

April 28, 2022



# Aqua Metals Produces High Purity Nickel in Metal Form at its Innovation Center

**High-quality metal extraction promises to reduce cost while minimizing environmental impacts – aligned with the bipartisan goal of building a domestic supply chain for strategic battery metals**

RENO, Nev., April 28, 2022 (GLOBE NEWSWIRE) -- Aqua Metals, Inc. (NASDAQ: AQMS) ("Aqua Metals" or the "Company"), a leading innovator in metals recycling with its AquaRefining™ technology, has achieved an additional milestone in proving its recycling technology by plating high purity nickel metal, one atom at a time, from black mass created from a variety of lithium-ion batteries. This achievement supports the expectation that Aqua Metals' Li AquaRefining potentially has strong economic and environmental advantages over other lithium-ion recycling processes in use or under development. High purity nickel enables a streamlined process for producing lithium battery-grade material. Aqua Metals' early test production of nickel sulfate, a compound often used in battery precursor material, showed promising results.

"The only Li-battery recycling method commercially in use today is smelting, which produces an alloy of the metals that needs multiple pyrometallurgical steps of processing to achieve the product we produce right out of our system," said David Regan, Vice President of Commercial for Aqua Metals. "These additional steps add emissions and cost, which is why we believe our process may be more cost-effective and sustainable than smelting or other recycling methods, and even mining."

Nickel is a key component in lithium-ion batteries as it can pack a lot of energy per battery while allowing battery producers to reduce the use of cobalt, which is more expensive. According to [Stockhead](#), nickel demand for lithium-ion batteries could grow by 567% by 2025, compared to 2019 levels. The exponential growth in demand for nickel due to the global expansion of EVs has resulted in a correlating and unprecedented surge in nickel prices. The nickel market was already exceptionally tight due to supply concerns in Indonesia, the top producer of nickel, but this was greatly exacerbated by Russia's invasion of Ukraine in February of 2022, as Russia is one of the world's largest suppliers of the metal. Russia's invasion and subsequent sanctions resulted in nickel prices hitting record-breaking levels in March, increasing as much as 60% in one day, one of the most extreme moves ever seen on the metal markets. Today nickel trades at more than \$32,000 per ton, up more than 100% over the past year.

Aqua Metals believes its Li AquaRefining process has the lowest environmental footprint of any technology under development. It recycles spent lithium-ion batteries in a clean, economical way that is fundamentally non-polluting by utilizing the renewable electron as the reagent instead of chemicals or high heat. Aqua Metals believes that AquaRefining has the potential to be a superior solution to solely mining for critical metals, and one of the most

effective ways of achieving President Biden's [Presidential Invocation of Defense Production Act for Battery Materials](#) national security goal to secure a domestic supply chain for critical and strategic battery metals through environmentally and socially responsible means.

"It is an environmental and geopolitical reality that the United States needs to transition to electrified transportation supported with renewable energy while also building a strong domestic battery supply chain through environmentally responsible recycling," commented Steve Cotton, Aqua Metals' President and CEO. "Our sustainable recycling process has already proven its ability to extract high-quality lithium, copper, and now nickel from lithium-ion black mass, and we intend to build on these early successes to help deliver on the President's vision of a robust and environmentally responsible domestic industrial base to meet the requirements of the clean energy economy."

"Beyond the potential economic and environmental advantages of AquaRefining, we feel our ability to produce high purity metals can be a big differentiator for us," said Ben Taecker, Chief Operations and Engineering Officer of Aqua Metals. "Plating such a high-quality nickel enables us to go directly to the production of battery precursor material without having to implement any additional refining steps. This streamlines the process, adding economic and environmental value. Our production of high purity nickel sulfate from the nickel we plated supports this. We remain on track for implementing a fully operational pilot later this year."

To date, the Company has [also produced high-purity lithium hydroxide](#) and [copper](#) from lithium-ion battery black mass at the Company's Innovation Center in the Tahoe-Reno Industrial Center. Through the development of AquaRefining for lead batteries, Aqua Metals is the only company that has experience building a commercial clean metals recycling technology. Aqua Metals will continue to update the market as meaningful progress is made.

Figure 1 is available at

<https://www.globenewswire.com/NewsRoom/AttachmentNg/baa5786e-d8c7-4d17-9a48-7925f9640566>

Figure 2 is available at

<https://www.globenewswire.com/NewsRoom/AttachmentNg/d5a7e111-d15e-4cff-a170-aaa2b58d1abd>

## **Conference Call**

The Company will be hosting its first quarter 2022 results conference call today, April 28<sup>th</sup> at 4:30 p.m. (EDT), during which time management will discuss these recent nickel results as well as other corporate developments.

Investors can access the live call by dialing (877)-407-9708 toll free or (201)-689-8259 for international callers. Participants have the option of attending the earnings call online by accessing the following link: [https://event.webcasts.com/starthere.jsp?ei=1544965&tp\\_key=4d6405c83e](https://event.webcasts.com/starthere.jsp?ei=1544965&tp_key=4d6405c83e). The results call will include power point presentation slides so if you do listen via telephone, please log in online to view those slides.

