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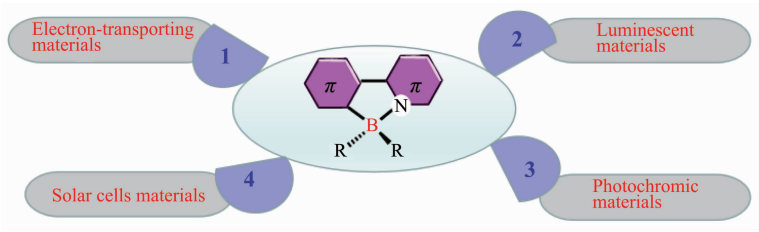
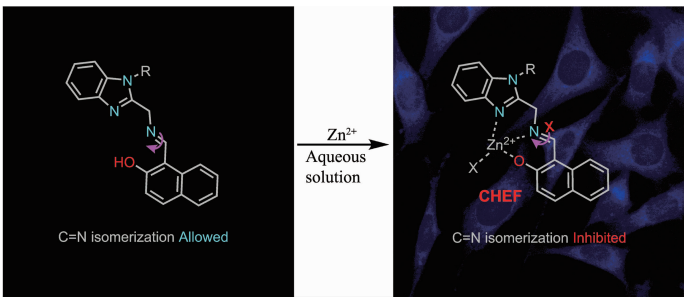


In this review, we have summarized the recent research progress on the synthesis and the applications of N,C-chelate four-coordinated organoboron compounds. These materials with strong intramolecular electron delocalization and rigid π-conjugated skeletons, are promising candidates as novel optoelectronic materials for applications in organic light-emitting diodes (OLEDs), organic field-effect transistors (OFETs), organic solar cells and sensors.

Articles

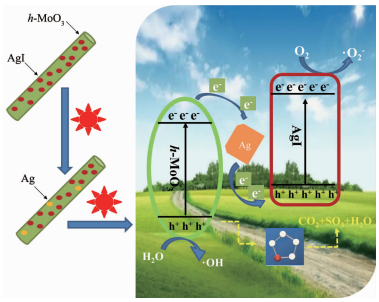


Two fluorescent probes BMO and NBMO were developed for the highly selective detection of Zn^{2+} based on C=N isomerization and chelation-enhanced fluorescence (CHEF) mechanism. The cell images showed that NBMO could be used to detect intracellular Zn^{2+}.

AgI/*h*-MoO_3 Heterojunctions: Fabrication and Photocatalytic Oxidative Desulfurization Activity of Simulation Fuel

ZHEN Yan-Zhong, WANG Jie, FU Meng-Xi, ZHANG Ying-Zheng, FU Feng

DOI:10.11862/CJIC.2017.236
Chinese J. Inorg. Chem., **2017**,**33**:1731-1740

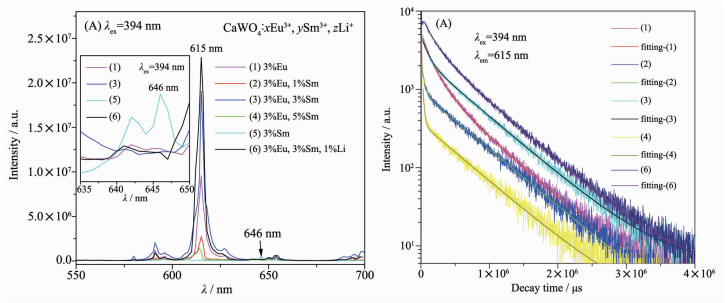


The structure AgI/*h*-MoO_3 transferred to Z-scheme heterojunction AgI/Ag/*h*-MoO_3 due to resulting in a small amount of metallic Ag in the intial stage of the photocatalytic reaction, which is favor of accelerating photoinduced electrons transfer, and enhancing separation of photoinduced electron-hole pairs contributed to the improvement of photocatalytic oxidative desulfurization activity for thiophene.

