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Construction of a Noble-Metal-Free Nickel Metal-Organic Macrocycle for Photocatalytic Hydrogen Production (English)

LI He-Chuan, LI Ming-Feng, HE Cheng, DUAN Chun-Ying

DOI:10.11862/CJIC.2018.017

Chinese J. Inorg. Chem., **2018**,**34**(1):11-19

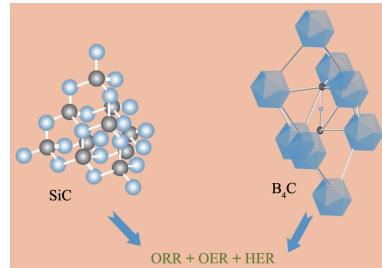
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Application of Silicon Carbide and Boron Carbide in Electrocatalysis

SU Jing, WANG Yan-Hui, DONG Liang,
ZANG Jian-Bing

DOI:10.11862/CJIC.2018.023

Chinese J. Inorg. Chem., **2018**,**34**(1):1-10



SiC and B₄C have highly stable covalent bonds, which have unique advantages and can be used in the field of fuel cell.

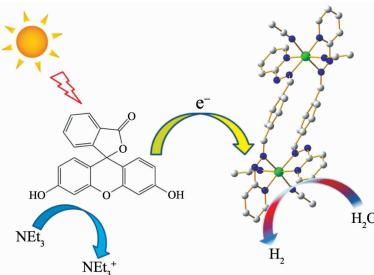
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Construction of a Noble-Metal-Free Nickel Metal-Organic Macrocycle for Photocatalytic Hydrogen Production (English)

LI He-Chuan, LI Ming-Feng, HE Cheng,
DUAN Chun-Ying

DOI:10.11862/CJIC.2018.017

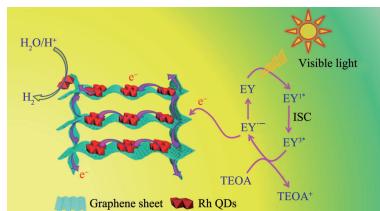
Chinese J. Inorg. Chem., **2018**,**34**(1):11-19



A nickel based metal-organic macrocycle $[\text{Ni}_2(\text{L}2)_2(\text{CH}_3\text{CN})_4](\text{ClO}_4)_4 \cdot 4\text{CH}_3\text{CN}$ was prepared as the proton reduction catalyst for light driven H₂ evolution in homogeneous environment with Fl as the photosensitizer. The formation of supramolecular complex between Fl and the macrocycle is benefit for the photo-induced electron transform, and achieves a high catalytic activity with the TON reaching to $3\ 100\ \text{mol}_{\text{H}_2} \cdot \text{mol}_{\text{cat}}^{-1}$.

Photocatalytic Hydrogen Evolution over Rh Quantum Dots Loaded on 3D Graphene under Visible Light Irradiation

ZHEN Wen-Long, GAO Hai-Bo, LÜ Gong-Xuan, MA Jian-Tai

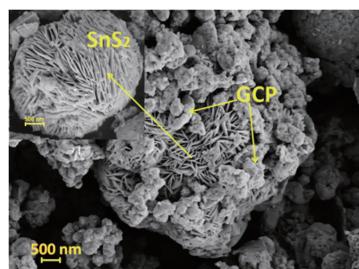


DOI:10.11862/CJIC.2018.024

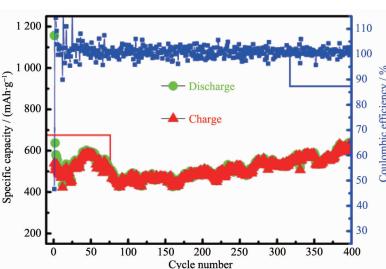
Chinese J. Inorg. Chem., **2018**,*34*(1):20-32

Electrochemical Performance of SnS₂/GCP (Graphene Composite Powder) Microcomposite as Anode Material for Lithium-Ion Battery (English)

LIN Jian, CUI Yong-Fu, CUI Jin-Long, WEN Zhong-Sheng, SUN Jun-Cai



The topological structure of 3D graphene could promote the electrons transfer in the graphene layers, which could enhance the photocatalytic activity and stability for hydrogen evolution reaction under visible light irradiation.

