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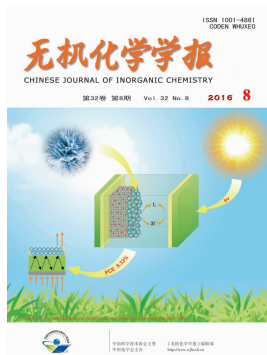
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TiO₂ Microspheres: Formation and Performance Improvement for Dye-Sensitized Solar Cells

ZHU Qing, TU Luo, ZHOU Xing-Fu

DOI:10.11862/CJIC.2016.195

Chinese J. Inorg. Chem., **2016**,**32**:1319-1326

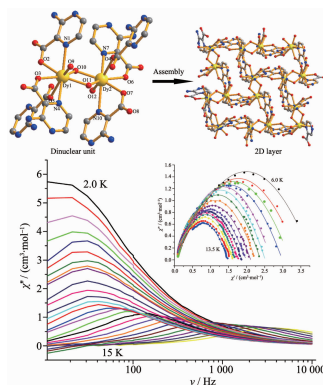
Articles

Single Molecule Magnet Behavior in a Two-Dimensional Array of Dysprosium (III) Complex (English)

YANG Yu-Ting, TU Chang-Zheng,
YAO Li-Feng, LI Jun-Li, CHEN Guang,
CHENG Fei-Xiang

DOI:10.11862/CJIC.2016.185

Chinese J. Inorg. Chem., **2016**,**32**:1311-1318



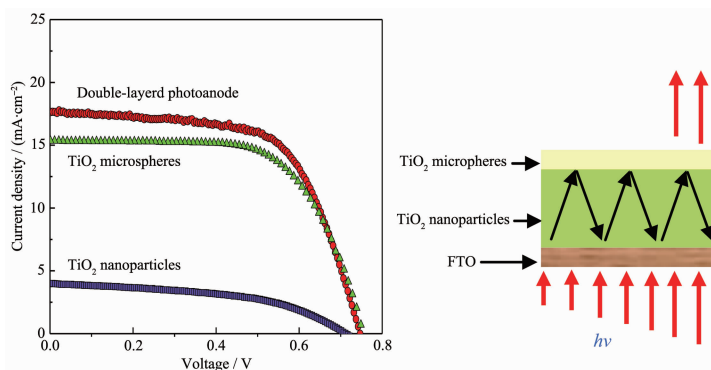
The dysprosium(III) complex with the 2D coordination network based on $\mu_2\text{-OH}^-$ bridged dinuclear units which displays ferromagnetic coupling and slow magnetic relaxation.

TiO₂ Microspheres: Formation and Performance Improvement for Dye-Sensitized Solar Cells

ZHU Qing, TU Luo, ZHOU Xing-Fu

DOI:10.11862/CJIC.2016.195

Chinese J. Inorg. Chem., **2016**,**32**:1319-1326



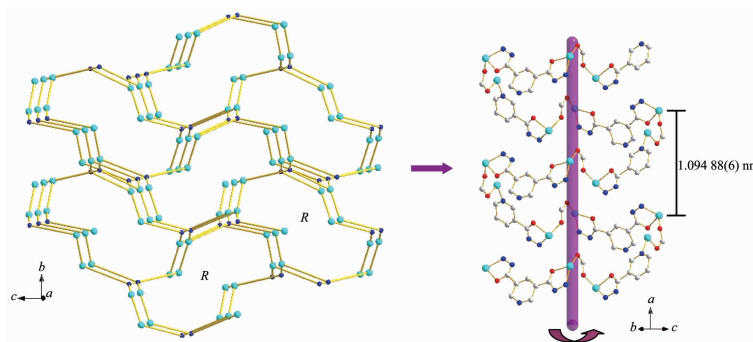
Double-layerd photoanode was fabricated by using TiO₂ microspheres as the reflecting layer and TiO₂ nanoparticles as the bottom layer. Adding reflecting layer can increase the reflectance of sunlight and improve the photoelectric conversion efficiency to 8.33%.

