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MoO₃ Nanobelts/Reduced Graphene Oxide (RGO) Composites as a High-Performance Anode Material for Lithium Ion Batteries

JI Wen-Xu, WU Di, YANG Rong, DING Wei-Ping, PENG Lu-Ming

DOI:10.11862/CJIC.2015.111

Chinese J. Inorg. Chem., **2015**,**31**:659-665

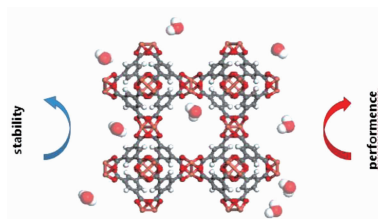
Reviews

Effect of Water Molecules on Structure and Properties of Metal-Organic Frameworks

ZHANG Zhuo-Ming, YANG Jiang-Feng, WANG Yong, LI Jin-Ping

DOI:10.11862/CJIC.2015.075

Chinese J. Inorg. Chem., **2015**,**31**:627-634



This review summarizes the destruction mechanism of MOFs at the presence of water, and the adsorption mechanism of water molecules on MOFs and the influence of it.

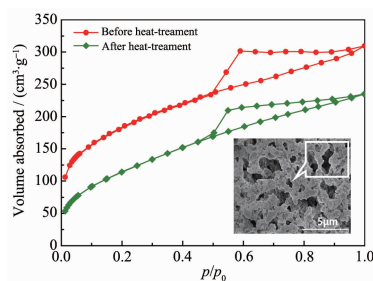
Articles

Preparation and Characterization of Hierarchically Porous Silica Monoliths

GUO Xing-Zhong, SHAN Jia-Qi, DING LI, YU Huan, ZHANG Xiao-Qi, YANG Hui

DOI:10.11862/CJIC.2015.118

Chinese J. Inorg. Chem., **2015**,**31**:635-640



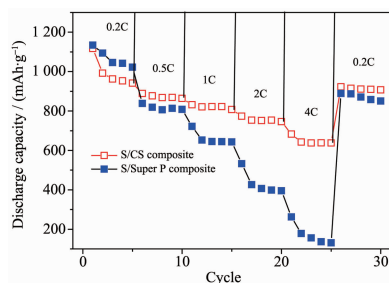
Hierarchically porous SiO₂ monoliths used twelve sodium dodecyl sulfate (SDS) as mesopore forming agent possess macropore size of 1 ~3 μm , mesopore size of 4 ~5 nm, and BET specific surface area as high as 650 $\text{m}^2 \cdot \text{g}^{-1}$, and still maintain good thermal stability after heat-treated at 800 $^{\circ}\text{C}$.

Sulfur-Hydrothermal Carbon Composites for Cathode in High-Rate Lithium-Sulfur Batteries (English)

LI Yan-Bing, DUAN Xiao-Bo, HAN Ya-Miao, ZHU Ding, HUANG Li-Wu, CHEN Yun-Gui

DOI:10.11862/CJIC.2015.073

Chinese J. Inorg. Chem., **2015**,**31**:641-648



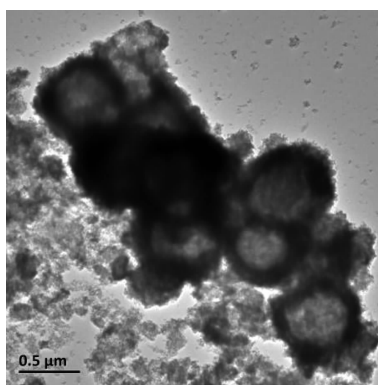
The electrochemical performance of the sulfur/carbon spheres composite electrode has been improved significantly because of the non-uniform carbon spheres and the chain conductive network.

