

29 SEPT – 2 OCT 2019 • SAN FRANCISCO, CA

NIP/DIGITAL

DIGITAL

# Printing for Fabrication 2019

*materials, applications, and processes*



CALL FOR PAPERS



[www.imaging.org/print4fab](http://www.imaging.org/print4fab)

Paper Abstract Deadline: **April 21, 2019**

Accepted Papers Manuscript Deadline: **July 15, 2019**

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

Photo: San Francisco Travel Association—Can Balcioglu.

## Explore and Shape the Technical Boundaries of the Print Eco-System

The digitalization of our world is in full swing and printing technologies are a vital part of this transformation due to their role in customized supply chains. *Not only is printing extending out of its classic habitat to produce breath-taking color on products, but it strongly enables the incorporation of electrical, optical, and mechanical functionalities into the manufacturing of industrial products.* Printing processes and systems approaches are now being used to build multi-functional 3D objects and enhance sensitivity in healthcare applications.

Printing for Fabrication gives attendees the chance to *look closer at the transformative innovations in the print eco-system*, from printing techniques and their physics to evolutions in print machinery for 2D and 3D printing to advances in printing materials, quantitative measurement, and modeling, as well as all the applications enabled by the interplay of all these fields.

This conference offers a variety of ways to broaden your perspective on printing with technical presentations and short courses, an exhibit, demonstration session, and many networking events.

*Join academics, researchers, developers, manufacturers, and distributors who work in this cross-functional world to exchange findings and ideas that support the development and success of printing techniques.* Your thoughts on how to build a better and more comprehensive/profound conference are welcome. Contact the committee at [print4fab@imaging.org](mailto:print4fab@imaging.org).

Come to San Francisco and be part of the next wave of innovations in the print eco-system.

— General Chair Ingo Reinhold and Executive Program Chair Teruaki Mitsuya

## How to Submit

Prospective authors are encouraged to review all the details on the conference website.

### Option 1: *Journal of Imaging Science and Technology* JIST-first Submission—submit via [jst.msubmit.com](http://jst.msubmit.com) **Submission Deadline: March 10, 2019**

Submit a complete JIST manuscript of original work to the website above; under manuscript Type/Focused Sections, select JIST-first—Printing for Fabrication 2019. Before submitting, please review the Author Guidelines at [www.imaging.org/JIST](http://www.imaging.org/JIST). Authors will be notified by late May as to their status. Accepted papers are included in the conference program as a JIST reprint. Upon acceptance, at least one author must register for the conference at the full registration fee and pay JIST page charges reduced by 50%. Rejected papers are converted automatically to a Conference Paper submission and sent to the program committee for review.

### Option 2: *Conference Paper or Talk Submission* **Submission Deadline: April 21, 2019**

Details on how to submit an abstract for a technical paper or talk representing original work can be found at [www.imaging.org/print4fab](http://www.imaging.org/print4fab). 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 (poster) paper, as well as whether you plan to submit a proceedings paper or do a presentation-only. Abstracts are peer-reviewed on a rolling basis; authors will be notified in mid-May as to their acceptance. Accepted papers are published in the conference proceedings. **Final papers are due in electronic format by July 15, 2019.** Direct submission inquiries to Katrina Bird at 703/642-9090 or [print4fab@imaging.org](mailto:print4fab@imaging.org).

## CONFERENCE TOPICS

### Fundamental Science and Technology of Printing Systems

- Inkjet-based, toner-based, and hybrid processes
- Print machinery and systems for 2D and 3D printing
- Material science for enhanced colloids and colloidal suspensions
- Post-print processing (drying, curing, sintering)
- Print-process modelling
- Raster image processing (RIP), pre-press solutions, and CAM for printed production
- Inline and offline metrology tools for quality control and performance
- Color science
- Standardization of materials and processes

### Printing Materials and Material Interaction

- Chemistry of ink (UV, aqueous, solvent)
- Chemistry of primers and pre-coats
- Material-machine interactions and processes
- Substrates for print processes
- Ink-substrate interactions
- Environmental sustainability

### 3D Printing

- Advances in material properties and throughput of 3D printing processes
- 3D metal printing and fabrication
- Functionality formation in 3D printing
- Combinatorial materials science using digital printing technologies
- Computational fabrication
- Legal, liability, and industry issues in 3D printing and additive manufacturing

### Digital Packaging

- Digital printing on foils and corrugated
- Digital finishing and converting
- Digitalization of packaging for IOT

### Printed Electronic Functionalities

- Printing-based large area electronics (displays, photovoltaics, PCBs)
- Printable conductors, semiconductors, and insulators
- Stretchable and flexible electronics
- Printing for energy applications: harvesting, storage, and conversion (solar, power generators, batteries, capacitors)

- Printing of soft-robotics (electronic skin, tactile sensors, etc.)

### Printing for Textiles and Nonwovens

- Fabric design printing
- Technical textile processing by printing
- Smart wearables and functionalities integration
- Smart wearables for health monitor applications

### Inkjet Printing onto Non-flat Objects

- Printing using robotics in industrial applications
- Printed functionalities integration on wallpapers, décor papers, and laminates
- Advanced digital wallpaper printing
- Laminate décor paper printing

### Printing of Biological Materials and Pharmaceuticals

- Bio-printing techniques
- Hydrogels and living cell ink formulations for bio applications
- Biomedical engineering
- Tissue modeling and biological surface modification
- Characterization of bio-printed objects
- 2D and 3D pharmaceutical printing

### Security Printing

- Materials
- Workflows
- Manufacturing
- Variable data printing

### Exhibition/Demonstration Session

The exhibit features industry-leading companies and their state-of-the-art products and applications, including materials, inks/toners, papers, films, textiles, and test equipment. The Demo Session allows authors and companies to showcase work related to presented papers.

