in current products and applications.

While UV inks provide instant drying; enable a wide choice of substrates; result in good end use properties (adhesion, durability, flexibility, etc.) and enable good printhead reliability - potential users must understand basic UV chemistry; UV ink components; ink formulation issues; hardware development criteria, health & safety issues, etc. to effectively and successfully implement UV ink jet systems.

As UV ink jet printing continues to expand; IMI's UV Ink Jet Course provides a unique opportunity to obtain information and insights critical to UV ink jet printing technology implementation in ever growing market and application sectors.

MONDAY NOVEMBER 7, 2005

8:00 a.m. - 9:00 a.m. Registration

9:00 a.m. Opening session

WELCOME
Alvin G. Keene, President, Information Management Institute, Inc., Carrabassett Valley, Maine, USA & Director, IMI Europe, Cambridge, UK

UV CHEMISTRY

COURSE SESSION LEADER:
James Goodrich, Senior Applications Chemist - Graphic Arts, Sartomer Company, Inc., Exton, Pennsylvania, USA

- Basics of UV curing chemistry
  - Safety & handling issues
  - Mechanisms of UV photopolymerization
  - Advantages of UV curing ink jet systems
- UV chemistry for ink jet systems
  - Monomers
  - Oligomers
  - Photoinitiators
- Models of UV ink jet systems
  - Adhesion
  - Cure
  - Pigment dispersion

1:00 - 2:00 p.m. Lunch

UV CURING

COURSE SESSION LEADER:
Dr. John Maitland, Special Applications Manager, Nordson UV, Slough, Berks, UK

- Curing technologies: Operation & differences
  - Mercury arc
  - Xenon discharge
  - Fluorescent lamps
  - Excimer lamps
  - Lasers
  - Microwave
  - LED's (UV & visible)
  - Electron beam
- Challenges with UV curing equipment on ink jet printing machines
- Methods for dealing with heat from UV lamp heads
- Oxygen inhibition & inerting
- Requirements for high speed, single pass applications
- Examples of bulbs, reflectors, lamp heads, shutters, etc.

5:30 p.m. Session closes
7:00 p.m. Reception

TUESDAY NOVEMBER 8, 2005

9:00 a.m.

UV PRODUCT IMPLEMENTATION & APPLICATIONS

COURSE SESSION LEADER:
Dr. Alan L Hudd, President & Chief Technical Officer, Xennia Technology Limited, Royston, Hertfordshire, UK

- Understanding ink jet printing process for UV curable materials
- UV ink formulation challenges & role of substrate
  - Controlling dot quality at speed
  - Pigment dispersions
  - Ink jet properties
  - Current limitations
- UV ink jet hardware configurations
  - Review of suitable printheads
  - Integration issues
  - System reliability
  - Current integrators
- Commercial UV ink jet systems: implementation, performance & applications
- UV ink jet applications: requirements, opportunities & challenges
  - Commercial printing
  - Electronics
  - Product decoration
  - Coatings
  - Manufacturing
  - Others
- Future trends in UV ink jet

1:00 p.m. Adjournment

COURSE LEADERS

James Goodrich, Senior Applications Chemist - Graphic Arts
Sartomer Company, Inc., Exton, Pennsylvania , USA

Mr. Goodrich earned his B.S. in Chemistry and a minor in Polymer Science from the Pennsylvania State University in 2000. Currently he is a Senior Applications Chemist for Sartomer Company, Inc. located in Exton, PA. James' work is concentrated on the UV/EB ink market with a focus on design and application of new energy-curable raw materials for the paste, liquid, and digital markets.

Dr. John Maitland, Special Applications Manager
Nordson UV, Slough, Berks, UK

Dr. Maitland received his PhD in Silver Halide Emulsion Chemistry from London University having won two Industrial Research Scholarships. Specialist knowledge includes Photo-Chemistry, Formulation of UV Inks & Coatings and UV & Visible Spectral Radiometry.

Prior to joining Nordson Corporation, Dr. Maitland was Manager for Group Printing Development at the Central Research Facility of Carnaud Metal Box (Crown Cork and Seal) in Oxfordshire. Responsibilities involved management of the Instrumentation & Control Section (UV and Visible).

