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Program

April 14-15, 2026

Centre PHI, Old-Montreal, Quebec, Canada

Ad+PECS²⁶

Advanced Manufacturing and Additive Printed Electronics Canadian Summit 2026

900-26-006 - 2026-04-16

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MARIO LECLERC GRANT DEPARTMENT OF CHEMISTRY



8:00 - 9:00 Registration and Breakfast

9:00 - 9:15 Welcome and Introduction, Day 1 - Presentation of ICI



Mirko Torres, Interim General Manager, Printability and Graphic Communications Institute (ICI)

The Institut is a non-profit organization that grew out of a concerted effort by the entire graphic communications industry. The Institut is also a college center for technology transfer (CCTT) in graphic communications and printability, associated with Collège Ahuntsic. It supports businesses through innovation, research and training, while supporting college education.

9:15 - 9:30 Printable Electronics at NRC – 2D to 3D - Gold sponsor

GOLD SPONSOR

Dr. Neil Graddage, Research Officer, National Research Council Canada

The National Research Council Canada collaborates to help Canadian industry and academia innovate in printable electronics across a wide variety of application spaces, from smart packaging to wearables. This talk will present NRC's research capabilities in materials, device and process development, highlighting some recent innovations that embed electronic functionality into new and exciting form factors.

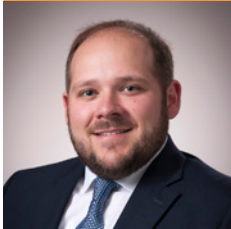


KEYNOTE PRESENTATION, CHAIR : MIRKO TORRES, ICI

9:30 - 10:00

3D Copper: The Mystery, Difficulties and Advantages of Mastering the Third Dimension of Selective Metallization

KEYNOTE SPEAKER



This presentation explores the emerging techniques of selective copper metallization on 3D surfaces, examining the underlying limitations that make three-dimensional copper structures both challenging and compelling. Learn about the perplexing challenges that arise when extending traditional planar metallization into the third dimension. The talk then highlights the performance advantages—enhanced system capability, and design flexibility—offering insights into strategies for mastering 3D copper in next-generation electronic devices.

Paul Gaylo, Associate Fellow of Advanced Manufacturing, Lockheed Martin

Paul Gaylo is an Associate Fellow in the Lockheed Martin RMS Advanced Manufacturing team and a NextFlex Fellow. Paul's current focus is early-stage manufacturing prototypes and process development. With an eye for innovative manufacturability, Paul has early engagement with design teams across Lockheed Martin with a mission to rapidly deploy advanced process technology in Lockheed Martin products. From antenna design and flexible hybrid electronics to additive manufacturing and composites, Paul finds no lack of opportunity in transitioning next-generation technology from the lab and into the field.



THEME : APPLICATIONS, CHAIR : ARNOLD KELL, PH.D., NRC

10:00 - 10:20 NDT for Printed Additive Electronics



At TRAQC, we provide non-destructive testing (NDT) for printed and additive electronics. By embedding printed quality-control structures directly into the production line, we enable non-destructive, in-line monitoring of electrical conductivity and process stability at full manufacturing speed. For example, our system has been successfully demonstrated at 50 m/min on a Varyflex press at the Printability and Graphic Communications Institute (ICI).

Mariia Zhuldybina, Ph.D., Co-Founder and CEO, TRAQC

Mariia is a scientist and innovator with a background in photonics and electrical engineering who is fueled by creativity, curiosity, exploring new applications, and building solutions towards a livable future. She completed her PhD at École de Technologie Supérieure in 2021. Her research focuses on the design of resonant photonic structures for industrial quality control of printed electronics using terahertz radiation. She is passionate about bringing terahertz technology out of the lab and into the industrial sector.



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10:20 - 10:40 Additive Packaging for Microelectronics in RF Applications



Additive manufacturing (AM) is emerging as a transformative technology for RF/microwave systems, offering rapid prototyping, custom geometries, and support for lightweight, flexible electronics. Recently, there has also been interest in applying Additive Manufacturing (AM) in packaging of microelectronic devices. Additive packaging offers advantages of expanded functionality in restricted volume, through miniature, low-SWaP-C sensors, allowing for non-traditional form factors. In this work, several innovations in printed RF components and packaging design aimed at enhancing performance and reducing footprint, will be presented.

