

Danny Huh on Neo Battery Materials' Process Innovation, 9th Patent and Position in NBM Korea

written by InvestorNews | April 4, 2024

In a recent enlightening interview with Tracy Weslosky of InvestorNews, Danny Huh, the Senior Vice President of Strategy and Operations at NEO Battery Materials Ltd., (TSXV: NBM | OTCQB: NBMFF) detailed the company's strides in silicon anode technology for lithium-ion batteries, underlining their consistent progress over the past three years. Particularly notable was the discussion around the application for their 9th patent a month ago, marking a technological leap aimed at significantly enhancing their silicon anode materials' production capacity and efficiency.

Revolutionizing Energy Storage with NEO Battery Materials' Strategic Advances in Silicon Anode Technology

written by InvestorNews | April 4, 2024

[NEO Battery Materials Ltd.](#) (TSXV: NBM | OTCQB: NBMFF), a leader in the development of low-cost silicon anode materials, is at

the forefront of a technological revolution that promises to redefine the lithium-ion battery landscape. As the demand for electric vehicles (EVs) and renewable energy storage solutions grows, the quest for more efficient and cost-effective batteries has become more critical than ever. NEO's strategic initiatives and recent achievements reflect its commitment to driving innovation in this space, amidst a broader industry shift towards silicon anodes over traditional graphite.

Since the commercial debut of lithium-ion batteries three decades ago, the technology has seen vast advancements, including a significant drop in price and improvements mostly on the cathode side. However, the graphite anodes used in these batteries have seen little innovation, until now. Silicon, capable of holding up to 10 times as many lithium ions by weight as graphite, has emerged as a promising alternative, despite its initial challenges, including volume expansion and material fracture.

NEO's recent strategic moves, including [increasing its ownership](#) in its South Korean subsidiary, NBM Korea, and filing its [9th patent](#) for a major silicon anode manufacturing innovation, underscore its role in this evolving market. The company's efforts to overcome silicon's historical challenges signify a major leap towards the commercialization of silicon anodes, which are essential for the next generation of lithium-ion batteries. These batteries promise longer ranges, faster charging times, and reduced costs for EVs, positioning silicon as a critical material in the global push towards electrification.

The significance of NEO's advancements cannot be overstated in the context of the broader industry's pivot towards silicon anodes. Companies like General Motors are already integrating silicon anodes into their products, signaling a market ready for

change. Furthermore, the recent influx of nearly half a billion dollars in investments towards commercializing silicon anode materials, including significant contributions from the U.S. Department of Energy, highlights the strategic importance of this technology.

Silicon anodes not only offer the potential for longer-range and faster-charging EVs but also promise to alleviate supply chain constraints associated with graphite anodes, nearly all of which are processed in China. By reducing reliance on overseas graphite and leveraging silicon, the most abundant metal in Earth's crust, companies like NEO are paving the way for a more sustainable and efficient future for batteries.

In its comprehensive strategy for 2024, NEO Battery Materials outlines a multi-faceted approach to commercialization, emphasizing operational execution, capital efficiency, and risk mitigation. The company's vision extends beyond mere technological innovation; it aims to optimize the electrochemical performance and cost competitiveness of its silicon anode material, NBMSiDE®, to establish advanced commercial agreements and expand its global supply chain network.

As NEO and other industry players continue to advance silicon anode technology, the promise of more affordable, efficient, and sustainable lithium-ion batteries becomes increasingly tangible. This shift not only supports the growing demand for EVs but also contributes to the global effort to transition to renewable energy sources, marking a significant milestone in the quest for greener and more sustainable energy solutions.

The [NEO Battery Materials Ltd.](#) (TSXV: NBM | OTCQB: NBMFF) market cap for Thursday, February 22, 2024 is CAD\$28.70M.

Danny Huh of NEO Battery on EV Industry Attention as it Revolutionizes Silicon Anode Technology

written by InvestorNews | April 4, 2024

In this InvestorIntel interview, Tracy Weslosky talks with [NEO Battery Materials Ltd.](#)'s (TSXV: NBM | OTCQB: NBMFF) Strategy and Operations Manager Danny Huh about achieving a significant [technology milestone](#) in the nanocoating manufacturing process of silicon anodes that can increase the driving range of electric vehicles and enable ultra-fast charging.