Currently, Dr. Maitland is Nordson company member for Radtech Europe and is actively involved with the Powder Coating, Adhesives and High Performance Coatings Technical Working Groups. He also supports the Industrial UV Training Course at the Paint Research Association, Teddington. In addition to presenting and publishing numerous technical papers, John has chaired technical conferences and made several patent applications.

Dr. Alan L Hudd, President & CTO Xennia Technology Limited
Royston, Hertfordshire, UK

In 1996 Dr. Hudd co-founded Xennia Technology; the world's first independent contract ink jet technology house dedicated to developing new ink jet inks for both the industrial and office ink jet industries.

In 1987 Alan joined Domino Printing Sciences and spent eight years as the Fluids Technology Manager, developing a wide range of ink jet ink for diverse applications and is credited with a number of patents and significant innovations within the industrial ink jet industry. Prior to Domino, he spent almost eight years with the Ministry of Defence and Royal Ordnance in the UK, developing new solid polymer rocket propellants for air to air missiles.

Dr. Hudd graduated with B.Sc. Honours degree in Chemistry and Physics, M.Sc and Ph.D research degrees in Polymer Chemistry from Manchester University.

13th Annual European In

Tuesday 8th - Thursday 10th November, 2005

Sheraton Lisboa Hotel & Towers, Lisbon, Portugal

- **23 presentations from industry leaders**
- **Our unique Suppliers Forum open to all registrants to present their company and services**
- **Free table-top display space if pre-booked**
- **Industry market report from IT Strategies**
- **Ample time for networking at our inclusive receptions and lunch**
- **Best value in the industry!**

CONFERENCE FOCUS

Ink jet printing continues to make technology advancements in product functionality, cost performance, print quality, and colour printing capabilities. Such improvements have made ink jet printing the leading digital printing technology and have enabled the development of new markets and applications. In addition to personal computer printing, applications such as wide format printing, photo quality printers, multifunction printers, digital presses, colour office printers, and industrial printing are providing market opportunities for ink jet printing technology, but in a very competitive environment.

This conference programme is designed to provide participants with a comprehensive assessment of technology and market development trends that will determine ink jet printing's role in the overall printing marketplace. The formal sessions and informal networking sessions provide a unique, interactive environment for leading hardware, consumables, components, system integrator and user company representatives to network and develop an improved understanding of current developments and other forces that are shaping ink jet printing's role in the evolving digital printing industry.

TUESDAY NOVEMBER 8, 2005

11:00 a.m. - 5:00 p.m. Conference Registration
2:00 p.m. Opening session

WELCOME AND INTRODUCTIONS
Alvin G. Keene, President, Information Management Institute, Inc., Carrabassett Valley, Maine, USA & Director, IMI Europe, Cambridge, UK

SESSION 1:
ADVANCES IN PRINTHEAD TECHNOLOGY THE KEY TO FUTURE PERFORMANCE ENHANCEMENTS

TECHNOLOGY DEVELOPMENTS AND FUTURE ADVANCEMENTS
Michael Willis, Managing Director, Pivotal Resources, Cambridge, UK

- Latest products & announcements
  - Desk-top gets to 1pl drops
  - Dye-sub printing challenges ink jet photo
- Existing industrial applications: most OEM needs met except cost
- Emerging industrial applications requirements
  - Fixed heads: not just more nozzles
  - Wider fluid handling capability
  - Sub-picoliter drops: the move to femoliters
- The patent scene
  - Emergence of MEMS technology
  - New players

THE ABC'S OF HP'S SPT (SCALEABLE PRINTING TECHNOLOGY)
Rob Beeson, R&D Competitive Intelligence Team Leader, Hewlett-Packard, Corvallis, Oregon, USA

- Outline of SPT goals
- Introduced products summary
- New silicon technology
- New ink delivery system
- New individual ink supplies
- Vivera inks
- Looking forward

Why not register on-line?
www.imieurope.com

Questions? Then email us at enquiries@imieurope.com

THE EMERGENCE OF KODAK – FROM DESK-TOP TO COMMERCIAL PRINTING
Dr. Markus Pahler, Director Strategic Programs, Kodak Versamark, Dayton, Ohio, USA

