PRINTED ELECTRONICS AND FUNCTIONAL IMAGING

Cal Poly’s Printed Electronics and Functional Imaging programs educate students in the application of solution-based materials on flexible substrates to produce functional and optical devices used in smart packaging, anti-counterfeit protection, and novel electronic items. Using advanced functional inks and functional imaging results in low-cost, high speed printing of displays, lighting, energy harvesting and storage devices, sensors, and anti-counterfeiting techniques.

These technologies represent growth areas for printers, packaging companies, and related graphic communication companies. They define the type of products and services that are in growing demand and will continue to be in the future, and also define the knowledge expected of employees in these areas.

Each of these fields has a common theme: the application of solution-based materials on flexible substrates to produce functional or optical devices. Using functional inks, printed electronics offers the potential of mass-scale, low-cost production using conventional and emerging printing and coating technologies as their foundation.

Curious?
Visit our website at printedelectronics.calpoly.edu

* Admission and enrollment are subject to Cal Poly Academic Senate, Provost and Chancellor’s Office program approval process.
What can I expect to be prepared to do with a Graduate Certificate in Printed Electronics and Functional Imaging?
The graduate certificate provides online coursework leading to understanding of the design and deployment of mass-scale manufacturing of functional printed products. Students completing the certificate will learn what is involved in producing printed electronics, active packaging, and security items – the equipment needed, the environmental conditions needed, process control requirements, and the techniques used to produce items within tolerance. Through world-class online education, students will see printed electronics being produced and engage in the design of printed electronics files. Students are encouraged to interact with local manufacturers to acquire additional real-world exposure to production of printed electronics, active packaging, or security printing. Certificate graduates will be better prepared to impact their existing business or move into high-technology companies with a better understanding of functional printing.

What can I expect to be prepared to do with the Master of Science Degree in Printed Electronics and Functional Imaging?
The Master of Science Degree in Printed Electronics and Functional Imaging will educate students in commercialization strategies in functional printing businesses. Graduates will be educated, using Cal Poly’s learn-by-doing approach, in funding models, business strategies, printing and coating technologies, imaging systems, material development, electronic fundamentals, novel applications, design integration, and product development. Graduates of the Master of Science degree will possess a unique skill and knowledge portfolio. Each student will actively design and produce a variety of printed electronics, active packaging, or security items, working in Cal Poly’s advanced laboratories. Graduates will develop understanding of environmental conditions needed, process control requirements, and the techniques used to produce functional printing devices. Students will gain experience in researching, specifying, developing, and procuring technology to commercialize products. Graduates may secure positions in management levels focused on equipment acquisition, product design, product development, scaling and commercialization, technology deployment, material specification development, and operations management in private and public companies, research labs, and government agencies.

Regardless of your undergraduate degree, Cal Poly’s Graduate Certificate or Master of Science Degree in Printed Electronics and Functional Imaging may be the pathway to a successful, high-paying, career in a field representing the future of graphic communication.

WHY STUDY NOW?

This is the optimum time to study printed electronics at Cal Poly for the following four reasons:

1. **Printed Electronics and Functional Imaging** explores emerging fields expected to grow rapidly in importance and volume in the decades ahead. Cal Poly will take a formative role in this field.

2. Printed Electronics and Functional Imaging applications are projected to generate new, novel products and also offer more efficient processing of existing, low-complexity electronics, barrier materials, low cost sensors, and anti-counterfeiting features.

3. Despite the optimism, there are many problems yet to work out, which lends itself to many scholarship opportunities for graduate students. Students can become part of the solution through research during their studies.

4. It is a natural extension of the equipment and knowledge base of Cal Poly’s Graphic Communication undergraduate degree. With more than 65 years of expertise in printing, Cal Poly is prepared to leverage its experience in printing to new markets.