

32nd International Conference on Digital Printing Technologies (NIP)

Printing for Fabrication

Materials, Applications, and Processes

September 12 - 16, 2016
Manchester, United Kingdom

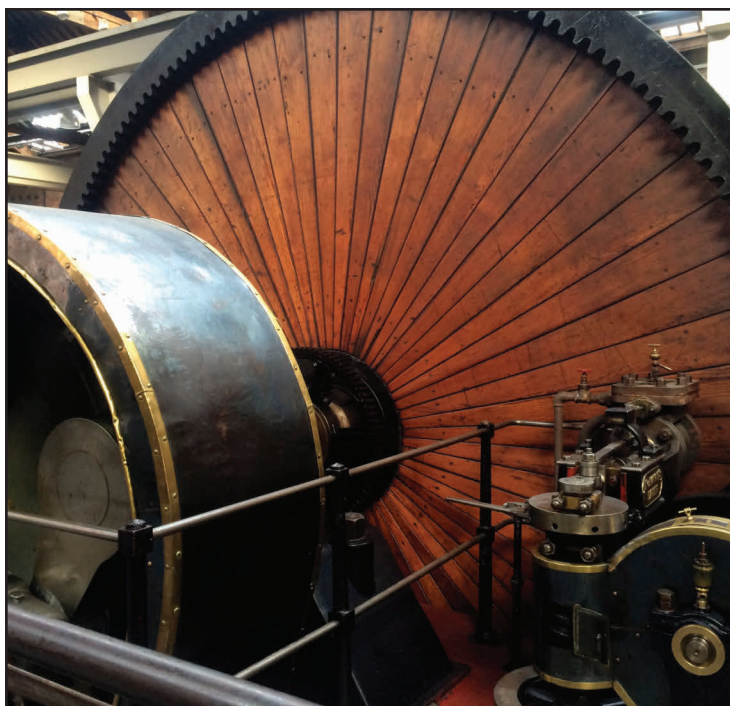


Photo: Suzanne E. Grinnan

General Chair: Brian Derby, University of Manchester

Abstract Deadline: **March 15, 2016**

Accepted Papers Deadline: **June 22, 2016**

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Society for Imaging Science and Technology (IS&T) and the
Imaging Society of Japan (ISJ)

Printing for Fabrication

Print-based fabrication, functional materials, and applications - Writing the next chapter

The printing industry continues to move forward. Familiar digital printing technologies such as inkjet and electrophotography continue to advance, particularly in the area of high-speed and single-pass output. New applications mean print quality, color science, image processing, and workflow continue to be active areas for improvement. At the same time, technologies that extend beyond marks on paper are playing an increasingly important role in redefining definitions of what it means to print something.

Printing for fabrication—essentially adapting traditional printing technologies to produce and manufacture functional two- and three-dimensional functionality for a wide range of applications from packaging to bio-mechanisms is an increasing focus of R&D. These new printing modalities are poised to become the disruptive technologies of future manufacturing.

Advances in nanotechnology and material science are a critical component in this transition. Both play a significant role in advancing graphics printing with the introduction of new toners, inks, and substrates, as well as the facilitation of the new additive manufacturing and bio fabrication technologies such as high-performance electronic and photovoltaic devices, highly-sensitive chemical and biological sensors, and even biological materials and structures. These changes may be the catalyst for a new industrial revolution.

Like the printing industry, the IS&T Printing conference continues to evolve. The traditional NIP and Digital Fabrication communities have routinely shared and

repurposed new ideas and concepts, exploiting the synergy between delegates. As “Printing for Fabrication” this journey continues, bringing together printing ecosystem practitioners—academics, researchers, developers, manufacturers, distributors—to a location beyond North America. This 32nd meeting takes place on the campus of the University of Manchester in the United Kingdom. With a strong UK community and academic presence in this field, and proximity to the wider European community, this will be a fascinating meeting.