The exhibit runs Oct 1-2; the Demo Session is Oct 2. Early exhibitor registration rates are in effect until June 14, 2019. For information, contact Donna Smith (dsmith@imaging.org).

## SPECIAL EVENTS/OPPORTUNITIES

### 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. Send suggestions for keynote talks to [print4fab@imaging.org](mailto:print4fab@imaging.org).

### Frontiers in Imaging: Digital Printing for Fabrication

#### Special One-day Event

A full day of invited talks around current state-of-the-art, pressing problems, and emerging applications in digital printing for fabrication will be held Wednesday October 2. The day will also feature the Interactive (Poster) Paper Session, Exhibits, the Demonstration Session, and the Printing Research Showcase (see below). Ideas for topics and speakers are welcome. Contact [print4fab@imaging.org](mailto:print4fab@imaging.org).

#### Bring a Paper/Show a Product:

### Printing Research Showcase for Students and Young Researchers

Did you present a paper at another conference on a topic related to Printing for Fabrication that you would like to discuss with our attendees? Do you have a program/product you've developed that our attendees should see? We're offering the opportunity for you to do that on Wednesday October 2 during the Interactive (Poster) Paper and Demonstration Session. Interested parties should send an email to [print4fab@imaging.org](mailto:print4fab@imaging.org) using the subject line "Research Showcase" .

### Student/Young Professional Event

Monday evening students and young (or young-at-heart) professionals get together for a fun activity. Past outings have included bowling, pool, vintage video arcade games, darts, and pub crawls. Join colleagues for an evening of fun. It's a great way to get to know others at the conference!

### Colleague Connections

Interested in organizing discussion session around a particular topic? We offer opportunities for such interactions throughout the week. Send questions, ideas, and proposals for Colleague Connection sessions to [print4fab@imaging.org](mailto:print4fab@imaging.org).

### Late Breaking News

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. We encourage you to present your success story by contacting [print4fab@imaging.org](mailto:print4fab@imaging.org).

### Call for Short Courses

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

Past classes have included: *Role of Inkjet in Commercial and Industrial Printing Applications*; *Digital Textile Printing: Applications, Markets, and Technology*; *Industrial Inkjet: Applications, Challenges, and Considerations*; and *Adapting Functional Materials for Ink Jet Deposition*. 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 open to classes with a hands-on, practical nature, and/or non-traditional format.

Short Courses are published in the Preliminary Program. Those interested in offering a workshop or course should send a proposal to [print4fab@imaging.org](mailto:print4fab@imaging.org) by **March 14, 2019**.



## The Venue

### San Francisco, California

Parc 55 (a Hilton Hotel) just off San Francisco's famous Union Square hosts Printing for Fabrication 2019 (NIP35). Located less than 500 feet/2 minutes from the Powell Street BART (metro) Station, the hotel is ideally situated for exploring this hilly peninsula city. Surrounded by the Pacific Ocean and San Francisco Bay, the city is known for its year-round fog, iconic Golden Gate Bridge, cable cars, colorful Victorian houses, proximity to California's Silicon Valley, eclectic dining establishments, and quality museums.



Photo: San Francisco Travel Association—  
Scott Chernis.

Air Transportation choices include San Francisco and Oakland International Airports (SFO and OAK, respectively). Both are accessible via BART and cost around \$10/one way. Travel time is approximately 30 minutes from SFO and 40 minutes from Oakland.

Make plans now to join us in this lovely city by the Bay in September!

## Conference Committee as of April 4, 2019

### General Chair

Ingo Reinhold, XaarJet Ltd. (Sweden)

### Executive Program Chair

Teruaki Mitsuya, Ricoh Company, Ltd. (Japan)

### Program Chairs

Rich Baker, Integrity Industrial Ink Jet Integration LLC (USA)

Katrina J. Donovan, Dragon Materials, LLC (USA)

Nobuyuki Nakayama, Fuji Xerox Co. Ltd, (Japan)

Dong-Youn Shin, Pukyong National University (South Korea)

Patrick J. Smith, University of Sheffield (UK)

Enrico Sowade, Zschimmer & Schwarz Mohsdorf GmbH & Co KG (Germany)

### Papers Program Committee

Ron Askeland, HP Inc. (USA)

Yashwanth Kumar Bandari, Oak Ridge National Laboratory (USA)

Lutz Engisch, Leipzig University of Applied Sciences (Germany)

Masahiko Fujii, Fuji Xerox Co. Ltd, (Japan)

Ghassan Jabbour, University of Ottawa (Canada)

Atsushi Tomotake, Konica Minolta Inc. (Japan)

### Short Course Chair

Michael Willis, Pivotal Resources, Ltd. (UK)

### Publicity Chairs

Norio Nagayama, Ricoh Company, Ltd. (Japan)

Scott Slomowitz, Caesar Rivise, PC (USA)

### Frontiers in Imaging: Printing for Digital Fabrication Chair

Scott Silence, Corning Inc. (USA)

### Outreach Chairs

Reinhard Baumann, Fraunhofer Institute for Electronic Nano Systems ENAS and Technische Universität Chemnitz (Germany)

Jim Stasiak, HP Inc. (USA)

### Late Breaking Technology News Chair

Werner Zapka, XaarJet Ltd. (Sweden)

### Steering Committee Chair

Alan Hodgson, Alan Hodgson Consulting Ltd. (UK)

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

## Printing for Fabrication 2019: San Francisco, CA

---



Society for Imaging Science and Technology  
7003 Kilworth Lane  
Springfield, VA 22151 USA  
703/642-9090; 703/642-9094 (fax)

[imaging.org](http://imaging.org)



NON-PROFIT ORG.  
US POSTAGE PAID  
Merrifield, VA  
Permit No. 2333