Sulfur Doped Tin Oxide Nanoparticles: Solid State Synthesis and Performance for Visible-Light Driven Photocatalytic Degradation of Paraquat (English)

HE Zhong-Bing, LIU Shao-You, YANG Hong-Yun, MIN Zong-Yi, NIE Xin

DOI:10.11862/CJIC.2015.117

Chinese J. Inorg. Chem., **2015**,**31**:649-658



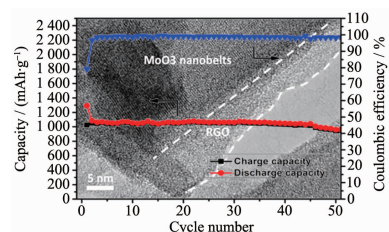
95.4% of the initial paraquat ($c_0=50 \text{ mg} \cdot \text{L}^{-1}$) is degraded over $\text{S-SnO}_{2(\text{SDRS})}$ photocatalyst within 2 h.

MoO_3 Nanobelts/Reduced Graphene Oxide (RGO) Composites as a High-Performance Anode Material for Lithium Ion Batteries

JI Wen-Xu, WU Di, YANG Rong, DING Wei-Ping, PENG Lu-Ming

DOI:10.11862/CJIC.2015.111

Chinese J. Inorg. Chem., **2015**,**31**:659-665



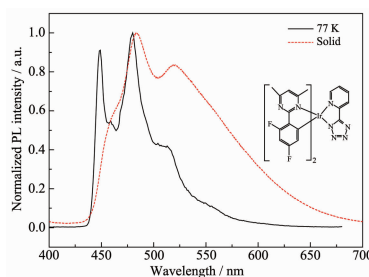
The MoO_3 nanobelts/RGO composite shows a much enhanced performance compared to bare MoO_3 nanobelts as an anode material for lithium ion batteries.

Syntheses, Crystal Structures and Photophysical Properties of a Blue Phosphorescent Iridium (III) Pyrimidine Complex

GE Guo-Ping, WEI Chuan-Dong, LI Chun-Yan, LIANG Yun-Xiao, LIANG Hong-Ze

DOI:10.11862/CJIC.2015.104

Chinese J. Inorg. Chem., **2015**,**31**:666-672



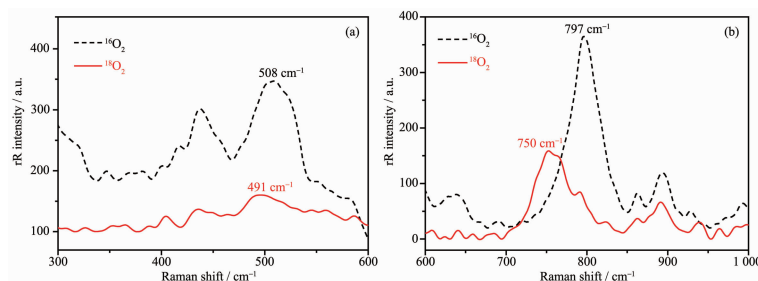
An iridium(III) complex of $\text{Ir}(\text{N}4)(\text{MDFPPM})_2$ ($\text{MDPPF}=4,4'$ -difluoro-5-me-thyl-2,3-diphenylpyrazine, $\text{N}4=5$ -(2-Pridyl)-1H-tetrazole) exhibits blue phosphorescent emission with a peak at 449, 480 and 513 nm in acetonitrile solution at 77 K, and with International Commission on Illumination (CIE) coordinates of (0.15, 0.23).

Oxygenation Reaction and Aging Mechanism of the Triethylenetetramine Cobalt Complex

LI Jun-Fang, FU Ji-Hong,
WANG Chuan-Xing, LI Hui, WANG Ji-De

DOI:10.11862/CJIC.2015.071

Chinese J. Inorg. Chem., **2015**,**31**:673-680



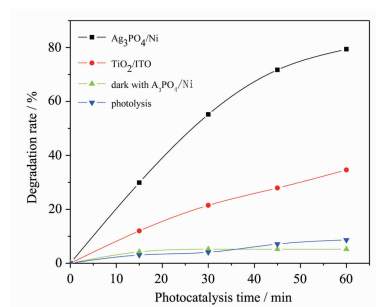
The $^{18}\text{O}_2$ isotopic substitution of the rR spectroscopic data, confirmed the formation of an dinuclear superoxo-Co complex with O-O and Co-O stretches of 797 and 508 cm^{-1} .

