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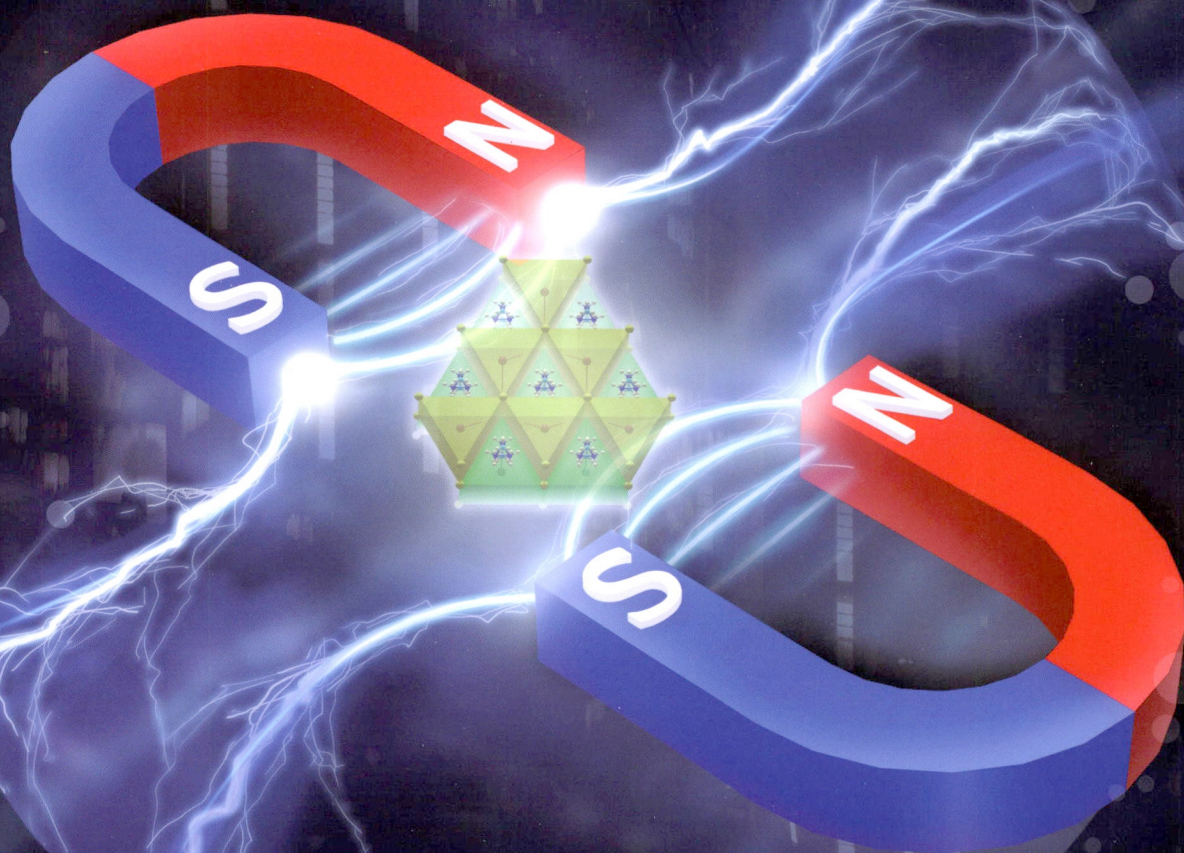
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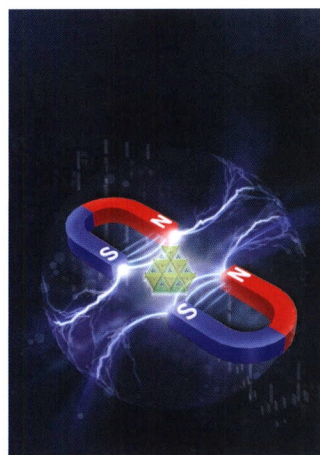
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研究论文

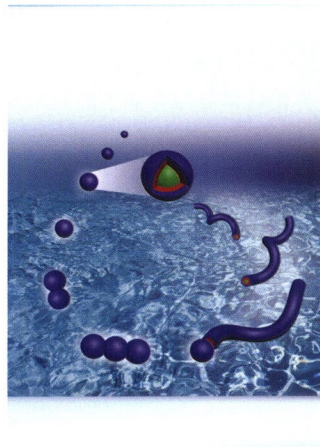
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* 通信联系人.

