

# 无机化学学报

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Ultra-small Size Rare Earth Complex Fluorescent Nanoprobe for Dual Color Imaging of Tumor Cells Constructed with PCL-*b*-PNIPAM Coordinated Eu(III)

GUAN Xiao-Lin, DING Yuan-Yuan, LAI Shou-Jun, YANG Xue-Qin, WEI Jing-Yu, ZHANG Jia-Ming, ZHANG Li-Yuan, TONG Jin-Hui, LEI Zi-Qiang

DOI:10.11862/CJIC.2022.097

*Chinese J. Inorg. Chem.*, **2022**,**38**(6):1023-1036

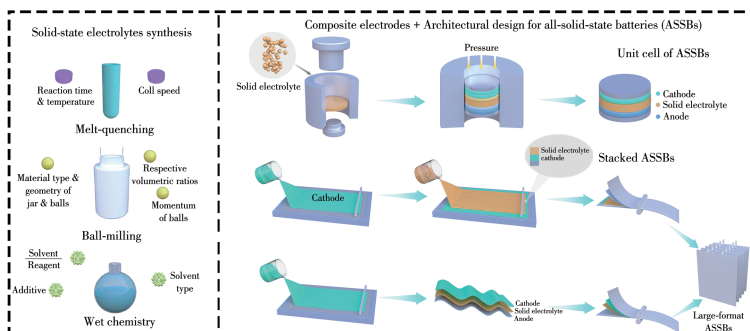
### Reviews

Li<sub>7</sub>P<sub>3</sub>S<sub>11</sub> Electrolyte: Synthesis, Conduction, and Application

LIAO Cong, YU Chuang, PENG Lin-Feng, LI Li-Ping, CHENG Shi-Jie, XIE Jia

DOI:10.11862/CJIC.2022.122

*Chinese J. Inorg. Chem.*, **2022**,**38**(6):977-992



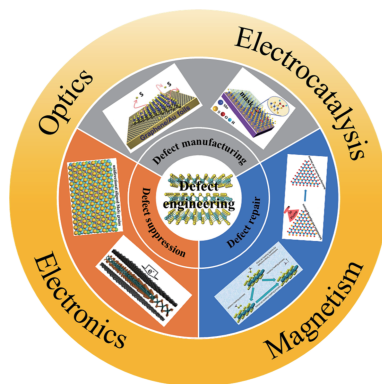
We summarize much research progress about Li<sub>7</sub>P<sub>3</sub>S<sub>11</sub> electrolyte, from structure and conduction mechanism to the synthetic routes, methods on modified performances, and applications in solid state battery. In the end, future development direction to advance its application in solid state battery are pointed out.

Defect Engineering of Two - Dimensional Transition Metal Dichalcogenides

LI Jing-Tao, MA Yang, LI Shao-Xian, HE Ye-Ming, ZHANG Yong-Zhe

DOI:10.11862/CJIC.2022.120

*Chinese J. Inorg. Chem.*, **2022**,**38**(6):993-1015



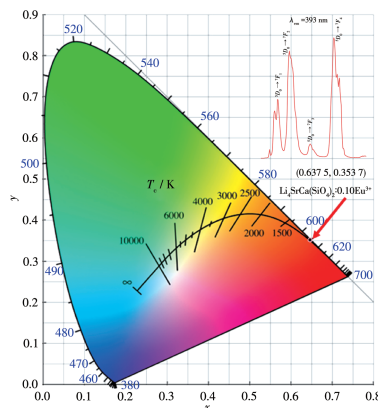
Defect engineering methods include defect suppression, defect repair, and defect manufacturing, which can be applied to electronics, optics, magnetism, and electrocatalysis applications.

