

COMPLETELY COBALT-FREE BATTERY CELLS FROM SVOLT AVAILABLE FOR ORDER NOW

High-tech company launches innovative battery cell technology specifically for the automotive sector

- The first cobalt-free battery cells from SVOLT are available for order now
- NMX battery cells are initially available in two sizes: a 115Ah version with 245 Wh/kg and a 226Ah cell variant with 240 Wh/kg
- A specially developed cathode material and the lack of cobalt make these novel battery cells more sustainable, durable and cheaper than conventional high-nickel batteries

Frankfurt am Main/Saarbrücken, 21 January 2021 - SVOLT Energy Technology Co., Ltd. (SVOLT), a global high-tech company headquartered in China, first announced its battery cells with cobalt-free cell chemistry at the International Motor Show (IAA) in September 2019. The first cell variants can now be ordered. SVOLT President & General Manager Hongxin Yang announced this at the first SVOLT Battery Day, which took place in Wuxi in mid-December 2020.

Globally, the system provider is initially offering two sizes of the innovative nickel-manganese battery cells (NMX). These do not require the heavy metal cobalt, which is otherwise used to thermally stabilize high-nickel battery cells (NCM). Serial production of the new products is scheduled to start in June 2021 at the factory in Jintan, China. By the end of 2023, the new batteries may also be produced at the planned factory in Saarland, Germany.

Cobalt-free battery cell in two sizes

Among other variants, cobalt-free NMX battery cells with 115Ah and an energy density of 245 Wh/kg can now be ordered in MEB format (33.4 x 220 x 102.5 mm). Their voltage is 3.74V and their capacity is 430 Wh. This means that the 115Ah variant of the NMX battery from SVOLT achieves an effectively usable capacity of 396 Wh. This cell variant is expected to be available from the second quarter of 2021.

A cobalt-free cell variant with 226Ah and an energy density of 240 Wh/kg can also be ordered and is expected to be available from the fourth quarter of 2021. The 226Ah version is SVOLT's own cell format L6 (21.5 x 574 x 118 mm). L-cells are long battery cells in a thin prismatic design with electrodes and degassing valves positioned at the sides.

Elimination of cobalt makes battery cells more sustainable and affordable

SVOLT's cobalt-free NMX cells are not only significantly more sustainable, they are also around five percent cheaper than classic high-nickel batteries. This is made possible thanks to the reduced nickel content, on the one hand, and due to the complete elimination of the heavy metal cobalt – one of the most expensive and controversial cathode elements – on the other hand. These factors make the battery cells particularly suitable for the broad middle-range market. At the same time, SVOLT's products achieve an energy density that is just five percent below that of comparable NCM battery cells.

The new battery cells consist of 75 percent nickel and 25 percent manganese and are stabilized by using doping and coating processes developed by SVOLT. NMX cells achieve higher thermal stability and overall safety than NCM cells.

Long life and high performance thanks to innovative cathode material

With this new technology, SVOLT has also succeeded in significantly improving the life cycle and the calendar life of NMX cells compared to conventional NCM battery cells. This means more than 2,500 charging cycles, among other benefits. The company developed a special cathode material, based on a single crystal with a wafer-thin surface coating (nano-coating), consisting of only a few hundred molecules to achieve a long-lived cobalt-free NMX battery cell.

Using this single crystal approach, SVOLT reduces one of the main causes of ageing in electric vehicle batteries: the formation of micro-cracks and fractures in the active cathode material and thus wear on the cell. At the same time, the coating, which is only a few nanometers thick, protects the surface of the used cathode material against secondary reactions with the electrolyte. In this way, SVOLT significantly slows down cell ageing in its NMX battery cells.

SVOLT also relies on a supplementary doping process in which foreign atoms, the so-called doping material, are inserted into the cathode material. By doing so, SVOLT not only succeeds in stabilizing NMX cells without cobalt, but also in increasing the mobility of the lithium ions in the cathode as well as conductivity. This helps to improve the performance of the battery.

The two NMX cell sizes from SVOLT can now be ordered worldwide. Additional NMX cell variants are planned in the near future.

Statements

Kai-Uwe Wollenhaupt, President of SVOLT Europe & Vice President of SVOLT Energy Technology: "As a systemic provider, SVOLT not only produces lithium-ion batteries that have been specially optimised for the automotive sector and the requirements thereof, it is also working specifically on developing them further. This is the only way to promote the acceptance and widespread distribution of electromobility. Our high-performance, inexpensive, and sustainable cobalt-free battery cells are an important milestone that underlines

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both our goal of offering products that are as sustainable as possible as well as our in-depth expertise in research and development. Thus, SVOLT is the first company to successfully make cobalt-free high nickel cell chemistry ready for mass production.”

Maxim Hantsch-Kramskoj, Vice President Sales & Marketing, SVOLT Europe: “Among other things, our cobalt-free battery cells will be used in an electric vehicle from Great Wall Motors, which will be available on the Chinese market starting in July 2021. But there is also great interest in the new battery technology beyond China's borders.”

About SVOLT

As a global high-tech company and spin-off of the Chinese automobile manufacturer Great Wall Motors, SVOLT Energy Technology Co., Ltd. (SVOLT) produces lithium-ion batteries and battery systems for electric vehicles and energy storage systems. SVOLT's comprehensive one-stop product portfolio includes battery cells, modules and packs as well as battery management systems and software solutions. The company combines in-depth systemic knowledge of battery systems and management with comprehensive expertise in the field of vehicle integration. SVOLT is headquartered in Jintan District, Changzhou, Jiangsu province in China. The home office of the European subsidiary SVOLT Energy Technology (Europe) GmbH is in Frankfurt am Main. SVOLT employs around 3,000 people worldwide, half of whom work in research and development (R&D). In 2019, SVOLT registered over 550 patents. Learn more at en.svolt.cn | svolt-eu.com

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