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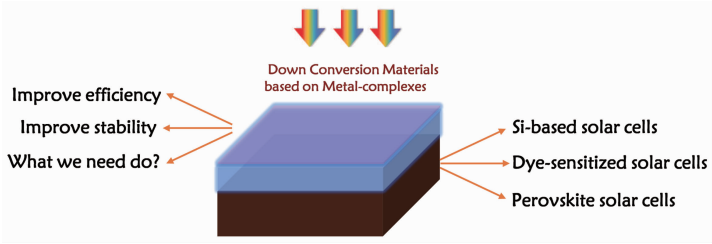
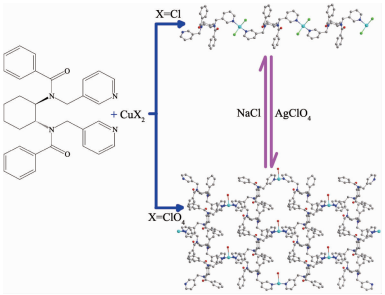
Reviews



We review the research progress on the development of down conversion materials for solar cells, focusing on the luminescent metal-complexes system.

Articles

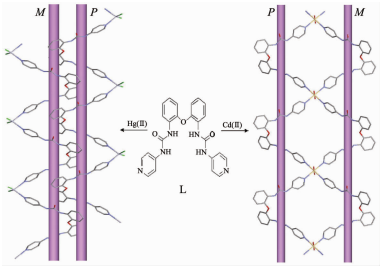


Two new chiral Cu (Ⅱ) coordination polymers have been assembled with a chiral V-shaped bidentate ligand and different Cu(Ⅱ) salts, with the structures of 1D linear chain and 2D (4,4) network, respectively. They can be reversibly transformed to each other in methanol under solvothermal conditions.

Syntheses and Crystal Structures of Hg(Ⅱ) and Cd(Ⅱ) Complexes Derived from a Bis(pyridylurea) Ligand

HUANG Chao, ZHAI Ju, LUO Xuan, CHEN Yao, CHEN Dong-Mei, ZHU Bi-Xue

DOI:10.11862/CJIC.2018.112
Chinese J. Inorg. Chem., **2018**,**34**(6):1028-1034

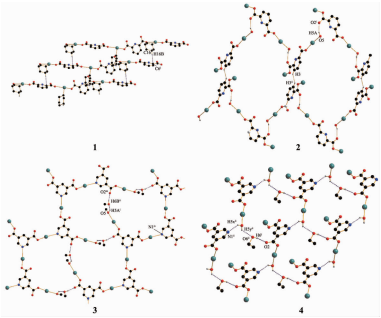


Two coordination polymers $\{[Hg(L)Cl_2]\cdot 2DMF\}_n$ (**1**) and $\{[Cd(L)_2(H_2O)_2](ClO_4)_2\cdot 4DMF\cdot 2H_2O\cdot 2CH_3OH\}_n$ (**2**) were synthesized and characterized. Their structures were measured via single crystal X-ray diffraction and their thermal stabilities and vapor adsorptions for MeOH were further investigated.

Syntheses, Structures and *in Vitro* Antitumor Activity of Bis(tricyclohexyltin) Pyridinedicarboxylate with Macrocyclic Supramolecular Structure

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

DOI:10.11862/CJIC.2018.111
Chinese J. Inorg. Chem., **2018**,**34**(6):1035-1042

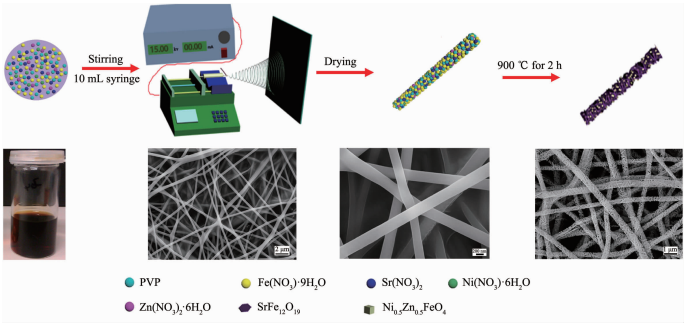


Four bis(tricyclohexyltin) pyridinedicarboxylates with macrocyclic supramolecular have been prepared by the microwave-assisted solvothermal reaction of tricyclohexyltin hydroxide with the 2,6-H_2pydc and 3,5-H_2pydc (H_2pydc=pyridinedicarboxylic acid) in methanol.

