



INN PAPER

Innovative and Smart Printed Electronics based on Multifunctionalized Paper: from Smart Labelling to Point of Care Bioplatfoms

D7.2 Initial communication material (Motion graphics, infographics, brochure)

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¹PU = Public; CO = Confidential, only for members of the consortium (including the Commission Services); CL = Classified, as referred to in Commission Decision 2001/844/EC

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1 INTRODUCTION

Several communication strategies are being used to maximise the impact of the INN PAPER project and to effectively communicate the actions and results beyond the consortium.

Support the communication strategies, three different communications materials has been developed, using different formats (both printed and on-line). These materials are presented below.

2 COMMUNICATION MATERIALS

2.1 Motion Graphics

The project motion graphics aims to aid in the understanding of the project for a wide audience. The motion graphics video summarises the key aspects of the project's scope (potential environmental impact helping the e-waste problem, technological advances and scientific knowledge) and purpose as well as its applications (explanation of the three use-cases and potential fields of application). It raises awareness on the benefits that scientific research can provide to improve industrial processes.

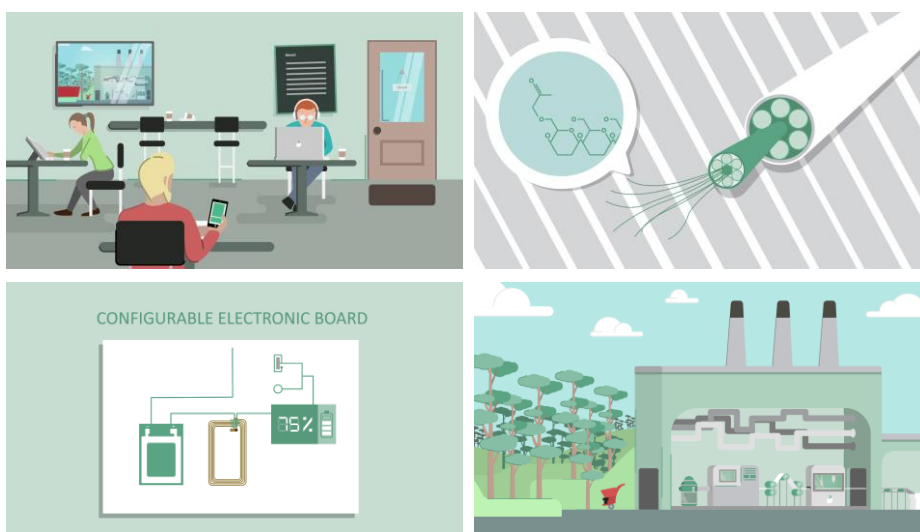


Figure 1: INN PAPER's motion graphics

Link: video available on the project's [Youtube channel](#)

2.2 Project's infographics

Complementary to the development of the motion graphics video, a project infographic has been designed to condense all the project's information in a poster format (Figure 2). It aims to present the project to a broad audience including some basic information about the scientific knowledge behind the technology, the impacts of INN PAPER and the three study-cases.

Link: <http://innpaper.eu/wp-content/uploads/2018/06/INN PAPER Infographics.pdf>



2.3 Project's brochure

The project brochure has been created to have an easy-to-carry presentation of the project for consortium members (Figures 3 and 4). It includes different levels of specialized information (from simple graphics and easy-to-understand heading to more technical descriptions of the scientific knowledge) and thus it can be used to target a broad audience ranging from the general public to scientific or industrial stakeholders.

Link: <http://innpaper.eu/wp-content/uploads/2018/06/INN PAPER-Brochure.pdf>

AN INNOVATION PROJECT TO DESIGN A CONFIGURABLE CIRCUIT BOARD, USING PAPER AS THE MAIN MATERIAL

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.

At INNAPER, 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 science


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.

Our numbers

15 Partners
7 Countries
3.5 Years
7.5 Millions €

 This project is funded by the European Union's Horizon 2020 research and innovation programme under grant agreement No 760876

Tailored sensors

To adapt the configurable electronic platform to different industries, INNAPER will develop a broad variety of paper-based sensors to measure temperature, humidity, pressure and detect specific chemical compositions.

Communication antennas

To receive and send information from external devices such as smartphones, we will print antennas that use the NFC protocol.

Electrochromic displays

Altering the optical properties of the paper, we will design displays to show information provided by the sensors.

Printed batteries

The special inks researched at INNAPER will allow us to print batteries to power the electronic items in the platform.

Our study-cases

INNAPER 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.