Alkim Akyurtlu, Ph.D., Professor, Electrical and Computer Engineering Department / Director (UML), Raytheon UML Research Institute / Director, Printed Electronics Research Collaborative (PERC)

Alkim Akyurtlu received the B.S. degree in electrical engineering from the Virginia Tech in 1994, and the M.S. and Ph.D. degrees in electrical engineering from Penn State in 1996 and 2001, respectively. In 2002, she joined the Department of Electrical and Computer Engineering at UMass Lowell, where she is a Full Professor. She is also the Director of the Printed Electronics Research Collaborative (PERC) and Director from UML of the Raytheon – UMass Lowell Research Institute (RURI). Her research interests are in additive manufacturing for advanced microelectronic packaging; printed electronics for RF and Microwave applications; development of functional materials for printed electronics; and design and application of metamaterials. Prior to coming to UML, Dr. Akyurtlu worked at MIT Lincoln Laboratory with the Systems and Analysis Group as a Technical Specialist conducting research on electromagnetic modeling and statistical analysis of radar systems. She is a Senior Member of IEEE.

10:40 - 11:00 Materials Developments for Stable, Scalable and Efficient Organic Solar cells



Organic photovoltaics (OPVs) are an emerging solar technology manufactured via roll-to-roll printing from non-toxic, earth-abundant materials. Owing to their best-in class performance under low-intensity illumination, OPVs are optimally suited for indoor energy harvesting and are already being deployed commercially as power sources for IoT devices. This presentation highlights the benefits of OPVs for indoor light harvesting and introduces Brilliant Matters' recent material innovations targeting this application space.

Arthur D. Hendsbee, Ph.D., Product Manager, Brilliant Matters

Arthur is an experienced organic materials scientist who graduated from the University of Calgary with a PhD in Chemistry in 2017, obtained under the supervision of Dr. Greg Welch. Following his PhD, in 2019 Arthur completed an NSERC funded postdoctoral fellowship with Dr. Yuning Li at the University of Waterloo where he studied organic optoelectronic device fabrication techniques. In 2019, Arthur was impressed by the vision of Brilliant Matters to provide industry with a reliable and scalable source of organic optoelectronic materials and joined as a Senior Scientist. Currently, he holds the role of Product Manager at Brilliant Matters.

11:00 - 11:20 Networking and Coffee Break

THEME : SUSTAINABILITY, CHAIR : DR. JAY PARK, TORONTO METROPOLITAN UNIVERSITY

11:20 - 11:50 Beyond Functionality: Embedding Circularity in In-Mold Electronics



In-Mold Electronics (IME) integrate functional circuitry and components within molded polymer structures, offering significant advantages in weight reduction, design freedom, and system integration. However, these benefits often come at the cost of end-of-life recyclability and material recovery. This contribution presents recent advances that embed circular design principles into IME, thereby addressing the sustainability gap in structural electronics. Experimental demonstrations include successful dismantling, recycling, and repair of In-Mold Electronics.

Dr. Stephan Harkema, Top Senior Scientist, Holst Centre

Dr. Stephan Harkema, Top Senior Scientist at TNO at Holst Centre, holds a PhD in Polymer Chemistry and has nearly 20 years of R&D experience in advanced materials and electronics. After extensive work on flexible OLEDs for lighting and signage, he shifted his focus to human-machine interfaces based on Hybrid and Printed Electronics. Since 2021, he has led developments in sustainable in-plastics embedded electronics, achieving successful dismantling, recycling, and repair of such systems. His work has resulted in multiple publications, patents, and advances in circular electronics innovation.

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11:50 - 12:10

Nanopaper as a Sustainable Substrate for Printed and Flexible Electronics



We have developed a new plant-based substrate for printed and flexible electronics that is renewable and compostable. Key properties under evaluation include thermal and dimensional stability, surface energy (contact angle), surface roughness, and porosity. The substrate exhibits excellent thermal stability, withstanding ink curing temperatures up to 200 °C for 20 min, thus enabling compatibility with copper-based conductive inks. It also demonstrates good printability using both screen printing and direct ink writing. The technology is currently being scaled up by a start-up for manufacturing in A4 sheets and roll-to-roll formats. This presentation will report the fundamental material properties, processing compatibility, and initial device prototypes, including sensors and RFID antennas.

Leonardo Simon, Professor, University of Waterloo



Leonardo Simon is Professor in the Department of Chemical Engineering at the University of Waterloo, in Canada, since 2002. He teaches courses in Materials Sciences and Engineering, Polymers, Nanocomposites and Engineering Design. His research group uses nanotechnology, polymer science and engineering to develop sustainable and enhanced materials for applications in flexible electronics, automotive, packaging, consumer goods and advanced manufacturing. Research areas include synthesis, characterization and properties of materials, nanocellulose, nanocomposites and bioproducts. He created Polynovus Consulting Inc to meet the demand from industrial research collaborators and companies in the areas manufacturing, new technology and innovation.

