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Syntheses, structures, and catalytic properties of three Ni(II)-based coordination polymers from 2,4,6-tris(3-pyridyl)-1,3,5-benzene ligand (English)

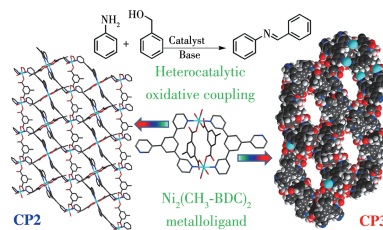
BAO Yu-Mei, CHEN Yan-He, XING Yuan-Yuan, ZHANG Jian-Yong, DENG Wei

DOI:10.11862/CJIC.2023.074

Chinese J. Inorg. Chem., **2023**,**39**(6):993-1004

Articles

Syntheses, structures, and catalytic properties of three Ni(II)-based coordination polymers from 2,4,6-tris(3-pyridyl)-1,3,5-benzene ligand (English)



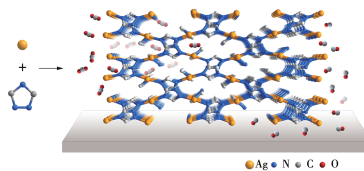
BAO Yu-Mei, CHEN Yan-He, XING Yuan-Yuan, ZHANG Jian-Yong, DENG Wei

Two coordination polymers (CPs) were obtained by using $\text{Ni}_2(\text{CH}_3\text{-BDC})_2$ as metalloligand, and **CP3** exhibited good catalytic activities for the oxidative coupling reaction of benzyl alcohols and aniline under solvent-free conditions.

DOI:10.11862/CJIC.2023.074

Chinese J. Inorg. Chem., **2023**,**39**(6):993-1004

Rapid synthesis of Ag-based metal-organic framework at room temperature for efficient electrocatalytic CO_2 reduction



CHE Yu-Can, CHENG Peng-Wei, ZHOU Yi, KE Fu-Sheng

Ag-based metal-organic framework with uncoordinated N can enrich CO_2 and conduct protons to accelerate the proton-coupled electron transfer (PCET) process, achieving efficient conversion of CO_2 to CO in an electrocatalytic CO_2 reduction reaction (CO_2RR).

DOI:10.11862/CJIC.2023.080

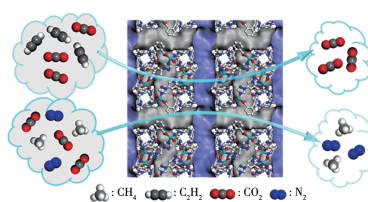
Chinese J. Inorg. Chem., **2023**,**39**(6):1005-1013

A microporous cobalt-based metal-organic framework for selective gas adsorption

GAI Shi-Peng, TIAN Jin-Dou, JIANG Fei-Long,
CHEN Qi-Hui, HONG Mao-Chun

DOI:10.11862/CJIC.2023.076

Chinese J. Inorg. Chem., **2023**,**39**(6):1014-1022



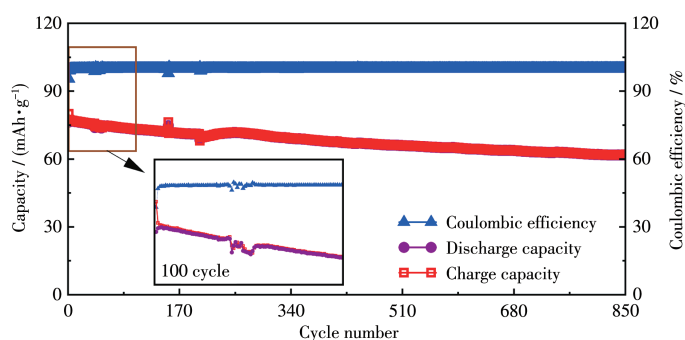
A novel metal - organic framework with polar micropores was prepared, which can not only selectively adsorb C_2H_2 from C_2H_2/CO_2 mixture but also selectively capture CO_2 from CO_2/N_2 and CO_2/CH_4 mixtures.

