intelliFLEX Training Programs Learn. Engage. Create.



Our location or yours

FHE Training for: Secure Printing, Healthcare, Aerospace/Defence, Smart Retail & Intelligent Packaging, Intelligent Buildings & Connected Homes, Wearables & Smart Garments, Automotive



Copyright © intelliFLEX Innovation Alliance. Do not copy or distribute in any way without the express consent of intelliFLEX.



Learn. Engage. Create.

Acquire the expertise and industry insight your organization needs to prosper in the growing global market for printable, flexible and hybrid electronics (FHE).

intelliFLEX levers the resources and know-how of its members and industry partners to deliver fee-based training programs. This training is intended for anyone in the position to be a creator, integrator or end-user/adopter of FHE technologies and applications.

From the fundamentals of FHE materials and componentry, to new product development and commercialization, and insight into the supply chains of end-use markets, we have the training you need. Options range from one-day introductory courses to three days of intensive hands-on technical training on commercial-grade printing presses.

All training includes your meals and refreshments. Training is open to anyone, with special discounts available to intelliFLEX members, students and academics.

We can come to you. Contact us to learn more

We can also come to you with customized training options. On-site custom training sessions require a minimum of five participants.





FHE: The key enabler of the Internet of Everything

Compared to conventional electronics, FHE enables you to add new smart features to ordinary objects such as connectivity to mobile devices or the Internet, with sensors, displays, energy storage and energy harvesting.

FHE represents a new set of manufacturing methods, including:

- 2D large-area printable electronics
- Flexible integrated circuits
- 3D printable electronics for multilayer PCBs
- Adding electronics to 3D objects
- In-mould electronics
- Smart textiles

Defying the limitations of traditional silicon

FHE can deliver substantial savings in cost to manufacture and deliver far more flexible functionality compared to traditional electronic or semiconductor components:

- Consume less power
- Take up less space
- Integration through in-mould and additive processes
- Disposable and biodegradable
- Flexible and stretchable
- Weavable into textiles

What can FHE add to your bottom line?

As a developer, manufacturer, integrator or end user, how can, and why should you pursue opportunities in this area?

Get the answers you need through our flexible training programs.



Flexible and Hybrid Electronics, FHE for short, is the toolbox for building, not just the Internet of Things, but the Internet of Everything, to create:

- Smart surfaces for automotive and aircraft to sense occupants, provide touch surfaces, add biological and gas sensing, or provide surface heating and energy harvesting elements
- Smart clothing that can monitor your vitals and other wearable tech for health, wellness and personal safety
- Sensor technologies needed for autonomous vehicles and to monitor anything from a commercial heating, ventilation and air conditioning system to your kitchen toaster
- Smart packaging to drive new ways to manage the entire retail supply chain

This is just the tip of the iceberg.

In this one-day workshop, we review the supply chain for creating and integrating FHE componentry into your products and applications. Through videos, case studies, group exercises and interactive discussions, we explore the technology, its applications, and where FHE-enabled products are already in the market, or soon will be.

Who should attend

Potential technology users and developers who wish to learn more about what is possible with FHE and how to integrate these components into products for a range of industries, including automotive, aerospace, intelligent buildings, medical, health care and industrial.

"The FHE course was very helpful in providing an overview of the many different technologies and processes now available in the field of printed electronics. The course also supplied practical examples and explained how hybrid and flexible electronics can be used as building blocks in complete solutions. It is well-thought-out program and supplies plenty of reference materials to use when delving into specifics. I would recommend it to anyone interested in this sector."

Howard Campbell, Business Development
Memtronik Innovations

What participants say

"This is a great course where one can get a broad perspective on FHE and explore the available opportunities and know-how of the industry."

Rakesh Sahu
Post-Doctoral Fellow
McMaster University

"Perfect opportunity to softland into the printable/ flexible electronics industry through the content and chapter modules of this course."

 Edward Jerjian, Founder and Project Engineer
Acquire Industries

"A great crash course that provides a general understanding of this exciting industry and its trends."

Ahmer Beg, Founder & CEO
Authentic or Not

Pricing	
intelliFLEX Industrial Members:	\$395 + HST
intelliFLEX Academic Members (professors/students):	\$295 + HST
Industrial Non-Members:	\$595 + HST
Academic Non-Members (professors/students):	\$495 + HST



What participants say

"Good choice of instructors. The printing technologists and scientists were very approachable and willing to answer questions. This was a wide-ranging and intensive course with a very good balance of practical applications and lectures. The fast pace of change in this field makes it valuable for people working in R&D to have this type of overview of the state of the art."

– Walt Sacuta Senior Electronics Engineer **CuePath Innovation**

"I learned many valuable lessons and applications considering that I don't have a background in the subject matter. The trainers were experts and conveyed their lectures very well."

- Jeziel Vidad Interim Manager Wearable, Interactive and Mobile Technologies Access Centre in Health (WIMTACH) Centennial College intelliFLEX offers this course in partnership with the Printability and Graphic Communications Institute (ICI) and the National Research Council of Canada (NRC).

Gain exclusive access to the machines, skills, resources and expertise critical to developing and bringing to market new products and applications enabled with FHE.

This training is a must-have starting point for those who want to get started with FHE and learn the fundamentals.

