

May 13-15, 2026

Montréal, Canada | École de Technologie Supérieure



# 3<sup>rd</sup> International Conference on **BIOMATERIALS AND BIOFABRICATION**



# Organizing Committee



**Ali Ahmadi**

Department of Mechanical Engineering  
ÉTS



**Elmira Arab-Tehrany**

LIBio  
Université de Lorraine



**Yupeng Chen**

Biomedical Engineering Department  
University of Connecticut



**Pier Francesco Ferrari**

Department of Evolutionary and  
Functional Biology  
Università di Genova



**Amir Sheikhi**

Department of Chemical Engineering  
Penn State University



**Sophie Lerouge**

Department of Mechanical Engineering  
ÉTS



**Ali Tamayol**

Biomedical Engineering Department  
University of Connecticut

## Student Committee



**Sara Badr**  
ÉTS



**Lisa Dupeyroux**  
ÉTS



**Hanna Hamoud-Michel**  
ÉTS



**Elise Wasmer**  
McGill University

## Message from the Organizers

Dear colleagues,

Welcome to BMBF 2026, hosted at ÉTS in Montréal. This year, ~100 participants come together for a focused, single-track program featuring 2 keynote lectures, 30 invited talks, 30 student presentations (oral and poster), and 3 industry presentations.

The format is designed to encourage discussion, interaction, and exchange across disciplines. We hope it provides a space for meaningful conversations and new collaborations.

We thank our speakers, sponsors, and participants for their contribution to this event.

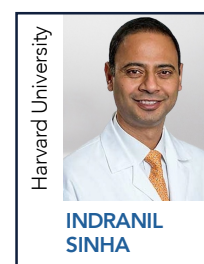
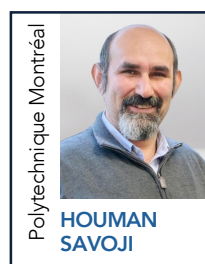
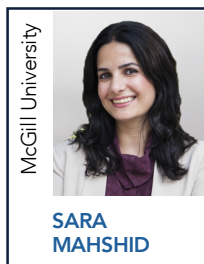
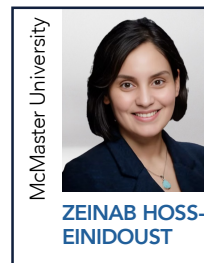
Thank you for being here.  
The BMBF Organizing Committee

# Speakers

## Keynote Speakers



## Invited Speakers



# Program | May 13

<b>MICROFLUIDICS</b> Ali Ahmadi	8:25		<b>Opening Remarks</b>
	8:30	<b>Thomas Gervais</b>	Polytechnique Montreal
	8:55	<b>David Juncker</b>	McGill University
	9:20	<b>Mohammad Qasaimeh</b>	NYU Abu Dhabi
	9:45	<b>Steve Shih</b>	Concordia University
	10:10		<b>Coffee Break</b>
<b>BIOPRINTING 1</b> Elmira Arab-Tehrany	10:30	<b>Sarah Heilshorn (Keynote)</b>	<b>Stanford University</b>
	11:15	<b>Emilio Alarcon</b>	University of Ottawa
	11:40	<b>Matt Kinsella</b>	McGill University
	12:05	<b>Theresa Raimondo</b>	Brown University
		12:30	
<b>BIOMATERIALS 1</b> Sophie Lerouge	13:20		<b>Sponsor Presentation : Puredyne</b>
	13:30	<b>Halima Alem-Marchand</b>	Université de Lorraine
	13:55	<b>Zeinab Hosseinidoust</b>	McMaster University
	14:20	<b>Sara Mahshid</b>	McGill University
	14:45	<b>Xian Wang</b>	Queen's University
	15:10		<b>Coffee Break</b>
<b>STUDENT PRESENTATIONS 1</b> Hanna Hamoud-Michel and Lucas Babis	15:30	<b>Laura Bouret, McGill University</b> <i>Localized Cold Atmospheric Plasma Treatment Following Tumor Resection Improves Outcomes in a Rat Model of Breast Cancer Bone Metastasis</i>	
	15:40	<b>Galareh Ganjikhoo, University of Waterloo</b> <i>Electrospun PCL Mats Integrated with Stiffness-Tunable GelMA Hydrogels for 3D Prostate Cancer Modeling</i>	
	15:50	<b>Kenta Katsumi, McGill University</b> <i>Sol-gel-derived bioactive Sr-substituted calcium borate glasses</i>	
	16:00	<b>Tarek Klaylat, McGill University</b> <i>Biofabrication of Ligament Grafts Using Physioxic Conditioning of hBM-MSC-Seeded Dense Aligned Collagen Gel Scaffolds</i>	
	16:10	<b>Ahad Mohammadi, Université de Montréal</b> <i>Development of a Laser-Based Biopen for In Vivo Printing</i>	
	16:20	<b>Ehsan Niknejad, Université du Québec à Chicoutimi</b> <i>From Passive Dressings to Smart Platforms: Bio-based Nanofibers Patch for pH-Gated Drug Delivery</i>	
	16:30	<b>Noah Pereira, University of Connecticut</b> <i>A Sprayable Laponite-Gelatin Foam for Rapid Hemostasis in Trauma Care</i>	
	16:40	<b>Gaëtan Roudier, McGill University</b> <i>Biomimetic Engineering of the Human Alveolar Basement Membrane Using Multicellular Spheroids</i>	
	16:50	<b>Yitian Zhang, McGill University</b> <i>Developing a Robotic Bioprinter for Reconstructive Esophagectomy Procedures</i>	
		17:00-18:30	

