

Not your grandpa's woody: Auto industry uses biomaterials for components

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By DAN ROBLEE (droblee@mininggazette.com), The Daily Mining Gazette

HOUGHTON - Beginning in the 1930s, the Ford Motor Company and several other car companies built "woodies" - cars with wood framed and paneled passenger compartments - and most of Ford's panels came from Big Bay, north of Marquette.

Today, auto companies are again looking to wood products and other plant-based biomaterials for car components, and Michigan Technological University is working to keep the U.P. involved in research and development for those products. Last week, Tech hosted a two-day biomaterials summit, with some sessions specifically dedicated to auto applications.

Valerie Brugeman, a senior product manager at the Center for Automotive Research in Ann Arbor, said many cars already have hidden biomaterials components, such as headliners, trays, seat foam and inner-door sound dampening material.



Photo by Allison Mills/Michigan Tech

From left, Valerie Brugeman of the Center for Automotive Research, Michigan Tech Dean of Forest Resources & Environmental Science Terry Sharik and SFRES professor Peter Laks discuss applications for wood particle board in an SFRES lab.

"All Fords have soy-based foam," she said. "There are very few structural components, but there's a lot of interest."

Tech professor Mark Rudnicki, executive director of the burgeoning Michigan Forest Biomaterials Initiative, said Ford has a standing policy they'll use bio-based components any time cost and performance can equal conventional components.

"Some of the car parts, you don't realize how much of the interiors are already hybrids with plant components," Rudnicki said. "Tree cellulose in armrests ... anything in a car may have plant components."

Rudnicki said much of the Biomaterials Initiatives' work will be lobbying for policies that will help biomaterials firms operate efficiently and incentivize innovation.

Brugeman said components go through extensive testing before they're put in new cars to ensure they're on par with conventional components, and while the materials haven't quite made the grade in all cases, automakers are prepared to switch to drop-in replacements as soon as they're available.

She said the most bio-built car currently on the market is the BMW I3 electric car, which emphasizes the organic aesthetic.

"The BMW I3 is the first to display natural fibers," she said. "They're normally in seat trays, panels, (the industry) tends to mask it."

With many buyers seeking "green" products in all areas, she said, other car companies are likely to follow suit.

"I wouldn't be surprised to see more biomaterials displayed and marketed over time," Brugeman said.