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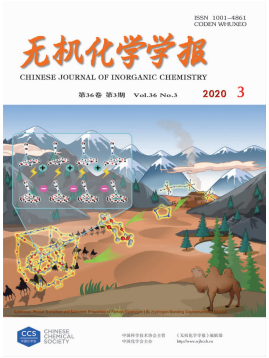
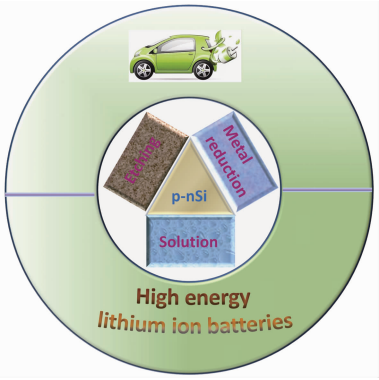
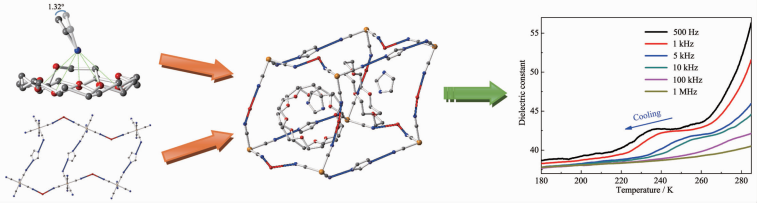


Reviews



This review summarize the current strategies for preparation of porous silicon (p-nSi) and the applications in LIBs.

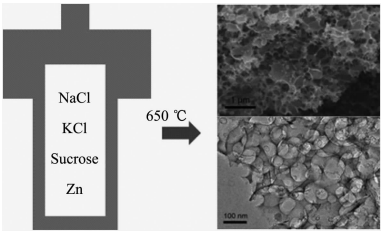
Articles



The supramolecular structures (18-crown-6)($C_3H_5N_2$) is filled into cage-like clathrate hydrate structure formed by 2D layered structure and water molecules through hydrogen bonds. Temperature variation triggers the cage structure abrupt change, and at the same time causes dynamic oscillation of supramolecules within the framework of $[Fe(CN)_6]^{3-}$, thus induces the step-like change in dielectric physical properties.

Three-Dimensional Porous Carbon Prepared by Molten Salt Zinc-Thermal Method as Anode for High Performance Potassium Ion Batteries

MA Kai, LIN Ning

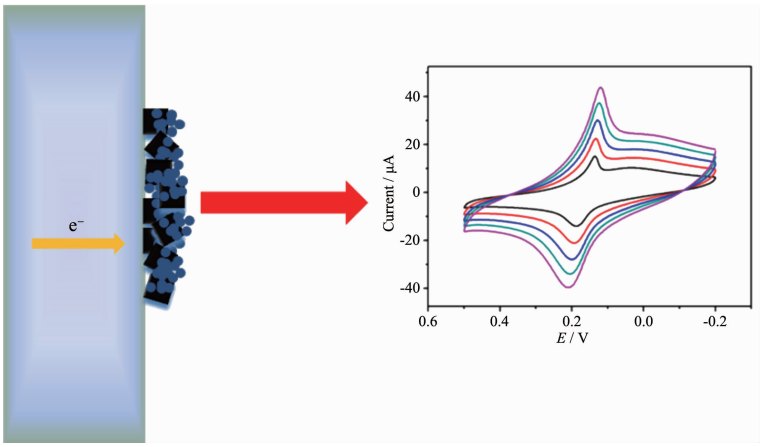


NaCl/KCl molten salts zinc-thermal method was used to prepare three-dimensional (3D) porous carbon materials with sucrose as precursor, which exhibits excellent rate performance and long cycle life for PIBs.

