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European Solar Energy Storage

Electrochemical energy storage application of ni3se2

Overview

The multifunctional 3D Ni3Se2 nano-architectures were successfully synthesized by a facile solvothermal route, and their electrochemical performances were systematically investigated. As electrode for supercapa.

What is the energy density of NISE ni 3 SE 2?

The device manifests an eximious energy density of 45.5 Wh Kg −1 at 1.600 kW kg −1, with a capacitance preservation of 96.1% over 12,000 cycles. Additionally, the NiSe@Ni 3 Se 2 composite also present a low overpotential of 281 mV at 10 mA cm −2.

Can ni 3 SE 2 nanosheets be used as attracting electrode materials?

In summary, we have triumphantly used a facile two-step strategy to Ni 3 Se 2 nanosheets on the surface of the 3D NiSe nanowires arrays directly deposited on Ni foam as attracting electrode materials for high-energy ASC device.

What is the electrochemical double layer capacitance of NISE nwas@ni3 SE 2 NSS?

The calculated results (Fig. 6(d)) show that the electrochemical double layer capacitance of the NiSe NWAs@Ni3 Se 2 NSs/NF is 3.25 mF cm −2, which is higher than NiSe NWAs/NF (2.82 mF cm −2) and Ni 3 Se 2 NSs/NF (2.67 mF cm −2). It reveals the composite electrode possesses more active reaction sites.

What is a Ni3 se 2/nf nanostructure?

A typical core-branch NiSe@Ni 3 Se 2/NF nanostructure directly grown on Ni foam as an asymmetric supercapacitor (ASC) electrode and electrocatalyst is prepared employing a facile two-step in-situ growth procedures. The as-synthesized nanoarchitecture is composed of relatively thin Ni3 Se 2 nanosheets shell and NiSe nanowire arrays core (NiSe NWAs).

Can Ni3 SE 2 ns be used as a hybrid electrode?

In this study, a particular nanostructure consisting of the Ni3 Se 2 NSs grown on the surface of NiSe NWAs were successfully synthesized directly on nickel

foam via one-step in-situ hydrothermal approach coupling with electrodeposition route. It can be acted as a self-supported hybrid electrode for ASCs and OER electrocatalysts.

Why is Nise NSS/NF a good electrochemical performance?

The favorable electrochemical performances of the as-synthesized the core-branch NiSe NWAs@ Ni 3 Se 2 NSs/NF is primarily ascribed to the unique design and the cooperative contribution of the support and active materials.

Electrochemical energy storage application of ni3se2

????????????? 3D Ni3Se2 ???????,Journal ...

?? ??????????????????3D Ni3Se2????,???????????????? ??????????,3D Ni3Se2????????1545.6 mAh cm-2??????????????????????????

Ni $_3$ Se $_2$????????????? ...

The Ni3Se2 nanowire array electrode is shown to be a high-performance alkaline water electrolyzer with current density of 10 mA cm-2 at a cell voltage of 1.62 V. The results demonstrate Ni3Se2 as a promising 2D highly active electrode for electrochemical energy storage and conversion applications.

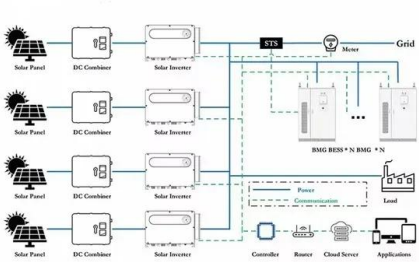
Ni (OH)2 Nanoflakes Supported on 3D Ni3Se2

Excellent electrochemical performance indicates that Ni 3 Se 2 @Ni (OH) 2 composite can become a promising electrode material for energy storage applications.

ACS Applied Energy Materials

Abstract Developing transition metal selenide materials with high capacity, excellent rate capability, and satisfactory durability presents

significant challenges due to their sluggish electrochemical kinetics, limited ...



Synthesis of 3D Ni3Se2 nano-architectures for electrochemical energy

Recently, transition metal sulfides have drawn a lot of attention due to their potential application in energy and environmental fields. In this paper, we present a simple and facile method for...

NiCoSe2/Ni3Se2 lamella arrays grown on N-doped graphene

Shi X, Wang H, Kannan P, et al. Rich-grain-boundary of Ni 3 Se 2 nanowire arrays as multifunctional electrode for electrochemical energy storage and conversion applications.

multifunctional electrode for electrochemical energy ...

Rich-grain-boundary Ni3Se2 nanowire arrays as multifunctional electrode for electrochemical energy conversion and storage Xin Shi,a Hui Wang,a Palanisamy Kannan,b Jieting Ding,a Shan Ji,*ab Fusheng Liu,*a Hengjun Gai,a and Rongfang Wang*a a College of Chemical Engineering, Qingdao University of Science and

Technology,

Synthesis of 3D Ni3Se2 nano-architectures for electrochemical energy

The results exhibited here have significant implications to design and study the multifunctional Ni 3 Se 2 nano-architecture for electrochemical energy storage and conversion applications.

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Ni (OH)2 Nanoflakes Supported on 3D Ni3Se2

Excellent electrochemical performance indicates that Ni 3 Se 2 @Ni (OH) 2 composite can become a promising electrode material for energy storage applications.

Ni3Se2 nanosheets in-situ grown on 3D NiSe nanowire arrays ...

This inspiring work both uncovers the superiority of transition metal selenides, and provides an

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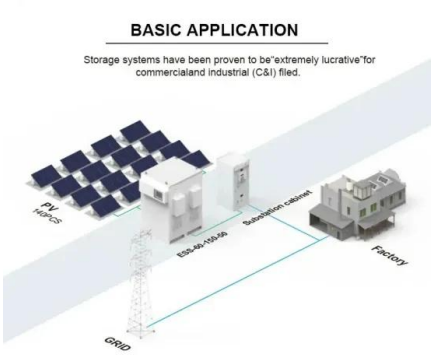
available pathway for their practical applications in high-performance energy storage and conversion systems.

Ni_3Se_2????????????? ...

The Ni3Se2 nanowire array electrode is shown to be a high-performance alkaline water ...



ACS Applied Energy Materials

Abstract Developing transition metal selenide materials with high capacity, excellent rate capability, and satisfactory durability presents significant challenges due to their sluggish electrochemical kinetics, limited electrical conductivity, and detrimental volume change.

Researching , Fabrication of Nickel Selenide/Nickel Sulfide

Therefore, the study could demonstrate a potential application of Ni3Se2/Ni3S2 nanocomposites, and provide an approach to design the new materials for energy storage.

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