Ucore Provides Update on RapidSX(TM) Technology for Near-Term Commercial Rare-Earth Elements Separation in USA

29.01.2021 | Newsfile

Halifax, January 29, 2021 - Ucore Rare Metals Inc. (TSXV: UCU) (OTCQX: UURAF) ("Ucore" or the "Company") is pleased to provide the following update regarding the Company's wholly owned subsidiary, Innovation Metals Corp. ("IMC"), and its ongoing commercialization development program for its RapidSX™ separation technology which is principally occurring at the RapidSX Commercialization and Development Facility ("CDF") in Kingston, Ontario, Canada.

IMC's proprietary RapidSX technology is being commercialized for the intended cost-effective bulk separation and purification of rare-earth elements ("REEs") - including both heavy REEs ("HREEs") and light REEs ("LREEs") - for the production of REE oxides ("REOs"), in addition to other critical metals, such as lithium ("Li"), nickel ("Ni"), and cobalt ("Co") for lithium-ion battery materials.

Commissioning of the RapidSX demonstration-scale pilot plant ("RapidSX Demonstration Plant") is scheduled to start in Q3 2021 with a comprehensive, independent techno-economic study and the design of a commercial-scale REE separation facility, both planned for completion in Q1 2022. With the anticipated ability to demonstrate the effectiveness of the RapidSX Demonstration Plant on REE feedstocks, IMC expects RapidSX to be ready for commercial adoption and implementation in approximately 15 months from now, via revenue-producing licensing agreements with IMC customers.

Additionally, the critical data derived from the RapidSX development program will be incorporated into the ongoing development of Ucore's planned Alaska Strategic Metals Complex ("Alaska SMC") in Southeast Alaska.

Ucore Chairman and Interim CEO, Pat Ryan, P.Eng. commented, "Ucore is incredibly pleased with the significant progress IMC has made with the RapidSX technology development. The outlook and opportunity have never been stronger, and we firmly believe RapidSX has the potential to be a disruptive technology and keystone feature in achieving domestic REE production; resulting in faster and lower-cost production as compared to other competing REE separation technologies."

"President Biden's Executive Order 13990 combatting climate change and Executive Order 14005, strengthening American manufacturing and buy-American provisions are significant. The US$2-trillion 'Build-Back-Better' economic initiatives underscore the urgency of the US's government's dramatically accelerating green/clean-energy development plans," said Mr. Ryan. "Yesterday, General Motors announced that it will sell only zero-emission vehicles by 2035. This is yet another demonstration of a seismic shift by America's largest automobile manufacturer and one of the world's largest automakers towards Environmental Social Governance ["ESG"]; a commitment to do more than make a profit, and to actively strive to contribute positively to society and the environment."

"To summarize this executive order, it's about jobs. It's about building our economy back. It's a whole-of-government approach to put climate change at the center of our domestic, national security and foreign policy. Our plans are ambitious… but we are America. We're bold. We're unwavering in the pursuit of jobs, innovation, science and discovery. We can do this. We must do this. And we will do this."

- President Joseph R. Biden, Jr.

January 27, 2021

IMC President Ty Dinwoodie stated, "The interest expressed from potential RapidSX end users all over the world has never been higher. With the anticipated successful commissioning and operation of the RapidSX Demonstration Plant, IMC intends to demonstrate the potentially significant CAPEX and OPEX efficiencies with RapidSX compared to conventional solvent-extraction-based REE separation technologies, while maintaining the same or higher technical and QA/QC standards. More than ever before, a secure, complete domestic REE supply chain is expected to be realized quickly and cost effectively - from existing and near-term REE concentrate producers - and is perfectly aligned with both of President Biden's executive orders."

RapidSX REE Development Program

In the first eight months since Ucore completed its acquisition of IMC, a significant amount of technical work has been undertaken to advance the RapidSX technology. As Ucore announced on October 1, 2020, the RapidSX commercialization development program is being led by IMC CEO, Chairman, co-founder, and co-inventor of the RapidSX technology, Dr. Gareth Hatch and IMC COO and VP for Metallurgy, Dr. Kurt Forrester, in conjunction with Dr. Boyd Davis and Mr. Alain Roy, Principals of Kingston Process Metallurgy ("KPM"), enhanced by additional technical expertise and partners engaged by IMC for the program. As Ucore announced on June 23, 2020, KPM is IMC's laboratory partner and has been supporting all aspects of IMC's technical work to commence the optimization and commercialization program to scale up the RapidSX technology.

RapidSX REE Development Update

1. RapidSX Test Program Agreements with Multiple US-Allied REE Producers

The response by potential end users/licensees of the RapidSX technology for commercial REE separation has been excellent. IMC is in numerous advanced-stage negotiations for RapidSX Test Program Agreements ("TPAs") with current and near-term REE producers in US-allied jurisdictions who desire testing regarding the utilization of the RapidSX technology for the separation of specific end-user mixed REE concentrates ("MRECs"). Ucore looks forward to providing further updates on IMC's executed TPAs in Q1 2021.

1. US-Allied-Sourced REE Feedstocks

IMC has been actively evaluating various already commercially available US-allied-sourced LREE and HREE MRECs from existing mining operations (rather than from exploration properties) to develop a comprehensive dataset that will demonstrate the versatility of the RapidSX technology for REE separation. The evaluation process will lead to the final selection of one such MREC to serve as the initial REE feedstock for the forthcoming RapidSX Demonstration Plant. Ucore expects to provide further updates on the MREC feedstock options being explored by IMC in Q1 2021.