DOI:10.11862/CJIC.2020.058
Chinese J. Inorg. Chem., **2020**,**36**(3):415-420

Non-enzyme Sensor for Hydrogen Peroxide Based on Prussian Blue/Manganese Dioxide Composite Modified Electrode

LIU Yu-Ge, LI Zhi-Guo, CHEN Wei-Zhen

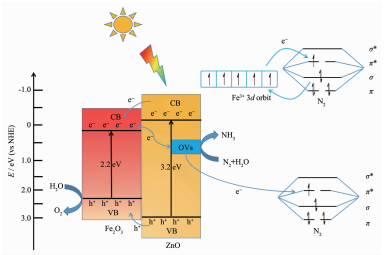


A non-enzyme sensor for the detection of H_2O_2 was fabricated on Prussian blue (PB)/MnO_2 composite modified glassy carbon electrode (GCE). The sensor possesses potential application in the analysis of glucose in real clinical samples.

DOI:10.11862/CJIC.2020.065
Chinese J. Inorg. Chem., **2020**,**36**(3):421-425

Photocatalytic Synthesis of Ammonia over Fe_2O_3/ZnO with Rich Surface Oxygen Vacancy

CHEN Qi, ZHOU Yu, ZHU Ji-Xiu, LIANG Tian-Tian, HUANG Rong-Bin, CHEN Ai-Min

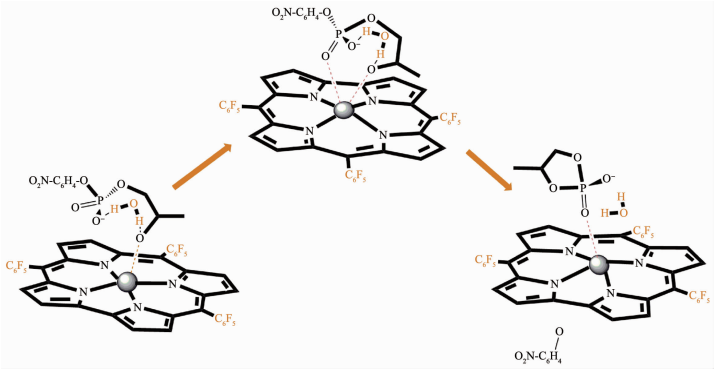


Fe_2O_3/ZnO catalysts exhibited photocatalytic nitrogen fixation efficiency due to the enhancement of visible light absorption, higher concentration of surface oxygen vacancies and Fe^{3+} active sites.

DOI:10.11862/CJIC.2020.063
Chinese J. Inorg. Chem., **2020**,**36**(3):426-434

Mechanism of Catalytic Hydrolysis Cleavage of RNA Phosphodiester Analogue HpPNP by Corrole Manganese(Ⅲ) Complex

LI Jiao, XU Yan, XU Xuan, XU Zhi-Guang, LIU Hai-Yang

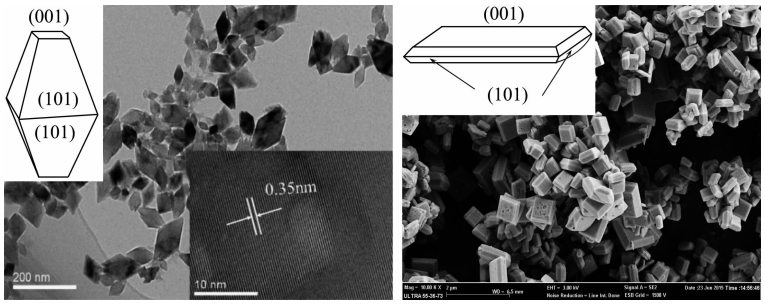


DOI:10.11862/CJIC.2020.064
Chinese J. Inorg. Chem., **2020**,**36**(3):435-442

Photo Catalytic Performance of Octahedral Bipyramids Titanium Oxide/Carbon Quantum Dots and Nanosheet Titanium Oxide/Carbon Quantum Dots