# Program | May 14

<b>BIOSENSING</b> Cyril Kahn	8:30	Maryam Badv	University of Calgary
	8:55	Tohid Didar	McMaster University
	9:20	Carlos Escobedo	Queen's University
	9:45	Mahla Poudineh	University of Waterloo
	10:10		Coffee Break
<b>BIOPRINTING 2</b> Ali Tamayol	10:30	<b>Ritu Raman (Keynote)</b>	MIT
	11:15	Hamid Akbarzadeh	McGill University
	11:40	Marc-André Fortin	Université Laval
	12:05	Houman Savoji	Polytechnique Montréal
	12:30		Lunch Break
<b>BIOMATERIALS 2</b> Hossein Ravahbakhsh	13:20		Sponsor Presentation : Rheolution
	13:30		Sponsor Presentation : Axelys
	13:40	Yupeng Chen	University of Connecticut
	14:05	Emmanuel Everaert	Oleon
	14:30	Sophie Lerouge	École de Technologie Supérieure
	14:55	Mohammadmahdi Samandari	Old Dominion University
	15:20		Coffee Break
<b>STUDENT PRESENTATIONS 2</b> Sara Badr and Noah Pereira	15:40	<b>Bashar Al Hakeem, McGill University</b> <i>Mussel-Inspired [HA]-Rich Peptides as pH-Reversible, Metal Tunable and Self-Assembling Hydrogels</i>	
	15:50	<b>Lucas Babis, Université de Lorraine</b> <i>3D printed gut-on-chip drug discovery platform</i>	
	16:00	<b>Bao-Toan Dang, University of Connecticut</b> <i>DNA-Inspired Nanopieces For Therapeutic mRNA Delivery Potentiate Antitumor Immunity in Sarcoma: From Earth to Space</i>	
	16:10	<b>Mohammed Hafiz, University of Nebraska</b> <i>Fibroblast-Mediated Matrix Remodeling Drives Mechanical Stiffening and Tumor Invasion in a Tunable 3D Lung Microenvironment</i>	
	16:20	<b>Arman Jafari, McGill University</b> <i>High-Resolution Fabrication of Human-Sized Tissue-Engineered Heart Valves Using a Novel DLP-Printable Hybrid Bioink</i>	
	16:30	<b>Pedro Leardin Silveira, Université de Lorraine</b> <i>Engineering Omega-3 Nanoliposomes for Controlled Intracellular Mobility in Neurons</i>	
	16:40	<b>Abbaleigh Wikston, McGill University</b> <i>From Freshwater Invasion to Biomaterial Inspiration: Proteinaceous Fiber Fabrication by Zebra and Quagga Mussels</i>	
	16:50	<b>Jin Zhai, University of Connecticut</b> <i>Co-delivery of small molecules and siRNA via Janus Based Nanopieces for Solid Tumor Treatment</i>	

