

A Better Material for Lithium Batteries

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A new material magnesium ferrite is a better candidate in lithium batteries, a recent study done by scientists at Pudducherry and Andhra Pradesh in collaboration with Amara Raja Batteries Ltd, Andhra Pradesh and Clemson University, South Carolina, USA suggests.

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Magnesium ferrite is an ecofriendly, nontoxic, cost effective and electrical conductive material that hasn't been evaluated for use in lithium batteries so far. A recent study by scientists at the Pondicherry University, Pudducherry and Vignan's University, Andhra Pradesh have collaborated with Amara Raja Batteries Ltd, Andhra Pradesh and Clemson University, South Carolina, USA to test magnesium ferrite in lithium batteries at the anode or positive terminal for its electrical behavior and qualities.

Researchers have synthesized magnesium ferrite by mixing solutions of ferric nitrate and magnesium nitrate, and heating the mixture under constant stirring in the presence of citric acid, urea and adding ammonia to complete the reaction. The sample is then heated at 700°C for 2 hours to obtain magnesium ferrite nanoparticles smaller than 40nm.

It shows improved electrical conductivity, higher discharge capacity, which is better than commercially used graphite. The scientists proclaim, "The observed electrochemical properties of the fabricated lithium battery indicate that the newly developed magnesium ferrite may be a better anode material for lithium battery applications".

Many day-to-day appliances such as our wall clock and torch use lithium batteries. Researchers need to develop newer materials that help industries make better batteries with enhanced life and longer discharge time that could cut down costs and save time.

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