

SEGULA Technologies signs a new innovation: a smart coating for more fuel-efficient vehicles

The E-Tric Tracks project aims to save up to 50% of the weight of electrical cables per car by replacing them with a smart coating that integrates electrical functions into the sheet metal.

Paris, 1 June 2021. SEGULA Technologies initiated the E-Tric Tracks project in 2016 in partnership with ArcelorMittal, based on the observation that the increase in the number of electrical devices in vehicles required ever more electrical harnesses, weighing the vehicle down by 40 to 50 kilos.

This innovative project, which is the subject of a joint international patent application, aims to **replace electrical cables in cars by integrating the electrical function into the vehicle's sheet metal to lighten its weight and thus reduce its energy consumption.**

The smart coating technology and process developed by SEGULA consists of a very thin layer of conductive ink (thickness < 100 µm - width < 20 mm) incorporated between protective layers. Printed on a formable metal substrate, this smart multilayer coating maintains the electrical current along the entire length of the tracks, resists high ignition voltage and meets normal operating temperature requirements. This technology is also compatible with the cataphoresis bath.

The process allows different electrical systems in a vehicle to be powered, for example car lights (ceiling lights, LED rear view mirror, etc.).

The E-Tric Tracks innovation is mainly aimed at players in the e-mobility sector, including the automotive, railway, naval and aeronautical industries, but it is also of interest for all applications involving low voltage, as is the case for household appliances.

It provides manufacturers with added value on their industrial performance, including from an ecological point of view, since 50% of the cable bundle could indeed be replaced by this new technology with tangible benefits:

- 20% weight saving on cable bundles while increasing the useful volume (i.e. less fuel consumption and less CO2 emissions)
- Fewer components, especially copper, so less supply
- Simplification and reduction of assembly time
- Cost reduction through reduced storage and assembly areas

"E-Tric Tracks is a very good example of SEGULA's willingness to develop disruptive innovations through cooperative projects between major players. Its results are the fruit of a joint exploration of innovative, pre-competitive ideas, and they represent a remarkable advance for a cleaner, more efficient e-mobility industry," commented Isabelle Dupret, Director of Research and Innovation in the Automotive Department at SEGULA Technologies.

VIDEO



<https://www.youtube.com/watch?v=FJ5J8CEiPMY>

In this video clip, part of the door panel has been replaced by the innovative solution and connected to the audio, power window motor and rear view mirror.

PHOTOS

Just click on the photos to download them:



E-Tric Tracks demonstrator: a car door in which the cables have been replaced by the intelligent lining (©SEGULA Technologies)



E-Tric Tracks Demonstrator: Zoom in on the printed circuit (©SEGULA Technologies)

About SEGULA Technologies

SEGULA Technologies is a global engineering group, serving the competitiveness of all major industrial sectors: automotive, aerospace, energy, rail, naval, pharmaceutical and petrochemical. With a presence in more than 30 countries and 140 offices worldwide, the Group favours close relationships with its clients thanks to the skills of its 10,000 employees. As a leading engineer who places innovation at the heart of its strategy, SEGULA Technologies carries out large-scale projects, from research to industrialisation and production.

Press contact

SEGULA Technologies

emilie.dubos@segula.fr

+33 (0)1 41 39 47 22