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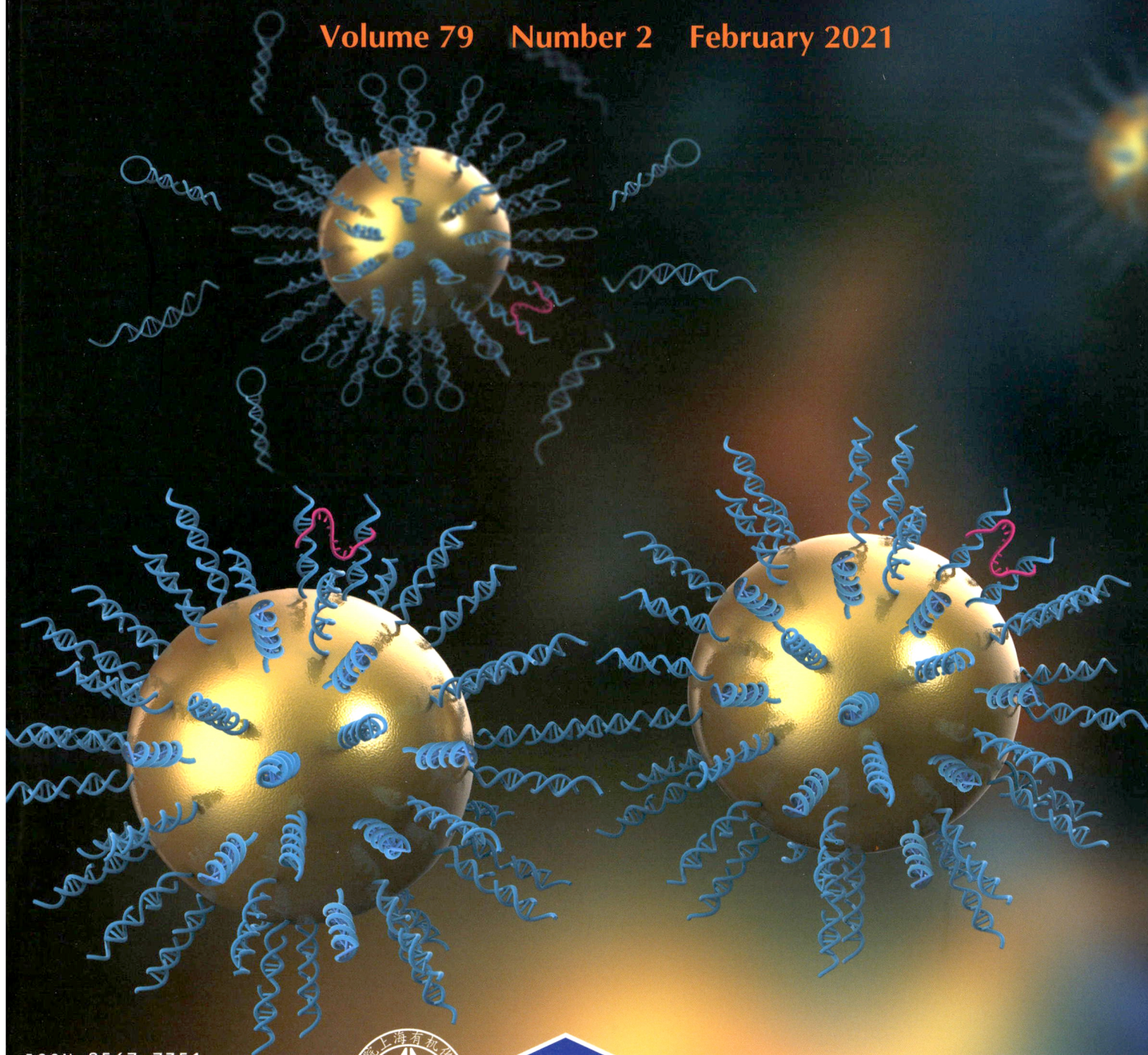


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(Huaxue Xuebao)

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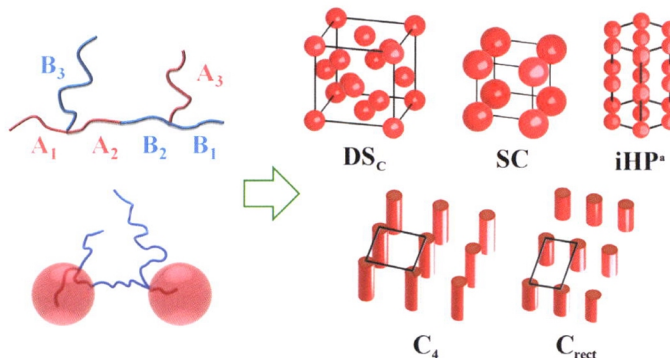
* 通信联系人.

