

Matrix has PowerWatch 2 running on light and body heat

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Forgive the Matrix PowerWatch 2 suggestion if it sounds like aggressive marketing: this is not jargon; this *is* a powerwatch. The watch uses solar and heat to power its varied functions, from health and fitness monitoring to GPS. It runs off solar power and body-generated heat.

Body heat and light are its drivers and the expectation alone for a

smartwatch that is charge-free has been enough to attract much interest.

"In 2016 we began our journey," said the Menlo Park, California-based Matrix Industries' promotional video. The journey was about harvesting the world's wasted energy and use it make charging electronics obsolete.

The Matrix team has now announced its second generation Matrix PowerWatch 2. Tech-watchers attending CES 2019 learned about it and varied reports discussed its gestures, functions and potential in the smartwatch market.

The company had already gained some attention with a previous Matrix PowerWatch. As Husain Sumra commented in *Wareable*, "Matrix's original PowerWatch had a great idea. It was a smartwatch that eschewed traditional charging in favor of using thermoelectrics to turn your body heat into [power](#) for the smartwatch. The problem? It didn't [do](#) much."

This time the watch team added solar charging along with thermoelectrics. Scott Stein in CNET January 6 said both "allow the watch to gain a larger smartwatch feature [set](#) that seems to challenge the Fitbits and Garmins of the world."

("A thermoelectric is a device that converts [heat](#) to electricity. They have been used for decades in niche applications to power NASA satellites," said the Matrix team on the Indiegogo site. The company notes thermoelectric technology that can convert low-grade heat from a person's body to power the watch.)

The watch is on pre-order at Indiegogo (\$199) and will be \$499 when available later this year. There were only 36 left at the time of this writing at the earlybird price of \$199. Estimated delivery is June.

Here is a sampling of its details: There is a full-color LCD display; a new reflective solar ring around the watch display, as the ring will convert sunlight into energy; intelligent heart-rate monitoring, 200 meter water resistance, notifications and GPS. The [smartphone app](#) they created offers fitness metrics and compatibility with health and fitness apps Apple HomeKit and Google Fit. Calorie count, step count and sleep quality are just some of the things it can eye for you. The team said the PowerWatch 2 will have a brighter and more uniformly illuminated back light compared to the PowerWatch.

Stefan Etienne, *The Verge*, said it was "well-suited for the great outdoors," regarding a scratch-resistant screen and water resistance to 200 meters. Etienne described a [durable](#), bulky watch with aluminum case and rubber strap.

The company CEO is Akram Boukai. His career has underscored a focus on materials converting heat to electricity and harnessing sunlight to power efficient, low-cost thermoelectric and photovoltaic devices. The CTO is Douglas Tham.

One aspect of the watch is clear. A feature attribute is that this is a watch that does not need a plug-in charge. CNET said, "The future of wearable fitness tech might be charge-free." Husain Sumra in *Wareable* said that the ring "partnered with the already-proven thermoelectric power, means it'll be awfully difficult to run out of power."

In the bigger picture (and this is quite a big picture), Stein said, "The company uses its PowerWatch models as testbeds to explore how its energy-harvesting tech works, making these watches concept cars of a sort."

An opportunity for the company to explore, thanks to the watch, could be in "how solar plus thermoelectrics could be used not just in watches,

but in next-wave smart home and IoT sensors or other wearables," said Stein.

Stein shared his personal take: "Certainly, being able to cast off batteries or charging from traditional-style fitness watches is something I'd love to see. Etienne said, "this is an exciting development for self-powered wearables."

Etienne, however, also looked at its limitations as well as strengths in his article in *The Verge*.

As for [Indiegogo supporters](#), at the time of this writing, backers had raised \$222,519 compared with the Matrix goal of \$100,000 (222% of \$100,000).

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