

LIST SUPPORTS ANISOPRINT IN IMPROVING 3D PRINTING TECHNOLOGY

The Luxembourg Institute of Science and Technology (LIST) and Anisoprint have committed to developing effective and tailor-made formulations of Carbon-Fibre Reinforced Polymer (CFRP) composites for industrial applications of 3D-printed materials.

On 13 March 2019, the Luxembourg Institute of Science and Technology (LIST) and Anisoprint, a Russian start-up specialized in 3D printing technologies recent arrival to the Luxembourgish market, signed a three year collaboration agreement. The two partners took the opportunity of their respective presence in Paris, France, at the 2019 edition of JEC World, the leading international Composites Show, to seal their commitment.

Improving formulations of Carbon-Fibre Reinforced Polymers

As part of the „Structural composite material for 3D-Printing“ (SAMIA-3D) research project partly funded by the Luxembourg National Research Fund (Fonds National de la Recherche – FNR), the two partners undertake to develop and validate, by February 2022, tailored material formulations of Carbon-Fibre Reinforced Polymer (CFRP) composites that meet the specific requirements for industrial applications. Anisoprint, which already sells its own patented continuous-fibre 3D-printing technology, allowing the manufacturing of complex 3D structures, now intends to further improve its concept in terms of materials. Such a development will allow Anisoprint to reach structural part specifications for a wide range of valuable applications including aeronautics, drones, electric cars, transportation and sport applications.

To achieve this goal, the Russian company will rely on the expertise of LIST researchers in the field of structural composite materials and their manufacturing. Together, they will develop effective formulations from the laboratory scale to the demonstration stage. The research work will focus on a better characterization and improvement of both the formability and adhesion of 3D-printed filament properties. Carbon-Fibre Reinforced Polymer materials are of great interest to manufacturers thanks to their excellent mechanical and chemical performance and recycling and potential lightweight structure capabilities. Pushing back the limits of printed materials is the focus of the collaboration between LIST and Anisoprint.

3D printing, a fast-growing sector Anisoprint's 3D printing technology aims to

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replace traditional extractive manufacturing technologies such as milling, turning, casting or forging by introducing lightweight and extremely strong composite materials at a competitive price. It will also compete with metal 3D-printing technologies in certain applications, providing significant cost savings due to lower equipment and material costs.

Over the past year, the 3D-printing sector has been constantly growing, creating in parallel a wide range of new opportunities and applications, mainly industrial. The development and progressive flooding of 3D printing into industrial production is evident in all sectors. The Anisoprint technology will not only make it possible to print parts made from continuous fibre-reinforced composite materials but will also allow a great combination of both polymer matrices and different fibres.

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