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目 次

综 述

- 过渡金属配合物催化乙腈碳碳单键断裂的研究进展.....陈慧晴 张 坤 徐 枫 黄 伟(2265)
碳化硅纳米材料的溶剂热合成.....马小健 孙常慧 钱逸泰(2276)

论 文

- 一种基于铜配合物的高灵敏硫化氢荧光探针.....黄 彬 陈韵聪 郭子建 何卫江(2283)
从 SiCl_4 合成多孔硅/碳复合材料及储锂性能研究.....冯雪娇 杨 军 努丽燕娜 王久林(2289)
 Fe_2O_3 含量对 Cu-Fe/铝土矿水煤气变换催化剂结构和性能的影响
.....江莉龙 刘 弦 曹彦宁 曾杰凯 林施团 魏可镁(2297)
一锅溶剂热法制备具有不同形貌特征的 CdSe 量子点负载石墨烯.....姜鸿基 毛炳雪(2305)
邻菲咯啉乳酸镍配合物的合成与表征及其与牛血清白蛋白相互作用的荧光分析
.....林海彬 张美鑫 林凉凉 周朝晖(2315)
以卵磷脂为手性添加剂制备手性介孔二氧化硅.....王 晴 国永敏 李 艺 李宝宗(2323)
单斜与锐钛矿双晶相 $\text{TiO}_2/\text{MWNTs}$ 复合材料的制备及其可见光光催化活性
.....沈水发 畅敏杰 车荣峰 潘海波 陈耐生(2327)
长链烷基季铵盐插层氧化石墨的结构变化.....林舜嘉 孙红娟 彭同江 刘 波(2333)
通过接枝苄基磺酸在 MCM-41 上固载手性 $\text{Mn}(\text{salen})$ 配合物
.....李 猛 胡晨晖 江春涛 杨 惠 陈 才 侯文华 陈 静(2339)
以 4,4'-联苯咪唑及间苯二甲酸根为配体构筑的 $\text{Ni}(\text{II})$ 配位聚合物的合成、晶体结构及光学性质
.....张春丽 覃 玲 徐基贵 郑和根(2347)
 $\text{Ca}_{0.8-2x}(\text{Yb}_x\text{Tb}_{0.1}\text{Na}_{0.1+x})_2\text{WO}_4$ 近红外下转换荧光粉水热合成及发光性质
.....廖金生 苏振裕 周 单 柳少华 温和瑞(2351)
4-羟基吡啶-2,6-二甲酸铽配位聚合物的合成与光谱性能研究
.....陈小莉 乔亚莉 高楼军 吕俊芳 崔华莉(2357)
 $\text{Pd}/\text{MnO}_x/\text{Pd}/\gamma\text{-Al}_2\text{O}_3$ 整体式催化剂降解地表臭氧.....周丽娜 陈耀强 任成军 龚茂初(2363)
 N -(2-氧乙酸-3-甲氧基)苄叉二胺合锌(II)配合物的合成、晶体结构及光学性质研究
.....闫 丽 王米嘉(2370)
超细 ZnFe_2O_4 纳米晶与蛋白质的相互作用.....李 强 姬晓旭 钟 秋 黄新堂 熊 丽(2375)
 $\text{Cu}_2\text{ZnSnS}_4(\text{CZTS})$ 纳米微球的制备及表征.....周 超 王 丹 高延敏(2382)
组氨酸、组胺醇和组胺钴(II)配合物氧合性能的比较研究
.....张新村 岳 凡 黄 艳 程 翔 文红梅 胡 地 王吉德(2387)
苯乙烯三嗪衍生物的合成及在重金属离子识别中的应用.....张 华 徐孝武 吴芳英(2394)

CrO_x-CeO₂ 二元氧化物表面 NO 的 NH₃ 催化还原反应机理(英文)

.....刘海弟 李伟曼 黄亿苹 陈运法(2399)

对甲醛苯甲酸构筑的 Cu(II)配合物:合成,结构及磁性质(英文).....戚金丽 郑岳青 许 伟(2405)

层状、花形和棒状钛酸铋纳米结构的可控合成及光催化性能(英文)

.....林 雪 于丽丽 闫丽娜 闫永胜 关庆丰 赵 晗(2415)

两个基于 2-氨基-5-巯基-1,3,4-噻二唑乙酸的稀土配合物的合成、晶体结构和性质研究(英文)

.....胡 冰 姚小强 谢永强 张有明 魏太保(2422)

基于三聚硫氰酸配体的六核镍配合物的合成,晶体结构和荧光性能分析(英文)

.....陈 静 谢吉民 夏昌坤 朱 禹 陈 佳(2433)

两个含吡啶取代苯酚配体的铜配合物的合成与晶体结构(英文)

.....高大志 王若徐 叶 帆 沈 旋 许 岩 朱敦如(2438)

基于一种三角柔性羧酸配体构筑的含镍配位聚合物的水热合成、结构和光化学性质(英文)

.....杜秀红 崔节虎(2445)

柔性双三氮唑配体构筑的二维镉(II)配合物的合成、结构和荧光性质(英文)

.....郝金明 李欢欢 李光跃 崔广华(2450)

一种 2,2'-联咪唑镉化合物的荧光、理论计算和结构研究(英文).....陈文通(2455)

2-丙基-1*H*-4,5-咪唑二酸构筑的混核锌-钕配位聚合物的合成、晶体结构及磁性质(英文)

.....高竹青 李红晋 顾金忠(2460)

2-苯甲酰苯甲酸铜配合物的合成、电化学、荧光及磁性研究(英文).....唐斯萍 张少华 杨颖群(2465)

氰根桥联 Fe^{III}-Cu^{II}一维配合物{[Fe(1-CH₃im)(CN)₄(μ-CN)Cu(cyclam)]·H₂O}_n 的合成、结构及磁性研究(英文)

.....苗保喜 李国玲 赵 云 倪中海(2470)

6,6'-二硫二烟酸构筑的锌配位聚合物的合成、晶体结构和荧光性能(英文)