Preparation and Microwave Absorption Properties of Porous Structure Soft/Hard Magnetic $Ni_{0.5}Zn_{0.5}Fe_2O_4/SrFe_{12}O_{19}$ Composite Fibers

ZHOU Jian-Wei, XING Xiao-Tong, HAN Qiu-Xia, MENG Xian-Feng, LU Chun-Hua

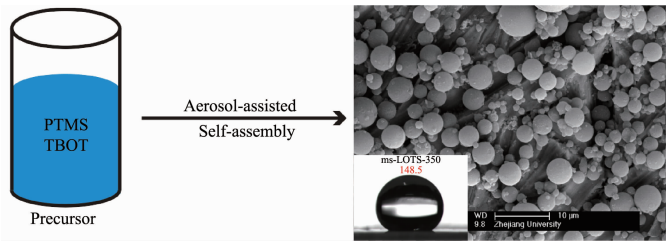
DOI:10.11862/CJIC.2018.111
Chinese J. Inorg. Chem., **2018**,**34**(6):1043-1050



Synthesis and Application of Super-Hydrophobic Titanosilicates Sphere

ZHOU Hui, LI Sha, XIAO Li-Ping, FAN Jie, ZHENG Xiao-Ming

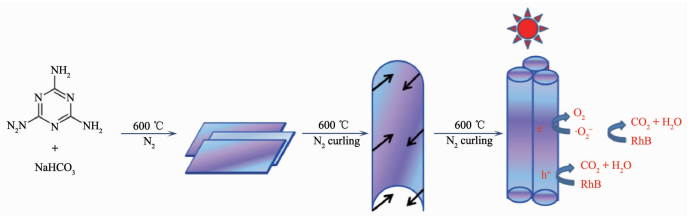
DOI:10.11862/CJIC.2018.123
Chinese J. Inorg. Chem., **2018**,**34**(6):1051-1058



Preparation and Photocatalytic Performance of g-C_3N_4 Nanotubes

WANG Xiao-Xue, GAO Jian-Ping, ZHAO Rui-Ru, WU Yong-Li, HAO Chao-Yue, QIU Hai-Xia

DOI:10.11862/CJIC.2018.113
Chinese J. Inorg. Chem., **2018**,**34**(6):1059-1064

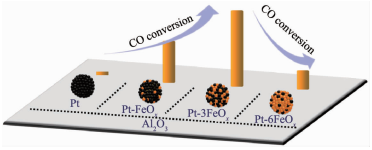


The photocatalytic performance of g-C_3N_4 nanotubes produced by the pyrolysis of melamine is improved.

Influence of Microstructure of Pt-FeO_x Catalyst on the Catalytic CO Oxidation

ZHENG Bin, GAN Tao, WU Shu-Jie, LIU Gang, ZHANG Wen-Xiang

DOI:10.11862/CJIC.2018.130
Chinese J. Inorg. Chem., **2018**,**34**(6):1065-1070

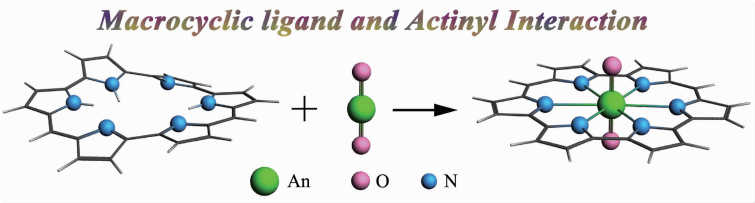


The presence of appropriate FeO_x species around Pt is beneficial to the construction of highly active CO oxidation catalysts.

Interaction Behavior Between Hexa-dentate Polypyrrolic Macrocycles and Actinyl Species: Bonding, Thermodynamic and Spectroscopic Properties

BI Yan-Ting, YAO Jun, SHEN Zhong-Hui, ZHANG Hong-Xing, PAN Qing-Jiang

DOI:10.11862/CJIC.2018.136
Chinese J. Inorg. Chem., **2018**,**34**(6):1071-1078

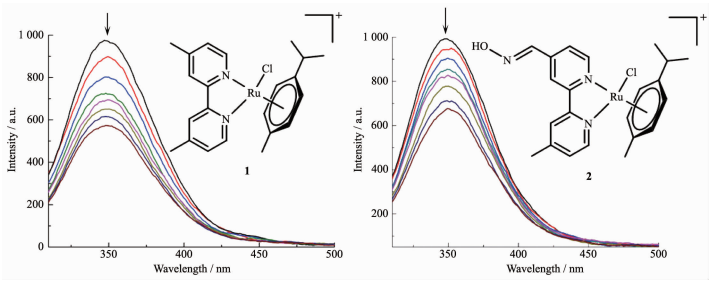


A relativistic DFT study of structures, QTAIM analyses at An-N bond critical points, thermodynamic energetics and electronic spectroscopy revealed the interaction behavior of actinyls and hexa-dentate polypyrroles, which have implications for promising application of these macrocyclic ligands in the detection and separation of toxic and radioactive uranium and *trans*-uranics.

