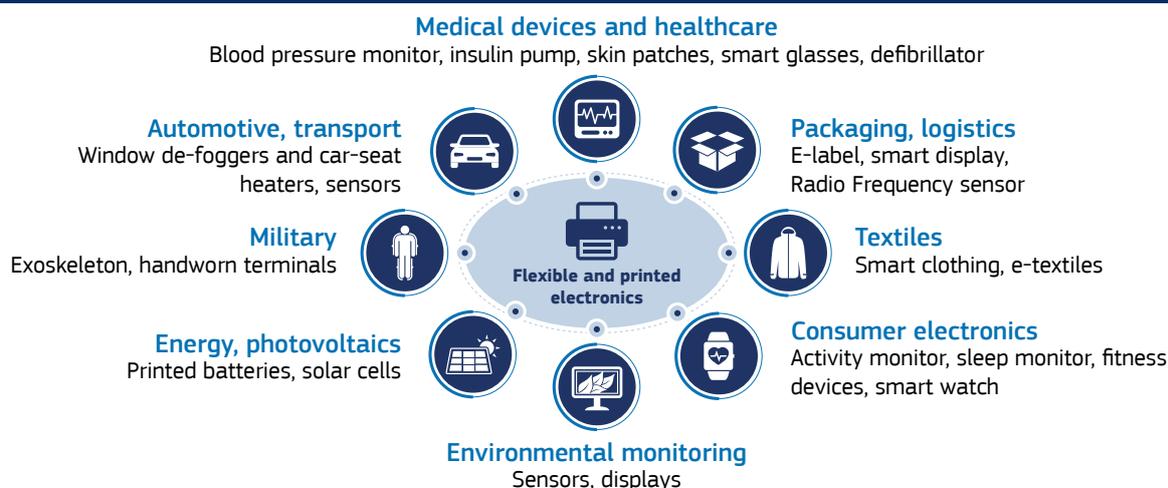


# Flexible and printed electronics open doors to new uses of already existing technologies

## Product Watch: Flexible and printed electronics

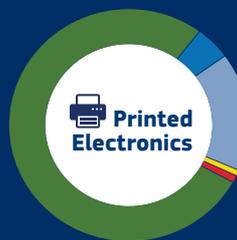
**Flexible electronics** refers to a class of lightweight, flexible and electronic sensing components and electronic devices built on stretchable substrates that are used for a broad set of products and applications such as displays and sensors. The most prominent characteristic is that they can bend in comparison to the electronic systems built in rigid materials. **Printed electronics** is often considered to be part of flexible electronics. It refers to the printing method used to create electronic devices by printing them on diverse substrates. The technology used has evolved over time, and now it is possible to print electrical circuits quickly and inexpensively thanks to inkjet printers.



Flexible and printed electronics can be applied in many new sectors, ranging from medical devices to environmental monitoring. Its market opportunities lie especially in the field of bendable displays:

Displays: €25.56 bn

Source: IDTechEx, 2020



- Conductive ink: €1.91 bn
- Sensors: €3.24 bn
- Organic light-emitting diode Lighting: €20.74 m
- Logic batteries, Organic photovoltaics e-textiles: €20.74 m

FLEXIBLE, STRUCTURAL, HYBRID

## Flexible electronics value chains rely on different materials than the regular value chain because its components need to be bendable

Flexible electronics value chains incorporate different production processes and thus different equipment (suppliers) than regular electronics. The flexible electronics value chain includes segments such as research and technology development, material supply, design, printing, components manufacturing, product integration and end-user segments.

### Electronics value chain



### Flexible and printed electronics



Research and innovation

Integrators

Application markets

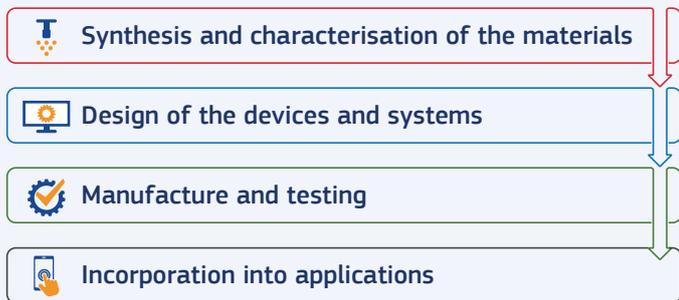
Automotive, Healthcare, Medical devices, Logistics, Textiles, Consumer goods

