New Invisible Coating Transforms Wood Into A Fire-Resistant Material

By Nicole Rodrigues, 22 Aug 2022

Image via NTU Singapore

Due to its flammability, wood is frequently avoided as a building material. That's a pity as the material brings an earthy depth that concrete and brick can't quite replicate.

However, wood may soon be immune to fire as scientists at Singapore's Nanyang Technological University have created a coating to prevent it from going up in flames.

The invisible substance is a barrier for timber against flames and is "activated" during the event of a fire. At just 0.075 millimeters thick, it is practically undetectable.

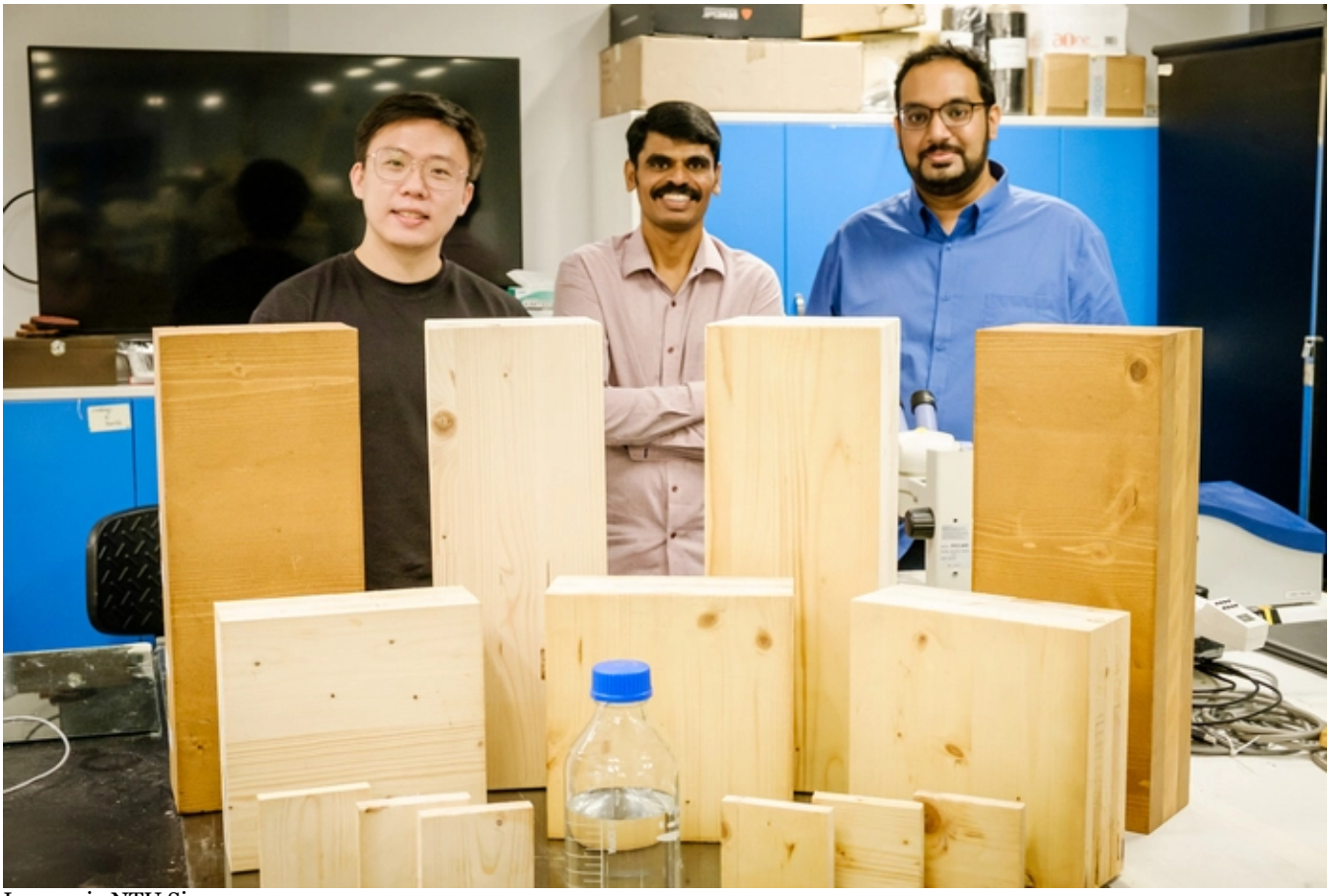

Image via NTU Singapore

When a fire is raging on, the chemicals in the barrier are activated and a char-like substance begins to grow over the wood, protecting what is inside from fully combusting.

The char can then be scraped off after the fire to reveal the planks beneath, which have not sustained any real damage.

Tests for the material's efficacy were conducted by a third-party institute, and a 'Single Burning Item' exam was performed on the timber.

Image via NTU Singapore

The coated slabs were subjected to extremely high heat. However, researchers found that there was minimal smoke produced and the fire did not spread to other pieces of wood around them. Eventually, the coating was awarded the highest class in industry-standard tests needed for lumber to be used in construction.

As the engineered timber industry grows, the team is looking to bring its technology to this new type of wood. According to the researchers, lumber sourced from sustainably-managed forests could also lower the carbon footprint in construction.

Currently, the scientists are in talks with Venturer Timberwork to introduce their coating to a new lab-grown wood project the company is working on.

[via Euronews and NTU Singapore, cover image via NTU Singapore]