12:10 - 12:15

Presentation of Anton Paar - Silver sponsor

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Eric Landry, Director of Sales, Anton Paar



Anton Paar develops, produces and distributes highly accurate laboratory instruments and process measuring systems, and provides custom-tailored automation and robotic solutions. It is the world leader in the measurement of density, concentration and CO₂ and in the field of rheometry. Anton Paar GmbH is owned by the charitable Santner Foundation. Over 4500 employees at the headquarters in Graz and the 37 sales subsidiaries worldwide ensure that Anton Paar products live up to their excellent reputation. The core competence of Anton Paar – high-precision production – and close contact to the scientific community form the basis for the quality of Anton Paar's instruments.

12:15 - 13:45

Poster / Prototype Session and Networking Lunch

Discover the posters and prototypes and enjoy a buffet lunch!

12:30 - 13:00

Anton Paar Workshop - Representation #1

13:00 - 13:30

Anton Paar Workshop - Representation #2

THEME: SUSTAINABILITY & SMART PACKAGING, CHAIR: MIRKO TORRES, ICI

13:45 - 14:05

Evidence-Based Sustainable Packaging Systems Using Life Cycle Assessment (LCA)



Life cycle assessment (LCA) is a critical tool for evaluating and improving the environmental performance of packaging systems. This presentation introduces LCA-driven approaches to sustainable packaging design, demonstrating how material selection, structural design, distribution conditions, and end-of-life scenarios influence overall impacts. Case studies from food, e-commerce, and reusable packaging systems illustrate how LCA supports evidence-based decisions that balance environmental performance, functionality, and economic feasibility.

Dr. Jonghun (Jay) Park, Director of The Centre for Packaging Innovation and Sustainability / Associate Professor at Toronto Metropolitan University

Dr. Jonghun (Jay) Park is an Associate Professor of The Creative School/Environmental Applied Science and Management and the Director of The Centre for Packaging Innovation and Sustainability at Toronto Metropolitan University, Toronto, Canada. His research program primarily focuses on sustainable packaging systems and design, packaging distribution, life cycle assessment, and packaging-human factors. Dr. Park has worked on several research projects supported by government/public research agencies such as National Science and Engineering Council of Canada, Canada Foundation for Innovation, and Mitacs, as well as many industry partners. Before joining the university, he worked at Samsung Electronics and HP as a senior engineer, coordinating several packaging development and optimization projects for global electronics product distribution.

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14:05 - 14:25

Discussion Panel: Sustainability & Smart Packaging



Dr. Jonghun (Jay) Park, Director of The Centre for Packaging Innovation and Sustainability / Associate Professor at Toronto Metropolitan University

Dr. Jonghun (Jay) Park is an Associate Professor of The Creative School/Environmental Applied Science and Management and the Director of The Centre for Packaging Innovation and Sustainability at University, Toronto, Canada. His research program primarily focuses on sustainable packaging systems and design, packaging distribution, life cycle assessment, and packaging-human factors. Dr. Park has worked on several research projects supported by government/public research agencies such as National Science and Engineering Council of Canada, Canada Foundation for Innovation, and Mitacs, as well as many industry partners. Before joining the university, he worked at Samsung Electronics and HP as a senior engineer, coordinating several packaging development and optimization projects for global electronics product distribution.

Marie-Eve Chapdelaine, Associate Director, Sustainable Development, Sustana

Marie-Eve Chapdelaine brings over 15 years of experience in corporate sustainable development, primarily within organizations committed to the circular economy. She led the strategic planning of three sustainable development plans at Cascades, contributed to positioning the company among the world's most responsible organizations, and founded the department responsible for maintaining this leadership position. She has since continued this commitment at Sustana. Her career has been shaped by a combination of hands-on experience and meaningful encounters that led her to fully dedicate herself to sustainable development, a subject she has also taught at the Université de Sherbrooke. Recognized for her involvement in residual materials management, she shares her expertise across various platforms, leads the non-profit organization Remplis Vert, which works to reduce the use of single-use plastic water bottles, and serves as an ambassador for Mission 1000 Tonnes, an initiative aimed at removing an equivalent amount of waste from nature.

James Lee, Senior Director, Product and Materials Innovation, Jones Healthcare Group

James is Senior Director, Product and Materials Innovation with Jones Healthcare Group based in London, Ontario, Canada, a leader in folding cartons, labels and contract pharmaceutical filling. In his role, James focuses on new packaging technologies for tomorrow and their potential impact and outcomes for consumers, patients and brand owners. James has over 25 years of experience in prepress and print production with organizations such as TC and SGSCO. With successful project execution under a varying set of global verticals throughout his career, James brings a diverse understanding of the packaging market with an eye for reproduction quality under differing print methods. James also serves as technical chair of the International Packaging Group based in Switzerland, which shares best practices and technical innovations amongst its membership.