# Program | May 15

<b>BIOPRINTING 3</b> Yupeng Chen	8:30	<b>Elmira Arab-Tehrany</b>	Université de Lorraine
	8:55	<b>Derek Rosenzweig</b>	McGill University
	9:20	<b>Indranil Sinha</b>	Harvard Medical School
	9:45	<b>Ali Tamayol</b>	University of Connecticut
	10:10		Coffee Break
<b>BIOPRINTING 4</b> Derek Rosenzweig	10:25	<b>Cyril Kahn</b>	Université de Lorraine
	10:50	<b>Hossein Ravanbakhsh</b>	University of Akron
	11:15	<b>Ali Ahmadi</b>	École de Technologie Supérieure
	11:40		Coffee Break
	11:55	<b>Yann Bami Chatenet, École de Technologie Supérieure</b> <i>Encapsulation of mesenchymal stromal cells in chitosan-gelatin injectable microcarriers via an oil-free inverse-gelation process</i>	
	12:05	<b>Salem Feddag, Université de Montréal</b> <i>A 3D-Printed Microfluidic Platform with Composite Hydrogel Matrix for In Vitro Modeling of Arteriovenous Malformations</i>	
<b>STUDENT PRESENTATIONS 3</b> Elie Daoust and Lisa Dupeyroux	12:15	<b>Joyce Jang, McGill University</b> <i>Effects of Hypoxic Conditions on Angiogenesis in Vascularized Chips</i>	
	12:25	<b>Abdolali Mehrjou, Concordia University</b> <i>A Biocompatible, Thermo-Responsive Gelatin Valve for Sequential Fluid Control in Microfluidic Paper-Based Analytical Devices</i>	
	12:35	<b>Hamideh Rezvani Alanagh, McGill University</b> <i>From Sea to Tree: Protein Mussel Condensates Orchestrate Hierarchical Cellulose Assembly for Porous Biomaterial Fabrication</i>	
	12:45	<b>Shiva Salari-Joubani, École de Technologie Supérieure</b> <i>Development of pectin-albumin foam-based inks for 3D printing of drug delivery systems</i>	
	12:55		Closing Remarks

# Poster Session

POSTER SESSION  
May 13

17:00-18:30

**Laura Bouret, McGill University**

*A Bioprinted Bone-Mimetic Co-Culture Platform to Study Tumor Organization and Response to Cold Plasma Treatment*

**Maryam Hosseini, Université du Québec à Chicoutimi**

*Multifunctional Stimuli-Responsive Bio-Platform via Synergistic Incorporation of Microalgal Phytochemicals and Metal Ions in Chitosan-based Scaffolds*

**Pakshid Hosseinzadeh, Université de Montréal**

*In situ gelling hydrogel scaffold with dual macroporosity for T cell cancer immunotherapy*

