

## THIS BREAKTHROUGH TECHNOLOGY IN LITHIUM EXTRACTION WILL REVOLUTIONIZE ENERGY STORAGE

**San Francisco, CA:** New cutting edge technology developed by [Energy Exploration Technologies, Inc.](#) (EnergyX) is providing lithium, the most vital element in batteries, more efficiency than ever before.

Lithium, sometimes called “white petroleum” is used in all batteries from cell phones to electric vehicles (EV), and utility grid backup. Many believe it is the energy source of the future, but it’s sourcing is in much need of advancement. As opposed to conventional brine production methods currently used, [EnergyX](#) research shows that lithium can be produced in a matter of days versus the typical 18 month process, essentially 100x faster, and up to 5x cheaper with higher recovery rates and significantly more efficiency.

After gaining global recognition in two of the most prestigious academic journals, [Science Advances](#) and [Nature Communications](#), serial entrepreneur Teague Egan, founder and CEO of EnergyX, executed a worldwide, exclusive license to acquire the rights to this technology, and further develop and scale it for commercialization.

Representing a monumental step forward in lithium extraction, the technology is a culmination of thousands of man hours and millions of dollars in research stemming from a tri-institutional effort between Monash University, CSIRO (the Australian National Laboratory), and lead by The University of Texas at Austin (UT), which is backed by a \$10.75M [U.S. Department of Energy grant](#).

Read about the work here:

- ‘Ultrafast selective transport of alkali metal ions in metal organic frameworks with subnanometer pores’ - [Science Advances](#)
- ‘Fast and selective fluoride ion conduction in sub-1-nanometer metal-organic framework channels’ - [Nature Communications](#)

The science is now backed by EnergyX who is building a world class portfolio of patents and looking to revolutionize the energy storage space by dramatically reducing the cost of lithium. EnergyX is already working with some of the top lithium production companies in the world to take the technology known as [LiTAS \(Lithium Ion Transport and Separation\)](#) mainstream. “Lithium is now featured at the top of the United States government’s Critical Minerals List, showing its geopolitical importance,” cites Egan. “In 2010 there were only 80K tons of global lithium demand, in 2025 there will be 1.5M tons of demand for EV batteries. Tesla alone is aiming to manufacturing millions of EV’s, not to mention every other automanufacturer is electrifying their entire fleet. We have the technology to secure the global supply of lithium for the future and extract it in a more environmentally sustainable method.” Egan claims the company is also working on solid-state battery electrolyte technology, using its core LiTAS nanotechnology to solve some of these problems.

The initial research was led by Dr. Benny Freeman, director of the [Materials for Water and Energy Technologies](#) lab at UT, a world renowned membranes expert and chair of the [American Chemical Society \(ACS\)](#). "I am excited that this new research can dramatically speed up our transition to a renewable energy future. By ensuring an environmentally-friendly and cheaper lithium supply, we can radically reduce our dependence on fossil fuels," says Dr. Freeman, who is also Chair of EnergyX's Science Advisory Board.

The core of EnergyX's LiTAS nanotechnology originates from a new class of materials called metal-organic frameworks (MOF), which have an extremely large internal surface area and small pore sizes, with remarkable transport and separation characteristics. "The fact that we are seeing MOF membranes target and separate specific metal ions in an aqueous mixture is a pioneering breakthrough, something that has never been done before," described TJ Dilenschneider, Chief Science Officer at EnergyX. "The 'salts' in salt water brines are all so similar, that having the ability to target and separate lithium from magnesium and calcium or sodium from lithium at high concentrations is pure phenomena. We are still trying to understand how the MOFs accomplish this feat." Dilenschneider is also a PhD student at UT under Dr. Freeman, and is presented more of his fundamental research on the topic at the ACS Annual Summit in San Diego in August.

As Egan [tweeted](#) earlier in August, the development and commercialization of this technology means a revolutionary new approach for the water and mining industries, areas that haven't seen much transformation or disruption in decades. Many additional applications also exist such as removing lithium from the highly contaminated wastewater that results from fracking operations.

**Learn more on the company website:** [www.energyx.com](http://www.energyx.com)

**For further information, exclusive stories and images or to set up an interview with Dr. Benny Freeman or EnergyX CEO Teague Egan, please contact:**

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