Ru(Ⅱ)-Arene Complexes Based on Bipyridyl Derivatives Ligand: Syntheses, Characterization and Interaction with DNA/BSA

GE Chao, WANG Hong-Yan, DONG Yi-Li, LI Ji, XU Yun, GU Qiu-Yu, SU Zhi, QIAN Yong, Peter J. Sadler, LIU Hong-Ke

DOI:10.11862/CJIC.2018.148
Chinese J. Inorg. Chem., **2018**,**34**(6):1079-1085

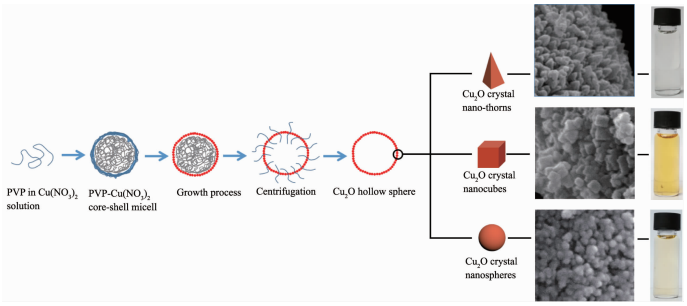


Ruthenium (Ⅱ)-arene complexes with bipyridyl derivatives ligands **1** and **2** were synthesized, which could interact with BSA.

Fabrication and Photocatalytic Properties of Hollow Sphere Cu_2O with Different Surface Morphology

YAO Xun, LI Ming-Gao, XIE Yan-Chun, LIU Fei, LIU Qin, LIU Yang, LI Peng, XUE Rui-Ting, FAN Xi-Mei

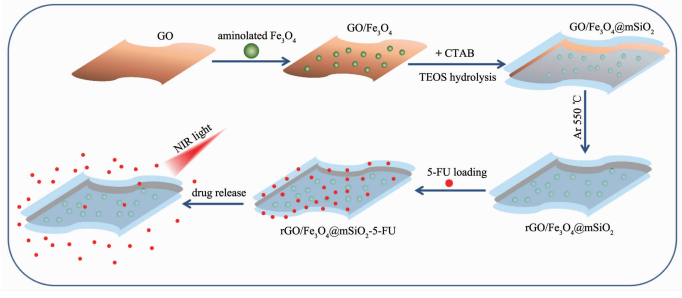
DOI:10.11862/CJIC.2018.144
Chinese J. Inorg. Chem., **2018**,**34**(6):1086-1094



Construction and Synergistic Anticancer Efficacy of Sandwich-like rGO/Fe_3O_4@mSiO_2 Drug Carriers

YANG Yong-Mei, JI Ming-Xiang, YANG Ying, XIE An-Jian, SHEN Yu-Hua

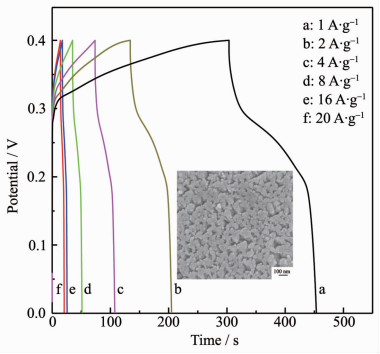
DOI:10.11862/CJIC.2018.164
Chinese J. Inorg. Chem., **2018**,**34**(6):1095-1102



Preparation and Electrochemical Performance of Nanoporous Bimetallic Oxide $NiCo_2O_4$

ZHOU Qi, LI Zhi-Yang, ZHENG Bin

DOI:10.11862/CJIC.2018.146
Chinese J. Inorg. Chem., **2018**,**34**(6):1103-1109

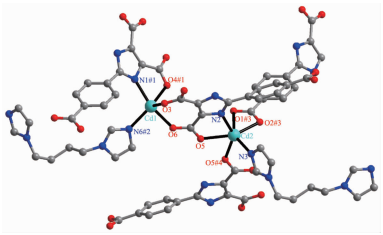


The bicontinuous nano-porous $NiCo_2O_4$ obtained by dealloying and annealing exhibits excellent ultracapacitor performance. Its specific capacitance is 674 $F \cdot g^{-1}$ at 1 $A \cdot g^{-1}$, The specific capacitance retention rate is 72% when the current density is increased to 20 $A \cdot g^{-1}$.