Preparation and Luminescence Properties of $CaWO_4$:$x$$Eu^{3+}$, $y$$Sm^{3+}$, $z$$Li^+$ Red Phosphors

WANG Lin-Xiang

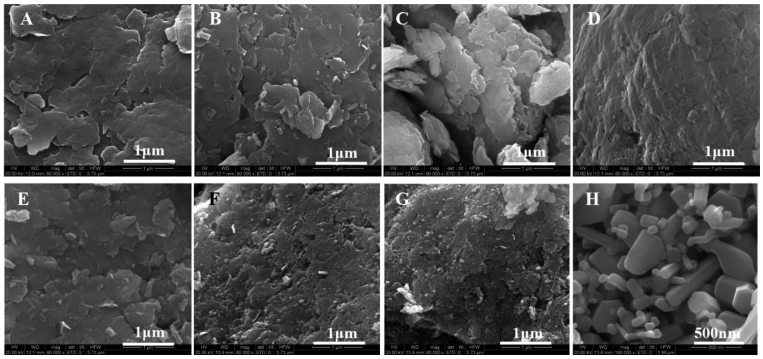
DOI:10.11862/CJIC.2017.213
Chinese J. Inorg. Chem., **2017**,**33**:1741-1747



Zn/Al Hydrotalcite with Different n_{Zn}/n_{Al} Molar Ratios: Synthesis and Phthalic Acid Adsorption Behaviour

YANG Ying-Li, YAN Xin-Long, HU Xiao-Yan, ZHOU Min

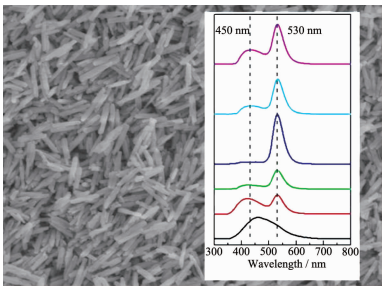
DOI:10.11862/CJIC.2017.232
Chinese J. Inorg. Chem., **2017**,**33**:1748-1756



Synthesis and Luminescence Properties of Zn_2GeO_4 Nanorods

YANG Yang, CONG Yan, ZHU Zi-Mao, GUO Cheng, ZHANG Zhen, WANG Zi-Wen, ZHANG Jia-Hua

DOI:10.11862/CJIC.2017.235
Chinese J. Inorg. Chem., **2017**,**33**:1757-1762

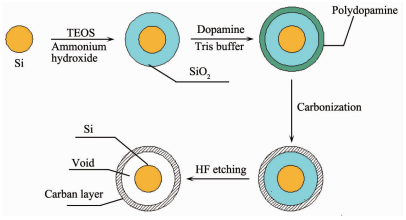


Blue-green emission-tunable Zn_2GeO_4 nanophosphor was obtained, and the PL peaks located at 350 nm and 530 nm is depended on the size of nanorods.

Synthesis and Electrochemical Performance of Si@void@C Composite Anode Material for Lithium Ion Battery

CAI Jian-Xin, LI Zhi-Peng, LI Wei, ZHAO Peng-Fei, YANG Zhen-Yu, YU Ji

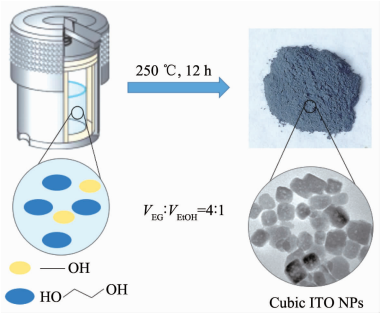
DOI:10.11862/CJIC.2017.226
Chinese J. Inorg. Chem., **2017**,**33**:1763-1768



