

# **A stable quasi-solid-state sodium-sulfur battery**





## Overview

---

Herein we report a stable quasi-solid-state Na-S battery enabled by a poly(S-pentaerythritol tetraacrylate (PETEA))-based cathode and a (PETEA-tris[2-(acryloyloxy)ethyl] isocyanurate (THEICTA))-based gel polymer electrolyte.

Herein we report a stable quasi-solid-state Na-S battery enabled by a poly(S-pentaerythritol tetraacrylate (PETEA))-based cathode and a (PETEA-tris[2-(acryloyloxy)ethyl] isocyanurate (THEICTA))-based gel polymer electrolyte.

**Abstract:** Ambient-temperature sodium-sulfur (Na-S) batteries are considered a promising energy storage system due to high theoretical energy density and low cost. However, great challenges remain in achieving high rechargeable capacity and long cycle life. Herein we report a stable.

Herein we report a stable quasi-solid-state Na-S battery enabled by a poly(S-pentaerythritol tetraacrylate (PETEA))-based cathode and a (PETEA-tris[2-(acryloyloxy)ethyl] isocyanurate (THEICTA))-based gel polymer electrolyte. The polymeric sulfur electrode strongly anchors sulfur through chemical. What is a solid state battery?

In contrast to conventional lithium-ion batteries, which use liquid electrolytes, solid-state batteries use a solid electrolyte material to help ions travel between electrodes. Solid-state batteries naturally offer faster charging due to their superior ion conductivity compared to liquid electrolytes [194, 195, 196].

How can sulfide-based electrolytes help a solid-state battery charge fast?

The creation of innovative materials, such as sulfide-based electrolytes and cutting-edge cathode/anode pairings, is essential for enabling quick charging in solid-state batteries. The fast-charging application on SSE may be seen as being directly hampered by the comparatively low critical current density (CCD).



Are all-solid-state NaS batteries suitable for stationary energy storage system?

Abstract The high theoretical energy density ( $1274 \text{ Wh kg}^{-1}$ ) and high safety enable the all-solid-state Na–S batteries with great promise for stationary energy storage system. However, the uncontrol.

Are solid-state batteries better than Li-ion batteries?

Although Li-ion battery technology has been investigated for many years, a major breakthrough, the invention of solid-state batteries, has only recently arrived. It offers better safety, higher energy density, and improved cycle life.

Are solid-state batteries the future of energy storage?

The development of solid-state batteries in energy storage technology is a paradigm-shifting development that has the potential to enhance how batteries are charged and used.

What is the Ideal anode material for solid-state lithium batteries?

The ideal anode material for solid-state lithium batteries is considered to be lithium (Li) metal due to its high specific capacity ( $3860 \text{ mAh g}^{-1}$ ) and low electrochemical potential ( $-3.04 \text{ V}$  versus standard hydrogen electrode).



## A stable quasi-solid-state sodium-sulfur battery

---



### [A comprehensive review of solid-state batteries](#)

This paper reviews solid-state battery technology's current advancements and status, emphasizing key materials, battery architectures, and performance characteristics. We ...

### [A Stable Quasi-Solid-State Sodium-Sulfur Battery](#)

Herein, we employ star-shaped crosslinking monomers to prepare polymeric sulfur cathode and gel polymer electrolyte (GPE), successfully fabricate stable quasi-solid-state Na-S batteries.



### **UCLA?????Nat Commun:?????????? ...**

Dual redox mediators accelerate the electrochemical kinetics of lithium-sulfur batteries Fang Liu, Geng Sun, Hao Bin Wu, Gen Chen, Duo Xu, Runwei Mo, Li Shen, Xianyang Li, Shengxiang Ma, Ran Tao, Xinru Li, Xinyi ...

### [A Stable Quasi-Solid-State Sodium-Sulfur Battery](#)

Herein, we employ star-shaped crosslinking monomers to prepare polymeric sulfur cathode and gel polymer electrolyte (GPE), and successfully fabricate stable quasi-solid-state Na-





[A Stable Quasi-Solid-State Sodium-Sulfur Battery](#)

Abstract Ambient-temperature sodium-sulfur (Na-S) batteries are considered a promising energy storage system due to their high theoretical energy density and low costs. ...

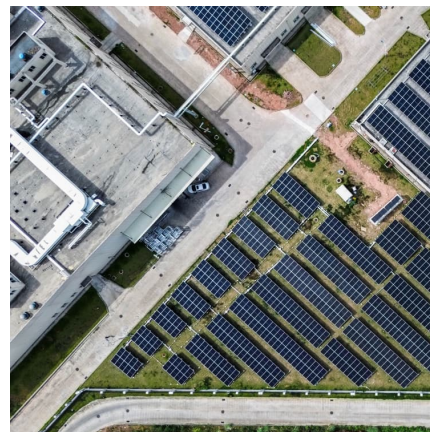


**A Stable Quasi-Solid-State Sodium-Sulfur Battery , Scilit**

Herein we report a stable quasi-solid-state Na-S battery enabled by a poly (S-pentaerythritol tetraacrylate (PETEA))-based cathode and a (PETEA-tris [2- (acryloyloxy)ethyl] isocyanurate ...

[\(PDF\) A Stable Quasi-Solid-State Sodium-Sulfur Battery](#)

The as-developed quasi-solid-state Na-S cells exhibit a high reversible capacity of 877 mA h g<sup>-1</sup> at 0.1 C and an extended cycling stability.



**????????Nature??,UCLA??????**

?? ?? ??? ??? , ???

QbitAI??,????????????????Nature???

????????????(UCLA)?????,????????????????????????????????? ...



### ????????Nature??,UCLA???????

Herein we report a stable quasi-solid-state Na-S battery enabled by a poly (S-pentaerythritol tetraacrylate (PETEA))-based cathode and a (PETEA-tris [2- (acryloyloxy)ethyl] isocyanurate ...



### Quasi-Solid Sulfur Conversion for Energetic ...

Herein, we propose a new design methodology for matrix featuring separated bi-catalytic sites that control the multi-step polysulfide transformation in tandem and direct quasi-solid reversible sulfur conversion ...

## Contact Us

For catalog requests, pricing, or partnerships, please visit:  
<https://www.conrad.edu.pl>