



15th European Coating Symposium
September 13-15, 2023



15th European Coating Symposium Program

Wednesday 13th of September 2023

Location: Université Paris Cité, Amphitheatre BUFFON, Buffon building, 15 rue Hélène Brion, 75013 Paris

Also: Amphitheatre DE GENNES, Condorcet building, 4 rue Elsa Morante, 75013 Paris

08:00 - 09:00 Registration (also possible at the drink on September 12th for the pre-Symposium Course, 18:00, same location)

09:00 - 09:15 **Welcome Address**

09:15 - 10:00 **Opening Keynote Lecture**
Lecture Room Buffon

Wet Coating Processes at Saint-Gobain: Products and Industrial Realities

Rémy Deleurence, Saint-Gobain, France

10:00 - 10:45 **Opening Keynote Lecture**
Lecture Room Buffon

How to clean a contaminated surface with a water drop?

Doris Vollmer, Max Planck Institute for Polymer Research, Germany

10:45 - 11:15 **Coffee Break**

11:15 - 12:25 **Parallel Session 1: Material Coating**
Lecture Room Buffon

11:15 - 11:35 **Developing Anode Architectures to Enhance Hydrogen Production in Alkaline Water Electrolysis**

Adarsh Jain (University of Duisburg-Essen & Max Planck Institute for Chemical Energy Conversion, Germany)

11:35 - 11:55 **Development of tuned SOEC electrode by spray coating**

Marijke Jacobs (Flemish Institute for Technological Research, Germany)

Parallel Session 2: Drying and Wetting
Lecture Room De Gennes

Experimental analysis of dynamic menisci in dip coating

Damien Rigutto (von Karman Institute & Université libre de Bruxelles, Belgium)

Contact line dynamics with inertia

Pierre-Brice Bintein (University Paris Cité, France)

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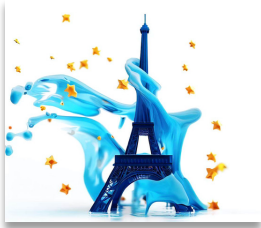
11:55 - 12:15	<p>Sorption and Diffusion Processes in Cathode Active Materials for Lithium-ion Batteries during the production of electrodes</p> <p>Thilo Heckmann (Karlsruhe Institute of Technology, Germany)</p>	<p>The coffee stain on a fiber</p> <p>François Boulogne (CNRS, University Paris Saclay, France)</p>
12:15 - 14:00	Lunch Break (Buffet lunch on site)	
14:00 - 15:40	<p>Parallel Session 3: Drying and Wetting</p> <p>Lecture Room Buffon</p>	<p>Parallel Session 4: Interface Dynamics</p> <p>Lecture Room De Gennes</p>
14:00 - 14:20	<p>Challenges in membrane direct coating in fuel cell production</p> <p>Philipp Quarz (Karlsruhe Institute of Technology, Germany)</p>	<p>Absolute/convective instability threshold for a liquid film over a moving substrate via linear stability analysis</p> <p>Fabio Pino (von Karman Institute & Université libre de Bruxelles, Belgium)</p>
14:20 - 14:40	<p>Particle migration in evaporating alcohol-water bimodal slurry films</p> <p>Masato Yamamura (Kyushu Institute of Technology, Japan)</p>	<p>Bilayer Couette and Film Flow over a Profiled Substrate</p> <p>Markus Scholle (Hochschule Heilbronn, Germany)</p>
14:40 - 15:00	<p>Particle dynamics in coating and drying processes of particulate suspensions</p> <p>Hyun Wook Jung (Korea University, South Korea)</p>	<p>Weakly non-parallel stability of a condensing film flow</p> <p>Simeon Vladimirov Djambov (EPFL, Switzerland)</p>
15:00 - 15:20	<p>The effect of the spatial variation of the evaporative flux on the deposition from a sessile droplet</p> <p>Stephen Wilson (University of Strathclyde, UK)</p>	<p>Condensation-induced self-patterning of a thin clayey layer. Impact on painted caves.</p> <p>Jérôme Martin (CNRS, University Paris Saclay, France)</p>
15:20 - 15:40	<p>Morphology and stability of drops sliding down deformable coatings</p> <p>Laurent Limat (CNRS, University Paris Cité, France)</p>	<p>High and low fidelity models to understand the physics of air-knife coating</p> <p>David Barreiro-Villaverde (University of A Coruña, Spain)</p>
15:40 - 16:10	Coffee Break	
16:10 - 17:00	<p>Poster Session Flash Talks (2 min. Flash Talks + 1 min. Transition)</p> <p>Buffon lecture room</p>	
16:10 - 16:13	<p>Analysis of edge formation in intermittent slot coating process</p> <p>Jee Sanghun (Korea University, South Korea)</p>	
16:13 - 16:16	<p>About the production of catalyst layers for PEM-fuel cells and PEM-electrolysis</p> <p>Philipp Quarz (Karlsruhe Institute of Technology, Germany)</p>	