Syntheses, Crystal Structures and Luminescence Properties of Zinc Helical Coordination Polymer Based on Semirigid V-Shaped Pyridine-3,5-dimethylhydrazones

SHI Feng-Xiang, WU Wen-Shi, HUANG Miao-Ling

DOI:10.11862/CJIC.2016.171

Chinese J. Inorg. Chem., 2016,32:1327-1336

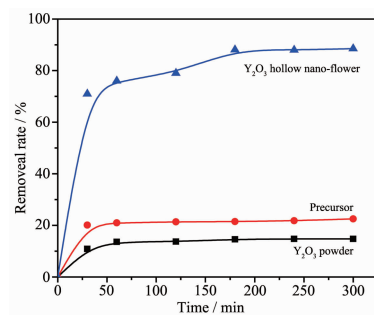


Yttria Hollow Nano-Flowers Synthesized by Hydrothermal Method and Their Adsorption Capacity

JIANG Xue-Liang, ZHANG Jiao, YU Lu, YONG Feng

DOI:10.11862/CJIC.2016.160

Chinese J. Inorg. Chem., 2016,32:1337-1344



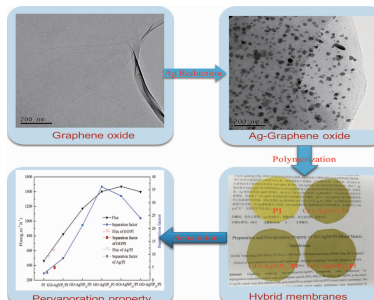
Uniform-sized and monodisperse Y_2O_3 hollow nano-flowers were synthesized by hydrothermal method followed by a calcination process. The Y_2O_3 hollow nano-flowers showed excellent adsorption ability to remove $\text{K}_2\text{Cr}_2\text{O}_7$ at room temperature.

Preparation and Pervaporation Property of GO-AgNP/PI Mixed Matrix Membranes

JIANG Yang-Yang, DAI Shi-Qi, YU Xin-Yi, LIN Jun-Ze, SHI Shen-Xuan-Xiang, WANG Ting, WU Li-Guang

DOI:10.11862/CJIC.2016.178

Chinese J. Inorg. Chem., 2016,32:1345-1352



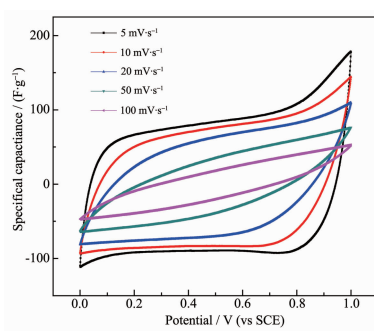
Graphene oxide-Ag nanoparticle (GO-AgNP) composites were first synthesized by impregnation-reduction method. Followed that, GO-AgNP/polyimide (PI) mixed matrix membranes were prepared by blending GO-AgNP with polyimide (PI). Addition of AgNP was helpful to improve the dispersion of AgNP-GO in the mixed matrix membrane, thus enhance the pervaporation performance of the membrane.

Electrochemical Property of Carbon Micro-coils/ MnO_2 Composites

ZHU Ya-Bo, TANG Guo-Xia, WANG Tao, FENG Pei-Zhong, TAO Xue-Yu

DOI:10.11862/CJIC.2016.145

Chinese J. Inorg. Chem., 2016,32:1353-1357



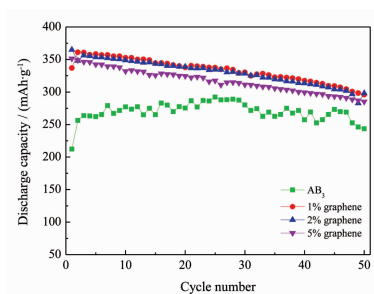
Due to the synergistic action of MnO_2 and CMC. The $\text{MnO}_2\text{@CMC}$ composites show a specific capacitance of $115 \text{ F} \cdot \text{g}^{-1}$ at a scan rate of $5 \text{ mV} \cdot \text{s}^{-1}$ and keep a good cycling stability.

