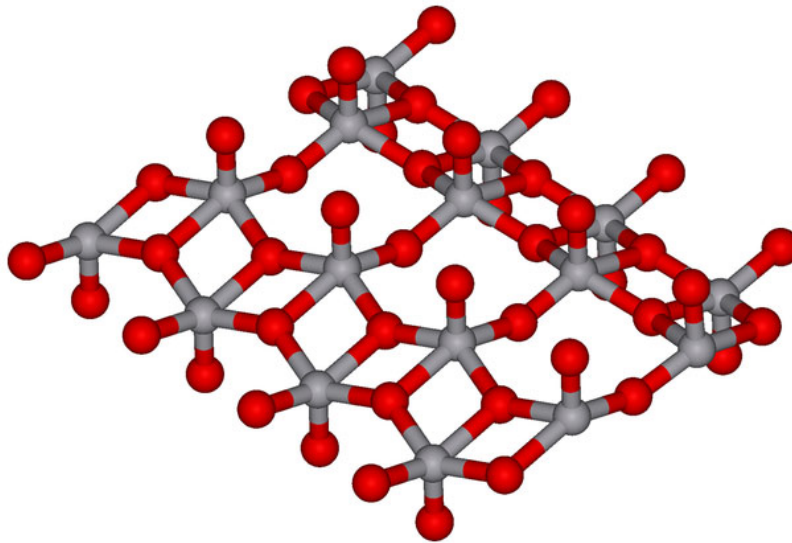


India successfully develops the world's first iron-ion battery, will lithium-ion batteries be replaced in the future?

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A team of researchers from the Madras Indian Institute of Technology has successfully created an iron-ion battery by using low carbon steel to make anodes, vanadium pentoxide (V_2O_5) as cathodes. V_2O_5 can move iron easily thanks to its large molecular distance. In addition, the researchers used iron chloride to make an electrode in an iron-ion battery.





Vanadium pentoxide structure and powder.

Compared with li-ion batteries, iron-ion batteries offer outstanding benefits including greater capacity, more stable structure and cheaper prices due to the more abundant battery manufacturing component than lithium.

Inside the iron-ion battery does not appear dendrite, the lithium fibers are likely to cause short-term li-ion battery, despite repeated charging-discharging process. Li-ion batteries are explosive in nature, so production must be done in a strictly controlled environment. Meanwhile, with iron-ion batteries one can assemble in conventional plants.



Researchers at Madras Institute of Technology.

Currently, after going through 150 charge-discharge cycles, the iron-ion battery retains a decent capacity.

Perhaps we still have a long time to go before the first smartphone that uses iron-ion batteries comes into being, but we still have to use lithium-ion batteries.

1. One company claims to recycle 100% of the materials that make up Li-ion batteries
2. New technology helps prevent smartphone batteries from catching fire and exploding

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