On the cover: A new N-type ferrimagnet $[\text{CH}_3\text{NH}_3]\text{[Fe}^{\text{II}}\text{Fe}^{\text{III}}(\text{HCO}_2)_6]$ shows large negative magnetization below T_N on cooling under the applied field even at 1 T. Further positive field regulated switchable magnetic dipoles switching of the magnetization and obvious huge positive exchange bias is also observed in the complex. [Bu, Xianhe *et al.* on page 1223-1228.]

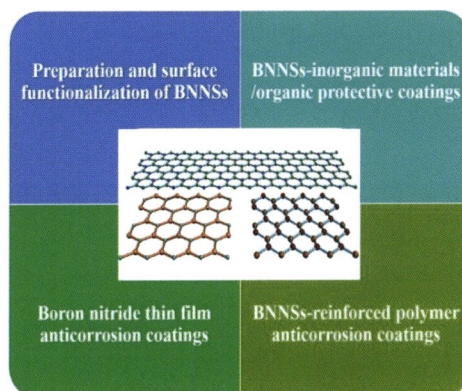


On the back cover: A pH-responsive poly(ethylene glycol)-*b*-poly(*L*-lysine)-*b*-poly(styrene) (PEG-*b*-PLL-*b*-PS) triblock copolymer forms spherical micelles, which are further used as the subunits to construct hierarchical 1D fiber-like supramolecular structure in water-THF mixed solvent. [Sun, Jing *et al.* on page 1235-1239.]



Review

Progress of Boron Nitride Nanosheets Used for Heavy-duty Anti-Corrosive Coatings



Sun, Jiulong; Cao, Wanwan; Wang, Ning; Gu, Lin*; Li, Weihua*

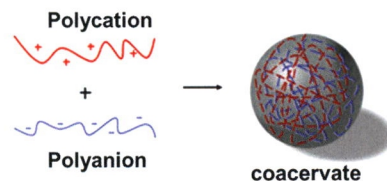
Acta Chim. Sinica **2020**, 78(11), 1139-1149

Boron nitride nanosheets (BNNs), also known as “white graphene”, is a two-dimensional material with excellent properties. It has great potential in the field of metal corrosion protection, due to its remarkable barrier properties against O_2 , H_2O and Cl^- and outstanding insulation.

Coacervate and Its Application in the Field of Artificial Cells

Yan, Lin; Ren, Yongshuo; Wang, Xuejing; Mu, Wei*; Han, Xiaojun*

Acta Chim. Sinica 2020, 78(11), 1150-1163

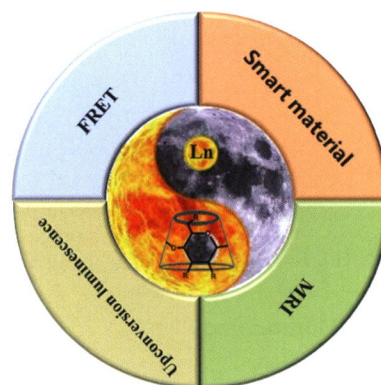


The formation mechanism of coacervates, classification of coacervates according to the raw materials are introduced in this review. And the recent progress of coacervates as artificial organelles and artificial cells are summarized.

Lanthanide Luminescent Supramolecular Assembly Based on Cyclodextrin

Zhou, Wei-Lei; Chen, Yong; Liu, Yu*

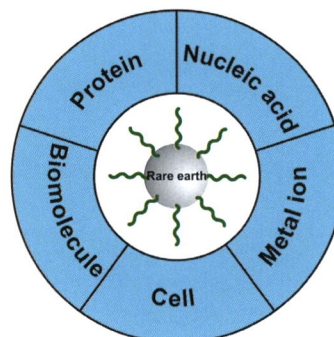
Acta Chim. Sinica 2020, 78(11), 1164-1176



