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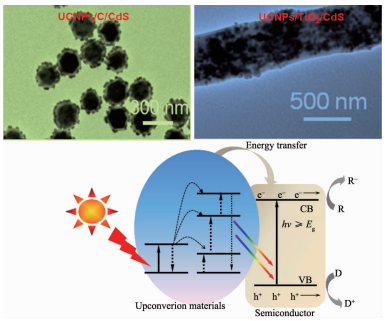
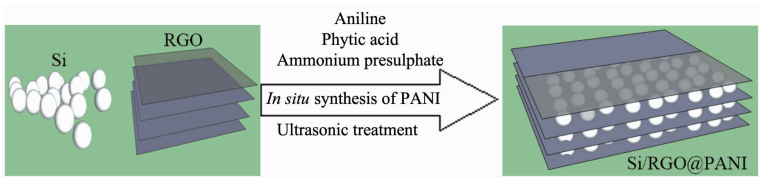


Energy crisis and environmental pollution have attracted seriously worldwide attention. The lanthanide ions doped upconversion nanostructures/semiconductors composite photocatalysts have attracted much attention. The synthetic techniques for fabrication of the composited photocatalysts, including epitaxial growth, electrospinning, chemical assembly and so on, have been highlighted for wastewater treatment and water splitting triggered by near infrared light.

Articles

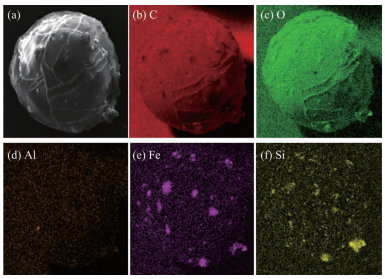


A sandwich-like Si/RGO@PANI nanocomposite consisting of RGO, PANI and nano Si particles reveals very good conductivity and can endure the great volume change of silicon during Li-ion insertion/extraction processes. Thus, this nanocomposite exhibits excellent electrochemical performance as a Li-ion battery anode material.

Magnetic Chitosan Micron Spheres: Synthesis and Adsorption Property for Cu^{2+}

LI Jian-Jun, BAO Xu, WU Xian-Feng, Islam Nazrul, LIU Yin, QIAO Shang-Yuan, YU Zhen-Wei, ZHU Jin-Bo

DOI:10.11862/CJIC.2017.052
Chinese J. Inorg. Chem., **2017**,**33**:383-388

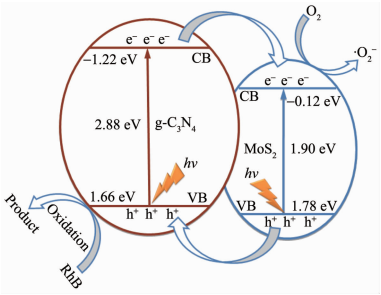


Coal-fly-ash magnetic spheres (MS) were employed as magnetic core to fabricate MS@SiO_2@Chitosan magnetic micro-spheres. The obtained micro-spheres exhibited a much higher Cu^{2+} adsorbability compared with the original coal-fly-ash magnetic spheres. And they could be separated effectively from water by magnetic separation.

Synthesis and Visible Light Photocatalytic Performance of MoS_2/g-C_3N_4 Composites

XU Meng-Qiu, CHAI Bo, YAN Jun-Tao, WANG Hai-Bo, REN Zhan-Dong

DOI:10.11862/CJIC.2017.045
Chinese J. Inorg. Chem., **2017**,**33**:389-395

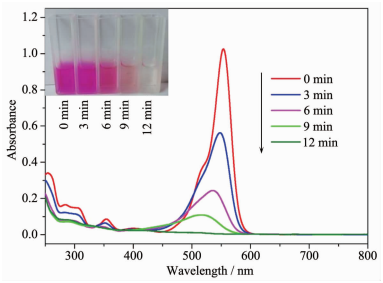


The MoS_2/g-C_3N_4 composites with significantly enhanced visible light photocatalytic performances were fabricated through combining the exfoliated commercial MoS_2 with g-C_3N_4.