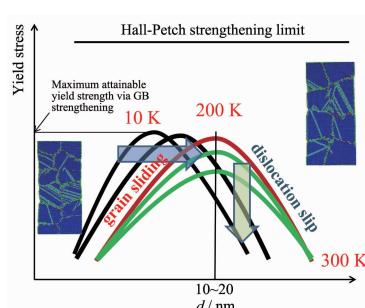


DOI:10.11862/CJIC.2018.019

Chinese J. Inorg. Chem., **2018**,*34*(1):33-42

Molecular Dynamics Investigation on the Temperature Dependence of the Deformation Mechanism of the Polycrystalline Silver Nanowires (English)

ZHAO Jian-Wei, CHENG Na, WANG Xiu-Xiu, YU Gang, Colm Durkan, WANG Nan



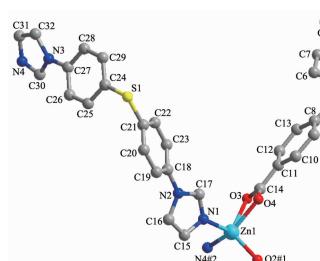
The Hall-Petch relation is sensitive to temperature. At low temperature, the Hall-Petch relation shifts toward large grain size. However, at temperature higher than 200 K, the maximum strength is reduced.

DOI:10.11862/CJIC.2018.011

Chinese J. Inorg. Chem., **2018**,*34*(1):43-54

Syntheses, Crystal Structures and Exceptionally Selective Detection of Picric Acid of Two Luminescent *d*¹⁰ Metal-Organic Frameworks (English)

XU Han, PAN Zhao-Rui



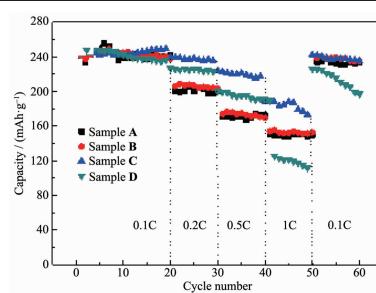
Two *d*¹⁰ coordination polymers show strong luminescence and their luminescence could be quenched by a series of nitroaromatic explosives. Importantly, they exhibits very highly sensitive and selective detection of picric acid compared to other nitroaromatic explosives.

DOI:10.11862/CJIC.2018.009

Chinese J. Inorg. Chem., **2018**,*34*(1):55-62

Surface Modification by Chemical Leaching of Over-Lithiated Cathode Material Li[Li_{0.2}Mn_{0.54}Ni_{0.13}Co_{0.13}]O₂ (English)

HU Guo-Rong, WANG Wei-Gang, DU Ke, PENG Zhong-Dong, CAO Yan-Bing



The rate capability curves of Li[Li_{0.2}Mn_{0.54}Ni_{0.13}Co_{0.13}]O₂ samples visually demonstrate the effect of chemical leaching on the electrochemical performance of the pristine sample. The one treated with H₂C₂O₄ solution shows the optimum rate capability and also structure stability during the charge-discharge process.

DOI:10.11862/CJIC.2018.018

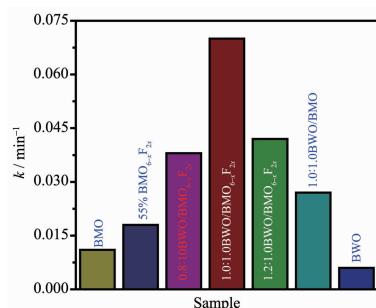
Chinese J. Inorg. Chem., **2018**,*34*(1):63-72

Construction of Bi_2WO_6 Quantum Dots (QDs) Decorated $\text{Bi}_2\text{MoO}_{6-x}\text{F}_{2x}$ Heterostructures with Enhanced Photocatalytic Activity