Synthesis and properties of
P2 - $Na_{2/3}Mn_{1/3}Bi_{1/3}Ni_{1/3}O_2$ as long - life and
high voltage sodium-ion battery cathode

MA Teng-Yue, AN Jin-Ling, ZHANG Peng,
LIU Jin-Rong, HE Wei-Yan

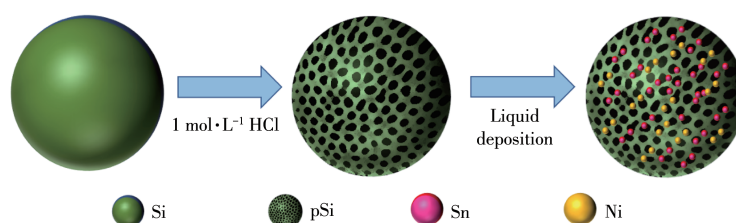
DOI:10.11862/CJIC.2023.077

Chinese J. Inorg. Chem., **2023**,**39**(6):1023-1030



Solution-phase synthesis of bimetallic
(Sn/Ni) doped porous silicon microspheres
with electrochemical lithium storage

XIAO Zi-Wei, XU Ze-Yu, WANG Jian-Ming



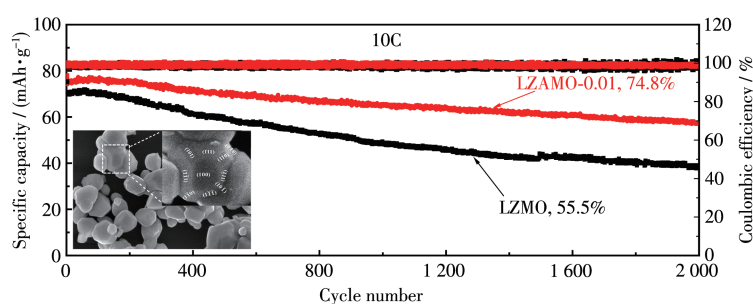
Novel bimetallic (Sn/Ni) doped porous silicon microspheres were fabricated from easily available low-cost Si-Al alloy precursors by a simple and scalable strategy with a solution-phase synthesis. Benefiting from the abundant three-dimensional porous structure and the substitution of Sn/Ni into Si lattice, the composite showed superior lithium storage performance.

DOI:10.11862/CJIC.2023.060

Chinese J. Inorg. Chem., **2023**,**39**(6):1031-1041

Synthesis and electrochemical properties
of truncated octahedral
 $LiZn_{0.08}Al_{0.01}Mn_{1.91}O_4$ cathode material by
solid-state combustion method

WANG Nian, LI Meng, JI Ying,
XIANG Ming-Wu, GUO Yu-Jiao, BAI Hong-Li,
LIU Xiao-Fang, GUO Jun-Ming



The Zn and Al co-doping can promote the development of crystal and the selective growth of crystal surfaces of spinel $LiMn_2O_4$ cathode materials, thus forming a truncated octahedral morphology $LiMn_2O_4$ cathode material with {111}, {110} and {100} crystal surfaces, which significantly improved its high rate performance and long cycle life.

DOI:10.11862/CJIC.2023.085

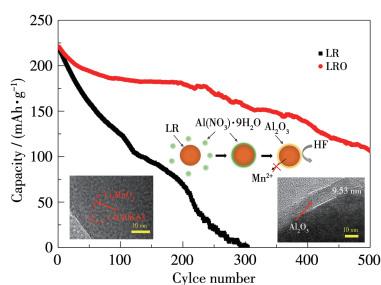
Chinese J. Inorg. Chem., **2023**,**39**(6):1042-1052

High temperature performances of lithium - rich manganese ternary cathode material modified by aluminum based compounds