Surface Modification of $\text{Mm}_{0.78}\text{Mg}_{0.22}\text{Ni}_{2.48}\text{Mn}_{0.09}\text{Al}_{0.23}\text{Co}_{0.47}$ Hydrogen Storage Alloy

LI Guo-Hui, HUANG Hong-Xia, WANG Xin-Ying, XIE Wen-Qiang

DOI:10.11862/CJIC.2016.197

Chinese J. Inorg. Chem., 2016,32:1358-1362

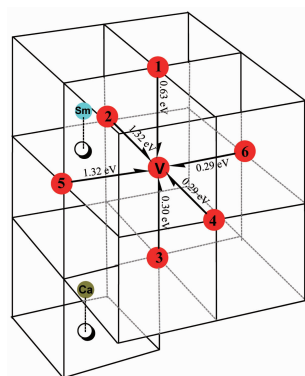


With the addition of graphene, the maximum discharge capacity of $\text{Mm}_{0.78}\text{Mg}_{0.22}\text{Ni}_{2.48}\text{Mn}_{0.09}\text{Al}_{0.23}\text{Co}_{0.47}$ (Mm denotes mischmetal) increased first and then decreased, the maximum discharge capacity of the 2% graphene reached $364.9 \text{ mAh} \cdot \text{g}^{-1}$.

Electronic Structures and Oxygen Ion Migrations of the CaO or BaO and Sm₂O₃ Co-doped CeO₂ System: A DFT+U Study

JIA Gui-Xiao, WU Tong-Wei,
LIU Yuan-Yuan, XIE Min, AN Sheng-Li,
BAO Jin-Xiao

DOI:10.11862/CJIC.2016.172
Chinese J. Inorg. Chem., **2016**,**32**:1363-1369

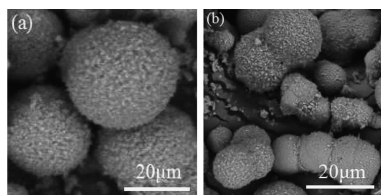


For the migration of O²⁻ to vacancy, the order of migration energies was $E_m(3 \rightarrow V) < E_m(1 \rightarrow V) < E_m(4 \rightarrow V) < E_m(2 \rightarrow V)$, due to repulsion effect between oxygen ions and doped ions with lower valence than Ce⁴⁺. For the migration of $3 \rightarrow V$, the repulsive force acted as a migration driver, and for the others, the repulsive force was different from the migration of $3 \rightarrow V$ and deleterious for the migration of O²⁻, and its order was $F_r(\text{Ca}^{2+}-1) < F_r(\text{Ca}^{2+}-4) < F_r(\text{Ca}^{2+}-2)$, so the order of migration energies was $E_m(1 \rightarrow V) < E_m(4 \rightarrow V) < E_m(2 \rightarrow V)$.

Synthesis and Characterization of CuSAPO-5 Molecular Sieve for Toluene Adsorption

LUO Wu-Kui, YAN Gui-Yang, LI Shi-Rong

DOI:10.11862/CJIC.2016.174
Chinese J. Inorg. Chem., **2016**,**32**:1370-1374

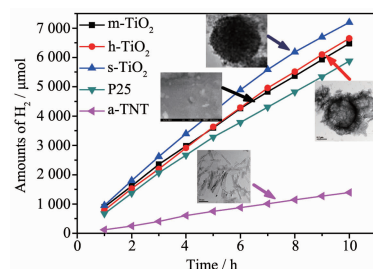


Microspheres CuSAPO-5 molecular sieves with 30 μm in diameter were synthesized under the hydrothermal condition with triethylenetetramine as template, the highest toluene adsorption were obtained at around the 120 min and absorption of about 180 mg·g⁻¹.

Synthesis and Photochemical Performances of Morphology-Controlled TiO₂ Photocatalysts for Hydrogen Evolution under Visible Light