WU Bing-Zhao, HUANG Hong-Qin, JIANG Cai-Ying, WANG Hui-Gang, ZHENG Xu-Ming

DOI:10.11862/CJIC.2020.061
Chinese J. Inorg. Chem., **2020**,**36**(3):443-450

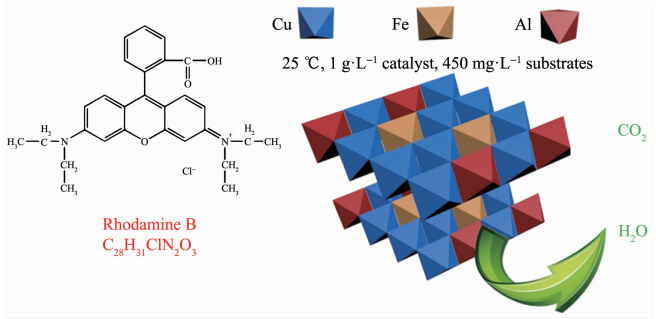


N-CDs doped octahedral bipyramids TiO_2 with high exposed (101) reactive facets and N-CDs doped nanosheets TiO_2 with high exposed (001) reactive facets have been successfully fabricated and their photodegradation performance were compared.

Synthesis and Application in Degradation of Rhodamine B of Layered $Cu_yFe_{6-y}Al_2O_x$ Catalysts

LAI Chu-Jun, REN Xiao-Xu, HE Tian-Qu, YUE Lin-Hai, HOU Zhao-Yin

DOI:10.11862/CJIC.2020.057
Chinese J. Inorg. Chem., **2020**,**36**(3):451-457

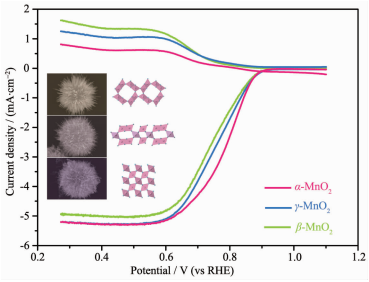


Layered $Cu_yFe_{6-y}Al_2O_x$ catalysts were prepared and applied in the Fenton degradation reaction of high concentrated rhodamine B under mild condition.

Structure-Activity Relationship of Three-Dimensional Urchin-like MnO_2 Microspheres with Different Crystalline Phases for Oxygen Reduction Reaction

CHEN Li-Ya, CHENG Gao, LIU Guan-Liang, HAN Jia-Xi, FU Shu-Chai, HAN Sheng-Bo, SUN Ming, LAN Bang, YU Lin

DOI:10.11862/CJIC.2020.048
Chinese J. Inorg. Chem., **2020**,**36**(3):458-466

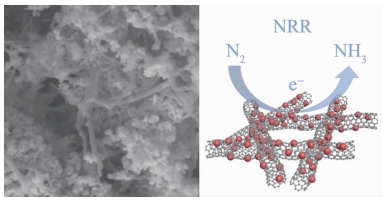


The effect of urchin-like MnO_2 microspheres with three crystalline phases on oxygen reduction reaction was studied, and the activity followed a sequence: α-MnO_2 > γ-MnO_2 > β-MnO_2. The difference of the activities was mainly related to the amount of Mn^{3+}, surface oxygen vacancies and conductivity.

Carbon Nanotube-Based Bimetallic Nitride Co_3W_3N for Electrocatalytic Synthesis of Ammonia under Ambient Condition

JIANG Cheng, GUO Hu, LI Ling-Hui, WANG Tao, FAN Xiao-Li, SONG Li, GONG Hao, XIA Wei, GAO Bin, HE Jian-Ping

