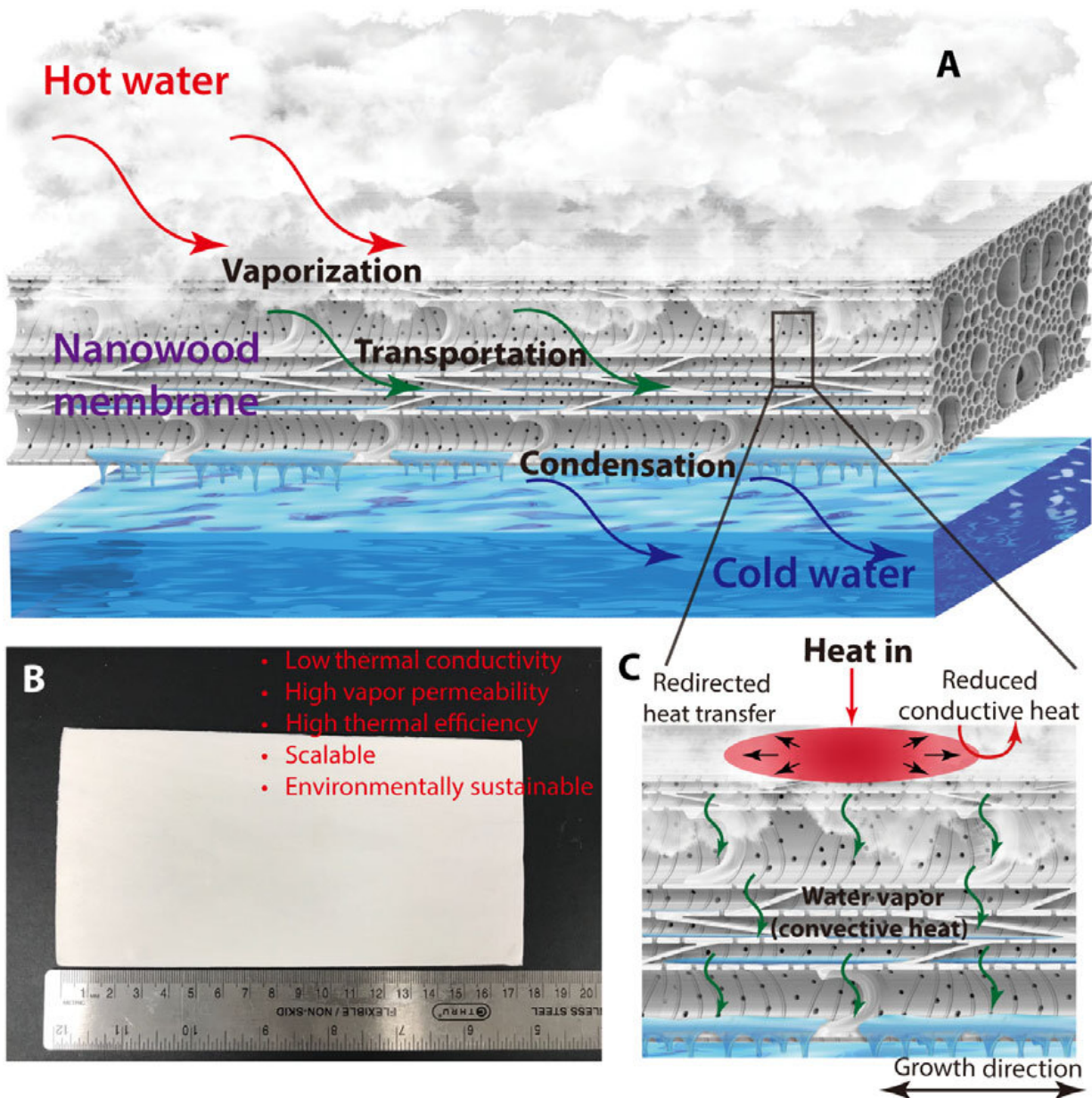


New wood membrane provides sustainable alternative for water filtration

August 2 2019