# Synthesis and Luminescence Properties of $\text{Li}_4\text{SrCa}(\text{SiO}_4)_2:\text{Eu}^{3+}$ Red Phosphor

FAN Xia-Xia, GAO Zhi-Xiang, QU Wen-Shan,  
TIAN Cui-Feng, LI Jian-Gang, LI Wei,  
DONG Li-Juan, SHI Yun-Long

DOI:10.11862/CJIC.2022.123

Chinese J. Inorg. Chem., 2022,38(6):1016-1022



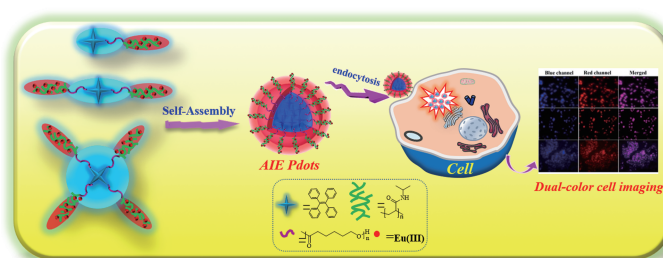
$\text{Li}_4\text{SrCa}(\text{SiO}_4)_2:\text{Eu}^{3+}$  red phosphor were synthesized by high temperature solid-state method, which showed excellent color saturation and color purity.

# Ultra-small Size Rare Earth Complex Fluorescent Nanoprobe for Dual Color Imaging of Tumor Cells Constructed with PCL-*b*-PNIPAM Coordinated Eu(III)

GUAN Xiao-Lin, DING Yuan-Yuan,  
LAI Shou-Jun, YANG Xue-Qin, WEI Jing-Yu,  
ZHANG Jia-Ming, ZHANG Li-Yuan,  
TONG Jin-Hui, LEI Zi-Qiang

DOI:10.11862/CJIC.2022.097

Chinese J. Inorg. Chem., 2022,38(6):1023-1036



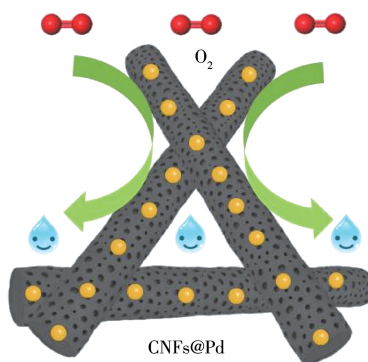
Three small-size polymer dots (Pdts) based on self-assembly of single, double, and four-arm amphiphilic block copolymers had excellent aggregation-induced emission effect and responsivity and exhibited reversible blue/red dual-color fluorescence imaging capabilities in tumor cells. In addition, four-arm Pdts had the smallest particle size, the best dual fluorescence performance, and the best cell imaging effect among them.

# Pd Nanoparticles Anchored on Porous Carbon Nanofibers for Enhanced Electrocatalytic Oxygen Reduction Reaction

MO Zhi-Yong, SONG Shi-Zhu, LI Wen-Yu,  
HE Xue-Long, SHEN Lu, GAO Xiao-Hong, LI Qi

DOI:10.11862/CJIC.2022.110

Chinese J. Inorg. Chem., 2022,38(6):1037-1048



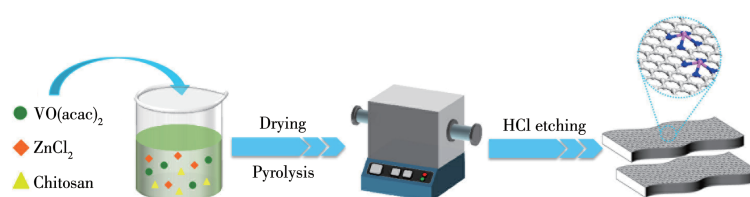
Pd nanoparticles anchored on porous carbon nanofibers (PCNFs@Pd) composites were synthesized by electrospinning, followed by a wet-chemistry reduction method, which was explored as an electrocatalyst for improvement of the oxygen reduction reaction in both acidic and alkaline electrolytes.