Preparation of $\text{Ag}_3\text{PO}_4/\text{Ni}$ Thin Films and Their Photocatalytic Activity and Reaction Mechanism for Rhodamine B

LI Ai-Chang, ZHU Ning-Ning, LI Jing-Hong,
YANG Xiao-Yan, WANG Shuang, YANG Liu

DOI:10.11862/CJIC.2015.094

Chinese J. Inorg. Chem., **2015**,**31**:681-688

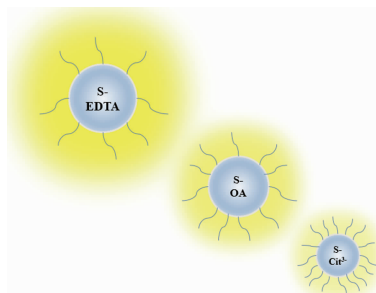


Synthesis and Optical/Magnetic Properties of Lanthanides Doped Gd_2O_3 with Different Morphologies

XU De-Kang, LIU Chu-Feng, YAN Jia-Wei,
OUYANG Hong-Qun, ZHANG Yue-Li

DOI:10.11862/CJIC.2015.076

Chinese J. Inorg. Chem., **2015**,**31**:689-695



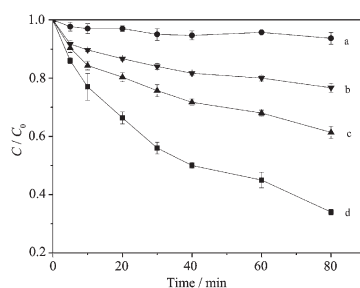
Using different additives in hydrothermally treated Gd_2O_3 products and their lanthanide-doped counterparts results in different structural, optical and magnetic properties.

Heterogeneous Fenton Degradation of Methylene Blue by $\delta\text{-MnO}_2$ -Coated Fe-Pillared Bentonite

SHI Zhong-Liang, WANG Xing-Xing,
YAO Shu-Hua

DOI:10.11862/CJIC.2015.112

Chinese J. Inorg. Chem., **2015**,**31**:696-702



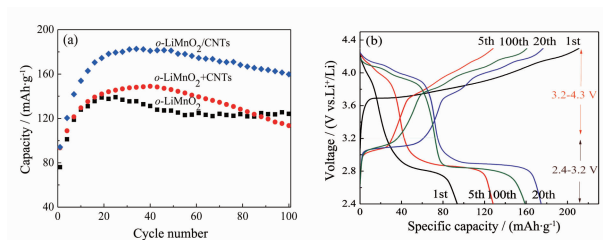
The $\delta\text{-MnO}_2$ -coated Fe-pillared bentonite (H-Fe-P-E-M) composite materials were synthesized. The higher catalytic degradation activity of methylene blue (MB) was achieved by H-Fe-P-E-M compared to single $\delta\text{-MnO}_2$ or Fe-pillared bentonite (H-Fe-P-E).

Hydrothermal Preparation and Carbon Nanotube Modification of *o*-LiMnO₂ Cathode Materials for Lithium Battery

LIU Li-Hu, CHEN Shu-Lin, LIU Fan,
XIANG Quan-Jun, FENG Xiong-Han,
QIU Guo-Hong

DOI:10.11862/CJIC.2015.100

Chinese J. Inorg. Chem., **2015**,**31**:703-709



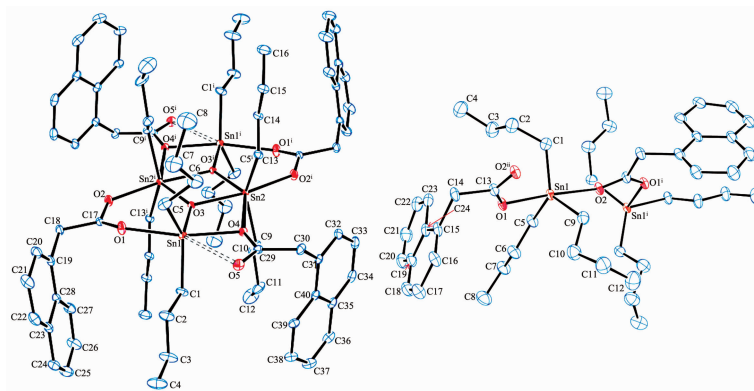
Carbon nanotube modified *o*-LiMnO₂ (*o*-LiMnO₂/CNTs) was prepared by hydrothermal reaction using LiOH and MnCl₂ with molar ratio as low as 8:1 at 180 °C for 24 h. The electrochemical performance of *o*-LiMnO₂ was remarkably improved by carbon nanotube modification.

