Focus Graphite Advanced Materials Provides Update on Patent Pending Silicon-Enhanced Spheroidized Graphite Technology for Battery Anodes

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The Company's patent pending silicon-enhanced spheroidized graphite technology represents a breakthrough in lithium-ion battery performance.

OTTAWA, February 10, 2025 - Focus Graphite Advanced Materials Inc. (TSXV:FMS)(OTCQB:FCSMF)(FSE:FKC) ("Focus" or the "Company"), a Canadian critical minerals resource company developing innovative advanced battery materials and technology, is pleased to provide an update on the status of its patent applications for its proprietary silicon-enhanced spheroidized graphite technology for lithium-ion battery anodes.

Patent Status by Region

1. United States

The U.S. patent application (Patent No. 18/278,659) is currently pending. Focus Graphite Advanced Materials is awaiting from the United States Patent and Trademark Office (USPTO).

2. Canada

The Canadian patent application (Patent No. 3,209,696) is pending. A formal request for examination has been submitted and Focus Graphite Advanced Materials has opted for an expedited review process to accelerate the commercialization of its technology.

3. Europe

The European patent application (Patent No. 22758669.0) remains pending. The application is currently under examination by the European Patent Office (EPO).

4. South Korea

The Korean patent application (Patent No. 10-2023-7032609 is pending.

Innovation Highlight

Focus Graphite Advanced Material's patent-pending silicon-enhanced spheroidized graphite technology represents a breakthrough in lithium-ion battery performance. Unlike conventional approaches where silicon is coated onto the graphite sphere after spheroidization-resulting in a single silicon layer-Focus Graphite Advanced Material's proprietary process incorporates multiple layers of silicon as the sphere is being created. This allows for significantly increased silicon content, which is crucial because silicon has 7 to 8 times the energy storage capacity of graphite.

This novel approach directly addresses two major challenges in silicon-enhanced anode materials:

- Charge-induced volume expansion: Conventional single-layer silicon coatings tend to swell during charging, leading to structural instability. By embedding silicon within the graphite layers, Focus Graphite Advanced Material's technology mitigates this issue and provides superior mechanical integrity.

- Unreliable solid electrolyte interphase (SEI) propagation: Silicon interacts with the electrolyte, causing performance degradation over time. The protective graphite layers in Focus Graphite Advanced Material's technology reduce these reactions, enhancing battery longevity and efficiency.

Performance Testing and Next Steps

The technology has been successfully tested in coin cells, demonstrating increased battery performance. Galvanostatic charge/discharge curves for coin cells made with 4.5% silicon addition show that coating the SPG with carbon improves cycling stability and increases the reversible capacity from 392 to 462 mAh/g which is 24% higher than the theoretical capacity of graphite alone at 372 mAh/g.

Tests conducted on the 9% Si Enriched SPG showed that adding the silicon to the anode mix before spheroidization increases the capacity from 530 to605 mAh/g, which is an additional 13% boost in capacity, or an overall 62 % increase when compared with the theoretical capacity of graphite alone.

The next phase is to validate this technology through testing in a full-scale large commercial battery. If the results remain consistent and positive in this phase, Focus intends to license the technology to a 3rd party OEM or major battery manufacturers.

About the Inventor

Dr. Joseph Doninger, Focus Graphite Advanced Material's Director of Technology and Manufacturing, is the driving force behind this invention. With decades of expertise, Dr. Doninger has authored over 27 technical papers and holds numerous patents in graphite processing and energy storage systems. His contributions to advancing graphite technologies have earned him international recognition as a leading expert in the field.

About Focus Graphite Advanced Materials Inc.

Focus Graphite Inc. is an advanced materials company developing sustainable mining and technology innovations. At the heart of our operations is the Lac Knife flake graphite deposit, known for its exceptional high purity and grade-ideal for applications in the military, defense, and green energy revolutions. Currently advancing through Canada's mine permitting process, Focus Graphite is on the verge of transforming this resource into a cornerstone for critical mineral supply.

Our proprietary, environmentally sustainable processing technologies ensure a green, chemical-free pathway from mine to market. The Company's proprietary silicon-enhanced spheroidized graphite patent technology is aimed at improving battery performance. We specialize in producing advanced, high-purity graphite materials tailored for diverse industries, including EV batteries, military applications, and high-tech manufacturing.

Focus Graphite's commitment extends beyond resource extraction-we are actively building partnerships with industry leaders, academic institutions, and government bodies to accelerate the commercialization of advanced materials and technologies derived from our flagship project. As a proud Canadian company, we are dedicated to contributing to North America's secure and sustainable critical minerals supply chain.

For more information on Focus Graphite Advanced Materials Inc. please visit https://focusgraphite.com/

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Cautionary Note Regarding Forward-Looking Statements

Certain statements contained in this press release constitute forward-looking information. These statements relate to future events or future performance and are often identified by words such as "could," "intend," "expect," "believe," "will," "projected," "estimated," and similar expressions, as well as statements relating to matters that are not historical facts. Such forward-looking information reflects the Company's current beliefs or assumptions regarding the outcome and timing of future events.

In particular, this press release contains forward-looking information relating to, among other things, the Company's pending patent applications in the United States, Canada, Europe, and South Korea; the anticipated benefits and commercialization potential of its proprietary silicon-enhanced spheroidized graphite technology for lithium-ion battery anodes; the Company's expectations regarding performance testing outcomes in large-scale commercial batteries; and its plans to license the technology to original equipment manufacturers (OEMs) or major battery manufacturers.

Forward-looking information is based on several assumptions, including the Company's ability to obtain patent approvals in key jurisdictions, the continued success of performance testing across different scales, the viability and scalability of the proprietary technology, and favorable market conditions for lithium-ion battery materials.

Although forward-looking information is based on reasonable assumptions made by the Company's management, there can be no assurance that such information will prove to be accurate. Forward-looking information involves known and unknown risks, uncertainties, and other factors that may cause actual results, performance, or achievements to differ materially from those expressed or implied by such statements. These risks include, but are not limited to, risks related to patent approvals and intellectual property protection, performance variability in larger-scale testing, technological and operational challenges in scaling up proprietary processes, fluctuations in market demand for battery materials, the ability to secure strategic partnerships, and general economic conditions affecting the battery materials industry.

The forward-looking information contained in this release is made as of the date hereof, and the Company undertakes no obligation to update or revise any such information, whether as a result of new information, future events, or otherwise, except as required by applicable securities laws. Investors are cautioned not to place undue reliance on forward-looking information due to the inherent risks and uncertainties involved.

The TSX Venture Exchange and OTCQX have not reviewed, approved, or disapproved the contents of this press release.

SOURCE: Focus Graphite, Inc.

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