- Kodak in transition
  - From market leader in the classical photo consumer business
  - To one of the dominant players in commercial printing
- Growth and diversification by acquisition
- Growth by technological development
- Actual situation of Kodak and the status of the transition
- Market opportunities for modern printing technologies
- State of the art of the Kodak professional ink jet technology

INNOVATION WITH RICOH INDUSTRIAL INK JET TECHNOLOGY AND NEW APPLICATIONS
Mark Elsbernd, Vice President, Ricoh Printing Systems America, Simi Valley, California, USA

- Printhead design advancements
  - Silicon (AMS 192)
  - Metal – Stainless Steel (Gen3 E3)
  - Page width arrays
- New industrial applications
  - Conductive materials
  - 3D Models – Rapid prototyping
  - High end proofers
  - Textiles

NEW M-CLASS: SHAPED PIEZO SILICON MEMS™ – A BREAKTHROUGH IN PIEZO PRINTHEAD DESIGN FOR INDUSTRIAL PRINTING AND DECORATIVE APPLICATIONS
James Gill, European Sales Director, Spectra Inc., Lebanon, New Hampshire, USA

- Powerful benefits of Silicon MEMs
  - Overall capabilities
- M-300/10 Jet Module
  - Construction
  - Specifications
  - Performance
  - Grayscale
- M-Class Printhead Configurations
  - Hex configuration & target applications
  - Quad configuration & target applications
  - Custom configurations
  - Development kit
- Summary

HYBRID SIDESHOOTER – LATEST DEVELOPMENTS IN PIEZO DOD PRINTHEAD ARCHITECTURE
Steve Temple, Technical Director, Xaar plc, Cambridge, UK

- New printhead architecture to enable single-pass systems adoption in production environments
- Improvements in quality, speed & reliability
- Allows more prolonged & stable jetting of wider range of functional fluids
- Creates digital printing opportunities in packaging & emerging applications incorporating printed electronics, bio & nano-technologies

NEW POWERS TO YOUR CUSTOMERS: LOW COST LASER CUTTING IN INK JET PRINTERS
Olivier Acher, Chief Scientist, CEA, Monts, France

- How it works: the combination of a laser diode and an additional ink cartridge
- Applications and markets
  - Moving the value from pre-cut media to the printer
  - Giving your customers new powers
  - From prints to objects: a smooth step toward personal fabrication?
- The performance/price learning curves

7:00 p.m. Reception

Join us and enjoy local wines and beers, canapes, and of course good company

k Jet Printing Conference

WEDNESDAY NOVEMBER 9, 2005

8:30 a.m.

SESSION 2:
ADVANCES IN MEDIA TECHNOLOGY, INKS & INDUSTRIAL APPLICATIONS

MEDIA DIVERSITY – SOLVENT & UV-CURABLE INK JET SYSTEMS CREATE NEW CHALLENGES AND OPPORTUNITIES
Michael Flippin, Vice President, Web Consulting Inc., Boston, Massachusetts, USA

- Impact of the growth of solvent, eco-solvent and UV-curable ink jet on the ink jet hardware installed base
- Changes in technical and manufacturing requirements for "next generation" ink jet media
- New applications and cost reduction as additional drivers for change in media offerings
- Sizing and forecasts for "dedicated" ink jet media (S, ES, US, AQ) and generic printable media
- Who are the key manufacturers, and who has competitive advantage?
- Strategic and tactical considerations in designing, manufacturing and distributing "next generation" ink jet media
- Conclusions and recommendations

THE CHANGING LANDSCAPE IN THE PHOTO PRINTING MARKETPLACE
Rob Kershaw, Regional Sales Director, Ilford Imaging, Marly, Switzerland

- Historical perspective 2000 – 2005
  - Massive changes in photo market over past few years
  - It is not over yet!
- Output technology shift and trends for the future
  - Historic industry leaders experiencing significant reductions in traditional businesses
  - Restructuring, bankruptcy & strategic reassessments
- Where will prints be made?
  - Where and how photo prints will be made will continue to evolve
- Battle of the brands
  - Brand leaders of the past will not necessarily be those of the future
- What lies ahead
  - Who will be the winners and losers of the future?

