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Cover



Benzimidazole-Based Cyclometalated Ir(III) Complexes: Syntheses, Structures and Luminescence Modulation/Switching (English)

RUI Kai, WU Shi-Shan, CAO Deng-Ke

DOI:10.11862/CJIC.2019.156

Chinese J. Inorg. Chem., **2019**,**35**(8):1340-1348

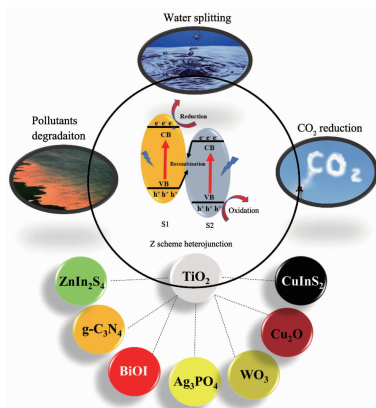
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Photocatalysts: Z-Scheme Heterojunction Constructed with Titanium Dioxide

MEI Qiu-Feng, ZHANG Fei-Yan, WANG Ning,
LU Wen-Sheng, SU Xin-Tai, WANG Wei,
WU Rong-Lan

DOI:10.11862/CJIC.2019.167

Chinese J. Inorg. Chem., **2019**,**35**(8):1321-1339



This paper reviews that titanium dioxide is combined with other semiconductors to form Z-scheme heterojunction, which shows enhanced visible light adsorption and high photocatalytic activity, and is applied in pollutants degradation, water splitting and CO₂ reduction.

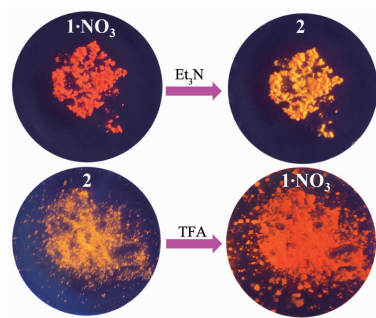
Articles

Benzimidazole-Based Cyclometalated Ir(III) Complexes: Syntheses, Structures and Luminescence Modulation/Switching (English)

RUI Kai, WU Shi-Shan, CAO Deng-Ke

DOI:10.11862/CJIC.2019.156

Chinese J. Inorg. Chem., **2019**,**35**(8):1340-1348



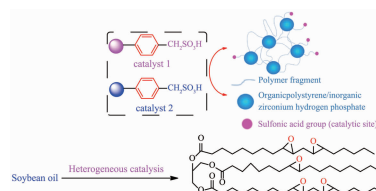
In complexes [Ir(ppy)(qbiH)]NO₃ (**1** · NO₃) and [Ir(ppy)(qbi)] (**2**), the distinct deprotonation degree between ligands qbiH and qbi⁻ leads to their different luminescence. In CH₂Cl₂, an emission at 581 nm was observed for **1** · NO₃, while an emission at 574 nm for **2**. In solid state, both **1** · NO₃ and **2** exhibited luminescence switching between red emission and orange emission, upon meeting Et₃N/TFA vapor.

Sulfonic-Functionalized Organic Polystyrene/Inorganic Hydrogen Zirconium Phosphate Catalyzed Epoxidation of Soybean Oil

ZOU Xiao-Chuan, HUANG Lin-Yu,
QUAN Wen-Xuan, WANG Cun, WANG Yue,
ZHAO Xin, TAN Zhi-Wen

DOI:10.11862/CJIC.2019.173

Chinese J. Inorg. Chem., **2019**,**35**(8):1349-1356



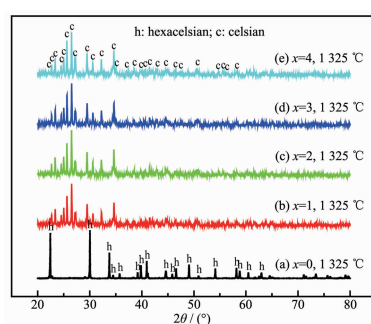
The sulfonic-functionalized organic polystyrene/inorganic hydrogen zirconium phosphate can efficiently catalyze the epoxidized soybean oil. Interestingly, the catalytic activity was restored again when the catalyst was allowed to stand in 2 mol·L⁻¹ of dilute hydrochloric acid for overnight after recycling.

