

ADVANCED ANODE SILICON-BASED MATERIAL CONTINUES TO DELIVER STRONG PERFORMANCE AT 100 CYCLES

- Testing of 18650-type batteries continues to indicate impressive performance improvement of about 14% versus graphite benchmark batteries at 100 cycles ^[1].
- Consistent performance: battery with Novacium advanced Silicon anode material matches graphite benchmark battery degradation rates at 100 cycles.

Montreal, Canada, March 21th, 2024 — [HPQ Silicon Inc.](#) ("HPQ" or the "Company") ([TSX-V: HPQ](#)) ([OTCQB: HPQFF](#)) ([FRA: O08](#)), a technology company specializing in green engineering of silica and silicon-based materials is pleased to announce a major milestone achieved by its France-based affiliate, NOVACIUM SAS ("Novacium"). This announcement covers more promising results produced during the continuous charge-discharge cycle testing of 'industry standard' 18650 industrial batteries, reaching another significant milestone at the 100-cycle mark.

"We are learning a lot from these results at 100 cycles ^[1], results that continue to surpass our initial theoretical expectations of a 10% improvement in battery performance," stated Dr. Jed Kraiem Ph.D., COO of Novacium. *"These results are incredibly encouraging indicators of the material's commercial viability in the battery manufacturing sector and underscore our ability to produce a blend of graphite and advanced engineered silicon anode material that significantly enhances battery performance."*

MAINTAINING BATTERY CAPACITY IMPROVEMENT WITH MINIMAL DEGRADATION AT 100 CYCLES

Analysis of the data in Figure 1, Left below demonstrates that the three industrial-type batteries, which utilize Novacium's custom-engineered silicon material blend, (blue lines), continue to achieve impressive performance at the 100-cycle mark. These batteries exhibit a high discharge capacity of approximately 3.11 Ampere-hours (Ah), surpassing the benchmark set by three comparison batteries (red lines) which have a capacity of about 2.66 Ah. These results mark another significant milestone after 100 cycles of testing. These results, confirm and extend the approximate 14% enhancement in full-battery capacity compared to 100% graphite benchmark batteries, that was observed in the previous 5, 25 and 50 cycles testing.

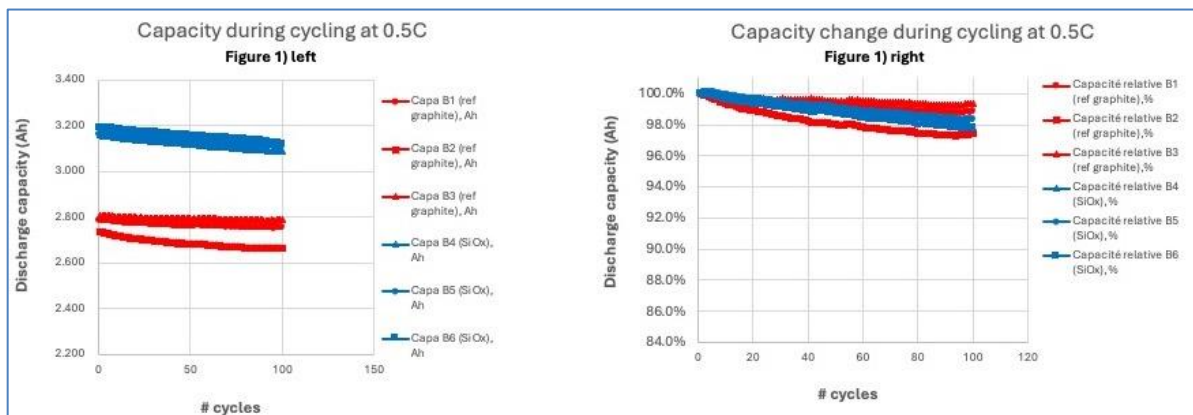


Figure 1) left shows battery capacity while Figure 1) right shows the capacity change during 100 cycles tests of HPQ and Novacium Gen 1 18650 industrial battery [1].

Furthermore, the data in Figure 1, Right reveals that, at the 100 cycles test mark, the measurable cycle degradation between the batteries made entirely of graphite (the red lines) and those incorporating Novacium's custom-engineered silicon base material blend (the blue lines) are in the same 1% to 2% ranges. Considering Silicon's historic tendency to degrade due to expansion and contraction during cycles, these results at 100 cycles are very promising for the Novacium engineered silicon anodes material.

"The data generated during testing has provided the crucial information needed to develop an enhanced second generation of advanced silicon-based material, that we hope will allow us to deliver even better results," added Dr. Kraiem. "This material is presently being utilized in the production of additional batches of 18650 batteries to be tested."

OUR 18650 BATTERY VS OTHER COMMERCIAL 18650 BATTERIES

One way to gauge the impact of Novacium's advanced engineered silicon anode material is by comparing its energy density with that of top-performing 18650 commercial batteries. In Figure 2 below, we present a side-by-side comparison, shedding light on the potential of our silicon anode technology to enhance battery performance.