This conference also brings a new initiative. For the first time the meeting will host the IS&T International Symposium on Technologies for Digital Print Fulfillment (TDPF). TDPF 2016 will join with The Royal Photographic Society to offer sessions on photo-books, other applications, and the technologies that drive the digital photography ecosystem, from capture to fulfillment.

We want to hear from you. If you have ideas for industry or academic lab tours, please contact us. Finally, if you would like to serve as a paper reviewer, session chair, or contribute in some other capacity, we welcome your participation. Feel free to contact the conference committee at NIP@imaging.org.

Come join us in Manchester and be part of the next wave of the future of printing!

*—General Chair Brian Derby and
Executive Program Chair James Stasiak*

Keep up-to-date on the details of these meetings! Join the NIP (Digital Printing)/Digital Fabrication Conference Group on LinkedIn!

SUBMISSIONS IN THE FOLLOWING AREAS ARE ENCOURAGED:

Printing and Fabrication Principles and Processes

- Hybrid Technologies
- Laser Imaging and Patterning
- Aerosol-based Processes
- Finishing and Converting
- Metrology Tools for Digital Printing Processes
- Performance of Print Products (quality, robustness, permanence, functionality)
- Single-pass Printing
- Toner-based Processes
- Inkjet-based Processes
- Thermal Printing

Applications

- 3D Printing/Additive Manufacturing
- Industrial Digital Printing
- Bio-Printing
- Large Area Electronics – organic and inorganic printed materials
- Electronic Paper and Paper-like Displays
- Smart Packaging & Internet of Things
- Security Printing
- Textile Printing – graphics and wearable smart devices

Physics and Chemistry of Materials

- 2D materials such as graphene, phosphorene, molybdenum disulfate (MoS_2), and tungsten diselenide (WSe_2)
- Colloids and Colloidal Suspensions (toner, particles, ink formulation, functionality)
- Substrates for Print Processes (paper, plastics, textiles, ceramics, glass)
- Ink-Substrate Interactions
- Process Materials – Machine Interactions
- Metrology for Printed Materials
- Environmental Sustainability

Lab2Fab

- Design/Build of Digital Production Machines
- Standardization

Workflow

- Printing Services and Solutions
- RIP and Pre-Press Solutions; CAM for Digital Production
- Printing Systems Optimization
- Custom Printing and Print Ordering

Short Courses and Workshops

The conference offers an extensive array of 2- to 4-hour short courses and workshops taught or organized by world-renowned experts on a wide range of subjects related to digital printing technologies.

Past classes have included: *Introduction to Digital Fabrication*, *Printed Electronics*, *Printing of Biomaterials*, *Industrial Ink Jet Technology for Printing and Fabrication*, and *Role of Ink Jet in Commercial and Industrial Printing*. In addition to course proposals, we are looking for instructors/experts to offer location-based and application/industry-focused classes or workshops. We are also looking for classes with a hands-on, practical nature, and/or untraditional format.

Short courses are published in the Preliminary Program. Those interested in offering a workshop or course should send a proposal to NIP@imaging.org by March 6, 2016.

Late Breaking News & Trends Session

A favorite of attendees, this session held at the end of the week, compiles recent success stories on the implementation of digital printing applications into manufacturing lines. Every new successful implementation strengthens the standing of our community and the general perception of digital fabrication. We encourage you to present your success story. Please, contact NIP@imaging.org to do so.

Exhibition Opportunity

A highlight of the conference, the exhibit features industry-leading companies and their state-of-the-art printing products and applications, including materials, inks/toners, papers, films, textiles, and test equipment. The exhibit runs September 13-14. Early exhibitor registration rates are in effect until June 1, 2016. Contact Donna Smith (dsmith@imaging.org).

How to Submit

Submission Deadline: March 15, 2016

Please read the submission criteria carefully as it has changed from last year.

Option 1: Journal of Imaging Science and Technology Focused Section Submission—submit via jist.msubmit.net (NOTE: All papers submitted via Option #1 will automatically also be submitted to the conference program committee for review per Option #2.)

