44th International Research Conference of iarigai
Advances in Printing and Media Technology

From printing to manufacturing

Welcome!

Theater “L’Équilibre”, where the welcome reception will take place.

Conference program
Welcome!

Welcome to the major scientific and technical event of the print and media field, the 44th iarigai International Research Conference! Under the general topic of expanding “from printing to manufacturing”, the focus of the conference program will be on functional printing, media developments, and print science. As a participant, you will learn about new research findings and topical observations - information that will benefit both industry and the research community. You will also meet new and old colleagues and you will have the opportunity of networking with experts and industry representatives with different specializations. All this will contribute to the development of our field.

We proudly announce that the conference this year will take place in Fribourg, Switzerland, hosted by the iPrint Institute of the University of Applied Sciences of Western Switzerland. The iarigai Conference on “Advances in Printing and Media Technology” runs from 10th to 13th September. Some program sessions address specifically also industry participants, notably the special high-level keynote session and the panel discussion on Tuesday, 12th September, where distinguished industry leaders discuss the future of print and media towards digital direct manufacturing or production.

We are convinced that the conference days in Fribourg will be instrumental in the international exchange of knowledge between researchers from various fields as well as between research and industry. Thus, we will all be working together for the further development of the print and media industries.

We look forward to meeting you in Fribourg!

With our best regards,

Prof. Fritz Bircher,
Conference Chair
Day 1

Sunday, 10th September 2017

12:00-17:00 Board meeting

18:00 Welcome reception at “L’Équilibre”, Fribourg
Registration start (at the Équilibre)

Day 2

Monday, 11th September 2017

8:30-9:00 Welcome and Coffee
Registration (at the NH Hotel)

09:00-10:30 Opening session

09:00-09:10 Opening of the conference
Anne Blayo, President of iarigai
Fritz Bircher, Conference director

09:10-09:15 Fribourg University of Applied Sciences - Welcome addresses
Jean-Nicolas Aebischer, Director

09:15-09:20 City of Fribourg - Welcome addresses
Thierry Steiert, Mayor

09:20-09:40 Industrial printing - needs for education
Fritz Bircher, iPrint Institute Fribourg

09:40-09:45 Introduction of new members

09:45-10:00 JPMTR - iarigai scientific publishing platform
Gorazd Golob, Editor-in-Chief

10:00-10:30 Invited opening presentation
Digital Direct Manufacturing
Steve Knight, Digital Direct Technologies

10:30-11:00 Coffee break

11:00-12:30 Plenary session 1 - New dimensions of industrial printing
Chair: Fritz Bircher

11:00-11:30 Mouvent™ Cluster - The Base for a printed Printer (keynote presentation)
Piero Pieranzzotti, Mouvent

11:30-12:00 Progress on massive scaling of NanoDrip electrohydrodynamic printing (keynote presentation)
Patrick Galliker, Scrona

12:00-12:30 New Printing Processes - Challenges for Paper Recycling (keynote presentation)
Axel Fischer, INGEDE

12:30-14:00 Lunch
### Session 2 A – Inkjet printing
**Chair:** tbd

14:00-14:25  
**A Model of Inkjet Printing on porous Substrates incorporating Droplet Impact**  
Li Yang, Jianghao Liu and Xianfu Wei

14:25-14:50  
**Ink Jet Matching of Gravure Printed Wood Grain**  
Vinay Anil Turke, Paul Daniel Fleming, Veronika Husovska and Alexandra Pekarovicova

14:50-15:15  
**Waveform Optimization for Piezo Drop on Demand Inkjet Print Heads by Meniscus Motion Analysis**  
Johannes Renner and Fritz Bircher

### Session 2 B – Printing processes
**Chair:** tbd

14:00-14:45  
**Calculation of Mesh Depression due to Squeegee Forces during Screen-Printing Process**  
Gunter Huebner

14:45-15:10  
**On the Measurement of the Pick-up Volume of Anilox Rollers by Fluorescence**  
Felipe Fernandes, Fabio Campanelli and Edgar Dörsam

### Session 3 A – Printed functionality 1
**Chair:** tbd

15:45-16:35  
**Influence of Drying Temperature on Morphology and Conductivity of Silver**  
Vincent Faure, Aurore Denneulin, Yahya Rharbi, Albert Magnin and Anne Blayo

16:35-17:00  
**Inkjet-fabricated Coated Reaction Platform for Colorimetric Glucose Detection**  
Eveliina Jutila, Risto Koivunen, Roger Bollström and Patrick Gane

### Session 3 B – Printing for packaging
**Chair:** tbd

15:45-16:35  
**Investigating Opportunities for 3D Digital Package Prototypes in the Proofing Workflow**  
Amanda Whyte, Natalia Lumby and Reem El Asaleh

16:35-17:00  
**Formulation of a Bio-based and Water-based Ink for Flexography**  
Fanny Bardot, Charles Bouchard, Olivier Tonnoir, Anne Blayo and Gérard Mortha

17:15-18:30  
**General assembly (appointed representatives only)**

18:30-19:15  
**Board meeting (members only)**

---

**Day 3**

**Tuesday, 12th September 2017**

10:15-10:45  
**Coffee break**

10:00-10:30  
**Plenary session 4 – Media**  
**Chair:** tbd

10:00-10:25  
**Title 4 (keynote presentation)**  
NN, Media research institute (tbc)