LI Cao-Long, WANG Fei, TANG Yuan-Yuan,
TANG Jun-Yan, CAO Fei,
SHANGGUAN Wen-Feng

DOI:10.11862/CJIC.2016.187
Chinese J. Inorg. Chem., **2016**,**32**:1375-1382

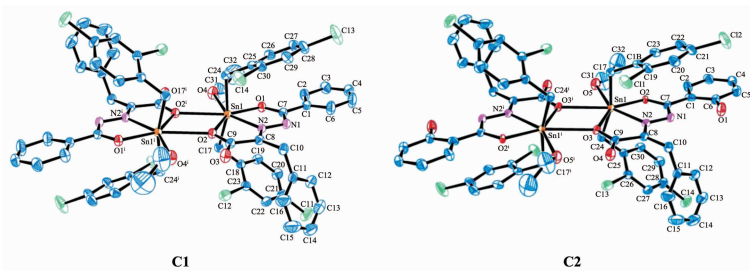


TiO₂ solid spheres (s-TiO₂), hollow spheres (h-TiO₂), nanotubes (a-TNT) and mesoporous TiO₂ (m-TiO₂) were morphology-controllably constructed via facile solution synthesis and solvent thermal methods. s-TiO₂ gave the best photocatalytic activity, which might be attributed to their special mesoporous solid spheres constructed by tiny well-crystallized TiO₂ nanocrystals, whose facilitated the transport of photo-excited carriers, restricted the recombination of electron-hole pairs.

Syntheses, Crystal Structures and Biological Activity of 2-Oxo-3-phenylpropionic Acid Aroyl Hydrazone Di-2,4-dichlorobenzyltin Complexes

JIANG Wu-Jiu, TAN Yu-Xing, YU Jiang-Xi,
ZHU Xiao-Ming, ZHANG Fu-Xing,
KUANG Dai-Zhi

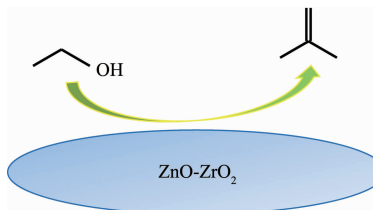
DOI:10.11862/CJIC.2016.179
Chinese J. Inorg. Chem., **2016**,**32**:1383-1390



Influence of Preparative Method on ZnO-ZrO₂ Catalyst for Ethanol Conversion to Isobutene

LIU Tian, XUE Fang-Qi, YUE Ying-Hong,
HUA Wei-Ming, GAO Zi

DOI:10.11862/CJIC.2016.177
Chinese J. Inorg. Chem., **2016**,**32**:1391-1397



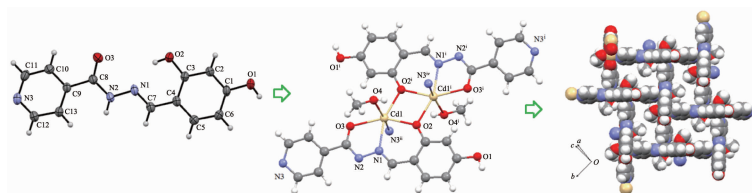
Compared to the ZnO-ZrO₂ mixed oxide prepared using the variable pH value method, the ZnO-ZrO₂ catalyst prepared using the constant pH value method had a higher surface area and a higher number of acid sites and basic sites, thus exhibiting a superior catalytic performance in ethanol conversion to isobutene.

Syntheses, Crystal Structures and Properties of 2,4-Dihydroxy-benzaldehyde Isonicotinoyl Hydrazone and Its Cd(II) Coordination Polymer

CHEN Yan-Min, ZENG Qian-Ru, LI Ying,
LIN Jian-Ning, WANG Jing-Mei, QU Bo,
XIE Qing-Fan

DOI:10.11862/CJIC.2016.181

Chinese J. Inorg. Chem., **2016**,**32**:1398-1404



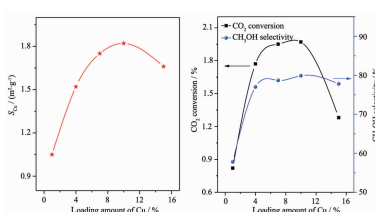
The reaction of [NONO] tetradentate Schiff base ligand (H_3Ldis), derived from the condensation of 2,4-dihydroxy-benzaldehyde and isoniazide, with cadmium acetate resulted in a net-cage-like coordination polymer which possess *in vitro* antitumor activity.