High-value, hands-on learning

Participants dive into the design, processes and materials for new product development:

- · Technical theory about materials and manufacturing methods
- How to design value-added features and new applications
- Hands-on formulation and proofing of printable conductive ink
- Design considerations and pre-press activities for several different printing techniques
- Actual production of FHE componentry on different substrates using various production processes

Who should attend

- Individuals with product companies, contract manufacturers, R&D organizations or technology development companies interested in new applications on a systems level (applications engineering) versus developing sub-components (R&D)
- Engineers and scientists in various vertical industry segments such as packaging, building automation, consumer products, automotive, and aerospace or defence
- Designers and new product developers involved in creating value-added features or new products who want to fast-track their knowledge of FHE development

In partnership with

intelli**FLEX**





Pricing

intelliFLEX Industrial Members:	\$1,950 + HST
intelliFLEX Academic Members (professors/students):	\$1,450 + HST
Industrial Non-Members:	\$2,150 + HST
Academic Non-Members:	\$2,150 + HST



One-Day Course Smart Packaging for Managers

intelliFLEX delivers this course in partnership with PAC. We dive into the rapidly growing market for active and intelligent packaging ("smart packaging") that is enabled by Flexible and Hybrid Electronics (FHE). While this course is non-technical, it will touch on the key technologies involved for smart packaging.

Today's consumer is in the retail driver's seat, empowered and informed like never before by digital and mobile technologies. Senior executives across the supply chain must invest in digital transformation for their businesses to remain relevant.

Product packaging and in-store retail displays – remade as intelligent devices to collect, store and transmit data – have a pivotal role to replay. Such connectivity is already yielding a paradigm shift across the retail supply chain, to better manage logistics, prevent product theft, spoilage, tampering and counterfeiting, and to turn the humble package into a digital marketing platform to achieve new levels of consumer engagement.

What you will learn

- Definitions of active and intelligent packaging solutions and the ecosystem involved in their delivery
- Major shifts in consumer and market trends that impact the future
 of FMCG product marketing and retail
- Applications and use case examples throughout the value chain, from production to inventory management, to consumer interaction and recycling
- Core technologies involved, including interactive software solutions
- How to utilize the data for insights and increased sales for your products
- Key players in active and intelligent packaging and smart retail
- Solutions that you could develop and implement in your business
- Lessons learned from brand owners, packaging companies and retailers

Who should attend

- Companies involved in the production of food & beverage, personal care, healthcare, pharmaceuticals
- Packaging companies involved in medical device packaging, automotive, industrial product packaging and other verticals
- Brand owners, packaging converters and material suppliers
- Consultants and analysts
- Technology companies and government organizations interested in developing better insight into applications for this market
- Research organizations planning to develop solutions for this market

"The intelliPACK course provides an excellent grounding of the technologies, materials, and applications of smart packaging. It also provides the critical information to build the business case – why this added intelligence matters across the supply chain, from manufacturers, to brand owners and retailers."

– James Downham
President and CEO, PAC

In partnership with





Pricing

intelliFLEX Industrial Members:	\$395 + HST
intelliFLEX Academic Members (professors/students):	\$295 + HST
Industrial Non-Members:	\$595 + HST
Academic Non-Members (professors/students):	\$495 + HST





One-Day Course Smart Textiles and Wearable Tech

intelliFLEX delivers this course in partnership with CTT Group, a technology transfer center specializing in the research, development and testing of technical textiles, advanced textile-based materials and geosynthetics.

Wearable technology has far reaching implications for a host of industries, including first responders, military personnel, and health and wellness. From devices worn on the arm or wrist, to eyewear, footwear, exoskeletons and functionality embedded into fabrics, wearable technology will impact every individual in the course of their daily lives.

FHE is a key enabling technology for all these devices and applications due to its advantages over conventional electronic components.

What you will learn

- Technology building blocks, components and the key players in the supply chain
- Data analytics and information flow, from the types of sensors used to collect specific types of data, to how that data is managed on the device and in the cloud
- Key end-use applications and use case examples for healthcare, fitness and sports performance, industrial, first responders and others
- Other applications for visibility, sensing, thermoregulation and fashion
- The business case and solutions that you could develop and implement
- Lessons learned from the market's early movers

Who should attend

- Companies involved in the apparel, fashion and textile industry supply chain
- Consumer electronics companies that are or wish to develop wearable technology
- Brand owners of leading fitness and apparel labels
- Consultants and analysts
- Technology companies and government organizations interested in developing better insight into applications for this market
- Research organizations planning to develop solutions for this market

In partnership with



intelli**FLEX** GroupeCTTGroup



Pricing	
intelliFLEX Industrial Members:	\$395 + HST
intelliFLEX Academic Members (professors/students):	\$295 + HST
Industrial Non-Members:	\$595 + HST
Academic Non-Members (professors/students):	\$495 + HST





We can come to you or you can join a class in your area - contact us to learn more

We can also come to you with customized training options. On-site custom training sessions require a minimum of five participants.

Training dates & locations: intelliflex.org/programs/training/intelliflex-training/ intelliFLEX events calandar: intelliflex.org/events/ Contact us for more details: events@intelliFLEX.org



Copyright © intelliFLEX Innovation Alliance. Do not copy or distribute in any way without the express consent of intelliFLEX.