WANG Zhen, LI Li, ZHANG Jun-Ting,
DENG Xiao-Long, LIU Yong-Feng

DOI:10.11862/CJIC.2023.066

Chinese J. Inorg. Chem., **2023**,**39**(6):1053-1060



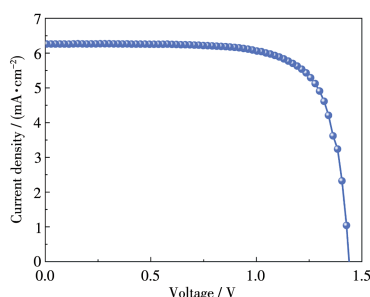
Al_2O_3 , AlF_3 , and AlPO_4 were used to modify $\text{Li}_{1.2}\text{Ni}_{0.133}\text{Co}_{0.133}\text{Mn}_{0.53}\text{O}_2$ (LR), and they can protect LR from corrosion and failure in high temperatures. A thin Al_2O_3 coating was generated on the surface of the material (LRO) with the lowest solid electrolyte interface film and charge transfer resistances, thus showing the best high-temperature electrochemical performance.

High-performance and stable perovskite solar cells prepared with a green bi-solvent method

ZHU Chen-Wei, JIN Yi-Nuo,
ZHANG Chun-Hong, CHEN Heng-Hui,
CHEN Shao-Tian, FU Yu-Ming, WU Yun-Jia,
SUN Wei-Hai

DOI:10.11862/CJIC.2023.084

Chinese J. Inorg. Chem., **2023**,**39**(6):1061-1071



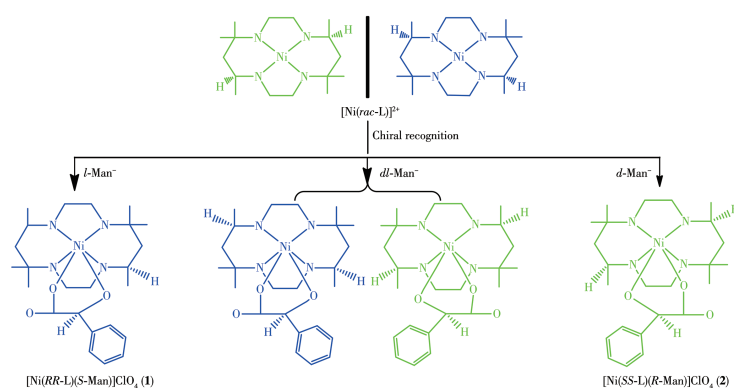
Based on bi-solvent system, we simplified the fabrication procedures and explored the spinning times to get high-quality CsPbBr_3 film.

Chiral recognition of mandelic acid and macrocyclic nickel(II) complexes

JIANG Ya-Nan, DENG Yuan-Huan,
WANG Qiong, TAN Ying-Zhi, OU Guang-Chuan

DOI:10.11862/CJIC.2023.073

Chinese J. Inorg. Chem., **2023**,**39**(6):1072-1078

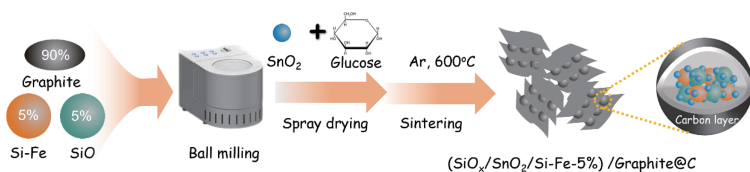


Electrochemical properties of Si-Fe incorporated SiO_x /graphite base anode materials

YUAN Tian-Xiang, TANG Ren-Heng,
LIU Jiang-Wen, XIAO Fang-Ming, WANG Ying,
ZENG Li-Ming

DOI:10.11862/CJIC.2023.068

Chinese J. Inorg. Chem., **2023**,**39**(6):1079-1090



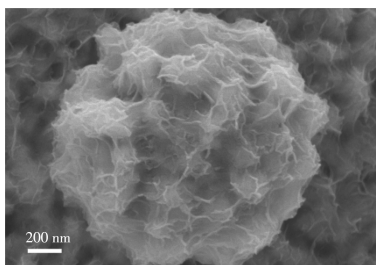
A composite anode material $(\text{SiO}_x/\text{SnO}_2/\text{Si-Fe-}\gamma)/\text{G}@C$ with graphite (G) as buffer and Si-Fe, SnO_2 as a fast Li^+ channel were successfully produced, which had capacity retention rate of 81.0% after 310 cycles, fast Li^+ diffusion and low volume expansion. Si-Fe plays an important role in this material.

