NEO Battery's Silicon Anode Achieves Significant Technology Milestone with Enhanced Uniform Nanocoating Capability

written by Raj Shah | April 18, 2023
April 18, 2023 (Source) – (**TSXV: NBM**) (**OTCQB: NBMFF**)

- Significant Technology Milestone of Uniform Nanocoating Capability on Silicon Anodes
  - Robustness and Nanocoating Thickness Control Effectively Increases Battery Run-Time and Cuts Down Charging Time for EVs
  - To File Additional Patents Related to Uniform Coating Solution Process

- Optimized One-Step Process Will Allow NEO to Supply 70% Cheaper Silicon Anodes Compared to Current Competitors
- Uniform Nanocoating Technology to Open Opportunities for Different Battery and Chemical Material Applications

NEO Battery Materials Ltd. ("**NEO**" or the "**Company**"), a low-cost silicon anode materials developer that enables longer-running, rapid-charging lithium-ion batteries, is pleased to report that the Company has achieved a significant technology milestone in its nanocoating manufacturing process. The new uniform nanocoating capability allows NEO's proprietary silicon anode materials, NBMSiDE™, to extend EV driving ranges and prompt

faster battery charging.

NEO has achieved the ideal nanocoating conditions to produce uniformly-coated silicon particles consistently. As a result, uniform nanocoating layers will be an additional advantage to enhance the current performance achieved by NBMSiDE™. Previously, non-uniform coatings often resulted in substandard capacity retention of NBMSiDE™ due to mechanical breakdown (refer to Figures A and B).

However, this manufacturing breakthrough in uniform nanocoating will ensure robust capacity retention and enable coating thickness control during commercial-level testing. Figures C to E show that the enhanced capability is agnostic to the silicon's shape and structure, making possible uniform coatings on both spherical and edged particles.

Dr. S. G. Kim, CTO of NEO, commented, "Achieving uniform coating layers on the nano-scale is an exceptionally difficult task for a company of any size that handles chemical products. Especially for NEO, our metal silicon inputs take on a plate-shaped structure, which adds to the technical hurdle of enabling uniform coatings. However, by achieving this uniform coating capability through an additional solution process, we have made a remarkable accomplishment and have amassed great interest from 3rd party industry experts and players."

Inconsistently-Coated Silicon Particle

Figure A

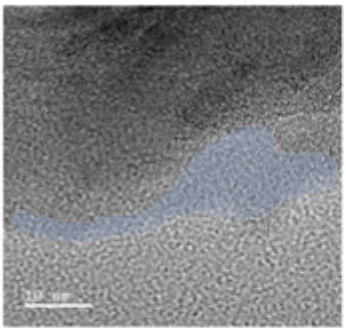
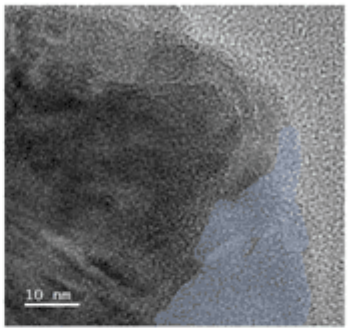


Figure B



Enhanced Uniformly-Coated Silicon Particle

Figure C

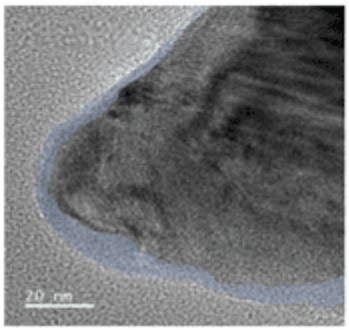


Figure D

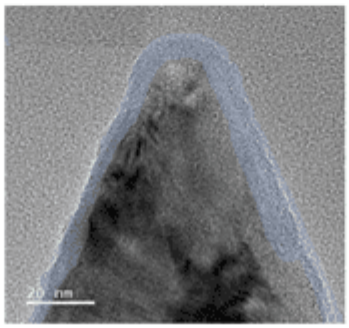
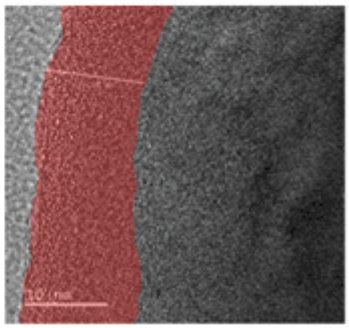


Figure E



Over the past 2 years, the Company has developed a novel manufacturing approach that combines the mixing, grinding, and nanocoating process into a one-step system. This transformational innovation will allow NEO to supply silicon anodes that are 70% cheaper compared to current competitors' technologies. The Company is also underway filing additional patents related to the technology and additive materials for the uniform coating solution process.

Mr. Spencer Huh, President and CEO of NEO, added, "With commercialization on track for 2024, this technology milestone marks another significant advantage for us in the battery industry. This uniform coating capability may also be applied to different chemical and battery materials, such as cathode materials. At NEO, we aim to provide one of the most transformative, cost-effective battery technology solutions to encourage the mass adoption of electric vehicles."

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. For more information, please visit the Company's website at: https://www.neobatterymaterials.com/.

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