New materials for lithium-ion batteries can double the distance for electric vehicles

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According to last year's Greg Clark business forecast, this project is developing silicon-based materials to replace carbon in the anode battery of lithium-ion batteries (Li-ion). Other partners in the project include University College London (UCL) and Synthomer, producers of polymer materials; These partners contribute to the name of the project: SUNRISE (Synthomer, UCL and Nexeon's Rapid Improvement in the Storage of Energy).

The total cost of the project, according to Nexeon, is £ 10 million, of which Innovate UK provides £ 7 million. The important purpose is to overcome a difficult problem with silicon in the Li-ion battery: expansion and contraction of the anode when the batteries are charged and discharged, limiting the rate of silicon loss by elasticity. electrode up about 10%. By using an innovative form of silicon that they are developing, combined with a polymer binder developed and optimized by Synthomer, is also working to ensure the bonding between binder and silicon, no reduces battery life.

This combination of silicon and binder, will allow more silicon to be used in electrodes, increasing the potential for storing energy density in batteries. UCL, meanwhile, will jointly conduct research on physical properties and energy storage efficiency in batteries.

The ultimate goal of the project is to develop the method replacing graphite anodes in batteries, increasing operational efficiency, when electric vehicles equipped with these new batteries can go up to 400 miles with a single charge. CEO Scott Brown said.

Dr Paul Shearing said: *"We are very pleased to be working on this project, which is very important for the development of electric batteries for transportation."*

The director of global innovation at Synthomer said: *"Challenges in developing the next generation of EV battery technology enable new opportunities for partners in the supply chain of materials to join hands. support innovation and improvement "* .

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