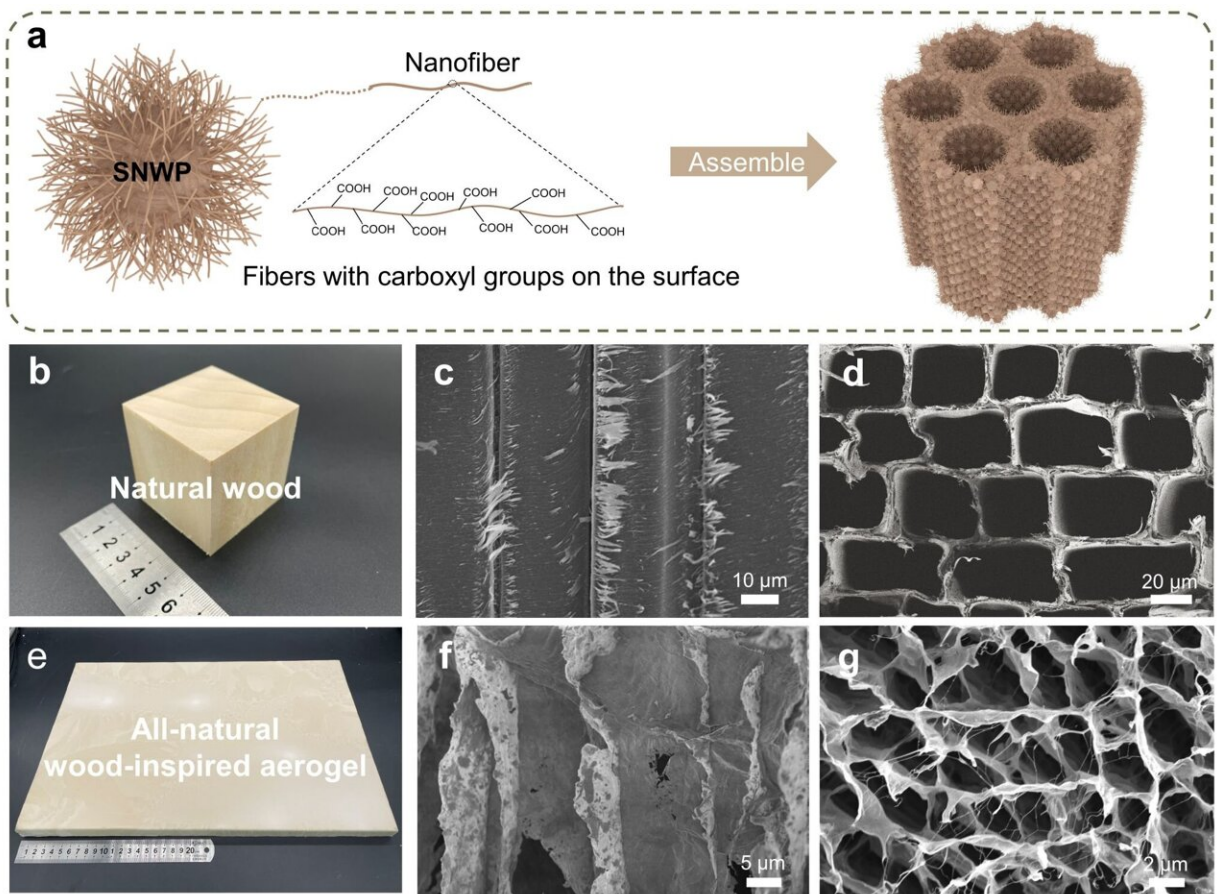


Scientists develop all-natural, wood-inspired aerogel

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A schematic diagram shows the structure of the all-natural wood-inspired aerogel. Credit: University of Science and Technology of China

Chinese scientists have developed a surface nanocrystallization method

to create all-natural wood-inspired aerogel with better thermal insulation and fire retardancy.

Wood has a variety of outstanding properties due to its oriented pore structure, among which the [low thermal conductivity](#) has attracted researchers to develop [wood](#)-like aerogels as thermal insulation materials.

This material can withstand a high temperature flame of 1,300 degrees Celsius and not be burned through in at least 20 minutes, according to the research team led by Yu Shuhong from the University of Science and Technology of China.

The researchers used the method of surface nanocrystallization with natural biomass and minerals as [ingredients](#) to make the surface-inert and weakly interacting wood particles better assemble to construct the aerogel.

The obtained wood-inspired aerogel has a channel structure similar to that of natural wood, enabling it to have better thermal insulation properties compared to most existing commercial sponges.

The low energy consumption and emissions of the preparation process and its [natural ingredients](#) make the aerogel more biodegradable, sustainable and environmentally friendly.

The researchers believe it will be an ideal replacement for existing commercial insulation materials.

The research findings were recently published in *Angewandte Chemie International Edition*.

More information: Zi-Meng Han et al, An All-Natural Wood-Inspired

Aerogel, *Angewandte Chemie International Edition* (2022). [DOI: 10.1002/anie.202211099](https://doi.org/10.1002/anie.202211099)

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