14:25 - 14:30

Technum Québec: a World-class Innovation Ecosystem - Bronze sponsor

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Alexis Martin, Director of Strategic Projects, Talent and Sustainable Development, Technum Québec



Technum Québec is an officially designated innovation zone by the Government of Québec. It strengthens its ecosystem by fostering collaboration that drives innovation, accelerates technology transfer and creates sustainable economic, social and environmental value. Through strategic partnerships and dedicated infrastructure, Technum Québec supports startup creation, attracts top talent and helps innovators bring advanced technologies to market and scale internationally.

14:30 - 14:50

Networking and Coffee Break

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THEME: PROCESSES, CHAIR: ERIC LANDRY, ANTON PAAR

14:50 - 15:10

Flexography for High-Resolution Roll-to-Roll Manufacturing



Mass-produced components are either exact replicates, or contain a high percentage of replicate circuitry, making their manufacture well suited for “analog” print technologies. While screen printing dominates current printed electronics manufacturing, the use roll-to-roll flexography can be advantaged for volume production of high-resolution designs. This talk will provide an overview of the benefits and challenges of “going roll-to-roll” and using flexo for the manufacture of printed electronics. Examples and data will be shared from lab-scale and production scale evaluations.

Carolyn Ellinger, VP, Printed Electronics, Eastman Kodak Company

Carolyn Ellinger is VP, Printed Electronics at Eastman Kodak Company. In her 30 years at Kodak, she has held a variety of technical and leadership positions. Technology areas include film systems, flexible displays, nanotechnology and semiconductor devices, MEMS-based devices, spatial ALD, and printed electronics with work resulting in peer-reviewed journal articles, multiple contributed and invited presentations, over 75 Granted US Patents, and numerous improvements to Kodak products. She is currently focused on building strategic partnerships in printed electronics.



15:10 - 15:30

IME : From Lab to Fab, Process Innovation and Industrial Scalability



This session will explore the full pathway from concept to industrial deployment of In Mold Electronics (IME), with a focus on process robustness, material behaviour, and design for manufacturing across printing, electronic integration, thermoforming and overmolding. Drawing on Eurecat’s applied research and industrial collaborations, the presentation will address key challenges such as conductive ink wash out during overmolding and film deformation during thermoforming, supported by recent experimental work.

Enric Fontdecaba-Baig, Ph.D., Director, Polymeric Materials & Processes Unit, Eurecat (Spain)

Enric Fontdecaba is the Director of the Polymeric Materials and Processes Unit at Eurecat, leading R&D and industrial innovation in advanced thermoplastics and manufacturing technologies since 2016. He holds a PhD in Computer Architecture, a Telecommunications Engineering degree, and a Diploma in Business Studies. He previously spent 20 years in the optical industry, combining roles in product R&D and high level operations, including serving as COO at INDO. His background bridges advanced engineering, product industrialization, large scale operations, and innovation management. His work at Eurecat focuses on polymer processing, thermoforming, overmolding, and integrating printed circuits into 3D plastic components for IME applications.



15:30 - 15:50

Inkjet Photoresist Printing for Semiconductor Devices



This work explores inkjet printing as an alternative to spin-coating for photoresist deposition in MEMS fabrication. Using a SUSS inkjet printer, a commercial positive photoresist was adapted through dilution to achieve optimal parameters. Results showed uniform coatings, sharp edges, and reduced material waste. Inkjet printing demonstrates potential for precise, eco-friendly, and cost-effective photolithography processes.

Sergio Ivan Yanez Sanchez, Ing., M. Sc. A., Microfabrication Process Development Engineer, C2MI

Sergio Ivan Yanez Sanchez is a MEMS process development engineer working at C2MI since 2021. He received a M. A. Sc. degree from Polytechnique Montreal the same year thanks to his work in binder selection for binder jetting 3D-printing technologies. Currently, his research interest includes inkjet printing and photolithography processes for MEMS manufacturing.



15:50 - 16:10

Digital Paint – A manufacturing scale up journey



An overview of the scale up of Trusscore’s Digital Paint technology which uses electrochromics to make ones walls change colour from a mobile app. The walls do not emit light, but instead change their base colour via an electrical stimulus. The product is integrated with Trusscore’s core PVC panel which is a drywall replacement product.

Chad Smithson, Ph.D., Technical Project Manager, Research & Development, Trusscore

Chad Smithson has worked on commercializing printed electronics for the past 11 years. Projects have included hybrid electronics on 3D surface for packaging and cold chain tracking, invisible nanotech ink for use in anticounterfeiting, and large area electrochromic devices.



16:10 - 16:15

Closing remarks, Day 1

17:30

Ad+Banquet at Les 3 Brasseurs (reserved seats only)

Presented by our Gold Sponsor National Research Council Canada (NRC).

