

Digital Single Market

Organic and Large Area Electronics

Organic and Large Area Electronics (OLAE) is a branch of electronics that works on conductive polymers, plastics, or small molecules instead of 'conventional' silicon semiconductors. It is called 'organic' electronics because OLAE displays are carbon-based.

Organic and Large Area Electronics is made by a scalable manufacturing technology, often using pioneer printing methods on flexible substrates like paper, plastic films or metal foils. Made of widely available, cheaper and less toxic material than traditional electronics, OLAE is an emerging technology ideal for applications that require flexibility and adaptability to large areas, particularly paper and plastic.

OLAE-based products are generally thin, lightweight, energy-efficient, robust and flexible. They can be found in Organic Light-Emitting Diodes (OLED) for super/rollable flatscreens and handheld devices displays, and OLED for lighting and Organic Photovoltaics (OPV). OLAE also enhances innovation in health monitoring applications with large area sensor diagnostics, in the automotive industry, in traditional industries like paper and plastic, in the glass and building industry and even in the advertising industry with smart windows and large area reflective displays.

New standalone products integrating OLAE-based displays, sensors, solar cells and lighting, featured with computing and communication functions can be developed to address new niche-markets, hence opening up huge opportunities for SMEs and for new manufacturing sites in Europe.

To find out more about OLAE, visit the European Technology Platform [Photonics 21](#) [1], the [Organic Electronics Association](#) [2], or the EU research project on Photonics [website](#) [3].

Published:

31 January 2014

Last update:

9 May 2017

Team responsible

[DG CONNECT](#) [4]

Share this page

Links

[1] <http://www.photonics21.org/>

[2] <http://www.oe-a.org/>

[3] http://cordis.europa.eu/fp7/ict/photonics/projects-fp7_en.html

[4] https://ec.europa.eu/info/departments/communications-networks-content-and-technology_en