

# Solid state battery without lithium

Could a solid-state EV battery be made without lithium?

Making solid-state EV batteries without the rare and expensive lithium could become reality as Japanese scientists discover a viable alternative using magnesium ions. Magnesium is cheap and abundant and the long struggle to improve its conductivity in solids has finally overcome the material's shortcomings.

What is a non lithium based solid state battery?

Non-lithium based solid state batteries Non-lithium based solid state electrolytes have been used extensively to study the functioning and performance of solid state batteries. Ceramics are some of the most common non-Li based solid state electrolytes .

Can lithium metal solid-state batteries be manufactured?

While the impetus to develop lithium metal solid-state batteries is clear, identifying a practical manufacturing process is challenging. Herewith, authors study the underlying mechanisms controlling in-situ anode formation that could enable viable lithium-free manufacturing.

What is the difference between lithium ion and solid state batteries?

Lithium-ion batteries conduct electricity through a liquid electrolyte solution, while solid-state batteries do so with solid materials, such as ceramic, glass, and sulfides. This means they have lower risk of fires, charge faster, have higher voltages, and can be recycled.

Are non li based solid state batteries good?

Therefore, non-Li based solid state batteries have been found to possess good ionic conductivity, resistance to leakage, and absence of side reactions. Extensive research has been done in this field and many newer solid state electrolytes are still being fabricated.

Can sodium solid-state batteries work better than lithium?

"Sodium solid-state batteries are usually seen as a far-off-in-the-future technology, but we hope that this paper can invigorate more push into the sodium area by demonstrating that it can indeed work well, even better than the lithium version in some cases," Deysner said. The ultimate goal?

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