Syntheses, Crystal Structures, and Anti-tumor Activity of Tetra-nuclear Cluster and 1D Chain Butyltin α -Naphthaleneacetic Carboxylates

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

DOI:10.11862/CJIC.2015.041

Chinese J. Inorg. Chem., **2015**,**31**:710-716

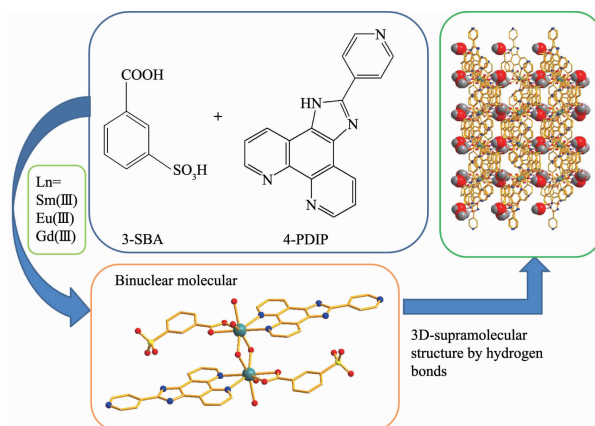


Syntheses, Crystal Structures and Characterization of Binuclear Lanthanide Complexes with 3-Sulfobenzoate and 2-(4-Pyridyl)imidazole[4,5-*f*]phenanthroline

LI Jia-Jia, SONG Shuang, MA Dou, QIAO Li,
GU Yi, QIAN Feng-Yun, LI Xia

DOI:10.11862/CJIC.2015.115

Chinese J. Inorg. Chem., **2015**,**31**:717-724

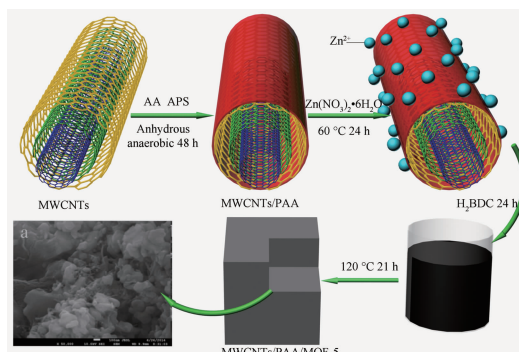


Preparation and N₂ Adsorption Properties of Multi-walled Carbon Nanotubes/Polyacrylic Acid/MOF-5

JIN Zhe, TANG Kai, HU Ya-Ping,
LÜ Jing-Wen, CHEN Zhi-Jun

DOI:10.11862/CJIC.2015.107

Chinese J. Inorg. Chem., **2015**,**31**:725-730

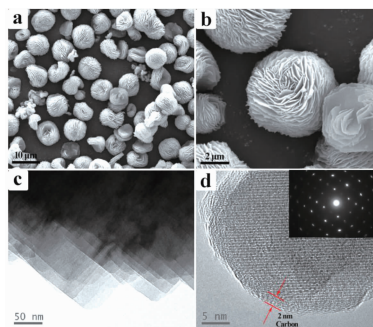


Solvothermal Synthesis and Electrochemical Performance of Flowerlike LiFePO₄ Hierarchically Microstructures

ZHENG Zhen-Miao, TANG Xin-Cun,
WANG Yang, JIN Yuan, MENG Jia,
LIU Wen-Ming, WANG Tao

DOI:10.11862/CJIC.2015.106

Chinese J. Inorg. Chem., **2015**,**31**:731-738



Well-defined three-dimensional hierarchical flower-like LiFePO₄ microstructures with tap density of *ca.* 1.3 g·cm⁻³ are assembled from single-crystalline nanoplates via solvothermal treatment. The volume energy density of LiFePO₄ cathodes exhibit discharge capacities of 205.1 and 175.2 mAh·cm⁻³ at 0.1C and 1C, respectively.