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16:16 - 16:19	Drying of slurry for manufacturing of battery electrodes: microfluidic studies of binder migration Djibrilla Mounkaila Noma (Laboratoire du Futur, France)
16:19 - 16:22	Investigation of microstructure formation and pore emptying in relation to drying conditions and particle properties Linus Janning (Karlsruhe Institute of Technology, Germany)
16:22 - 16:25	Mass transport through battery electrode coatings during post-drying and humidity management Philipp Barbig (Karlsruhe Institute of Technology, Germany)
16:25 - 16:28	Multi-component drying of electrolyte solvents from porous electrodes and separators for recycling processes of lithium-ion batteries Lukas Loedige (Karlsruhe Institute of Technology, Germany)
16:28 - 16:31	CFD simulation of slot-die coating for single- and multilayered lithium-ion battery electrodes in OpenFOAM Alexander Hoffmann (Karlsruhe Institute of Technology, Germany)
16:31 - 16:34	Data-driven modeling-based design of dual-shim configuration for uniform coating of non-Newtonian liquids in the PEMFC slot coating process Donguk Kim (Korea University, South Korea)
16:34 - 16:37	Multi-stage drying of battery electrodes and comparison of drying process and energy efficiency with NIR and laser energy input Julian Borho (Karlsruhe Institute of Technology, Germany)
16:37 - 16:40	Simulation study on cooperative motion of particles in a quasi-two-dimensional colloidal glass-forming liquid Jinseong Yun (Korea University, South Korea)
16:40 - 16:43	Towards an optimized electrode production - Recent approaches in flexibility and efficiency Kevin Ly (Karlsruhe Institute of Technology, Germany)
16:43 - 16:46	Experimental characterization of the rivulets in a liquid film down an inclined plane Anne Gosset (University of A Coruña, Spain)
16:46 - 16:49	Transient deformation and swelling of paper by aqueous co-solvent solutions Anton Darhuber (Eindhoven University of Technology, Netherlands)
16:49 - 16:52	Quantifying the coating layer shape in finite depth dip coating Jisoo Song (Seoul National University, South Korea)
16:52 - 16:55	Simplified model for stable operating condition of thick-film battery electrode slot coating Jihwan Yoon (Seoul National University, South Korea)
17:00 - 19:30	“Cheese & Wine” Poster Session
19:30	Meeting of the ECS Committee, free evening for the others.