WANG Dan-Jun, SHEN Hui-Dong, FU Meng-Xi, WANG Chan, GUO Li, YANG Xiao, FU Feng

DOI:10.11862/CJIC.2018.029

Chinese J. Inorg. Chem., **2018**, *34*(1):73-82



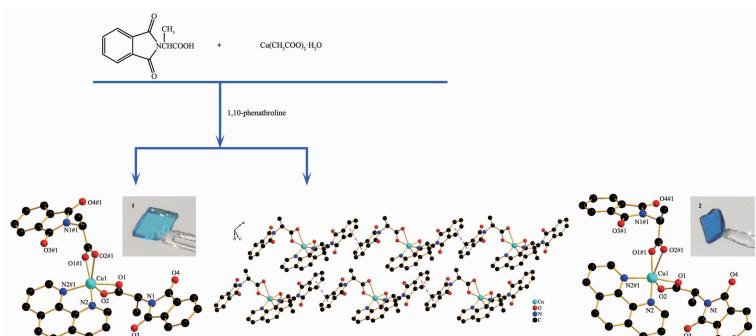
Bi_2WO_6 QDs deposition improves the separation sufficiency and migration rate of photogenerated electrons and holes, thus significantly improving photocatalytic activity of $\text{Bi}_2\text{WO}_6/\text{Bi}_2\text{MoO}_{6-x}\text{F}_{2x}$.

Two Concomitant Polymorphs of Homochiral Cu(II) Coordination Compounds Based on *N*-phthalyl-L-alanine: Syntheses and Crystal Structures (English)

LI Meng-Li, CHANG Xu, ZENG Yan-Li, SONG Hui-Hua

DOI:10.11862/CJIC.2018.001

Chinese J. Inorg. Chem., **2018**, *34*(1):83-91

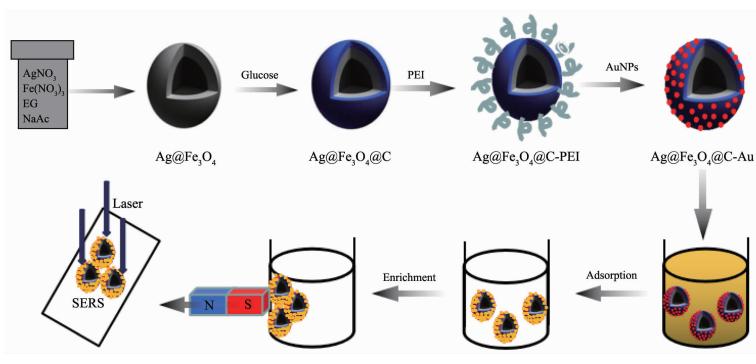


Preparation and SERS Performance of Magnetic $\text{Ag}@\text{Fe}_3\text{O}_4@\text{C}$ Supported Gold Nanoparticles

SHEN Mao, LIANG Hua-Ding, JIN Yan-Xian, JIA Wen-Ping, CHEN Su-Qing

DOI:10.11862/CJIC.2018.014

Chinese J. Inorg. Chem., **2018**, *34*(1):92-98

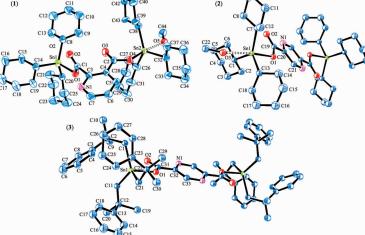


Syntheses, Crystal Structures and *in Vitro* Antitumor Activity of Three Bis(organotin) Pyridine-2,3(5)-dicarboxylate

FENG Yong-Lan, YU Jiang-Xi, JIANG Wu-Jiu, ZHU Xiao-Ming, ZHANG Fu-Xing, KUANG Dai-Zhi

DOI:10.11862/CJIC.2018.002

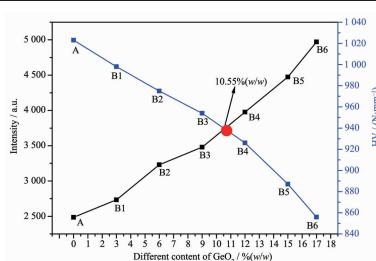
Chinese J. Inorg. Chem., **2018**, *34*(1):99-104



Three compounds have distorted tetrahedral and trigonal bipyramidal configuration for the central tin atom. The compounds exhibited strong *in vitro* antitumor activity against five human tumor cell line, HT-29, HepG2, MCF-7, KB and A549.

