

Polyoxometalates

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From confined growth to enhanced peroxidase-like activity:
Nucleation of a phosphate-mediated $\text{Fe}^{\text{III}}\text{-Ce}^{\text{III}}$ -oxo cluster
inside the $\{\text{P}_8\text{W}_{48}\}$ nanoreactor



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Highlight

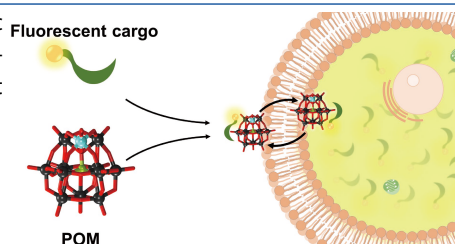
Superchaotropic polyoxometalates as membrane carriers

Aleksandar Kondinski*

Polyoxometalates, **2024**, 3, 9140058

<https://doi.org/10.26599/POM.2024.9140058>

Low-charged, superchaotropic polyoxometalates serve as cross-membrane carriers of fluorescent cargo, making cells shine.



Review article

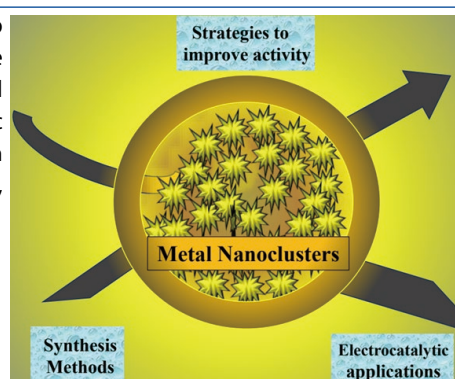
Advances in coinage metal nanoclusters: From synthesis strategies to electrocatalytic performance

Piracha Sanwal, Ali Raza, Yu-Xin Miao*, Brock Lumbers*, and Gao Li*

Polyoxometalates, **2024**, 3, 9140057

<https://doi.org/10.26599/POM.2024.9140057>

This paper highlights the relationship of the catalytic mechanism's structure and performance over the metal nanoclusters in the electrocatalytic reactions, such as oxygen reduction reaction, hydrogen evolution reaction, and oxygen evolution reaction.



Research articles

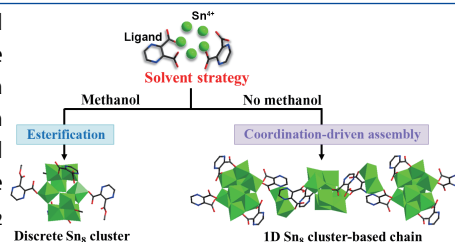
Hierarchical assembly of discrete Sn_8 -oxo cluster and extended structure regulated by solvent strategy

Yu Su, Wei-Juan Chen, Qian Zhou, Yu Zhu*, Ya-Pan Wu, and Dong-Sheng Li*

Polyoxometalates, **2024**, 3, 9140059

<https://doi.org/10.26599/POM.2024.9140059>

The novel discrete Sn_8 -oxo cluster and its extended structure were hierarchically assembled using a solvent strategy in different reaction pathways. In addition to the structural correlation, the extended structure exhibits better electrocatalytic CO_2 reduction activity than the discrete cluster.



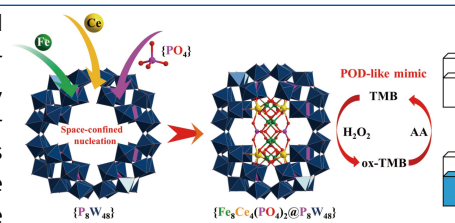
From confined growth to enhanced peroxidase-like activity: Nucleation of a phosphate-mediated Fe^{III} - Ce^{III} -oxo cluster inside the $\{\text{P}_8\text{W}_{48}\}$ nanoreactor

Hong-Xin Sheng, Bo-Yang Lin, Chao-Qin Chen, Jing Du, and Peng Yang*

Polyoxometalates, **2024**, 3, 9140060

<https://doi.org/10.26599/POM.2024.9140060>

The adoption of space-confined synthetic approach yielded a $\{\text{P}_8\text{W}_{48}\}$ -archetypal host-guest assembly, wherein a multi-component PO_4^{3-} -mediated Fe^{III} - Ce^{III} -oxo cluster is pocketed. Thanks to the Fenton-active metallic additives, the as-made polyanion behaved an enhanced peroxidase (POD)-like activity for application in colorimetric sensing of ascorbic acid in high efficiency.