Visible-Light Responsive Photocatalyst g-C_3N_4@BiOCl with Hollow Flower-like Structure: Preparation and Photocatalytic Performance

YANG Bing-Ye, LI Hang, SHANG Ning-Zhao, FENG Cheng, GAO Shu-Tao, WANG Chun

DOI:10.11862/CJIC.2017.033
Chinese J. Inorg. Chem., **2017**,**33**:396-404

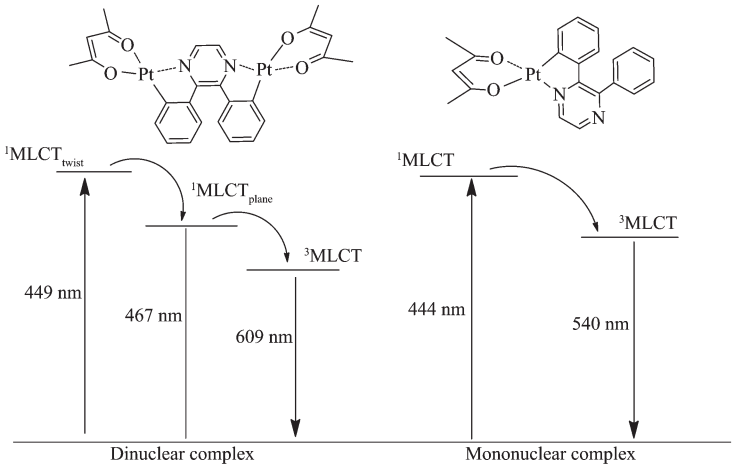


The heterojunction photocatalyst of g-C_3N_4@BiOCl with hollow flower-like structure was fabricated and exhibited much higher photocatalytic activity than g-C_3N_4 and BiOCl under visible-light irradiation ($\lambda \geqslant 420$ nm). The degradation efficiency of 50 mg·L^{-1} rhodamine B can be reached to 99% within 12 min.

Mononuclear and Dinuclear Platinum(Ⅱ) Complexes Based on Bridging Ligands 2,3-Diphenylpyrazine or 2,3-Diphenylquinoxaline: Crystal Structures and Photophysical Properties

LUO Kai-Jun, GENG Hao, ZHANG Cheng-Yang, NI Hai-Liang, LI Quan

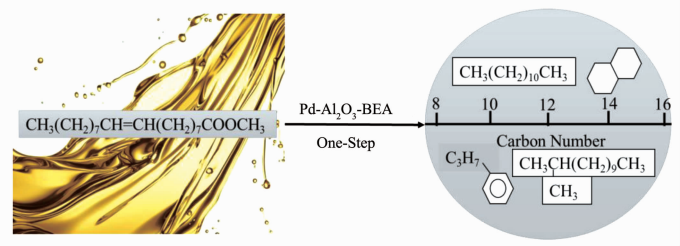
DOI:10.11862/CJIC.2017.026
Chinese J. Inorg. Chem., **2017**,**33**:405-414



Pd-Al_2O_3-BEA Catalysts for the Preparation of Jet Fuel-Range Hydrocarbons from Oils Through One-Step Hydrogenation

DU Jun-Chen, ZHANG Ai-Min, MA Jiang-Li, LIU Qiang, FENG Feng, CHEN Yu-Bao, ZHAO Yun-Kun

DOI:10.11862/CJIC.2017.027
Chinese J. Inorg. Chem., **2017**,**33**:415-420

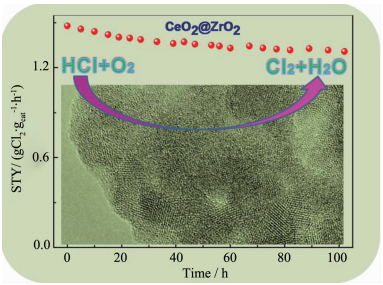


H-β modified Pd/Al_2O_3 material with appropriate pore distribution and acidity has been investigated as an efficient catalyst for the preparation of jet fuel-range hydrocarbons from oils by one-step hydrogenation reaction.

Superfine CeO_2 Embedded in a Porous ZrO_2 Matrix for Catalytic HCl Oxidation

XU Xi-Hua, LOU Jia-Wei, XIE Xing-Xing, FEI Zhao-Yang, LIU Qing, CHEN Xian, TANG Ji-Hai, CUI Mi-Fen, QIAO Xu

DOI:10.11862/CJIC.2017.047
Chinese J. Inorg. Chem., **2017**,**33**:421-428

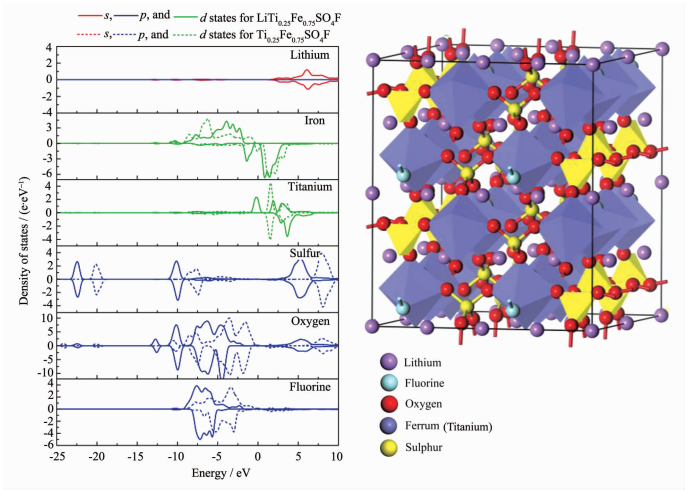


Nano-sized CeO_2 particles embedded in the amorphous ZrO_2 matrix for recycling of Cl_2 from HCl oxidation, which are thus prevented from sintering during the reaction.

