

August 26, 2022

IPERIONX PRODUCES TITANIUM METAL FROM TENNESSEE MINERALS

- IperionX has successfully applied patented technologies to produce the first low-carbon spherical titanium, aluminum and vanadium alloy ("Ti-6Al-4V" or "Ti64") powder using titanium minerals from Tennessee as feedstock.
- Testing confirmed that IperionX's Ti64 powder meets important Grade 5 quality specifications, which accounts for ~50% of global titanium metal use, including in aerospace turbines, structures and engine components.
- The patented titanium technologies have the potential to significantly lower the energy consumption, costs and carbon emissions versus the incumbent Kroll process used to create titanium metal sponge and then refined into titanium alloys.
- The technologies can produce titanium alloys directly with alloying elements oxides, and this important advantage offers a valuable opportunity to deliver customers a wider range of lower cost innovative titanium alloys on shorter lead times.
- The U.S. currently has no primary titanium metal (sponge) production capacity, with key inputs in the global titanium supply chain dominated by China and Russia.
- IperionX aims to re-shore an all-American low-carbon titanium supply chain that will utilize recycled titanium feedstocks, and titanium minerals from Tennessee, to produce commercial grade titanium metal and alloys for use in aerospace, space, consumer electronics, electric vehicle and defense sectors.

IperionX Limited ("IperionX" or "Company") (NASDAQ: IPX, ASX: IPX) is pleased to announce that it has successfully applied patented low-carbon titanium metal technologies to upgrade Tennessee titanium minerals into high grade +99% TiO_2 and then into a high-quality spherical titanium alloy powder.

IperionX metal powder production process



Testing has confirmed successful production of a spherical Ti-6Al-4V powder with aluminum and vanadium uniformly distributed within the sample and meeting industrial specifications, and oxygen content meeting Grade 5 specification (<0.2 wt%).



Corporate Office

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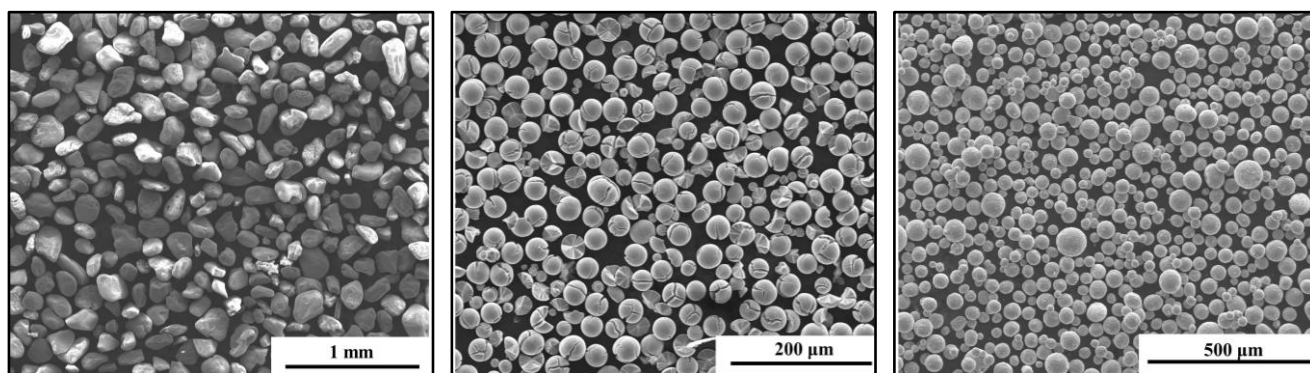
Tennessee Office

279 West Main St, Camden, TN 38320

Salt Lake City Office

1782 W 2300 S, West Valley City, UT 84119

Scanning Electron Microscope ("SEM") images of IperionX metal powder production process



Titan ilmenite (~60% TiO₂)

+99% TiO₂

Ti-6Al-4V

The low-carbon titanium spherical powder was produced by using a range of patented technologies, including;

- Medium grade titanium minerals (ilmenite) sourced from IperionX's Titan Project were upgraded to a +99% titanium dioxide feedstock using the proprietary Synthetic Rutile and Alkaline Roasting and Hydrolysis ("ARH") process technologies.
- The high-grade titanium feedstock was blended with oxides of the alloying elements and then reduced with using the patented Hydrogen Assisted Metallothermic Reduction ("HAMR") technology to produce low-carbon angular titanium powders.
- The patented Granulation Sintering Deoxygenation ("GSD") technology was used to produce a high-quality spherical titanium powder alloy Ti64.