Solvothermal Synthesis and Electrical Performance of Cubic ITO Powders

PENG Xiang, CHEN Yu-Jie, LIU Jia-Xiang

DOI:10.11862/CJIC.2017.224
Chinese J. Inorg. Chem., **2017**,**33**:1769-1774

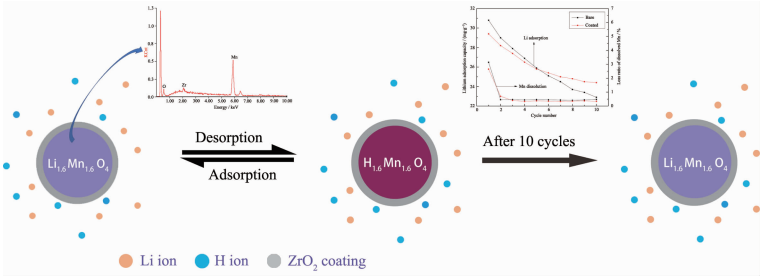


Small-sized and well-dispersed cubic shape ITO powders were synthesized using ethylene glycol and ethanol as mixed solvents. The results show the average particle size is 10.7 nm, the electric conductivity of the powder gets up to the maximum of 46.75 mS·cm^{-1}, when the volume ratio of ethylene glycol to ethanol is 4:1.

Synthesis and Adsorption Properties of ZrO_2-Coated Lithium Ion-Sieve from Salt Lake Brine

WANG Hao, YANG Xi-Yun, YIN Zhou-Lan, CAO Gai-Fang, XU Hui

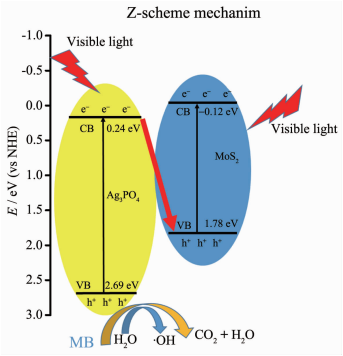
DOI:10.11862/CJIC.2017.217
Chinese J. Inorg. Chem., **2017**,**33**:1775-1781



Synthesis and Visible Light Photocatalytic Performance of Ag_3PO_4/MoS_2 Nanosheets Composite Photocatalyst

YAN Xin, HUI Xiao-Yan, GAO Qiang, YU Gao-Jie, MO Yun-Cheng, YE Zi-Meng, LI Jun-Chun, MA Zi-Yi, SUN Guo-Dong

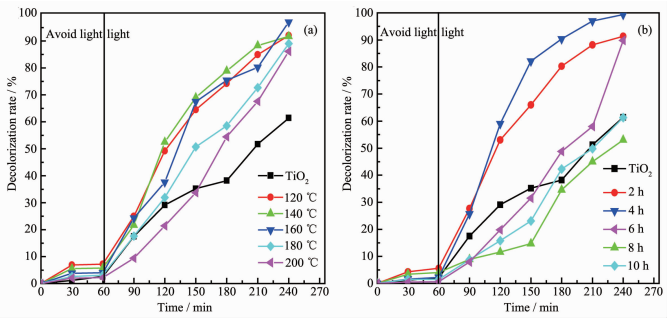
DOI:10.11862/CJIC.2017.212
Chinese J. Inorg. Chem., **2017**,**33**:1782-1788



Photocatalytic Mechanism of TiO_2/schorl Composite by Different Hydrothermal Conditions

QI Shu-Yan, WU Chao, WANG De-Peng, XU Huan-Yan

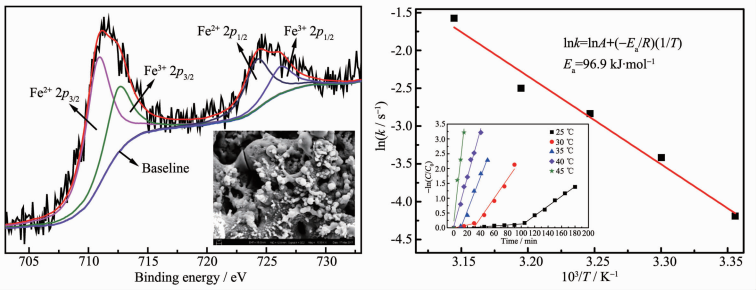
DOI:10.11862/CJIC.2017.219
Chinese J. Inorg. Chem., **2017**,**33**:1789-1796