Les 3 Brasseurs – Saint-Paul
105, rue Saint-Paul Est, Montréal (Québec) H2Y 1G7
Métro Champ-de-Mars



8:00 - 9:00 **Networking Breakfast**

9:00 - 9:05 **Welcome and Introduction, Day 2**

THEME : FUNCTIONAL INKS AND MATERIALS, CHAIR : JULIE FERRIGNO, PH.D., ENG., HENKEL

9:05 - 9:25 **Silver-Plated Copper: A Cost-Effective, High-Performance Alternative to Traditional Silver Inks**



This presentation introduces silver-plated copper (SPC) conductive materials as a cost-effective option that can serve as an alternative to traditional silver inks in some applications. By combining a copper core with a protective silver coating, SPC delivers performance comparable to silver inks in many use cases while significantly reducing material costs and reducing exposure to volatile silver pricing. We will highlight key electrical, mechanical, and environmental performance metrics of the new SPC inks, showing where they offer a strong technical fit and how they can help manufacturers balance high performance with improved supply stability and long-term cost efficiency.

Julie Ferrigno, Ph.D., Eng., Lead Applications Engineer Printed Electronics, North America, Henkel



Application Engineer at Henkel, she is specialized in materials and conductive inks for the manufacturing of emerging printed electronics products. Over the past few years, she has focused her activities in advanced manufacturing for the very fine line screen printing process and its applications to RF and heating technologies. Before Printed Electronics industry, she has worked as Electronics engineer on Earth Observation Science and Telecommunication satellites. She has a PhD in Electronics (Failure Analysis of Digital Integrated Circuits, 2008) from CNES, Toulouse, France and an Engineering Degree in Physics (2005) from INSA Toulouse, France.

9:25 - 9:45 **Next-Generation Conductive & Semiconductive Nano-Solutions for Printed and Flexible Electronics**



GenesInk develops advanced conductive and semiconductive nano-solutions enabling ultra-fine patterning, transparent conductive films, and high-performance functional layers for next-generation printed and flexible electronics. Powered by a strong scientific R&D ecosystem combining chemistry, materials science, and process engineering, the company supports custom formulation, additive manufacturing integration, and industrial scale-up. These innovations address critical challenges in miniaturization, sustainability, and device performance across IoT, photovoltaics, displays, sensors, and advanced electronic packaging.

Sofiane Bourdillon, Ph.D., R&D Project Manager, GenesInk



Dr. Sofiane Bourdillon works as an R&D Project Manager at GenesInk Group, a global leader in conductive and semi-conductive nano-solutions for printed and flexible electronics. He holds a PhD in organic chemistry from Aix-Marseille University and specializes in organic synthesis, polymer chemistry, and functional materials. With several years of research and industrial experience, his work focuses on developing innovative molecules and inks for IoT, flexible electronics, and emerging technologies. He has led multiple industry-collaborative projects and contributes to advancing next-generation materials through a scientific, application-driven, and sustainability-focused approach.

9:45 - 10:05 **Printable Self-Healing Conductors for Sustainable and Biointegrated Devices**



This work presents recent advances in printable organic electronic materials and devices for flexible, sustainable, and biointegrated applications. We focus on conducting polymer systems compatible with additive manufacturing and printing processes, enabling stretchable, self-healing, and recyclable electronic devices. Emphasis is placed on materials design, device fabrication, and integration into sensors and bioelectronic interfaces. These results highlight the potential of printed electronics to enable scalable manufacturing of next-generation functional and sustainable electronic systems.

Fabio Cicoira, Ph.D. Professor, Department of Chemical Engineering and Institute of Biomedical Engineering, Polytechnique Montréal



Fabio Cicoira is Full Professor in the Department of Chemical Engineering and the Institute of Biomedical Engineering at Polytechnique Montréal, where he leads the Laboratory of Organic Iontronics. His research focuses on organic bioelectronics, conducting polymers, and printable electronic materials, with particular emphasis on self-healing, stretchable, and recyclable electronic devices for sustainable and biointegrated applications. He has authored over 110 scientific publications and is a Fellow of the Royal Society of Chemistry. His work explores the interface between materials science, electronics, and biology, with the goal of developing next-generation flexible and implantable electronic technologies.

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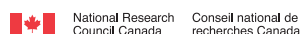
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10:05 - 10:25

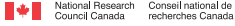
3D Electronics by Freeform Lithography



Freeform Lithography is a new opto-mechanical manufacturing technology being developed at the NRC that enables precise photopatterning on complex and freeform surfaces. This presentation will cover how this mask-free and contactless approach can produce high-resolution 3D electronics with scalability and speed, positioning it as a transformative platform for manufacturing conformal antennas and sensors. It unlocks new opportunities in advanced communications, aerospace, and electronics, where next-generation device architectures demand complex geometries.