10:25-10:50  
**Title 5 (keynote presentation)**  
NN, Media company (tbc)

10:50-11:15  
**Canadian Magazine Publishers – State of the ‘App’**  
Christopher Smyth and Caman Fan
<table>
<thead>
<tr>
<th>Time</th>
<th>Session A - Printing Inks</th>
<th>Session B - Print quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45-12:00</td>
<td>Chair: tbd</td>
<td>Chair: tbd</td>
</tr>
</tbody>
</table>
| 10:45-11:10  | Predictive Modelling of Demixing and Evaporation from a Roller Nip-distributed Water-in-Ink Thin Film Emulsion using Tack Measurement  
Patrick Gane, Carl-Mikael Tåg and Cathy Ridgway | Special Examination for the Durability of Text Books  
Csaba Horváth |
| 11:10-11:35  | The Yin and Yang of Colors - how to calculate the exact complementary color to a specific chromatic Brand Color  
Michael Abildgaard Pedersen | Quality Testing of Samples from Multi-Layer-Printing Process using the Method of Visual Color Assessment  
Heike Gute, Edgar Dörsam and Hans Martin Sauer |
| 11:35-12:00  | Microscale Halftone Analysis: measurement Framework and Convolution Strategy to differentiate Physical and Optical Dot Gain  
Louis Vallat-Evrard, Lionel Chagas, Raphaël Passas and Nadège Reverdy-Bruas | Quality Control in Job Printing: adaptable Camera Focus using Power Spectrum  
Julian Schäfer, Felipe Femandes and Edgar Dörsam |

<table>
<thead>
<tr>
<th>Time</th>
<th>Lunch</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:00-13:30</td>
<td>Lunch</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Session A - Printing functionality 2</th>
<th>Session A - Substrates for printing</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:30-14:45</td>
<td>Chair: tbd</td>
<td>Chair: tbd</td>
</tr>
</tbody>
</table>
| 13:30-13:55  | Analyte Separation for Microfluidic Applications by Surface Charge Modified Functional Pigment Coatings  
Risto Koivunen, Evelina Jutila, Roger Bolström and Patrick Gane | The Evaluation of Bio-Based Binders Influence on Offset Print Mottle using GLCM  
Igor Karlovits, Janja Juhant Grkman, David Ravnjak and Gregor Lavrič |
| 13:55-14:20  | A Method to Assess the Cross-Sectional Profile of Fused Deposition Modeling Lines  
Heng Li, Bruce Myers and Shu Chang | Using ISIT as a Probe to establish Critical Roughness – film thickness relationship  
Mika Anttila, Martti Toivakka and Patrick Gane |
| 14:20-14:45  | Cheap Carbon Nanodots obtained from Waste and their use as Luminescent Material for (Water-based) Ink-jet Inks  
Massimo Varisco, Denis Zufferey, Fritz Bircher and Olimpia Mamula Steiner | The Wettability Effect of CMY Water-based Flexographic Printing Inks  
Zuzanna Żołek-Trynowska, Joanna Izdebska-Podsiadły and Mariusz Trynowski |

<table>
<thead>
<tr>
<th>Time</th>
<th>Coffee break</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:45-15:15</td>
<td>Coffee break</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Plenary session 7 - Introduction &amp; panel discussion on digital direct manufacturing</th>
</tr>
</thead>
</table>
| 15:15-15:30  | Chair: Fritz Bircher  
Short introduction representative of packaging printing |
| 15:30-15:45  | Short introduction representative of additive manufacturing |
| 15:45-16:00  | Short introduction representative of printed electronics |
| 16:00-16:15  | Short introduction representative of bioprinting |
| 16:15-17:00  | Panel discussion  
Moderator: Fritz Bircher |
Closing of the conference
Wrap up
Fritz Bircher, Conference director and Anne Blayo, President of iarigai

45th International Research Conference, Warszawa, September 2018
Presentation by the University of Warsaw (Zuzanna Żołek-Tryznowska)

Conference dinner

Day 4
Wednesday, 13th September 2017

Meeting at the NH Hotel
Building of two groups

Group 1
Transfer by shuttle to the Marly Innovation Center (MIC)

09:15-10:15 Visit iPrint Institute
The modern Way of Printing

10:15-10:30 Coffee break (at the MIC)
Transfer by shuttle to the Museum

10:45-11:45 Visit Gutenberg Museum
The ancient Way of Printing

15’ walk back to the NH Hotel

Group 2
15’ walk to the Museum

09:15-10:15 Visit Gutenberg Museum
The ancient Way of Printing

10:15-10:30 Coffee break (at the MIC)
Transfer by shuttle to the MIC

10:45-11:45 Visit iPrint Institute
The modern Way of Printing

15’ walk back to the NH Hotel

Back at the NH Hotel

Trains leaving Fribourg:
- 12h26 in the direction of Geneva (every 30 minutes)
- 12h34 in the direction Bern/Zürich (every 30 minutes)

* Program is subject to changes