Iron Oxide Coating Fenton-like Catalysts: Preparation and Degradation of Phenol

YAO Zhong-Ping, CHEN Chang-Ju, WANG Jian-Kang, XIA Qi-Xing, LI Chun-Xiang, JIANG Zhao-Hua

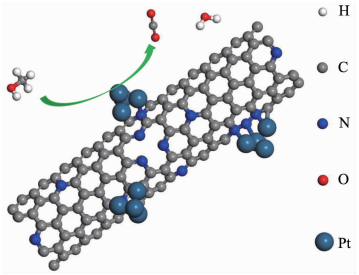
DOI:10.11862/CJIC.2017.197
Chinese J. Inorg. Chem., **2017**,**33**:1797-1804



High-Efficiency Pt Catalyst Supported on Nitrogen-Doped Carbon Nanotubes for Methanol Electrooxidation

LIU Chen-Xia, CAI Yue-Jin, WANG Yu, FAN Hao, CHEN Qiang, WU Qiang, YANG Li-Jun, WANG Xi-Zhang, HU Zheng

DOI:10.11862/CJIC.2017.205
Chinese J. Inorg. Chem., **2017**,**33**:1805-1809

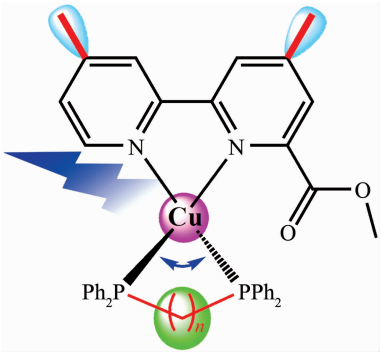


High-dispersive Pt catalysts for methanol electrooxidation were conveniently constructed owing to the nitrogen participation, and their performances evolutions are well-correlated with the controllable sizes distributions.

Luminescent Mononuclear Copper(I) Diphosphine Complexes with 6-Methoxycarbonyl-4,4′ -dimethyl-2,2′ -bipyridine (English)

ZENG Xue-Hua, LUO Yan-Sheng, HE Li-Hua, CHEN Jing-Lin, ZHANG Meng-Li, LIAO Jin-Sheng, LIU Sui-Jun, WEN He-Rui

DOI:10.11862/CJIC.2017.234
Chinese J. Inorg. Chem., **2017**,**33**:1810-1816

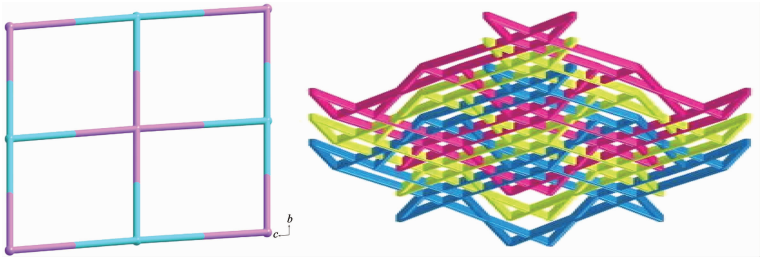


The emission properties of Cu(I) complexes are more markedly influenced by the P-Cu-P angle than the methylene chain length of diphosphine, and the introduction of two methyl substituents into the 2,2′ -bipyridyl ring is effective for improving luminescence properties.

