Latest news on lithium ion batteries

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Researchers at Harvard University have developed a solid state battery that can be recharged in 10 minutes, and now it"s got Series A funding to scale production.

October 23 update: Adden Energy has raised $15 million in a Series A round led by At One Ventures with participation from Primavera Capital Group, Rhapsody Venture Partners, and MassVentures to scale production and bring solid state battery technology to car manufacturers.

The company will use the funding to construct a roll-to-roll pilot line production facility at its headquarters in Waltham, Massachusetts.

Adden Energy has already demonstrated technology that can deliver its battery in EV-compatible, commercially compatible pouch cell form-factors; this Series A-funded production line will enable it to scale the size of the batteries 100x.

Laurie Menoud, partner at At One Ventures and board member at Adden Energy, said, "Our investment in this technology is a signal of how important we know this to be, and it"s also our confidence level in Adden Energy"s ability to win market share through competitive unit economics. With the added energy density of lithium metal anodes, the cost per kilowatt hour is going to drop by 30%, and that is going to be a significant driver of adoption."

Adden Energy says its next-generation batteries are on track to reach the goal of EV parity with internal combustion engines by 2028.

January 15, 2024: The lithium metal battery researchers developed at the Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS) can also be charged and discharged at least 6,000 times -- more than any other pouch battery cell.

The research published in Nature Materials describes a new way to make solid-state batteries with a lithium metal anode. Xin Li, Associate Professor of Materials Science at SEAS and senior author of the paper, said:

Lithium metal anode batteries are considered the holy grail of batteries because they have ten times the capacity of commercial graphite anodes and could drastically increase the driving distance of electric vehicles.

Our research is an important step toward more practical solid-state batteries for industrial and commercial applications.

One of the biggest challenges in designing solid-state batteries is the formation of dendrites on the surface of the anode. Dendrites are projections of metal that can build up on the lithium surface and grow like roots into the electrolyte. They pierce the barrier that separates the anode and cathode, causing the battery to short or even catch fire.

The dendrites form when lithium ions move from the cathode to the anode during charging, attaching to the surface of the anode in a process called plating. That creates an uneven, non-homogeneous surface on the anode, and allows dendrites to take root.

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