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## 5-min charging technology

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85 percent of our energy in manufacturing and transportation comes from burning fossil fuels. Transportation itself accounts for almost two thirds of the oil used worldwide. According to recent estimations, we have 40 years of oil and 50 years of gas left before we run out. We need all the technological developments imaginable to make sure that we reach 100% renewable energy by 2050. Besides, combustion of fossil fuels leads to toxic exhausts, and nearly 1.2 million people die each year due to air pollution, especially in urban areas. Decarbonization of manufacturing and transportation has become time-critical, and quick technological advances are urgently needed. One of the most effective ways is a combination of renewable energy, electrification and battery storage technology. However, in order to be widely adopted, such battery systems must be fast-charging, convenient, cheap and efficient.

After 5 years' development in the anode materials' chemistry, unique cell design and scale-up method, Nyobolt has finally created the battery system capable of charging a vehicle under 5min, achieving up to 25,000 cycles without significant degradation. Our technology unlocked the potential for electrification in commercial robotics by increasing uptime 3 times. High-power and heavy-duty vehicles and tools powered by Nyobolt batteries benefit from nearly degradation-free charge-discharge cycles. In June 2024, our prototype sports car's battery packs has achieved exceptional charging rate of 5.5kWh/min (equivalent to 330kW of rapid charging) in the first on-road driving and charging test, adding ~40km per minute. This demonstrated topping up a vehicle from 10% to 80% in only 4min 37sec.

The anode technologies developed by Nyobolt are based on niobium tungsten oxide (NWO) chemistry and graphite-dominant species. NWO suits high cycle life applications, while the graphite-dominant batteries benefit from higher energy density, lower cost and weight, while maintaining good power and cycle life characteristics.

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### Figures

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