Preparation and Up-Conversion Luminescence Properties of $\text{Ho}^{3+}/\text{Yb}^{3+}$ Co-doped $\text{ZnO-Al}_2\text{O}_3-\text{GeO}_2-\text{SiO}_2$ Glass Ceramics

LI Ming-Yue, ZOU Xiang-Yu, ZHANG Hong-Bo, SHAO Jing, SU Chun-Hui



The optimal quality percentage of GeO_2 instead of SiO_2 is determined by red x-crossing.

DOI:10.11862/CJIC.2018.004

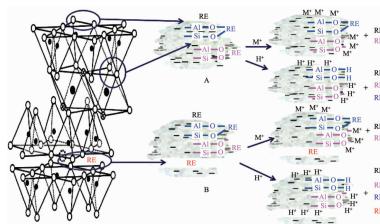
Chinese J. Inorg. Chem., **2018**, *34*(1):105-111

Classification and High Efficient Leaching of Ion Adsorption Rare Earth Based on Its pH Dependence

XU Qiu-Hua, YANG Li-Fen, ZHANG Li, LI Cui-Cui, WANG Da-Shan, ZHOU Xin-Mu, ZHOU Xue-Zhen, LI Yong-Xiu

DOI:10.11862/CJIC.2018.025

Chinese J. Inorg. Chem., **2018**,*34*(1):112-122



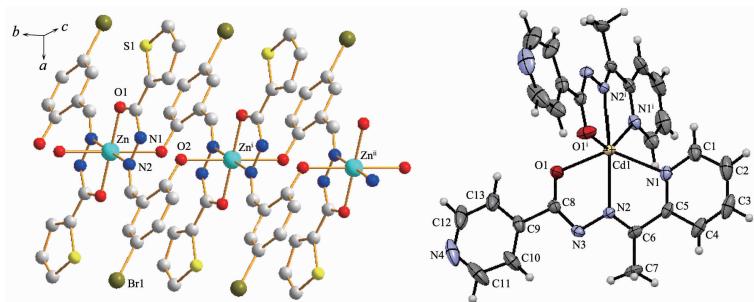
To realize high efficiency leaching of ion adsorption rare earths, slightly increasing the acidity of electrolyte solution is necessary for recovering the rare earths bonded by Al-O fracture bonds in the marginal of colloidal and clay minerals and that strongly adsorbed between the two layers of 2:1 type clay minerals.

Syntheses, Crystal Structures and Properties of Zn(II) and Cd(II) Complexes with Acylhydrazone Schiff Base