Two Cd(Ⅱ) Coordination Polymers Based on Flexible Tetracarboxylic Acid Ligands: Crystal Structures and Fluorescent Properties (English)

LIU Lu, XU Chun-Ying, LI Ying, WANG Ji-Chao, ZHANG Yu-Ping, WANG Jian-Ji

DOI:10.11862/CJIC.2017.233
Chinese J. Inorg. Chem., **2017**,**33**:1817-1824

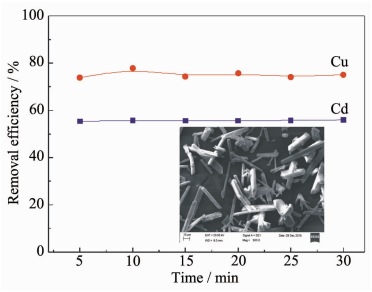


Complex **1** features a (4,4)-connected *sql* topology net with point symbol of $\{4^4\cdot6^2\}_2$. Complex **2** presents a trinodal (4,4,4)-connected 3D 3-fold interpenetrating *bbf* network with a Schläfli symbol of $(6^6)(6^4\cdot8^2)$. **1** and **2** present better thermal stabilities and different photoluminescence behaviors in the solid state.

Synthesis of K_2FeO_4 for Removing Heavy Metals in the Phenol-Aqueous Solution (English)

HE Deng-Liang, LIU Shu-Xin, QIN Hai-Li, SHEN Fang, WANG Xue-Li, LIU Lan, RUAN Qi-Ping

DOI:10.11862/CJIC.2017.237
Chinese J. Inorg. Chem., **2017**,**33**:1825-1834

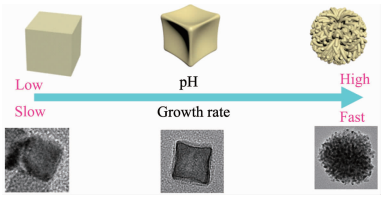


K_2FeO_4 crystals were synthesized by secondary recrystallized purification with calcium hypochlorite and iron nitrate nonahydrate as raw material. And it was used to remove Cu(Ⅱ) and Cd(Ⅱ) ions from phenol-aqueous solution.

Shape-Controlled Synthesis of Pd Nanocrystals with Remarkable Enhanced Catalytic Performance (English)

RU Ting-Ting, CHU Xue-Feng, SHI Ying-Yan, ZHENG Wen-Qi, GUO Yan, YANG Xiao-Tian, JIANG Kai

DOI:10.11862/CJIC.2017.193
Chinese J. Inorg. Chem., **2017**,**33**:1835-1842

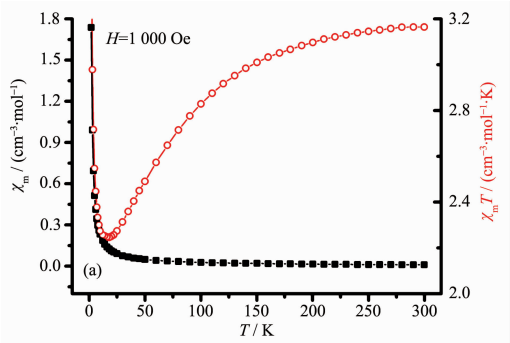


A morphology evolution of Pd nanocrystals has been induced by using OTAB-Na as the capping agent. In the following catalytic test of liquid-phase reduction of 4-NP by AB, the dendritic nanosphere is more active than concave cube, indicating a typical shape-dependent catalytic properties.

Syntheses, Structures and Magnetic Analysis of Co(Ⅱ) Coordination Polymer Based on *N*-(Pyridine-3-sulfonyl amino) Acetate (English)

LIAO Bei-Ling, YANG Ge-Ge, LI Shi-Xiong, JIANG Yi-Min, YIN Xiu-Ju

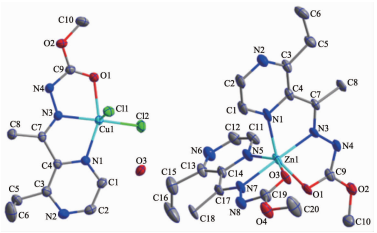
DOI:10.11862/CJIC.2017.189
Chinese J. Inorg. Chem., **2017**,**33**:1843-1848



Cu(Ⅱ) and Zn(Ⅱ) Complexes Based on Methyl (1-(3-Ethylpyrazin-2-yl) ethylidene)carbazate: Crystal Structures and Fluorescence Properties (English)