Speaking about the high performance and cost-reduction capabilities of their uniform nanocoating technology, Danny discusses how there is an increased interest from ten companies, including global battery and electronic manufacturers and EV automakers, to use NEO Battery Materials' silicon anodes in their lithium-ion batteries.

Providing an update on its South Korean Commercial Plant construction that has completed the Request for Quote ("RFQ") process, Danny also discusses filing NEO's [6th patent](#) to Korean Intellectual Property Office for one-step nanocoating technology for silicon anodes.

Danny also talks about the recent [appointment](#) of Dr. S. G. Kim, a silicon/polymer material and chemical technology development expert, as NEO's Chief Technology Officer. Dr. Kim is the former

Executive Vice President and Head of R&D of Hanwha Solutions Corporation (KSE: 009830), a multi-billion South Korean chemical manufacturing conglomerate.

To access the full InvestorIntel interview, [click here](#)

Don't miss other InvestorIntel interviews. Subscribe to the InvestorIntel YouTube channel by [clicking here](#)

About NEO Battery Materials Ltd.

NEO Battery Materials Ltd. is a Vancouver-based company focused on electric vehicle lithium-ion battery materials. NEO has a focus on producing silicon anode materials through its proprietary single-step nanocoating process, which provides improvements in capacity and efficiency over lithium-ion batteries using graphite in their anode materials. The Company intends to become a silicon anode active materials supplier to the electric vehicle industry.

To learn more about NEO Battery Materials Ltd., [click here](#)

Disclaimer: NEO Battery Materials Ltd. is an advertorial member of InvestorIntel Corp.

This interview, which was produced by InvestorIntel Corp., (IIC), does not contain, nor does it purport to contain, a summary of all the material information concerning the "Company" being interviewed. IIC offers no representations or warranties that any of the information contained in this interview is accurate or complete.

This presentation may contain "forward-looking statements" within the meaning of applicable Canadian securities legislation. Forward-looking statements are based on the opinions and assumptions of the management of the Company as of

the date made. They are inherently susceptible to uncertainty and other factors that could cause actual events/results to differ materially from these forward-looking statements. Additional risks and uncertainties, including those that the Company does not know about now or that it currently deems immaterial, may also adversely affect the Company's business or any investment therein.

Any projections given are principally intended for use as objectives and are not intended, and should not be taken, as assurances that the projected results will be obtained by the Company. The assumptions used may not prove to be accurate and a potential decline in the Company's financial condition or results of operations may negatively impact the value of its securities. Prospective investors are urged to review the Company's profile on [Sedar.com](https://www.sedar.com) and to carry out independent investigations in order to determine their interest in investing in the Company.

If you have any questions surrounding the content of this interview, please contact us at +1 416 792 8228 and/or email us direct at info@investorintel.com.

Danny Huh of NEO Battery Materials Discusses Silicon Nanocoating on Anodes for the

1000-Mile EV Battery

written by InvestorNews | April 4, 2024

In this InvestorIntel interview, Tracy Weslosky talks with NEO Battery Materials Ltd.'s Strategy and Operations Manager Danny Huh about their ongoing commercialization and optimization process to achieve the 1000-Mile Electrical Vehicle Battery using silicon anode materials. Having achieved a significant technology milestone of uniform nanocoating capability on silicon anodes, Danny explains how their technology can help increase driving range of electric vehicles and enable ultra-fast charging.

Making lithium ion battery components more durable and efficient to improve battery capacity

written by InvestorNews | April 4, 2024

NEO Battery Materials' Progressing on the Development and Commercialization of Longer Lasting Higher Energy Density Lithium Ion Battery Components

Investors looking for a cutting edge technology company in the electric vehicle (EV) battery components sector need look no

further than [NEO Battery Materials Ltd.](#) (TSXV: NBM | OTCQB: NBMFF). NEO is a North American battery materials company with a current focus on developing silicon anode (the negative electrode in a battery) materials through its “ion-and electronic-conductive polymer nanocoating technology.” Or, in simpler language, a ‘silicon material’ for batteries, used to make the anode last longer in service (make it capable of being charged and recharged more times without losing integrity or efficiency) and be capable of holding more energy, thus making the battery more durable and efficient

NEO [states](#): “NEO has a focus on producing silicon anode materials through its proprietary single-step nanocoating process, which provides improvements in capacity and efficiency over that of lithium-ion batteries using graphite in their anode materials.”

