



CAPABILITY

**Digital**

**Let's innovate together**

[www.uk-cpi.com](http://www.uk-cpi.com)



**At CPI, we use advanced digital technologies and platforms to help customers design products, devices, formulations and manufacturing processes. This enables our clients to accelerate product development at a lower cost, reducing the time to market. CPI can help you:**

- Design electronics products, circuitry, devices and wearables for a broad range of markets
- Develop predictive models for the design of new complex formulations and materials
- Design and simulate manufacturing processes using multi-scale modeling approaches
- Verify process models using digitally connected process analytical technologies (PAT)

### **Connected electronic devices, wearables and sensor networks**

We support companies with smart product development and manufacturing processes that harness the opportunities offered by advanced digital technologies and internet of things (IoT).

Using our state-of-the-art printed, flexible hybrid electronics and photonics facilities, we can help you to develop unique, and even flexible or freeform products with embedded intelligence and wireless communication. The solutions that we can develop include:

- Active (powered) or passive (unpowered) sensors to detect parameters such as temperature, shock, humidity, strain and location
- Energy harvesting and management, including integration of flexible batteries
- Electronic connectivity using various communication protocols e.g. NFC, RFID, Bluetooth, LPWAN, NB-IoT

### **Smart factory**

At CPI, our state-of-the-art facilities for process engineering, formulated products and biotechnology help our clients to develop complex formulations, materials, products and the associated manufacturing processes. Using advanced digital technologies, we can enhance product quality, boost plant performance and reduce cost by:

- Developing advanced process control solutions for manufacturing processes, using model-based techniques and machine learning
- Helping to establish a digital twin for manufacturing processes by developing bespoke low-cost sensor networks for data capture and data analytics, simulation and modeling



## Connected supply chain

We help our clients to develop bespoke solutions that can digitally connect materials, components, parts, products and logistical assets to their supply chain management and cloud-based systems. Our world-leading printed and flexible hybrid electronics facilities allow you to develop bespoke and low-cost smart tags, sensors, devices, packaging and labels, which integrate components with multiple communication protocols. These facilities enable:

- Real-time track and trace across the supply chain
- Environment and condition monitoring in transit
- Reduced waste and improved operational efficiency
- Increased customer confidence through verification, quality assurance and transparency
- Enhanced security and authentication and linking into systems such as block-chain
- Data analytics for decision support using machine learning

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