

5-Minute Ultra-Fast Charging Capability Achieved by NEO's Silicon Anode Technology

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Vancouver, June 7, 2021 - Dr. Jong Hyeok Park, Chief Scientific Advisor and Director of [NEO Battery Materials Ltd.](#) (TSXV: NBM) (OTC: NBMFF) ("NEO" or the "Company"), is pleased to announce that NEO's silicon (Si) nanocoating technology successfully achieved an ultra-fast charging/discharging capability in a half-cell coin test.

In a newly conducted test through Dr. Jong Hyeok Park's Lab, this breakthrough result presents the potency of NEO's nanocoating technology through showing superior charging/discharging performance on small battery cells. NEO's nanocoated silicon anode allows for a safe full charge within 5 minutes, which demonstrates potential for scaling and implementation in larger cells such as those used in high power EV batteries.

Dr. Jong Hyeok Park commented, "Our unique, proprietary solution integrates silicon nanoparticles uniformly coated by a nanometer-thick elastomer - a highly elastic polymer - with superior affinity to liquid carbonate electrolytes, which substantially outperforms the rate-capability of conventional silicon anodes as shown below. For a performance test at a 12 C-rate, which represents a several minute operation of the cells, we can realize 5 minute-level ultra-fast charging/discharging without major capacity loss or safety concerns."

"Our test results evidence that the Company's devised concept is valid and viable for improving the rate-capability of silicon beyond the current state of the art, which cannot be attained by only utilizing conventional silicon-carbon (Si-C) nanocomposites. NEO's silicon anode enables better wettability of the electrolyte to the surface of Si nanoparticles, which can bring about a larger contact surface area to increase the lithium-ion current or movement to the anode. Our proprietary elastomer nanocoating layer with excellent affinity with polar solvents shows fast charging/discharging ability for high power electric vehicles," added Dr. Park.

Rate Capability of NEO Si Anode

To view an enhanced version of this graphic, please visit:

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Spencer Huh, President and CEO of NEO, commented, "We are proud and excited to announce NEO's 5-minute ultra-fast charging capability through our unique silicon nanocoating technology using an ion-conductive elastomer layer. We are on the mission to remove the bottleneck of EVs effectively and efficiently through improving the cell chemistry and performance of lithium-ion batteries through silicon anodes."

"We are currently well underway of developing a full-cell prototype. Our team of top South Korean battery experts will continue to refine our technology to deliver an innovative silicon anode material that is cost-effective, mass-producible, and commercially viable," added Spencer Huh.

About NEO Battery Materials Ltd.

[NEO Battery Materials Ltd.](#) is a Vancouver-based resource company focused on battery materials development in North America. The Company is focusing on developing silicon anodes through nanocoating an ion-conductive elastomer layer, 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 materials supplier to the electric vehicle industry. The Company has staked new mining claims in Golden, BC, along a strike with a quartzite bed, targeting silica in the quartzites for a total of 467 hectares. For more information, please visit the Company's website at: <https://www.neobatterymaterials.com/>.

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