

Ica & Kostika's Mycelium Sneakers: Pushing Boundaries in Design and Technology

The world of fashion has seen a revolutionary shift with [Ica & Kostika](#)'s Mycelium Sneakers, a perfect fusion of futuristic footwear and cutting-edge 3D printing technology. Designed by Ica Paru, a footwear designer, and Kostika Spaho, an architect, these sneakers push the limits of what's possible in the fashion industry. Inspired by the radial growth of mycelium found in mushrooms, the shoes' intricate design and pattern reflect nature's own processes, creating a design that is both unique and innovative.

The story behind the Mycelium Sneakers began in 2022 when the idea was first conceived during the NFT boom. Initially born as an NFT project, the shoes quickly transitioned into an actual, physical product that would later open new doors for Ica & Kostika's brand.



The sneakers are manufactured using 3D printing, ensuring a high level of customization and precision. The shoes' material, a partially

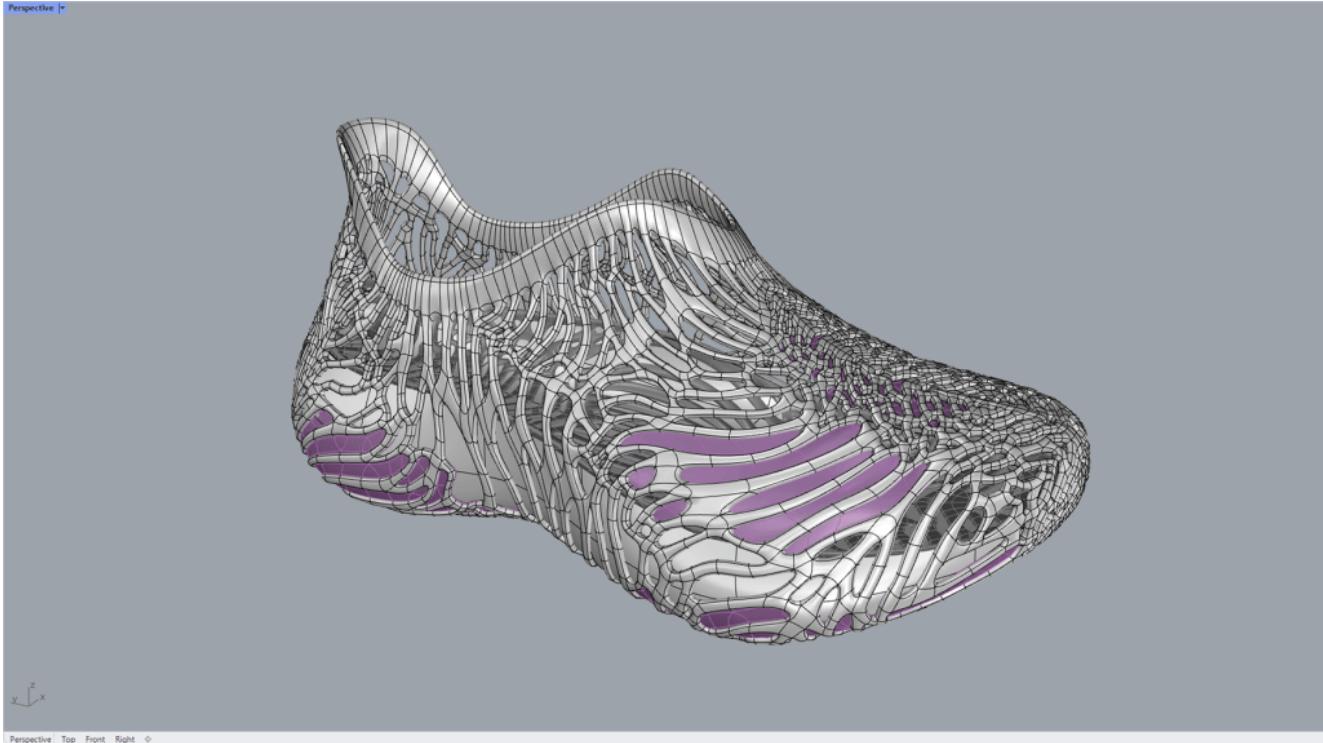
recyclable elastomer, is environmentally friendly and offers a comfortable and breathable fit. With their distinct mycelium-inspired texture, these sneakers have a one-of-a-kind appearance that's caught the attention of the fashion world.

DESIGN PROCESS: FROM CONCEPT TO CREATION

At the heart of the design process is [Rhino](#), the foundational software that Paru and Spaho have relied on for many years. Rhino's precision and versatility allowed them to develop highly detailed and intricate 3D models for the sneakers. In the early stages of design, the team worked in the modeling software [modo](#), particularly for its handling of high polygon counts and UV transforms, which was crucial for creating the fluid, organic patterns mimicking mycelial growth.

The transition to Rhino occurred when the team needed to refine the model for production, taking advantage of Rhino's robust tools for measuring, checking imperfections, and preparing files for the factory.

Rhino's interface was invaluable in ensuring the design was functional and aesthetically pleasing. One of the main challenges they faced was ensuring the design's precision for 3D printing, particularly the fitting and ergonomics of the shoes. Using Rhino, the team could cut sections of the model with clipping planes to inspect for potential imperfections before sending the files to production. This workflow allowed for rapid prototyping and iterative changes, making the design process efficient while maintaining the integrity of the original concept.



