

**EQACC SOLAR**

# **Platinum catalysis for energy storage batteries**



## Overview

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Can catalysis improve battery performance?

For the past few years, a growing number of studies have introduced catalysts or the concept of catalysis into battery systems for achieving better electrochemical performance or designing materials with distinctive structures and excellent properties.

Do carbon semi-tubes support platinum catalysts for polymer electrolyte fuel cells?

Chen Y, Zhang S, Chung-Yen Jung J, et al. Carbons as low-platinum catalyst supports and non-noble catalysts for polymer electrolyte fuel cells. *Progress in Energy and Combustion Science*, 2023, 98: 101101  
Cai J, Chen J, Chen Y, et al. Engineering carbon semi-tubes supported platinum catalyst for efficient oxygen reduction electrocatalysis.

What type of catalysis is used in secondary batteries?

In terms of catalysis used in secondary batteries, the first things we could think of are Li-S and Li-O<sub>2</sub> batteries. As for the LSB, (19–22) it is consisted of a cathode with sulfur (S) as the active material, electrolyte (solid-state or liquid), an anode (Li metal), and a separator (Figure 2 a).

Are carbons a low-platinum catalyst for polymer electrolyte fuel cells?

Chen, Y.Z., Zhang, S.M., Chung-Yen Jung, J., et al.: Carbons as low-platinum catalyst supports and non-noble catalysts for polymer electrolyte fuel cells. *Prog. Energy Combust.*

## Platinum catalysis for energy storage batteries

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### Catalysis for Energy Storage and Batteries , Catalysts , MDPI

Special Issue Information Dear Colleagues, This Special Issue of Catalysis for Energy Storage and Batteries explores innovative advancements in electrochemistry for sustainable energy ...

### Platinum-based electrocatalysts: advances in synthesis

Abstract Electrocatalysts are pivotal in the realms of energy conversion and storage systems, serving as a cornerstone for the advancement of renewable energy technologies. ...



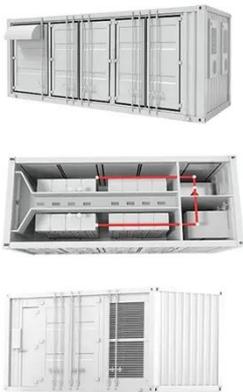
### platinum catalysis for energy storage batteries

High energy storage capabilities of  $\text{CaCu}_3\text{Ti}_4\text{O}_{12}$  for paper-based zinc-air battery ... To assess the performance of the as-prepared catalyst in energy storage application, Two different ...

### Carbon Semi-Tubes for

## Electrochemical Energy Catalysis

This perspective introduces the progress of advanced carbon nanostructures, the success of CST-based non/low noble metal (platinum) catalysts for electrocatalysis, and the ...



### An ultra-low platinum loading ORR ...

The oxygen reduction reaction (ORR) plays a crucial role in key processes of fuel cells and zinc-air batteries. To enable ...

## Integrated platinum-fullerene nanocatalyst as efficient ...

Efficient and robust platinum-carbon electrocatalysts are of great significance for long-term service of high-performance Li-O<sub>2</sub> batteries. Herein we developed an ultra-low ...



### An ultra-low platinum loading ORR electrocatalyst with high ...

The oxygen reduction reaction (ORR) plays a crucial role in key processes of fuel cells and zinc-air batteries. To enable commercialization, reducing the ...

platinum (Pt) content ...



## Recognition and Application of Catalysis in ...

With the exponentially increasing requirement for cost-effective energy storage systems, secondary rechargeable batteries have become ...



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## Integrated platinum-fullerene nanocatalyst as efficient

Efficient and robust platinum-carbon electrocatalysts are of great significance for long-term service of high-performance Li-O batteries. Herein we developed an ultra-low ...

## Catalysts for Clean Energy Conversion and Storage

Clean energy conversion and storage technologies, such as fuel cells, metal-air batteries and water-splitting, are currently under intensive investigation

for their high efficiency, ...

**DETAILS AND PACKAGING**



**Recognition and Application of Catalysis in Secondary ...**

With the exponentially increasing requirement for cost-effective energy storage systems, secondary rechargeable batteries have become a major topic of research interest ...

**Outstanding platinum group metal-free bifunctional ...**

Developing highly active and durable catalysts for zinc-air batteries (ZAB) is critical for energy conversion and storage. Herein, we prepared Fe-N-C catalysts at a kilogram scale ...



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