We will modify the fibres of paper to give them specific features: conducting electricity, resisting higher temperatures, shielding from magnetic fields...

Using tailored inks, our technologies allow us to create differentiated areas within the same paper, integrating the different electronic items within the paper itself. Giving rise to circuits, batteries, sensors, displays, and many other electronic items.

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Our science
We consume electronics faster than ever, discarding them every few years. Smartphones, tablets, TVs... are made up of plastic and metal, materials that are difficult to recycle. This is a growing environmental and social problem: the electronic waste or e-waste.

At INNPAPER, we want to develop electronic devices using paper: a material that is recyclable, reusable, cheap and flexible. In the future, this technology can help reduce the amount of e-waste we produce, creating more environmentally friendly electronics.

Our motivation
We consume electronics faster than ever, discarding them every few years. Smartphones, tablets, TVs... are made up of plastic and metal, materials that are difficult to recycle. This is a growing environmental and social problem: the electronic waste or e-waste.

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Our technology
We will design the usual items found in electronics—such as circuits, batteries or antennas—using paper as the main material. Altogether, these items will form a configurable electronic board, adaptable to be used by industries in different fields.

Our production
To monitor the environmental impact and analyse the viability of the INNPAPER technology, the project comprises the whole chain of production: from the raw materials, to the assembly of the final devices.

Renewable resources
We will perform lifecycle analysis, that evaluate the environmental impacts of the extraction of the raw materials, their processing, the manufacture of the study-cases and their recyclability and reusability.

Sustainable production
At INNPAPER we will produce all the prototypes in a pilot assembly line that uses the latest industrial process available, such as roll-to-roll processing. These methods reduce the amount of material needed, lowering the carbon footprint.

Recyclable design
To minimise the amount of waste generated by our devices, we will design them to be as recyclable and reusable as possible. To do this, we will conduct recyclability analysis of our products, to use them to re-manufacture processes.

Our numbers
15 Partners
7 Countries
3.5 Years
7.5 Millions €

Our study-cases
INNPAPER will design electronic solutions that could be adapted to multiple industries in the future. To show the flexibility of our electronic configurable board, we will develop three prototypes for three different sectors: pharmaceutical, security and food industry.

Drug and caffeine detectors
Our paper-based chemical sensors can be tailored to detect the presence of specific molecules. To improve the monitoring of substances, our project will develop detectors of caffeine in drinks and THC in saliva.

Smart Labels
We will develop labels with pressure, humidity and temperature sensors, to monitor the state of the food inside the packaging.

Bed-side diagnostics
Our biosensors can detect the presence of influenza virus and streptococcus bacteria in saliva. These sensors will be used to manufacture a fast, cheap and portable diagnostic test.