On the cover: DNA walker is a programmable and sophisticated DNA nanomachine with dynamic behaviors. By integrating the bipedal DNA walker with the DNA-functionalized gold nanoparticle assembly system, a time-dependent orderly assembly strategy of gold nanoparticles has been developed. This strategy may have potential in the fabrication of functional superlattice nanomaterials at a constant temperature. [Haojun Liang *et al.* on page 192-199.]



Account

“Bridge” Make Differences to the Self-Assembly of Block Copolymers



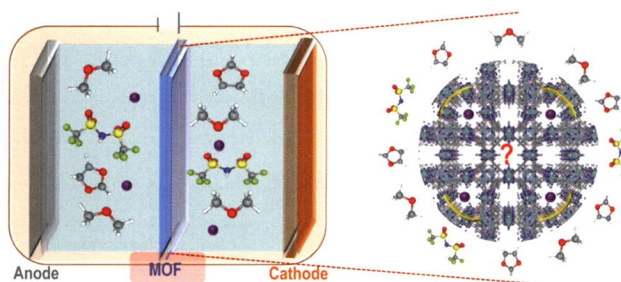
Weihua Li*

Acta Chim. Sinica **2021**, 79(2), 133-138

Synergistic effect of stretched bridging block and released packing frustration stabilizes a number of nonclassical low-coordinated spherical phases.

Perspective

Applications of Metal-organic Frameworks (MOFs) Materials in Lithium-ion Battery/Lithium-metal Battery Electrolytes



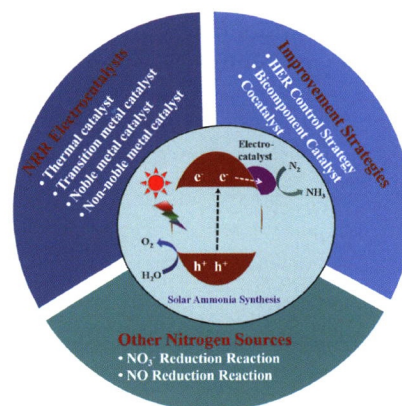
Zhi Chang, Yu Qiao, Huijun Yang, Han Deng, Xingyu Zhu, Ping He, Haoshen Zhou*

Acta Chim. Sinica **2021**, 79(2), 139-145

Benefit from their metal sites and nano/subnano channels, metal-organic frameworks (MOFs) were employed in lithium-ion batteries/lithium-metal batteries to regulate the configurations of various electrolytes and finally improve the electrochemical performances of battery systems.

Review

Recent Progress on Electrocatalytic Synthesis of Ammonia Under Ambient Conditions

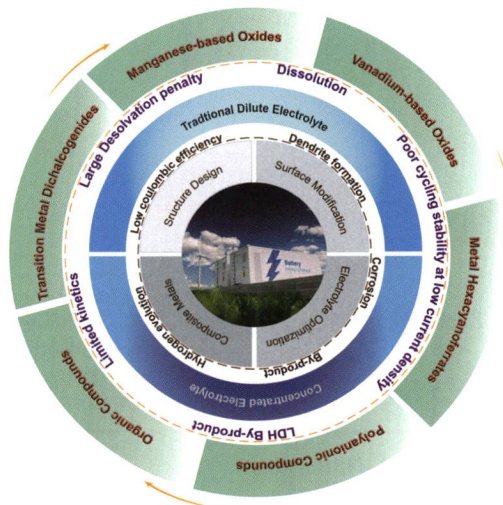


Su Zhan, Fuxiang Zhang*

Acta Chim. Sinica **2021**, 79(2), 146-157

The research progress of electrocatalytic N_2 reduction reaction (NRR) from the perspective of solar energy conversion is introduced in this review, including different NRR electrocatalyst, performance improvement strategies and other nitrogen sources for ammonia synthesis.

Research Progress and Challenge of Aqueous Zinc Ion Battery



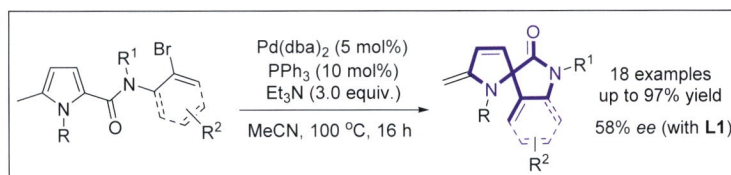
Lu Zhang, Wenfeng Wang, Hongming Zhang, Shumin Han*, Limin Wang*

Acta Chim. Sinica **2021**, 79(2), 158-175

Aqueous zinc ion batteries (AZIBs) as an emerging battery energy storage technology show good application value and prospect in large-scale energy storage. The currently important progress in cathode and anode materials and electrolyte used in AZIBs is presented, and the scientific challenges and corresponding strategies are summarized in this review.