PRODUCTION CHALLENGES & SOLUTIONS

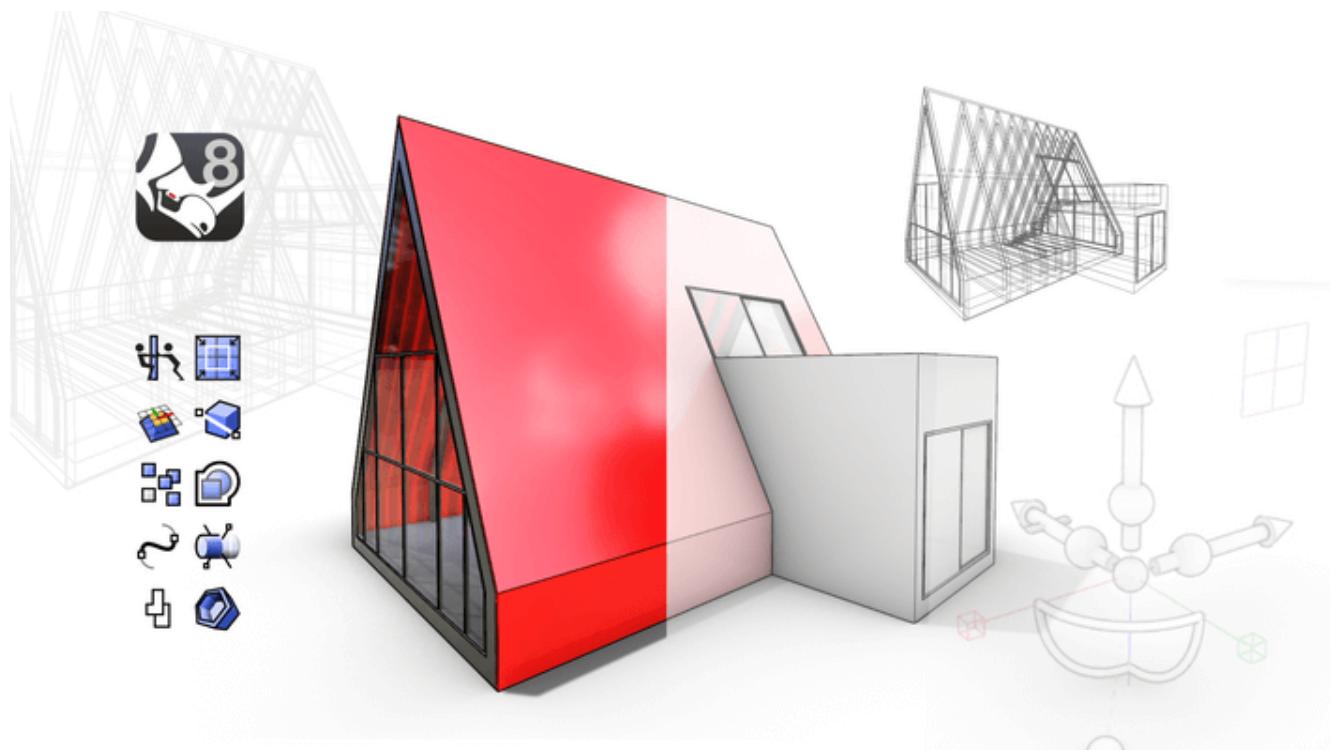
The production of the Mycelium Sneakers is highly automated, with robots managing much of the process. However, scaling production and ensuring consistency presented some challenges. Initially, only a small number of sneakers were produced, and adjustments were required to meet customer needs. The limited first run of 20 pairs revealed that some individuals required minor adjustments to the shoes, prompting the team to refine their design for better customization in future batches.

To solve this, Ica & Kostika worked closely with their factory, ensuring that adjustments were communicated quickly and efficiently. The use of Rhino's precise measurement and file export capabilities helped the team make quick tweaks to the design before sending it back to the production line. This level of responsiveness is crucial when working with a product that is custom-made and 3D printed, allowing the team to stay agile in their design and production processes.



FINAL PRODUCT & MARKET IMPACT

The Mycelium Sneakers are not only a testament to the power of 3D printing and design software like Rhino but also an example of how technology can be leveraged to create a product that is both functional and artistic. Each pair is made to order, ensuring minimal waste and offering a bespoke experience for each customer. Although the initial release was limited, with the shoes available only in the US, the project has gained considerable attention, and the brand plans to expand internationally.



See Also

[INTRODUCTION TO RHINO 8](#)

The shoes' unique design and material have made them a standout in the fashion world, and customers' response has been overwhelmingly positive. Ica & Kostika's decision to discontinue European sales due to complex VAT regulations is a reminder of the logistical challenges small businesses face when scaling.

Despite this, the success in the US and the growth in the Chinese market, thanks to a partnership with [Polly Polymer](#), has been a major

win. The partnership, which involved a royalty agreement, allowed the shoes to sell over 3,000 pairs in China, further cementing their place in the global market.



THE FUTURE OF ICA & KOSTIKA AND THE MYCELIUM SNEAKERS

With the success of the Mycelium Sneakers, Ica & Kostika are now looking to the future, leveraging their design expertise and the power of 3D printing to bring even more innovative products to market. Their company, Dazmia, is focused on helping other designers bring their ideas to life, offering a platform for digital transformation and design. The brand's future is bright, with the promise of more groundbreaking designs that blur the lines between fashion, technology, and nature.

Through their work with Rhino, Grasshopper, and 3D printing, Ica & Kostika are not only transforming footwear but are also contributing to a broader shift in design culture—one that embraces technology and sustainability in equal measure. Their Mycelium Sneakers are just the beginning of a new era in fashion, one where the boundaries between the physical and digital worlds continue to blur.

CREDITS

Footwear: Ica & Kostika

Photographer: Velissarios J George

Stylist: Niki Pagiataki

Female Model: Marianna Painesi

Agent: New Model Agency

Male Model: Nikolay

Agent: S.A.D. Mgt

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