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REGENERATIVE FIBRES FOR THE FASHION INDUSTRY

 FASHION & BEAUTY

One startup is redesigning textiles to promote a circular economy

Spotted: According to one [Quantis report](#), apparel is responsible for 3,290 million metric tonnes of CO₂-equivalent emissions a year. And finishing processes for textiles are also especially harmful, with dyeing causing over [20 per cent](#) of global water pollution and generating huge volumes of wastewater. To tackle this issue, women-led biotech company Werewool is using biomimicry to engineer high-performance, protein-based textile fibres, with innovative technology that's co-patented between the Fashion Institute of Technology and Columbia University.

Instead of requiring harmful dyeing, Werewool's fibres – which are made from agricultural waste – use naturally coloured proteins. By altering the DNA of a protein, Werewool's team can then tweak the colour of the protein. Connecting these proteins to the circular fibres colours them naturally, without polluting waterways. The final fibres are fully biodegradable and circular. Instead of needing petroleum-based raw materials and synthetic dyes, Werewool utilises natural and renewable resources, with a regenerative process that returns nutrients to the Earth at the end of a garment's life.

Though the company is currently focusing on 'dyeing' textiles, Werewool's technology could be used to replace other chemical-based finishing techniques. After identifying organisms with desirable properties in the natural world, the necessary DNA can be redesigned for its protein-based fibres. This means that Werewool could, in future, replicate any natural property in its fibres, including making them antimicrobial, stretchy, or waterproof.

While the company is still in the early stages of development, Werewool recently announced a [\\$3.7 million](#) (around €3.4 million) seed round led by Sofinnovva Partners and Material Impact. The money

will be used to develop the company's first product that will use neon pink protein fibres, as well as expand manufacturing capacity and grow the team.

The fashion industry is constantly growing, and Springwise has spotted many innovations trying to make it more sustainable. These include climate-positive [cotton T-shirts](#) and a process that transforms [pollution into sustainable fabrics](#).

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Takeaway:

The fashion industry represents an integral part of our economy, with a value of over [\\$2.5 trillion](#) and employing more than 75 million people across the globe. But as the industry booms, so does its environmental damage – including pollution of clean water and carbon emissions. Werewool's platform provides an eco-friendly alternative that could reduce our dependence on petrochemicals, slash harmful emissions and pollution, and minimise the number of products going into landfills by providing biodegradable alternatives.