NEO’s stock price has been on a tear in 2021; however, the recent pullback potentially gives a better entry point for investors.

NEO Battery Materials (TSXV: NBM) 1 year stock price chart



Source: [Yahoo Finance](#)

Another thing that investors love is active management that can rapidly progress a company and produce lots of good news. We’ll take a look at the news flow summary below, just for November 2021.

- [Nov. 23, 2021](#) – NEO Battery Materials appoints lithium-ion battery electrode binder and polymer technology expert, Dr. Byeong-Su Kim, to Scientific Advisory Board. The news [states](#): “Utilizing robust binder technologies with

characteristics such as a high elastic modulus can **help contain and control the volume expansion of silicon**, resulting in lower probabilities of particle pulverization and a cracking anode.”

- [Nov. 18, 2021](#) – NEO Battery Materials receives approval for a core patent from the Korean Intellectual Property Office.
- [Nov. 16, 2021](#) – NEO Battery Materials announces research consortium LOI with both the University of Toronto **and with an undisclosed global OEM for R&D and scale-up of EV Battery Materials**. The preliminary project will involve the full electrode fabrication of silicon-carbon composite anodes through NEO’s silicon particle nanocoating process....With the active material (silicon and/or graphite), binders and conductive additives as core components....
- [Nov. 10, 2021](#) – NEO Battery Materials appoints Dr. Dongmok Whang, expert in low-dimensional nanomaterials and graphene, to Scientific Advisory Board. His research expertise lies in the field of fabrication and manufacturing of low-dimensional nanomaterials, especially **graphene, semiconductor nanowires, and porous nanostructures** for applications in electric vehicle lithium-ion batteries, fuel cells, and various energy storage solutions.
- [Nov. 4, 2021](#) – NEO Battery Materials accomplishes **anode production capacity upscaling Project** over the past three months. The news [states](#): “From the initial production rate of several grams per hour for manufacturing silicon anode materials at the lab-scale, **NEO’s engineering team has accomplished to expand the rate to a level of several kilograms per hour**. This is a result of improving productivity by more than 1,000-fold, and the success of the Project at this level has given stronger validation

for the 120-ton semi-commercial plant that is scheduled to be commissioned by the end of next year.” President & CEO Spencer Huh, added: “As NEO understands the need to fast-track into mass production, we are pleased to announce the accomplishment of the Upscaling Project. The Company is at the forefront of developing unique Si anode lines through the low-cost manufacturing process, and we are customizing solutions for various downstream users to optimize the products for high-power electric vehicle lithium-ion battery applications.”

The above 5 news items, when added together’ show the rapid pace and progress NEO is achieving. Looking back on the previous two months there were even more great achievements by NEO. The standout news came on October 26 when NEO [announced](#): “**Completion of semi-commercial plant conceptual design** and initiates engineering EPC stage for construction.” The facility will be in South Korea. President & CEO, Spencer Huh, [stated](#): “NEO is now another step towards commercializing our silicon anode materials for EV lithium-ion batteries and is actively expediting our timelines and milestones.”

As shown below the problem with silicon in anodes can be that as the silicon absorbs the electrons it expands then cracks the anode, leading to a low cycle life (low longevity). NEO has managed to improve this by using its cost-effective and efficient one-pot, single-step, nanocoating process.

NEO Battery Materials state that their silicon anode materials are already achieving much higher cycles than competitors



Source: [NEO Battery Materials company website](#)

Closing remarks

A lot of the details surrounding NEO Battery Materials' achievements are not very well understood by investors. This is only natural as most investors are not battery material scientists.

The key to understanding NEO's work is that its silicon anodes or composite silicon graphite anodes can significantly improve battery capacity, which relates to greater energy density, and hence longer range for the same size battery. What EV manufacturers and customers all want is better performing batteries that result in longer driving range for a given size battery. Silicon anodes today present many challenges, especially cracking leading to poor cycle life. NEO is making great strides in solving this problem by producing silicon anode materials with a much longer cycle life.

If NEO can succeed in meeting commercial standards it will have Tesla and other EV and battery/anode OEMs knocking on its door. For now it appears there is plenty of promise, especially given the longer cycling results (1,000 cycles) and recent production scaling progress, as well as the interest from an OEM in joining NEO's research consortium.

NEO Battery Materials trades on a market cap of [C\\$39 million](#). It's one to watch.