**Noor Madhoun, McGill University**

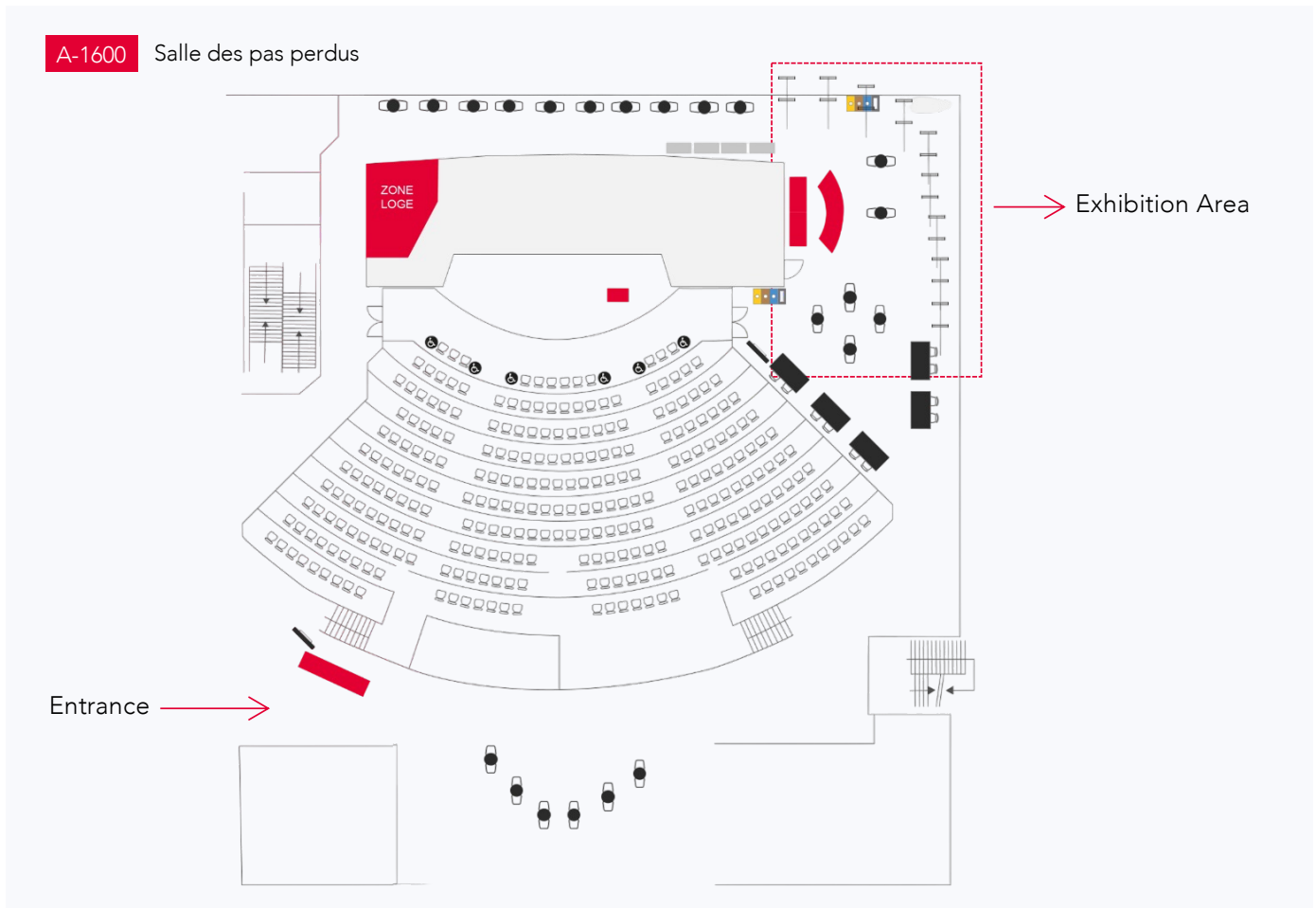
*Inducing alignment of organized M13 bacteriophage structures for phage-templated films with enhanced conductivity for electro-chemical and electrical devices*

**Maryam Moosavi, Université du Québec à Chicoutimi**

*Tailoring the Hydrophilic/Hydrophobic Balance of High-Molecular-Weight PHBV Films for Controlled Release in Bio-Interface Applications*

**Alfredo Moreno Olmedo, McGill University**

*Development of Alginate-Polydopamine Microcarriers for Bioreactor Expansion of Human Bronchial Epithelial Cells*



## **EXTRUSION-BASED BIOPRINTING**

### **SIMPLY PROGRESSIVE. USABLE. PURE.**

#### **PUREDYNE® Kit B:**

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- Resolution capability:  $< 200 \mu\text{m}$  line width
- Programmable suck-back for precise start and end points

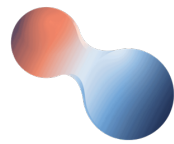
#### **Puredyne Temperature Control B5:**

- Add-on module for the Puredyne cap b5 print head
- Adjustable temperature range: 39–104 °F (4–40 °C)
- Solid-state thermoelectric Peltier element with PID controller
- Integrated fan — airflow directed upward, no influence on prints
- Optical level indicator with viewing slot
- Ensures optimal cell survival conditions throughout the process
- Ideal for temperature-sensitive biomaterials