.....李运涛 海 啸 刘 侠 张亚男(2475)

基于 4-二苯基乙酸及 1,3-二(4-吡啶基)丙烷的两个银配合物的结构和荧光(英文)

.....郝洪庆 陈木华 李 鑫 彭梦侠(2480)

2-氨基对苯二甲酸根及 2-咪唑烷酮构筑的镉(II)配位聚合物的合成、晶体结构及荧光性质(英文)

.....陈顺玉 杨 娥 刘子生(2485)

1, 1, 4, 7, 7-五(2-苯并咪唑甲基)二乙基三胺镍(II)配合物的合成,晶体结构和 SOD 活性研究(英文)

.....张 勇 胡家尾 周 霞 陈世明 马志刚 陈雪梅(2491)

以草酸、碳酸根构筑的一个钕(III)配位聚合物的晶体结构和荧光性质(英文)

.....黄德乾 张 宏 盛良全 刘昭第 徐华杰 凡素华(2497)

4'-羟基联苯-4-甲酸、1,3-二吡啶基丙烷构筑的一维镉配位聚合物的晶体结构和荧光性质(英文)

.....马德运 覃 亮 郭海福 刘 煌 徐 俊(2503)

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CONTENTS

Cover



A New Sensitive Fluorescent H₂S Probe Based on Cu²⁺ Complex

HUANG Bin, CHEN Yun-Cong, GUO Zi-Jian, HE Wei-Jiang

DOI:10.3969/j.issn.1001-4861.2013.00.347

Chinese J. Inorg. Chem., **2013,29**:2283-2288

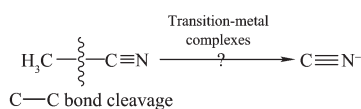
Reviews

Progress of the C-C Bond Cleavage in Acetonitrile Catalyzed by Transition-Metal Complexes

CHEN Hui-Qing, ZHANG Kun, XU Feng, HUANG Wei

DOI:10.3969/j.issn.1001-4861.2013.00.352

Chinese J. Inorg. Chem., **2013,29**:2265-2275



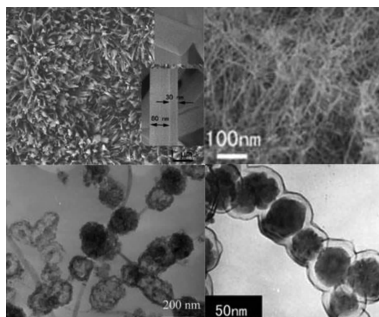
The research advancements of the cleavage of C-C bond in acetonitrile catalyzed by versatile transition-metal complexes are reviewed.

Solvothermal Synthesis of Silicon Carbide Nanomaterials

MA Xiao-Jian, SUN Chang-Hui, QIAN Yi-Tai

DOI:10.3969/j.issn.1001-4861.2013.00.359

Chinese J. Inorg. Chem., **2013,29**:2276-2282



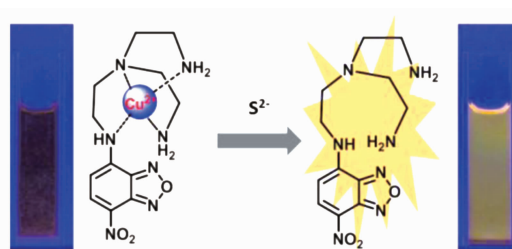
Solvothermal synthesis of silicon carbide nanomaterials, including nanowires, nanorods, nanobelts, nanocrystals, nanoflakes, nanospheres, and SiC@C composite nanomaterials is reviewed. Low-temperature synthesis of silicon carbide (< 200 °C) can also be achieved via solvothermal route.

A New Sensitive Fluorescent H₂S Probe Based on Cu²⁺ Complex

HUANG Bin, CHEN Yun-Cong,
GUO Zi-Jian, HE Wei-Jiang

DOI:10.3969/j.issn.1001-4861.2013.00.347

Chinese J. Inorg. Chem., **2013**,**29**:2283-2288



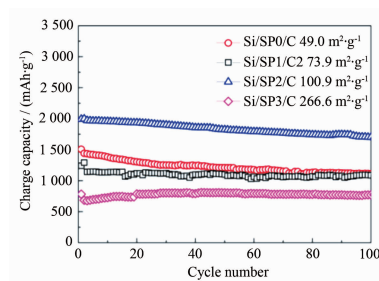
A Cu²⁺ complex formed by a new NBD fluorescent ligand was prepared as a sensitive turn-on probe for H₂S, and the rapid turn-on fluorescent response was due to the emission recovery of NBD ligand via removing the emission quenching Cu²⁺ from the complex by S²⁻.

Synthesis and Lithium Storage Performance of Porous Silicon/Carbon Composite Material from SiCl₄

FENG Xue-Jiao, YANG Jun, NULI Yan-Na,
WANG Jiu-Lin

DOI:10.3969/j.issn.1001-4861.2013.00.367

Chinese J. Inorg. Chem., **2013**,**29**:2289-2296



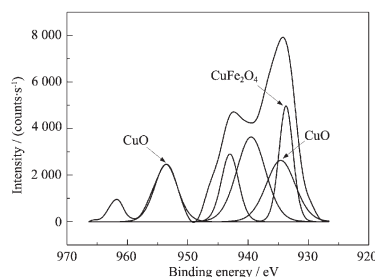
Porous silicon/carbon composite was prepared via a mechanochemical reaction between Li₁₃Si₄ and SiCl₄ under ball milling. Specific surface area of silicon/carbon composite can be adjusted by controlling the particle size distribution of Li₁₃Si₄. The specific surface area of porous silicon/carbon composite plays an important influence on its electrochemical performance.