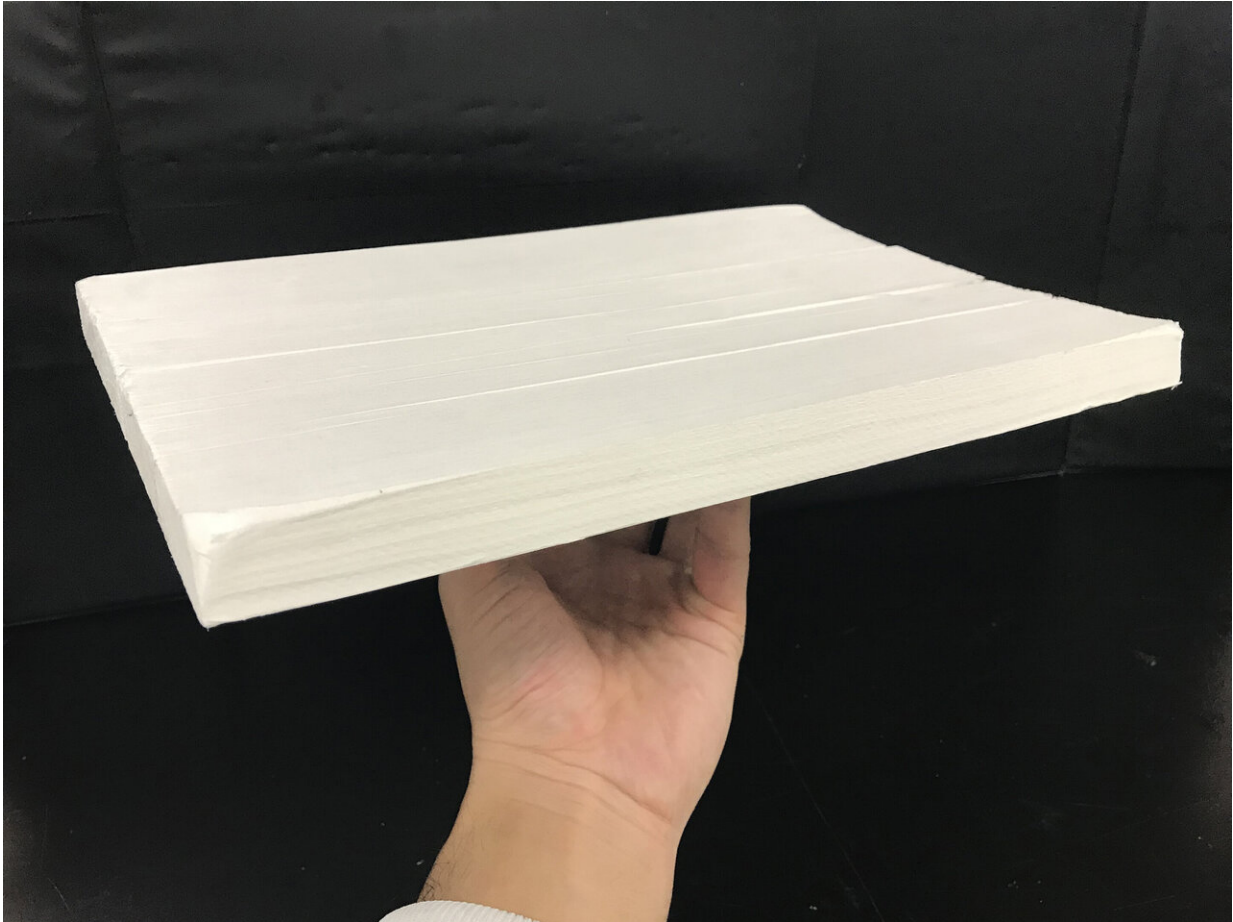


Schematic of the process of using the new wood membrane to distill water.
Credit: T. Li, University of Maryland.