Syntheses, Crystal Structures and Fluorescent Properties of Zinc/Cadmium Complexes Based on Tetranuclear Metal Unit

ZHANG Xiao-Ge, GAO Lou-Jun,
CHEN Xiao-Li, CUI Hua-Li, MA Hong-Yan

DOI:10.11862/CJIC.2015.110

Chinese J. Inorg. Chem., **2015**,**31**:739-748



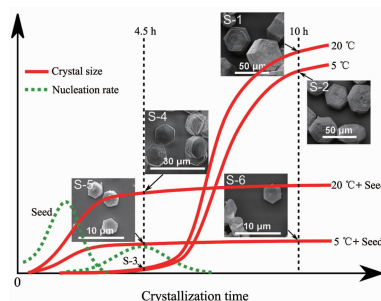
Two Zn/Cd complexes were synthesized and characterized. **1** shows a cyclic tetranuclear structure. **2** is 3D network based on tetranuclear cadmium clusters cross-linked by C₂O₄²⁻ ions and enam²⁻ ligands.

Synthesis and Characterization of Low Aspect Ratio CrCoAPO-5 Molecular Sieves

YAN Jie, LI Jian, ZHANG Bao-Quan,
LIU Xiu-Feng

DOI:10.11862/CJIC.2015.063

Chinese J. Inorg. Chem., **2015**,**31**:749-754



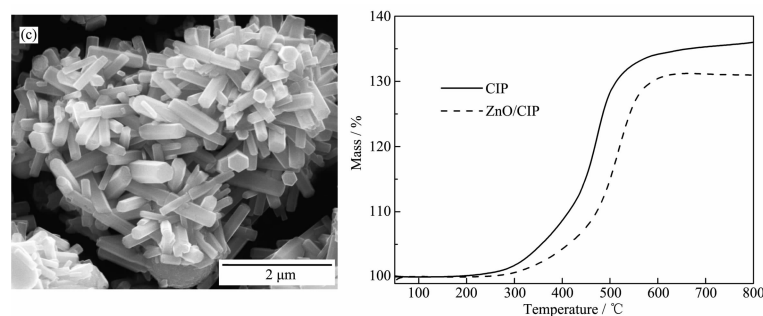
Hexagonal plate-like CrCoAPO-5 molecular sieves could be synthesized by hydrothermal crystallization by controlling gel preparation temperature and crystallization rate. The 3 μm-sized CrCoAPO-5 crystals with the aspect ratio less than 0.2 possessed much better catalytic activities with satisfactory stability.

Preparation and Oxidation Resistance of Core Shell Urchin-like ZnO/Carbonyl Iron Powder Composite Particles

GUO Fei, DuHong-Liang, QU Shao-Bo,
XIA Song, XU Zhuo, ZHAO Jian-Feng

DOI:10.11862/CJIC.2015.103

Chinese J. Inorg. Chem., **2015**,**31**:755-760



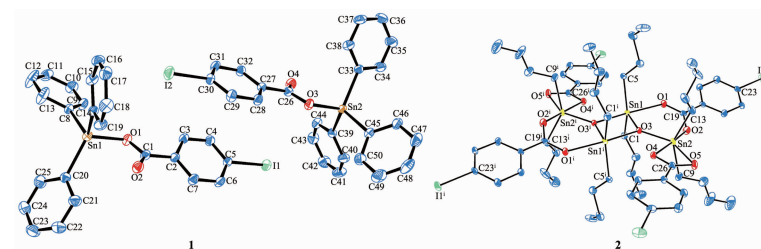
The core shell urchin-like ZnO/CIP composite particles present much better oxidation resistance than CIP without influencing the electromagnetic absorbing performance of CIP.