Chantal Paquet, Senior Research Officer, National Research Council Canada

Chantal Paquet is a Senior Research Officer and Group Leader at the NRC, where she leads the Advanced Materials for Additive Manufacturing group. Her research focuses on volumetric additive manufacturing, and printable electronics, with expertise spanning polymer chemistry, and molecular inks. Dr. Paquet has authored numerous high-impact publications and holds an extensive portfolio of patents in additive manufacturing and printed electronics. She leads multidisciplinary teams and collaborates with industry and government partners to develop advanced materials and manufacturing solutions for applications ranging from aerospace to defense.



10:25 - 10:45

Networking and Coffee Break

THEME: INTEGRATION: FLEXIBLE HYBRID ELECTRONICS (FHE), CHAIR: NGOC DUC TRINH, PH.D., ICI

10:45 - 11:05

Additively Manufactured Copper Multilayer Circuits and its Reliability



Our team of researchers has made significant advancements in the field of printed electronics, particularly through the use of copper inks in multilayer circuits. This innovation not only reduces production costs but also enhances the conductivity and reliability of devices. We invite you to discover the reliability results obtained for two layers circuits as well as the advancement made to push further the complexity of devices that can be printed.

Christophe Sansregret, Eng., Printed Electronics and Advance Packaging Process Development Engineer, C2MI

Christophe Sansregret is working at the MiQro Innovation Collaborative Centre (C2MI) in process development in printed electronics and advanced packaging. He focuses on flexible and printed electronics production through additive manufacturing. He is currently developing new processes to manufacture complex hybrid multilayer circuits using copper inks on various substrates in collaboration mainly with the École de technologie supérieure (ÉTS).



11:05 - 11:25

ZTACH® ACE: Magnetically Aligned, Reliable, SMT-Compatible Z-Axis Interconnects for Flexible Hybrid Electronics



Join SunRay Scientific's presentation on ZTACH® ACE, a magnetically aligned anisotropic conductive epoxy redefining electronic interconnects, replacing solder, wire bonding, and other legacy methods. Discover how this single-step, SMT-compatible process enables cost-effective miniaturization and integration of heat and pressure-sensitive applications across FHE. Case studies will highlight applications in wearables, RFID, LEDs, medical, and automotive - delivering breakthroughs in flexibility, performance, throughput, and manufacturing simplicity.

Madhu Stemmermann, CEO and Co-Founder, SunRay Scientific

Madhu has 25 years of experience in executive leadership roles across manufacturing, supply chain, sales and product management spanning various industries such as electronics packaging, conductive adhesives, medical devices, LED lighting and engineered plastics. She was the youngest and first female Plant Manager appointed at Philips Lighting. She has led and executed various company transformations and acquisitions. Madhu received her degree in Chemical Engineering from Purdue University, West Lafayette, IN.



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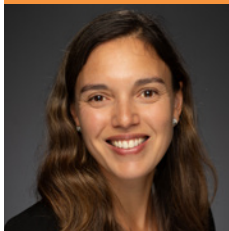


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11:25 - 11:45

Novel thermoset resin overmoulding process for in-mould electronics



In-Mould Electronics (IME) technology is emerging as a revolutionary way to manufacture structural electronic parts with embedded smart functions, by combining standard screen printing, thermoforming, and overmoulding processes. While the industry has mainly focused on high pressure thermoplastic injection to encapsulate circuits and electronic components, e2ip technologies and the National Research Council of Canada (NRC) have developed and patented a novel thermoset resin overmoulding process, together with a new class of molecular ink sets. Both innovations are specifically engineered for IME, significantly expanding design freedom and improving overall device performance, pushing the technology to a new level of innovation.

Loleï Khoun, Ph.D., Senior Research Officer, National Research Council Canada

Dr. Loleï Khoun earned her B.Eng. in Materials Engineering in 2004 from the École Nationale Supérieure des Ingénieurs en Arts Chimiques et Technologiques (ENSIACET) in Toulouse, France, and her Ph.D. in Mechanical Engineering from McGill University in Montréal, Canada, in 2009. She joined the National Research Council of Canada (NRC) in 2011 as a Research Officer with the Advanced Polymer Composites team. Dr. Khoun's research focuses on the processing, characterization, and performance evaluation of high-performance polymer composites for transportation applications. In recent years, she has focused on advancing in-mould electronics manufacturing through cost-effective thermoset processing technologies that provide enhanced design flexibility and integration capabilities.