Preparation and supercapacitor performance of Mo-doped NiMnSe₂

HAO Sheng-Yang, ZHANG Yu-Ting,
WANG Xiao-Qing

DOI:10.11862/CJIC.2023.072

Chinese J. Inorg. Chem., **2023**,**39**(6):1091-1102



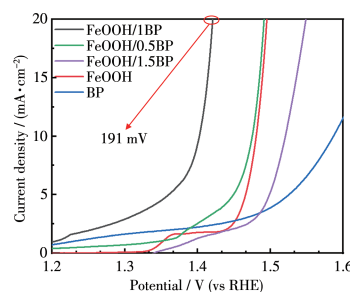
We applied a simple hydrothermal method to grow a Mo-doped NiMnSe₂ without binding reagent on the foam nickel, which achieves ultra-high specific capacitance, good rate performance and excellent cycle performance.

One-step synthesis of FeOOH/black phosphorus nano-composite: Synergistic achieving system's excellent oxygen evolution property

ZHU Ya-Bo, HUA Cheng-Ye, XIE Ting-Ting,
WANG Guang-Lan, FENG Pei-Zhong

DOI:10.11862/CJIC.2023.082

Chinese J. Inorg. Chem., **2023**,**39**(6):1103-1112

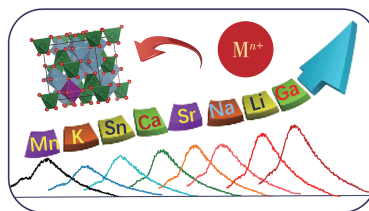


Preparation and luminescent properties of ZnAl₂O₄:Mn materials

LÜ Li, LIU Lin, HAN Mei-Xing, YANG Hui-Jun,
LIU Hui-Ying

DOI:10.11862/CJIC.2023.071

Chinese J. Inorg. Chem., **2023**,**39**(6):1113-1121



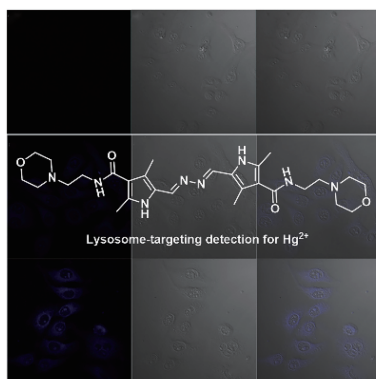
Mn⁴⁺ doped ZnAl₂O₄ samples are conducive to effective luminescence at 680 nm. Different metal ions (Li⁺, Na⁺, Ca²⁺, Sr²⁺, Sn²⁺, and Ga³⁺) co-doped with Mn⁴⁺ into the ZnAl₂O₄ crystal structure could enhance the luminescence intensity of the sample.

Pyrrole - based hydrazone for fluorescent imaging of Hg²⁺ in lysosomes (English)

WANG Zhen, LI Si-Yuan, WANG Yuan,
WU Wei-Na, ZHANG Lei, CHEN Zhong,
YAN Ling-Ling

DOI:10.11862/CJIC.2023.083

Chinese J. Inorg. Chem., **2023**,**39**(6):1122-1130



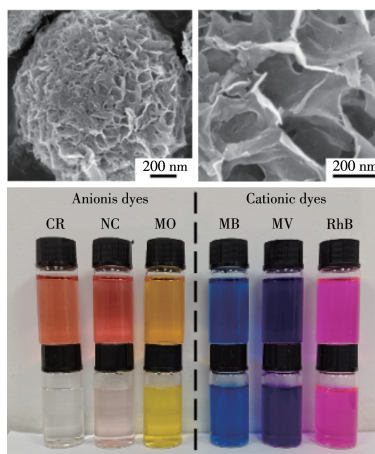
A pyrrole-based hydrazone bearing morpholine moiety has been synthesized for colorimetric and fluorescent turn-on detection of Hg²⁺ ions, which could be used for tracing Hg²⁺ in lysosomes.

