

Developing 'green' tires that boost mileage and cut carbon dioxide emissions

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A new generation of "green" automobile tires that can boost fuel efficiency without sacrificing safety and durability is rolling their way through the research pipeline. The new tires could help add an extra mile or two per gallon to a car's fuel economy. That's the topic of the cover story of the current issue of Chemical & Engineering News, (C&EN) ACS' weekly newsmagazine.

C&EN Senior Editor Alexander Tullo explains that rolling resistance — the friction that tires encounter when rolling — are a major factor in a vehicle's fuel economy. It can determine up to 20 percent of fuel economy. Overcoming it accounts for 4 percent of global carbon dioxide emissions from burning fossil fuels. For years, tire makers and their raw material suppliers have been eyeing lower rolling resistance as a way to boost [fuel economy](#) and promote a cleaner environment. But they have been thwarted by a principle in the tire world called the "magic triangle of tire technology." It holds that an improvement to rolling resistance has to come at the expense of wet-road grip and durability.

That barrier is now falling, thanks to the development of new materials, including new forms of silica and nanomaterials. These new materials include a nanogel that improves abrasion resistance, grip and rolling resistance of tires as well as a newly-developed resin that helps tires retain air longer. But there's a catch: Motorists still will have to keep tires properly inflated to take full advantage of the new technology, the article notes.

More information: "Stretching Tires' Magic Triangle",
pubs.acs.org/cen/coverstory/87/8746cover.html

Source: American Chemical Society ([news](#) : [web](#))

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