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Thursday 14th of September 2023

Location : Amphitheatres Buffon and De Gennes

09:00 - 09:45	Keynote Lecture Lecture Room Buffon	
	A journey into cosmetic coatings through mascara deposition Odile Sonnevile-Aubrun, L'Oréal R&I, France	
09:45 - 10:30	Keynote Lecture Lecture Room Buffon	
	Cracking, stratification and instabilities in drying of colloidal dispersions Alexander Routh, University of Cambridge, United Kingdom	
10:30 - 11:00	Coffee Break	
11:00 - 12:20	Parallel Session 5: Interface dynamics Lecture Room Buffon	Parallel Session 6: Material Coating Lecture Room De Gennes
11:00 - 11:20	Air Entrapment during Coating of Viscous Fluids Hadj Benkreira (University of Bradford, UK)	Simultaneous multilayer coating for battery electrodes and numerical simulations with model material systems Alexander Hoffmann (Karlsruhe Institute of Technology, Germany)
11:20 - 11:40	Hydrodynamics of Short Curtain Coating Fateh Rabehi (University Paris Cité, France)	Coating thickness analysis in slot coating process of the battery slurry Kyengmin Min (Seoul National University, South Korea)
11:40 - 12:00	Multiscale numerical modeling of antibubbles combining CFD and lubrication approach Omer Atasi (Université libre de Bruxelles, Belgium)	A new concept for an energy- and cost-efficient battery electrode production - Drying investigation of a highly-concentrated granule-based system Kevin Ly (Karlsruhe Institute of Technology, Germany)
12:00 - 12:20	Three-dimensional damping of defects on coating films Anne Gosset (University of A Coruña, Spain)	Cleaning station for slot dies Harald Doell (TSE Troller AG, Switzerland)
12:20 - 14:00	Lunch Break (Buffet lunch on site)	

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14:00 - 15:20	Parallel Session 7: Drying and Wetting Lecture Room Buffon	Parallel Session 8: Printing Technology Lecture Room De Gennes
14:00 - 14:20	Stress and Fracture During the Drying of Aqueous Particulate Coatings Annie Moorhead (University of Minnesota, United States)	Chromatographic Effects in Inkjet Printing Anton Darhuber (Eindhoven University of Technology, Netherlands)
14:20 - 14:40	Mass transport and drying-induced stresses in charged colloidal dispersions Jean-Baptiste Salmon (Laboratoire du Futur, France)	Inkjet printing of surfactant solutions onto thin moving porous media Anton Darhuber (Eindhoven University of Technology, Netherlands)
14:40 - 15:00	Formation of glassy skins in drying polymer solutions François Lequeux (ESPCI, France)	Smart materials by inkjet Muriel Mauron (University of Applied Sciences and Arts Western, Switzerland)
15:00 - 15:20	Coalescence of multiple sessile drops on a substrate Antoine Bouvier (ESPCI, France)	The role of the dispersing agent on latency issues for water-based inkjet inks: drying aspect Amélie Brogly (University Grenoble Alpes, France)
15:20 - 15:50	Coffee Break	
15:50 - 16:50	Parallel Session 9: : Interface dynamics Lecture Room Buffon	Parallel Session 10: Wetting and Drying Lecture Room De Gennes
15:50 - 16:10	Falling films on a slippery wall: a revisited formulation Christian Ruyer-Quil (University Savoie Mont Blanc, France)	Fluid invasion front within a confined copper pillar array for microelectronic Mary-Ann Gasser (CEA, France)
16:10 - 16:30	Falling liquid film subject to a counter-current turbulent gas flow: beyond the absolute instability limit Georg Dietze (University Paris Saclay, France)	Thickness gradients induced by defects in liquid deposition Gabrielle Di Mauro (Saint-Gobain Research Paris, France)
16h30 - 16h50	Modelling thin-film flow over a spinning disk Laura Milne (University of Strathclyde, UK)	Drying liquid coatings with an evaporation mask Laurence Talini (CNRS, Saint-Gobain Research Paris, France)
17:00 - 17:45	Keynote Lecture Lecture Room Buffon	
	Stable and unstable coating flows on curved substrates François Gallaire, Ecole Polytechnique Fédérale de Lausanne, Switzerland	