Simple synthesis of hierarchical ZnO microspheres for organic dyes removal (English)

SUN Tong-Ming, YOU Meng, WANG Dan-Qi, CUI Ying, CUI Hui-Hui, WANG Miao, TANG Yan-Feng

DOI:10.11862/CJIC.2023.067

Chinese J. Inorg. Chem., **2023**,**39**(6):1131-1138



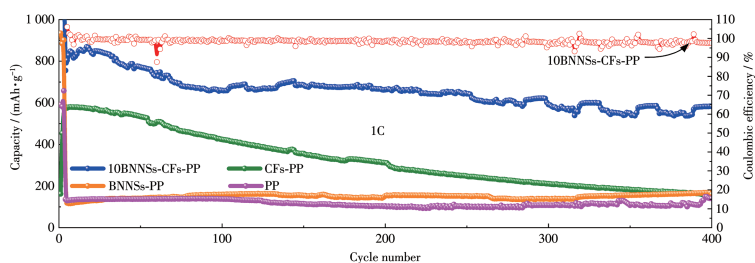
Three-dimensional hierarchical nanosheets-assembled ZnO microspheres were synthesized and exhibited an excellent removal efficiency and selectivity for anionic organic dyes in dark.

Boron nitride nanosheets/carbon fibers-modified separators for high-performance lithium-sulfur batteries (English)

GAO He-Jun, YANG Jing-Wen, QIAO Jia-Xiao, QIAO Wei, CAO Chao-Chao, LI Ze-Xia, WANG Peng, TANG Cheng-Chun, XUE Yan-Ming

DOI:10.11862/CJIC.2023.078

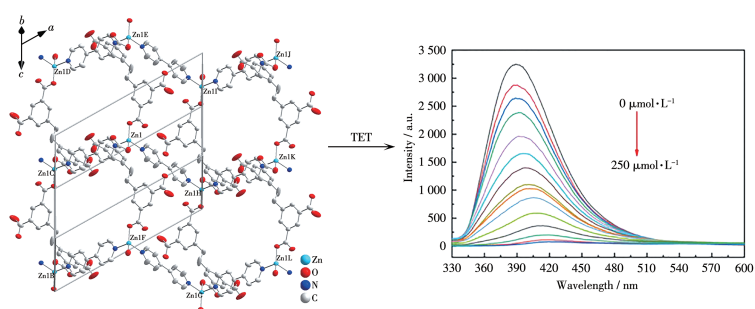
Chinese J. Inorg. Chem., **2023**,**39**(6):1139-1150



We developed a polypropylene (PP) separator modified boron nitride nanosheets/carbon fibers (BNNSs/CFs) produced by some simple processes for Li-S batteries. The 10BNNSs/CFs-PP cell maintained a capacity of $583.1 \text{ mAh} \cdot \text{g}^{-1}$ after 400 cycles with a decay of 0.069% per cycle at 1C.

A stable Zinc(II) metal-organic framework in water for the detection of tetracycline (English)

WANG Xuan, WANG Ji-Jiang, TANG Long, WANG Lao-Bang, YUE Er-Lin, BAI Chao, WANG Xiao, ZHANG Yu-Qi



A Zinc(II) metal-organic framework $[\text{Zn}(\text{H}_2\text{L})(4,4'\text{-bpy})]_n$ (**1**) features a 2D wavelike network structure. It shows good stability in water, and can be used as a highly sensitive and selective fluorescent probe to detect tetracycline (TET) with a detection limit of $0.17 \mu\text{mol} \cdot \text{L}^{-1}$. **1** can also be successfully used for the determination of TET in Yanhe River water.