Effect of Li₂O-Na₂O-B₂O₃-SiO₂ Sintering Aids on Structure and Dielectric Properties of BaAl₂Si₂O₈ Ceramics

YAN Xin-Kan, DING Shi-Hua,
ZHANG Xiao-Yun, HUANG Long, ZHANG Yun

DOI:10.11862/CJIC.2019.152

Chinese J. Inorg. Chem., **2019**,**35**(8):1357-1362



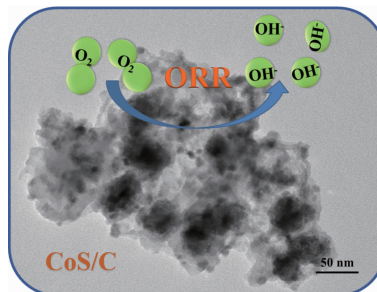
BAS-*x*% (*w/w*) LNBS (*x*=0, 1, 2, 3, 4) ceramics were prepared by solid state route. The phases structure were examined by X-ray diffraction, indicating that Li⁺ substituting for Al³⁺ or Li⁺ entering into the single four-membered-ring(S4R) could promote the hexacelsian-to-celsian transformation by doping LNBS sintering aids.

Preparation and Electrocatalytic Property of Cobalt Sulfide/Porous Carbon Composite Catalyst Derived from ZIF67

LI Jing-Xiu, ZHAO Yuan, XUE Jian-Jun,
HE Ping-Ting, WANG Ling

DOI:10.11862/CJIC.2019.163

Chinese J. Inorg. Chem., **2019**,**35**(8):1363-1370



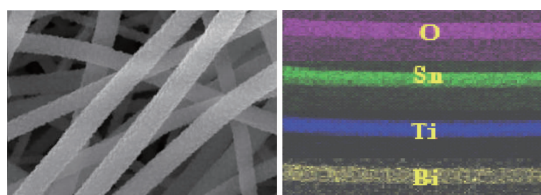
Low-cost catalyst cobalt sulfide/porous carbon with high dispersion and large specific surface has been synthesized through combination of ion exchange method and heat treatment method which showed enhanced electrocatalytic performance for oxygen reduction reaction in alkaline medium.

Preparation of Bi@Bi₂Sn₂O₇/TiO₂ Plasmonic Composite Fibers with Enhanced Photocatalytic Hydrogen Generation Activity

LI Yue-Jun, CAO Tie-Ping, ZHAO Yan-Hui,
SUN Da-Wei, WANG Xia

DOI:10.11862/CJIC.2019.187

Chinese J. Inorg. Chem., **2019**,**35**(8):1371-1378



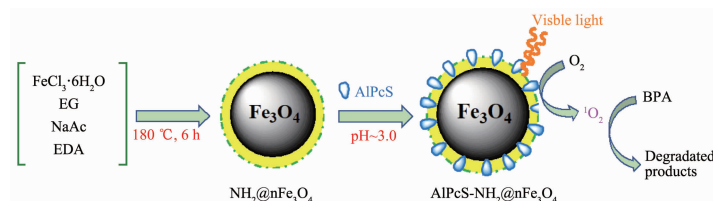
The Bi@Bi₂Sn₂O₇/TiO₂ plasmonic composite fibers were prepared by locating the Bi nanoparticles and Bi₂Sn₂O₇ through one-step hydrothermal method on the electrospun TiO₂ in the presence of glucose, and obtained well photocatalytic hydrogen activity.

Sulfonated Aluminum Phthalocyanine Modified Amino Functionalized Magnetic Materials for Photosensitized Degradation of Bisphenol A

GUO Dong-Jing, HU Mei-Qin, SHEN Hao-Yu, ZHANG Jian, SUN Jie, XU Yi-Ming

DOI:10.11862/CJIC.2019.168

Chinese J. Inorg. Chem., 2019,35(8):1379-1386



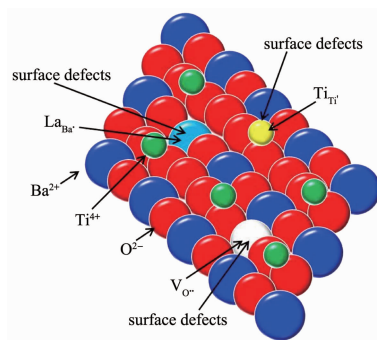
Under visible light and air, AlPcS-NH₂@nFe₃O₄ showed high photosensitization activity for the degradation of bisphenol A and achieved the dual purposes of photocatalytic degradation and magnetic recovery.

Effects of Donor-Doped on Photocatalytic Properties of BaTiO₃-Based Nanoparticle

MENG Guo-Xiang, TIAN Xiao-Xia, ZHANG Jia-Rui, ZHANG Xiang, HAN Feng-Qing, QU Shao-Bo

DOI:10.11862/CJIC.2019.183

Chinese J. Inorg. Chem., 2019,35(8):1387-1395



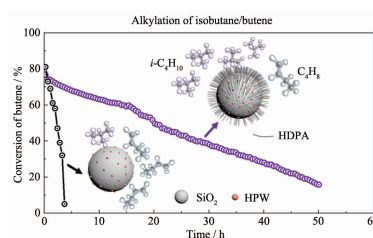
The surface defects were induced with a facile and effective approach by La³⁺ ion doping, and the photocatalytic performance of BaTiO₃ was improved.