Effect of Fe₂O₃ Content on Structure and Catalytic Performance of Cu-Fe/Bauxite for Water Gas Shift Reaction

JIANG Li-Long, LIU Xian, CAO Yan-Ning,
ZENG Jie-Kai, LIN Shi-Tuan, WEI Ke-Mei

DOI:10.3969/j.issn.1001-4861.2013.00.338

Chinese J. Inorg. Chem., **2013**,**29**:2297-2304



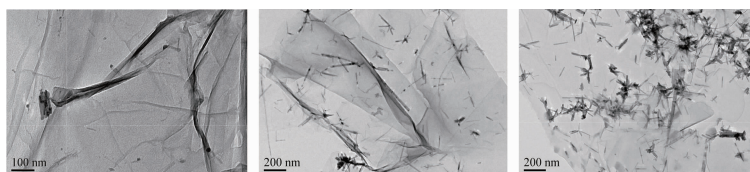
The Cu₁₅Fe₂₀/MB catalyst exhibited the best activity and stability, the formation of CuFe₂O₄ helped to increase the activity.

One-Pot Step Hydrothermal Synthesis of Nano-Composites Based on Graphene and CdSe Quantum Dots with Different Morphology

JIANG Hong-Ji, MAO Bing-Xue

DOI:10.3969/j.issn.1001-4861.2013.00.342

Chinese J. Inorg. Chem., **2013**,**29**:2305-2314

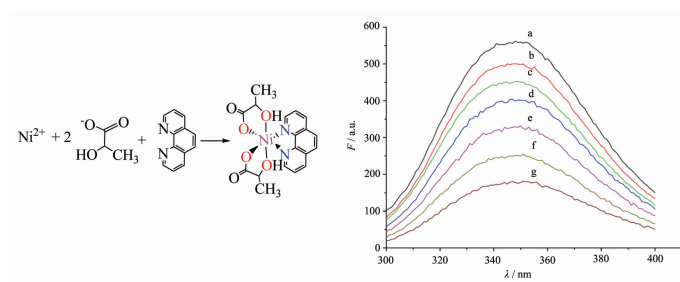


A comparative study of the reduction of graphene oxides by two ways is presented. The results demonstrated that graphene oxides were reduced, and the CdSe quantum dots loaded on the surface of graphene grew into nanorods, nanowires, and even branch-shaped nano structures with the increase of the reaction time.

Synthesis and Characterization of $[\text{Ni}(\text{Hlact})_2(\text{phen})] \cdot 2\text{H}_2\text{O}$ and Its Interaction with BSA Studied by Fluorescence Spectroscopy

LIN Hai-Bin, ZHANG Mei-Xin,
LIN Liang-Liang, ZHOU Zhao-Hui

DOI:10.3969/j.issn.1001-4861.2013.00.225
Chinese J. Inorg. Chem., **2013**,**29**:2315-2322

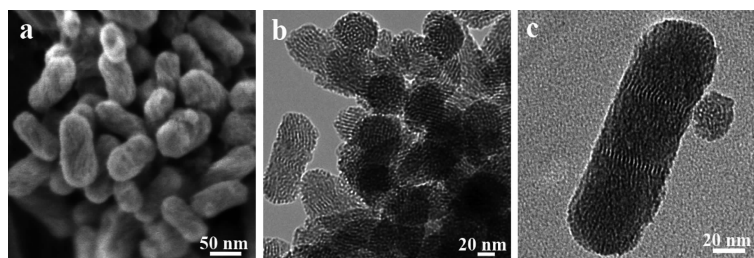


The interaction between Bovine Serum Albumin and $[\text{Ni}(\text{Hlact})_2(\text{phen})] \cdot 2\text{H}_2\text{O}$ is studied by fluorescence spectra. The way of fluorescence quenching is considered as static quenching.

Preparation of Chiral Mesoporous Silica Using Phosphatidylcholine as a Chiral Additive

WANG Qing, GUO Yong-Min, LI Yi,
LI Bao-Zong

DOI:10.3969/j.issn.1001-4861.2013.00.374
Chinese J. Inorg. Chem., **2013**,**29**:2323-2326

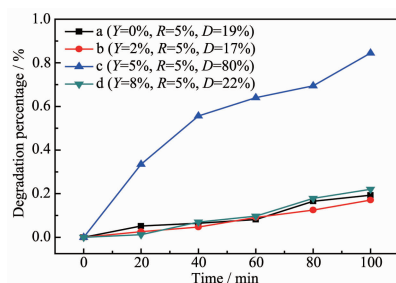


Helical mesoporous silica nanorods were prepared through a templating approach using cetyltrimethylammonium bromide (CTAB) as the template and phosphatidylcholine (PC) as a chiral additive. The circular dichroism spectrum (CD) indicated that the nanorods tended to form a structure with homochirality at angstrom level.

Preparation of Bi-crystalline (Monocline and Anatase) TiO_2 /MWNTs Composite and Its Photocatalytic Activity under Visible Light Irradiation

SHEN Shui-Fa, CHANG Min-Jie,
CHE Rong-Feng, PAN Hai-Bo,
CHEN Nai-Sheng

DOI:10.3969/j.issn.1001-4861.2013.00.369
Chinese J. Inorg. Chem., **2013**,**29**:2327-2332

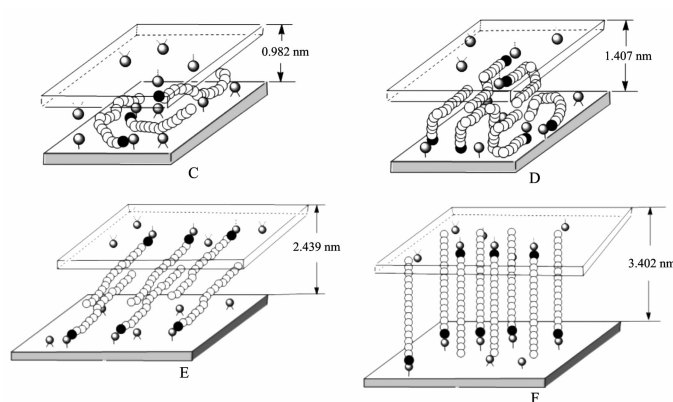


Adding of MWNTs can affect crystalline phase and photocatalytic activity of TiO_2 , the product with 5% MWNTs has bi-crystalline phase with comparative content of monocline and anatase and exhibits high photocatalytic activity under visible light irradiation.

