ecovative

Fast Facts

Program: Mushroom® Materials

Purpose: In 2007, Ecovative Design, a two-person materials development company, set out to create materials grown from vegetative mycelium (mushroom tissue) that could replace traditional petroleum-based foams.

Jobs Created: 65 employees across two facilities in Green Island and Troy, NY, and expanding.

Capital raised: More than $14 million.

Market Impact: Today, Ecovative ships tens of thousands of pounds of Mushroom® Materials around the world for a wide variety of uses.

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INNOVATIVE TRANSPORTATION SOLUTIONS

From Fungus to Foam: Driving the Future of Biomaterials

What comes to mind when you think of mushrooms? Most people think of their culinary potential, or imagine them covering the ground and trees in a shady forest. Eben Bayer, co-founder of Ecovative Design, had a different thought when he saw mushrooms springing up from a wood-chip pile near his rural home. He saw an engineering tool with the potential to bind things together.

Students Fuel a Homegrown Idea

Bayer worked with Gavin McIntyre at Rensselaer Polytechnic Institute (RPI) in Troy, NY. They were undergraduate students taking a class at RPI when they invented a way to use fungi to create rigid, molded materials by binding agricultural byproducts like cornstalks with the root structure of mushrooms (called mycelium). They envisioned a future where this new, strong, sustainable material could replace traditional petroleum-based foams, which biodegrade extremely slowly and can be harmful to the environment. Taking their invention from a prototype to a viable product, however, would require more than innovation—they needed start-up capital to put the product to the test.

Product Test Drive

In 2007, Bayer and McIntyre started Ecovative to commercialize their idea. Recognizing the potential value the mushroom technology could have for the transportation industry and the environment as a greener alternative to foam, NYSERDA provided support to Ecovative to test the product and prove it was durable, impact- and flame-resistant, and safe for public use.

Mushroom® Materials are used to make door panels for vehicles (top) and packaging materials (bottom).

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Eben Bayer and Gavin McIntyre

The company launched Mushroom® Materials in 2009. Ecovative's first partnership with an automotive manufacturer and NYSERDA produced in-vehicle components such as door panels and insulation, as well as custom packaging solutions.

Bringing Mushroom® Materials to Market

Today, Ecovative ships tens of thousands of Mushroom® Packaging parts or pieces around the world for a wide variety of uses, including packaging and engineered wood alternatives. By growing scalable and affordable biomaterials to meet customer requirements at their base in Green Island, NY, Ecovative is having a positive impact on New York State's green tech economy and ecosystem.

Ecovative grows petrochemical-free, rapidly renewable Mushroom® Materials, which the automotive industry is using to produce in-vehicle components and packaging solutions.

Ecovative's materials are flame-resistant.

THE BENEFITS

- Economic Development
- Quality of Life
- Carbon Footprint
- Reducing Barriers

"Before Ecovative had its first customers and investors, NYSERDA was the first to recognize the promise of our biomaterial platform. Without that early involvement, Ecovative would not have been able to develop and commercialize our MycoFoam™ products in just three years."

– Gavin McIntyre, Chief Scientist and Co-Founder of Ecovative Design

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