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17:45 – 18:00

Announcements: ECS2025, ICSTS2024

18:00- 19:45

Rest time before Gala Dinner

19:45 – 23:00

Dinner Cruise on the Seine River – Boat Le Zouave, Company France
Tourisme. Boarding: 19:45 at “Escale de Bercy” banks (see maps on pp 11-12)



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Friday 15th of September 2023

Location: Amphitheatres Buffon and De Gennes

09:15 - 10:00	Keynote Lecture Lecture Room Buffon	
	Wetting flows with viscoelasticity Jacco Snoeijer, University of Twente, The Netherlands	
10:00 - 10:30	Coffee Break	
10:30 - 12:30	Parallel Session 11: Wetting and Drying Lecture Room Buffon	Parallel Session 12: Material Coating Lecture Room De Gennes
10:30 - 10:50	Free surface flows and contact line motions with suspensions Alice Pelosse (University Paris Cité, France)	Effect of gas wiping temperature on coating weight reduction in hot-dip galvanizing on steel strip Hirokazu Kobayashi (JFE Steel Corporation, Japa)
10:50 - 11:10	Delayed coating of a liquid film on a soft substrate in a partially wetted condition Anthony Varlet (University Paris Cité, France)	Film Formation of Lithium-Ion- and Sodium-Ion-Battery Electrodes During Drying: Challenges and Opportunities due to Particle Properties and Process Conditions Julian Klemens (Karlsruhe Institute of Technology, Germany)
11:10 - 11:30	Acoustically-Induced Sinuous-Varicose Coupling in Falling Fluid Rivulets Grégoire Le Lay (University Paris Cité, France)	Structural optimisation of catalyst layers for PEM electrolysis Nadine Zimmerer (Karlsruhe Institute of Technology, Germany)
11:30 - 11:50	Microfluidic study of evaporation through steady colloidal crust Hrishikesh Pingulkar (Laboratoire du Futur, France)	Fabrication of Reduced Graphene Oxide Nanofiltration Membranes by an Integrated Roll-to-Roll (R2R) Process Tequila Harris (Georgia Institute of Technology, United States)
11:50 - 12:10	Capillary flow of evaporating liquid solutions in open rectangular microchannels Kumar Satish (University of Minnesota, United States)	About the pore emptying during drying of water-based battery electrodes David Burger (Karlsruhe Institute of Technology, Germany)
12:10 - 12:30	Optomechanical measurement of single nanodroplet evaporation with millisecond time-resolution Louis Waquier (University Paris Cité, France)	New methods for optimized inline monitoring of the drying process of battery electrodes Jonas Mohacsi (Karlsruhe Institute of Technology, Germany)

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12:30 - 14:00 **Lunch Break (Buffon Restaurant)**

14:00 - 14:40	Parallel Session 13: Interface Dynamics Lecture Room Buffon	Parallel Session 14: Printing Technology Lecture Room De Gennes
14:00 - 14:20	Friction of poroelastic contacts with hydrogel coatings Antoine Chateauminois (ESPCI, France)	Transport and evaporation of aqueous co-solvent mixtures in thin porous media Anton Darhuber (Eindhoven University of Technology, Netherlands)
14:20 - 14:40	Hydrogel films as anti-fog coatings : swelling and debonding Emilie Verneuil (ESPCI, France)	Digital printing of coatings by direct-to-shape inkjet printing with industrial robot Philip Kessler (HEIA-FR, HES-SO University of Applied Sciences and Arts, Western Switzerland)
15:00 - 15:45	Closing Keynote Lecture Lecture Room Buffon Freezing contact line Thomas Séon, CNRS, Sorbonne Université, France	

15:45 - 16:00 Good Bye: Lecture Room Buffon

END OF THE SYMPOSIUM

Venues

12th of September 2023: Pre-Conference Course

Location: Amphi Buffon, Buffon building (RdC), 15 rue Hélène Brion, 75013 Paris

13th of September 2023 - 1st day of the symposium

Locations: Amphi Buffon, same as above, and Amphi De Gennes, Condorcet building (basement), 4 rue Elsa Morante, 75013 Paris

14th of September 2021 - 2nd day of the symposium

Locations: Amphi Buffon and Amphi De Gennes, same as above.