DOI:10.11862/CJIC.2023.069

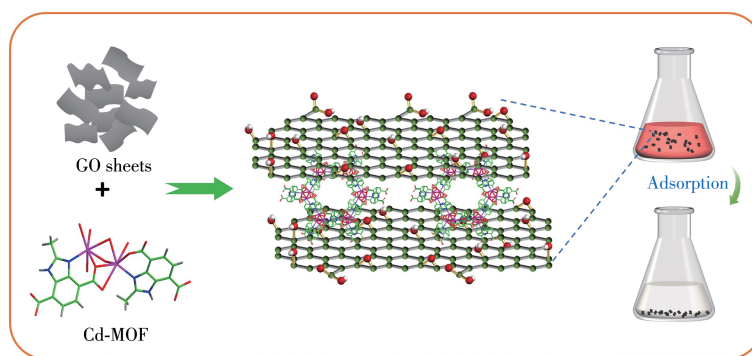
Chinese J. Inorg. Chem., **2023**,**39**(6):1151-1158

Adsorption of rhodamine B by
benzimidazole-based metal-organic
framework/graphene oxide composites
(English)

HAN Xiao, WANG Lin-Yu, GENG Fu-Jiang,
XI Gai-Qing

DOI:10.11862/CJIC.2023.061

Chinese J. Inorg. Chem., **2023**,**39**(6):1159-1168

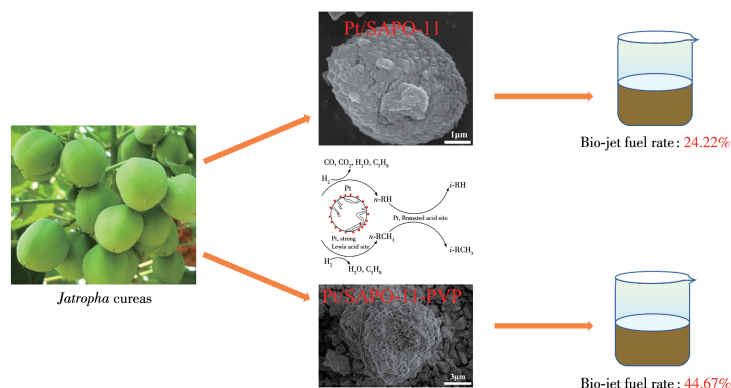


Influence of various polymer dispersants
on the performance of Pt/SAPO-11
catalysts (English)

ZHANG Ai-Min, LIU Qiang, YIN Hui,
HUANG Jian-Guo, AN Zheng-Yuan, CHEN Li

DOI:10.11862/CJIC.2023.070

Chinese J. Inorg. Chem., **2023**,**39**(6):1169-1178

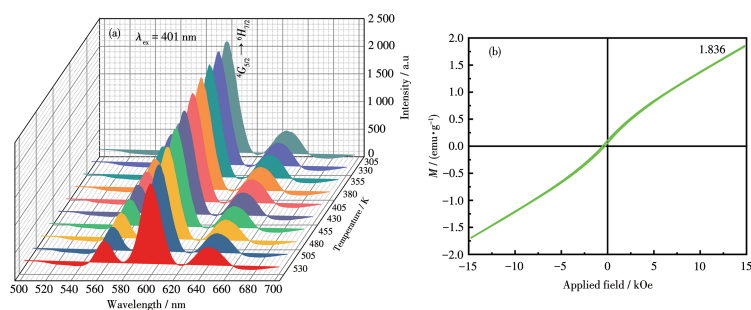


GdPO₄:Sm³⁺ phosphor: Optimization of
calcination temperature and doping
concentration and fluorescence and
magnetic properties (English)

WU Jin-Xiu, WANG Qian-Qian, WU Bao-Long,
LIU Zhao-Gang, HU Yan-Hong, QI Yuan-Hao,
ZHANG Xiao-Wei, FENG Fu-Shan, LI Jian-Fei

DOI:10.11862/CJIC.2023.081

Chinese J. Inorg. Chem., **2023**,**39**(6):1179-1192



Temperature dependence and correlation
of initial microstructural defects and
breaking (English)

ZHAO Jian-Wei, SHEN Kun-Yan, YU Xiao-Hui,
HOU Jin

DOI:10.11862/CJIC.2023.075

Chinese J. Inorg. Chem., **2023**,**39**(6):1193-1207