Communication

Palladium-Catalyzed Heck Reaction of Endocyclic Conjugated C=C Bonds of Pyrroles



Bo Zhou, Renxiao Liang, Zhongyan Cao, Pinghai Zhou, Yixia Jia*

Acta Chim. Sinica **2021**, 79(2), 176-179

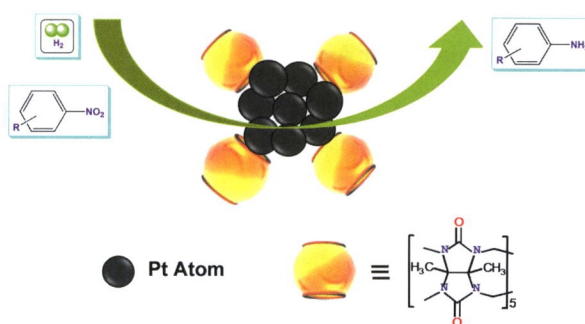
A palladium-catalyzed intramolecular Heck reaction of the endocyclic conjugated C=C bonds of pyrroles is developed, which accessed a range of 3,2'-spiropyrrolidine-2-oxindole derivatives in good to excellent yields. A preliminary asymmetric reaction leads to product **2b** in 58% *ee* under the help of (*S*)-H₈-BINOL-based phosphoramidite ligand **L1**.

Article

Ultrafine Platinum Nanoparticles Derived from Supramolecular Crystal for Catalytic Hydrogenation of Nitroarenes

Xiaomeng Zhang, Xiya Li, Wanfeng Xiong, Hongfang Li*, Rong Cao

Acta Chim. Sinica **2021**, 79(2), 180-185

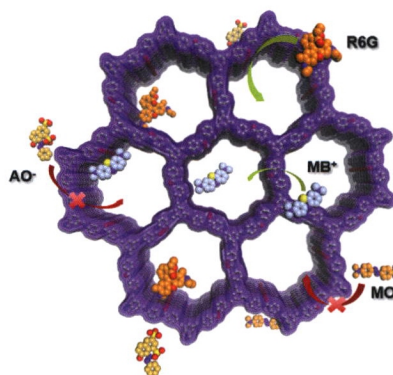


Ultrafine Pt nanoparticles (NPs) have been successfully synthesized through *in-situ* reduction of crystalline supramolecular assemblies constructed by Me₁₀CB[5] and [PtCl₆]²⁻. The Pt NPs exhibit high activity, stability and chemoselectivity towards catalytic hydrogenation of nitroarenes.

A Novel Amide-functionalized Covalent Organic Framework for Selective Dye Adsorption

Jing Fang, Wenjuan Zhao, Minghao Zhang, Qianrong Fang*

Acta Chim. Sinica **2021**, 79(2), 186-191

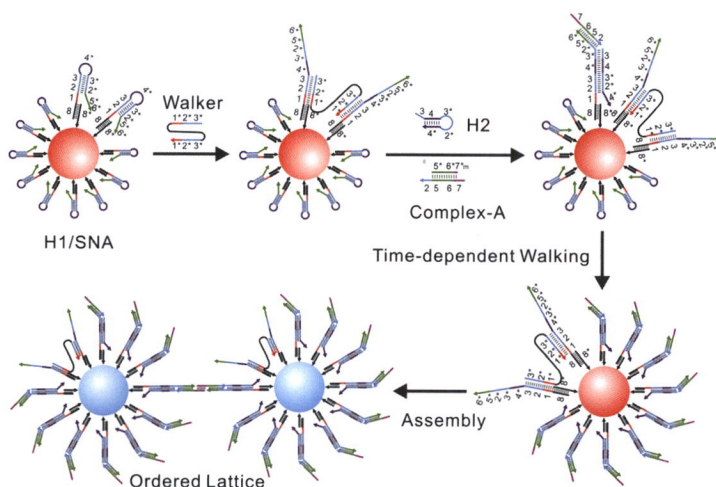


A novel amide-functionalized two-dimensional covalent organic framework (2D COF, JUC-578) with high crystallinity, uniform morphology and 1D mesoporous channels can selectively adsorb cationic dyes, and these results were attributed to the electrostatic interaction between the electron donor nitrogen in the skeleton and the electron-deficient dyes as well as other weak interactions (hydrogen bonding, coupling, etc.).

