

Lithium-ion batteries

Read the full article at rsc.li/2MqXHUU

John Goodenough, Akira Yoshino and Stanley Whittingham have won the 2019 Nobel prize in chemistry for the development of lithium-ion batteries. Lithium-ion batteries are lightweight and have a high energy density. They can be recharged and reused thousands of times.

In the 1970s, Stanley Whittingham produced the first working lithium battery. The anodes he used were made of metallic lithium, but these could be short-circuited, which could cause fires. John Goodenough then found a better cathode material that gave the battery a higher voltage. In 1986, Akira Yoshino changed the anode to a carbon-based material. This battery was much more stable.



Lithium-ion batteries

Read the full article at rsc.li/2MqXHUU

John Goodenough, Akira Yoshino and Stanley Whittingham have won the 2019 Nobel prize in chemistry for the development of lithium-ion batteries. Lithium-ion batteries are lightweight and have a high energy density. They can be recharged and reused thousands of times.

In the 1970s, Stanley Whittingham produced the first working lithium battery. The anodes he used were made of metallic lithium, but these could be short-circuited, which could cause fires. John Goodenough then found a better cathode material that gave the battery a higher voltage. In 1986, Akira Yoshino changed the anode to a carbon-based material. This battery was much more stable.

1. What are the two main factors that affect the voltage of a cell?
2. Suggest why lithium-ion batteries are lightweight.
3. Explain the difference between rechargeable and non-rechargeable batteries.
Refer to chemical reactions in your answer.