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- Double-sided Luer-Lock connection for cartridge and dispensing needle
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# Transforming ideas from public research into innovations



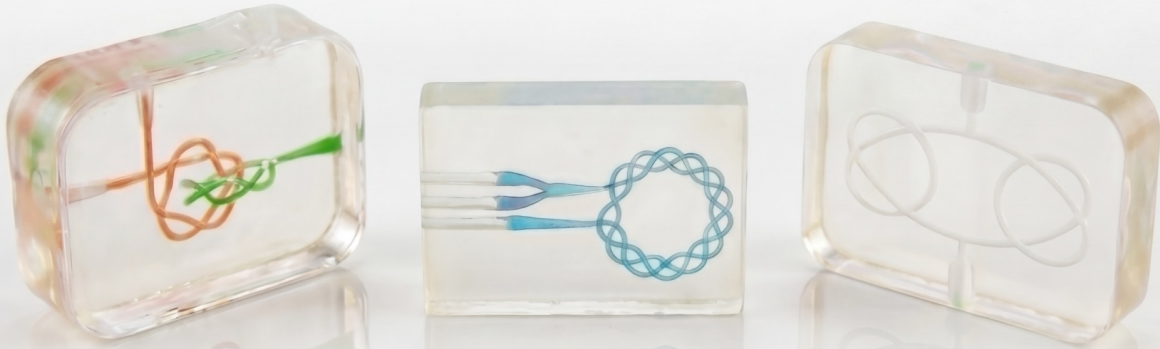
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Advanced 3D culture and controlled perfusion environments for engineered tissues and organoids, built for predictive, scalable drug screening.

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**BEYOND ANIMAL MODELS**

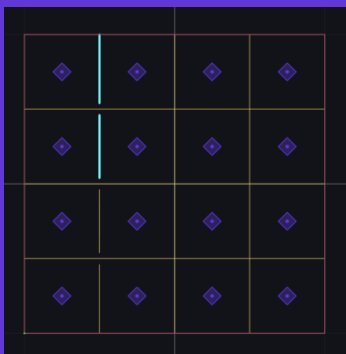
10+ years of vascular research



# Aster Biofab

## Accelerating the Transition Away from Animal Models

### Aster BioSlicer

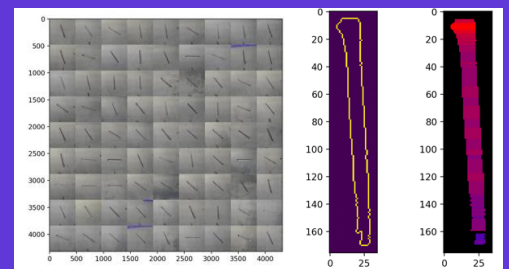


Full control over paths and parameters.

Natural language models compatible

Hardware agnostic

### Helianthus Module



Automated Printability Analysis

# Program at a Glance

WEDNESDAY   May 13	8:25	Opening Remarks	
	8:30	Microfluidics	Session Chair: Ali Ahmadi
	10:10	Coffee Break	
	10:30	Bioprinting 1	Session Chair: Elmira Arab-Tehrany
	12:30	Lunch Break	
	13:20	Sponsor Presentation: Puredyne	
	13:30	Biomaterials 1	Session Chair: Sophie Lerouge
	15:10	Coffee Break	
	15:30	Student Presentations 1	
	17:00 -18:30		Poster Session & Social Mixer
THURSDAY   May 14	8:30	Biosensing	Session Chair: Cyril Kahn
	10:10	Coffee Break	
	10:30	Bioprinting 2	Session Chair: Ali Tamayol
	12:30	Lunch Break	
	13:20	Sponsor Presentation: Rheolution	
	13:30	Sponsor Presentation: Axelys	
	13:40	Biomaterials 2	Session Chair: Hossein Ravanbakhsh
	15:20	Coffee Break	
	15:40	Student Presentations 2	
	FRIDAY   May 15	8:30	Bioprinting 3
10:10		Coffee Break	
10:30		Bioprinting 4	Session Chair: Derek Rosenzweig
11:40		Coffee Break	
11:55		Student Presentations 3	
12:55		Closing Remarks	

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