CHEN Yan-Min, FENG Ying-Jian, CAI Min-Yu, FANG Ya-Qian, XIE Qing-Fan

DOI:10.11862/CJIC.2018.008

Chinese J. Inorg. Chem., **2018**,*34*(1):123-128

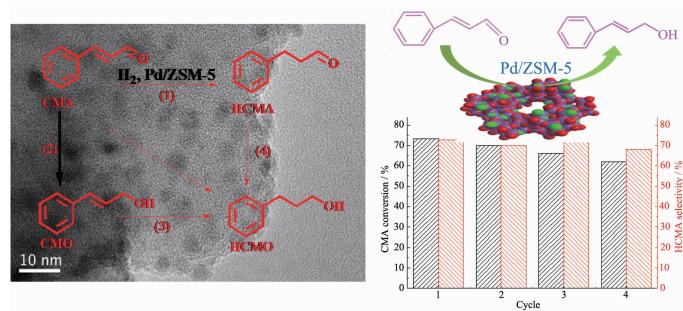


Nano Pd/ZSM-5: *in Situ* Synthesis and Catalytic Hydrogenation of Cinnamaldehyde

TONG Xue, YANG Feng-Li, REN Jing, CAI Jin-Peng, LU Nan, JIANG Xing-Mao

DOI:10.11862/CJIC.2018.026

Chinese J. Inorg. Chem., **2018**,*34*(1):129-134

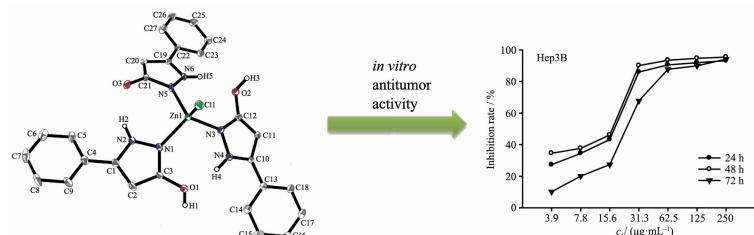


Synthesis, Crystal Structure and Antitumor Activity of Pyrazole Zinc Complex

LI Jing, WU Chun-Yang, ZHANG Ying, SHEN Gui-Nan, JIN Cheng-Hao

DOI:10.11862/CJIC.2018.016

Chinese J. Inorg. Chem., **2018**,*34*(1):135-141

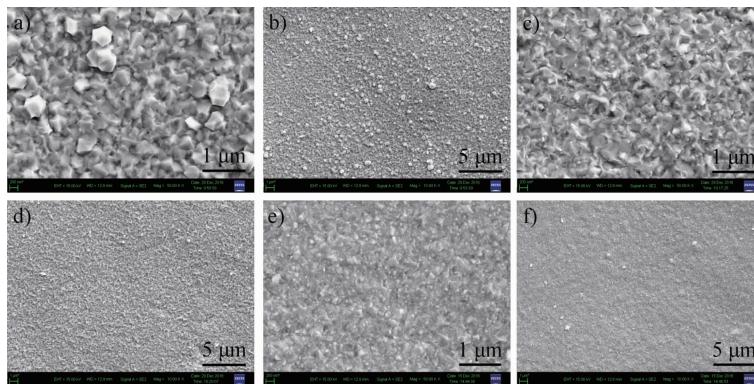


Electrodeposition of Bright Gold Deposits in Ionic Liquid [BMIm][BF₄] (English)

SONG Yun-He, YANG Pei-Xia, LIAN Ye, FENG Zhong-Bao, ZHANG Jin-Qiu, AN Mao-Zhong

DOI:10.11862/CJIC.2018.020

Chinese J. Inorg. Chem., **2018**,*34*(1):142-150

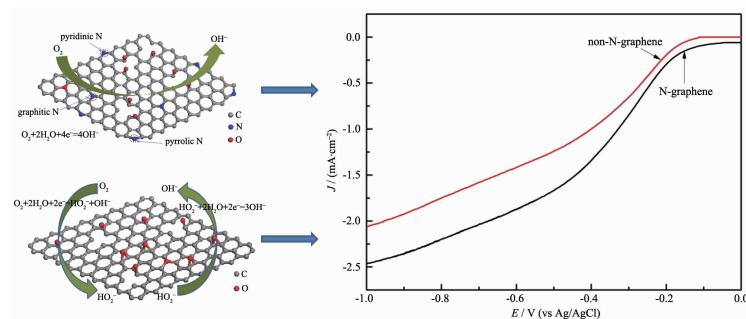


Nitrogen-doped Graphene by Microwave Solvothermal for Oxygen Reduction Reactions in Alkaline Electrolyte (English)

CHENG Ming, SHI Rui-Na, LIU Shu-Sen, ZHAO Jin-Xian, REN Jun

DOI:10.11862/CJIC.2018.022

Chinese J. Inorg. Chem., **2018**,**34**(1):151-160



Syntheses, Crystal Structures and Theoretical Calculation of Cadmium/Lead Supramolecular Coordination Compounds (English)