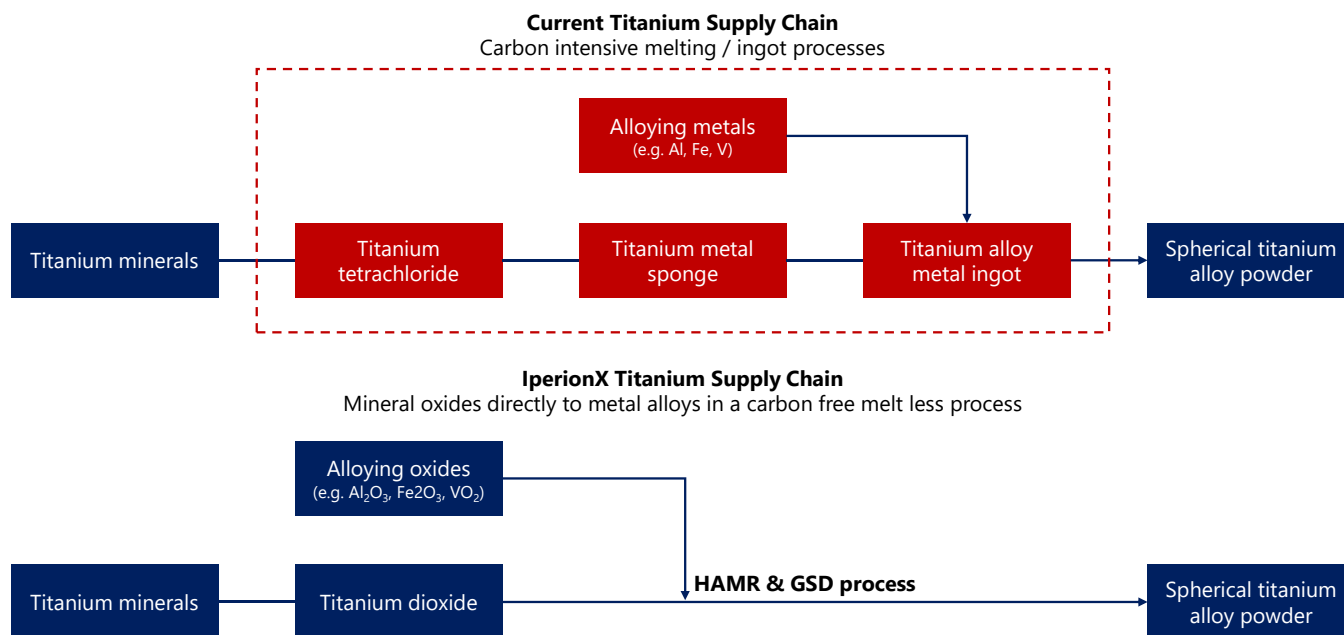
Ti64 is a widely used alloy of titanium, aluminum and vanadium that provides high strength-to-weight ratio, excellent corrosion resistance and biocompatibility. Spherical Ti64 powders are used to manufacture advanced components with additive manufacturing / 3D printing.

Titanium alloy powders are currently produced with the Kroll process to firstly create titanium metal sponge, which is then refined via a series of high energy titanium melt processes to produce large batch titanium alloys as ingots. These ingots are then processed into titanium alloy wire/rod, which are feedstocks for high energy plasma / gas atomization that produces spherical titanium alloy powders.

The technologies avoid the high-cost, high-carbon Kroll process to create titanium sponge, but also bypass the series of energy intensive titanium melt processes, ingot manufacturing, wire production and gas atomization, to produce low carbon and low-cost titanium spherical powders.