Methanol Synthesis from CO_2 Hydrogenation over Supported CuO/TiO₂ Catalysts

LIU Chao-Heng, GUO Xiao-Ming,
ZHONG Cheng-Lin, LI Liang, HUA Yu-Xi,
MAO Dong-Sen, LU Guan-Zhong

DOI:10.11862/CJIC.2016.192

Chinese J. Inorg. Chem., **2016**,**32**:1405-1412



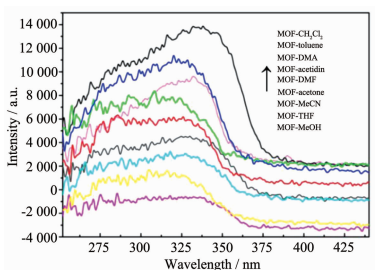
The loading amount of Cu affects the Cu surface area and the basicity of Cu/TiO₂ catalyst, which in turns affects the CO₂ conversion and methanol selectivity.

Two Series of (4,8)-Connected Lanthanide-Metal Organic Frameworks Based on a Tetra-carboxylate Ligand for Sensing of Small Molecules (English)

LIU Zhen, CHEN Xiao, FENG Yun-Long

DOI:10.11862/CJIC.2016.175

Chinese J. Inorg. Chem., **2016**,**32**:1413-1420



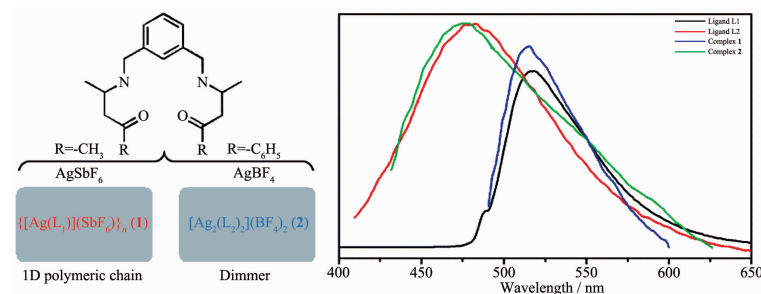
The luminescence intensity of Yb-MOF can be modulated by organic small molecule solvents, and Yb-MOF exhibited the enhancement of the luminescence intensity when dispersed in CH₂Cl₂ and toluene.

Syntheses, Structures and Luminescent Properties of Two Silver Coordination Complexes Based on Bis(β -diketone) Schiff Bases (English)

ZHANG Qi-Long, XU Hong,
FENG Guang-Wei, HUANG Ya-Li

DOI:10.11862/CJIC.2016.151

Chinese J. Inorg. Chem., **2016**,**32**:1421-1426

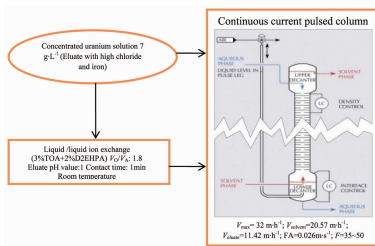


Recovery of Uranium from Its Concentrated Solution by Tri-octyl Amine Using Pulsed Column (English)

Mohamed Fathi El-Shahat,
Hisham Mohamed Kamal,
Reda Abd El-Gawad Ghazalla,
Walid Mohamed Morsy

DOI:10.11862/CJIC.2016.176

Chinese J. Inorg. Chem., **2016**,**32**:1427-1433



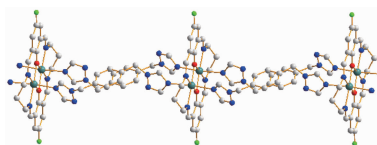
The paper concerned with the possibility of purification of uranium concentrated solution (eluate) by tri-octyl amine mixed with D2EHPA to overcome the chloride and iron hindrance effect using pulsed column. Batch studies followed by continuous ones were achieved to give complete illustration of industrially uranium processing.

Two 1D Coordination Polymers:
Syntheses, Crystal Structures,
Electrochemical and Optical Properties
(English)

CHENG Qing-Rong, ZHANG Ming, LI Ping,
LIAO Gui-Ying, ZHOU Hong, PAN ZHI-Quan

DOI:10.11862/CJIC.2016.188

Chinese J. Inorg. Chem., **2016**,**32**:1434-1440



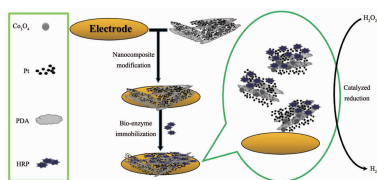
Two coordination polymers have been synthesized. The complexes feature 1D chains, in which the macrocyclic units are connected by 1,4-bis molecules. The research showed that the complexes have low energy gap.