Banquet: Le Zouave Boat, on the Seine River, boarding at "Escales de Bercy", 19H45,

15th of September 2023 - 3rd day of the symposium

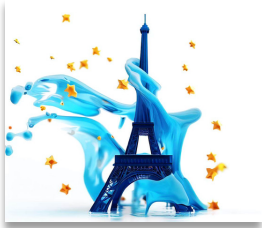
Locations: Amphi Buffon and Amphi De Gennes, same as above

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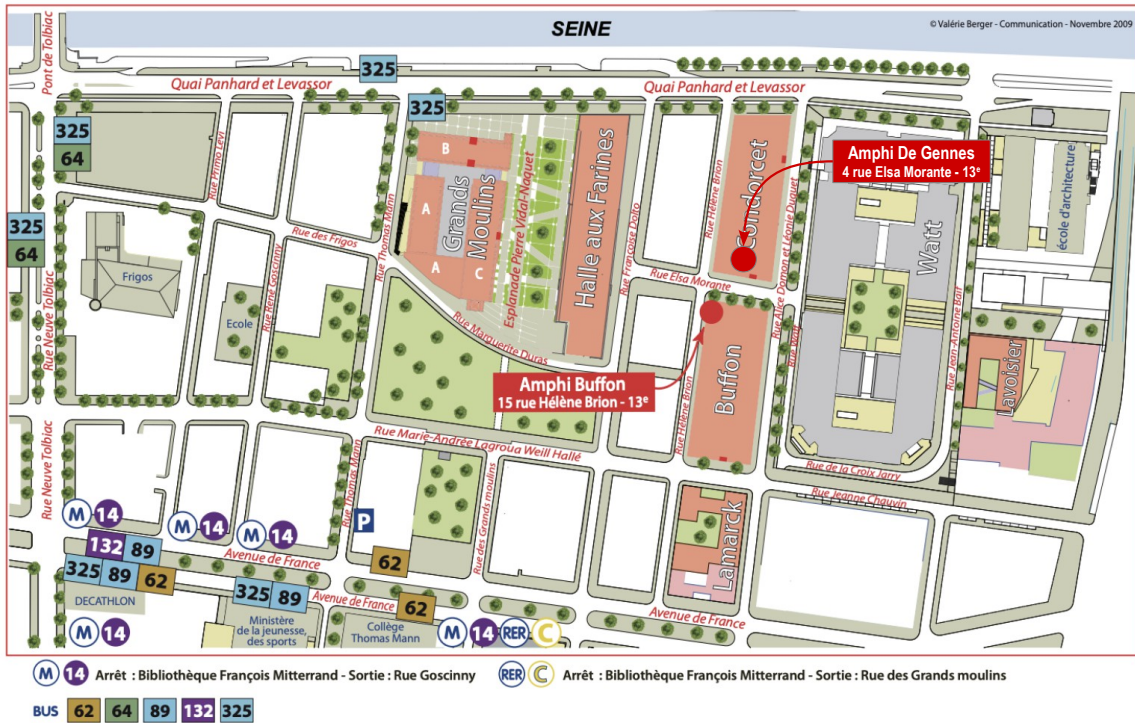


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Campus Maps, with Amphitheatres locations



There are two different sites depending on the sessions.

Amphi Buffon, Buffon building, 15 rue Hélène Brion, 75013 Paris, for all keynote lectures, parallel sessions 1, 3, 5, 7, 9, 11, 13 and poster session.

Amphi de Gennes, Condorcet building (basement), for parallel sessions 2, 4, 6, 8, 10, 12, 14

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WIFI

Wifi at the Université Paris Cité

Eduroam connection is available everywhere at Université Paris Cité.

