

Myzel Bike Box



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Problem definition

The Mycel Bike Box is a modular transport box made of mycelium – the root network of fungi – combined with a lightweight PLA frame. It exemplifies the symbiosis of sustainable materials research and functional design in an urban context. Grown rather than manufactured, the box is biodegradable, coated with a water-repellent finish, and stabilized by the frame. Its modular design allows for repair, replacement, and complete recycling. Developed for cargo bikes, the MycoBox combines ecological responsibility with aesthetic innovation..

Results, Checkpoints, Next Steps

The current results of the Mycelium Bike Box demonstrate significant progress in material and process development. By integrating fibers and structural reinforcements, the stability of the mycelium panels has been greatly improved. A water-repellent coating further enhances weather resistance and expands the potential for use in urban environments. In parallel, the optimization of growth conditions has been advanced to make the production process more efficient and scalable.

The current prototype of a functional bike box showcases both the technical feasibility and the design potential of the concept.

The next steps will focus on the further optimization of the material, particularly regarding load capacity, moisture resistance, and weight, in order to enhance its applicability within the bike logistics sector. At the same time, main-

taining the goal of full biodegradability of the modules will remain a central priority.

Funding

Project: Development of a sustainable transport box for cargo bikes made from a new mycelium composite material (Mycel-BikeBox)

Subproject: Development of the mycelium composite material, incl. the growth environment and nutrient media

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