



Fats Into Jet Fuel

New biofuels technology has the potential to turn virtually any fat (including oil from animal fat or algae) into fuel to power jet airplanes. The technology is said to be 100 percent green as no petroleum or gasoline products are added.

Scientists say that the new technology has some key advantages over other biofuels. “We can take virtually any (fat) including low-quality feedstock like cooking grease and turn it into virtually any fuel,” said a scientist. “And we're not competing directly with the food supply, like ethanol-based fuels that are made from corn,” he added.

The fuel created by the new process burns cleaner, say scientists, so it's better for the environment, as no soot is produced. The new process also puts to use what other biodiesel processes throw away. Rather than discarding glycerol, the new process burns glycerol cleanly and efficiently to provide some of the energy needed for the process.

The physical and chemical properties of traditional biodiesel fuels don't match the current requirements needed for jet fuels, making biodiesel unacceptable for the task. Jet fuel travels at 25,000 to 35,000 feet where temperatures can reach 70 degrees below zero, so it needs to flow better in cold temperatures.



The process has four steps, First, scientists use high temperatures and water pressure to strip off some of the chemical bonds in the oil and fat molecules. Next, they place these in a reactor and carbon dioxide is released. “After these first two steps, we can make any fuel we want to make,” said a scientist. In the last steps, they break up the fat chains into molecules with branches, making them more compact. Finally, they make other small chemical changes to create the final fuel.

“We currently produce one-and-a-half billion gallons of animal fats annually. Animal fats are harder to work with, but cheaper,” said a scientist. “We think the aviation industry will be keen to find an alternative to petroleum-based jet fuel.”

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