INK JET PRINTHEAD BARS FOR INDUSTRIAL APPLICATIONS
Yoshihiko Masakawa, Division Manager, PS Business Division, Olympus Corporation, Japan

- Successful commercial implementation of fixed printhead arrays
- Challenges of ink and substrate
- Technical achievements in print engine design
- Printhead configuration options
- Next generation developments

INK JET AND SCREEN PRINTING - A HYBRID SOLUTION
Konrad Vosteen, Product Manager Digital Printing Systems & Sven Peppekus, Sales Manager, Thieme GmbH & Co. KG, Teningen, Germany

- The requirements of screen printers & meeting their needs
- Combining the benefits of screen printing with ink jet
- The hybrid flatbed concept
- Development of the M-Press with Agfa UPH printheads
- Key applications
- The future of flatbed printers & screen printing

UPS & DOWNS OF UV WIDE FORMAT PRINTING
Paul Yandell, Global Business Development Manager, Fujifilm Sericol, Broadstairs, UK

- Speed versus productivity
- How to widen the colour gamut
- Is UV just a solvent printer with a lamp?
- White – fashion statement or need?

LEDS FOR UV CURING – PAST, PRESENT & FUTURE
Dr. Nick Campbell, Project Manager, Inca Digital Printers, Cambridge, UK

- Main factors for UV curing with LEDs
- Development of LEDs to their present state
- Commercial implementation of LED curing system in a flatbed printer
- Future potential developments of LED curing

1:00 p.m. - 2:30 p.m. Lunch

SESSION 2 CONTINUED

THE CHALLENGES OF INK JET INK FORMULATION FOR PACKAGING
Peter Walshe, Business Development Manger, SunJet, Midsomer Norton, UK

- The unique and diverse challenges of the packaging print market
- Recent developments in ink jet ink technology and how this will impact the packaging sector
- FastJet: challenges for formulating inks for corrugated packaging
- Ink jet in the packaging market: opportunities and future ink developments

HIGH SPEED CURING FOR UV INK JET
Manuel Blauensteiner, Product Manager UV Ink Jet, IST Metz GmbH, Germany

- Current applications and solutions
- Focused future applications for UV ink jet
- Influencing factors of UV curing (inks, printheads, UV systems)
- How to reach high speed in a cost efficient way

SESSION 3:
TEXTILE PRINTING – AN UPDATE

ACCESSING THE DIGITAL TEXTILE MARKET OPPORTUNITY
Stewart Partridge, Managing Director, Web Consulting, Abingdon, UK

- Textile printing recovers from global slump
- At last - digital textile printing comes of age
- Emergence and applications for high volume platforms
- Implications and forecasts for hardware, ink and media
- Strategies and tactics for generating profits from digital textile

TEXTILE ASIA UPDATE – MEETING THE REQUIREMENTS OF JAPAN/EUROPE
Akiyoshi Ohno, President, Konica Minolta IJ Technologies, Tokyo, Japan

- Different requirements for Japan and Europe
- Matching technology to local markets and applications
- Uniqueness of KonicaMinolta TP-V
- Keys for success and future strategy
- Ink jet head development update... on the eve of the revolution
- PED, print bar & ultimate end-shooter

DIGITAL PRODUCTION A REALITY THROUGH STORK U SEE – THE DIGITAL TEXTILE STANDARD
Jorg van der Meij, Marketing Manager, Stork Digital Imaging B.V., Boxmeer, The Netherlands

- The need for standards in the emerging digital textile printing industry
- Launch of Stork's U See standard 3 years ago
  - Customer benefits
  - Assurance of quality from digital sample to digital bulk
  - Growth of U See digital sampling bureaus and digital printing mills
  - Industry examples from leading brand owners
- Economic feasibility of today's digital printing
- Experience with Digital Print Asia (DPA) certified mill in Thailand

SUPPLIERS FORUM

5 minute presentations related to technology, capabilities, services, new product introductions, etc. The Suppliers' Forum is open to all conference registrants

7:00 p.m. Reception

Programme continues on next page.....