Structure Change of Quaternary Alkylammonium-Graphite Oxide Intercalation Composite

LIN Shun-Jia, SUN Hong-Juan,
PENG Tong-Jiang, LIU Bo

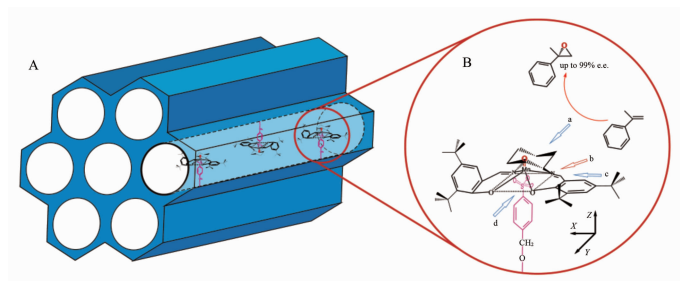
DOI:10.3969/j.issn.1001-4861.2013.00.383
Chinese J. Inorg. Chem., **2013**,**29**:2333-2338



Immobilization of Chiral Mn(salen)
Complex on MCM-41 via
Functionalizing with Benzyl
Sulphonic Acid

LI Meng, HU Chen-Hui, JIANG Chun-Tao,
YANG Hui, CHEN Cai,
HOU Wen-Hua, CHEN Jing

DOI:10.3969/j.issn.1001-4861.2013.00.385
Chinese J. Inorg. Chem., **2013**,**29**:2339-2346

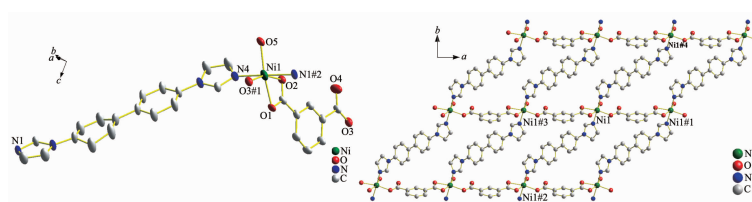


The obtained catalyst shows excellent catalytic activity and selectivity for the asymmetric epoxidation of α -methylstyrene with an e.e. value above 99%.

Synthesis, Crystal Structure and
Optical Properties of Ni(II) Coordination
Polymer Constructed by 4,4'-Biphenyl
Imidazole and Isophthalic Acid Ligands

ZHANG Chun-Li, QIN Ling, XU Ji-Gui,
ZHENG He-Gen

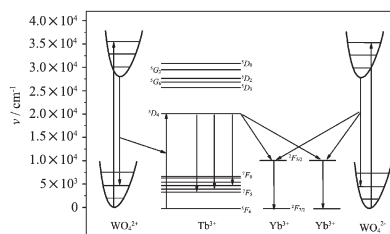
DOI:10.3969/j.issn.1001-4861.2013.00.378
Chinese J. Inorg. Chem., **2013**,**29**:2347-2350



Hydrothermal Method and Luminescent
Properties of $\text{Ca}_{0.8-2x}(\text{Yb}_x\text{Tb}_{0.1}\text{Na}_{0.1+4x})_2\text{WO}_4$
Near-Infrared Downconversion
Phosphor

LIAO Jin-Sheng, SU Zhen-Yu,
ZHOU Dan, LIU Shao-Hua, WEN He-Rui

DOI:10.3969/j.issn.1001-4861.2013.00.349
Chinese J. Inorg. Chem., **2013**,**29**:2351-2356

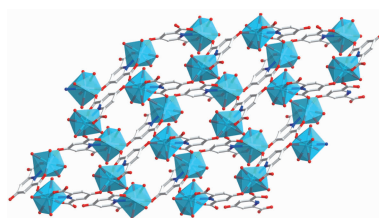


Compared with the as-prepared $\text{Ca}_{1-2x}(\text{Yb}_x\text{Na}_x)_2\text{WO}_4$ samples, $\text{Ca}_{0.8-2x}(\text{Yb}_x\text{Tb}_{0.1}\text{Na}_{0.1+4x})_2\text{WO}_4$ samples show more strong NIR emission peak (999 nm) under ultraviolet light. This is because there exist not only the efficient cooperative energy transfer process from WO_4^{2-} group to Yb^{3+} (direct) but also from WO_4^{2-} group to Tb^{3+} to Yb^{3+} (indirect).

Structural and Spectral Study of Terbium
4-Hydroxypyridine-2,6-Dicarboxylic
Acid Coordination Polymer

CHEN Xiao-Li, QIAO Ya-Li, GAO Lou-Jun,
LV Jun-Fang, CUI Hua-Li

DOI:10.3969/j.issn.1001-4861.2013.00.363
Chinese J. Inorg. Chem., **2013**,**29**:2357-2362

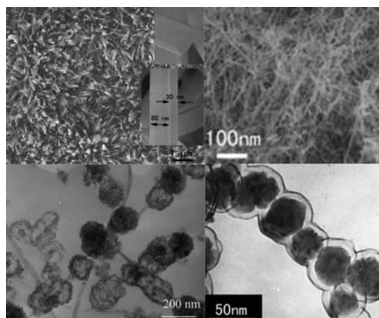


Coordination polymer shows 2D wave network structure. One Tb^{III} ion joined with three $(\text{cam})^{3-}$ ions to form a 2D network with $(4 \cdot 8^2)$ topological. The complex exhibits typical Tb^{III} -centered emissions in the solid state.

