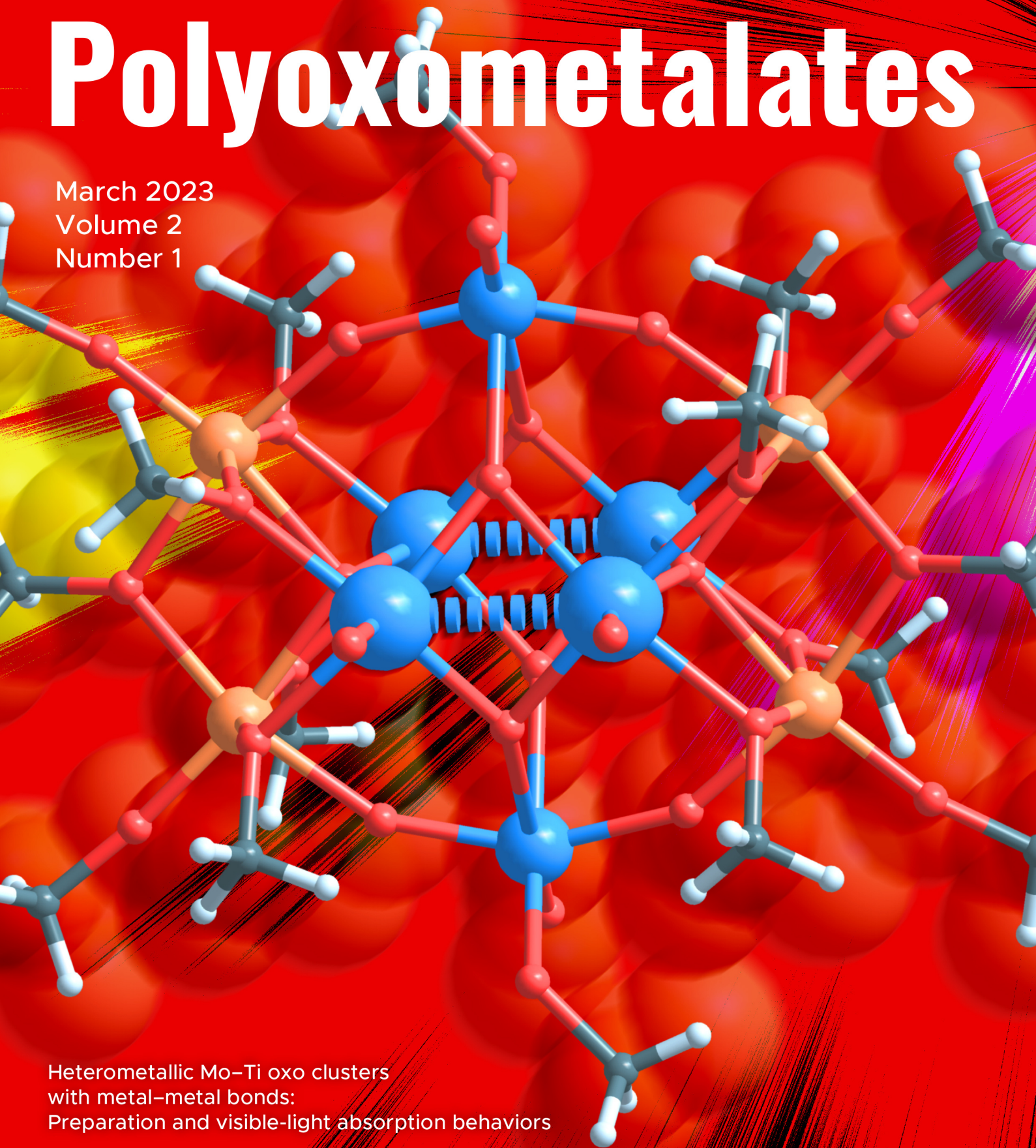


Polyoxometalates

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Number 1



Heterometallic Mo-Ti oxo clusters
with metal-metal bonds:
Preparation and visible-light absorption behaviors



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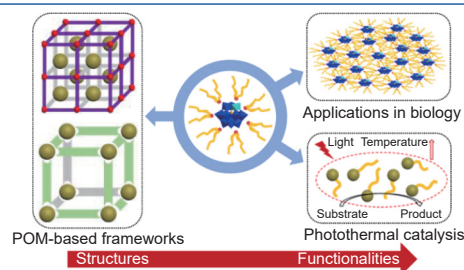
Review articles

Perspective of polyoxometalate complexes on flexible assembly and integrated potentials

Bao Li and Lixin Wu*

Polyoxometalates, **2023**, 2, 9140016
<https://doi.org/10.26599/POM.2022.9140016>

