

Battling the force that wastes 1 out of every 10 gallons of gasoline in cars

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the force that wastes almost 1.4 million barrels of oil per day in cars and trucks in the United States alone — could become less of a problem for fuel-conscious consumers thanks to promising new oils and other materials that scientists are developing. That's the topic of the cover story in the current issue of Chemical & Engineering News (C&EN), ACS' weekly newsmagazine.

C&EN Senior Business Editor Melody Voith notes that friction, the heat produced when objects rub together, wastes fuel in engines and other machinery and causes their parts to wear and eventually break down. One in every 10 gallons of gasoline in the average car goes to overcoming friction in the engine — about 1.4 million barrels of oil wasted per day or almost \$31 billion worth of fuel (at \$60 per barrel) lost every year. But the article describes how high-tech lubricants and additives now in development could vastly reduce the effect of friction and improve energy efficiency in everything from [car](#) engines to power-generating wind turbines. That could improve the fuel economy of cars by 3-5 percent, according to one estimate.

Scientists are also trying to reduce wear on engine and machine parts, one of the consequences of increased [friction](#), by designing tougher materials that can better withstand extreme heat and other harsh conditions. One promising approach is the use of nanoparticles — super-strong particles just 1/50,000th the width of a human hair — to coat engine parts and make them more slippery.

More information: "Fighting Friction", This story is available at pubs.acs.org/cen/coverstory/88/8841cover.html

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