

Decarbonising the textile industry: A revolutionary pigment from the lab to the market in three years

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Explore the journey of decarbonising the textile industry through the remarkable example of bringing a revolutionary pigment from the lab to the market in three years, starting with the milestones of this captivating journey

EverDye is a green chemistry startup aiming at decarbonizing the way we colour our garments. Its journey began with a vision to revolutionise textile dyeing, one of the most impactful steps of textile production. Along the way, the company achieved milestones that validated the impact and scalability of its innovation. Each step marked a significant leap toward creating a sustainable solution for the textile industry, free from intensive resource utilisation.

Textile dyeing: First proof of concept

The story started in July 2021 with the first POC. This milestone represented the initial validation of this idea: using bio-based pigments and room-temperature dyeing to eliminate the heavy environmental footprints of textile dyeing. Dyeing processes are done at high temperatures (+80°C) and are lengthy (+4h), resulting in high amounts of energy required to heat the dyebath. This usage of carbon-emitting energy releases huge quantities of greenhouse gas, ranking fashion as the second most significant polluting industry globally.

These first tests laid the foundation for what followed, proving their pigments could adhere strongly to fibres using a simple yet innovative fixation mechanism, similar to a magnet, without the need for hours-long application or high-temperature baths. This never-before-seen solution could drastically reduce the textile industry's footprint and help it meet its sustainability targets.



Producing lab-scale pigment

In Q2 2022, EverDye reached another essential milestone in scaling the innovation: the production of a first lab-scale pigment. This demonstrated the pigment formulation's replicability, enabling the start of conversations with potential partners and clients.

With the fashion industry's framework being highly scrutinised by the public and authorities, numerous parties, from end-customers to brands, are awaiting solutions oriented towards reducing impact, and research for alternative solutions is urgent for many.

Dyed cotton sample

By Q4 22, efforts had culminated in the production of dyed fabric samples, made to showcase the practical application of the pigments. This achievement was important as it demonstrated how the technology could deliver the same vibrant colours and high-quality results as traditional methods, while using significantly less energy and water.

The end of 2022 marked one important step: receiving client validation. This confirmed that the technology could compete with or even exceed existing industry standards regarding colour vibrancy, durability, and fastness.

Lab tests and pilot projects with brands

By mid-2023, lab tests and pilots had begun collaborating with high-profile clients. This milestone represented proof of interest in this technology from some of the most recognised names in the fashion industry. It also marked the company's transition from early-stage validation to real-world applications, bringing it closer to scaling its solution for industrial use.

Scaling up to commercial production

In Q3 2023, EverDye made another significant step by scaling up its pigment production to an industrial scale. This achievement was a major technical breakthrough demonstrating the scalability of the formulation process. It also allowed the company to start additional pilots, moving beyond small-scale tests and proving that their technology could meet the demands of industrial-scale dyeing.

All those achievements were made feasible with public investment support from different actors, such as Bpifrance, EIC, and Andam. These prizes and subsidies enforced the company's innovativeness and validated the impact potential it could have, positioning EverDye as a leader in sustainable textile innovation.

First industrial production

In Q3 2024, the company achieved one of its most ambitious goals: completing a first commercial collaboration. This milestone demonstrated the successful plug-and-play integration of their technology into existing dyeing facilities without requiring additional capital expenditure from dyeing mills. It was the ultimate proof that the solution could deliver on its promises of sustainability, quality, and cost-effectiveness at scale.

EverDye's technology debuted on the United States market through a capsule collection with the lingerie brand AdoreMe. This milestone was not just a commercial achievement but also a symbolic one, showcasing how their sustainable dyeing process could align with consumers' demands and the growing market for sustainable fashion.

Today: Three colours ready for commercialisation

By Q4 2024, three colours were entirely ready for commercialisation. Additionally, other colours are almost completed and will soon be ready to hit the shelf, promising an expanded palette to meet broader market needs in the near future and create a long-lasting impact on the industry.

Decarbonising the textile industry: Looking ahead

This journey shows that an industrial startup can go from an idea to commercial adoption, while staying true to their values and daring to be bold and innovative. The priorities to drive impact at scale are clear:

1. Scaling the technology to full industrial capacity.
2. Expanding the range of colours, aiming for all major colours by 2025.
3. Establishing strategic partnerships to drive adoption across the textile value chain.

These combined steps position EverDye to drive meaningful change in the fashion and textile industries, enabling the creation of vibrant colors without compromising the health of our planet.

Contributor Details

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