Electronic Structure of $LiTi_{0.25}Fe_{0.75}SO_4F$ Positive-Electrode Material for Lithium-Ion Battery

TAO Wei, HUANG Yun, YI Ting-Feng, XIE Ying

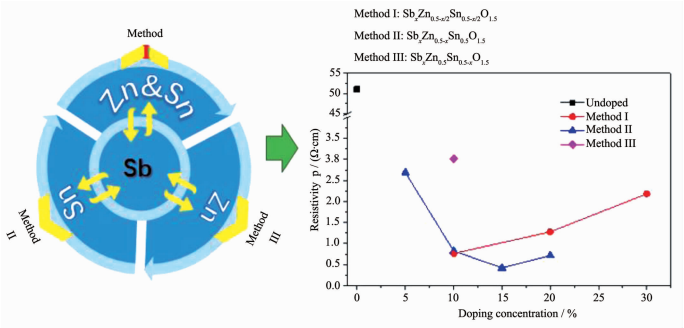
DOI:10.11862/CJIC.2017.043
Chinese J. Inorg. Chem., **2017**,**33**:429-434



Ti doping results in the disappearance of the band gap, and then significantly enhances the electric conductivity and structural stability of $LiFeSO_4F$ cathode materials.

Structures and Properties of Sb-Doped ZTO Transparent Conducting Films

CHEN Xiao, LI Yi-Ming, LIU Xiao-Jun, HE Yun-Qiu

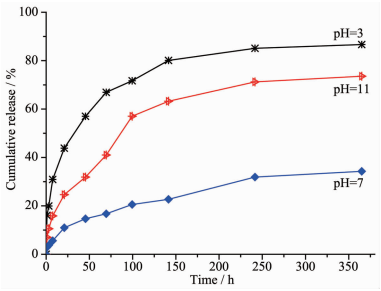


By the three substitution methods (Ⅰ, Ⅱ and Ⅲ), the Sb ions successfully entered into the lattice positons of the target ions as designed, resulting in the variation of the conductivity of the Sb-doped ZTO films.

DOI:10.11862/CJIC.2017.039
Chinese J. Inorg. Chem., **2017**,**33**:435-445

Preparation and Properties of pH Value-Responsive Sustained Release System of Chlorpyrifos/ Copper(Ⅱ) Schiff Base SBA-15

LIN Yue-Shun, ZHOU Hong-Jun, ZHOU Xin-Hua, GONG Sheng, XU Hua, CHEN Hua-Yao

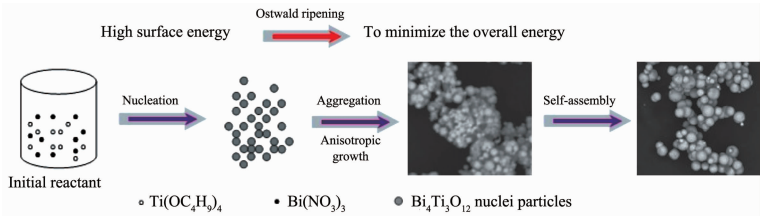


The chlorpyrifos/copper Schiff base modified SBA-15 (CH-Cu-SBA-15) sustained release system showed significant sensitivity in response to the pH value, which was of potential value for agricult ural control of pests and diseases. Meanwhile, their releasing curves could be described by Riger-Peppas equation.

DOI:10.11862/CJIC.2017.056
Chinese J. Inorg. Chem., **2017**,**33**:446-454

Preparation and Photocatalytic Performance of Spherical-like $Bi_4Ti_3O_{12}$ Composite

GAO Xiao-Ming, DAI Yuan, ZHANG Yu, WANG Zi-Hang, FU Feng

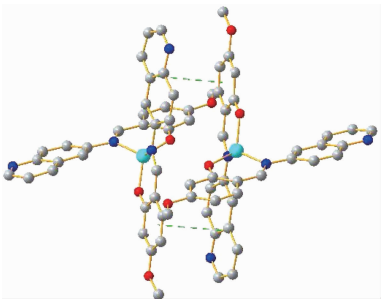


Spherical-like $Bi_4Ti_3O_{12}$ composite was synthesized by hydrothermal method. With the assistance of self-assembly and anisotropic growth process, the surface energy will be further decreased, thus the spherical-like $Bi_4Ti_3O_{12}$ composite s become much more stable. $Bi_4Ti_3O_{12}$ composite exhibited significantly photocatalytic activity under visible light irradiation towards degradation of AF than that of MO, MB, and the ·OH was main active radicals in photocatalytic degradation.

