

MarinaTex

Lucy Hughes, University of Sussex, International James Dyson Award Winner

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Across the globe it is estimated that 40% of the 320 million tons plastic produced for packaging is used just once and then discarded. Lucy Hughes aimed to solve the problem of both single-use plastics and inefficient waste streams by harnessing fish waste to create a unique plastic alternative.

James Dyson Award

2019 marked the 15th year of the James Dyson Award. The competition is open to student inventors with the ability and ambition to solve the problems of tomorrow. Participants are given full autonomy over their intellectual property.

MarinaTex is a bioplastic made of organic fish waste and locally sourced red algae. It is a translucent and flexible sheet material, making it ideal for applications in single-use packaging. While it may look and feel like plastic, it uses a unique formula of red algae to bind proteins with strong overlapping bonds giving it strength and flexibility. It biodegrades after four to six weeks, is suitable for home composting and does not leach toxins.



For Lucy, MarinaTex represents a commitment to material innovation and selection by incorporating sustainable, local and circular values into design. She aims to commercialise MarinaTex sustainably and use her award money for further research into how it can become a global answer to the abundance of plastic waste while still harnessing local solutions.

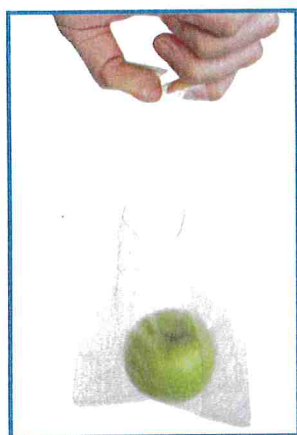
Sir James Dyson, Founder, said: "MarinaTex elegantly solves two problems: the ubiquity of single-use plastic and fish waste. Further research and development will ensure that MarinaTex evolves further, and I hope it becomes part of a global answer to the abundance of single use plastic waste."

The James Dyson Foundation

The James Dyson Foundation works internationally to inspire young people about engineering: from primary schools to university students and graduates. At school level the Foundation supports design and technology education through free resources and workshops. The James Dyson Award is the Foundation's international design competition, celebrating, encouraging and inspiring the next generation of design engineers.

In 2019 the Dyson School at Imperial College opened on the iconic Exhibition Road following a £12 million donation from the James Dyson Foundation. The new school develops the next generation of graduate engineers and technology leaders. The Dyson School teaches a four-year full-time MEng course in Design Engineering. ■

www.jamesdysonfoundation.co.uk



2019 Runners Up

Afflo, Anna Bernbaum, Dyson School of Dyson Engineering, Imperial College, UK

Afflo is an AI-enabled wearable device that monitors asthmatic symptoms and predicts triggers, allowing users to make data driven decisions about their asthma management. It collects respiratory signals and pairs them with environmental information, collected through a sensor.

Gecko Traxx, Ryan Tilley, RMIT University, Sydney, Australia

Gecko Traxx is a manual wheelchair accessory that enables off-road access. The tyre cross-section expands when in contact with the ground, increasing the contact surface area by three times when needed.