Bioassay Applications of Aptamer-Functionalized Rare Earth Nanomaterials

Jia, Yiyi; Wang, Wenjie; Liang, Ling; Yuan, Quan*

Acta Chim. Sinica 2020, 78(11), 1177-1184

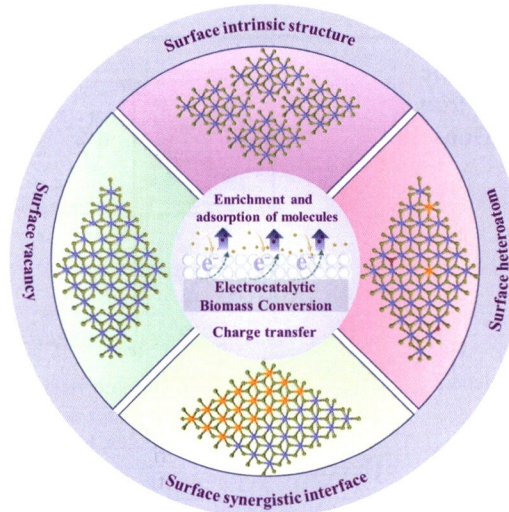


The research progress of aptamer-functionalized rare earth nanomaterials as nano fluorescent probes in the field of bioassays is reviewed, and the main types, properties, detection mechanisms and detection substances are briefly introduced.

Research Progress of Surface and Interface Chemistry Regulate Two-dimensional Materials for Electrocatalytic Biomass Conversion

Wang, Wenbin; Wen, Qunlei; Liu, Youwen*; Zhai, Tianyou*

Acta Chim. Sinica 2020, 78(11), 1185-1199

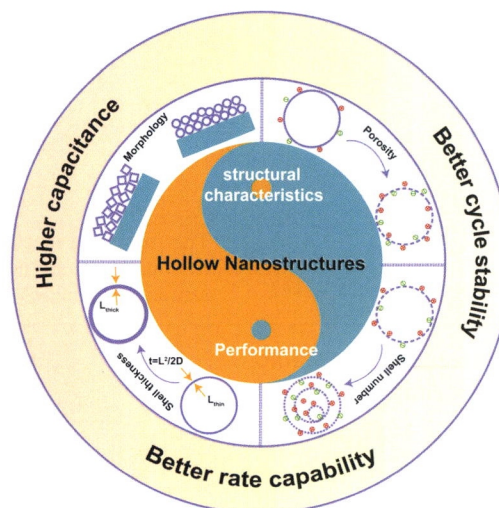


Surface and interface chemistry regulate two-dimensional materials, such as regulating intrinsic structure, generating vacancies, introducing heteroatom, and constructing synergistic interface, which can improve the key points of the electrocatalytic biomass conversion process (enrichment and adsorption of molecules, and charge transfer).

Hollow Nanostructures for Surface/Interface Chemical Energy Storage Application

Bi, Ruyi; Mao, Dan; Wang, Jiangyan*; Yu, Ranbo*; Wang, Dan*

Acta Chim. Sinica **2020**, 78(11), 1200-1212

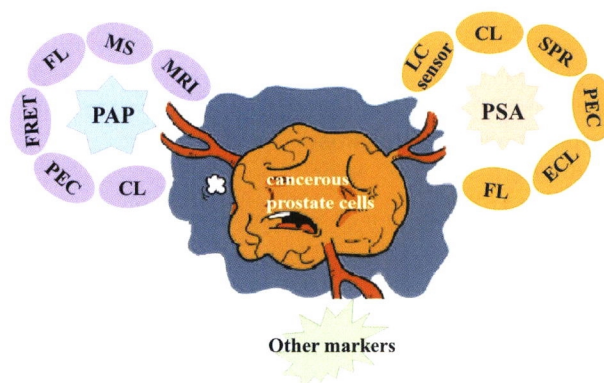


The recent progress of hollow nanostructures applied in surface/interface chemical energy storage is summarized in this review, and the challenges and perspectives in this area are also elaborated.