13th Annual European Ink Jet Printing Conference

2 day conference

THURSDAY NOVEMBER 10, 2005

8:30 a.m.

SESSION 4:

EMERGING APPLICATIONS – POTENTIAL TO DOUBLE THE SIZE OF THE INK JET INDUSTRY?

PRINTED ELECTRONICS, DISPLAYS, RFID & INK JET

Mark Hanley, Managing Partner, IT Strategies Inc., Hanover, Massachusetts, USA

- Slow sequential development from conductive chemistry printing to semi-conductive chemistry
- Market definitions and a quantified basis for projections of the markets
- Summary of major ink jet activities in printed electronics so far
- The transition to predominantly high volume ink jet printing of electronics is likely to be relatively rapid
- Working minimum ink jet specifications for the nearest markets

PRINTING ELECTRONICS – THE APPLICATIONS AND YOUR OPPORTUNITIES

Raghu Das, Managing Director, IDTechEx Ltd, Cambridge, UK

- Making packaging and products smarter with disposable electronics
- Major players, their progress and what's coming next
- The opportunity for ink jet printing
- The market for printed electronics 2005-2025

HIGH-SPEED PRINTING OF RFID TAGS

Dr. Alan Hudd, President & CTO, Xennia Technology Ltd, Royston, UK

- Evolution of ink jet and printed electronics
- How does the popular belief and benefits of customised short run digital printing model fit the requirements of low-cost mass printing of RFID tags?
- The RFID ink jet proposition
- System and technology video demonstration
- Direct write Print2Chip capabilities

DIGITAL PRINTING OF ELECTRONICS USING MASSIVELY INTEGRATED INK JET PRINTING - ECONOMICS AND VIABILITY TRIGGERS FOR COMMERCIAL SUCCESS

Steve Jones, Chairman, Circatex Group Ltd, South Shields, UK

- Very high volume manufacturing of electronics has migrated to the Far East
  - Much design function remains in Europe & US
  - Need for high technology, rapid response service-driven cost-competitive solutions
  - Requirement for high-mix, short-run production runs with low up-front costs
  - Modern designs are driven by ever increasing functionality and miniaturisation
  - Solutions abound but most not yet rugged
  - Future production process where the entire electronic circuit/assembly digitally printed
  - Where are these production machines?
- Proof of concept ink jet machine will allow some boundary conditions to be explored
  - Two 40,000 nozzle grey-scale printhead assemblies print single pass 700mm wide panels with feature positional accuracy <10 microns in less than one second
  - 1000mm wide area scanned with narrow heads to investigate electronically active inks

INK JET SOLUTIONS FOR THE PRINTING OF ELECTRONIC COMPONENTS

Erik Moderegger, Project Leader, AT&S AG, Leoben, Austria

- Trends in miniatiarisation of printed circuit boards of electronic devices
  - Resistors & capacitors embedded within multi-layers
- Ink jet as a manufacturing solution
  - Accurate materials deposition
  - Accurate positioning of components relative to previously produced
- In-house process development at Europe's largest pcb manufacturer
  - From ideas to production
  - Innovations in ink development
  - Demands on systems integration and printing hardware

12:30 p.m. Adjournment

INK JET ACADEMY

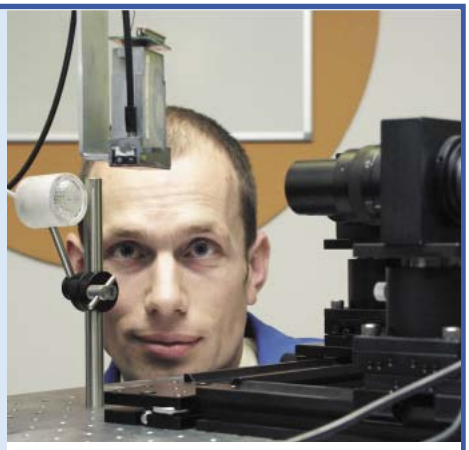
Practice of ink jet technology

Three times yearly, Manchester, UK

The Ink Jet Academy offers the first dedicated course aimed at assisting chemists and technologists to develop and enhance their level of ink jet expertise. In particular, the course deals with ink design and reliability principles, methodologies for successful developments and risk evaluation. It draws on valuable lessons from Xennia 's long experience of ink jet research & development.

