# Adden energy battery

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The start-up Adden Energy, founded by scientists at Harvard University, is developing a new type of solid-state battery for electric vehicles and has now announced that it has received a technology licence and closed a seed funding round of 5.15 million US dollars.

According to Adden Energy, the self-developed lithium metal battery achieves a charging time of only three minutes in the laboratory and a service life of more than 10,000 cycles. The prototype also has a high energy density and material stability “that overcomes the safety problems of some other lithium batteries”. The results have been published in Nature and other journals.

In other news, the startup announces it has received an exclusive technology licence from Harvard University’s Office of Technology Development (OTD) to scale solid-state battery technology. In addition, a good US$5 million has come in via a seed funding round. The round was led by Primavera Capital Group. Rhapsody Venture Partners and MassVentures also participated. The licence and venture funding will enable the startup to scale up the lab prototype to commercial use of a solid-state lithium metal battery, according to a statement.

Adden Energy was founded in 2021 by Xin Li along with William Fitzhugh and Luhan Ye, who were both involved in developing the technology as PhD students in Li’s Harvard lab. Fred Hu, founder and chairman of Primavera Capital, is also a founder of Adden Energy.

Harvard"s Office of Technology Development has granted an exclusive technology license to Adden Energy, Inc., a startup developing innovative solid-state battery systems for use in future electric vehicles (EVs) that would fully charge in minutes. Adden Energy has closed a seed round with $5.15M in funding led by Primavera Capital Group, with participation by Rhapsody Venture Partners and MassVentures.

The license and the venture funding will enable the startup to scale Harvard"s laboratory prototype toward commercial deployment of a solid-state lithium-metal battery that may provide reliable and fast charging for future EVs to help bring them into the mass market.

Developed by researchers in the lab of Xin Li, PhD, Associate Professor of Materials Science at Harvard John A. Paulson School of Engineering and Applied Sciences (SEAS), the lab-scale coin-cell prototype has achieved battery charge rates as fast as three minutes with over 10,000 cycles in a lifetime, with results published in Nature and other journals. It also boasts high energy density and a level of material stability that overcomes the safety challenges posed by some other lithium batteries.

Adden Energy was co-founded in 2021 by Li, along with William Fitzhugh, PhD "20, and Luhan Ye, PhD "22, both of whom contributed to the development of the technology as graduate students in Li"s Harvard lab. Fred

Hu, PhD "93, founder and Chairman of Primavera Capital, is also a founder of Adden Energy.

"Typically, lithium-metal anodes in other solid-state designs develop dendrites, twig-like growths that can gradually penetrate through the electrolyte to the cathode. We defeat the growth of dendrites before they can cause damage, by novel structural and material designs," said Ye, who is now CTO of Adden Energy. "As a result, the device can sustain its high performance over a long lifetime. Our recent study shows that this nice feature can also be maintained at scale-up."

"Climate change is the defining challenge facing the world. It is more important than ever to accelerate the transition to clean energy and zero-emission transportation," said Hu, who also serves on the Global Board of the Nature Conservancy. "Adden Energy"s mission is to develop cutting-edge battery technologies, thereby enabling mass adoption of electric vehicles and contributing to a greener and more sustainable global economy."

"Electric vehicles cannot remain a luxury fashion, literally the "one percent" of vehicles on the road, if we are to make progress toward a clean energy future, and the U.S. won"t have a used-car market if EV batteries last only 3 to 5 years," added Li. "The technology needs to be accessible to everyone. Extending the lifetime of the batteries, as we"re doing here, is an important part of that."