

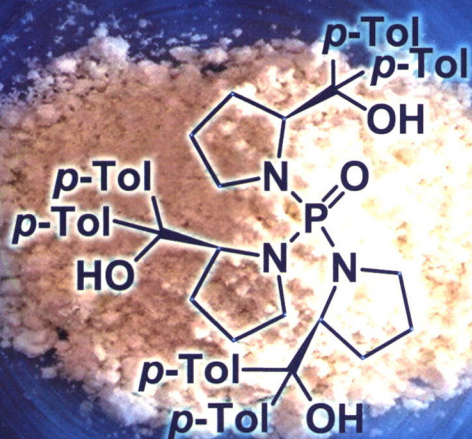
应用化学

2022

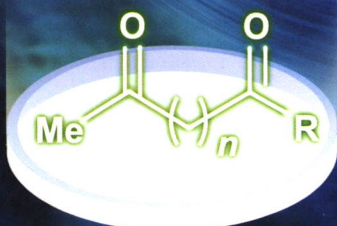
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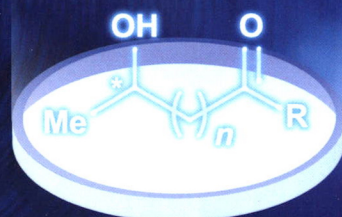
Chiral Phosphonamide Catalyst



$n = 2, 3, 4, 8$

$R = \text{OEt}, \text{O}^i\text{Pr}, \text{O}^t\text{Pr}, \text{O}^t\text{Bu}, \text{N}(\text{OMe})\text{Me}$

$\text{BH}_3 \cdot \text{THF}, \text{Ar}, 70^\circ\text{C}, 5 \text{ min}$



up to 88% yield
up to 95% ee

The asymmetric reduction of chain aliphatic ketoesters catalyzed by chiral phosphonamide catalyst is reported. The yield of the corresponding chiral hydroxy esters is up to 89% and the ee value is up to 95%.



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.....陈丽燕 谈东兴* 韩福社*

报道了手性磷酸胺剂催化链状酮酯化合物的不对称还原反应,产物手性羟基酯化合物的收率最高可达 89%,

对映体过量(*ee*)最高可达 95%。

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(责任编辑:孙智权 编排:张煜华)

*通讯联系人

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March 2022

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Asymmetric Reduction of Chain Aliphatic Ketoesters Catalyzed by
Tris[(*S*)- α , α -bis(4-methylphenyl)-2-pyrrolidine methanol]phosphonamide

CHEN Li-Yan, TAN Dong-Xing*, HAN Fu-She*

The asymmetric reduction of chain aliphatic ketoesters catalyzed by chiral phosphonamide catalyst is reported. The yield of the corresponding chiral hydroxy esters is up to 89% and the *ee* value is up to 95%.

For details see pp 425–438

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XU Di, DAI-Li*, YAO Wen-Zhi, YANG Guang-Rui, WANG Hai-Rong, SONG Peng-Fei, ZHU Yan-Song

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Applications of Transition Metal-doped Iron-based Nanoparticles in Biomedicine

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2022, 39(3):391-406

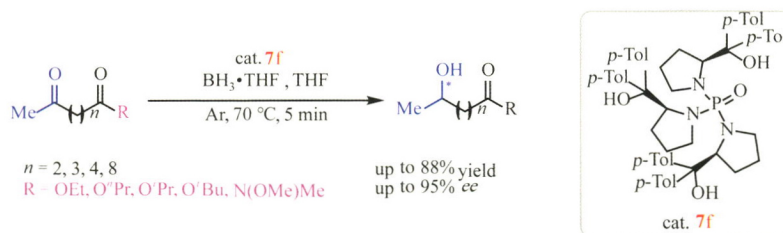
Progress of Mitochondria-Targeted Near-Infrared HClO/ClO⁻ Fluorescent Probes

HUANG Rui, YE Chang-Qing, LI Ya-Jun, CHIOU Mong-Feng, LI Da-Liang*, BAO Hong-Li*

2022, 39(3):407-424

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Asymmetric Reduction of Chain Aliphatic Ketoesters Catalyzed by Tris[(*S*)- α , α -bis(4-methylphenyl)-2-pyrrolidine methanol] phosphonamide

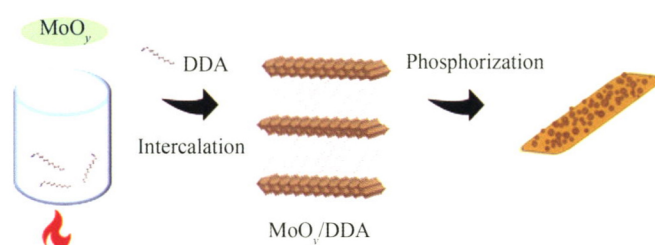


CHEN Li-Yan, TAN Dong-Xing*, HAN Fu-She*

The asymmetric reduction of chain aliphatic ketoesters catalyzed by chiral phosphonamide catalyst **7f** is reported. The yield of the corresponding chiral hydroxy esters is up to 89% and the *ee* value is up to 95%.

