

The SMART Tire Company announces Mars Rover tires to become available for use on Earth

18 March 2021, by Sarah Katz



SMART Tires. Credit: The SMART Tire Company

The SMART Tire Company has revealed its first space-age tire, soon to be available to the general public. Already tested by NASA for use on Mars Rover missions, these tires come equipped with the company's Shape Memory Alloy Radial Technology (SMART), made from the super-elastic material NiTiInol+.

While regular elastic can stretch, smart memory metal goes a step further by rearranging its [molecular structure](#) when bent and then immediately resuming its former shape. Thus, these tires never lose air, never go flat and have strength like titanium.

Such tires present many uses here on Earth, including an alternative to pneumatic bicycle tires that promises a light, durable and smooth riding experience. In fact, these tires can enhance safety through improved traction for commuters on concrete and gravel roads alike. The tires even use a synthetic, rubber-like material called

Polyurethanium for the strongest grip and tread in all weather conditions. In other words, these SMART tires can last the entire lifetime of your bike without ever needing a replacement due to leaks, tears, messy sealants or punctures.

Perhaps the most exciting thing about these new tires is that they are manufactured by NASA. Indeed, the SMART Tire Company has also collaborated with the Ford Motor Company's micromobility provider Spin to develop this [shape memory alloy](#) for electric scooters. The two companies seek to combine efforts in creating an easier and securer transportation experience for consumers.



SMART Tires. Credit: The SMART Tire Company

Moreover, tires made of this material exhibit 30 times the recoverability rate of ordinary steel under strain. Looking back on why NASA first developed this [tire](#) and its corresponding material gives an idea why such durability was necessary. As a component of the Mars Rover wheels, this alloy

had to be capable of withstanding harsh terrain and cratered topology on the red planet's surface. In fact, the tires were effectively designed to act as [shock absorbers](#) to protect the Rover's internal systems against jagged rocks.

Deemed METL, this space-age [shape](#) memory alloy will challenge the \$250 billion international tire market in realizing a cleaner, safer solution for bicycle and scooter tires as well as the wheel at large. For now, The SMART Tire Company aims to release these tires to the cycling community in early 2022 before moving on to the auto industry and beyond.

More information: Cycling. The SMART Tire Company, The SMART Tire Company, 16 Mar. 2021, www.smarttirecompany.com/cycling

Sands, K. The Little Tires That Could... Go to Mars. NASA, NASA, 6 May 2020, www.nasa.gov/feature/glenn/202...hat-could-go-to-mars

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