

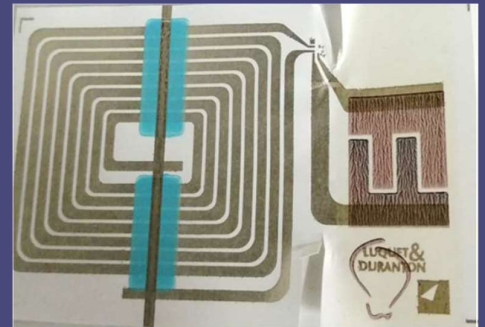
## Flexible & Wearable Electronics Application Experiments



### Luquet&Duranton

Luquet et Duranton is a company with more than 120 years of expertise in the manufacture and distribution of technical prints and shapes mainly working with the medical sector, administrations and industry.

<https://luquet-duranton.fr>



### Problem to be solved

Electrochromic Displays (ECD) are low-energy consuming display, which work by a change of color of a thin-layer. The commercialization of the ECD is inextricably linked to the improvement of the color contrast, the reduction of the color switch time and adjustment of the manufacturing to satisfy cost demand. One of the possible way of improvement is the reduction of the number needed for the display fabrication.

### Solution provided by SmartEEs

The whole project consisted in the fabrication of ECD using only flexography. It is a direct printing process, using a relief flexible plate that applies a fluid ink to the substrate. The flexographic process is able to print on a very wide variety of substrates with a printed ink film thickness ranging from few nanometers up to 8  $\mu\text{m}$ , which was suitable for printing electronics. The prototype was made of an electrochromic display (ECD) linked to an antenna and a NFC chip by using new effective manufacturing method.

### Business model & impact

A possible creation of a dedicated start-up for building ECD by flexography is highly considered at this stage. One of the main objective of the study was to understand the possibility of printing ECD using only flexography: this objective was successfully reached. This results in cost reduction of the ECD as less ink is needed for the fabrication compared to screen-printing.