Learning will be achieved through a mixture of in-depth theory and, most importantly, hands-on experience of formulating inks and evaluating results. The 4-day course is designed to enable laboratory staff new to ink jet or with only limited ink jet experience to achieve a good level of competence in ink jet ink development and to solve problems that would typically arise during an ink jet development programme. For the full course programme please visit our web site at www.imieurope.com.

The Practice course is offered in 2 forms: the first open to individuals from any company; the second, where confidentiality is important, dedicated to a group from a single client company. Each attendee will be expected to understand the principles of ink jet printing. To gain maximum benefit, we recommend prior attendance of the Theory of Ink Jet Technology course. Client dedicated courses can be preceded, where appropriate, by a one-day Theory course.



XENNIA innovative inkjet solutions

omic Organic Materials Innovation Centre

	Dates	Location	Length of course	Registration fee includes	Course fee
Practice of ink jet technology	Nov 14-18, 2005 March 27-31, 2006 June 19-23, 2006	Manchester, UK	4 days	Course notes, lunches, Course dinner, breaks (but not accommodation)	£2,500

Registration information

For further information on this course please either check the Ink Jet Academy pages on our web sites at www.imieurope.com, email christine@imieurope.com or call IMI Europe at +44 1223 236920 or IMI Inc. at +1 207 235 2225.

The Practice of Ink Jet Technology course is run three times a year in Manchester, UK at the University of Manchester's OMIC Centre. Courses are subject to a minimum of 6 and maximum of 12 attendees. You can register your interest in participating on a course via our web site at www.imieurope.com or by calling IMI Europe. We will then confirm course dates and arrangements 10 weeks before the course begins.

Private sessions of the Practice of Ink Jet Technology are also available and allow full confidentiality and some flexibility of course content.

WELCOME TO DIGITAL PRINTING 2005

IMI Europe has once again put together an outstanding programme for Digital Printing 2005. Our 13th Annual European Ink Jet Printing Conference is packed with the latest overviews, updates and technology developments for office, industrial printing and media. This year the UV Ink Jet Printing Course gives a first class overview of this emerging and important technology. And if you need to get up to speed with ink jet, join our very popular and successful course - the Ink Jet Academy - Theory of Ink Jet Technology.

Our programmes offer the best value in the industry - great registration rates, discounts for multiple registrations, and opportunities to network with the speakers and attendees at our inclusive lunches and receptions. Also registrants to the conference are welcome to display company literature in our separate display area.

How could you miss it. See you in Lisbon!

Mike Willis, Managing Director, IMI Europe Ltd

PRODUCT DEMONSTRATIONS

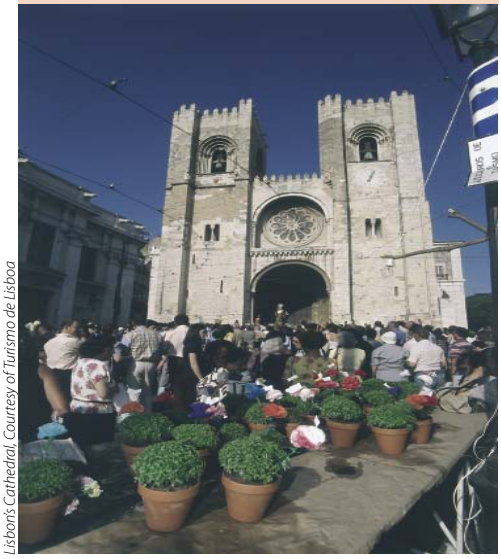
Product demonstrations or displays by both conference speakers and registrants are encouraged. IMI will cooperate with all interested parties to provide appropriate space so products can be displayed and demonstrated during the conference breaks. There is no charge in addition to the conference registration fee to have a display table. Interested companies should contact Alvin Keene at IMI Inc. to book space - email: imi@imiconf.com

WORLDWIDE PRINTER AND SUPPLIES MARKET REPORT

Information Management Institute, Inc. is pleased to announce that it has commissioned I T Strategies of Hanover, Massachusetts to prepare a study report entitled "Worldwide Printer and Supplies Market Report" for distribution to all registrants to IMI's programmes.