# Synthesis of Amines by Oxidative Coupling of Benzylamine over a Vanadium-Nitrogen Co-doped Porous Carbon Catalyst

WU Xiao-Xue, QI Yan-Yan, WANG Ying-Yi, WANG Li, TU Gao-Mei, FU Yang-He, CHEN De-Li, ZHU Wei-Dong, ZHANG Fu-Min

DOI:10.11862/CJIC.2022.112

Chinese J. Inorg. Chem., 2022,38(6):1049-1058



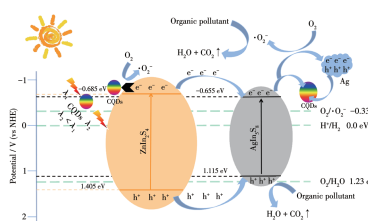
A vanadium-nitrogen co-doped porous carbon (V-N-C) catalyst was successfully prepared via high-temperature pyrolysis combined with an acid-leaching approach, which exhibited high catalytic activity, selectivity, and robust stability for the direct aerobic oxidation of benzylamine and its derivatives to produce corresponding imines using molecular oxygen as the sole oxidant under mild reaction conditions.

# Multi-pathway Photoelectron Migration and Photocatalytic Properties of AgIn<sub>5</sub>S<sub>8</sub>/Carbon Quantum Dots/ZnIn<sub>2</sub>S<sub>4</sub>

ZU Wen-Lin, LI Li, HUANG Ji-Wei, SUN Ying-Ru, MA Feng-Yan, CAO Yan-Zhen

DOI:10.11862/CJIC.2022.113

Chinese J. Inorg. Chem., 2022,38(6):1059-1072



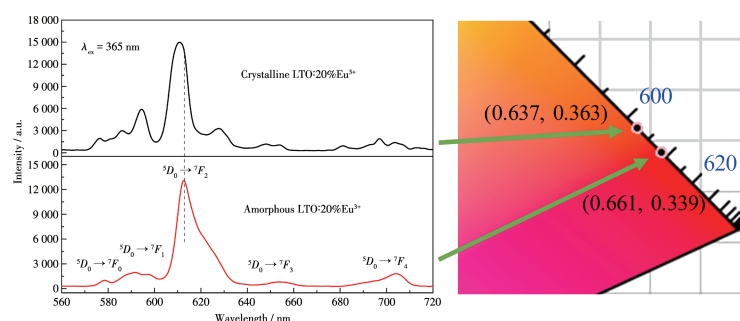
During the photocatalytic degradation and hydrogen production from photolysis water process, the synergistic effect between different components enhances the broad spectral response range of the composite AgIn<sub>5</sub>S<sub>8</sub>/CQDs/ZnIn<sub>2</sub>S<sub>4</sub>, while CQDs (carbon quantum dots) and Ag<sup>0</sup> can effectively improve the lifetime of electron transport, thereby achieving high photocatalytic efficiency.

# Combustion Synthesis and Performances of Amorphous La<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub>:Eu<sup>3+</sup> Phosphor for Plant Growth Lighting

ZHANG Yi, ZHOU Cui-Ping, ZHANG Qi-Feng, FENG Xin-Dan

DOI:10.11862/CJIC.2022.114

Chinese J. Inorg. Chem., 2022,38(6):1073-1080



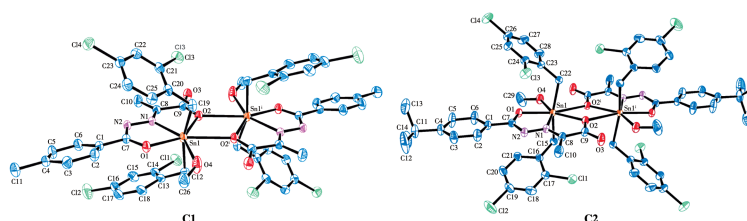
The amorphous La<sub>2</sub>Ti<sub>2</sub>O<sub>7</sub>:Eu<sup>3+</sup> (LTO:Eu<sup>3+</sup>) phosphor synthesized by combustion method showed an enhanced red emission and a higher color purity in comparison with the crystalline sample synthesized by solid-state method.