Isobutane/Butene Alkylation on Supported Phosphotungstic Acid Promoted by Hexadecylphosphate

XU Meng-Xia, WANG Yi-Bo, DENG Chang-Shun, DING Li-Ping, XU Yi-Da, XUE Nian-Hua, GUO Xue-Feng, PENG Lu-Ming, DING Wei-Ping

DOI:10.11862/CJIC.2019.145

Chinese J. Inorg. Chem., 2019,35(8):1396-1402



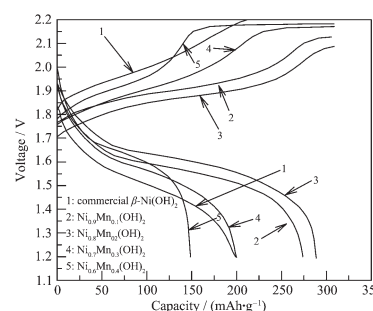
The modification of hexadecylphosphate (HDP) on SiO₂-supported heteropolyacids (HPW) enhanced the concentration of isobutane around the catalytic sites, which inhibited the self-polymerization of butene and greatly prolonged the life of the catalyst.

Rate Performance Analysis of Ni_{1-x}Mn_x(OH)₂ as Cathode Material for Zinc-Nickel Single Flow Battery

YAO Shou-Guang, DOU Fei, XING Ru-Yue, CHENG Jie, XIAO Min

DOI:10.11862/CJIC.2019.177

Chinese J. Inorg. Chem., 2019,35(8):1403-1410



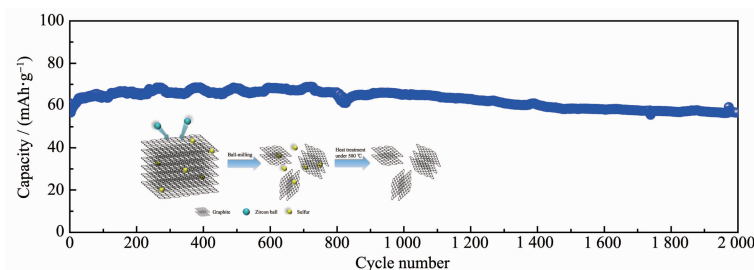
Manganese-doped Ni_{1-x}Mn_x(OH)₂ was prepared by buffer solution method. The constant current charge-discharge tests show that the material of Ni_{0.8}Mn_{0.2}(OH)₂ had excellent cycle performance and exhibited a high specific discharge capacity of 288.8 mAh·g⁻¹ at 800 mA·g⁻¹ when the specific discharge capacity of commercial β-Ni(OH)₂ was 198.7 mAh·g⁻¹.

“Top-Down” Method Derived Few-Layer Graphite as Cathode Material for High-Capacity Aluminum-Ion Battery

LIU Dong-Hai, WANG Jun-Ming,
FAN Wei-Chao, FANG Jin-Gang, ZHU Xiao-Jun,
MENG Chui-Zhou

DOI:10.11862/CJIC.2019.171

Chinese J. Inorg. Chem., **2019**,**35**(8):1411-1418



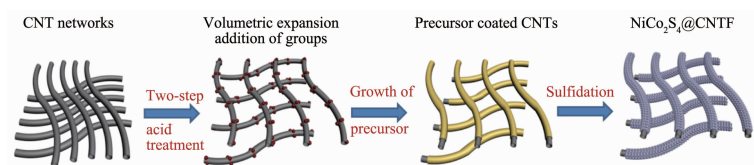
A novel easily-scalable “top-down” method was used to prepare graphite cathode materials with characteristics of few layers, small size and defect-free, which further increases the embedding sites of ions and breaks the inherent capacity limitation of graphite, so as to improve the electrochemical performance of aluminum ion batteries.

Preparation and Electrochemical Properties of NiCo₂S₄@Carbon Nanotube Constructed Flexible Film Electrode for Supercapacitors

ZHOU Yue-Wei, JI Yun-Hui, TAN Chang-Bin,
SONG Wei-Jie, XU Liang-Liang,
TANG Shao-Chun

DOI:10.11862/CJIC.2019.185

Chinese J. Inorg. Chem., **2019**,**35**(8):1419-1426



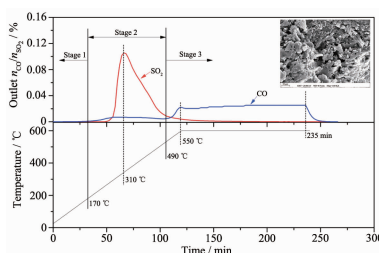
A new top-down route was reported to the synthesis of NiCo₂S₄@carbon nanotubeconstructed flexible composite film electrodes with good structure integrity even after repeated large deformations, a high capacitance of 270.3 mF·cm⁻² at 0.5 mA·cm⁻² and outstanding cycle life (93% of initial capacitance after 10 000 cycles at 2.5 mA·cm⁻²).