Olivier Ferrand, Eng, M. Eng, Director, R&D / Printed electronics, e2ip Technologies

Olivier Ferrand serves as the Head of R&D at E2IP Technologies, leading the development of next-generation printed electronics and human-machine interfaces. An INSA Lyon (France) Materials Engineering graduate, Olivier has spearheaded the company's most successful innovations, including CapFlex™ and the award-winning Smart Structural Surfaces™. With over 15 years of expertise, Olivier has transformed screen-printing into a high-performance process for sophisticated circuitry. An inventor on multiple international patents, he now directs E2IP's research strategy, bridging advanced material innovation with high-volume applications for the aerospace, medical, and defense sectors.



11:45 - 12:05

Novel Material Technologies for Emerging Electronics



This presentation will highlight two of the newer technologies that Panasonic Industry is developing for emerging electronic applications. First, we will discuss how to make soft circuits for new form-factor electronic devices like wearable sensors. These circuits can be manufactured with either additive manufacturing or conventional subtractive processes depending on the application capabilities and requirements. Next, we will investigate a low resistance transparent conductive film made with ultra-fine embedded copper mesh technology.

Rick Trunnell, Business Development Manager, Panasonic Industry

Rick Trunnell has spent his career in the printed circuit board world. With wide experience in board shops, working in the multi-layer world then moving from rigid materials to rigid flex and exotic materials. Since joining Panasonic he has worked with a wide variety of circuit board materials, focusing more recently on stretchables, ultra-high density interconnect (UHDi) designs and some additive processing.



12:05 - 12:15

Direct Ink Write Technology vs Inkjet for Printed Electronics Research - Bronze sponsor

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Gio Obando, Technical Sales Lead, Voltera



Printed electronics R&D often starts with digital, maskless printing—but inkjet and direct ink writing (DIW) deliver different kinds of truth. This talk explains how piezo inkjet forms droplets and why its material window is tight, then contrasts DIW's extrusion of thick-film pastes for functional, multilayer prototypes. You'll leave with a practical checklist for choosing the right tool based on resolution, materials, performance targets, and screen-printing scalability from lab to production.

12:15 - 13:45

Poster / Prototype Session and Networking Lunch

Discover the posters and prototypes and enjoy a buffet lunch!

12:30 - 13:00

Anton Paar Workshop - Representation #3

13:00 - 13:30

Anton Paar Workshop - Representation #4

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13:45 - 13:50

Award ceremony for the best poster



Mario Leclerc Grant, sponsored by the Department of Chemistry of Université Laval

THEME : GREEN NETWORK – PRESENT & FUTURE, CHAIR: SERGE DESNOYERS, PH.D., U. LAVAL

13:50 - 14:00

GreEN Electronics Network



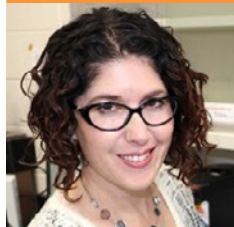
Mario Leclerc, Ph.D., Professor and Canada Research Chair on Electroactive and Photoactive Polymers, Université Laval

Mario Leclerc obtained a PhD in chemistry from Université Laval, Quebec, Canada, in 1987. After a brief stint at INRS-Energy and Materials, he joined the Max-Planck-Institute for Polymer Research in Mainz, Germany, in 1988, as a post-doctoral researcher in Professor G. Wegner's research group. In 1989, he accepted a position as Assistant Professor in the Department of Chemistry at the Université de Montréal. In 1998, he was promoted to Full Professor. That same year, he joined the Centre de Recherche en Sciences et Ingénierie des Macromolécules (CERSIM) at Université Laval in Quebec City. He currently holds a Canada Research Chair in Electroactive and Photoactive Polymers. He is the author or co-author of more than 300 publications and 16 book chapters. He also holds 12 patents.



14:00 - 14:20

Old Material, New Tricks: Shellac in Flexible and Printed Electronics



Shellac may be an ancient material, but it has a surprising talent for solving very modern problems in flexible and printed electronics. In this talk, I will show how this natural biopolymer, best known for wood finishes and candy coatings, delivers the film-forming, adhesive, dielectric, and barrier properties needed to replace petroleum-based materials in next-generation devices. By using shellac as a green planarization layer, recyclable substrate component, and protective matrix for conductive nanomaterials, we create devices that are printable, flexible, and environmentally responsible. These “new tricks” reveal how a traditional material can meet today's demands for circularity, performance, and scalable manufacturing – and offer a fresh and unexpectedly powerful direction for environmentally conscious electronics.