Syntheses, Crystal Structures, Thermal Stability and Herbicidal Activity of Two Organotin 4-Iodobenzoates

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

DOI:10.11862/CJIC.2015.085

Chinese J. Inorg. Chem., **2015**,**31**:761-766



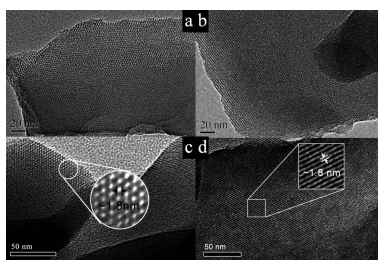
Two compounds formed the dimer structure and one-dimensional coordination polymer chain by intermolecular hydrogen bonds and halogen bond, respectively. The complexes exhibited herbicidal activity for *Amaranthus spinosus* and *Portulaca oleracea*.

Synthesis of Ordered Supramicroporous Silica Using Rosin-Based Quaternary Ammonium Salt

WANG Peng, CHEN Shang-Xing,
ZHAO Zhen-Dong, WANG Zong-De,
FAN Guo-Rong

DOI:10.11862/CJIC.2015.105

Chinese J. Inorg. Chem., **2015**,**31**:767-773



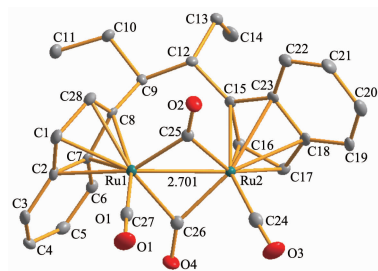
Ordered hexagonal supermicroporous silica with large surface area ($1\,024\text{ m}^2\cdot\text{g}^{-1}$), high pore volume ($0.56\text{ cm}^3\cdot\text{g}^{-1}$) and narrow pore size distribution (cent-ered at about 1.80 nm) was synthesized using dehydroabietyltrimethyl ammonium bromine as template agent, tetraethyl orthosilicate as silicate source, and ammonia as alkaline medium.

Ruthenium Carbonyl Complexes Containing Alkyl-Substituted Indenyl Ligands: Syntheses and Structures (English)

LIU Ying-Chun, MA Zhi-Hong,
SHANG Cheng-Xi, HAN Zhan-Gang,
ZHENG Xue-Zhong, LIN Jin

DOI:10.11862/CJIC.2015.088

Chinese J. Inorg. Chem., **2015**,**31**:774-780



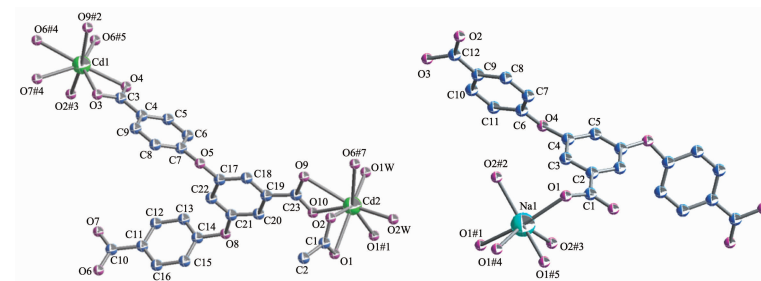
Thermal treatment of the alkyl-substituted indenyl ligands [$\text{C}_9\text{H}_7\text{R}$] [$\text{R} = \text{CH}_2\text{CH}_2\text{CH}_3$ (**1**), $\text{CH}(\text{CH}_3)_2$ (**2**), C_5H_9 (**3**), $\text{CH}_2\text{C}_6\text{H}_5$ (**4**), $\text{CH}_2\text{CH}=\text{CH}_2$ (**5**)] with $\text{Ru}_3(\text{CO})_{12}$ gave the responding dinuclear metal carbonyl complexes and the bridged diruthenium complex.