# Synthesis, Anti-tumor Activity, and Interaction with DNA of Two Substituted Benzyltin Complexes

CHEN Le, DENG Xin, TAN Yu-Xing, ZHANG Fu-Xing, KUANG Dai-Zhi, JIANG Wu-Jiu

DOI:10.11862/CJIC.2022.124

Chinese J. Inorg. Chem., 2022,38(6):1081-1089



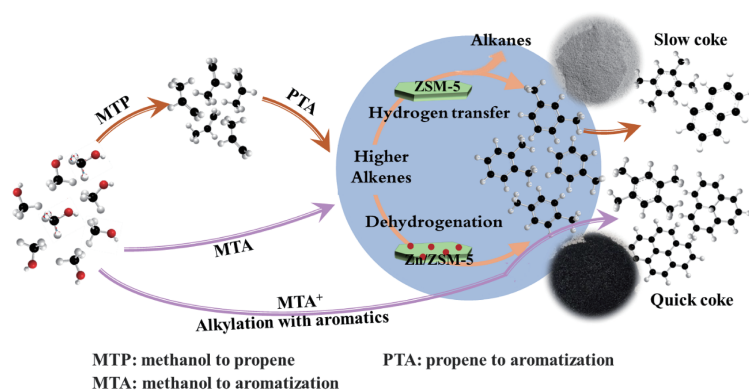
Two complexes belong to centrosymmetric structure mode with a four-membered central Sn<sub>2</sub>O<sub>2</sub> unit, and complex C1 exhibited excellent antitumor activity suggesting that it may be a potential candidate for further chemical optimization and cancer therapy.

Structure-Activity Relationship and Reaction Characteristics of Propene Aromatization Catalyzed by ZSM-5

REN Kun, ZHANG Liang-Liang, LI Zhong, FU Ting-Jun

DOI:10.11862/CJIC.2022.115

*Chinese J. Inorg. Chem.*, **2022**,**38**(6):1090-1102

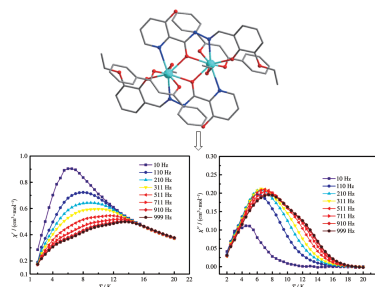


A Dy<sub>2</sub> Complex Showing Outstanding Single-Molecule Magnet Behavior (English)

XIN Xiao-Yan, ZHANG Xue-Jin, CHEN Feng-Jiao, WANG Yu, YANG Chen, QIAO Na, SHI Ying, WANG Wen-Min

DOI:10.11862/CJIC.2022.125

*Chinese J. Inorg. Chem.*, **2022**,**38**(6):1103-1111



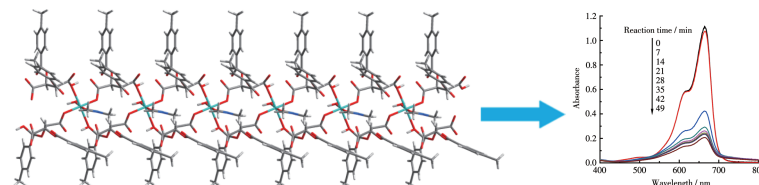
A new Dy<sub>2</sub> complex shows outstanding single molecule magnet behavior.

Structure, Thermostability, Fluorescence, and Dye Adsorption Properties of a Copper(II) Coordination Polymer Based on (+)-Di-*p*-toluoyl-*D*-tartaric Acid (English)

ZHENG Huan, CHU Yan-Xiao, FENG Si-Si, YUAN Cai-Xia

DOI:10.11862/CJIC.2022.109

*Chinese J. Inorg. Chem.*, **2022**,**38**(6):1112-1120



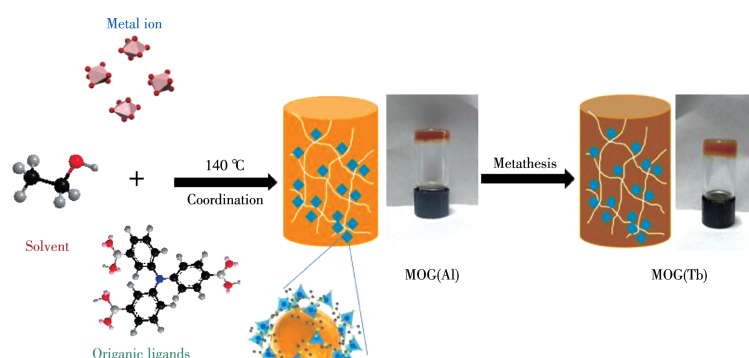
A coordination polymer based on (+)-di-*p*-toluoyl-*D*-tartaric acid and Cu<sup>2+</sup> featuring a 1D chain structure exhibits a good and specific adsorption effect on methylene blue dye in an aqueous solution.

