

Panasonic Energy to Purchase Silicon Anode Materials from Nexeon, Enabling Production of Higher-energy-density EV Batteries in the U.S.

Securing low-expansion and high-performance silicon anode material to accelerate the development and production of next-gen LIBs with longer cycle life

Osaka, Japan - July 25, 2023 – Panasonic Energy Co., Ltd., a Panasonic Group Company, today announced the signing of an agreement to purchase silicon anode material for automotive batteries from U.K.-based [Nexeon Limited](#) ("Nexeon"; Oxfordshire, U.K.) to boost the performance of lithium-ion batteries for electric vehicles (EVs). Nexeon's silicon anode material will be used for lithium-ion batteries to be manufactured at a new facility in De Soto, Kansas, U.S., from 2025.

In line with the global shift to EVs, Panasonic Energy has been working to meet demand by expanding production of automotive batteries and increasing the energy density of battery cells to give EVs a longer range. In general, realizing higher energy density of battery cells requires improving capacity of not only cathodes but also anodes. Silicon materials are considered the key to boosting battery performance because their theoretical capacity is approximately 10 times than that of graphite, which is currently commonly used as an anode material. However, there is a hurdle to increasing the percentage of silicon in anodes as problems arise from its expansion characteristics when the cells are charged, resulting in battery capacity fade.

Panasonic Energy, an industry leader, has actively developed technologies to harness silicon based materials and become the first company to succeed in mass production of silicon-doped EV batteries. Panasonic Energy will be among the first in the industry to use Nexeon's new high-capacity silicon capable of containing expansion under charging to boost battery performance. The Company will continue to increase the percentage of silicon with the aim of attaining the target of improving the volumetric energy density 5% by 2025 and 25% by 2030 as stated in the Panasonic Energy's business strategy.

Panasonic Energy remains committed to leading the growth of the lithium-ion battery industry by leveraging its outstanding technology and depth of experience and will build a strong partnership with Nexeon to fulfill its mission of realizing a society in which the pursuit of happiness and a sustainable environment are harmonized.

Characteristics of Nexeon's next-generation silicon material:

- The proprietary structure contains expansion during battery charging, which was a problem posed by silicon materials, and increases the anode's capacity while maintaining excellent cycle properties.
- The potential to significantly increase cell energy density.

For more details, please visit <https://www.nexeon.co.uk/technology>

About Panasonic Energy Co., Ltd.

Panasonic Energy Co., Ltd., established in April 2022 as part of the Panasonic Group's switch to an operating company system, provides innovative battery technology-based products and solutions globally. Through its automotive lithium-ion batteries, storage battery systems and dry batteries, the company brings safe, reliable, and convenient power to a broad range of business areas, from mobility and social infrastructure to medical and consumer products. Panasonic Energy is committed to contributing to a society that realizes happiness and environmental sustainability, and through its business activities the Company aims to address societal issues while taking the lead on environmental initiatives. For more details, please visit <https://www.panasonic.com/global/energy/>

About Nexeon Ltd.

Nexeon is the leading international developer and manufacturer of advanced silicon anode materials for lithium-ion batteries. These are fundamental to achieving a sustainable future. Nexeon's battery materials enable a significantly higher cell energy density, allowing for the design of smaller and more cost-effective batteries. This leads to enhanced performance for a several applications, including electric vehicles, where range and charging times can be dramatically improved, addressing key consumer barriers to entry. Nexeon is headquartered in Oxfordshire next to the London, Oxford, Cambridge 'golden triangle', with operations in Japan and South Korea. It has a strong multi-disciplinary team with expertise in sciences, engineering and manufacturing. For more details, please visit <https://www.nexeon.co.uk>

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