Three Cd(Ⅱ) and Zn(Ⅱ) Coordination Polymers Based on 2-(4′-Carboxyphenyl)-1*H*-imidazole-4,5-dicarboxylic Acid: Syntheses, Topological Structures, Fluorescent Spectra and DNA Binding (English)

YAN Shi-Cheng, WU Da-Ling, ZHANG Min-Zhi, GUAN Quan-Yin, ZHAO Guo-Liang

DOI:10.11862/CJIC.2018.149
Chinese J. Inorg. Chem., **2018**,**34**(6):1110-1120

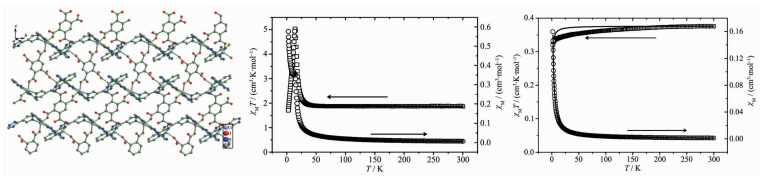


Three coordination polymers $\{[Cd_2(CPhIDC)(bimb)]\cdot H_2O\}_n$ (**1**), $\{[Cd_2(CPhIDC)(phen)_2]\cdot 3H_2O\}_n$ (**2**), $\{[Zn_2(CPhIDC)(bpp)]\cdot 1.5H_2O\}_n$ (**3**), ($H_4CPhIDC$=2-(4′-carboxyphenyl)-1*H*-imidazole-4,5-dicarboxylic acid, bimb=1,4-bis(imidazol-1-yl)butane, phen=1,10-phenanthroline, bpp=1,3-di(4-pridyl)propane) have been synthesized by solvothermal reaction and characterized by IR, EA, PXRD and single-crystal XRD.

Crystal Structures and Magnetic Properties of Two Isomorphic Frameworks Based on 3-(1*H*-pyrazol-4-yl)-5-(pyridin-2-yl)-1,2,4-triazole and 1,2,4,5-Benzenetetracarboxylic Acid (English)

WANG Yu-Fang, TAI Jun-Hui, YAN Xiao-Wei, ZHAO Meng-Yun, WANG Li-Ya

DOI:10.11862/CJIC.2018.135
Chinese J. Inorg. Chem., **2018**,**34**(6):1121-1126

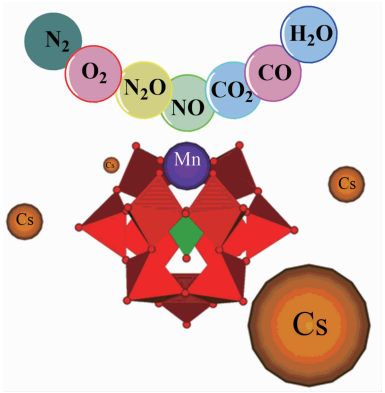


The present work reports synthesis and characterization of two new isomorphic coordination polymers, $[M(btec)_{0.5}(H_2L)]_n$ (M=Co(Ⅱ) (**1**), Cu(Ⅱ) (**2**)). Compounds **1** and **2** are 2D structure. In addition, magnetic studies indicate that **1** show weak ferromagnetic between metal ions and there is typical paramagnetic behavior in **2**.

DFT Study of Mono-Manganese-Substituted Keggin-Type Polyoxometalates with Atmospheric Small Molecules X (X=H_2O, N_2, O_2, NO, N_2O, CO and CO_2) (English)

LIU Chun-Guang, ZHANG Han-Yu, JIANG Meng-Xu

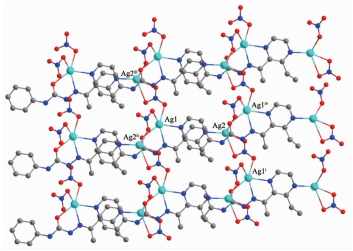
DOI:10.11862/CJIC.2018.143
Chinese J. Inorg. Chem., **2018**,**34**(6):1127-1136



Geometries, electronic structure, and bonding nature of a series of mono-manganese-substituted Keggin-type polyoxometalates(POMs) with atmospheric small molecules have been studied based on density functional theory calculations.

