



New hybrid battery from Bosch – 48 volts is a recipe for success

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- ▶ Short development times: Bosch is an incubator of electromobility
- ▶ New 48-volt battery systematically designed to save fuel
- ▶ Michael Budde: “We are confident that this will position us as a market leader for 48-volt batteries.”

Gerlingen, Germany – Bosch’s new 48-volt battery for hybrids is in demand by automakers across the globe. Similar to the Bosch e-axle, this innovative 48-volt battery is standardized for easy integration into new vehicle models. Established manufacturers and start-ups alike can thus eliminate long and expensive development processes. “Bosch is an incubator of electromobility. We help manufacturers reduce their development times and launch their products faster,” says Dr. Rolf Bulander, chairman of the Bosch Mobility Solutions business sector and member of the board of management of Robert Bosch GmbH. This means that installation of the lithium-ion battery will benefit not only compact cars, but mini- and microcars as well. Production of the battery is scheduled to start in late 2018. Anticipating a large market for entry-level hybrids, Bosch offers other powertrain components for these models in addition to the 48-volt battery. The company estimates that some 15 million 48-volt hybrid vehicles will be on the road by 2025.

The art of the battery: standardized and easy to use

Automakers everywhere – whether in China, Europe, or North America – are all striving to cut CO₂ emissions, which in practice means reducing cars’ fuel consumption. Bosch has systematically designed its new 48-volt battery to do precisely that. For instance, the lithium-ion cells Bosch uses are as compact as possible while still achieving a reduction in CO₂. The 48-volt battery is in high demand, particularly among Chinese manufacturers, and the lithium-ion unit is poised to become a global success. Bosch is already in talks with over a dozen customers and has secured a considerable number of production projects.

The secret of the battery's success is its sophisticated concept, which offers a comparatively inexpensive way to help reduce vehicle CO₂ emissions. This is also due to the product design, as the battery requires no active cooling and its housing is made of plastic, not metal. Both these factors bring costs down still further. The plastic housing presents a real challenge, as lithium-ion cells expand when the battery is charging and over the course of the unit's service life. As a result, the housing must withstand a certain amount of stress. Bosch engineers rearranged the cells in the 48-volt battery so that even plastic housing can bear the pressure.

"We at Bosch have long been making upfront investments in electromobility. Now those investments are gradually starting to pay off," says Dr. Mathias Pillin, head of electromobility at Bosch. On the world's roads, there are already well over 500,000 electric and hybrid cars fitted with Bosch components. The company invests 400 million euros a year in electromobility. Bosch has years of experience from more than 30 production projects, including in the manufacture of batteries, and that expertise is now bearing fruit. As Michael Budde, head of Bosch Battery Systems, puts it: "We are demonstrating that there is more to a battery than making it perform faster, stronger, farther; instead, there is an art to finding a suitable user-friendly solution."

With its new battery, Bosch is playing a key role in making the 48-volt hybrid affordable for the mass market. This would make it possible for the powertrain to quickly become a hybrid for everybody – and not only in China: as the mass market for hybrids expands, Bosch expects its battery to find success in Japan and Europe as well. "We are confident that this will position us as a market leader for 48-volt batteries," Budde says.

Q&A – More information about the 48-volt battery

How does a 48-volt hybrid save on fuel?

A 48V hybrid can considerably cut its fuel consumption through the use of a boost recuperation system (BRS). Here's how it works: a conventional car loses energy whenever the driver brakes. The BRS stores this braking energy in a 48V battery and applies it later when the driver accelerates (electronic boost). This requires less fuel – and produces less CO₂ in the exhaust.

Why is China seen as an e-mobility pioneer?

With more than half a million models sold, China is by far the world's largest market for electric vehicles. It is a world leader in e-vehicle production, too. Electric vehicles and hybrids are set to take over still more of the Chinese market, especially with government support.

Why is the new battery efficient when it comes to CO₂?

No other country in the world emits as much CO₂ into the atmosphere as China. It has set itself a fleet target of 117 g/km by 2021, and China's automakers are looking to the 48-volt hybrid system to help them achieve this goal. Bosch's new and less expensive 48-volt battery will make the system more affordable for a broader market, and will thus help Chinese automakers considerably reduce CO₂ emissions.

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