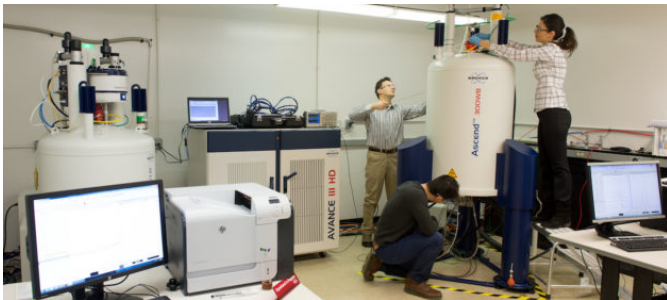


Berkeley Lab researchers announce a "major step" towards energy dense and safe solid-state magnesium-ion rechargeable batteries through the discovery of the fastest magnesium-ion solid-state conductor yet.



Magnesium promises higher energy density than the currently used lithium. However it lacks good options for liquid electrolyte, with most being actually corrosive against other parts of the battery. As a result, the researchers bypassed the liquid option in favour of creating a solid-state alternative, the impressively named magnesium scandium selenide spinel.

The conductor has magnesium mobility compared to solid-state lithium battery electrolytes-- a breakthrough, since magnesium is thought to move slowly in most solids. The achievement was brought about thanks to computational resources from MIT, and Argonne chemists helping with nuclear magnetic resonance (NMR) spectroscopy experiments.

Of course these are still early days for magnesium-based batteries, and the researches need to do more work with the conductor before it finds a place in an actual device.

Go ["Holy Grail" for Batteries: Solid-State Magnesium Battery a Big Step Closer](#)