Synthesis, Crystal Structure and DNA-Binding Property of Ag(I) Complex with 1-(3-Ethylpyrazin-2-yl)ethylidene-4-phenylsemicarbazide (English)

WU Hao, WANG Yuan, ZHANG Ling,
KANG Rui-Fang, WU Wei-Na

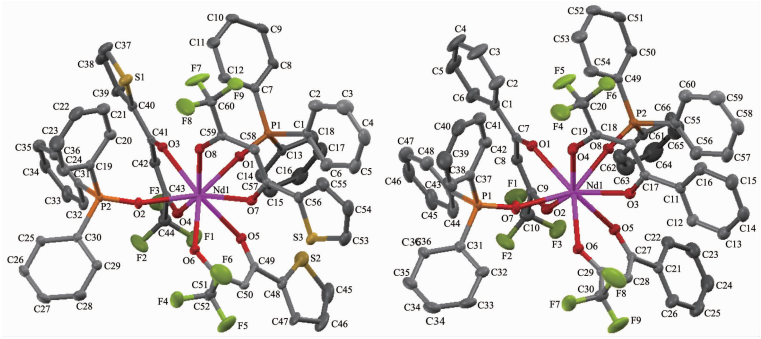


The complex $[Ag_2(HL)(NO_3)_2]_n$ (**1**) with a 2D framework bearing a semicarbazone ligand has been synthesized and characterized. The interaction of complex **1** with DNA is stronger than that of the ligand HL.

DOI:10.11862/CJIC.2018.108
Chinese J. Inorg. Chem., **2018**,**34**(6):1137-1142

Syntheses, Crystal Structures and Luminescence Properties of Nd Complexes with β-Diketonate and Triphenylphosphine Oxide (English)

LIU Qiang, ZHANG Shuai, DU Kai, YIN Qiang,
LI Wa, CAI Pei-Jun

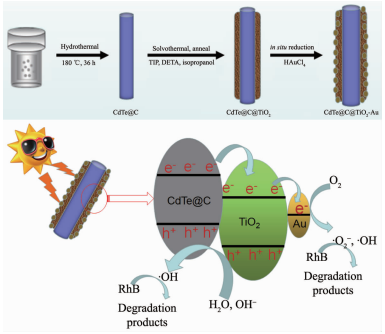


Under mild conditions, two β-diketonate neodymium complexes were synthesized. They have excellent thermodynamic stability and typical fluorescence characteristics of neodymium complexes.

DOI:10.11862/CJIC.2018.141
Chinese J. Inorg. Chem., **2018**,**34**(6):1143-1148

Fabrication and Photocatalytic Performance of One-Dimensional Structured CdTe@C@TiO_2-Au Heteronanowires (English)

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

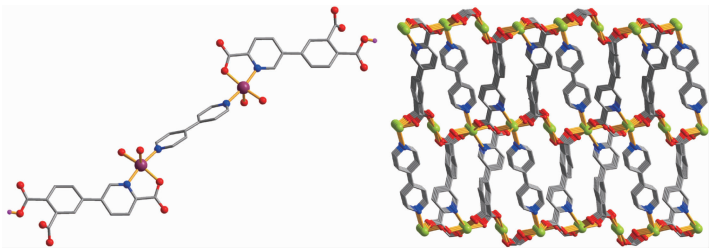


One-dimensional structured (1D) TiO_2-coated CdTe@C nanowires support for Au nanoparticles (CdTe@C@TiO_2-Au) has a good stability and visible light photocatalytic activity.

DOI:10.11862/CJIC.2018.140
Chinese J. Inorg. Chem., **2018**,**34**(6):1149-1158

Syntheses, Crystal Structures and Magnetic Properties of Two Copper (Ⅱ) and Manganese(Ⅱ) Coordination Compounds Constructed from Biphenyl Tricarboxylic Acid (English)

LI Yu, ZOU Xun-Zhong, GU Jin-Zhong,
CHENG Xiao-Ling

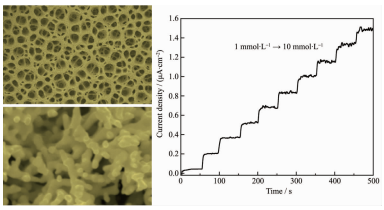


Zero dimensional dinuclear copper(Ⅱ) coordination compound $[Cu_2(Hdppa)_2(4,4'\text{-bipy})(H_2O)_4]\cdot 4,4'\text{-bipy}\cdot 6H_2O$ (**1**) and 3D manganese(Ⅱ) coordination polymer $\{[Mn_3(\mu_5\text{-dppa})_2(4,4'\text{-bipy})(H_2O)_2]\cdot 4H_2O\}_n$ (**2**) have been constructed and the structures and magnetic properties of the compounds were investigated.

