

FAIRMAT raises €8.6 million to put technology at the service of high-tech material recycling

Benjamin Saada, co-founder of Expliseat, launches his new start-up, a pioneer in developing breakthrough technologies for high-tech material recycling, with the aim of creating one of the first circular industries with a negative carbon footprint, for large-scale, high-impact environmental applications.

Paris, September 28, 2021 – Benjamin Saada, co-founder of Expliseat, launches FAIRMAT, a deeptech company targeting "zero waste" and an end to the landfilling of composite materials, by creating recycled materials with a negative carbon footprint, suitable for a wide range of applications. This ambition will revolutionize the high-tech materials industry — whose use is constantly growing — while paradoxically very few ecological solutions exist for their end of life.

FAIRMAT announces a fundraise of €8.6 million to industrialize its proprietary carbon fiber composite recycling technology. This seed round was led by fund Singular alongside business angels including tech entrepreneurs and industry leaders who will support FAIRMAT in this first stage of its development.

A disruptive technology applicable to an exponentially growing market

FAIRMAT aims to revolutionize composite materials through a disruptive technology that creates a lightweight, strong high-tech material designed for use across virtually all industries. Produced from carbon fiber production offcuts across numerous sectors — wind energy, aviation, automotive — this material will prevent their landfilling or incineration, which remains the norm in most cases. Although fully aware of the problem, industries using carbon fiber composites still struggle to find solutions. The volume of carbon fiber composite waste continues to rise, estimated at nearly 62,000 tonnes¹ globally each year, not counting end-of-life dismantling. High-value waste that is neither sorted nor valorized but sent to landfill — which FAIRMAT intends to recycle. FAIRMAT thus creates the first high-tech recycled material with a negative carbon footprint.

Through its proprietary technology, FAIRMAT disrupts the sector by broadening the applications of this high-value material via the creation of a truly equitable material, saving 41 kg of CO₂ emissions per kilogram of recycled material. FAIRMAT offers an ecological alternative to all production materials and addresses the environmental and sustainability challenges facing industrial players. The CFC market alone represents 160,000 metric tonnes produced in 2020². Carbon fiber composite is a material that provides enormous, indispensable services to the planet — for example by enabling hydrogen storage in vehicles or making it possible to manufacture wind turbines.

A deeptech in service of a more sustainable industry

FAIRMAT has developed a technological process capable of making carbon fiber composite production circular, giving a second life to this high-value material. Until now, end-of-life composite was predominantly either incinerated or landfilled.

FAIRMAT will draw on numerous technologies (artificial intelligence, robotics, algorithms, etc.) to advance its solution, significantly reduce its production cost, and offer new planet-friendly applications to a wide range of actors in industries such as design, mobility, electronics, construction, transport, and logistics.

Production launch planned for 2022

This first funding round will allow FAIRMAT to mature the technologies it has developed in the field of composite material recycling. FAIRMAT plans to launch production of its high-value recycled material as early as 2022. In this regard, the deeptech has already signed its first recycling contracts in France. FAIRMAT targets a capacity of 5,000 tonnes of recycled materials annually at its first production site.

"When I looked more closely at recycling this material, I realized it was not being valorized in an ecological way at all. I wanted to think about developing a technology that would meet the sustainability requirements needed to transform industries. In 2021, we are finally able to make this high-value material circular in a far more virtuous way, and this is thanks to new technologies. We have a major challenge ahead of us: recycling a gigantic market whose growth will continue to increase in the years to come. Thanks to the trust of Singular and our investors, we will quickly make our ecological material available to our industrial clients." comments **Benjamin Saada, founder of FAIRMAT.**

Raffi Kamber, co-founder of Singular, states: *"Benjamin Saada is a recognized figure in the world of industrial innovation. Having revolutionized the aeronautics industry with the world's lightest aircraft seat, he is now tackling the valorization of a strategically important material for the planet with the creation of FAIRMAT. The ambition of the FAIRMAT team won us over immediately, and we are very pleased to be able to support the first steps of this future major player in deep tech in Europe and beyond."*

About FAIRMAT

Founded in 2020 by Benjamin Saada, FAIRMAT is a French deeptech company with the ambition of revolutionizing the recycling of carbon fiber composite. Through its breakthrough technology, FAIRMAT enables a sustainable future for composites and a more ecological industrialization over the long term. More information at: www.fairmat.tech

About Singular

Singular is a European venture capital fund supporting founders of high-potential young technology companies. Focused on the digital sector, and in particular on machine learning and computer vision, Singular's teams support projects throughout their development with particular attention to their international growth potential.

About carbon fiber composites

Carbon fiber composite is one of the most common forms of composite in use today. Carbon fiber is produced primarily through polymerization at extremely high temperatures in an inert atmosphere furnace.

The resulting fibers are then spun and/or woven into sheets and mixed with hardening resins to form the various required components. A composite material is an assembly of at least two components that differ in form and chemical composition and are non-miscible. In general, it consists of a reinforcement (here, carbon fiber) and a matrix (here, a polymerized resin).

Composites are used across a wide range of markets and applications including industry, railways, renewable energy, and aerospace. They are also used in newer applications such as hydrogen vehicles, drones, bicycles, boats, and more.

Compared to traditional materials such as steel, aluminum, iron, or titanium, composites have not yet reached full maturity and have only recently come to be better understood by design and manufacturing engineers. However, the physical properties of composites make them undeniably attractive. High strength combined with low weight remains the winning combination driving composite materials into new horizons.

Indeed, carbon fiber composites represent a sustainable means of reducing CO₂ emissions: aircraft, hydrogen vehicles, electric mobility, wind turbines, and more have all become significantly less energy-intensive since incorporating this material into their design.

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¹ According to estimates presented by Sankar Karuppannan Gopalraj and Timo Kärki in the scientific journal *SN Applied Sciences*, published February 2020. ² According to estimates presented by A.K. Bledzki, K. Goracy, and M. Urbaniak in the scientific journal *Polymer*, published January 2021.