This exclusive market report is updated at least twice annually and provides an ongoing source of market information based on a consistent methodology and reporting structure. The report is generated from IT Strategies' worldwide computer printer industry model.

All registrants to IMI Europe's Digital Printing Conferences at the Sheraton Lisboa Hotel & Towers, Lisbon, Portugal will receive a complimentary copy of the latest edition of the "Worldwide Printer and Supplies Market Report."



Lisbon's Cathedral, Courtesy of Turismo de Lisboa

Tower of Belém, Lisboa, Courtesy of Turismo de Lisboa

LOCATION

The Sheraton Lisboa Hotel & Towers is centrally located in Lisbon, and is a ten minute taxi ride from Lisboa International airport.

The Sheraton Lisboa Hotel & Towers features underground parking, a business and communications centre, a variety of shops, a health club with a heated outdoor pool, gym, sauna, steambath and massage. This hotel offers a unique opportunity to combine a relaxing weekend or vacation in Lisbon in conjunction with attendance at IMI Europe's conference and courses.

Lisbon offers plenty of bars, restaurants, sightseeing, monuments, museums and shopping. The city is relatively small and easy to get around. Just outside the hotel is a metro station, and also taxis are plentiful and low-cost.

Within easy reach of Lisbon are some of Europe's most beautiful beaches and golf courses, as well as horse riding centres, water sports, the glamorous resort of Estoril, the village of Sintra and the mountains of Arrábida.

For additional information on Lisbon, visit Turismo de Lisboa Web Site at: **www.atl-turismolisboa.pt**

Courtesy of Turismo de Lisboa

UPCOMING IMI CONFERENCES

1st Ink Jet Technology Integration Symposium
October 24-25, 2005, Las Vegas, Nevada, USA
4th Annual Printable Electronics & Displays Conference and Trade Fair
October 26-28, 2005, Las Vegas, Nevada, USA
Ink Jet Academy: Practice of Ink Jet Technology
November 14-18, 2005, Manchester, UK
1st RFID Technology Integration Symposium
November 14-15, 2005, Las Vegas, Nevada, USA
Paper-Like Displays Course
November 14-15, 2005, Las Vegas, Nevada, USA
3rd Annual Paper-Like Displays Conference
November 16-18, 2005, Las Vegas, Nevada, USA
Ink Jet Academy: Theory of Ink Jet Technology
January 29-30, 2006, St. Pete Beach, Florida, USA
15th Annual Ink Jet Printing Conference
January 30-February 1, 2006, St. Pete Beach, Florida
13th Tag, Ticket & Label Printing Conference
February 1-3, 2006, St. Pete Beach, Florida, USA
14th Annual Laser Printing Conference
February 2, 2006, St. Pete Beach, Florida, USA
9th Annual Toner & Imaging Chemicals Conference
February 6-8, 2006, St. Pete Beach, Florida, USA
Ink Jet Academy: Practice of Ink Jet Technology
March 27-31, 2006, Manchester, UK

HOTEL INFORMATION

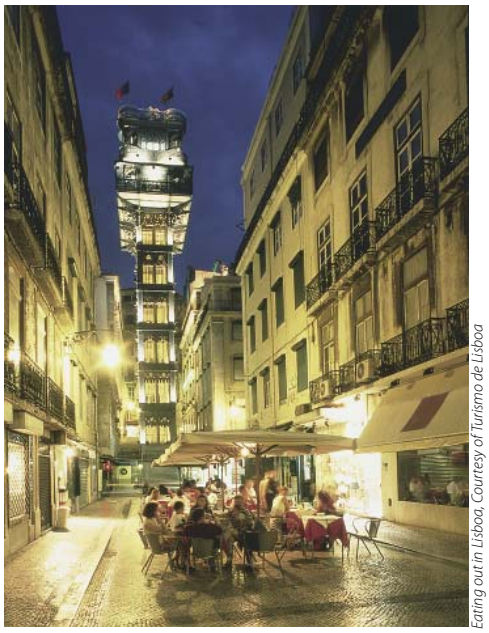
The 13th Annual European Ink Jet Printing Conference, the UV Ink Jet Printing Course and the Ink Jet Academy are being held at the Sheraton Lisboa Hotel & Towers, Lisbon, Portugal. Hotel reservations and charges are the responsibility of each conference registrant. The discounted hotel rate is €130 for single occupancy and €150 for double occupancy - buffet breakfast included. Early booking is advised - the Sheraton Hotel & Towers will guarantee the reduced rate only until **October 7, 2005**. Requests after that date will be on a space available basis. To receive the special rate, you must identify yourself as a registrant to an IMI Europe Conference.