Advances in Analytical Methodology of Prostate Cancer Markers

Ma, Qiulin; Feng, Nan; Ju, Huangxian*

Acta Chim. Sinica **2020**, 78(11), 1213-1222



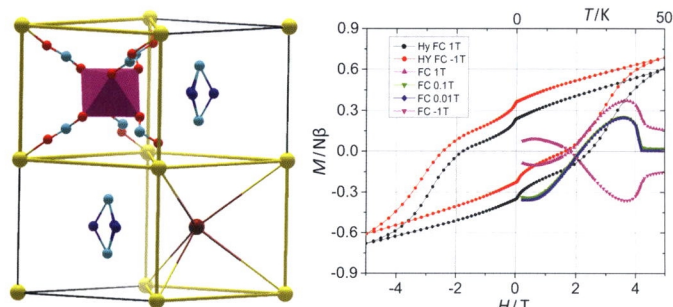
In this review the recent advances in the methodological study for detection of prostate cancer markers are reviewed. And the detection technologies of prostate-specific antigen and prostate acid phosphatase are emphatically introduced, which mainly contain colorimetric techniques, electrochemical methods, and fluorescence methods. On the basis of summarizing the research progress in this field in recent decades, the future development of prostate cancer marker analysis is prospected.

Communication

Construction, Magnetic and Dielectric Properties of Mixed-Valence Iron Formate with Methylammonium Guest

Zhao, Jiongpeng; Wang, Weiwei; Han, Songde; Li, Quanwen; Li, Na; Liu, Fuchen*; Bu, Xianhe*

Acta Chim. Sinica **2020**, 78(11), 1223-1228



Mixed-valence metal-formate $[\text{CH}_3\text{NH}_3]_n[\text{Fe}^{\text{III}}\text{Fe}^{\text{II}}(\text{HCO}_2)_6]_n$ (**1**) exhibits thermo-driven magnetic poles reversal under a large applied field of 1 T. And positive field regulated switchable magnetic dipoles, together with obvious huge positive exchange bias, is also observable in **1**.

Copper-Catalyzed Enantioselective Aminoboration of Styrenes with 1,2-Benzisoxazole as Nitrogen Source

Huang, Hao; Lin, Huaxin; Wang, Min; Liao, Jian*

Acta Chim. Sinica **2020**, 78(11), 1229-1234

Article

pH/solvent Tunable Hierarchical Nanostructures Assembled from an Amphiphilic Polypeptide-containing Triblock Copolymer

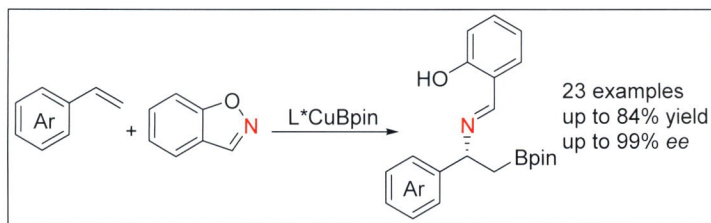
Li, Rongye; Khiman, Mehul; Sheng, Li; Sun, Jing*

Acta Chim. Sinica **2020**, 78(11), 1235-1239

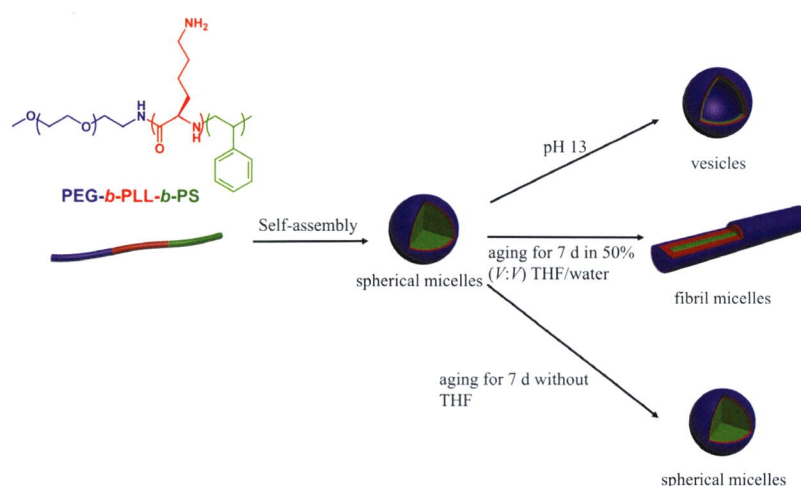
A Two-Photon Fluorescent Probe for Specific Imaging of Furin Activity in Living Cells and Tissues