DNA Walker-Programmed Nanoparticle Superlattice

Yijun Guo, Bing Wei, Xiang Zhou, Dongbao Yao*, Haojun Liang*

Acta Chim. Sinica **2021**, 79(2), 192-199

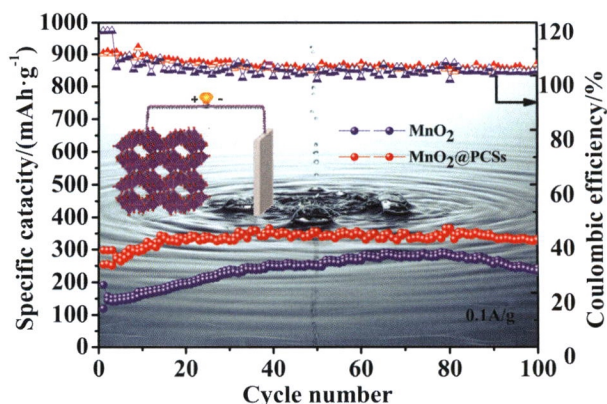


The time-dependent bipedal DNA walker can continuously walk on the spherical nucleic acid (SNA) surface under programming of the catalytic hairpin assembly reaction, accompanied by the generation of active sticky ends on SNA surface to induce the assembly of SNAs to form ordered superlattices synchronously.

Preparation of α - MnO_2 Nanorods/Porous Carbon Cathode for Aqueous Zinc-ion Batteries

Yanli Li, Dandan Yu, Sen Lin, Dongfei Sun*, Ziqiang Lei

Acta Chim. Sinica **2021**, 79(2), 200-207

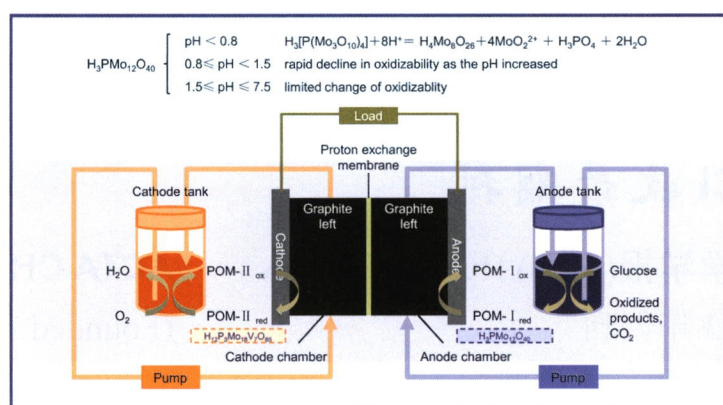


α - MnO_2 nanorods/porous carbon nanosheets composite were prepared by a simple hydrothermal/dispersion strategy. The composite with a three-dimensional network structure and high conductivity exhibits high capacity, excellent rate performance and long cycle-life in aqueous zinc-ion batteries.

Optimization Mechanism for Operational Conditions of Biomass Liquid-Catalyst Fuel Cell

Shan Jiang, Huan Li*

Acta Chim. Sinica **2021**, 79(2), 208-215

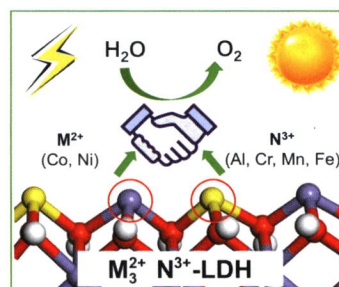


When the pH of anolyte was less than 1.5, a moderate anolyte acidification improved the oxidizability of heteropoly acid greatly and accordingly enhanced the power density of liquid-catalyst fuel cell significantly.

Role of Synergistic Effect in Oxygen Evolution Reaction over Layered Double Hydroxide

Si Wang, Jialing Ma, Lifang Chen, Xin Zhang*

Acta Chim. Sinica **2021**, 79(2), 216-222



“《化学学报》2019 年度最有影响力论文奖”揭晓

为推动促进国内外化学期刊发展、加强化学工作者交流,根据《化学学报》编委会决议,设立“《化学学报》XX 年度最有影响力论文奖”。该奖对获奖人的国籍、居住地、单位、年龄等没有任何限制,由《化学学报》编委会根据文章年度 SCI 引用情况评出(参考影响因子计算规则,兼顾当年发表当年引用情况,按第 $n-2$ 年至第 n 年发表的文章在第 n 年引用情况排序),奖励通信作者荣誉证书、文章第一作者荣誉证书和奖金 1000 元。奖励 10 篇左右。已获奖的论文次年不再重复奖励。

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