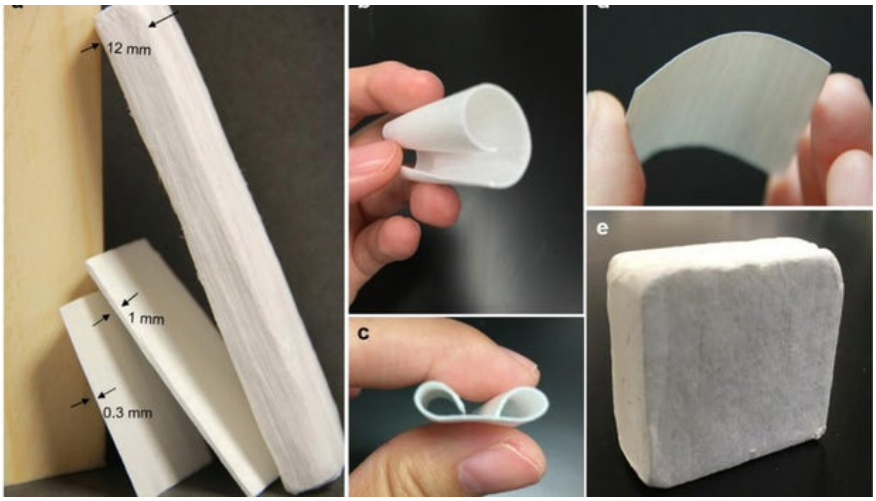
Nanowood white materials promise special insulation

Engineers at the University of Maryland created a new insulating material capable of preventing temperatures higher than 100 degrees Celsius compared to porous or air silica.

Engineers at the University of Maryland created a new insulating material capable of preventing temperatures higher than 100 degrees Celsius compared to porous or air silica. It is 30 times more insulated than styrofoam foam, and seems much more environmentally friendly.

"Nanowood" as the team calls, is produced by taking some of the usual basswood wood logs in the US in initial tests - and removing all lignin from it. Lignin contributes to making this wood yellow / brown and gives a certain hardness. It is completely removed when creating perfect white material without yellow.

In fact, the process of producing nanowood is very similar to paper making - the wood is cut, then boiled with sodium hydroxide and sodium sulfite, then treated with hydrogen peroxide to remove lignin and most hemicellulose, and then the mixture is left to dry to create a new material that maintains the structure of the wood, rather than crushing as small as you produce paper.



When lignin is removed from a block of wood, what you left is a bunch of lightweight white cellulose fiber, structured like a wood fiber.

These fibers not only act as extremely effective insulators but also prevent heat better than styrene or silicon materials commonly used in housing insulation.

This fibrous wood material reacts positively to sunlight due to its available white color and its natural cellulose fibers do not cause allergies. It is also fully biodegradable, and can be produced in a variety of shapes and sizes including blocks, sheets and rolls.

It is certainly an attractive material, obviously there is a lot of work to be done before it becomes the most widely used insulation material in the future.