



Wood grain | Photo source [Pixabay](#)

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3D PRINTING USED TO RECREATE NATURAL WOOD INTERNAL PATTERNING



Scientists have developed a method of 3D-printing wood grain, producing blocks that resemble wood even when sliced open.

Spotted: 3D printing is one of the significant technological advancements of our time. Its potential uses are almost limitless. We've spotted so many examples at Springwise, from [3D-printed meat](#) to [3D-printed artworks](#). Now, the design industry might be taking a more sustainable turn with 3D-printed wood.

Researchers at [Columbia University Department of Mechanical Engineering](#) have managed to recreate blocks of wood, even down to the finer details of the internal grain pattern. 3D-printing has previously been limited in its capacity to recreate internal structures, especially in mimicking the complexities of organic materials. This is due to a combination of how digital files are prepared and the manufacturing ability of modern 3D-printers.

The team took a series of extremely thin slices of olive wood, taking high-resolution digital photos of each slice. The stack of images was then fed into a Stratasys J750 PolyJet printer, capable of printing finer colours and the details of materials by use of voxels. Importantly, a voxel defines the 3D printed surface value.

The slices are printed with the exact same thickness as the thinnest layer. This strategy enables the team to recreate an entirely new internal pattern for the wooden block. They proved their method

by freezing the final 3D-printed product in liquid nitrogen and smashing it open. They also sculpted the blocks into ornate figures, demonstrating the design potential.

The team published their research in the journal [3D Printing and Additive Manufacturing](#).

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Takeaway:

The ability to 3D-print complex internal structures can impact vast industries, but let's focus on design. Interior designers could recreate wood patterns 3D-printed to exact requirements, reducing time and money spent working and finishing the material with tools. Moreover, designers could also create their own internal patterns, in whatever colours they like, creating psychedelic wood patterns for imaginative sculpting. Are you a designer who could work with this new 3D-printing method?