DOI:10.11862/CJIC.2018.142
Chinese J. Inorg. Chem., **2018**,**34**(6):1159-1165

Three Dimensional Porous Gold Film Prepared by the Hydrogen Bubble Dynamic Template (English)

LIU Jun, LI Rong, XIAO Jie, ZHANG Miao-Lan, LIU Xuan-Yan

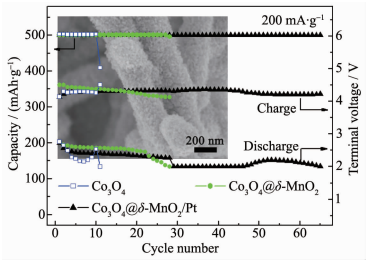


Herein, Au films with three-dimensional hierarchical pores were prepared by hydrogen bubble dynamic template method. The Au foam films show good electrocatalytic activities in enzyme-free detection of glucose.

DOI:10.11862/CJIC.2018.133
Chinese J. Inorg. Chem., **2018**,**34**(6):1166-1172

Co_3O_4@δ-MnO_2/Pt Core-Shell Arrays as Efficient Catalytic Cathode for Lithium-Oxygen Cells (English)

CHENG Hao, XIE Jian, CHEN Zhen, TU Jian, CAO Gao-Shao, ZHAO Xin-Bing

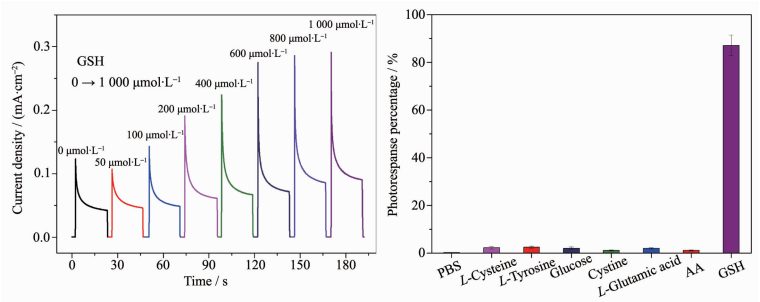


A binder-free array-type Co_3O_4@δ-MnO_2/Pt catalytic cathode exhibits high catalytic effect for oxygen reduction/evolution reactions, enabling conformal growth of thin-layered Li_2O_2 and long cycle life of the Li-O_2 cell.

DOI:10.11862/CJIC.2018.137
Chinese J. Inorg. Chem., **2018**,**34**(6):1173-1182

Effects of Electrolyte Composition, Thickness and Surface Modification on Photo-Electrochemical Activity of $BiVO_4$ Films Deposited through Spin-Coating (English)

SUI Mei-Rong, GU Xiu-Quan, SHI Mei-Lin, LIU Lin-Lin, NI Zhong-Hai

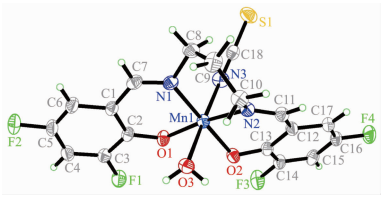


The $BiVO_4$ thin films (~120 nm in thickness) exhibits an excellent visible-light PEC performance for both the water splitting and detection of the glutathione (GSH) with ultralow contents.

DOI:10.11862/CJIC.2018.143
Chinese J. Inorg. Chem., **2018**,**34**(6):1183-1191

Syntheses, Crystal Structures and Urease Inhibition of Two Manganese(Ⅲ) Complexes with Bis-Schiff Bases (English)

LI Yun-Tong, DONG Jing-Wen, LU Yao, GU Yi-Tong, SHANG Chao-Nan, LIU Fu-Yao, XIN Yu, JING Chang-Ling, YOU Zhong-Lu



Two Schiff base manganese(Ⅲ) complexes were prepared. The thiocyanato-coordinated complex show effective urease inhibitory activity.

DOI:10.11862/CJIC.2018.147
Chinese J. Inorg. Chem., **2018**,**34**(6):1192-1198