DOI:10.11862/CJIC.2017.046
Chinese J. Inorg. Chem., **2017**,**33**:455-462

Syntheses, Crystal Structures and Antibacterial Activities of Complexes with *N*-(6-Quinolyl)salicylaldimine Ligand

SHI Juan, LI Jiang, GE Hong-Guang



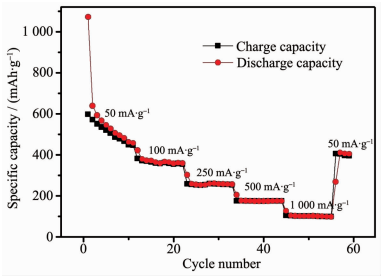
Molecular structure of **1**

4-methoxy-6-amine quinolone Schiff base (L) coordinated with Co(Ⅱ), Zn(Ⅱ) and Cu(Ⅱ) to give complexes $[CoL_2]$ (**1**), $[ZnL_2]$ (**2**) and $[CuL_2]$ (**3**). Complexes **1**~**3** had similar coordination mode, and the coordinate metal atom possessed a distorted tetrahedron. Complex **1** had an outstanding fungicidal activities, and can be used as antibacterial agent.

DOI:10.11862/CJIC.2017.050
Chinese J. Inorg. Chem., **2017**,**33**:463-470

Synthesis and Electrochemical Performances of Three-Dimensionally Ordered Macroporous Fe_2SiO_4/SiO_2@C Nano-Glass-Ceramic Materials as an Anode for Lithium-Ion Batteries

SUN Ru, LI Dong-Lin, CHEN Guang-Qi, ZHANG Wei, FAN Xiao-Yong, GOU Lei, WANG Yan-Ru, CHENG Yi-Ni, ZHAO Zhen-Zhen

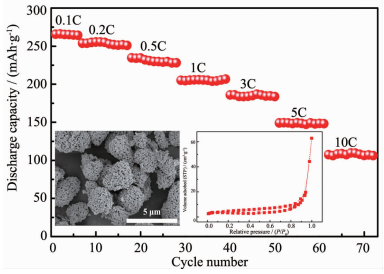


3DOM Fe_2SiO_4/SiO_2@C nano-glass-ceramic exhibits a highly reversible discharge capacity up to 450 mAh·g^{-1} at a current density of 50 mA·g^{-1}, and 260 mAh·g^{-1} at 250 mA·g^{-1} in the voltage range of 0.05~3.0 V, while 3DOM amorphous SiO_2@C composite with same porous structure only delivers 15 mAh·g^{-1} at 50 mA·g^{-1}.

DOI:10.11862/CJIC.2017.058
Chinese J. Inorg. Chem., **2017**,**33**:471-478

Preparation and Electrochemical Performance of Porous Micro-Nano Structure Layered Li-Rich $0.6Li_2MnO_3 \cdot 0.4LiNi_{0.5}Mn_{0.5}O_2$ Cathode for Lithium-Ion Batteries

ZHENG Zhuo, WU Zhen-Guo, XIANG Wei, YANG Xiu-Shan

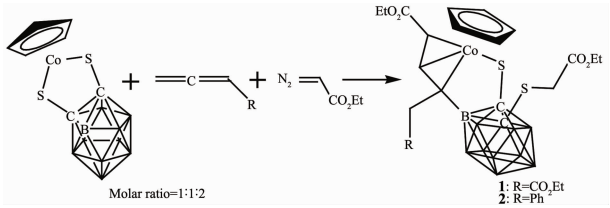


The porous micro-nano Li-rich $0.6Li_2MnO_3 \cdot 0.4LiNi_{0.5}Mn_{0.5}O_2$ cathode has a well-ordered layered α-$NaFeO_2$ structure and high BET specific surface area (13 m^2·g^{-1}), which endows the significantly improved high rate performance (10C, 107 mAh·g^{-1}) and cycling stability (94% of capacity retention at 0.5C after 100 cycles).

