

Lithium-Sulfur batteries will help smartphones work longer

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Kyeongjae Cho, professor at the University of Texas, Dallas, USA said: "*Lithium-ion batteries are usually only a certain capacity, and most people want to use their phones for a longer time.*" .

Many smartphone users are familiar with the shelf life of lithium-ion batteries. Sometimes the battery can last for almost a day but it has to be charged many times, so it costs electricity. Cho, along with researcher Jeongwoon Hwang, has worked with other regional scientists to improve lithium-sulfur batteries, widely regarded as evolution from lithium-ion batteries. Lithium-sulfur batteries have more important advantages than lithium-ion batteries.



According to Cho, the cost of making lithium-sulfur batteries is less than lithium-ion batteries, they are also lighter, storing twice the energy and better for the environment.

"The lithium-sulfur battery studied by the community is the next generation of batteries. The lithium-sulfur battery has three to five times more battery capacity than lithium-ion batteries, which means that if you normally use the phone only For three hours, with lithium-sulfur batteries you can use your phone from 9 to 15 hours," he said. However, lithium-sulfur battery is not without problems.

Sulfur is a poor conductor of electricity and can become unstable only through several charging and charging cycles. The broken electrode is another reason that lithium-sulfur batteries are facing.

Scientists tried to improve the lithium-sulfur battery by placing metal lithium on an electrode and sulfur electrode on the other side. However, metal lithium is usually unstable, and sulfur is excessively insulated.

The scientists discovered a technology to create a sulfur-carbon nano that produces electrical conductivity on an electrode and a nano coating to stabilize the other side of the electrode. Researchers have discovered that molybdenum, a metal component often used to strengthen and harden steel, creates a material that adjusts the thickness of the coating when combined with two sulfur atoms, a thin layer like spider web.

They found that the molybdenum improved stability and compensated for the poor electrical conductivity of sulfur, thus allowing a larger stored energy density and making the lithium-sulfur battery more durable.

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