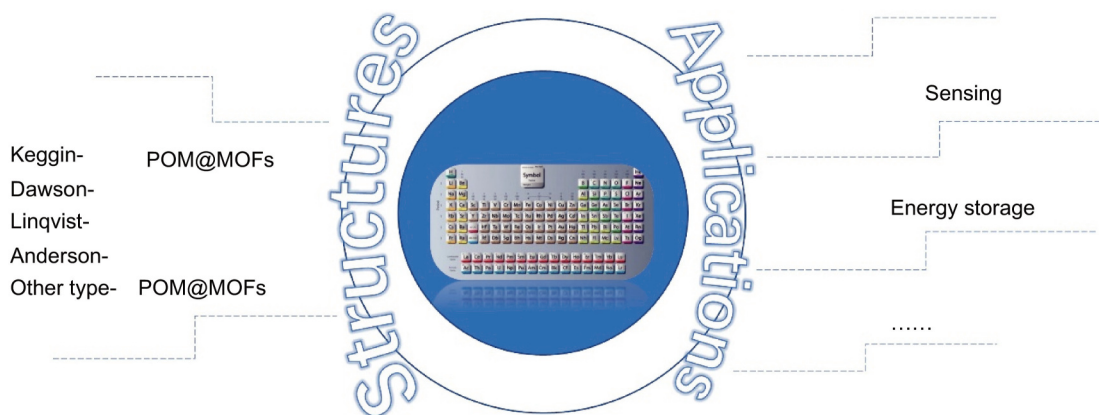
The complexation of organic components and polyoxometalates (POMs) through covalent bond and noncovalent interactions creates various hybrids possessing unique structures and functions as well as attractive applications. In this perspective, important potentials of POM complexes in the fields of functional rigid/flexible frameworks, biomaterials, and photothermal catalysis are discussed and summarized, which show great value in the broad areas.



State-of-the-art advances in the syntheses, structures, and applications of polyoxometalate-based metal-organic frameworks

Yan Zhang, Yifan Liu, Dan Wang, Jiancai Liu*, Junwei Zhao*, and Lijuan Chen*

Recent progresses in syntheses, structural achievements and potential applications of polyoxometalate-based metal-organic frameworks are summarized and personal outlook and viewpoints on this field have been given.



Polyoxometalate-based metal-organic frameworks

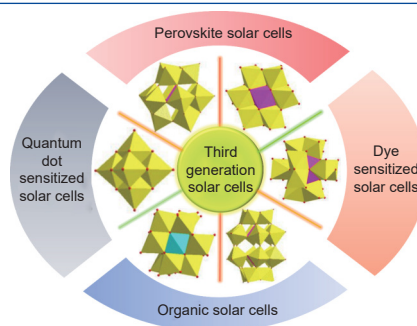
Polyoxometalates, **2023**, 2, 9140017
<https://doi.org/10.26599/POM.2022.9140017>

Application of polyoxometalates in third-generation solar cells

Qiu Zhang, Fengyan Li*, and Lin Xu*

Polyoxometalates, **2023**, 2, 9140018
<https://doi.org/10.26599/POM.2022.9140018>

In this review, we summarize the research progress of various polyoxometalates (POMs) molecules and their derived POMs-based nanomaterials in enhancing the performance of quantum dot-sensitized solar cells (QDSSCs), dye-sensitized solar cells (DSSCs), perovskite solar cells (PSCs), and organic solar cells (OSCs). Meanwhile, the great development prospect of POMs in the field of photovoltaic devices in the future is forecasted.

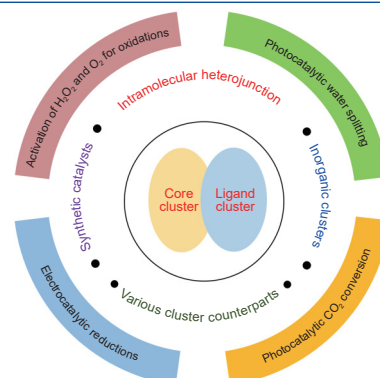


Metal-oxide clusters with semiconductive heterojunction counterparts

Guanyun Zhang and Yifeng Wang*

Polyoxometalates, **2023**, 2, 9140020
<https://doi.org/10.26599/POM.2023.9140020>

Intramolecular heterojunction compounds, which are composed of core clusters and ligand clusters, were used as thermocatalysts or photocatalysts in the typical catalytic reactions, such as selective oxidation of organics with H_2O_2 or O_2 and photocatalytic water splitting, which yielded outstanding catalytic performance.



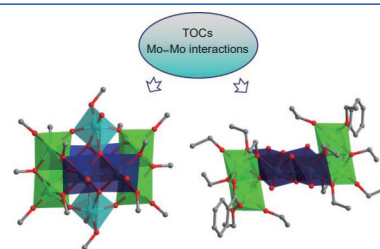
Research articles

Heterometallic Mo–Ti oxo clusters with metal–metal bonds: Preparation and visible-light absorption behaviors

Weizhou Chen, Xiaofeng Yi*, Jian Zhang, and Lei Zhang*

Polyoxometalates, **2023**, 2, 9140013
<https://doi.org/10.26599/POM.2022.9140013>

Electron-rich $\text{Mo}^{\text{V}}\text{--}\text{Mo}^{\text{V}}$ pairs in heterometallic titanium-oxo clusters bring in effective visible light absorption and significantly reduce optical band gaps.



Front Cover

Zwitterion-dissociated polyoxometalate electrolytes for solid-state supercapacitors

Dongming Cheng, Zhixin Gao, Wenwen Wang, Siqi Li, Bo Li, and Hong-Ying Zang*

Polyoxometalates, **2023**, 2, 9140019
<https://doi.org/10.26599/POM.2023.9140019>

A zwitterion is used as a molecular additive to enhance the solubility and dissociation of polyoxometalates (POMs) in gel electrolytes for solid-state supercapacitors. The $\text{H}_3\text{PMo}_{12}\text{O}_{40}$ or $\text{H}_4\text{SiMo}_{12}\text{O}_{40}$ with high redox activity is selected to achieve a single POMs species of gel electrolyte with both high proton conductivity and redox activity by the addition of ampholytic zwitterion.

