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Alelion builds center of excellence for advanced battery technology in Gothenburg

Alelion invests in a state-of-the-art center of excellence for battery-cell testing and at the same time recruits cutting-edge expertise for the Gothenburg facility.

A rapid transition is currently underway among manufacturers of heavy-duty special vehicles, which operate in ports, airports, construction sites, and similar environments. Sustainable battery-powered electrification is replacing the diesel engine, and manufacturers are in need of an experienced partner in lithium-ion technology to accelerate their transition.

This segment of the automotive industry demands high-voltage batteries that can withstand rugged conditions. The challenging environments in which off-highway vehicles operate call for a battery performance radically different from that of a regular passenger car. The vehicles require more energy and greater power and have to be able to handle round-the-clock operation in demanding environments marked by temperature variations, vibrations, and various other strains.

Today, only about two percent of the off-highway vehicle fleet is electrified per year, but demand is expected to rise sharply. Alelion has defined a potential volume by 2030 of close to 30,000 vehicles divided over 20 defined customers within this segment, and considers it possible to supply half of this volume with battery solutions. For the company, this implies an annual growth rate of 50-60 percent in the coming years.

Supplying the customer with the right solution

The investment in a center of excellence for cell testing will allow Alelion to evaluate and find the right cells and battery solution for each customer's specific use pattern, independently of suppliers and external testing institutes.

- In the transition from diesel engines to battery power, it is difficult for the customer to choose the appropriate power supply; it is common to choose an unnecessarily powerful solution to be on the safe side, but that is not sustainable, neither economically nor environmentally, says Anders Dison, Sales and Marketing Manager.

- The results from the cell test lab will ensure that we offer the solution that is optimal for the user.

All competence under one roof

- Concentrating all competencies under the same roof enables us to drive the development of next generation battery systems and at the same time optimize today's batteries to achieve the right performance and lifespan, says Fredrik Larsson, Systems and Verification Team Leader and responsible for the development of Alelion's cell-testing capacity.



- The cell test lab will also analyze the aging of the battery, to allow us to extend the battery life prior to recycling by moving it from a demanding to a somewhat less demanding application, says Fredrik Larsson.

Development effort close to the customer

In Alelion's cell test lab, battery cells from different suppliers will be evaluated in close cooperation with customers. Test data will be compared with field data to identify the cell that is optimal for the customer, but also to determine how the battery's performance changes over time.

In addition, Alelion can draw on extensive user data from the 5,000 lithium-ion batteries that already power electrified vehicles around the world. More than ten years of data are now being analyzed to further optimize performance, life, and second life – that is, reuse.

New jobs in a growth company

Cutting-edge expertise in testing and verification will be attached to the new cell test lab. The systems team at Alelion is set to double this year, and recruitment of battery engineers is ongoing.

- Here, you have the chance to influence the entire development process – from customer needs to delivery, says B-O Hertz, acting CTO at Alelion. We have everything within four walls: a modernized cell test lab, our own development organization, and in-house production.

Alelion's expanded and modernized cell-testing facility will be operational in the first half of 2023. In a first step, the investment amounts to a total of SEK 20 million over 2022-23, including new recruitments.

ABOUT ALELION'S CELL TEST LAB

The key component of a battery is the cells, whose structure and components determine the performance and characteristics of the battery.

The lab will be able to test and evaluate the properties, chemistries, and design of cells from different cell manufacturers.

Cell characterization and performance will be measured with high accuracy at different stages of ageing. It is also possible to test for deep ageing to low state-of-health values (SOH).

The tests will be performed in climatic cabinets in order to control and regulate ambient temperature, examining both low and high temperature ranges.

Real operating cycles will also be tested in the lab, based on field measurements performed at Alelion's customers. Both standardized lab cycles and measured operating cycles will be



tested. The ageing test will thus be able to include, for example, peak currents from regenerative pulses that occur during braking of vehicles.

The lab has the capability to test high currents. The ageing processes are non-linear, and as knowledge remains limited, this is an active research area. Hence, the lab adds important abilities to Alelion and Alelion's customers.

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About Alelion Energy Systems AB (publ)

Alelion develops and manufactures customized battery systems based on lithium-ion technology. We help customers succeed with their electrification of heavy off highway vehicles in the transition to a more sustainable energy use. Alelion is investing to stay ahead, offering the latest proven technology, adapted to the specific needs of customers and end-customers. The company is headquartered in Gothenburg. Alelion shares are traded through the Nasdaq First North Growth Market (ALELIO).

We have and give the power to change. alelion.com

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