

Generating electricity from WiFi promises that the future of smartphones without batteries still works well

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This discovery can allow not only smartphones but also all mobile devices that can operate normally without batteries, as long as these devices support WiFi reception. In addition, this also brings completely new ways of using technology, in a way that is safer and more environmentally friendly.

This device that converts radio waves into electricity is developed by US scientists, and is named rectenna. Rectenna is the composition of a semiconductor that is only a few atoms thick.



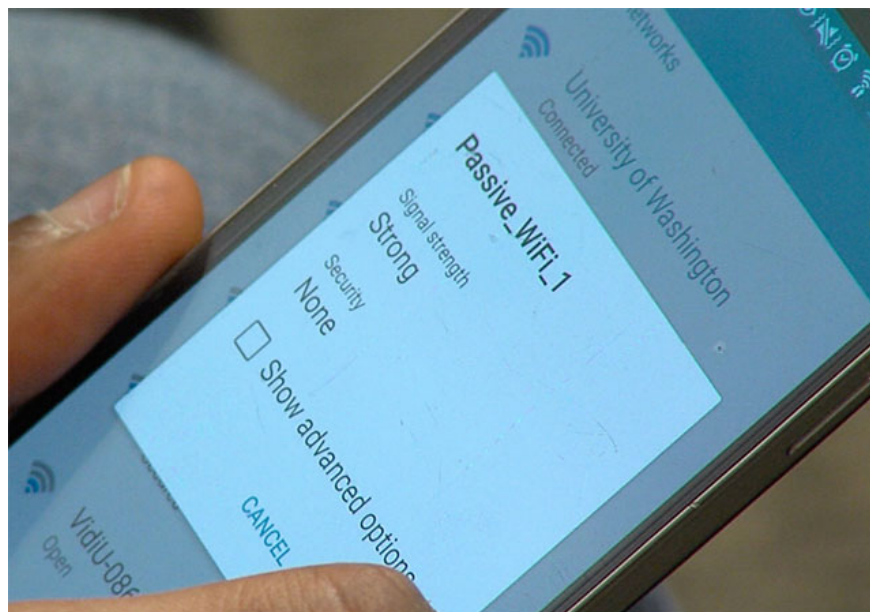
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WiFi signals are collected by integrated antennas, which are then converted into DC current that is suitable for electronic circuits that mobile devices are currently using.

This device is small enough that can be integrated in smartphones, laptops, medical devices and wearable technology to replace traditional batteries, which are unsafe and contaminate the lips. school

Thanks to its versatility, this device can also be built to be used in large areas with poor coverage. And this is the future of the technology world.

Professor Tomas Palacios, director of the Massachusetts Institute of Micro-Technology Technology and Systems Institute, said: "Internet of things devices are becoming indispensable tools in modern life. They appear in everywhere, from the street to the offices, so how can we power these electronic devices in the most effective way? This new invention could be the solution. We have come up with a new way to power future electronic systems - by 'harvesting' power from WiFi in an easy way that can be integrated in the zones. Large area, thereby making better use of the advantages that networking technology has wherever it is. '



In tests, the rectenna can generate about 40 microwatts of electricity when exposed to typical WiFi signals, which fall into about 150 microwatts. And this energy level is more than enough to 'lighten' the screen on a smartphone or activate mobile silicon chips.

The co-author of the study, Professor Jesus Grajal from the Technical University of Madrid, Spain, said one of the most important applications of this invention could be in the field of implant devices. Medical in the body, as well as the "smart drugs" that are receiving much attention from health professionals in recent times. He added: "The biggest problem preventing the effectiveness of electronic devices that can be implanted in the human body is that they cannot operate for a long time because they cannot use batteries to provide power. It is simply because if the lithium battery leaks in the human body, the patient will have a very high risk of death. '



To create rectenna, the team used a new 2D material called molybdenum disulphide, with a thickness of just 3 atoms, and one of the world's thinnest semiconductors. The antennas will be responsible for producing electricity, but they will also be very small in size.

Electricity obtained from radio waves will be in the form of high-frequency alternating current (AC). After that, the semiconductor will be able to convert the AC signal into direct current that can be easily used in mobile devices.

Scientists are now planning more complex devices with markedly improved efficiencies. If it could be applied in practice, this invention could completely change the technological world, as well as the way we use technology.

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