Alberta Oil Sands PLS Qualifies for Development on MRT Platform

26.10.2017 | GlobeNewswire

HALIFAX, Nova Scotia, Oct. 26, 2017 (GLOBE NEWSWIRE) -- Ucore Rare Metals Inc. (TSX-V:UCU) (OTCQX:UURAF) (“Ucore” or the “Company”) is pleased to announce the completion of analytical characterization of a pregnant leach solution derived from the Alberta oil sands (the “Beta PLS”) at IBC Advanced Technologies, Inc. (“IBC”). IBC has assessed the Beta PLS and found it to be conducive to extraction of the rare earth elements (“REE”) using Molecular Recognition Technology (“MRT”).

In 2016, Ucore announced a partnership with a Major Alberta Oil Sands Producer (“MOSP”) which is developing a commercial process for the recovery of metals-enriched concentrates from the Alberta oil sands (the “Bitumen Metals Extraction” or “BMX” process). The MOSP conducted a review of multiple metals separation platforms and selected MRT as the preferred technology to recover industrial scale quantities of high purity metals from the oil sands tailings and process flow. In 2017, Ucore has materially advanced this partnership, successfully isolating the BMX concentrate into a Beta PLS, using its proprietary Bentzen Process (see Ucore Press Releases dated: July 18, 2016, March 6, 2017, June 26, 2017, July 26, 2017 and Sept. 6, 2017).

Ucore now reports that IBC has completed a detailed analysis of the Beta PLS using Inductively Coupled Plasma Spectrometry (“ICP”), an analytical instrument used for determining the presence and level of chemical elements in a solution. Based on the ICP results, detailed below, IBC concluded that Ucore’s proprietary leach circuit (the “Bentzen Process”) has generated a solution in which the carbon content, base metals and other deleterious constituents have been contained to levels conducive to MRT, and there are no technical barriers which would indicate an inability to recover high purity REE from the Beta PLS.

“This is the first time that a mixed concentrate from the Alberta oil sands has been rendered as a PLS submissible to Molecular Recognition Technology testing,” said Jim McKenzie, President and CEO of Ucore. “The extraction of high value REE from bitumen froths is an objective that has been pursued by our Major Oil Sands Partner for some time. It is also an objective that has been much discussed, but to our knowledge, has never been accomplished, either in Alberta or at a world level. The reason is the relative lack of selectivity demonstrated by traditional solvent extraction technologies, an obstacle which is largely transcended by MRT. Given the magnitude of Athabasca tailings and process flow, the implications for a North American REE supply chain are significant.”

“The Bentzen Process has delivered a Beta PLS with base metal and carbon content amenable to Molecular Recognition Technology,” said Steven R. Izatt, President and CEO of IBC. “What’s more, the current oil sands process uses a nitric reagent, a platform with which we’ve had good success in deriving high purity REE from the Bokan PLS. At this juncture, IBC will be looking to optimize the PLS still further, adjusting the leach platform to leverage maximum utility from the MRT metals separation circuit. Given the containment of nuisance materials and the familiarity of the leach circuit, we see no technical barriers which would indicate that high purity REE cannot be accessed from the oil sands source material in a manner consistent with our prior experience at Bokan.”

Summary of ICP Test Results and Analysis:

- Three Beta PLS samples, UCLT8, UCLT9 and UCLT12, were analyzed by IBC using ICP.
- The analytical work was intended to provide a qualitative assessment to determine feasibility of the Bentzen Process dissolution procedure and applicability of the dissolution process to the use of MRT for separation of the REE. IBC researchers have noted that the existing dissolution procedure, while promising, has not been fully optimized and that this analysis is a ‘First Level’ feasibility assessment, intended to provide initial feedback for further optimization initiatives. Accordingly, the results are reported in a semi-quantitative format.