Preparation and Electrocatalytic
Properties of Polydopamine
Functionalized Co_3O_4 Nanocomposite
(English)

WANG Hai-Ning, PAN Bo-Guang, SUN Zhao,
FENG Tao-Tao, QI Yu, HONG Cheng-Lin

DOI:10.11862/CJIC.2016.190

Chinese J. Inorg. Chem., **2016**,**32**:1441-1448



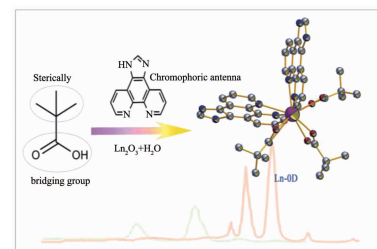
Polydopamine (PDA) bio-functionalized Co_3O_4 nanoparticles were applied to the research of electrocatalysis on H_2O_2 . The combined effect of Co_3O_4 , PDA and platinum nanoparticles (Pt NPs) greatly improved the electrocatalytic properties.

Lanthanide(III) Coordination Complexes
with Pivalates and Chelating N-Donor
Ligands: Syntheses, Structures, Thermal
Stabilities and Luminescence Properties
(English)

FANG Jie-Fang, XIONG Yan-Ju,
CHENG Jing-Xiang, HUANG Shu-Ting,
FANG Le-Xin, LU Xun, YUE Shan-Tang

DOI:10.11862/CJIC.2016.186

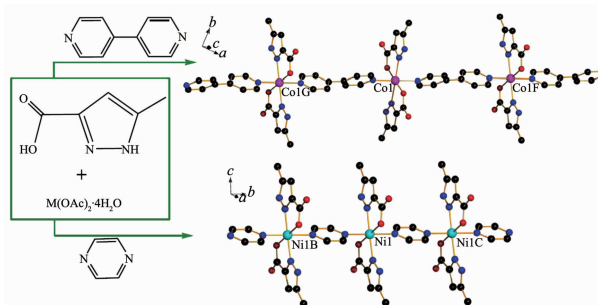
Chinese J. Inorg. Chem., **2016**,**32**:1449-1456



A sterically hindered carboxylate ligand pivalic acid and a conjugated rigid multidentate ligand 1-*H*-imidazo [4,5-*f*] [1,10]-phenanthroline were selected to obtain lanthanide luminescent complexes.

Syntheses, Crystal Structures and
Properties of Cobalt(II) and Nickel(II)
Complexes Based on 5-Methyl-1*H*-
pyrazole-3-carboxylic Acid Ligand
(English)

CHENG Mei-Ling, WANG Shen,
TANG Li-Zhi-Peng, LIU Qi



Magnetic properties of two 1D chain-typed coordination polymers, $\{[\text{Co}(\text{HMPyCA})_2(4,4'\text{-bpy})]_2 \cdot 5\text{H}_2\text{O}\}_n$ (**1**) and $\{[\text{Ni}(\text{HMPyCA})_2(\text{pyz})] \cdot 5\text{H}_2\text{O}\}_n$ (**2**), show that **1** exists the interaction of anti-ferromagnetism between two adjacent metal ions and **2** exists ferromagnetic interaction in the high-temperature region and antiferromagnetic interaction in the low-temperature region.

