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Aqua Metals Recovers High-Purity Copper from Lithium-ion Battery Black Mass Using Sustainable and Economical Metals Recycling Process

Company continues to make Li R&D progress and is on schedule for running a fully integrated pilot later in 2022

RENO, Nev., March 22, 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 another key accomplishment in metals recycling by recovering its first copper from lithium-ion battery black mass at the Company's Innovation Center in the Tahoe-Reno Industrial Center. The plating of the high quality copper, which is selectively plated atom-by-atom, is another significant step in building out Aqua Metals' capabilities for recovering all the high-value materials in lithium-ion batteries. To date, the Company has also [produced high-purity lithium hydroxide](#) from lithium-ion battery black mass and successfully lab-tested cobalt plating.

Copper, which currently trades at more than \$10,000 a tonne, is an important raw material for manufacturing the copper foil for lithium-ion batteries, and copper also has many other applications relevant to the new energy era. Electric vehicles can contain more than a mile of copper wires, using 4-16 times more copper than gasoline-powered vehicles. Other components of the green energy revolution, such as electric charging points, solar panels, wind turbines, and smart power grids, have heavy copper wire and cabling needs. As of 2021, the world consumed 30 million tonnes of copper per year, and by 2050 it is predicted to double to 60 million tonnes. Efficient and clean recycling methods for recovering copper from spent lithium-ion batteries are critical to meet this global demand.

"To prove that our AquaRefining technology is the most sustainable and economical method, we are being very thorough in implementing a methodical step-by-step scaling approach as we verify each phase of the process," said Ben Taecker, Chief Operations and Engineering Officer of Aqua Metals. "We are very proud of the R&D teams' progress and are confident that we will remain on schedule for running a fully integrated pilot in the coming months."

Li AquaRefining 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. The room-temperature process uses about 1/200th of the chemicals of a standard hydro process and does not generate the carbon footprint of a high heat approach. Li AquaRefining is a closed-loop process that recycles the chemicals it uses. Consequently, it has a fraction of the waste streams, estimated at approximately 99.5 percent less than the standard hydro process. Aqua Metals, which to date has been

awarded 72 patents with 49 patents pending, is developing its Li AquaRefining process to license to lithium-ion battery recyclers worldwide.

“What differentiates us from other metals recycling processes is that our technology produces high purity metals. Cathode materials can be produced from pure metals, and starting with high purity metals is the best approach to making cathode materials,” said David Regan, Vice President of Commercial for Aqua Metals. “We believe our technology will provide our partners with the ability to recycle more economically and cleanly, and provide a superior business opportunity with the option of selling product back into the battery supply chain or selling high purity metals to the metals industry. We think our partners will find this flexibility a great asset for their business.”

Through the development of AquaRefining for lead batteries, Aqua Metals is the only company that has experience building a commercial clean metals recycling technology. In addition to lithium and copper, the Company’s R&D program at the Innovation Center is working to recycle the other critical elements of lithium-ion batteries such as cobalt, nickel, and manganese. Aqua Metals will continue to update the market as meaningful progress is made in the R&D process.

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 and our deployment of AquaRefining technology and equipment to our Taiwan partner’s facility. 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.

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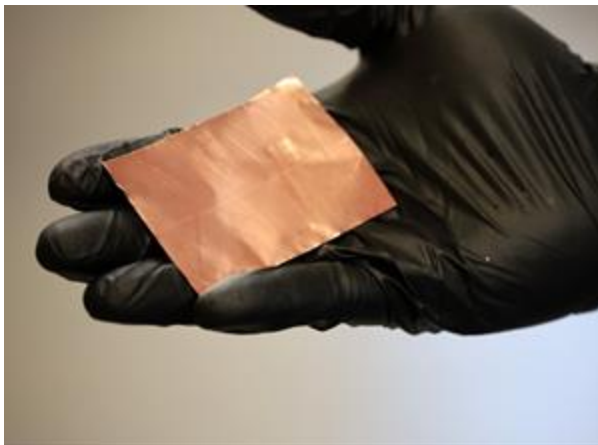
Photos accompanying this announcement are available at:

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Copper Foil



Copper Foil produced at the Aqua Metals Innovation Center in Tahoe Reno Industrial Center, NV

Copper Foil, Lithium Hydroxide and Black Mass



The Copper foil was produced from black mass made up of a mix of lithium-ion batteries. Li AquaRefining will be able to process black mass from any mix of lithium-ion batteries.

Source: Aqua Metals