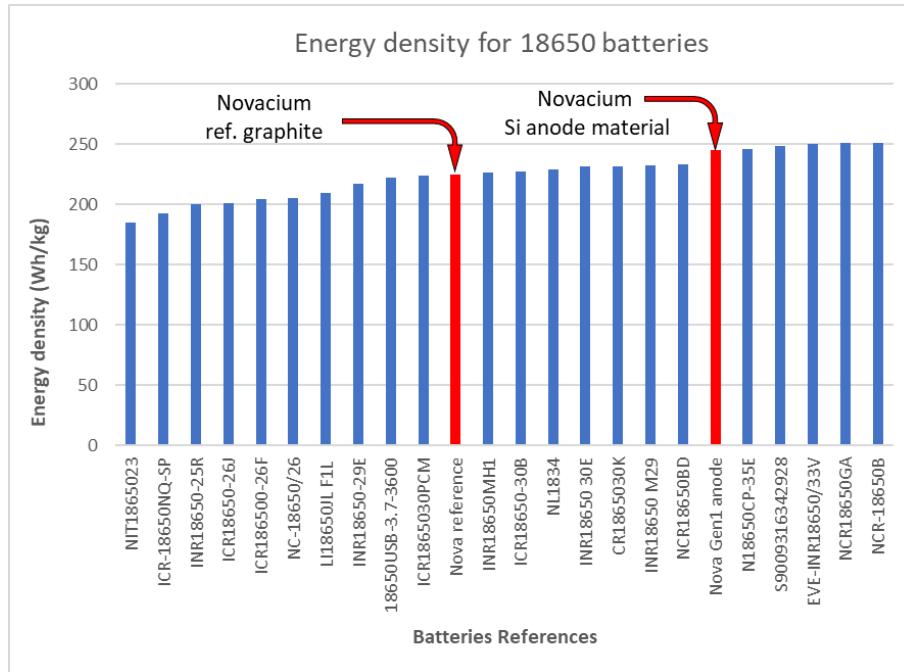


Figure 2) Energy density of top-performing 18650 commercial batteries versus our advanced engineered silicon anode material blend.

The data indicates that our benchmark graphite battery performs well, while our blend of 90/10 graphite and advanced engineered silicon anode material ranks among the top six batteries on the list. HPQ and Novacium note that these are initial tests in a product that has not been optimized, suggesting there remains room to improve upon this already impressive battery performance.

"I am profoundly encouraged by the results to date," expressed Mr. Bernard Tourillon, President and CEO of HPQ Silicon Inc. and NOVACIUM SAS. "This achievement reflects our ability to deliver a material that can improve the performances of most batteries available in the market. However, I am even more excited about the potential of our next generations of materials."

REFERENCE SOURCES

- [1] Novacium technical team analysis of the data from the ongoing charging and discharging cycle tests conducted at a world-leading university, the name of which is kept confidential for competitive reasons.

About NOVACIUM SAS

Novacium is an HPQ - affiliated company started in Q3 2022. This green technology startup is based in Lyon, France and is a partnership with HPQ and three of France's leading research engineers, Dr. Jed KRAIEM PhD, Novacium's Chief Operating Officer ("COO"), Dr. Oleksiy NICHIPORUK PhD, Novacium's Chief Technical Officer ("CTO"), and Dr. Julien DEGOULANGE PhD, Novacium's Chief Innovation Officer ("CIO"). Novacium is a new Research and Development company which allows the researchers to develop their own technology in high added value fields connected to renewable energy, and allows HPQ Silicon Inc, a Canadian company, to expand the depth and reach of its technical team to help develop its silicon and new renewable energy projects.

About HPQ Silicon

[HPQ Silicon Inc. \(TSX-V: HPQ\)](#) is a Quebec-based TSX Venture Exchange Tier 1 Industrial Issuer.

HPQ is developing, with the support of world-class technology partners [PyroGenesis Canada Inc.](#) and [NOVACIUM SAS](#), new green processes crucial to make the critical materials needed to reach net zero emissions.

HPQ activities are centred around the following four (4) pillars:

- 1) Becoming a green low-cost (Capex and Opex) manufacturer of Fumed Silica using the **FUMED SILICA REACTOR**, a proprietary technology owned by HPQ being developed for HPQ by PyroGenesis.
- 2) Becoming a producer of silicon-based anode materials for battery applications with the assistance of NOVACIUM SAS.
- 3) HPQ SILICON affiliate NOVACIUM SAS is developing a low carbon, chemical base on demand and high-pressure autonomous hydrogen production system.
- 4) Becoming a zero CO₂ low-cost (Capex and Opex) producer of High Purity Silicon (2N+ to 4N) using our **PUREVAP™ "Quartz Reduction Reactors" (QRR)**, a proprietary technology owned by HPQ being developed for HPQ by PyroGenesis.

For more information, please visit [HPQ Silicon web site](#).

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For further information contact:

Bernard J. Tourillon, Chairman, President, and CEO Tel +1 (514) 846-3271

Patrick Levasseur, Director Tel: +1 (514) 262-9239

Email: Info@hpqsilicon.com