2022, 39(3):425-438

Preparation of Molybdenum Phosphide-based Catalyst and Its Application in Water Electrolysis

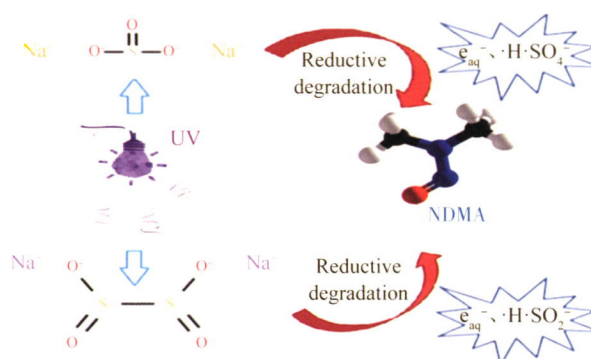


CUI Bo-Yang, WU Hong-Da, YU Zong-Bao, GENG Zong-Xing, REN Tie-Qiang, SHI Chun-Wei, YANG Zhan-Xu*

The “N-MoP/graphite” formed by *in-situ* carbonization and phosphating of lamellar MoO₃ intercalated with dodecyl amine (DDA) can effectively improve HER performance.

2022, 39(3):439-450

Reductive Degradation of *N*-Nitrosodimethylamine in Water by Ultraviolet Advanced Reduction Processes



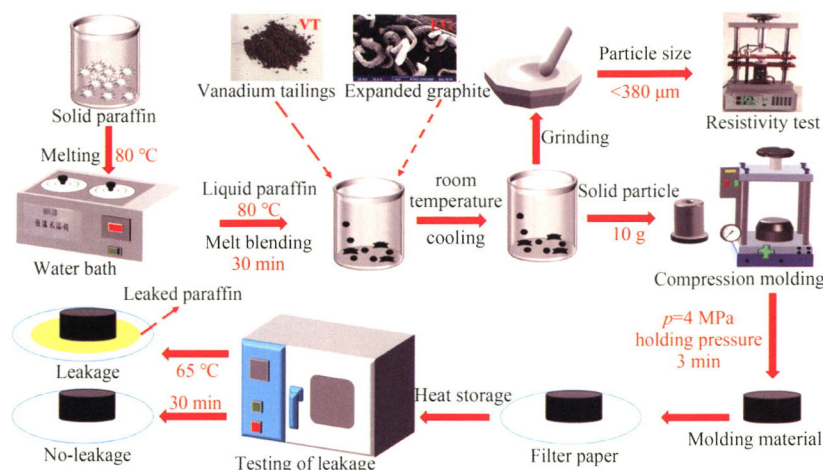
ZHA Xiao-Song*, ZHANG Lin, WENG Yuan-Jie, FENG Zhi-Liang, JIN Su-Wen

Two ultraviolet (UV) based advanced reduction processes—UV/Na₂SO₃ and UV/Na₂S₂O₄ were chosen to degrade NDMA and the highest NDMA removal efficiency (94.4%) was achieved under the weak acidity, high UV light intensity and nitrogen saturation condition.

2022, 39(3):451-460

Influence of Vanadium Tailings on the Thermal Stability and Electrical Conductivity of Expanded Graphite/Paraffin Composite Phase Change Materials

XU Zhong*, LI Jun, WU En-Hui, JIANG Yan

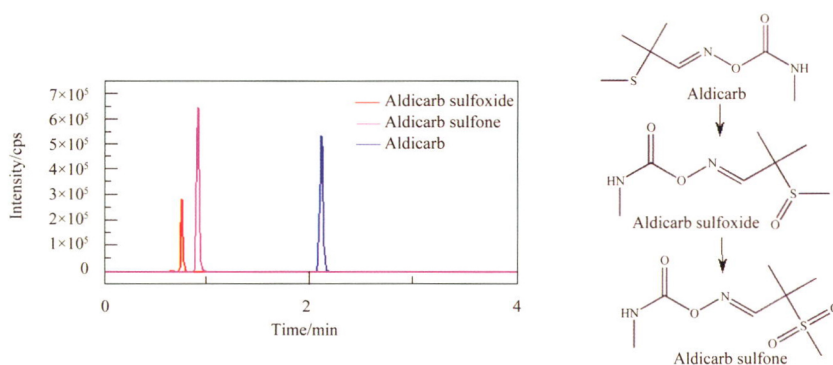


The vanadium tailings from Panzhihua are milled to the micron level by ball milling, used as a conductive strengthening agent and added to the expanded graphite/paraffin composite phase change material to expand its application range by using the conductivity of the composite phase change material.