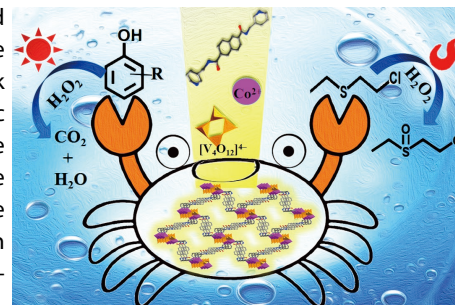


Front Cover

New two fold interpenetrating 3D polyoxovanadate-based metal-organic framework as bifunctional catalyst for the removal of 2-chloroethyl ethyl sulfide and phenolic compounds

Shuang Li, Yuan Zheng, Guo-Cheng Liu*, Xiao-Hui Li, Zhong Zhang*, and Xiu-Li Wang*

A new three-dimensional (3D) 2-fold interpenetrating polyoxovanadate (POV)-based metal-organic framework shows satisfying catalytic performances for the selective oxidation of 2-chloroethyl ethyl sulfide (CEES) to the corresponding sulfoxide (CEESO) and photodegradation toward phenol, 2-chlorophenol and *m*-cresol under visible light.

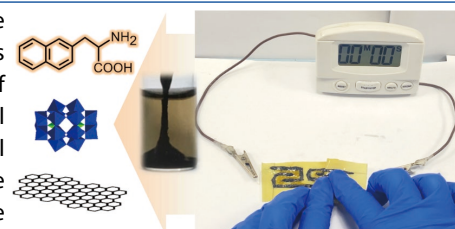


Polyoxometalates, **2024**, 3, 9140061
<https://doi.org/10.26599/POM.2024.9140061>

Taming of heteropoly acids into adhesive electrodes using amino acids for the development of flexible two-dimensional supercapacitors

Chuanling Mu, Zhanglei Du, and Wen Li*

Heteropoly acids-based conductive adhesives have been explored as electrodes for the construction of flexible two-dimensional supercapacitors (SCs). These functional adhesives enable the flexible SCs to be integrated in series with metal-free interconnects and hold 92% capacitance retention during mechanical deformation.

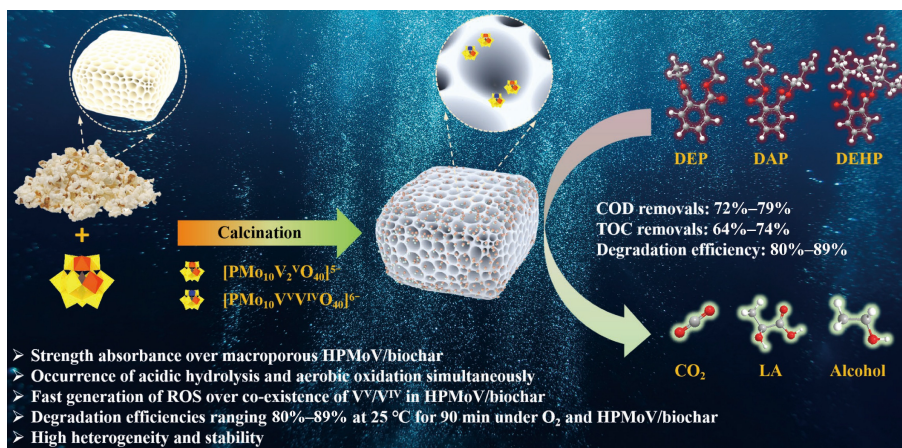


Polyoxometalates, **2024**, 3, 9140062
<https://doi.org/10.26599/POM.2024.9140062>

Fabrication of macroporous POMs/biochar materials for fast degradation of phthalic acid esters through adsorption coupled with aerobic oxidation

Qiwen Wang, Jiaxin Wang, Dan Zhang*, Yuannan Chen, Jian Wang, and Xiaohong Wang*

Macroporous $H_5PMo_{10}V_2O_{40}(n)$ /biochar (abbreviated as HPMoV(*n*)/biochar, where *n* is the loading amount of HPMo: 12 wt.%, 28 wt.%, 44 wt.%, 53 wt.%, and 63 wt.%) featured a double-functional sites of strong Brønsted acidity and redox property, biochar promoting electron transfer between polyanion and phthalic acid esters (PAEs), generation of reactive oxygen species (ROS) confined inside the pores.



Polyoxometalates, **2024**, 3, 9140064
<https://doi.org/10.26599/POM.2024.9140064>