Liu, Hongwen; Zhu, Longmin; Lou, Xiaofeng; Yuan, Lin; Zhang, Xiao-Bing*

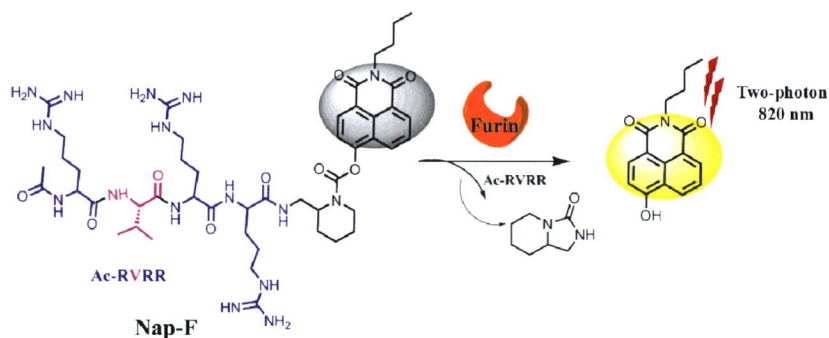
Acta Chim. Sinica **2020**, 78(11), 1240-1245



Utilizing 1,2-benzisoxazole as a new amine source, an enantioselective copper-catalyzed aminoboration of styrenes was presented. Under mild reaction conditions, the desired chiral β -aminoboronates were accessed with satisfied yields and enantioselectivities.

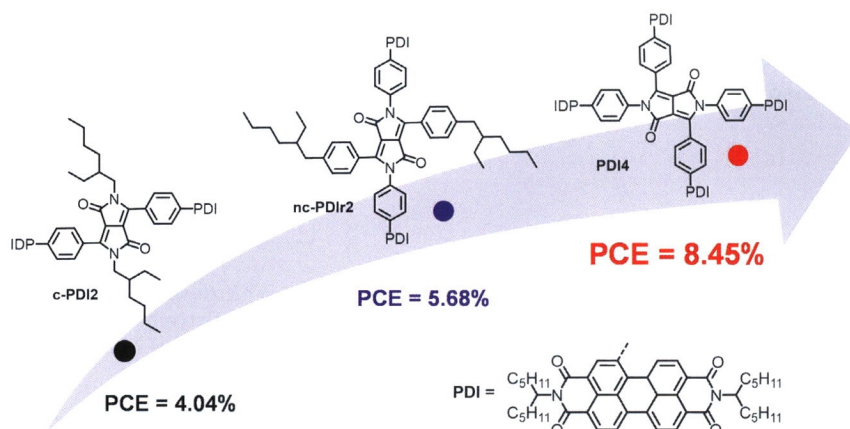


A poly(ethylene glycol)-*b*-poly(*L*-lysine)-*b*-poly(styrene) (PEG-*b*-PLL-*b*-PS) triblock copolymer assembled into spherical micelles in 1 : 1 volume ratio of tetrahydrofuran-water mixed solvent, in which the hydrophobic PS segment formed a core and the two hydrophilic segments PLL and PEG served as shell and corona, respectively. The micelles were further used as the subunits to construct 1D fiber-like hierarchical supramolecular structure. The obtained assemblies showed both pH and solvent dependence.



A furin-activatable two-photon fluorescent probe was developed firstly that allowed for detection and imaging of furin activity in live cells and tumor tissues.

Synthesis and Photovoltaic Properties of Perylene Diimide Based Small Molecular Acceptors with a Diketopyrrolopyrrole Core