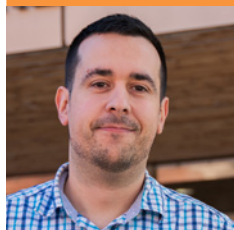
Tricia Breen Carmichael, Ph.D., Professor, Department of Chemistry and Biochemistry, University of Windsor

Tricia Breen Carmichael is a Professor in the Department of Chemistry and Biochemistry at the University of Windsor. She received her Ph.D. in 1996 from the University of Windsor, and then held a postdoctoral position at Harvard University in the lab of George M. Whitesides. She then joined the IBM T.J. Watson Research Center in Yorktown Heights, New York as a Research Staff Member in organic electronics. She currently leads an interdisciplinary research program on stretchable and wearable electronic devices, including stretchable light-emitting devices, textile-based wearable electronics (e-textiles), and stretchable transparent conductors.



14:20 - 14:40

Rethinking Polymer Semiconductors for a Sustainable Electronics Era



π -Conjugated polymers are increasingly central semiconductors for modern electronics, yet their synthesis and processing still lag behind today's sustainability demands. This presentation will explore how high-throughput synthetic methods and unconventional molecular design can accelerate materials discovery while enabling greener, high-performance semiconductors. By integrating sustainable synthesis with reimagined side-chain chemistry, dynamic bonding motifs, and solvent-free or benign processing, this presentation will highlight new stretchable functional materials that meet both environmental and performance requirements for next-generation devices.

Simon Rondeau-Gagné, Ph.D., Associate Professor, Department of Chemistry & Biochemistry, University of Windsor

Simon Rondeau-Gagné earned his PhD in Chemistry from Université Laval in 2014. He then joined the Department of Chemical Engineering at Stanford University as a postdoctoral fellow in the laboratory of Prof. Zhenan Bao. He was appointed Assistant Professor in the Department of Chemistry and Biochemistry at the University of Windsor in 2016 and promoted to Associate Professor in 2021. Since 2023, he has held a University of Windsor Research Chair in advanced semiconducting materials. His research group focuses on the design of functional polymers, with particular emphasis on supramolecular chemistry and self-assembly, to develop stretchable and self-healing materials for emerging electronic devices.



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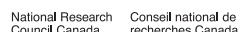
SILVER PARTNER



BRONZE PARTNERS

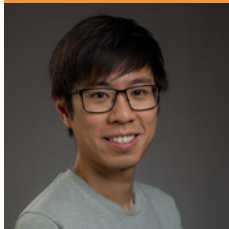


MARIO LECLERC GRANT
DEPARTMENT OF CHEMISTRY



14:40 - 14:55

GreEN Spin offs and Career Paths



Engineering Printable Carbon-based Materials for High-Performance Sensing in Public Safety

Printable carbon-based materials provide a scalable platform for high-performance sensors in public safety applications. Their tunable electronic properties and compatibility with printing enable lightweight, low-cost, and deployable devices. This presentation highlights advances in engineering π -conjugated polymers and carbon-based hybrids for improved selectivity and stability, with examples including gas detection, chemical threat monitoring, and aircraft icing sensors within fully printed electronic systems.

Jenner Ngai, Research Associate, Quantum and Nanotechnologies Research Centre, NRC

Jenner is a Research Associate at the National Research Council of Canada (NRC) in the Nanomaterials Group at the Quantum and Nanotechnologies Research Centre. He holds a BSc from the Chinese University of Hong Kong, an MPhil from Hong Kong Baptist University, and a PhD in Chemical Engineering from the University of Waterloo. His research focuses on organic conjugated materials and thin-film devices for sensing applications. He develops hydrogen-bonding semiconducting materials and carbon-based hybrids, including SWCNT/polymer composites, to improve gas and environmental sensor performance, stability, and power efficiency.



From Printed Electronics Research to Clinical Translation: The GreEN Network Journey

The GreEN Electronics Network fostered interdisciplinary collaboration in organic electronic materials, printing processes, and device engineering. This presentation reflects on how the network supported the transition from academic research in printed OLED systems to the creation of PrintedSUN Inc., a spin-off developing conformable phototherapy platforms for chronic wound care. It highlights the role of collaborative research ecosystems in enabling scalable manufacturing strategies and clinically oriented device development.

Akpeko Gasonoo, Ph.D, Co-founder & CTO, PrintedSUN

Akpeko Gasonoo is Co-founder and CTO of PrintedSUN Inc., a Canadian company developing flexible OLED-based phototherapy systems for chronic wound care. He holds a PhD in Electronic Engineering and has over a decade of experience in printed organic electronics, large-area device fabrication, and scalable ink-based processes. Formerly a postdoctoral researcher at the University of Calgary, his work bridges advanced materials science and translational device development. Through PrintedSUN, he is advancing conformable light-delivery platforms for regulated medical applications, beginning with diabetic foot ulcers.



14:55 - 15:00

Closing Remarks, Day 2

OUR EXHIBITORS



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