

Alternative jet fuels cut particulate matter emissions

November 14 2011

Conventional jet fuel mixed with alternative fuels has been shown to cut particulate matter emissions from a plane's engine by nearly 40 percent, according to a recent study by researchers at Missouri University of Science and Technology.

The [study](#), which will be published in an upcoming issue of the journal [Environmental Science and Technology](#), tested two types of alternative jet fuels: biofuels made from [vegetable oils](#), and fuels made with the Fischer-Tropsch process, which creates [liquid hydrocarbons](#) from coal, natural gas or biomass.

Researchers in Missouri S&T's Center of Excellence for Aerospace Particulate Emissions Reduction Research tested the fuels in the same type of jet engine used in Boeing 737s. Using equipment that captures and measures exhaust, the researchers studied emissions while the engine power was set at different levels to simulate an airplane's taxi, descent to an airport, climb and takeoff.

They found that the more alternative fuel they blended with the jet fuel, the lower the particulate matter emissions. But they also discovered that the only fuel that was a viable alternative for commercial or military use was a 50-50 blend of Fischer-Tropsch fuel and [jet fuel](#). It reduced particulate matter mass emissions by 39 percent.

Prem Lobo, assistant director of the Center of Excellence for Aerospace Particulate Emissions Reduction Research, was the lead author of the

[Environmental Science and Technology](#) paper. Co-authors were Dr. Philip Whitefield, interim vice provost for academic affairs, professor of chemistry and director of the center, and Dr. Donald E. Hagen, professor of physics and a researcher at the center.

Provided by Missouri University of Science and Technology

Citation: Alternative jet fuels cut particulate matter emissions (2011, November 14) retrieved 26 April 2024 from <https://phys.org/news/2011-11-alternative-jet-fuels-particulate-emissions.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.