Pd/MnO_x/Pd/γ-Al₂O₃ Monolith Catalysts for Ground-Level Ozone Decomposition

ZHOU Li-Na, CHEN Yao-Qiang,
REN Cheng-Jun, GONG Mao-Chu

DOI:10.3969/j.issn.1001-4861.2013.00.357
Chinese J. Inorg. Chem., **2013**,**29**:2363-2369

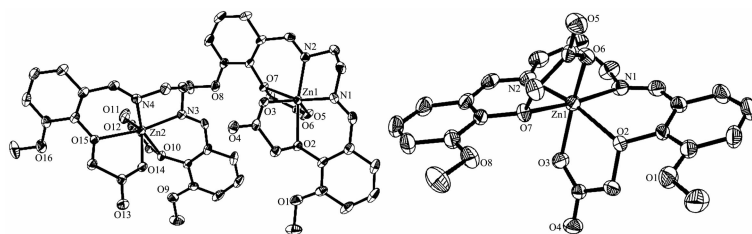


A synergetic effect was observed between Pd and MnO_x on the Pd/MnO_x+Pd/γ-Al₂O₃ catalysts by temperature-programmed reduction (TPR).

Synthesis, Crystal Structures and Fluorescence of Two Zn(II) Complexes with Schiff Base Ligands

YAN Li, WANG Mi-Jia

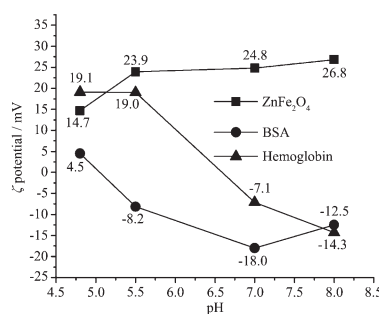
DOI:10.3969/j.issn.1001-4861.2013.00.351
Chinese J. Inorg. Chem., **2013**,**29**:2370-2374



Ultrafine ZnFe₂O₄ Nanocrystals Interacting with Proteins

LI Qiang, JI Xiao-Xu, ZHONG Qiu,
HUANG Xin-Tang, XIONG Li

DOI:10.3969/j.issn.1001-4861.2013.00.368
Chinese J. Inorg. Chem., **2013**,**29**:2375-2381

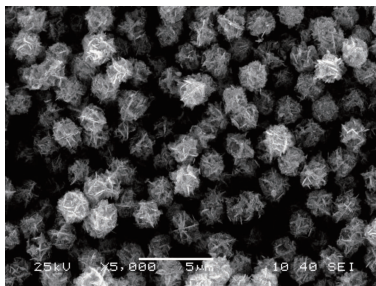


Hydrothermal prepared ultrafine ZnFe₂O₄ nanocrystals adsorb hemoglobin via electrostatic interaction, whereas adsorption behaviors between BSA and nanocrystals can not be explained by such interaction.

Fabrication and Characterization of Cu₂ZnSnS₄ (CZTS) Microparticles

ZHOU Chao, WANG Dan, GAO Yan-Min

DOI:10.3969/j.issn.1001-4861.2013.00.376
Chinese J. Inorg. Chem., **2013**,**29**:2382-2386

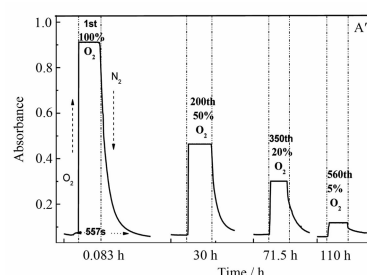


In this paper, CZTS microparticles were synthesized by a solvothermal method using PVP as surfactant. The morphology and optical performance of CZTS has occurred a certain change with different contents of PVP.

Comparative Study for Oxygenation Properties of Cobalt Complexes with Hsitidine, Histidinol and Histamine

ZHANG Xin-Cun, YUE Fan,
HUANG Yan, CHENG Xiang,
WEN Hong-Mei, HU Di, WANG Ji-De

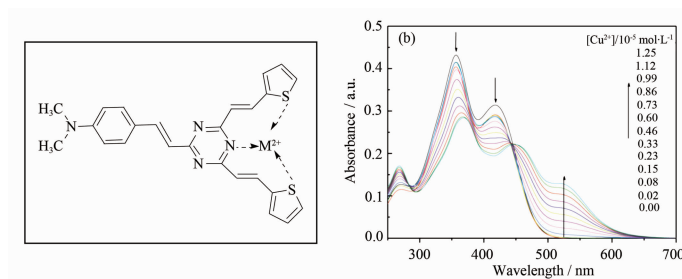
DOI:10.3969/j.issn.1001-4861.2013.00.353
Chinese J. Inorg. Chem., **2013**,**29**:2387-2393



The oxygenation of His-Co, Hio-Co and Hit-Co were investigated by UV-Vis spectrophotometry and oxygen electrode since their ligands have similar structures. The results revealed that all three complexes can reversibly uptake dioxygen whereas there are obvious differences in their oxygenations. The order of the reversible oxygenation capacity is His-Co>>Hio-Co>Hit-Co.

Synthesis of *s*-Triazine Derivatives and Application of Heavy Metal Ions Recognition

ZHANG Hua, XU Xiao-Wu, WU Fang-Ying

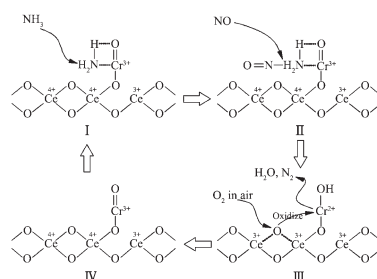


DOI:10.3969/j.issn.1001-4861.2013.00.375
Chinese J. Inorg. Chem., **2013**,**29**:2394-2398

A 1 :1 metal-ligand complex between compound **2** and Cu²⁺, Hg²⁺ and Fe³⁺ respectively, was formed which resulted in strength change from down to top.