2022 ,39(3):461-469

Determination of Aldicarb, Aldicarb Sulfoxide, Aldicarb Sulfone in Water by Solid Phase Extraction and UPLC-MS/MS with Isotope Dilution

SUN Hui-Jing*, CUI Dong-Ni

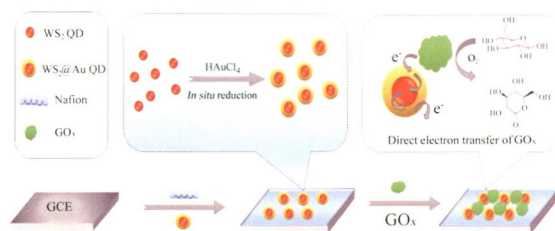


Aldicarb and its metabolites were determined by UPLC-MS/MS, by using isotope dilution combined with solid phase extraction, the accuracy and stability of the method were effectively improved.

2022 ,39(3):470-479

Facile One-Step Synthesis of $\text{WS}_2@Au$ Quantum Dot Composite by *in situ* Reduction and Its Sensing Application

PENG Hong-Zhen, ZHANG Yu, GUO Lin-Jie, SONG Wei*, LI Qing-Nuan*, MENG Xiang-Ying*



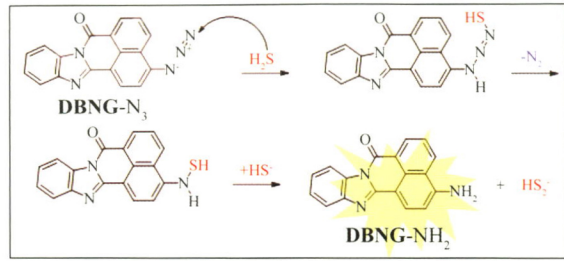
The $\text{WS}_2@Au$ QDs are prepared by a facile one step *in situ* reduction method and provide good microenvironment for glucose oxidase (GOx), which shows an enhanced direct electron transfer between GOx and the electrode surface.

2022 ,39(3):480-488

Fluorescent Probe for Rapid Detection of H₂S with Benzimidazole Naphthalimide as the Core

ZHANG Cheng-Lu*, WANG Yi-Ming, REN Zhi-Xuan, LI Lu, LI Yu-Qing, SONG Fu-Lu

2022 ,39(3):489-497

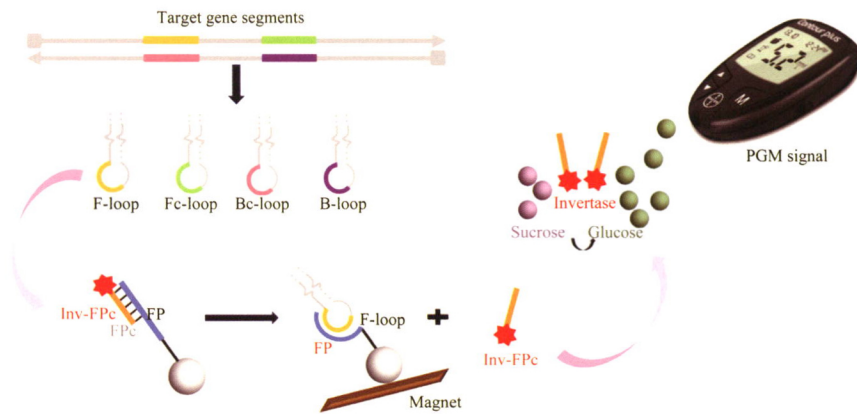


When H₂S is added, the azide group in DBNG is reduced to an amino group, which reduces the recovery of the D- π -A structure induced by the azide group and leads to a “turn-on” phenomenon in the fluorescence signal and a red shift, showing excellent fluorescence recognition performance of H₂S.

A Commercial Glucose Meter for Portable *in vitro* Molecular Diagnosis of Hepatitis B Virus

YU Jia-Xue, WANG Chang, YANG Mei-Ting, DU Yan*, LIU Chang*

2022 ,39(3):498-506



Coupling loop mediated isothermal amplification and nucleic acid circuits to glucose meter for the detection of hepatitis B virus.

(Executive Editor: SUN Zhi-Quan; Editing by ZHANG Yu-Hua)

* To whom correspondence should be addressed

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