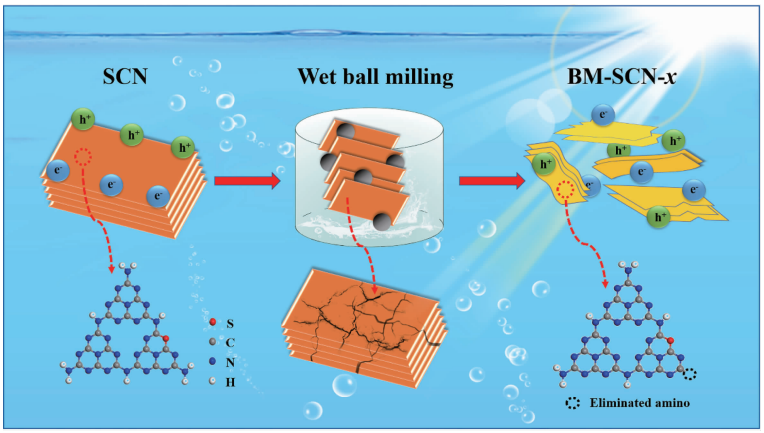
DOI:10.11862/CJIC.2020.047
Chinese J. Inorg. Chem., **2020**,**36**(3):467-474



Low-cost catalyst carbon nanotube-based double transition metal nitrides Co_3W_3N/CNTs composite with small particle size was synthesized, which shows excellent ammonia production rate, Faraday efficiency and long-time electrochemical stability during nitrogen reduction reaction.

Effect of Dry and Wet Environment of Ball Milling on Visible Light Catalytic Performance of Sulfur-Doped Carbon Nitride

TAN Jie, LI Zhi-Feng, YANG Xiao-Fei, LI Jie, ZHANG Ting-Ting



DOI:10.11862/CJIC.2020.052
Chinese J. Inorg. Chem., **2020**,**36**(3):475-484

Structural Regulation and Electrochemical Performance of Self-Supported Nickel-Based MOF on Ni Foam

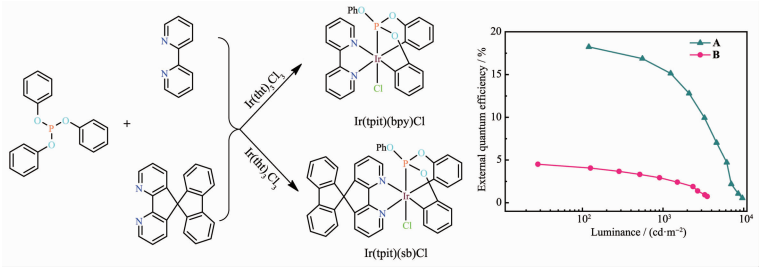
HU Wen-Ming, MA Qian, HE Yong-Qiang, LIU Hong-Bo, LIU Jun-Qiang, XIA Xiao-Hong

Direct growth of Ni-MOF material on the surface of nickel foam was achieved via a simple one-step solvothermal method. Solvents have remarkable effect on the morphology and electrochemical performance of the Ni-MOF/NF because of their different pH values and solubilities of terephthalic acid.

DOI:10.11862/CJIC.2020.060
Chinese J. Inorg. Chem., **2020**,**36**(3):485-493

Influence of Spirofluorene on Photoelectric Properties of Iridium Complexes Containing Tridentate Phosphite Ligands (English)

CHEN Man, WANG Yue, ZHOU Yue-Yue, WANG Ping, TONG Bi-Hai, FUNG Man-Keung, WANG Song

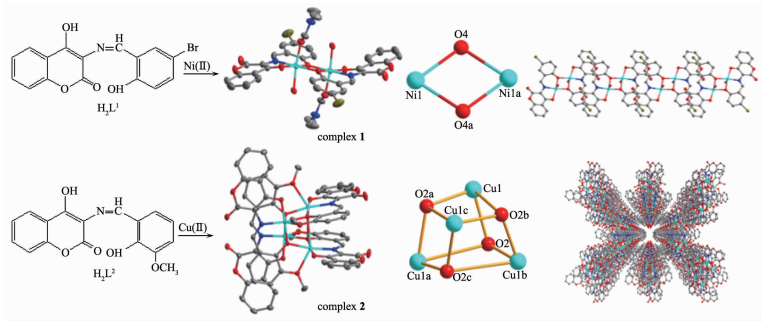


Based on the complex Ir(tpit)(sb)Cl containing spirofluorene group, the external quantum efficiency of OLED device is 4.5%. The external quantum efficiency of Ir(tpit)(bpy)Cl-based device is up to 18.2%.

