

TITANIUM DIOXIDE TiO_2 FOR HIGH-RATE BATTERY APPLICATIONS

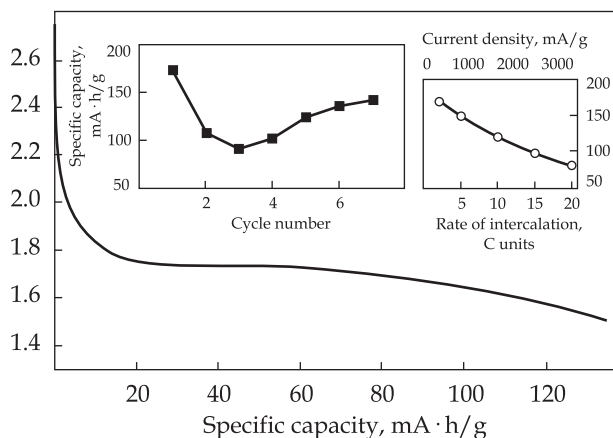
Areas of Application

Anode material for lithium-ion batteries used in renewable energy

Specification

Working voltage range, V	1.3–2.8
Nominal capacity at 1.5 C discharge current, mA · h/g	165
Maximal current load, mA/g	3350
Particle size, nm	250
Crystallite size, nm	14–20

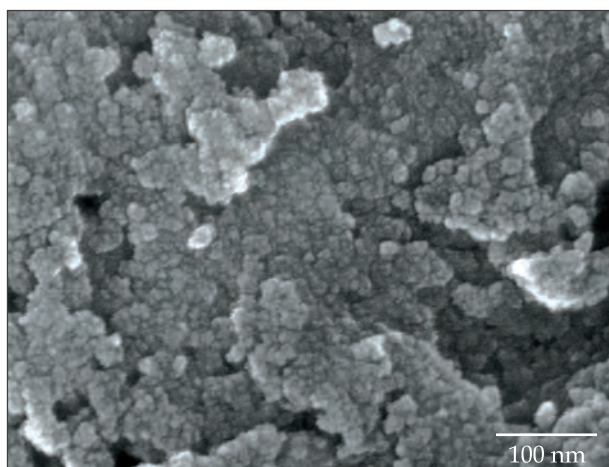
U, V



Galvanostatic discharge curves for TiO_2 and dependence of specific capacity on discharge current

Advantages

The material is cheaper than the commercial analogue, $\text{Li}_4\text{Ti}_5\text{O}_{12}$, and the method of its obtaining is simpler, whereas the specific and power density characteristics of both materials are comparable



SEM micrograph of TiO_2

Stage of Development.
Suggestions for Commercialization

IRL5, TRL4

The electrode material is proposed

IPR Protection

IPR2, IPR3

Contact Information

Sviatoslav A. Kirillov, Joint Department of Electrochemical Energy Systems of the NAS of Ukraine;
+38 044 424 35 72, e-mail: kir@i.kiev.ua