
CO₂-Derived Electrode Material Leads to Superior Performance in Sodium-ion Batteries

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UP Catalyst's sustainable carbon nanotubes derived from CO₂ have shown exceptional results in sodium-ion batteries. Learn how this breakthrough technology is revolutionizing the energy storage industry and promoting sustainability.

UP Catalyst, a nanotechnology company based in [Estonia](#), has announced the successful development of a new electrode material derived from CO₂ that has demonstrated superior performance in sodium-ion batteries.

Working in conjunction with Imperial College London's Titirici group, UP Catalyst's use of carbon nanotubes (CNTs) has resulted in a significant increase in the cyclability of the batteries tested. Specifically, the electrode material retained 93.75% of its capacity after 4,000 charge and discharge cycles, compared to currently used batteries which typically deplete after just 800 cycles.

In addition to the improved cyclability, the electrode material exhibits excellent stability and improved energy density, making it an attractive candidate for large-scale energy storage applications. Furthermore, because UP Catalyst produces sustainable carbon nanomaterials and graphite from CO₂-rich flue gases from heavy industry emitters, biogenic origin, and even direct air-captured CO₂, the new electrode material is also environmentally friendly.

UP Catalyst's CEO, Gary Urb, stated, "The development of this new electrode material is a significant step towards achieving these goals, as it not only enhances battery performance but also helps to mitigate the impact of carbon emissions on the environment."

The breakthrough in sodium-ion battery technology may soon lead to a significant shift in the energy storage industry, as it can rival and even exceed the performance of lithium-ion batteries at a much lower cost and higher efficiency and safety levels. Several large manufacturers are already planning to mass-produce next-generation sodium-ion batteries, and UP Catalyst's new electrode material further increases the battery characteristics, making it an even more attractive option.

Prof. Magda Titirici, head of the Titirici group, expressed her excitement, stating, "Our team of experts is dedicated to finding new and innovative solutions that meet the growing demand for high-performance, sustainable batteries, and UP Catalyst's electrode material is a major step forward in that direction."

UP Catalyst's achievement is an important contribution to the sustainable energy industry and is a significant step towards a more environmentally conscious future.

Read the [original article](#) on Greener Ideal.