Two Metal-Organic Frameworks Based on Tricarboxylic Acid: Syntheses, Structures and Fluorescent Properties (English)

ZHAO Can, ZHANG You, XIE Meng-Lin,
WU Meng-Qin, WEN Yi-Hang

DOI:10.11862/CJIC.2015.095

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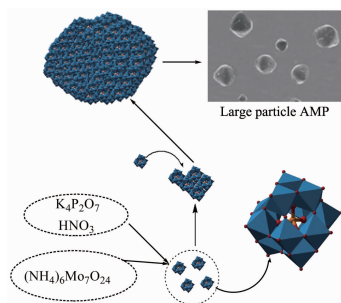


Large Particle Ammonium
Molybdophosphate: Preparation and
Crystallization Kinetics (English)

HUANG Yun-Jing, LIU Shan, YANG Wei-Jun

DOI:10.11862/CJIC.2015.099

Chinese J. Inorg. Chem., **2015**,**31**:789-797



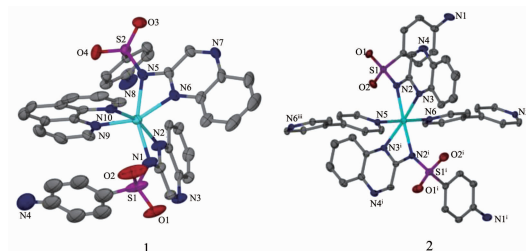
Large particle AMP is generated through slowly dropping a nitric acid solution of potassium pyrophosphate into an ammonium molybdate solution.

Syntheses, Crystal Structures and
Fluorescent Properties of Two Zn(II)
Complexes Based on
Sulfaquinoxalines (English)

KANG Jing-Yan, HUANG Shi-Jie,
ZHAO Xiu-Hua, ZHAO Ya-Yun, LI Xing

DOI:10.11862/CJIC.2015.097

Chinese J. Inorg. Chem., **2015**,**31**:798-806



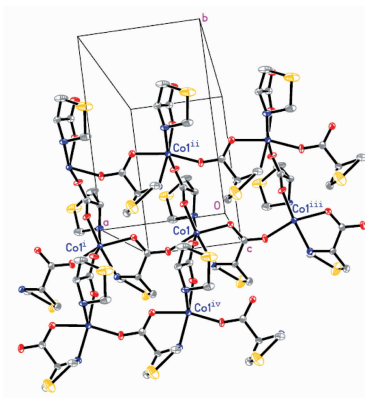
The ligand sulfaquinoxaline reacted with $\text{Zn}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ and $\text{Zn}(\text{OAc})_2 \cdot 2\text{H}_2\text{O}$ to give two Zn(II) complexes, $[\text{Zn}(\text{L})_2(\text{phen})] \cdot \text{H}_2\text{O}$ (**1**) with mononuclear structure and $\{[\text{Zn}(\text{L})_2(\text{bpy})] \cdot 2\text{EtOH}\}_n$ (**2**) with 1D chain structure, respectively, which had dissimilar structures due to the different auxiliary ligands.

Structures and Magnetic Properties of
Two Chiral Polynuclear Metal Clusters
with Derivative of *L*-cysteine (English)

XU Jian, XIE Li-Xia, ZHANG Chang-Li

DOI:10.11862/CJIC.2015.102

Chinese J. Inorg. Chem., **2015**,**31**:807-812



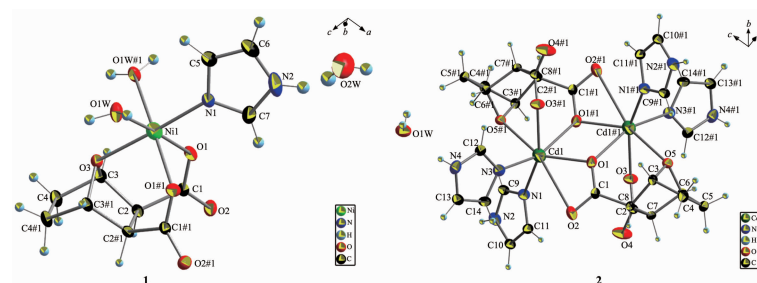
Two complexes based on *L*-thioproline (LTP) have been obtained. Each octahedral metal ion is linked to another four metal ions by four LTP ligands adopting a $\mu_2\text{-N}_2\text{O}_2\text{O}_3$ coordination mode. Moreover, the complexes at solid state exhibit weak antiferromagnetic couplings between the ions.