Reaction Mechanism of NH₃-Selective Catalytic Reduction for NO on CrO_x-CeO₂ Binary Oxide (English)

LIU Hai-Di, LI Wei-Man, YUE Ren-Liang, CHEN Yun-Fa

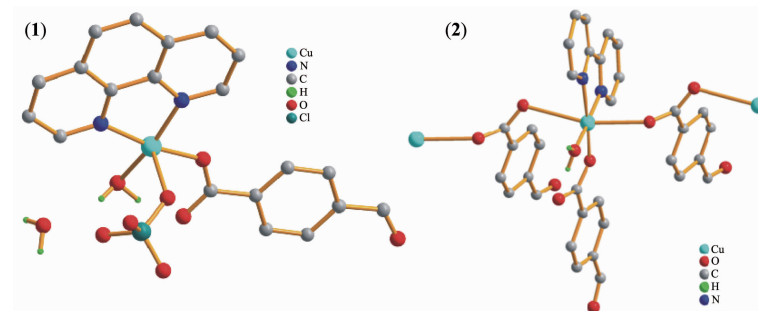


The selective catalytic reduction (SCR) of NO_x by NH₃ on CrO_x/CeO₂ binary oxide at 473 K was proved to follow Eley-Rideal mechanism by *In-situ* Diffuse Reflectance Infrared Fourier Transform Spectroscopy method.

DOI:10.3969/j.issn.1001-4861.2013.00.316
Chinese J. Inorg. Chem., **2013**,**29**:2399-2404

Use of *p*-Formylbenzoate to Construct two Copper (II) Complexes: Syntheses, Crystal Structures and Magnetic Properties (English)

QI Jin-Li, ZHENG Yue-Qing, XU Wei

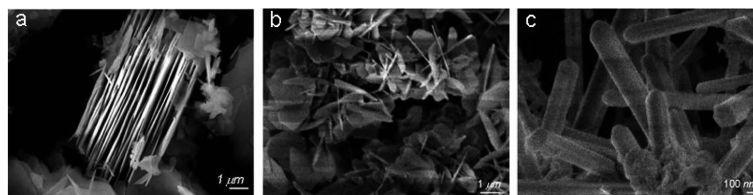


DOI:10.3969/j.issn.1001-4861.2013.00.380
Chinese J. Inorg. Chem., **2013**,**29**:2405-2414

The mononuclear Cu(II) complex [Cu(phen)(H₂O)(fba)(ClO₄)]·H₂O (**1**) (Hfba=*p*-formylbenzoic acid) shows weak ferromagnetic and antiferromagnetic behavior in the experimental temperature range. The 1D chain polymer ¹[Cu(bpy)(H₂O)(fba)₂] (**2**) suggests ferromagnetic interactions.

Controllable Synthesis and Photocatalytic Activity of Layered, Flowerlike, and Rodlike Bismuth Titanate Nanostructures (English)

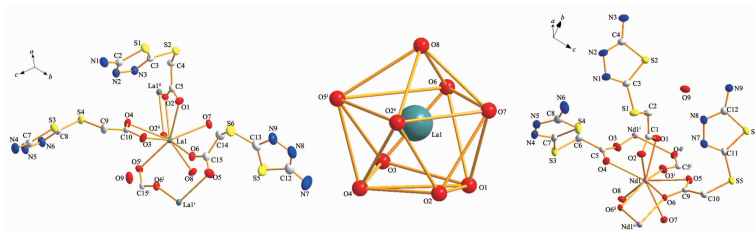
LIN Xue, YU Li-Li, YAN Li-Na, YAN Yong-Sheng, GUAN Qing-Feng, ZHAO Han



BIT nanostructures exhibit higher photocatalytic activities in the degradation of methyl orange (MO) under visible light irradiation than that of traditional N-TiO₂.

DOI:10.3969/j.issn.1001-4861.2013.00.346
Chinese J. Inorg. Chem., **2013**,**29**:2415-2421

Synthesis, Crystal Structure and Properties of Two Coordination Polymers Constructed by Lanthanide and [5-Amino-1,3,4-thiadiazol-2-yl] thioglycolic Acid (English)

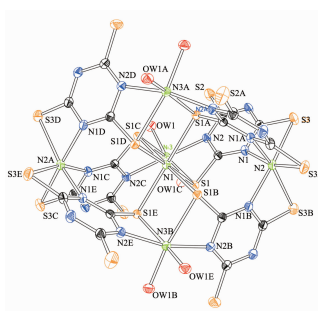


HU Bing, YAO Xiao-Qiang, XIE Yong-Qiang, ZHANG You-Ming, WEI Tai-Bao

DOI:10.3969/j.issn.1001-4861.2013.00.379

Chinese J. Inorg. Chem., **2013**,**29**:2422-2432

Synthesis, Characterization and Photoluminescent Property of a Hexanuclear Nickel (II) Complex with Trithiocyanuric Acid (English)



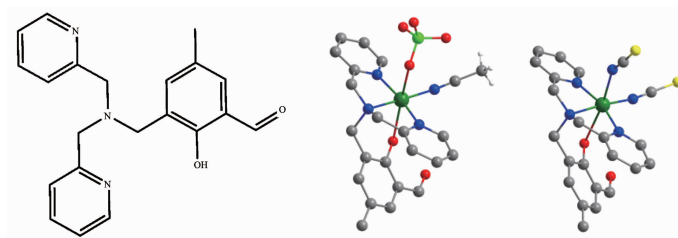
The complex exhibits a hexanuclear building unit. The photoluminescent property studies show the complex display intense emission at 538 nm.

CHEN Jing, XIE Ji-Min, XIA Chang-Kun, ZHU Yu, CHEN Jia

DOI:10.3969/j.issn.1001-4861.2013.00.339

Chinese J. Inorg. Chem., **2013**,**29**:2433-2437

Syntheses and Crystal Structures of Two Copper Complexes with Pyridyl-Substituted Phenol Ligand (English)

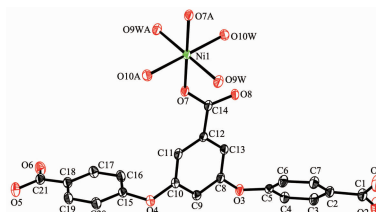


GAO Da-Zhi, WANG Ruo-Xu, YE Fan, SHEN Xuan, XU Yan, ZHU Dun-Ru

DOI:10.3969/j.issn.1001-4861.2013.00.384

Chinese J. Inorg. Chem., **2013**,**29**:2438-2444

Hydrothermal Synthesis, Crystal Structure and Photochemical Properties of a Nickel(II) Coordination Polymer Based on a Tripodal Flexible Carboxylate Ligand (English)



A new Ni coordination polymer with strong solid UV absorption has been synthesized and structurally characterized by X-ray diffraction.