MAO Pan-Dong, CHEN Ze-Hua, WANG Yuan, QIN Li, WU Wei-Na, WANG Yuan

DOI:10.11862/CJIC.2017.214
Chinese J. Inorg. Chem., **2017**,**33**:1849-1854

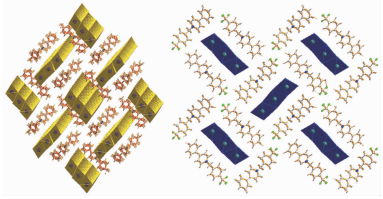


Two complexes $[Cu(HL)Cl_2]\cdot H_2O$ and $[ZnL_2]$ have been synthesized and characterized. The Zn(Ⅱ) complex exhibits a different band from that of the ligand in the fluorescence emission spectra, probably due to the energy transferring from the ligand to the Zn(Ⅱ) ion.

Syntheses and Crystal Structures of Two Homogeneous Organic-Inorganic Compounds Based on PbI_2 (English)

YUAN Guo-Jun, LIU Guang-Xiang, SHI Chao, SHAO Dong-Sheng

DOI:10.11862/CJIC.2017.225
Chinese J. Inorg. Chem., **2017**,**33**:1855-1860

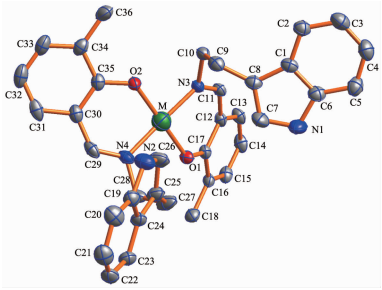


Iodoplumbate ion exhibits octahedron topology in compounds **1** and **2**, and all these octahedron topologies form 1D $[Pb_3I_9]_n$ polymeric chain through edge-sharing connecting modes.

Two Mononuclear Ni(Ⅱ) and Cu(Ⅱ) Complexes Containing a Bidentate Schiff Base Ligand: Syntheses, Structures and Antibacterial Activities (English)

LIU Chao, LI Sha-Sha, YANG Min, BI Rong, YU Qing-Quan, ZHANG Li

DOI:10.11862/CJIC.2017.220
Chinese J. Inorg. Chem., **2017**,**33**:1861-1868

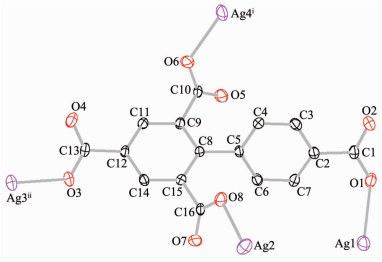


Two complexes, $Ni(L)_2$ (**1**) and $Cu(L)_2$ (**2**) based on HL (HL=*N*-(3-methylsalicylidene)tryptamine) have been synthesized and investigated for their preliminary antibacterial activities. The results demonstrate that complexes **1** and **2** display more excellent inhibiting effects than the ligand.

Syntheses, Structures, DNA Interaction of Ag(Ⅰ) and Cd(Ⅱ) Coordination Polymers Based on Biphenyl-2,4,4′,6-tetracarboxylic Acid and Imidazo-phenanthrolin-phenoxy Acetic Acid (English)

LU Ya, LÜ Tian-Xi, HU Wei-Ji,
WU Xiao-Yong, ZHAO Guo-Liang

DOI:10.11862/CJIC.2017.215
Chinese J. Inorg. Chem., **2017**,**33**:1869-1875

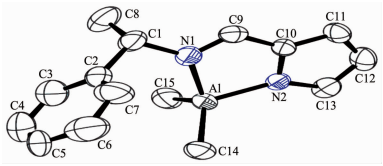


Two novel coordination polymers $[Ag_4(BPTC)]_n$ (**1**) and $[Cd(PIMPHC)_2]_n$ (**2**) were synthesized under hydrothermal reactions by using biphenyl-2,4,4′,6-tetracarboxylic acid (H_4BPTC, $C_{16}H_{10}O_8$) and 2-(4-(1*H*-imidazo-2-[4,5-*f*] [1,10]phenanthrolinyl)phenoxy) acetic acid (HPIMPHC, $C_{21}H_{14}N_4O_3$).