DOI:10.11862/CJIC.2017.059
Chinese J. Inorg. Chem., **2017**,**33**:479-486

Reactivity of Half-Sandwich 16 Electron Compound $CpCo(S_2C_2B_{10}H_{10})$ with Ethyl Diazoacetate and Allenes(English)

LIU Gui-Feng, YAN Hong

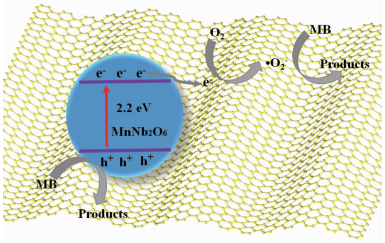


The three-component reactions of the 16e half-sandwich complex $CpCo(S_2C_2B_{10}H_{10})$ (Cp: cyclopentadienyl) with ethyl diazoacetate (EDA) and terminal allenes at ambient temperature lead to compounds **1** and **2**. A plausible mechanism for the formation of **1** and **2** was proposed.

DOI:10.11862/CJIC.2017.055
Chinese J. Inorg. Chem., **2017**,**33**:487-492

Fabrication of RGO-$MnNb_2O_6$ Photocatalyst with Enhanced Visible Light Efficiency in Photocatalytic Degradation of Methylene Blue (English)

GU Wei, YAN Ming, SUN Lin, SHI Wei-Dong

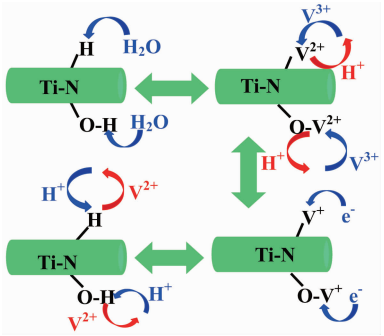


The as-prepared RGO-$MnNb_2O_6$ composites could significantly enhance photocatalytic activity for the degradation of methylene blue under visible light irradiation. Within 60 min, 78.2% of the methylene blue was removed by the optimum sample (3% RGO-$MnNb_2O_6$), which was about 2 times higher than that of the individual $MnNb_2O_6$.

DOI:10.11862/CJIC.2017.054
Chinese J. Inorg. Chem., **2017**,**33**:493-500

Electrochemical Performance of Titanium Nitride Nanotubes as Negative Electrode in a Static Vanadium Battery Towards V(Ⅱ)/V(Ⅲ) Redox Couple (English)

ZHAO Feng-Ming, WEN Gang,
KONG Li-Yao, CHU You-Qun, MA Chun-An

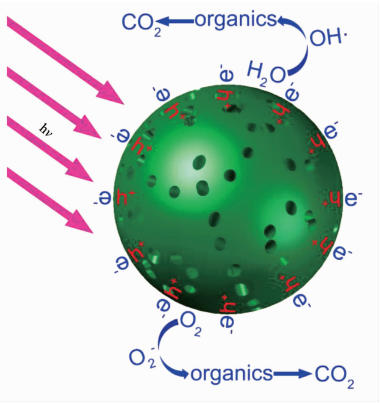


TiN NTs electrode provides large electrochemical surface area and more active center to improve the absorption of V(Ⅲ), therefore the TiN NTs electrode exhibited excellent electrochemical activity towards V(Ⅱ)/V(Ⅲ) redox couple.

DOI:10.11862/CJIC.2017.053
Chinese J. Inorg. Chem., **2017**,**33**:501-508

Synthesis and Photocatalytic Characterization of ZnO/BiOI Microspheres (English)

WANG Yuan-You, GONG Ai-Qing,
YU Wen-Hua

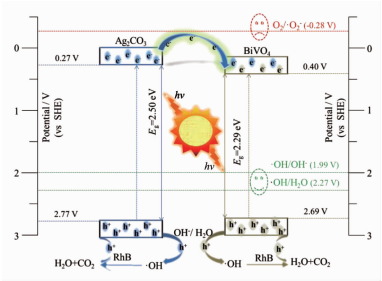


The porous ZnO/BiOI microspheres showed high photodegradation activities whether in RhB aqueous solution or in CH_3CHO gaseous phase.

DOI:10.11862/CJIC.2017.061
Chinese J. Inorg. Chem., **2017**,**33**:509-518

Preparation, Characterization and Photocatalytic Mechanism of $Ag_2CO_3/BiVO_4$ Composite Microsheets

LIU Ren-Yue, WU Zhen, BAI Yu,
YU Chang-Lin, LI Jia-De, SHU Qing,
YANG Kai



DOI:10.11862/CJIC.2017.062
Chinese J. Inorg. Chem., **2017**,**33**:519-527