

# Epoch Biodesign Secures \$18.3M Series A to Scale AI-Driven Plastic Biorecycling Technology

March 7, 2025



**Epoch Biodesign, a UK-based startup specializing in enzyme-based plastic recycling, has announced the successful completion of an oversubscribed \$18.3 million Series A funding round. Originating from founder Jacob Nathan's high school science project, the company is now poised to scale its innovative biorecycling technology.**

Founded in 2019, Epoch Biodesign has assembled a team of chemists, biologists, and software engineers focused on developing a library of “plastic-eating” enzymes. The Series A funding will be used to establish the company's first production facility, capable of processing 150 tons of plastic waste annually. Commercial-scale production is anticipated by 2028, with efforts underway to accelerate this timeline.

The company's technology addresses the global plastic waste crisis by utilizing generative AI to accelerate the discovery and optimization of enzymes capable of breaking down complex plastics like polyester and nylon. By leveraging large language models (LLMs) and proprietary lab data, Epoch Biodesign has significantly reduced the time required to develop effective enzymes, achieving speed improvements of up to 25x.

“The challenge with biology is that it's just too complicated. Humans don't understand how it works. We'll never be able to rationalize it. Most of these biological questions that we have remain unanswered. So the big shift here has been our ability to understand large, complex datasets — which is effectively AI,” explained Nathan.

Epoch Biodesign's biorecycling process offers several advantages, including lower energy consumption due to its low-temperature operation, high yields exceeding 90%, and the production of reusable materials without unwanted byproducts. This approach aims to make recycling economically competitive with virgin plastic production.

The Series A round was led by Extantia Capital, with strategic participation from Inditex, the parent company of Zara, which has also entered into a multi-year joint development agreement with Epoch Biodesign. Other investors include Day One Ventures, Happiness Capital, Kibo Invest, and Lowercarbon Capital, along with a \$1 million grant from the UK government.

This funding brings Epoch Biodesign's total capital raised to \$34 million. The company plans to double its team size in the next 12 months to support its scaling efforts and further develop its enzyme library for a broader range of plastic waste.