DOI:10.11862/CJIC.2016.184

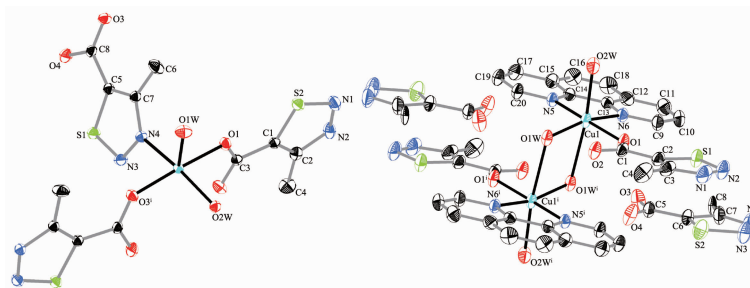
Chinese J. Inorg. Chem., **2016**,**32**:1457-1466

Syntheses, Crystal Structures and DNA-Binding of Two Copper(II) Complexes Constructed by 4-Methyl-1,2,3-thiadiazol-5-carboxylic Acid (English)

HU Wei-Ji, WU Da-Ling, SHEN Jin-Bei, ZHAO Guo-Liang

DOI:10.11862/CJIC.2016.183

Chinese J. Inorg. Chem., **2016**,**32**:1467-1475

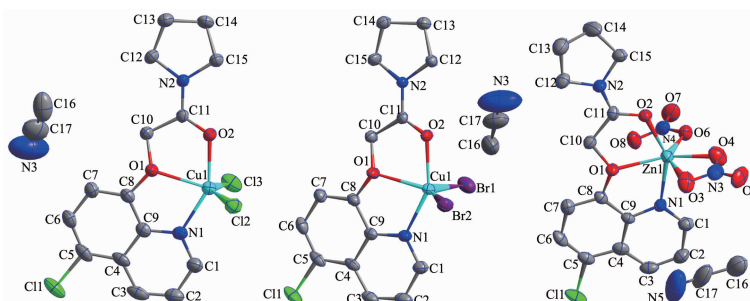


Syntheses, Crystal Structures and Fluorescence Properties of Three Cu(II)/Zn(II) Complexes with an Amide Type Ligand (English)

MAO Pan-Dong, YAN Ling-Ling, Wu Wei-Na, YAO Bi-Xin, LIU Min-Qi, WANG Yuan

DOI:10.11862/CJIC.2016.182

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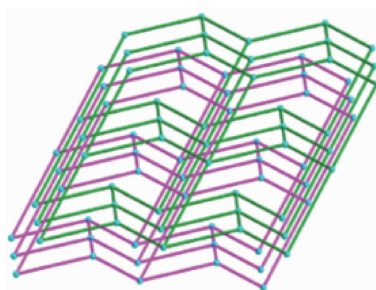
Three complexes, $[\text{CuLCl}_2] \cdot \text{CH}_3\text{CN}$ (**1**), $[\text{CuLBr}_2] \cdot \text{CH}_3\text{CN}$ (**2**) and $[\text{ZnL}(\text{NO}_3)_2] \cdot \text{CH}_3\text{CN}$ (**3**), were synthesized and characterized by X-ray diffraction. The emission band of complex **3** red-shifts comparing with that of the ligand L, primarily due to the energy transferring from L to the Zn(II) ion.

Syntheses, Crystal Structures and Fluorescence Properties of Two Compounds Constructed by Aromatic Carboxylates and 4,4'-Bis(imidazol-1-yl)-phenyl Sulphone (English)

XU Han

DOI:10.11862/CJIC.2016.194

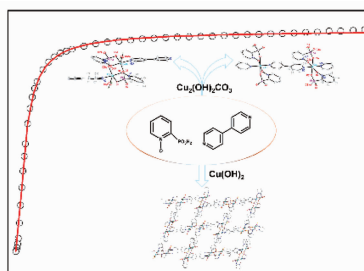
Chinese J. Inorg. Chem., **2016**,**32**:1481-1486



Two coordination polymers have been synthesized and characterized by elemental analyses, IR spectra, TGA, single-crystal X-ray diffraction. The thermal stability and solid-state luminescence of compounds **1**~**2** were further explored.

Syntheses, Structures and Magnetic Properties of Three Copper Phosphonates Bearing 4,4'-Bipyridine Bridge (English)

YE Wen-Peng, CHEN Ming, YANG Yi, ZHA Li-Qin, MA Yun-Sheng, YUAN Rong-Xin



Three copper phosphonates with 1D and 2D structures have been constructed in the presence of 4,4'-bpy. Antiferromagnetic interactions between the copper ions have been studied.

DOI:10.11862/CJIC.2016.196

Chinese J. Inorg. Chem., **2016**,**32**:1487-1494