DU Xiu-Hong, CUI Jie-Hu

DOI:10.3969/j.issn.1001-4861.2013.00.341

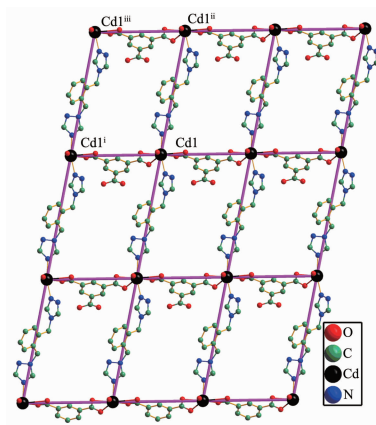
Chinese J. Inorg. Chem., **2013**,**29**:2445-2449

Two Dimensional Cadmium (II)
Coordination Polymer Constructed from
Flexible Bis(triazole) Ligand: Synthesis,
Structure and Fluorescence Property
(English)

HAO Jin-Ming, LI Huan-Huan, LI Guang-Yue,
CUI Guang-Hua

DOI:10.3969/j.issn.1001-4861.2013.00.361

Chinese J. Inorg. Chem., **2013**,**29**:2450-2454



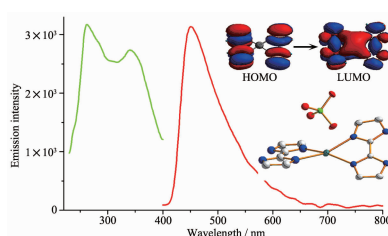
The structural analyses show that the complex display a 2D (4,4) network and via multiple intermolecular hydrogen bonds extending into a 3D supramolecular structure.

Fluorescent, Theoretical and Structural
Investigations of a 2,2'-Biimidazole
Cadmium Compound (English)

CHEN Wen-Tong

DOI:10.3969/j.issn.1001-4861.2013.00.364

Chinese J. Inorg. Chem., **2013**,**29**:2455-2459



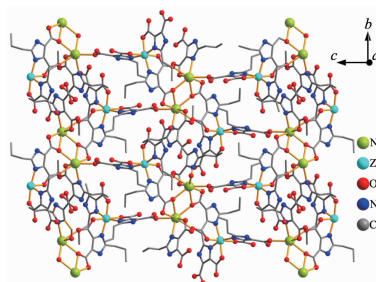
A new cadmium-biimidazole compound displays a broad and strong emission in the blue region. Theoretical computation reveals that the emission band should be ascribed to ligand-to-metal charge transfer (LMCT).

Synthesis, Crystal Structure and
Magnetic Properties of a Zn-Nd
Heterometallic Coordination Polymer
Constructed by 2-Propyl-1*H*-imidazole-
4,5-dicarboxylic Acid (English)

GAO Zhu-Qing, LI Hong-Jin, GU Jin-Zhong

DOI:10.3969/j.issn.1001-4861.2013.00.343

Chinese J. Inorg. Chem., **2013**,**29**:2460-2464



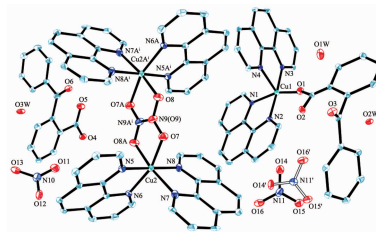
A 3*d*-4*f* heterometallic coordination polymer {[NdZn(H₂pimda)₃(Hpimda)(H₂O)₂] · H₂O}_n (**1**) with 2D sheet structure has been constructed and the structure and magnetic properties of the compound were investigated.

Synthesis, Electrochemical, Fluorescent
and Magnetic Properties of a Copper(II)
Complex with 2-Benzoylbenzoic Acid
as a Ligand (English)

TANG Si-Ping, ZHANG Shao-Hua,
YANG Ying-Qun

DOI:10.3969/j.issn.1001-4861.2013.00.356

Chinese J. Inorg. Chem., **2013**,**29**:2465-2469



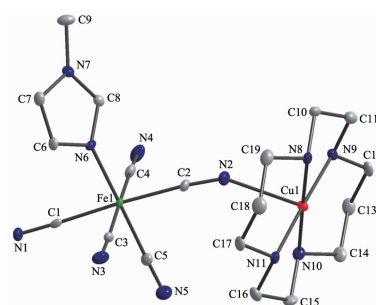
The title complex can give off strong fluorescence band at around 494 nm. In addition, it displays diamagnetic property in temperatures range of 300~52 K.

Synthesis, Crystal Structure and
Magnetic Properties of a
One-Dimensional Cyanide-Bridged
Fe^{III}-Cu^{II} Complex $\{[\text{Fe}(\text{1-CH}_3\text{im})(\text{CN})_4(\mu\text{-CN})\text{Cu}(\text{cyclam})]\cdot\text{H}_2\text{O}\}_n$ (English)

MIAO Bao-Xi, LI Guo-Ling, ZHAO Yun,
NI Zhong-Hai

DOI:10.3969/j.issn.1001-4861.2013.00.322

Chinese J. Inorg. Chem., **2013**,**29**:2470-2474



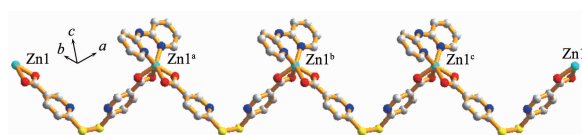
The Fe^{III}-Cu^{II} complex exhibits a weak ferromagnetic coupling between the different metal ions through the cyanide bridge.