Structures, Interaction with DNA and
BSA and Antiproliferative Activities of
Ni(II) and Cd(II) Complexes Based on
Demethylcantharate and Imidazole
(English)

DU Fang-Yuan, LI Shi-Kun, LIN Qiu-Yue,
WEI Qiong, TANG Ning-Ning

DOI:10.11862/CJIC.2015.113

Chinese J. Inorg. Chem., **2015**,**31**:813-823

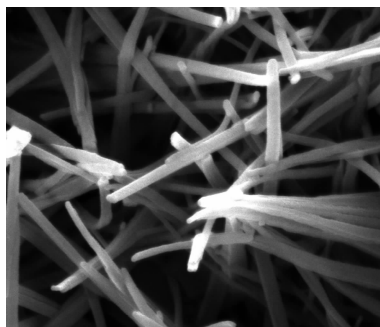


Structure, Bioactivity and MC3T3-E1 Cell Response of Sodium Hydrogen Titanium Oxide Nanowire on Titanium (English)

JING Shao-Dong, CHENG Su, ZHOU Rui,
WEI Da-Qing, ZHOU Yu

DOI:10.11862/CJIC.2015.119

Chinese J. Inorg. Chem., **2015**,**31**:824-838



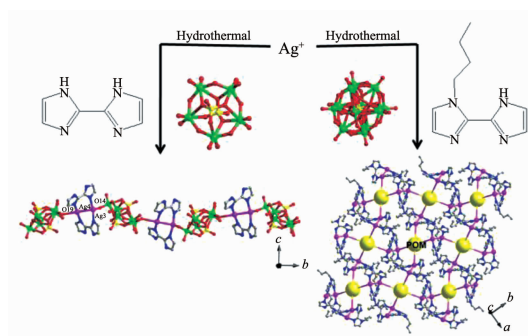
The bioactive nanowire of sodium hydrogen titanium oxide ($\text{Na}_{0.8}\text{H}_{1.2}\text{Ti}_3\text{O}_7$) shows good hydrophilic and apatite-formation ability, good bioactivity and better cell response.

Syntheses, Structures and Properties of Two POM-based Compounds Modified by Biimidazole and Its Derivative (English)

TIAN Ai-Xiang, HOU Xue, SUN Na,
XIAO Ru, YING Jun, YANG Yang,
NING Ya-Li, LI Tian-Jiao, WANG Xiu-Li

DOI:10.11862/CJIC.2015.114

Chinese J. Inorg. Chem., **2015**,**31**:839-847



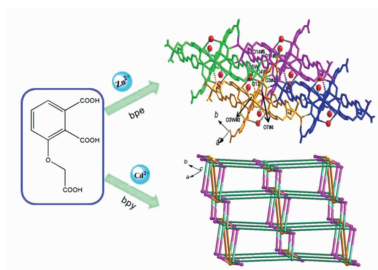
By using two kinds of ligands 2,2-biimidazole and its derivative 5-butyl-2,2-biimidazole, two Strandberg- and Keggin-based compounds have been synthesized under hydrothermal conditions.

Zinc and Cadmium Coordination Polymers Based on 3-(Carboxymethoxy)benzene-1,2-dioic Acid and N-donor Ancillary Ligands: Syntheses, Crystal Structures, and Luminescent Properties(English)

FAN Hui-Tao, LI Bo, ZHAO Qiang,
CHEN Bao-Kuan, FENG Chao-Qiang

DOI:10.11862/CJIC.2015.068

Chinese J. Inorg. Chem., **2015**,**31**:848-856



Due to various coordination modes and conformations of the versatile 3-(carboxymethoxy)benzene-1,2-dioic acid (H_3L) ligands and co-ligands, two complexes exhibit structural and dimensional diversity.