For those without eduroam, two specific connexions are available:

ssid : up7d

login : coll-sept2023@guest

password : Vq8Qx74J

ssid : up7d

login: congres-esc2023@guest

password: S5tMVjGr

Slides, Posters and Abstracts

For the participants presenting an oral contribution:

We ask you to come with a pdf of powerpoint contribution that you will upload on the meeting computer during the break. If you have very specific animations, it will be possible to use your own laptop, but we request anyone to avoid this as much as possible.

Posters

Poster boards (well adapted to size A1) will be available, including mounting material. Make sure to maintain paragraph clarity by using a font size which can be read at some distance.

- it is recommended that all text be limited to 1/5th of the poster.
- Contact details of the authors must be present.
- The accepted participants shall bring their own posters to the Symposium; no printer will be available at the venue.
- All the posters will be on display for three days starting on 13th of September (see program). The purpose is to allow online participants to attend the poster session.
- Please provide us as early as possible one slide in pdf for the flash poster session (see with Ludovic Pauchard)
- Two prizes of the best posters will be attributed by the ECS Committee.

Book of Abstracts

The book of abstracts and this program will be available online on the meeting site. Paper versions will be given at the on-site registration, with programs and some goodies (see at the desk).

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GALA DINNER on September 14th evening

The simplest path (about 15 minutes walk from the meeting) :

- From Buffon building, take Hélène Brion street up to the Seine River
- Walk along the Seine River, up to Pont de Tolbiac
- Cross the Seine River on Pont de Tolbiac
- Turn left at the bridge exit and walk up to “Escales de Bercy”.



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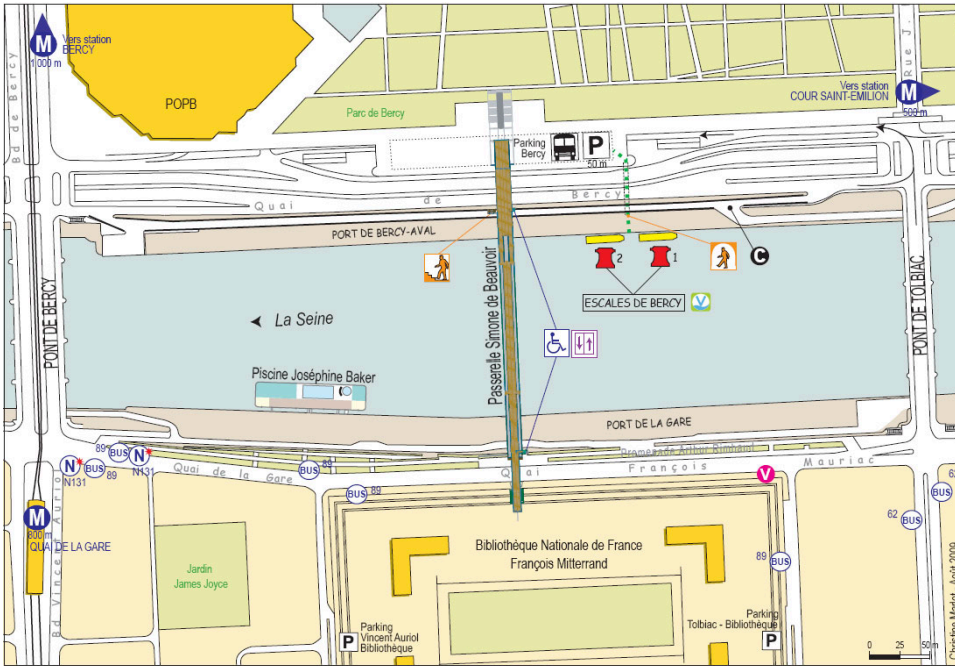


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The goal: Banks “Escalaes de Bercy”, Boat Le ZOUAVE, on 19H45.



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