The technologies have the potential for up to a 95% reduction in Scope 1 and 2 carbon emissions compared to the incumbent Kroll titanium supply chain. The technologies eliminate the direct carbon emissions from producing titanium, generate no Scope 1 emissions, and by utilizing 100% renewable power in the production process, Scope 2 carbon emissions can also be eliminated.

The technologies can also produce titanium alloys directly from the oxides of the alloy elements. This offers a valuable opportunity to deliver customers a wider range of lower cost, innovative titanium alloys on shorter lead times. This includes the potential to offer titanium alloys which are difficult to produce with incumbent technologies such as Ti-1Al-8V-5Fe ("Ti-185"), which offers high strength and fatigue life for military applications, and Ti-Palladium allow for superior corrosion resistance in demanding applications or luxury goods.



Existing titanium supply chain and titanium supply chain utilizing IperionX's technologies.

The U.S. is completely dependent on imports of high-carbon primary titanium metal feedstocks produced via the high-cost Kroll process, and it currently lacks the surge capacity required to support defense and critical infrastructure needs in an extended national emergency. In contrast, Russia and China's market share of global titanium sponge production continues to increase and is expected to pass over 70% share this year.

The ability to produce high quality spherical titanium metal powders using titanium minerals from the Titan Project in Tennessee demonstrates the potential for IperionX to re-shore an all-American low-carbon titanium supply chain – taking raw Tennessee critical minerals, or recycled titanium feedstock – and applying proprietary technology to produce high-quality, low-carbon commercial grade titanium metal and alloys in the U.S.

Further, the production of spherical titanium powders produced via the HAMR & GSD processes from minerals in Tennessee supports IperionX's collaboration with Oak Ridge National Laboratory under a U.S. DOE approved User Agreement to develop low-cost titanium alloys for additive manufacturing, including opportunities to use titanium powders to parts which currently rely on other metals, such as stainless steel and aluminum.

Anastasios (Taso) Arima, IperionX's Managing Director and CEO said:

"The need to secure a cost effective, low carbon, all-American titanium metal supply chain is of critical importance to major U.S. industries and the U.S. defense sector.

Today's announcement highlights that these innovative technologies can produce low carbon titanium metal and its alloys directly from domestically sourced titanium minerals from our Titan critical minerals project in Tennessee. These patented technologies can deliver production of innovative titanium alloys that were not possible with the current melt processes.

The signing into law of the Inflation Reduction Act (2022) last week was an important turning point for re-shoring critical low carbon American supply chains and provides a wide range of U.S. government funding opportunities and incentives to accelerate the scale-up of emerging technologies to reduce the U.S. reliance on foreign supply chains. These include \$40 billion for DOE Loan Programs Office loan commitments, \$500 million for the DOD DPA Title III program, and a 10% production tax credit for critical mineral and metal production in the U.S., enabling the acceleration of actions to fund and secure these critical supply chains."

This announcement has been authorized for release by the CEO and Managing Director.

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About IperionX

IperionX's mission is to be the leading developer of low carbon, sustainable, critical material supply chains focused on advanced industries including space, aerospace, electric vehicles and 3D printing. IperionX's breakthrough titanium technologies have the potential to produce titanium products which are sustainable, 100% circular, low carbon intensity and at product qualities which exceed current industry standards. The Company also holds a 100% interest in the Titan Project, located in Tennessee, U.S., a very large titanium resource in North America which is also rich in rare earth minerals.

IperionX holds exclusive option to acquire Blacksand Technology, LLC ("Blacksand"), which holds the rights to commercialize these patented titanium technologies to produce metal products from titanium and/or its alloy. Separately, IperionX also holds exclusive options to enter into license agreements with Blacksand over a suite of their patented technologies and related products. The technologies were invented by Dr. Zhigang Zak Fang at the University of Utah with support from the Advanced Research Programs Agency – Energy ("ARPA-E") within the Department of Energy ("DOE").

Forward Looking Statements

Information included in this release constitutes forward-looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance, and achievements to differ materially from any future results, performance, or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves, the Company's ability to comply with the relevant contractual terms to access the technologies, commercially scale its closed-loop titanium production processes, or protect its intellectual property rights, political and social risks, changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the Company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company's business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company's control.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements, or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.