DOI:10.11862/CJIC.2020.045
Chinese J. Inorg. Chem., **2020**,**36**(3):494-502

Synthesis, Crystal Structure and Spectral Properties of Binuclear Ni(Ⅱ) and Cubane-like $Cu_4(\mu_3\text{-}O)_4$ Cored Tetranuclear Cu(Ⅱ) Complexes Based on Coumarin Schiff Base (English)

ZHANG Shu-Zhen, CHANG Jian, ZHANG Hong-Jia, WU Ya, SUN Yin-Xia, WANG Yan-Bin

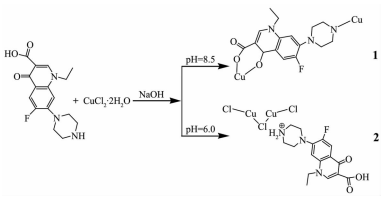


Two Schiff base binuclear Ni(Ⅱ) and cubane-like $Cu_4(\mu_3\text{-}O)_4$ core tetranuclear Cu(Ⅱ) complexes formed the 1D supramolecular chain and the 3D network supramolecular structure, respectively, by different intermolecular interactions.

DOI:10.11862/CJIC.2020.056
Chinese J. Inorg. Chem., **2020**,**36**(3):503-514

Synthesis, Crystal Structure, and Antibacterial Activity of Copper(Ⅱ) Complexes Based on Norfloxacin (English)

HUANG Yan-Ju, XU Mei-Ling, ZHANG Jun

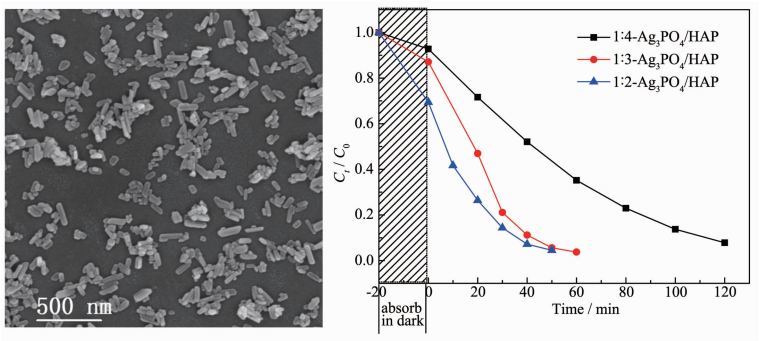


Under alkalinity and acidity conditions, two different copper complexes $[Cu_2(HNOR)_2Cl]_n$ (**1**) and $[Cu_2Cl_3]\cdot H_3NOR\cdot H_2O$ (**2**) were obtained, respectively.

DOI:10.11862/CJIC.2020.054
Chinese J. Inorg. Chem., **2020**,**36**(3):515-520

Hydrothermal Preparation and Properties of Ag_3PO_4/HAP Composite Photocatalysts (English)

SONG Cui, ZHAO Li-Hua, QI Ming-Ying, SUN Rong-Wei, ZHU Qian

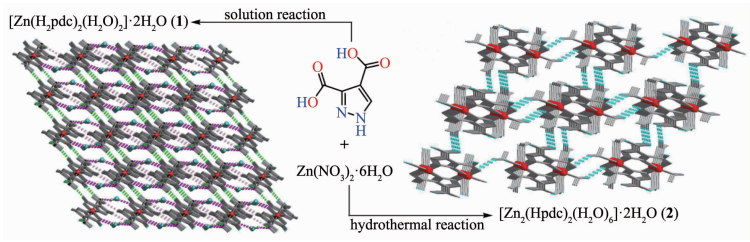


Ag_3PO_4/HAP photocatalyst was synthesized via a hydrothermal method using oyster shells as a raw material. The 1:2-Ag_3PO_4/HAP exhibited the highest photocatalytic activity.