Organometallic Gels Based on Metal Ion Exchange for the Detection of Antibiotics and Nitroaromatic Compounds (English)

YUAN Yi-Zhen, YANG Yun-Shang, ZHAO Yu-Chen, ZHANG Ying-Peng

DOI:10.11862/CJIC.2022.126

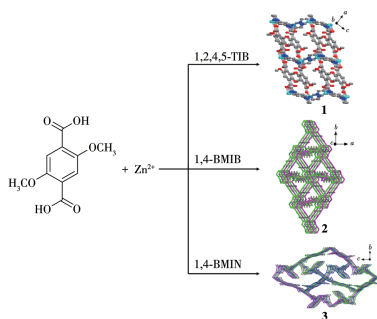
*Chinese J. Inorg. Chem.*, **2022**,**38**(6):1121-1132



*Chinese J. Inorg. Chem.*, **2022**, **38**(6):1171-1179

Three Zn(II)-MOFs Based on Imidazole Derivatives and 2,5-Dimethoxyterephthalic Acid: Syntheses, Crystal Structures, and Fluorescence Properties (English)

SHI Ming-Feng, GU Jiang-Hong, WAN Yi, XU Zhong-Xuan



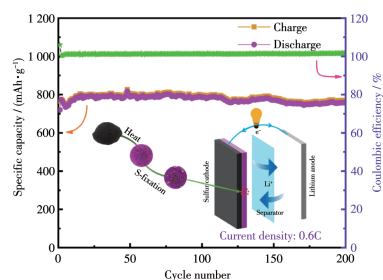
With the help of imidazole ligands 1,2,4,5-tetra(1*H*-imidazol-1-yl)benzene (1,2,4,5-TIB), 1,4-bis(4-methyl-1*H*-imidazol-1-yl)benzene (1,4-BMIB), and 1,4-bis(4-methyl-1*H*-imidazol-1-yl)naphthalene (1,4-BMIN), 2,5-dimethoxyterephthalic acid ( $H_2DTA$ ) reacted with zinc ions to obtain three complexes based on a four-connected pillared-layer framework, 2-fold interpenetration *pcu* net, and 3-fold interpenetration *dia* net, respectively.

DOI:10.11862/CJIC.2022.121

Chinese J. Inorg. Chem., **2022**,**38**(6):1180-1188

Rapid Construction of Two-Dimensional N, S-Co-doped Porous Carbon for Realizing High-Performance Lithium-Sulfur Batteries (English)

SUN Lin, XIE Jie, CHENG Feng, CHEN Ruo-Yu, ZHU Qing-Li, JIN Zhong

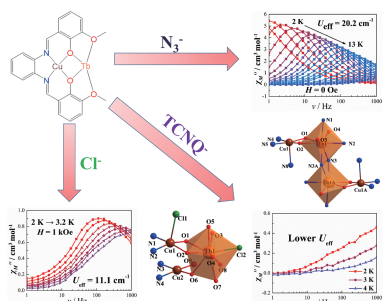


DOI:10.11862/CJIC.2022.116

Chinese J. Inorg. Chem., **2022**,**38**(6):1189-1198

Anionic Modification of the Cu-Tb Single-Molecule Magnets Based on the Compartmental Schiff-Base Ligand (English)

JI Wen-Jie, XIA Cheng-Cai, ZHANG Xin-Yu, WANG Xin-Yi



By using different anions, three Cu-Tb SMMs (single-molecule magnets) based on the compartmental Schiff-base ligand were synthesized and characterized structurally and magnetically. Two trinuclear  $[CuTbCu]$  complexes are field-induced SMMs, while one tetranuclear  $[CuTb]_2$  complex is a zero-field SMM.

DOI:10.11862/CJIC.2022.117

Chinese J. Inorg. Chem., **2022**,**38**(6):1199-1208