

**BLINK SOLAR**

# **Electrochemical energy storage application of Ni<sub>3</sub>Se<sub>2</sub>**



## Overview

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What is a controllable  $\text{Ni}_3\text{Se}_2$  nanowire array?

Controllable nanoarchitecture arrays of the transition metal selenide, supported on conductive substrates, are promising materials for high-performance electrochemical energy storage and conversion applications. Herein,  $\text{Ni}_3\text{Se}_2$  nanowire arrays with a rich-grain-boundary are rationally grown on a nickel foam (.

Can  $\text{Ni}_3\text{Se}_2$  nanosheets be used as attracting electrode materials?

In summary, we have triumphantly used a facile two-step strategy to  $\text{Ni}_3\text{Se}_2$  nanosheets on the surface of the 3D  $\text{NiSe}$  nanowires arrays directly deposited on Ni foam as attracting electrode materials for high-energy ASC device.

Is  $\text{Ni}_3\text{Se}_2$  a good electrolyzer?

The  $\text{Ni}_3\text{Se}_2$  nanowire array electrode is shown to be a high-performance alkaline water electrolyzer with current density of  $10 \text{ mA cm}^{-2}$  at a cell voltage of 1.62 V. The results demonstrate  $\text{Ni}_3\text{Se}_2$  as a promising 2D highly active electrode for electrochemical energy storage and conversion applications.

Can  $\text{NiSe@Ni}_3\text{Se}_2$  be used for oxygen evolution reaction?

In addition, the as-obtained  $\text{NiSe@Ni}_3\text{Se}_2$  catalyst can present favorable electrocatalytic performances for oxygen evolution reaction (OER) with a small overpotential of 281 mV at  $10 \text{ mA cm}^{-2}$ .

## Electrochemical energy storage application of Ni<sub>3</sub>Se<sub>2</sub>

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### Synthesis of 3D Ni<sub>3</sub>Se<sub>2</sub> nano-architectures for



Abstract The multifunctional 3D Ni<sub>3</sub>Se<sub>2</sub> nano-architectures were successfully synthesized by a facile solvothermal route, and their electrochemical performances were ...

### ACS Applied Energy Materials

Developing transition metal selenide materials with high capacity, excellent rate capability, and satisfactory durability presents significant challenges due to their sluggish ...



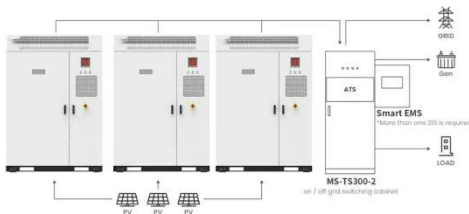
### Rich-Grain-Boundary of Ni<sub>3</sub>Se<sub>2</sub> Nanowire Arrays as ...



All the results make Ni<sub>3</sub>Se<sub>2</sub> electrode as a promising 2D highly active electrode for electrochemical energy storage and conversion applications.

## Rich-grain-boundary of Ni<sub>3</sub>Se<sub>2</sub> nanowire arrays as ...

Controllable nanoarchitecture arrays of the transition metal selenide, supported on conductive substrates, are promising materials for high-performance electrochemical energy ...



Application scenarios of energy storage battery products

## Researching , Fabrication of Nickel Selenide/Nickel Sulfide

In this paper, Ni<sub>3</sub>Se<sub>2</sub>/Ni<sub>3</sub>S<sub>2</sub> nanocomposites were synthesized on nickel foam by a solvothermal and selenization method, and their structures and electrochemical energy storage ...

## Synthesis of 3D Ni<sub>3</sub>Se<sub>2</sub> nano-architectures for electrochemical energy

3D multifunctional Ni<sub>3</sub>Se<sub>2</sub> nano-architecture electrodes on Ni foam for electrochemical energy storage and conversion applications have been achieved, which ...



## ACS Applied Energy Materials

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

durability presents ...



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### Development of $\text{MnAl}_2\text{O}_4/\text{Ni}_3\text{Se}_2$ nanocomposite for ...

Fossil fuel utilization leads to environmental pollution and depletion of energy supplies, prompting the preparation of environmentally friend and advanced energy storage ...



### Synthesis of 3D $\text{Ni}_3\text{Se}_2$ nano-architectures for electrochemical energy

Semantic Scholar extracted view of "Synthesis of 3D  $\text{Ni}_3\text{Se}_2$  nano-architectures for electrochemical energy storage and conversion" by Songyang Li et al.

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### $\text{Ni}_3\text{Se}_2$ thin films deposited on $\text{CuO}$ nanomaterials as ...

Abstract With the ever-increasing demand for high-performance energy

storage devices, the development of efficient and stable electrode materials for supercapacitors has ...



### Rich-grain-boundary of Ni<sub>3</sub>Se<sub>2</sub> nanowire ...

Controllable nanoarchitecture arrays of the transition metal selenide, supported on conductive substrates, are promising materials for ...

### Ni<sub>3</sub>Se<sub>2</sub> nanosheets in-situ grown on 3D NiSe nanowire ...

This inspiring work both uncovers the superiority of transition metal selenides, and provides an available pathway for their practical applications in high-performance energy ...



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