A replay of the earnings conference call will also be available via the company website, and can be found at the following link: <https://ir.aquametals.com/ir-calendar>. A telephone replay will be available until May 12, 2022, by dialing (877)-660-6853 or (201)-612-7415 and using

Pin Number 13729444.

### **About Aqua Metals**

[Aqua Metals](#), Inc. (NASDAQ: AQMS) is reinventing metals recycling with its patented hydrometallurgical AquaRefining™ technology. The modular Aqualyzers™ cleanly generate ultra-pure metal one atom at a time, closing the sustainability loop for the rapidly growing energy storage economy. The Company's offerings include equipment supply, services, and licensing of the AquaRefining technology to recyclers across the globe. Aqua Metals is based in Reno, Nevada.

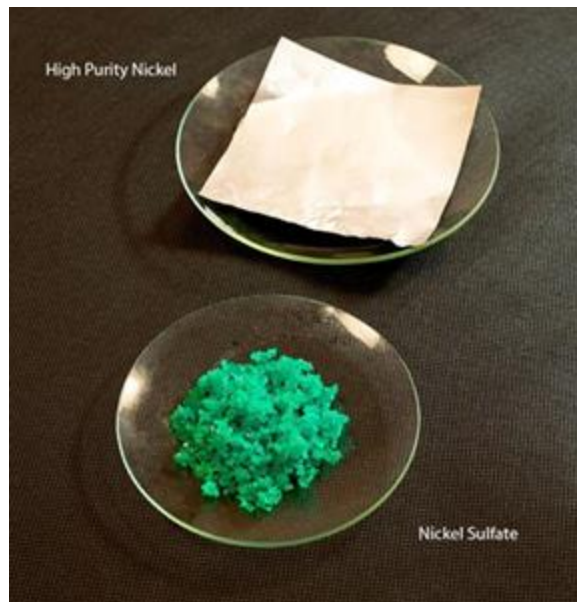
### **Safe Harbor**

This press release contains forward-looking statements concerning Aqua Metals, Inc. Forward-looking statements include, but are not limited to, our plans, objectives, expectations and intentions and other statements that contain words such as "expects," "contemplates," "anticipates," "plans," "intends," "believes", "estimates", "potential" and variations of such words or similar expressions that convey the uncertainty of future events or outcomes, or that do not relate to historical matters. The forward-looking statements in this press release include our expectations for our ability to develop our AquaRefining technologies for the recycling of lithium-ion batteries and the expected benefits of our Innovation Center and the recycling of lithium-ion batteries. Those forward-looking statements involve known and unknown risks, uncertainties, and other factors that could cause actual results to differ materially. Among those factors are: (1) the risk we may not be able to recycle lithium-ion batteries using our AquaRefining process or, if we do, derive the expected benefits from such recycling, (2) the risk that we may not derive the expected benefits from our Aqua Metals Innovation Center; (3) the risk that licensees may refuse or be slow to adopt our AquaRefining process as an alternative to smelting in spite of the perceived benefits of AquaRefining; (4) the risk that we may not realize the expected economic benefits from any licenses we may enter into; (5) the risk that we may not be able to access additional capital, through the sale of our TRIC facilities and equipment or otherwise, as and when needed and (6) those other risks disclosed in the section "Risk Factors" included in our Annual Report on Form 10-K filed on February 24, 2022. Aqua Metals cautions readers not to place undue reliance on any forward-looking statements. The Company does not undertake and specifically disclaims any obligation to update or revise such statements to reflect new circumstances or unanticipated events as they occur, except as required by law.

Contact: Glen Akselrod, Bristol Capital  
(905) 326-1888, Ext. 1  
[glen@bristolir.com](mailto:glen@bristolir.com)

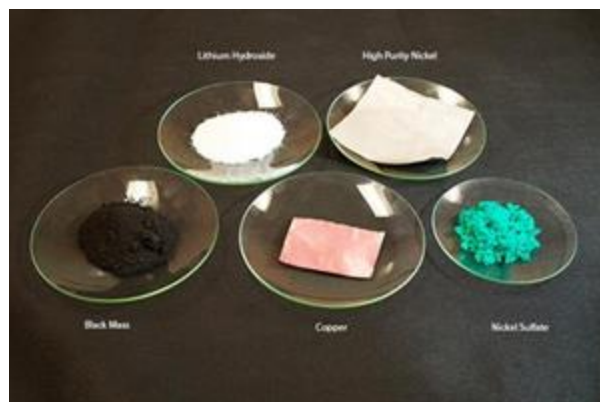


**Figure 1: High Purity Nickel and Nickel Sulphate**



Nickel sulfate with the high purity nickel used as the source material produced at the Aqua Metals' Innovation Center in the Tahoe-Reno Industrial Center, NV

**Figure 2: Black Mass - Lithium Hydroxide - Copper - Nickel - Nickel Sulfate**



Black Mass (spent Lithium-ion batteries) feedstock sample accompanied by the suite of battery minerals produced by Aqua Metals to date – lithium hydroxide, copper, nickel, nickel sulfate

Source: Aqua Metals