

Medallion Resources Expands Rare Earth Element Separation Test Work with Purdue University and Provides Corporate Update

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VANCOUVER, Oct. 14, 2021 - [Medallion Resources Ltd.](#) (TSX-V: MDL; OTCQB: MLLOF; Frankfurt: MRDN) - "Medallion" or the "Company", is pleased to provide a corporate update on research underway with Purdue University to advance and optimize the Ligand Assisted Displacement (LAD) Chromatography method for rare earth element (REE) separation. As reported February 18 2021, Medallion is the exclusive licensee of this breakthrough environmentally friendly technology for all non-coal sourced raw materials.

Key Points

- Medallion has separated high purity magnet REEs neodymium and praseodymium from natural leach solutions using LAD Chromatography in collaboration with Purdue University.
- Due to this success, Medallion has purchased automated and up-scaled chromatography equipment to accelerate research.
- Medallion is preparing 70kg of mixed REE carbonate from mineral sand monazite stockpiles for ongoing separation research, engineering and financial modelling.
- Heavy REE feedstock has been acquired and simulation run for the separation of Dy, Tb and other high value heavy REEs. Heavy REE separation will soon be tested.
- Australian partner ACDC Metals Ltd has initiated the ASX Initial Public Offering (IPO) process.

During June 2021, the Medallion-Purdue team successfully completed the separation of the magnetic REEs neodymium (Nd) and praseodymium (Pr) to high-purity from a natural monazite sourced solution. The rapid progress and positive results highlighted the skill and experience of Professor Linda Wang, Postdoctoral Research Associate Yi Ding, and their extended research group, and the relatively mature status of the LAD Chromatography method. The foundations of LAD Chromatography are built upon Purdue's proprietary chromatography simulation that enables optimized and highly targeted testing.

Following the rapid success and milestones of the research and development program, Medallion has procured a larger scale automated bench-top chromatography instrument for Professor Wang's laboratory. This up-scaled system is enabling accelerated testing and separation of REEs. In addition, the larger volume allows more precise separation of lower concentration but higher value elements like dysprosium (Dy), terbium (Tb) and scandium (Sc). Separation modelling of these heavy REEs has been progressed, and REE feedstock has been acquired for testwork.

To support scaled up separation testwork at Purdue University, Medallion has contracted the Saskatchewan Research Council to prepare 70 kg of mixed REE carbonate from Medallion's mineral sand monazite stockpile. This REE carbonate will form the basis of separation research in preparation for a pilot plant operation during 2022.

In addition, research and mathematical modelling has focused on screening and validation of the LAD chromatography materials (resins and pre-saturants) to maximize efficacy, regeneration capacity and minimize waste. While proprietary, this modelling and selection has made very substantial gains with the input of Medallion's REE consultants.

"The achievements to date have demonstrated the robustness of the mathematical modelling framework and digital design process which refines a complex set of process alternatives into a small set of tests" said Mark Saxon, President and CEO. "This breakthrough separation technology will have very broad application, and we are now sharing results under Confidentiality Agreements with prospective partners in various parts of the REE supply chain. As it is organic-solvent free, small footprint and can be highly selective for REE magnet metals, we view it as highly disruptive in the REE sector."

As previously announced, Medallion Resources has signed a Letter of Intent (LOI) with ACDC Metals Ltd, an owner of various monazite rich mineral sand projects in eastern Australia. The LOI envisages the construction of a monazite processing facility based on the Medallion Monazite Process and LAD Chromatography in eastern Australia, with the opportunity to process feed from a range of sources. ACDC Metals Ltd has initiated the Initial Public Offering (IPO) process for an Australian Stock Exchange (ASX) listing, targeting listing in late 2021 to early 2022, with [Medallion Resources Ltd.](#) as a founding shareholder.

Medallion's recently completed Techno Economic Assessment provides the engineering and financial modelling data for ACDC Metals Ltd to rapidly progress towards permitting and execution of a monazite processing facility within a mineral sand monazite rich jurisdiction.

As announced January 5 2021 Medallion contracted Minviro Ltd to complete a Life Cycle Assessment (LCA) for the Medallion Monazite Process in a nominal west Texas location. This LCA has been passed to external review for ISO compliance. A similar LCA has been completed by Minviro Ltd for a southeastern Australian location to support the ACDC Metals Ltd activities and demonstrate the low environmental impact nature of the Medallion process.

About Medallion Resources

Medallion Resources (TSX-V: MDL; OTCQB: MLLOF; Frankfurt: MRDN) has developed a proprietary process and related business model to achieve low-cost, near-term, rare-earth element (REE) production by exploiting monazite. Monazite is a rare-earth phosphate mineral that is widely available as a by-product from mineral sand mining operations. Furthermore, Medallion has recently licensed an innovative REE separation technology from Purdue University which can be utilized by Medallion and sub-licensed by Medallion to third party REE producers.

REEs are critical inputs to electric and hybrid vehicles, electronics, imaging systems, wind turbines and strategic defense systems. Medallion is committed to following best practices and accepted international standards in all aspects of mineral transportation, processing and the safe management of waste materials. Medallion utilizes Life Cycle Assessment methodology to support investment and process decision making.

More about Medallion (TSX-V: MDL; OTCQB: MLLOF; Frankfurt: MRDN) can be found at medallionresources.com.

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