All-solid-state lithium-ion batteries based on self-supported titania nanotubes

We report an electrochemically driven transformation of amorphous TiO2 nanotubes for Li-ion battery anodes into a face-centered-cubic crystalline phase that self-improves as the cycling proceeds. T...

However, success is not assured, and solid-state battery development faces several challenges, including (i) improving control of materials and interfaces, (ii) addressing processing challenges and cost, (iii) ...

We report the fabrication of an all-solid-state lithium-ion battery composed of self-supported titania nanotubes (TiO2nts) as anode, a thin film of polyethylene oxide (PEO) carrying bis ...

Deposition-Type Lithium Metal All-Solid-State Batteries: About the Importance of Stack-Pressure Control and the Benefits of Hot Pressing during Initial Cycling

To explore the performance of PEO-LiTFSI- (5%)LLTO composite electrolyte in solid-state lithium-ion battery, it was used to assemble into LiFePO 4 /SPE/Li solid-state lithium ...

Silicon-based all-solid-state batteries (Si-based ASSBs) are recognized as the most promising alternatives to lithium-based (Li-based) ASSBs due to their low-cost, high ...

In this context, titania nanotubes (TiO 2 NTs) have been extensively studied as a 3D negative electrode for lithium-ion batteries (LIBs). These self-supported nanostructured electrode show ...

Empowering all-solid-state Li-ion batteries with self-stabilizing Sn-based anodes To find the appropriate anode material for all-solid-state Li-ion batteries (ASSLIBs), the use of self ...

In the present work, we report the fabrication of an all-solid-state battery consisting of TiO 2 NTs synthesized from ternary titanium alloy (Ti-6Al-4V, with 6 wt% aluminum and 4 wt% vanadium) ...

All-solid-state batteries were fabricated by assembling a layer of self-organized TiO2 nanotubes grown on as anode, a thin-film of polymer as an electrolyte and separator, and a layer of composite LiFePO4 as a cathode.

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We report the fabrication of an all-solid-state lithium-ion battery composed of self-supported titania nanotubes (TiO (2)nts) as anode, a thin film of polyethylene oxide (PEO)...

All-solid-state lithium-ion batteries based on self-supported titania nanotubes

To build high-capacity, long-life all-solid-state lithium-selenium batteries, lithium iodide (LiI) is introduced into the cathode as an active additive. LiI actively enhances interfacial ...

Here, we report a groundbreaking strategy for fabricating flexible all-solid-state lithium-ion batteries (FASSLIB) using MWCNTs-based composite electrodes and highly ...

This work highlights that the customized design of solid electrolytes and catholytes based on polymer networks is an efficient strategy to obtain high-performance all ...

Plylahan N, Letiche M, Barr MKS, Djenizian T: All-solid-state lithium-ion batteries based on self-supported titania nanotubes. Electrochem Commun 2014, 43: 121-124.

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