ColdBlock™ Technologies Inc.

UNIVERSITÉ LAVAL RADIOECOLOGY LAB DISCOVERS NEW USES FOR COLDBLOCK DIGESTION TECHNOLOGY

May 15, 2024 (Quebec City, QC) – **Dr. Dominic Larivière** is Professor of Analytical and Environmental Chemistry, and Director of the Radioecology Laboratory at **Université Laval**. Dr. Larivière and his team have uncovered novel uses for **ColdBlock Technologies Inc.** digestion technology, significantly advancing analytical capabilities in the fields of nuclear science and environmental chemistry.

The Radioecology Lab at Université Laval focuses on pioneering research in nuclear science, environmental, and analytical chemistry. Dr. Larivière and his team are committed to developing innovative analytical tools to investigate the distribution of metals and radionuclides, both in natural and anthropogenic environments, as well as in living organisms. Leveraging cutting-edge radiometric and spectrometric instruments alongside unique sample preparation methods, the lab aims to better comprehend the impact of these elements on the environment and human health.

Since introducing a ColdBlock digestion unit into the Radioecology Lab, Dr. Larivière and his team have made some groundbreaking discoveries and new functionalities for the digester beyond the purpose for which it was designed. He took some time to share his observations in three areas of work.

- **Ashing Organic Samples:** Dr. Larivière explained, "The ColdBlock unit not only facilitates simultaneous digestion of multiple samples but it also offers an unexpected capability for ashing organic samples." This is particularly significant as organic materials, such as plants, pose challenges for traditional digestion methods due to their high organic content, which may be compromised under acidic conditions. "Our research has revealed that the ColdBlock unit enables efficient ashing of organic matter, streamlining our analytical processes. Compare this to a furnace which requires 8-10 hours to burn the organic content. With ColdBlock, we are able to achieve same result in just 1.5 hours."

- **Disposing of Organics:** As a nuclear lab, the team is always looking for ways to dispose of organic matter while reducing the risk of contamination. "Our primary objective is to detect elements at low concentrations, necessitating gradual sample reduction." Dr. Larivière explained. **"**ColdBlock's ability to accommodate larger sample sizes facilitates this process, empowering us to achieve more precise measurements."

- **Magnet Dissolution:** Dr. Lariviere and his team published a study on the Digestion Techniques for the Dissolution of Neodymium-Based Magnets. ColdBlock emerged as a pivotal component alongside conventional digestion methods (microwave digestion, open vessel digestion, and alkaline fusion). The study showcased ColdBlock's efficacy in rapidly and efficiently solubilizing neodymium magnets, offering a promising avenue for streamlined analytical workflows. Specifically, focused infrared digestion (FID) parameters were initially optimized with unmagnetized magnet powder and subsequently used on magnet pieces, demonstrating that the demagnetization and grinding steps are optional.

Dr. Larivière concluded "We have been able to do things with ColdBlock that were not possible previously. It is effective for use as a digestion unit, allowing our lab to digest samples that were otherwise difficult to digest, and eliminating time-consuming and expensive steps. It has also served us well in ashing organic matter."

Craig West, CEO of Coldblock Technologies Inc., was pleased to hear of the groundbreaking discoveries made by Dr. Larivière and his team, remarking, "We are continually inspired by the innovative applications of ColdBlock technology in academic and research settings. The newfound functionalities unveiled by Dr. Larivière not only elevate the capabilities of his laboratory but also present exciting possibilities for laboratories worldwide."

About the Radioecology Lab at Université Laval

For more information about the Radioecology Lab at Université Laval, please visit the Radioecology Lab website.

About ColdBlock Technologies

ColdBlock sample digestion technology uses focused short-wave infrared heating and a unique cooling zone to dissolve solid sample matter into solution for multi-element analysis with a significantly faster, simpler, and safer process compared with older digestion methods. ColdBlock's sample digestion system is being used in laboratories across several industries, saving time and money by increasing sample throughput capacity and significantly reducing turnaround times, while providing accurate and reliable results. ColdBlock Technologies Inc. is a privately owned company based in Ontario, Canada.

For further information, visit www.coldblock.ca and follow us on X (@coldblock) and LinkedIn.

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