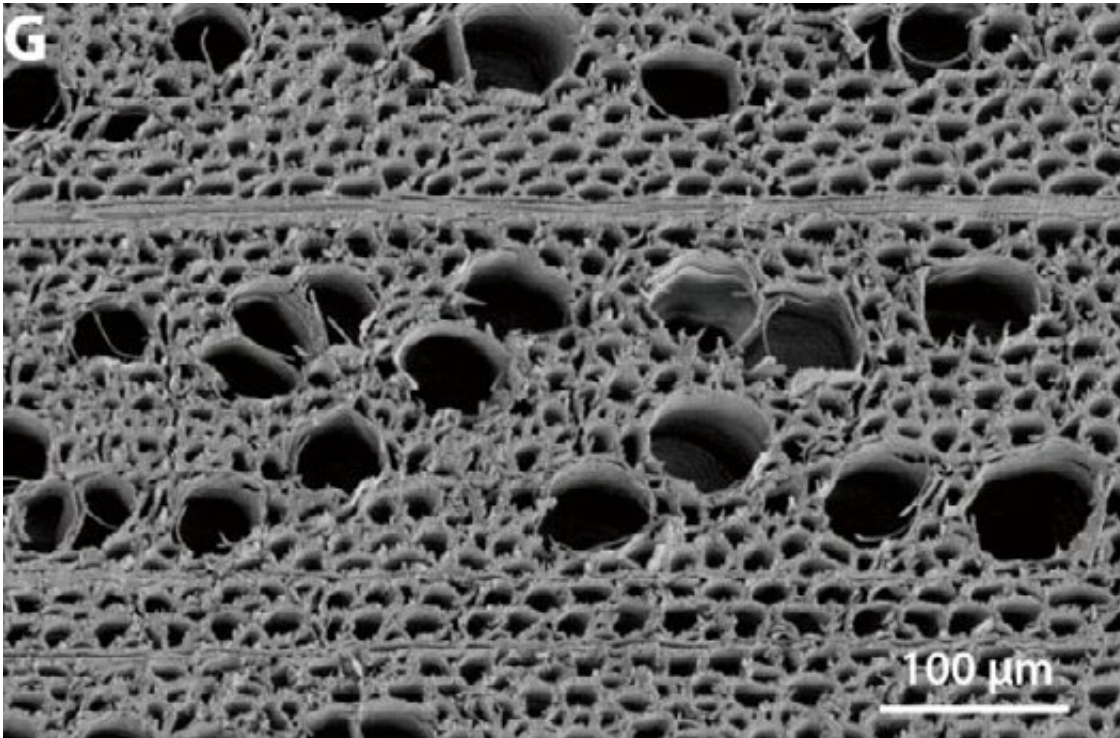
Inspired by the intricate system of water circulating in a tree, a team of researchers led by Princeton University, have figured out how to use a thin slice of wood as a membrane through which water vapor can evaporate, leaving behind salt or other contaminants.

Most membranes that are used to distill [fresh water](#) from salty are made of polymers, which are derived from fossil fuels and are also difficult to recycle. The wood membrane is a more sustainable material, and according to the researchers, has very high porosity, which promotes [water vapor](#) transport and prevents heat loss.

In a paper published Aug. 2 in the journal *Science Advances*, the researchers demonstrate that the new membrane they designed performs 20% better than commercial membranes in water distillation tests.



A white wood material used for membrane manufacturing. Credit: S.He and T.Li at University of Maryland College Park



Cross section of nano wood membrane used for water filtration. Credit: D. Hou, University of Colorado.

More information: D. Hou et al., "Hydrophobic nanostructured wood membrane for thermally efficient distillation," *Science Advances* (2019). advances.sciencemag.org/content/5/8/eaaw3203

Provided by Princeton University

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