

The Project

Configurable electronic board

To clear the path towards a standardized paper-electronics, it's essential to have a **common platform** integrating the usual items found in electronics: circuits, batteries antennas and sensors. INNAPER's electronic board is **freely configurable**, allowing for multiple applications.

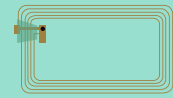
Tailored sensors

Temperature, humidity, pressure and electrochemical sensors, ready to be adapted for different applications.



Communication antennas

The platform is ready to send information from sensors to external devices such as smartphones, using the NFC protocol.



Electrochromic displays

Using a combination of electrically conducting paper and printable electrochromic inks, the platform will count with displays to show information.



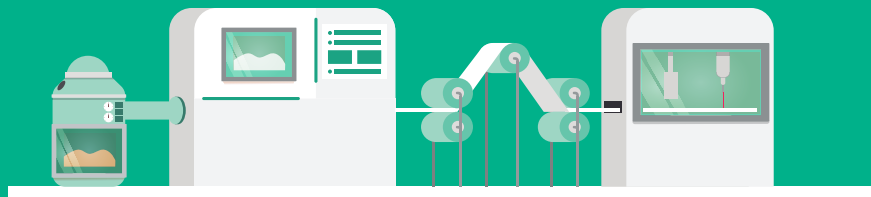
Printed batteries

To power the devices on the platform, INNAPER will use tailored inks to develop batteries that will be printed within the paper.



Scaling up to industry levels

INNAPER will manufacture the technology in its pilot assembly line, using the latest industrial processes available, such as **roll-to-roll** processing. This will serve to design production procedures that are easily adapted to an industrial scale.



Three use-cases

To show the flexibility of the INNAPER technologies, the project will develop three prototypes for three different sectors: food, security and medical industry.

Smart Labels

Labels that use **pressure**, **humidity** and **temperature** sensors to monitor the conditions during the transport and their conservation.



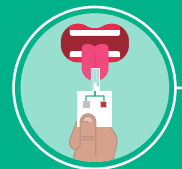
Drug and caffeine detectors

To improve the monitoring of substances, our project will develop **sensors for caffeine** in drinks and **THC** in saliva. When integrated with the rest of our platform, they will be used to produce chemical detectors for the security industry.



Bed-side diagnostics

INNAPER will design **biosensors** to detect the presence of **influenza virus** and **streptococcus bacteria** in saliva. These sensors will be used to manufacture a fast, cheap and portable diagnostic tests.



INNAPER at a glance

Currently we produce nearly 50 million metric tonnes of electronic waste each year. This poses a growing environmental and social concern. INNAPER is a European innovation project that aims to reduce the environmental impact of electronics, designing a new electronic technology based on paper: a **recyclable, reusable** and **renewable** material.

Modifying the cellulose nanofibers that compose paper, the project will produce **tailored papers and inks** that will be used to manufacture electronic items such as batteries, displays, antennas and circuits. Altogether, they will form a **configurable electronic board**, ready to be used by the packaging, security, food and health industry in smart labels, and drug, caffeine and disease detection devices.

To transfer the technology developed by the project to the industrial market, INNAPER gathers a team of both academic and industrial partners, that aims to make an impact in the **flexible and printed electronics** industry. This is a growing market, widely used in many industrial sectors, from health to security. Furthermore, the proliferation of the Internet of Things devices will boost this market in the next decades. Paper electronics pose a sustainable alternative for the flexible plastic electronics that will shape the market in the years to come.

The Project in numbers

7 EU Countries

3.5 Years

7.5 M€ Funding

15 Partners

Partners



Find out more!

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INNAPER

A research and innovation project to print electronics within paper