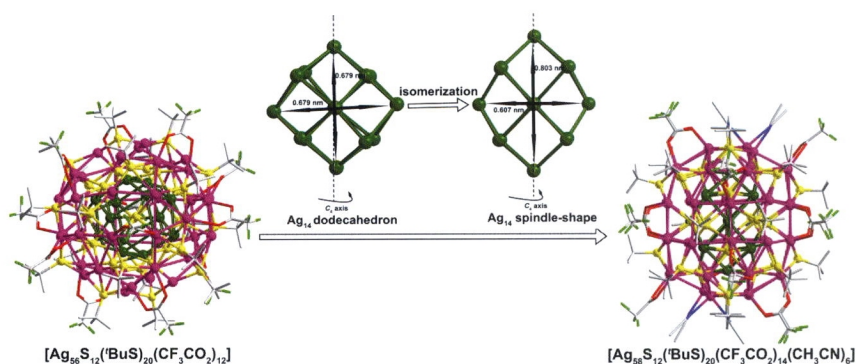


Hu, Yuhui; Wu, Wenlin; Yu, Liyang*; Luo, Kaijun*; Xu, Xiaopeng; Li, Ying; Peng, Qiang*

Acta Chim. Sinica **2020**, 78(11), 1246-1254

This work reported the design and synthesis of two-armed and four-armed 3D perylene diimide (PDI) derivatives with a diketopyrrolopyrrole (DPP) core for polymer solar cells. The four-armed **PDI4** featured with wider electron delocalization which delivered superior power conversion efficiency of 8.45%.

Formation of Spindle-Like Ag_{58} Cluster Induced by Isomerization of $[\text{Ag}_{14}]$

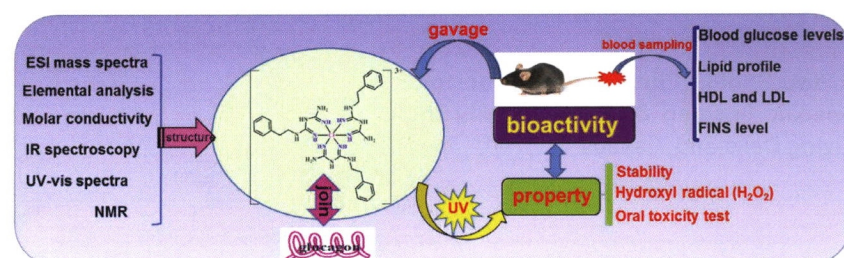


Shen, Yanglin; Jin, Junling; Duan, Guang-xiong; Xie, Yunpeng*; Lu, Xing*

Acta Chim. Sinica **2020**, 78(11), 1255-1259

The deformation of Ag_{14} core from dodecahedron to spindle shape causes the spherical silver(I)-thiolate cluster Ag_{56} to change to spindle-shaped Ag_{58} cluster.

Synthesis of A Novel Anti-diabetes Chromium(III) Complex and Investigation of Its Biological Activity and Mechanism



Dong, Jinlong*; Shen, Lazhen; Wen, Bin; Song, Zhen; Feng, Junjie; Liang, Gang; Liu, Bin; Yang, Binsheng*

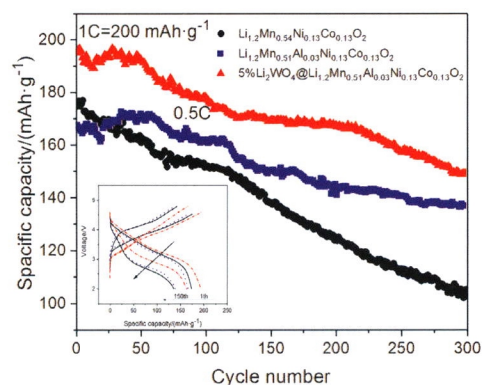
Acta Chim. Sinica **2020**, 78(11), 1260-1267

Chromium(III) complex was prepared, and characterized by elemental analysis (EA), electrospray ionization mass spectrometry (ESI-MS), infrared (IR), UV-vis and nuclear magnetic resonance (NMR) spectroscopy. Their stability and oxidation resistance were also studied. Meanwhile, C57 diabetic mouse model was established to explore its biological activity and toxicity. Then, the interaction between the complex and glucagon was studied by fluorescence spectra, the conditional binding constant K is $1.29 \times 10^5 \text{ L} \cdot \text{mol}^{-1}$.

Dual Effect of Aluminum Doping and Lithium Tungstate Coating on the Surface Improves the Cycling Stability of Lithium-rich Manganese-based Cathode Materials

Ren, Xuqiang; Li, Donglin*; Zhao, Zhenzhen; Chen, Guangqi; Zhao, Kun; Kong, Xiangze; Li, Tongxin

Acta Chim. Sinica **2020**, 78(11), 1268-1274



The cycle stability of the lithium-rich manganese-based positive electrode material modified by aluminum doping and lithium tungstate coating is greatly improved than that without modification.