Synthesis, Crystal Structure and
Luminescent Property of Zn(II) Polymer
Coordination Based on
6,6'-Dithiodinicotinic Acid (English)

LI Yun-Tao, HAI Xiao, LIU Xia,
ZHANG Ya-Nan

DOI:10.3969/j.issn.1001-4861.2013.00.355

Chinese J. Inorg. Chem., **2013**,**29**:2475-2479

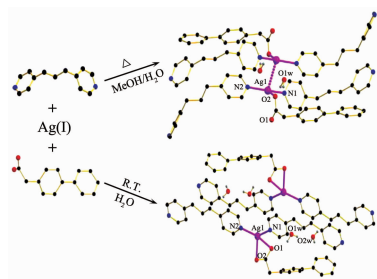


Structure and Fluorescence of Two
Ag(I) Complexes Based on
4-Biphenylacetate and
1,3-Bis(4-pyridyl)propane (English)

HAO Hong-Qing, CHEN Mu-Hua, LI Xin,
PENG Meng-Xia

DOI:10.3969/j.issn.1001-4861.2013.00.370

Chinese J. Inorg. Chem., **2013**,**29**:2480-2484



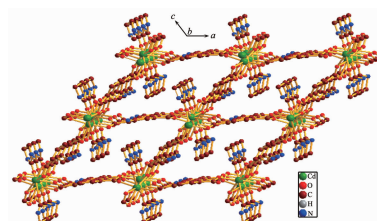
The solution reactions of Hbpa, bpp and Ag(I) with the ratio of 1:1:1 under different experimental conditions resulted in two sandwich-like coordination polymers involving different conformations of flexible ligands, Ag...Ag or $\pi\cdots\pi$ interactions, thermal stability, as well as intense fluorescence in the visible region.

Synthesis, Crystal Structure and
Luminescent Property of a Cd(II)
Coordination Polymer Constructed by
2-Amino-1,4-benzenedicarboxylate and
2-Imidazolidinone (English)

CHEN Shun-Yu, YANG E, LIU Zi-Sheng

DOI:10.3969/j.issn.1001-4861.2013.00.350

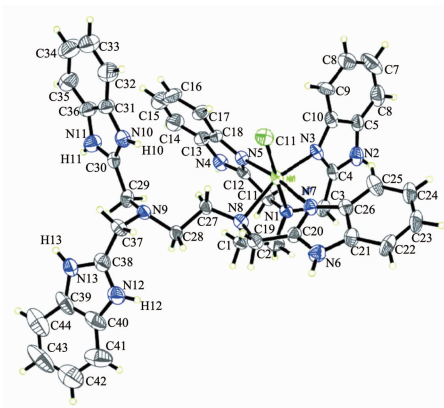
Chinese J. Inorg. Chem., **2013**,**29**:2485-2490



The complex features a three-dimensional framework with 1D tunnels and displays a strong blue emission at room temperature.

Synthesis, Crystal Structure and SOD Activity of Ni(II) Complex with 1, 1, 4, 7, 7-Pentakis(1*H*-benzimidazol-2-ylmethyl)-1, 4, 7-triazaheptane (English)

ZHANG Yong, HU Jia-Wei, ZHOU Xia,
CHEN Shi-Ming, MA Zhi-Gang,
CHEN Xue-Mei

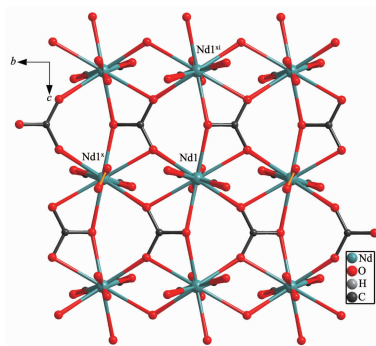


The coordination geometry of the nickel(II) complex was distorted octahedron geometry, it can inhibit pyrogallol oxidation and its SOD activity was affected by reaction temperatures and pH values. IC₅₀ of the complex was 29.8 mg·L⁻¹.

DOI:10.3969/j.issn.1001-4861.2013.00.348
Chinese J. Inorg. Chem., **2013**,**29**:2491-2496

A Neodymium(III) Coordination Polymer Based on Oxalate and Carbonate Ligands: Synthesis, Structure and Luminescence (English)

HUANG De-Qian, ZHANG Hong,
SHENG Liang-Quan, LIU Zhao-Di,
XU Hua-Jie, FAN Su-Hua

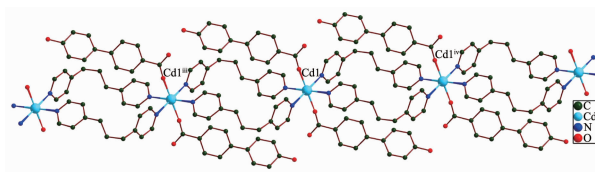


Hydrothermal synthesis of a neodymium (III) coordination polymer, {[Nd₂(ox)(cb)₂(H₂O)₂]·3H₂O}_n (**1**) (ox=oxalate, cb=carbonate) based on ox and cb ligands, leads to a material that displays NIR luminescence properties.

DOI:10.3969/j.issn.1001-4861.2013.00.283
Chinese J. Inorg. Chem., **2013**,**29**:2497-2502

One-Dimensional Cadmium Coordination Polymer Involving 4'-Hydroxybiphenyl-4-carboxylate and 1,3-Bis(4-pyridyl)propane Ligands: Structure and Luminescence (English)

MA De-Yun, QIN Liang, GUO Hai-Fu,
LIU Huang, XU Jun



Hydrothermal synthesis of a new 1D cadmium coordination polymer, {[Cd(4',4-Hhbc)₂(bpp)₂]}_n (**1**) (4',4-Hhbc=4'-Hydroxyl-biphenyl-4-carboxylate, bpp=1,3-bis(4-pyridyl)propane) based on 4',4-Hhbc and bpp ligands, leads to a material that displays blue luminescence properties.

DOI:10.3969/j.issn.1001-4861.2013.00.354
Chinese J. Inorg. Chem., **2013**,**29**:2503-2508