- The purposes of analyzing the samples were: 1) to verify that the REE content can be dissolved into a solution amenable to treatment by MRT; and 2) to confirm that no technical barriers exist for the use of MRT to separate individual REE from the dissolved REE content.
- The solutions were analyzed for 16 REE (La-Lu, minus Pm, and Sc and Y). Each of the REE tested, except Sc, was found to be present. The primary base metals detected were aluminum and iron, which accounted for essentially all of the base metal content. Analysis also indicated no significant presence of carbon, a deleterious component of the original oil sands feedstock.
- Accounting for the base metal and carbon content, IBC has determined that the individual REE can be separated from the analyzed Beta PLS. IBC’s assessment is based on its experience in separating the individual REE from other PLS streams including the Bokan-Dotson Ridge PLS, as previously reported (see Ucore Press Releases dated: March 2, 2015, May 24, 2016, June 7, 2016, July 5, 2016 and Aug.15, 2016).
- Conclusions from the analysis are that 1) REE were successfully dissolved into a solution amenable to treatment by MRT; and 2) there are no technical barriers which would indicate an inability to extract REE from the source material using an MRT circuit.
- The immediate next step is to adjust the dissolution procedures to maximize the concentrations of the REE in solution, followed by testing of the Beta PLS for the purpose of REE class separations at bench scale.
- The exceptional selectivity of SuperLig® products for specific metals provides an ideal tool to selectively separate the metals of interest in the Beta PLS. A significant advantage of the MRT system is the ability to handle high solution volumes in combination with high flow rates on an automated basis, a requirement of the oil sands application. MRT systems can be designed and constructed for a wide range of sizes, concentrations, and volume-throughputs. In view of this, subject to the successful completion of bench scale trials referenced above, the Company intends to undertake industrial scale trials at the SuperLig®-One pilot plant in Utah.

Steven R. Izatt, President and CEO of IBC and a member of Ucore’s Advisory Board, has approved the scientific and technical content of this news release and is the Qualified Person responsible for its accuracy. Mr. Izatt, Registered Member of the Society for Mining, Metallurgy, and Exploration (“SME”), holds a B.A. degree in Chemistry from Brigham Young University (“BYU”), as well as an M.S. degree in Chemical Engineering Practice and an M.S. degree in Technology and Policy, both from the Massachusetts Institute of Technology (“MIT”).

About Ucore

Ucore Rare Metals is a development-phase company focused on rare metals resources, extraction and beneficiation technologies with near term potential for production, growth and scalability. On March 3, 2015, Ucore announced that it had entered into an agreement with IBC to form a joint venture for the deployment of SuperLig® Molecular Recognition Technology for REE and multi-metallic tailings processing applications in North America and associated world markets. The Company has a 100% ownership stake in the Bokan project. On March 31, 2014, Ucore announced the unanimous support of the Alaska State Legislature for the investment of up to USD $145 Million in the Bokan project at the discretion of the Alaska Import Development and Export Agency (“AIDEA”).

For further information, please contact Mr. Jim McKenzie, President and Chief Executive Officer of Ucore Rare Metals Inc. at: +1 (902) 482-5214 or visit http://www.ucore.com.

About IBC

IBC Advanced Technologies, Inc. is an award-winning, green chemistry selective separations company based on innovative MRT products. IBC is headquartered in American Fork, Utah, with manufacturing facilities in Utah and Houston, Texas. IBC has supplied industrial, governmental and academic customers worldwide with environmentally friendly products, processes and services for over 29 years. IBC specializes in MRT, utilizing green chemistry to achieve highly selective separations of individual metal ions in complex matrices. Based on Nobel Prize-winning technology (1987), IBC’s proprietary products and processes are used worldwide by premier metals refining and mining companies. IBC’s contemplated joint venture with Ucore would build on IBC’s proven capabilities to develop, scale-up and commercialize selective separations systems for a number of diverse and complex applications.

Cautionary Notes

This press release includes certain statements that may be deemed “forward-looking statements”. All statements in this release, other than statements of historical facts, that address future exploration drilling, exploration activities, research and development timelines, and events or developments that the Company expects, are forward looking statements. Forward looking statements in this press release include that we may enter into a long-term supply partnership and offtake relationship and the possibility of an independent North American REE supply chain. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in forward-looking statements. Factors that could cause actual results to differ materially from those in forward-looking statements include exploitation and exploration successes or setbacks, research and develop successes or setbacks, continued availability of financing, that we may not be able to reach agreements, that the product may not be suitable for intended uses, and general economic, market or business conditions.

MRT is at advanced testing stages and has yet to be proven, at a commercial scale, for the separation of rare earth elements. The Company has not yet released an economic assessment on the use of MRT for the separation of rare earth elements and does not yet have any specific contracts for the processing of rare earths using MRT.

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined by the TSX Venture Exchange) accepts responsibility for the adequacy or accuracy of this release.