LIU Hong, LI Chuan-Bi, LI Guo-Feng, LI Xiu-Mei, PAN Ya-Ru



DOI:10.11862/CJIC.2018.003

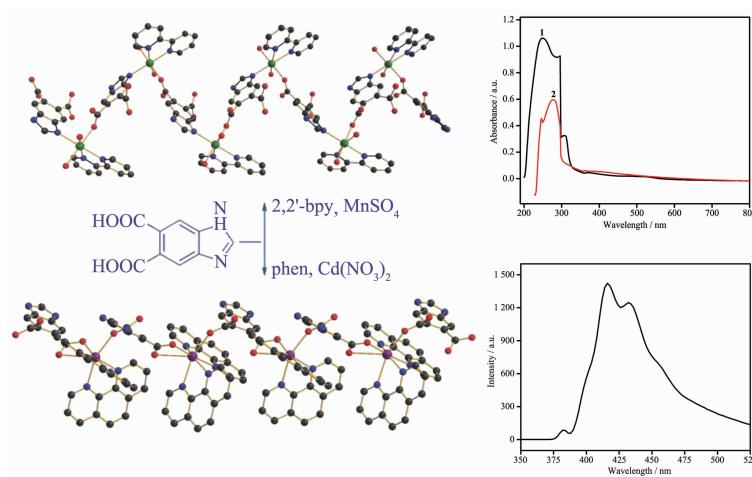
Chinese J. Inorg. Chem., **2018**,**34**(1):161-169

Manganese(II) and Cadmium(II) Mixed-Ligand Complexes Constructed from Benzimidazole-5,6-dicarboxylic Acid: Syntheses, Crystal Structures and Properties (English)

WANG Yong-Li, WEI Zhen, LUO Yong-Hua, ZHANG Peng-Mei, GENG Li-Li, WANG Li-Hua, LIAO Bo

DOI:10.11862/CJIC.2018.027

Chinese J. Inorg. Chem., **2018**,**34**(1):170-178

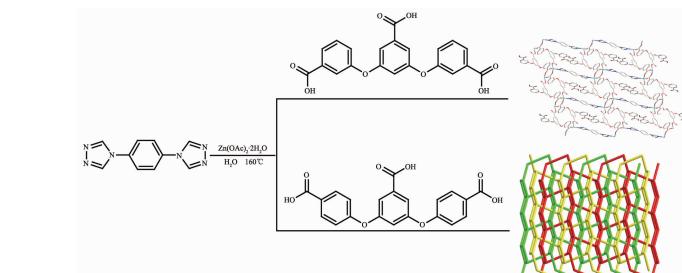


Solvothermal Synthesis and Characterization of Two Zn(II) Coordination Polymers with Isomeric Multi-carboxylate Ligands (English)

YANG Shi-Ying, CAI Hua, ZHANG Qi, ZHOU Yu-Ping, REN Xiao-Chen, XIE Lu-Lu

DOI:10.11862/CJIC.2018.007

Chinese J. Inorg. Chem., **2018**,**34**(1):179-186



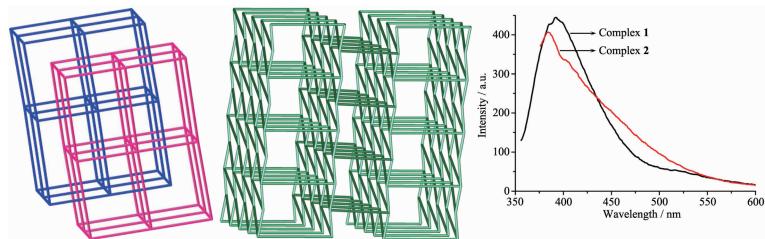
Two Zn(II) coordination polymers based on mixed-ligands exhibit 2D cluster-based (4,4) network and 3D fold 2D+2D→2D parallel entangled network, respectively.