Smart Labels

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



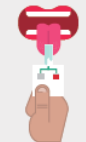
Drug and caffeine detectors

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.



Bed-side diagnostics

We 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 test.



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 analyze the viability of the INNAPER 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 life-cycle 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 INNAPER, we will produce all the prototypes in a pilot assembly line that uses the latest industrial processes 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.



Figure 2. INNAPER infographics

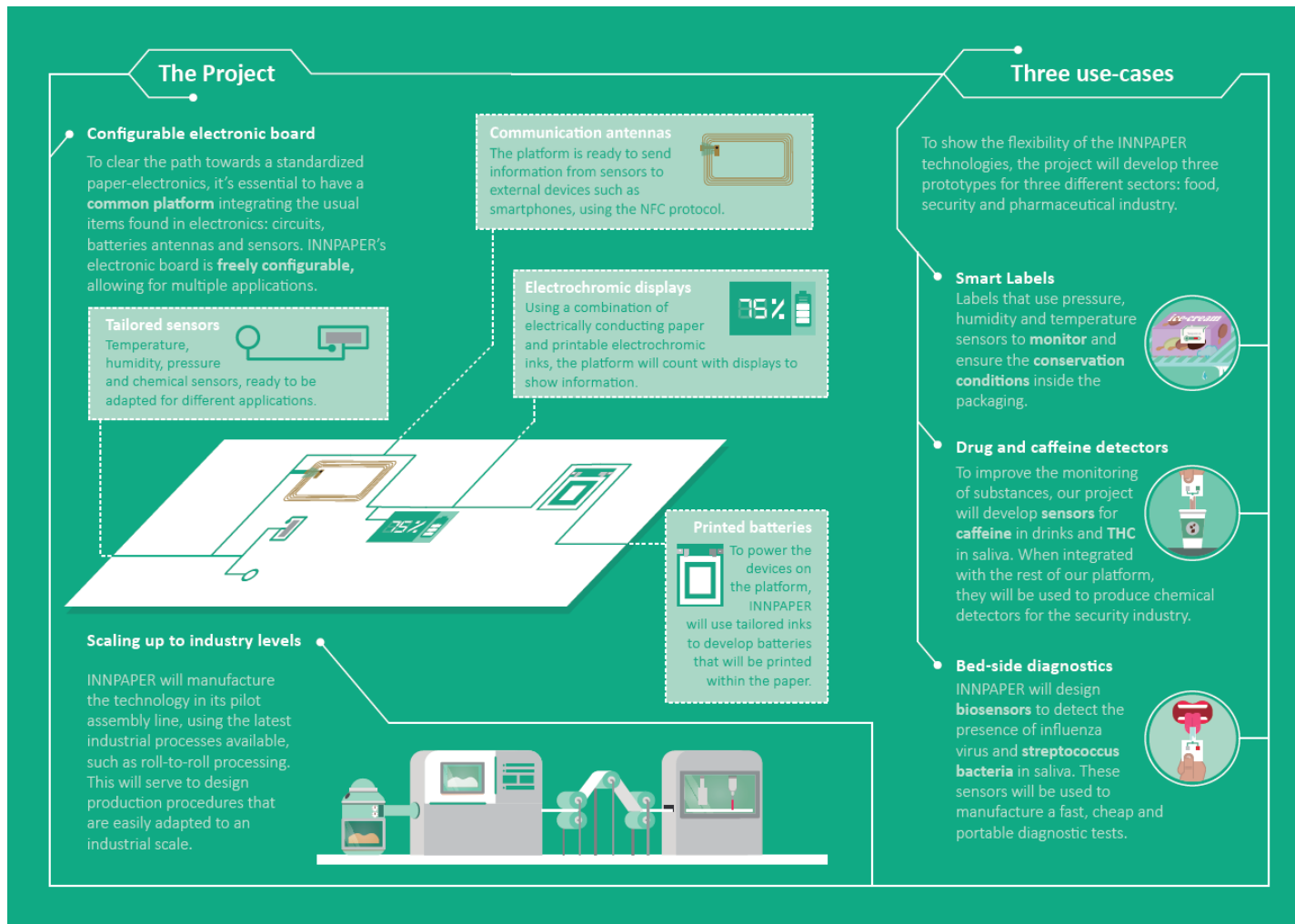


Figure 3. INNAPER brochure front side

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 and health industry in smart labels, and drug 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
- 7.5 M€ Funding
- 3.5 Years
- 15 Partners

Partners




Find out more!


www.innpaper.eu

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INNAPER

An innovation project to print electronics within paper

Figure 4. INNAPER brochure back side