Synthesis, Structure and Application in *rac*-Lactide Polymerization of Compound $[C_4H_3N\{CH{=}NCH(Me)C_6H_5\}\text{-}2]AlMe_2$ (English)

JIA Bin, HAO Jun-Sheng, TONG Hong-Bo,
WEI Xue-Hong, ZHOU Mei-Su,
LIU Dian-Sheng

DOI:10.11862/CJIC.2017.221
Chinese J. Inorg. Chem., **2017**,**33**:1876-1880

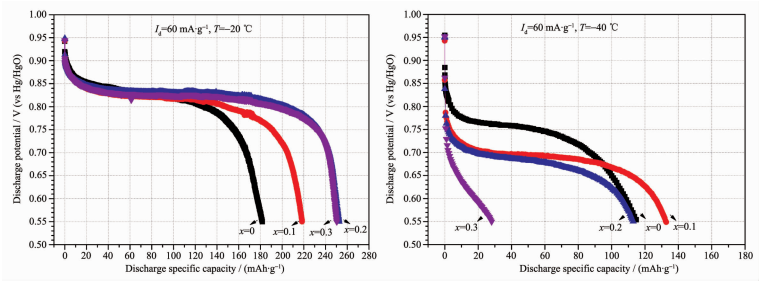


The reaction of Schiff base ligand (*d*,*l*)-*N*-(2-pyrrolylmethylene)-1-phenylethylamine with equivalent trimethylaluminum produced novel four-coordinated organoaluminum compound $[C_4H_3N\{CH{=}NCH(Me)C_6H_5\}\text{-}2]AlMe_2$. It is an active initiator for the polymerization of *rac*-lactide yielding the isotactic-rich polylactides.

Effects of Al Content on Low-Temperature and High-Rate Performance of $MmNi_{4.0-x}Co_{0.7}Mn_{0.3}Al_x$ Alloys (English)

TANG Zheng-Yao, ZHOU Wan-Hai,
ZHU Ding, WU Chao-Ling, HUANG Li-Wu,
LIU Kun, CHEN Yun-Gui

DOI:10.11862/CJIC.2017.228
Chinese J. Inorg. Chem., **2017**,**33**:1881-1888

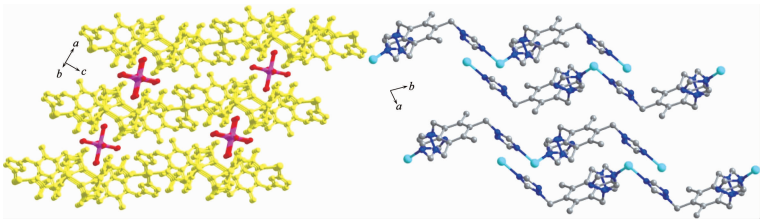


The discharge capacity still increases with the increase of Al content at −20 ℃, but gradually deteriorates when the temperature drops down to −40 ℃.

Syntheses, Crystal Structures and Fluorescence of Cadmium(Ⅱ) and Zinc(Ⅱ) Complexes Based on Flexible Tripodal Ligands (English)

WU Qi, SU Zhi, WANG Hong-Yan,
DONG Yi-Li, HU Jiong-Sheng, LIU Dong-Ju,
WU Chang, XU Yun, YING Ao, FANG Min,
LIU Hong-Ke

DOI:10.11862/CJIC.2017.196
Chinese J. Inorg. Chem., **2017**,**33**:1889-1895



Flexible tripodal nitrogen-containing ligands have been utilized to synthesize two 2D coordination polymers, which validate the strong coordination ability of imidazole- and triazolate-containing ligands.