

Sumitomo focuses on power-generating device installed in tire

31 July 2019, by Nancy Cohen



Credit: Kansai University

Tires that recover energy as they roll made numerous headlines this week as tech watchers explored Sumitomo's concept.

TU-Automotive was among numerous sites reporting on the concept: "Engineers for Japanese tire giant, Sumitomo Rubber Industries, have teamed up with Professor Hiroshi Tani of Kansai University, to develop a system that claims to collect static [electricity](#) generated within vehicle [tires](#)."

The two-part setup is a car tire and a special energy harvesting device that is planted inside it—namely, "two layers of [rubber](#) each covered in an electrode, along with a negatively charged film that interfaces with a positively charged film," said Nick Lavars, *New Atlas*.

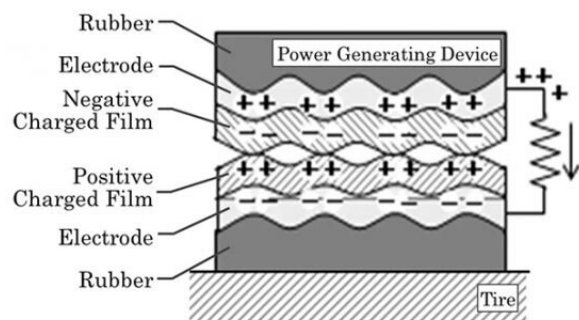
The Sumitomo news release said they developed a technology "to generate electric power from the rotation of a tire, which is accomplished by installing a power generating device (Energy Harvester) inside of a tire to convert static electricity occurring within a tire into clean energy. This new device takes advantage of a type of static

electricity called frictional charging to generate [electric power](#) efficiently each time a tire's [footprint](#) deforms as a tire rotates."

Frictional charging is when electrons transfer between two objects as they're rubbed together," said *Geek.com*. Lee Matthews told readers that the tiremaker had revealed a prototype actually producing usable electricity while you [drive](#). "To be clear, this happens in the tire itself—not the wheel."

Most tires today use a layered design of liners, belts and sidewalls beneath the tread, he wrote, whereas Sumitomo's prototype tire "inserts two thin films, one with a [positive charge](#) and one with a negative charge."

InsideEVs Gustavo Henrique Ruffo: "Instead of collecting the [static electricity](#) that regular tires already produce, the idea is to create tires that generate it actively whenever they suffer any sort of tread deformation when moving."



Credit: Kansai University

What could this tire concept deliver? This small amount of electricity could make what kind of difference if at all? Accessories like dashboard

lights and radios, Lavars said.

Also, Sumitomo "imagines initially it could be used to power things like tire pressure monitors." Maybe more.

Sumitomo's release stated, "We are confident that the results of this latest research will lead to [practical applications](#) for this new technology as a [power source](#) for sensors used in TPMS (Tire Pressure Monitoring System) and other automotive devices, contributing to the creation of future services that make use of various digital tools without any need for batteries.

While [tire](#) pressure monitoring sensors (TPMS) are an excellent candidate, Matthews remarked "just about any low-power sensor or device in a vehicle could be wired in."

Sumitomo is to continue developing the technology. "The electricity harvesting technology is being further developed with the assistance of the Japan Science and Technology Agency, a national [research](#) agency," said *news.com.au*.

"Moving forward, we will continue working to advance this research with support from the Japan Science and Technology Agency," said Sumitomo in its release.

"What we know at this point," said Ruffo, "is that tires can contribute more to a car than by simply making sure it does not lose grip. They can also give back a part of the energy the car spends with their [rolling](#) resistance."

More information:

[www.srigroup.co.jp/english/new ...
19/sri/2019_060.html](http://www.srigroup.co.jp/english/new...19/sri/2019_060.html)

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