For more information, read the full Product Watch on Flexible and printed electronics here:

<https://ati.ec.europa.eu/reports/product-watch/flexible-and-printed-electronics>

## Research and technology play a key role in the development of flexible and printed electronics

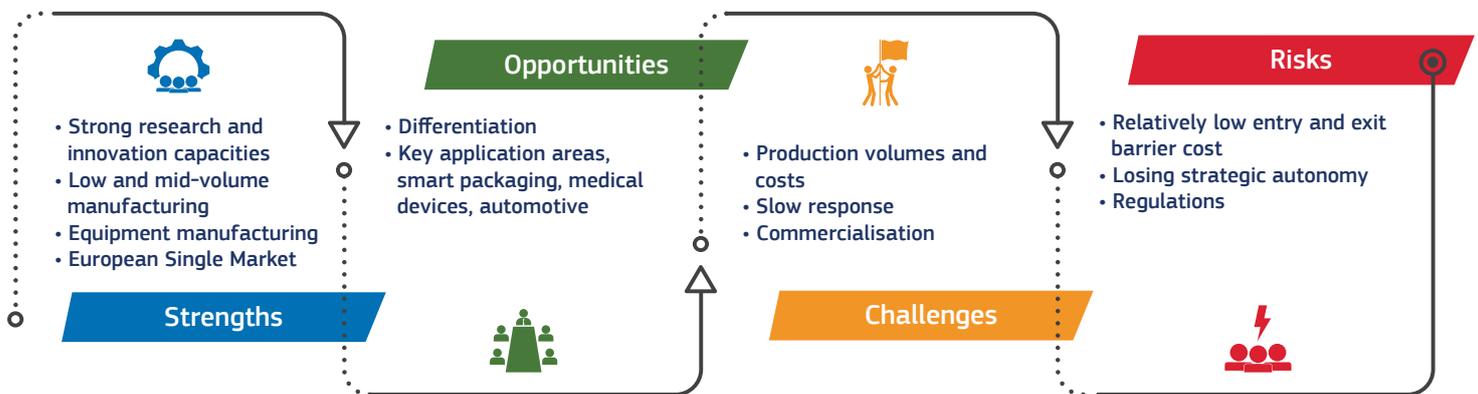
The process of manufacturing flexible electronics starts with the characterisation of the materials



Key actors in the flexible electronics value chain range from research centres and manufacturers to the end users

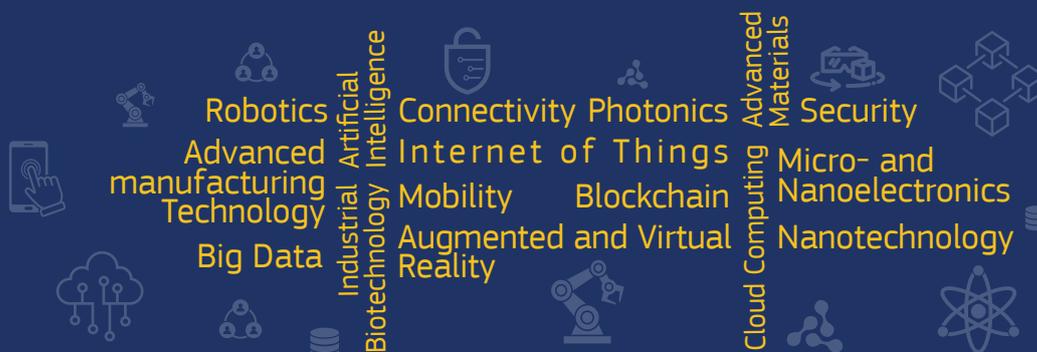


## EU competitive positioning regarding flexible and printed electronics



## About the Advanced Technologies for Industry (ATI) project

The ATI project – funded by the European Commission – supports the **implementation** of Europe's new growth strategy with a systematic monitoring of **technological trends** and reliable, **up-to-date data** on advanced technologies.



The **Product Watch** analyses novel products that are based on advanced technologies for the development of goods and services – enhancing their overall commercial and social value. It supports cluster organisations and S3 partnerships, providing intelligence on innovation areas where European regions could team up and invest together.

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