Two 3D Cd(II) Coordination Polymers Based on Semi-rigid Dicarboxylic Acid Ligand (English)

LIU Lu, HONG Meng-Ru, LIU Ying-Ying, WANG Zhi-Hui, LI Ying, HOU Hong-Wei, ZHANG Yu-Ping

DOI:10.11862/CJIC.2018.006

Chinese J. Inorg. Chem., **2018**,**34**(1):187-194



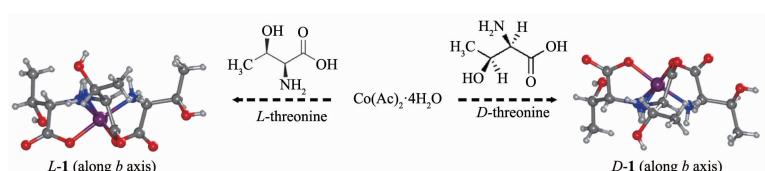
Coordination polymer (CP) **1** possesses a 6-connected 2-fold interpenetrating 3D *pcu* topology net with point symbol of $4^{12}\cdot 6^3$. CP **2** exhibits a 5-connected 3D *sqa* network with a Schläfli symbol of $4^4\cdot 6^6$. Additionally, **1** and **2** present better thermal stabilities, as well as **1** and **2** also show different photoluminescence behaviors in the solid state.

Syntheses, Structures and Circular Dichroism Spectroscopy of Chiral Complexes $[\text{Co}(L/D\text{-thr})_3]\cdot 4.5\text{H}_2\text{O}$ (English)

TIAN Ju-Mei, ZHANG Jing-Ping

DOI:10.11862/CJIC.2018.010

Chinese J. Inorg. Chem., **2018**,**34**(1):195-200



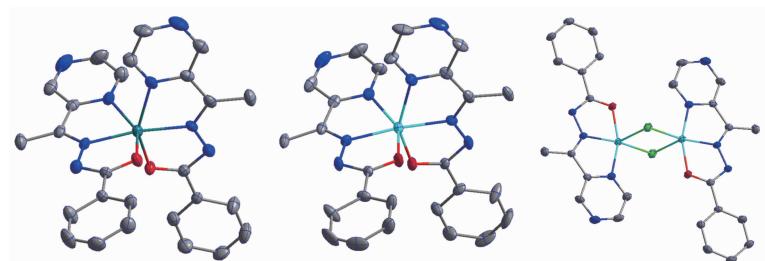
A couple of enantiomer **L-1** and **D-1** have been assembled using $\text{Co}(\text{Ac})_2\cdot 4\text{H}_2\text{O}$ based on the chiral ligand *L/D*-threonine. The chirality of compounds was confirmed by circular dichroism analysis.

Co(II)/Zn(II)/Cu(II) Complexes Containing Hydrazone Ligand Bearing Pyrazine Unit: Syntheses, Crystal Structures and Fluorescence Properties (English)

HOU Xu-Feng, ZHAO Xiao-Lei, ZHANG Lu, WU Wei-Na, WANG Yuan

DOI:10.11862/CJIC.2018.005

Chinese J. Inorg. Chem., **2018**,**34**(1):201-205



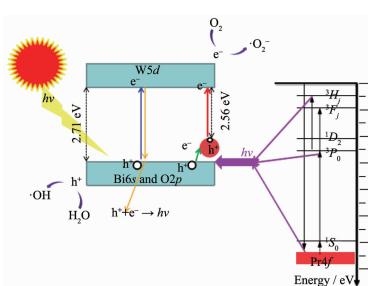
Three complexes $[\text{Co}(\text{L})_2]$, $[\text{Zn}(\text{L})_2]$ and $[\text{Cu}_2(\text{L})_2\text{Cl}_2]$ with 2-acetylpyrazine benzoylhydrazone have been synthesized and characterized. The Zn(II) complex exhibits strong fluorescence emission probably due to a CHEF effect.

Photocatalytic Activities of Pr Doped Bi_2WO_6 Three-Dimensional Flower Microspheres via Hydrothermal Method (English)

ZHANG Ya-Heng, TIAN Hao, ZHAI Ren-Kai, LI Jian-Xing, GU Da-Guo, QIANG Gui-Hong, XI Xin-Guo

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The 1.0%Pr- Bi_2WO_6 exhibit an enhanced visible light-induced photoactivity with the degradation rate of 95% for MB. The higher photocatalytic activity is attributed to the formation of Pr doping, which promote adsorption of visible light and the separation of electron-hole pairs, leading to more active species on the photocatalyst surface.