For hotel information and to make hotel reservations please use the dedicated on-line service linked from our web site: **www.imieurope.com**

The Sheraton Lisboa Hotel & Towers address is:

The Sheraton Lisboa Hotel & Towers
Rua Latino Coelho 1
1069-025 Lisboa
Portugal

Phone: +351 21 312 0000
Fax: +351 21 357 5073
Email: sheraton.lisboa@sheraton.com



Eating out in Lisboa, Courtesy of Turismo de Lisboa

SPRING 2006 US EVENTS: DATES & LOCATIONS TO BE ANNOUNCED

17th Annual Thermal Printing Conference
3rd Annual Security Printing Conference
3rd Photo Quality Printing Conference
Ink Jet Developers Conference 2006
2nd Annual Engineered Fine Particle Applications Conference
Digital Printing Summer Camp
July 24-28, 2006, Cambridge, Massachusetts, USA

For complete details and registration information visit IMI's web site **www.imiconf.com**

IMI EUROPE

Digital Printing *Conferences 2005*

REGISTRATION FEES

THE INK JET ACADEMY
THEORY OF INK JET
- Attendance at all sessions
- Course reference binder
- One lunch
- One reception
- Coffee breaks

Registration fee £745, €1,095, $1,295

UV INK JET PRINTING COURSE
- Attendance at all sessions
- Conference reference binder
- One lunch
- One reception
- Coffee breaks

Registration fee £745, €1,095, $1,295

13th ANNUAL EUROPEAN INK JET PRINTING CONFERENCE
- Attendance at all sessions
- Conference reference binder & CD
- One lunch
- Two receptions
- Coffee breaks

Registration fee £745, €1,095, $1,295

DISCOUNTS

A discount of £70, €100, or $120 is given for the second and subsequent registrants from the same company for the same course or conference when registered as a group. For each additional course or conference we offer a registrant a £70, €100, or $120 discount. You are only elegible for one discount per person.

BOOKING POLICY

Cancellations will receive a 100% refund if made 72 hours prior to the start of the conference. Substitutions may be made at any time.

HOW TO REGISTER

1 Please register on-line via our web site - www.imieurope.com
We will check availability, and fax and mail to you your registration information and an invoice with details of how, when and where to pay.

2 Alternately fill in the form below (copy it first if you wish to register more than one person), and fax it to:
Christine Reed at IMI Europe, Cambridge, UK - Fax: +44 1223 235901

I wish to pay in the following currency: UK £ ☐ Euro € ☐ US $ ☐

Hotel reservations and charges are the responsibility of each conference registrant - For details see previous page
Special rates are available up to October 7th 2005

REGISTRATION FORM

Conferences or Course required - indicate below

INK JET ACADEMY	☐	£ 745	€ 1,095
UV INK JET COURSE	☐	£ 745	€ 1,095
13th EUROPEAN INK JET CONFERENCE	☐	£ 745	€ 1,095
Discount for multiple courses or registrants		£ 70	€ 100

NAME ..... JOB TITLE .....

COMPANY .....

ADDRESS .....

CITY ..... POSTCODE ..... COUNTRY .....

PHONE ..... FAX: .....

EMAIL .....

IMI Europe, Manor Farm, Milton Road, Impington, Cambridge, CB4 9NF, UK
Tel: +44 1223 236920 Fax: +44 1223 235901 email: christine@imieurope.com