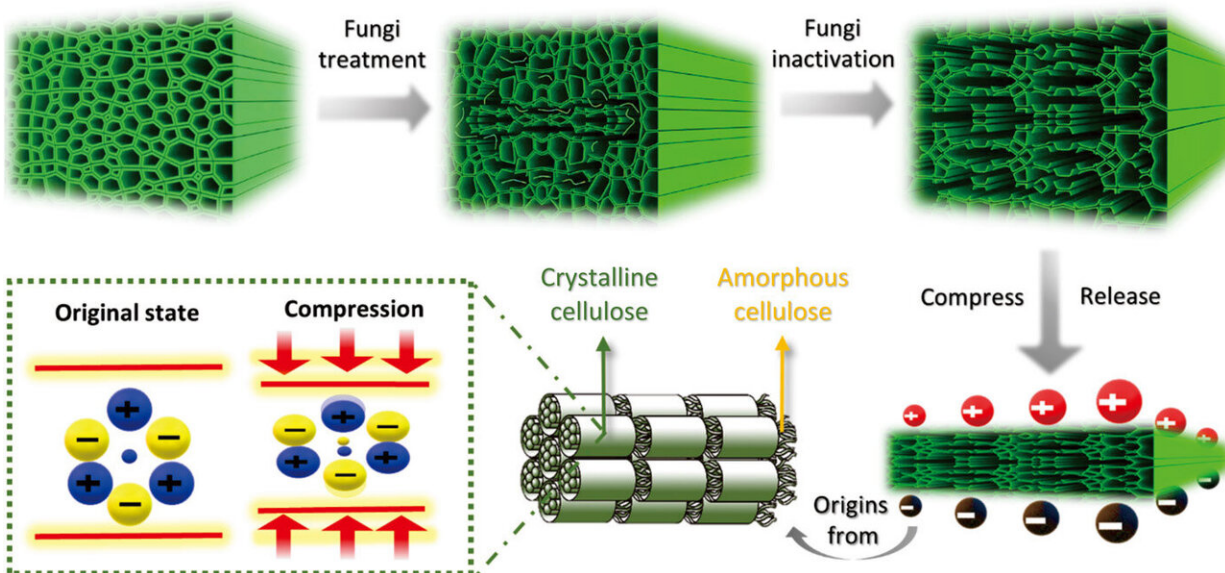


Using softened wood to create electricity in homes

March 11 2021, by Bob Yirka



Graphical illustration of the structure evolution of wood upon fungal treatment. Credit: *Science Advances* (2021). DOI: 10.1126/sciadv.abd9138

A multi-institutional team of researchers has found that it is possible to use a type of fungus to soften wood to the point that it could be used to generate electricity. In their paper published in the journal *Science Advances*, the group describes their process and how they tested it.

As the world works its way toward cleaner energy-producing systems, scientists seek novel approaches to producing [electricity](#). One possibility

is the use of piezoelectric devices that generate electricity by harnessing movement such as footsteps. In this new effort, the researchers have noted that much energy is wasted when people walk around. And while some have attempted to harness some of that energy with devices designed for shoes or legs, the researchers with this new effort wondered if it might be possible to add piezoelectrics to the [floor](#) to make use of that energy.

In studying the kinds of [wood](#) that are used to make floors, particularly in homes, the researchers noted that they do not have much give—a necessary component of an [energy](#)-harvesting system. To solve that problem, they found that applying a type of white rot fungus to pieces of balsa wood for a few weeks sped up the decaying process in a useful way. It made the wood spongier, which translated to give. When stepping on the wood, the researchers could feel it depress. They also found that after the wood returned to its former shape when pressure was removed.

To test their idea, the researchers treated a wooden veneer with the [fungus](#) and then added a piezoelectric [device](#), which sent the power it produced through a wire attached to an LED light. The wood was then placed on a floor where people could walk on it. Each time they did so, the light came on. The researchers note that the amount of electricity generated was just 0.85 volts but the system could very easily be scaled up to include all the flooring in a home, generating enough electricity, perhaps, to power certain devices.

More information: Jianguo Sun et al. Enhanced mechanical energy conversion with selectively decayed wood, *Science Advances* (2021). [DOI: 10.1126/sciadv.abd9138](https://doi.org/10.1126/sciadv.abd9138)

Citation: Using softened wood to create electricity in homes (2021, March 11) retrieved 27 April 2024 from <https://techxplore.com/news/2021-03-softened-wood-electricity-homes.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.