1. Completion of the RapidSX Research Platform

IMC is pleased to announce the completion and successful commissioning of the new multi-column RapidSX Research Platform. Aside from demonstrating and validating the underlying technical capability and efficiencies of the RapidSX technology, the RapidSX Research Platform will be utilized for quantitative characterization and design optimization of the physical RapidSX hardware, independent of the chemistry of the separation applications. Additionally, the RapidSX Research Platform will aid in the characterization of process kinetics, as well as pH and equilibrium isotherms, and other critical parameters for various REE feedstocks. The RapidSX Research Platform will serve as the foundation for the initial design of large-scale proprietary contactors for IMC's forthcoming RapidSX Demonstration Plant.

1. Engagement of Process Modeling Software Partner

In Q4 2020, IMC engaged an industry-leading process-modeling software provider for the development of IMC's mathematical process-modeling tool ("Modeling Tool"). The state-of-the-art Modeling Tool will combine empirical results and datasets from the RapidSX Research Platform and other sources, with the thermodynamic and other mathematical equations required to effectively model solvent-extraction-based applications using the RapidSX technology. Once finalized, the Modeling Tool will provide IMC with the unique ability to rapidly test and to simulate large numbers of different test conditions, to determine the

optimum RapidSX-based flowsheet parameters and equipment configurations for particular REE and other feeds, at commercial scale.

Ucore looks forward to providing further updates on IMC's commercialization of the RapidSX technology for the separation of HREEs and LREEs in the coming months.

# # #

About Ucore Rare Metals Inc.

Ucore is focused on rare and critical metals resources, extraction, beneficiation and separation technologies with potential for production, growth, and scalability. Ucore has a 100% ownership stake in the Bokan-Dotson Ridge Rare Earth Element Project in Southeast Alaska. Ucore's vision and plan is to transition to become a leading advanced technology company that provides metal separation products and services to the mining and mineral extraction industry.

Through strategic partnerships, this vision includes disrupting China's dominance of the US REE supply chain through the development of a heavy rare earth processing facility - the Alaska Strategic Metals Complex in Southeast Alaska and the long-term development of Ucore's heavy rare earth element mineral resource property located at Bokan Mountain on Prince of Wales Island, Alaska.

Ucore is listed on the TSX Venture Exchange under the trading symbol "UCU" and in the United States on the OTC Markets' OTCQX® Best Market under the ticker symbol "UURAF".

For further information, please visit www.ucore.com.

About Innovation Metals Corp.

IMC has developed the proprietary RapidSX™ process, for the low-cost separation and purification of REEs, Ni, Co, Li and other technology metals, via an accelerated form of solvent extraction. IMC is commercializing this approach for a number of metals, to help enable mining and metal-recycling companies to compete in today's global marketplace. IMC is a wholly owned subsidiary of Ucore Rare Metals Inc.

For more information, please www.innovationmetals.com.

About the RapidSX™ Technology

IMC developed the RapidSX separation technology with the assistance of US$1.8 million in funding from the United States Department of Defense ("US DoD"), resulting in the production of commercial-grade, separated rare-earth oxides ("REOs") at the pilot scale. RapidSX combines the time-proven chemistry of conventional solvent extraction ("SX") with a new column-based platform, which significantly reduces time to completion and plant footprint, as well as potentially lowering capital and operating costs. SX is the international rare-earth element ("REE") industry's standard commercial separation technology and is currently used by 100% of all REE producers worldwide for bulk commercial separation of both heavy and light REEs. Utilizing similar chemistry to conventional SX, RapidSX is not a "new" technology, but represents a significant improvement on the well-established, well-understood, proven conventional SX separation technology preferred by REE producers.

Forward-Looking Statements

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 business development and/or acquisition activities (including any related required financings), timelines, litigation outcomes, events or developments that the Company expects, are forward-looking statements. 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 or results and actual results or developments may differ materially from those in forward-looking statements. In regard to business plans and objectives, the Company has assumed that it will be able to procure or retain additional partners and/or suppliers, in addition to Innovation Metals Corp. ("IMC"), as suppliers for Ucore's expected future Alaska SMC. Ucore has also assumed that sufficient external funding will be found to prepare a new National Instrument 43-101 technical report that demonstrates that the Bokan Project is feasible and economically viable for the production of both REE and co-product mineral materials and metals and the then prevailing market prices based upon assumed customer off-take agreements. Ucore has also assumed that sufficient external funding will be found to develop the specific engineering plans for the Alaska SMC and its construction. Factors that could cause actual results to differ materially from those in forward-looking statements include, without limitation: IMC failing to protect its intellectual property rights in RapidSX™; RapidSX failing to demonstrate commercial viability in large commercial-scale applications; Ucore not being able to procure additional key partners or suppliers for the Alaska SMC; Ucore not being able to raise sufficient funds to fund the specific design and construction of the Alaska SMC; adverse capital-market conditions; unexpected due-diligence findings; unexpected or adverse outcomes in the currently outstanding litigation matters between Ucore and IBC Advanced Technologies, Inc.; the emergence of alternative superior metallurgy and metal-separation technologies; the inability of Ucore and/or IMC to retain its key staff members; a change in the legislation in Alaska and/or in the support expressed by AIDEA regarding the development of Bokan and/or the Alaska SMC; the availability and procurement of any required interim and/or long-term financing that may be required; and general economic, market or business conditions.

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

CONTACT

Mark MacDonald
Vice President, Investor Relations
Ucore Rare Metals Inc.
902.482.5214
mark@ucore.com

To view the source version of this press release, please visit https://www.newsfilecorp.com/release/73162