

# Robots can recharge themselves by 'eating metal'

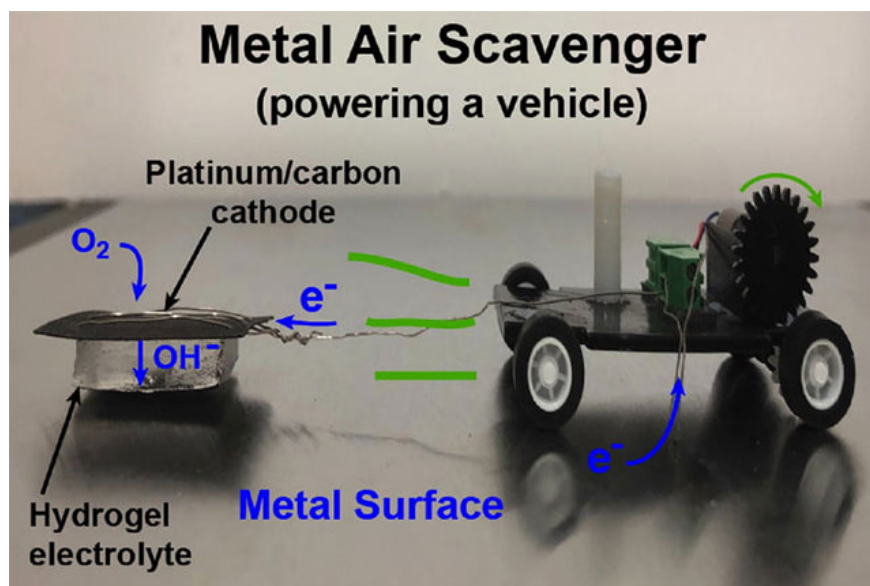
Researchers from the University of Pennsylvania School of Engineering and Applied Sciences have just announced a bold idea: Robots can recharge themselves by coming into contact with metal on each level.

It must be affirmed that robotic technology has made great strides over the years, they are smarter with the presence of artificial intelligence, more skillful thanks to precision mechanical technology as well as automation. However, one factor that significantly affects the practical applicability of robots in many situations is the battery.

Not only for robots, the battery is a 'low point' in the field of mobile technology. Battery production technology does not seem to keep up with other aspects, although it has improved quite a bit over the years. It is a major obstacle for robots when applied in the real world.

To partially solve the problem, researchers from the University of Pennsylvania School of Engineering and Applied Sciences have just announced a bold idea: Robots can recharge themselves by contact with a needle. Sort by each level.

*"The idea here is to equip robots and electronics in general with the ability to charge themselves by extracting energy from materials in their surroundings. This approach is similar to that of an animal. "We have to go eat, breathe and drink water to stay alive,"* said James Pikul, assistant professor at the Department of Mechanical and Applied Mechanics, a member of the research team.



Robots "eat" metal

Basically, the scientists will equip the robot with a small 'hydrogel' plate. Hydrogel will act as an electrolyte, any metal surface it touches will act as the battery anode. This allows electrons to flow into the cathode and power

the connected device (robot). The amount of electricity collected will also depend on the type of metal, the temperature, as well as their oxidation potential. In addition, the robot will also be equipped with a small water tank to prevent the hydrogel surface from drying out.

The ultimate goal of the project is to be able to create robots that can operate for significantly longer, especially in specific jobs such as search, rescue, medical treatment and public maintenance. Karma. Robots will be able to recharge their energy by 'consuming' part of the metal surface as needed (a small robot only needs to 'eat' about 100 micrometres of the top surface of a piece of metal to maintain shelf operation. many minutes).

Regardless of the practical applicability, all ideas related to the power supply are essential for the field of robots in particular and the field of mobile electronics in general.

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