Submit a complete JIST manuscript of original work in the related science and/or technology to the web address noted above; under manuscript type, select: *Focused Section—Printing for Fabrication*. Prior to submission, pay close attention to the Author Guidelines for Conference Focused Sections, found at www.imaging.org/ist/pdfs/JIST_Conference_Focused_Section_Guidelines.pdf. Authors will be notified by late April. Accepted papers will be included in the conference oral presentation program. Rejected papers will still be eligible for Option #2 and do not need to be resubmitted.

Option 2: Conference Paper Submission—submit via www.imaging.org/manchester

Submit a technical paper representing original work in the science and/or technology related to digital printing or fabrication, to the conference paper web address noted above. Submissions should be based on the template provided and must include an extended abstract of approximately 500 words, clearly stating the technical content of the paper, the methods, and conclusions; if appropriate, emphasize what is new compared to previously presented/published results. You will be asked to indicate your preference for giving an oral or an interactive paper. Abstracts are peer-reviewed; authors will be notified in late April 2016 as to acceptance. Accepted papers (4-6 pages in length) are published in the conference proceedings. **Papers are due in electronic form by June 22, 2016.** Direct submission inquiries to Diana Gonzalez at 703/642-9090, NIP@imaging.org.

Special Topic Sessions

Following on the highly successful Special Sessions on Digital Biology (2013), 3D Printing (2014), and Nano-printing (2015), the 2016 conference will feature special sessions on **the integration of 2D electronic materials into functional devices**. There will also be a session focused on **recent advances in the development and implementation of novel printable and programmable materials in 1-, 2-, and 3D**, as well as on **single-pass printing**. We invite papers in these areas.

Keynote Presentations

Keynote presentations given by leaders in the industry and related scientific fields are a highlight of the conference. These talks provide attendees with broader context on industry-wide issues, important technical achievements, and/or international market trends. The 2016 keynotes will focus on the special topics noted above, as well as the development of new techniques for traditional processes.

University Tours and Interaction

Tours of the Fabrication and Material Science facilities at the University of Manchester are planned for Friday afternoon. We are also working to arrange tours and other interactions with the UK National Graphene Institute.

European Location

This year's conference will highlight research projects in the UK and Europe, as well as an exhibition featuring relevant European industry partners, as a way to encourage regional and international business relationships.

Collocation with TDPF

IS&T and The Royal Photographic Society are joining to present the seventh International Symposium on Technologies for Digital Photo Fulfillment (TDPF). TDPF 2016 will have a special session on photobooks, as well as look at the technologies that drive the digital photography ecosystem, from capture to fulfillment. Plans are being made to tour local photographic archives.

The Venue

Manchester, United Kingdom

The 2016 European City of Science hosts the 32nd in IS&T's series of digital printing and digital fabrication conferences.

Manchester has a rich history steeped in innovation—much of it originated with the processing of raw cotton and the production of cotton goods during the industrial revolution. The engineering firms that initially made machines for the cotton trade, diversified into general manufacturing, as did the chemical industry, which began by producing bleaches and dyes before expanding into other areas. A natural outgrowth of this commercialization was the establishment of university and college programs that advanced science, engineering, and invention. As such, Manchester can lay claim to 25 Nobel prize laureates, including Niels Bohr, James Chadwick, Ernest Rutherford, and Andre Geim and Konstantin Novoselov, for groundbreaking experiments regarding the two-dimensional material graphene. This sense of innovation and ingenuity continues to this day, making Manchester a dynamic and interesting city to visit.

Manchester Airport offers more than 200 direct flights, including from Amsterdam, Atlanta, Barcelona, Beijing (starting 2016), Berlin, Brussels, Chicago, Dubai, Frankfurt, Geneva, Hong Kong, London, New York, Newark, Paris, Philadelphia, Singapore, Tel Aviv, Washington DC, and Zurich. The airport is a 20-minute train ride from the city center. Manchester is a two hour train ride from London, with four trains per hour.

All technical sessions will take place at the University of Manchester, with social and auxiliary events occurring at interesting locations around the city.

Conference Committee as of December 2015

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Printing for Fabrication: Manchester, UK



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