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A new battery that runs on... your own sweat



Tue, 17 August 2021, 8:29 pm · 2-min read



Researchers have created a new type of battery that is able to produce electric current using sweat.

Researchers from Nanyang Technological University, Singapore, have developed a new innovative battery powered by perspiration.

What if we could recharge batteries with our own sweat? That's the question researchers at a Singaporean university asked themselves. The device designed by engineers there measures 0.8 square inches and is as flat as a Band-Aid. The prototype battery runs on perspiration and can discharge 20 hours of electricity from just 2 ml of sweat. At this point, it is only usable on small portable devices.

The soft, stretchy battery is attached to a stretchy textile that will absorb sweat at the wrist or forearm. It is also possible to attach it to objects like smartwatches. The textile absorbs and retains the sweat to provide the battery with a constant supply of power, even if the rate of perspiration varies. The

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"Our technology heralds a previously unattainable step in wearable device design," said paper author and materials scientist Pooi See Lee of Nanyang Technological University. "By taking advantage of a ubiquitous product, perspiration, we may be able to envision a more environmentally friendly way to power wearable devices without resorting to conventional batteries."

Initial testing took place on a person wearing the battery around his wrist during a 30-minute exercise bike session. The volunteer was able to generate a voltage of 4.2 V, enough to power a temperature sensor and send its collected data to a smartphone throughout the process. This new battery design could reduce hazardous electronic waste and toxic materials.

Now, the researchers are trying to determine how body heat affects the battery's performance while exploring the effects of human sweat. The team has filed a patent application for the new battery through NTUitive, the enterprise and innovation company of Nanyang Technological University.

Axel Barre

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