DOI:10.11862/CJIC.2020.067
Chinese J. Inorg. Chem., **2020**,**36**(3):521-528

Syntheses, Crystal Structures and Luminescent Properties of Zn(Ⅱ) Complexes Based on 3,4-Pyrazoledicarboxylic Acid (English)

QIN Meng-Na, WANG Li-Dong, CHENG Mei-Ling, LIU Lu, LIU Qi, TANG Xiao-Yan

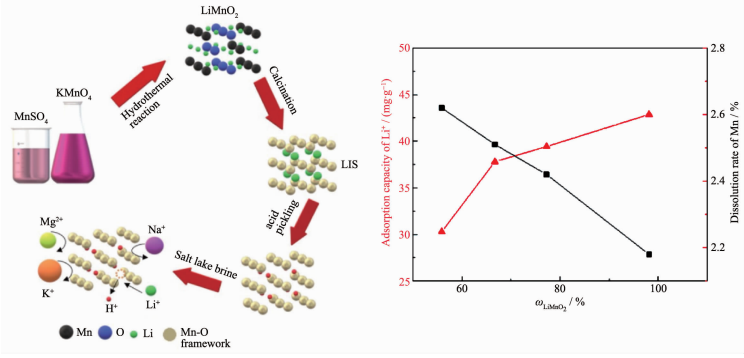


Two Zn(Ⅱ) complexes containing H_2pdc^-/$Hpdc^{2-}$, $[Zn(H_2pdc)_2(H_2O)_2]\cdot 2H_2O$ (**1**) and $[Zn_2(Hpdc)_2(H_2O)_6]\cdot 2H_2O$ (**2**) (H_3pdc =3,4-pyrazoledicarboxylic acid), have been synthesized via different synthetic routes, and the crystal structures and luminescent properties of them have been described. In the crystals of complexes, the O(C, N)–H···O(N) hydrogen bonds expanded the mono-/di-nuclear complexes to 3D supramolecular structures.

DOI:10.11862/CJIC.2020.046
Chinese J. Inorg. Chem., **2020**,**36**(3):529-535

Role of Process Parameters on Phase Purity of *o*-$LiMnO_2$ and Synthesis of $Li_{1.6}Mn_{1.6}O_4$ as Lithium Ion-Sieve (English)

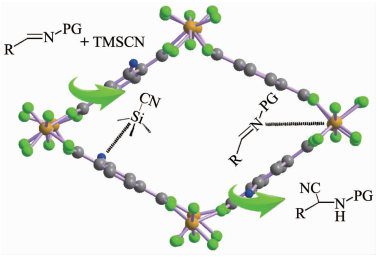
FU Yu-Yao, YANG Xi-Yun, HUANG Hai-Qiang, WANG Yuan-Yuan, LI Ji-Shen



DOI:10.11862/CJIC.2020.038
Chinese J. Inorg. Chem., **2020**,**36**(3):536-546

Substrate-Selectivity of Strecker Reaction Based on Amino-Functionalized Ga-MIL-53 Catalyst (English)

WANG Peng-Cheng, WU Shu-Jie, SHAN Liang, JIANG Yan-Song, FAN Yong, WANG Li, CHEN Xiao-Dong, XU Jia-Ning