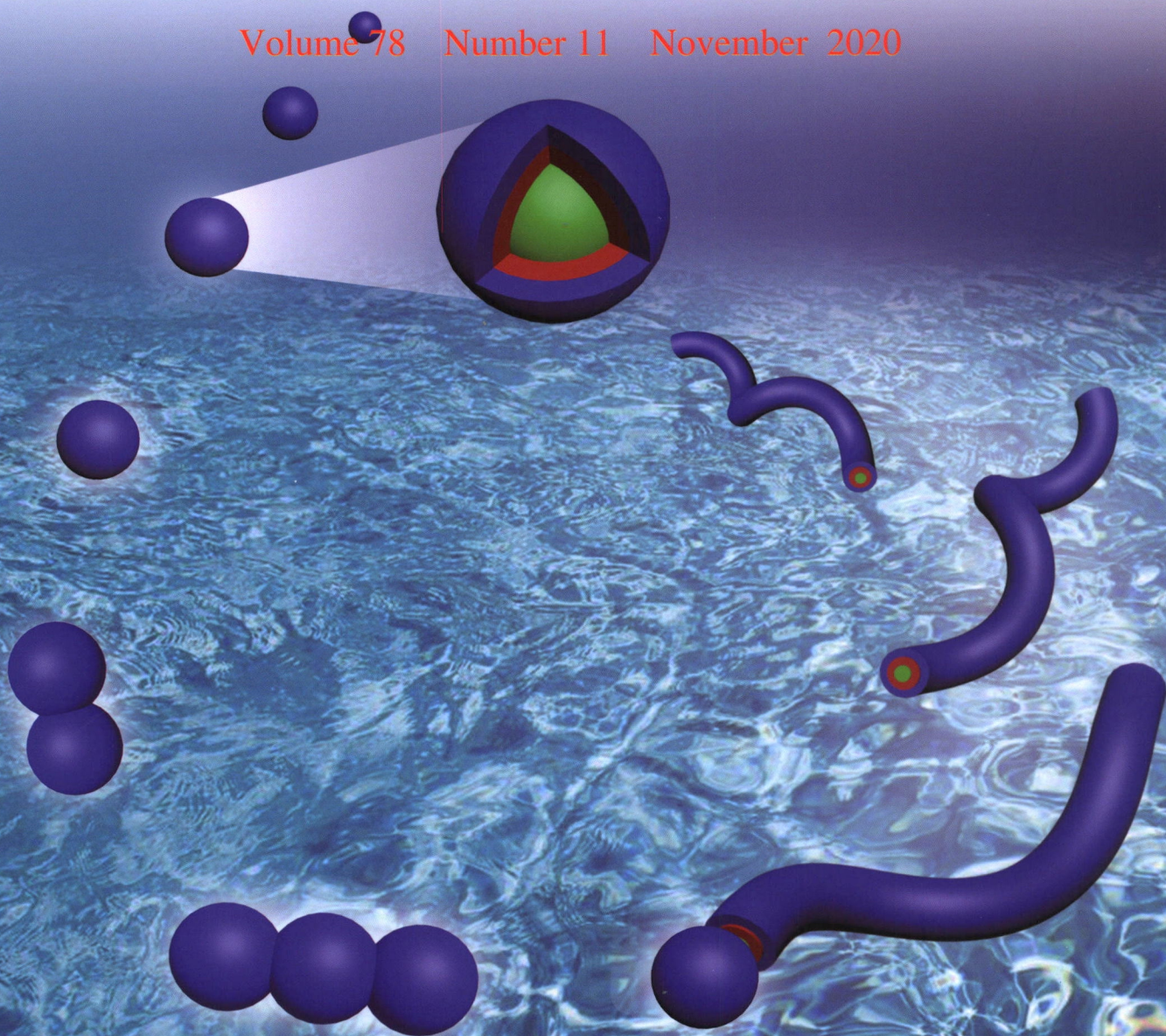


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万方数据

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