SMARTER SURFACES

THAT MAKE A DIFFERENCE

Printed Electronics

cidetec
surface engineering

Printed electronics

Everywhere we look, surfaces are becoming increasingly connected and interactive, creating objects and products that provide meaningful, relevant experiences. In this connected world, smart surfaces represent one of the most exciting and emerging areas of interest, with outstanding industrial applications.

CIDETEC Surface Engineering develops smart surfaces through printed electronics, imbuing materials with intelligent functionality. These surfaces can integrate a range of technologies, including lighting, heating, antennas, and capacitive sensors, enabling them to respond to both present and future demands.

A primary objective is to enhance functionality while simultaneously minimizing weight, space, cost, and complexity. Furthermore, Cidetec has comprehensive expertise in In-Mold Electronics (IME) processes, encompassing all stages of integrating electronics into plastic and composite components.

CIDETEC

CIDETEC Surface Engineering is a key international player in research and innovation related to smart surfaces, surface engineering and composite materials. We specialize in printed electronics, sustainable composites, REACH compliance solutions, aesthetic and functional coatings, protective and barrier coatings, advanced paints and hydrogen technologies.

We are Spain's only technological centre specialising in Surface Engineering. Aligned with sustainability and environmental policies, we count on state-of-the-art equipment and facilities paired with a multidisciplinary team of experts that will help accelerate your company's innovation process.

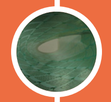
180+
customers

90
researchers & technicians

35
European projects
(12 of them coordinated)

14
patent families

Background



2005-2009
Pressure sensor

Technology protected by patent (2005) (ES2264900B1, ES2302436B1, EP1912051A2)

Polythiophen-based distributed flexible pressure sensors having a large surface area

2011
Electrochemical sensors

Technology protected by patent (2009) (ES2358657B1/ EP2492351B1)

Electrochemical sensor for the detection of analytes in liquid media

2012
Electrochromic displays

Printed displays with ON-OFF colour switching

2014
Invisible electronics

Invisible technology for the power supply of electronic components such as LEDs, etc.

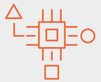
2018
Smart Printed Electronics based on Multifunctionalized Paper

First EC-funded Project in printed electronics coordinated by CIDETEC from Smart Labelling to Point of Care Bioplatforms

Our aim

To provide comprehensive support throughout the entire In-Mold Electronics (IME) process, facilitating the seamless integration of electronics into plastic components (plastronics) and into sustainable composites, leveraging our in-depth expertise in this field.

Design



Ink formulation

Printing

NIEBLING SAMK 720

THIEME LAB 1000 (600)

Hybridisation

Thermoforming

Overmoulding thermoplastics & composites

SCREEN PRINTER THIEME 1010E

ESSEMTEC PUMA 1

Current developments

01. **Modified sustainable inks with improved properties and/or performances**

02. **Selective deposition of functional inks (including multi-layer systems) on 2D and 3D surfaces**

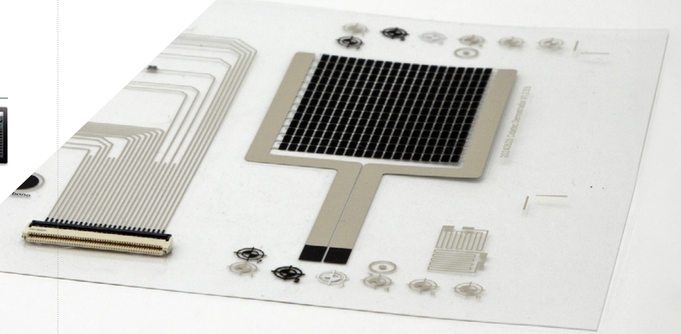
03. **Fixed resistance and PTC heaters printed on different materials**

04. **Printing of conductive circuits on rigid or flexible substrates, 2D and 3D**

05. **Resistive and capacitive touch sensors**

06. **Invisible conductive layers for power supply of electronic components (e.g. LEDs) directly applied on workpieces**

07. **Design and integration of 3D parts with printed electronics into final product**



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