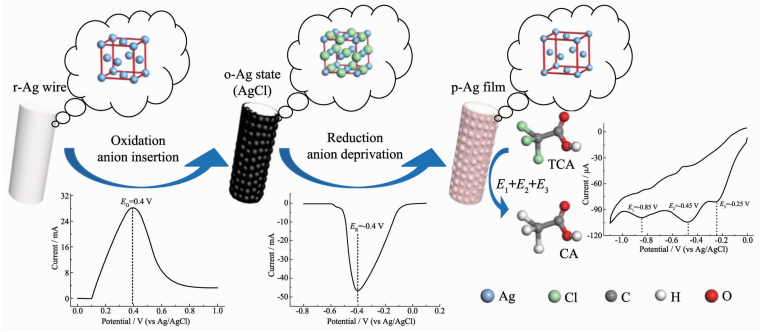


With respect to Strecker reactions, NH_2-Ga-MIL-53 exhibited excellent catalytic performance and significant catalytic universality for various substrates, and the catalytic mechanism can be described as the classic Lewis acid-base synergistic catalysis.

DOI:10.11862/CJIC.2020.036
Chinese J. Inorg. Chem., **2020**,**36**(3):547-554

Highly Activated Polyporous Silver Film: Preparation by Voltammetric Etching with Chloride Ion Promotion and Electrochemical Determination of Trichloroacetic Acid (English)

CHU You-Qun, WANG Ling-Qiao, HUANG Zhang-Kao, XU Ying-Hua, ZHAO Feng-Ming

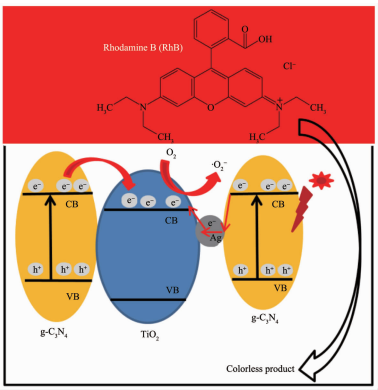


Voltammetric etching using chloride ion was employed to fabricate a highly activated polyporous silver film for electrochemcal detection of trichloroacetic acid.

DOI:10.11862/CJIC.2020.059
Chinese J. Inorg. Chem., **2020**,**36**(3):555-565

Constructing and Photocatalytic Performance of g-C_3N_4/Ag/TiO_2 Composites (English)

LI Ping, ZHANGA Xiao-Xian, SI Ying, LIANG Ting-Ting, LIU Huan, QIU Ling-Fang, DUAN Shu-Qi, DUO Shu-Wang, CHEN Zhong

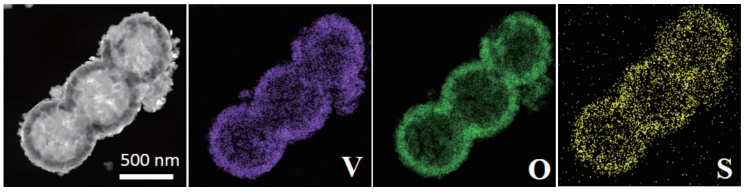


The g-C_3N_4/Ag/TiO_2 composite photocatalyst with enhanced visible light activity for RhB degradation was facilely fabricated via a mechanical agitation procedure. The research shows $\cdot O_2^-$ and h^+ are the major reactive species, and the enhanced photocatalytic activity mainly contributed to the formation of heterojunction and the good conductivity of Ag.

DOI:10.11862/CJIC.2020.055
Chinese J. Inorg. Chem., **2020**,**36**(3):566-574

V_2O_5 Hollow Spheres as High Efficient Sulfur Host for Li-S Batteries (English)

PAN Pei-Feng, CHEN Ping, FANG Ya-Nan, SHAN Qi, CHEN Ning-Na, FENG Xiao-Miao, LIU Rui-Qing, LI Pan, MA Yan-Wen



V_2O_5 hollow spheres were synthesized by hydrothermal synthesis and annealing as high efficient sulfur host for high performance lithium-sulfur batteries which can storage more sulfur and effectively restrict the shuttle effect of polysulfides.

DOI:10.11862/CJIC.2020.051
Chinese J. Inorg. Chem., **2020**,**36**(3):575-583