Rechargeable batteries (also known as secondary cells) are batteries that potentially consist of reversible cell reactions that allow them to recharge, or regain their cell potential, through the work done by passing currents of electricity.









Non-rechargeable batteries, or primary cells, and rechargeable batteries, or secondary cells, produce current exactly the same way: through an electrochemical reaction involving an anode, cathode and electrolyte. In a rechargeable battery, however, the ???

## **HOW DOES A RECHARGEABLE BATTERY WORK**

Scientists study processes in rechargeable batteries because they do not completely reverse as the battery is charged and discharged. Over time, the lack of a complete reversal can change the chemistry and structure of battery materials, which can reduce battery performance and safety.

Rechargeable batteries, also known as secondary batteries, work by converting chemical energy into electrical energy. They are made up of one or more electrochemical cells, which consist of positive and negative electrodes immersed in an electrolyte solution.

? Charging a rechargeable battery involves converting electrical energy into chemical energy. During this process, electrons flow from the cathode to the anode, increasing the battery's chemical potential energy. The nominal voltage of a lithium-ion battery is 3.60V, reaching about 4.2V when fully charged.

2/3







## **HOW DOES A RECHARGEABLE BATTERY WORK**

If you"ve ever been curious about how rechargeable batteries work or why you should switch from standard, we"ve got you covered. There are a few key differences between a rechargeable battery and its standard cousin, but the core process required for a battery to power a device is the same.

Charging and discharging. A solar-powered charger

## for rechargeable AA batteries. During charging, the positive active material is oxidized, releasing electrons, and the negative material is reduced, absorbing electrons. These electrons constitute the current flow in the external circuit.

When one attempts to recharge a battery by reversing the direction of electric current flow, the opposite takes place: a reduction reaction proceeds at the negative electrode, and an oxidation









00KW 1MW 2MW



