Bosch battery technology

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Battery-powered vehicles will account for around 20 percent of global road traffic by 2030. But there are already concerns that there will not be enough of the raw materials needed to manufacture them. At the same time, the first wave of used batteries from the first electric cars is on the horizon. Sebastian Krieger from Bosch Rexroth decided to make the best of a bad situation. He and his team want to make electromobility even more sustainable using an efficient and automated battery recycling solution.

A battery is a unit consisting of one or more electrochemical cells that can store and release energy. An accumulator is a special type of battery that can be recharged over and over again (often referred to as a "rechargeable battery" or a "secondary battery"). So that means accumulators are batteries, but not all batteries are accumulators.

Bosch battery systems rely on lithium-ion technology. The lithium-ion battery consists of a galvanic cell in which lithium ions migrate between the anode and cathode during charging and discharging. This chemical energy is then converted into electrical energy. Lithium ions have a high energy density and can absorb and hold this energy quickly without being prone to the memory effect. As a result, lithium-ion batteries have a higher energy density per cell, are quicker to charge, and have a longer service life than other battery technologies.

The lithium-ion batteries from Bosch are designed to have a long service life, both in terms of the technology in the battery cells themselves and the architecture of the battery packs. Elements such as improved power transmission and innovative cooling systems increase the batteries" capacity and performance. Bosch rechargeable batteries can be recharged hundreds of times over before their performance starts to decline.

He is at home in nature: for the past three years, English sculptor Adam Detre and his family have been living in a forest near the small Finnish town of Fiskars. What has fascinated the artist ever since moving to the far north of Europe is the finality of summer and winter, the oscillation between pitch-black afternoons and daylight nights. He has dedicated his latest sculpture to the latter. It was created using cordless power tools from Bosch.

More runtime with the same power for the toughest applications: That"s the promise of the innovative ProCORE18V+ high-performance battery from Bosch Power Tools. But how is this possible? The answer can be found inside the battery, more precisely in the so-called tabless cells. Yvonne Schweizer, segment owner for batteries and chargers, and Andreas Gonser, battery expert, explain what is behind the new battery technology.

Bosch"s patented and automated deep discharge process takes no longer than 15 minutes to deactivate vehicle batteries using a chemical process. This is in stark contrast to the 24 hours that the conventional manual

process needs. But saving time is not the only benefit of the Bosch solution: it also minimizes safety risks, ranging from short circuits and fires to chemical exposure and injuries caused by maneuvering heavy batteries. As an added bonus, the energy recovered during the discharge process is even recycled by being used to operate machinery or being fed into the grid.

Efficiency -- the ratio of input power to output power -- is nearly 25 percent higher for Bosch Biturbo series tools than for comparable corded tools. The combination of 18-volt lithium-ion battery and motor enables a comparable mains power of up to 1,000 watts to be generated. The secret to this lies in the battery"s optimized airflow and cooling design and the tools" electronics architecture, which ensures that no one particular point of the battery is subject to a disproportionate amount of stress and the motor can use the high-power currents as efficiently as possible.

Check out our global job opportunities or visit your local career website for insights into our application process and to get helpful advice. Become part of the Bosch family and discover what the future holds for you.

The next generation of high-power batteries is here. With tabless cell technology, ProCORE18V+ 8.0Ah gives your BITURBO tools greater performance and longer runtime than ProCORE18V 8.0Ah, so you can complete heavy-duty applications with ease.

ProCORE18V+ 8.0Ah is built on revolutionary tabless cell technology, featuring countless parallel current pathways for less inner resistance and less heat. In combination with the heat management of COOLPACK 2.0, the tabless cell technology of ProCORE18V+ 8.0Ah helps ensure a longer battery lifetime.*?

Find out more about Bosch Batteries, how to diagnose and service vehicle batteries in the workshop. Modern cars are equipped with more and more components running on electric energy. They need to be supplied by reliable sources of energy with high performance. Equipped with modern technology and featuring a corrosion-proof design, Bosch batteries provide different types of vehicles with the energy they need - over long periods.

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