Cyclic Regeneration of Potassium-Modified Activated Semi-coke by Impregnation Method for Flue Gas Desulfurization (English)

WU Hai-Tao, ZHUO Qi-Dong, YANG Zi,
SHI Jian-Dong, CHEN Hong-Jian, YIN Wen-Yu,
TANG Xiao-Yan, MA Yun-Shen,
YUAN Rong-Xin

DOI:10.11862/CJIC.2019.175

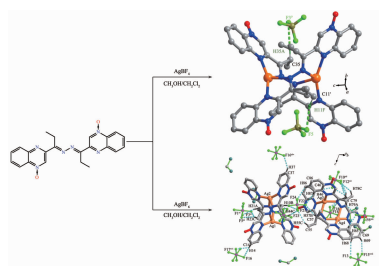
Chinese J. Inorg. Chem., **2019**,**35**(8):1427-1435



The ASC modified by 10% (w/w) K₂CO₃ (K10) exhibited good SO₂ removal efficiency at 120 °C. Cyclic regeneration of K10 showed that the sample had the best desulfurization performance after four regeneration cycles (K10-R-600-4), and the regeneration process of the used K10 could be divided into three stages: the desorption, the reaction and the decomposition.

Syntheses and Crystal Structures of Two Discrete Complexes Generated from 3,6-Bis(2-(4-oxide-quinoxaline)-yl)-4,5-diaza-3,5-octadiene and Ag(I) Salt (English)

REN Xiu-Hui, WANG Peng, SU Jian,
CHENG Jun-Yan



With a double Schiff-base ligand, 3,6-bis(2-(4-oxide-quinoxaline)-yl)-4,5-diaza-3,5-octadiene (L) and Ag centers, we get two new discrete coordination compounds, [Ag₈(L)₈](BF₄)₈·CH₂Cl₂·3CH₃OH (**1**) and [Ag₄(L)₄](PF₆)₄·CH₂Cl₂ (**2**).

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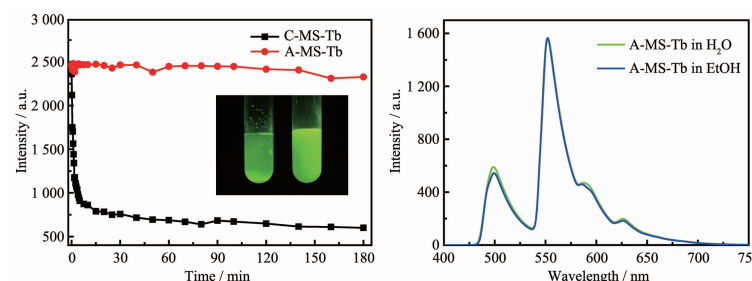
Chinese J. Inorg. Chem., **2019**,**35**(8):1436-1444

Highly Sensitive Luminescent Sensor for Cr(III) Based on a Water Dispersed Nano-sized Amorphous Methyl Salicylate Terbium Complex (English)

LIU Xiao-Jun, SUN Li-Ting, ZHANG Shu, ZHOU Chen, LIU Yan-Zhu, ZHOU Xue-Zhen, LI Yong-Xiu

DOI:10.11862/CJIC.2019.166

Chinese J. Inorg. Chem., **2019**,**35**(8):1445-1454



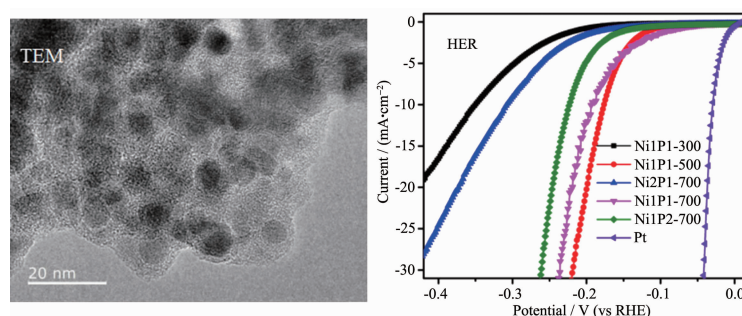
Amorphous methyl salicylate terbium(A-MS-Tb)complex is a potential sensor for detecting chromium ions in aqueous solution due to its good water dispersibility and excellent luminescence property which can be quenched by Cr³⁺.

Preparation of Metal-Organic Framework-Derived Nano-Scale Nickel Phosphide Catalysts (English)

XU Dan, ZHU Liang-Kui, ZHOU Dan, FU Yu-Rong, FU Xiao-Wen, CHEN Rong, LI Hai-Xia

DOI:10.11862/CJIC.2019.148

Chinese J. Inorg. Chem., **2019**,**35**(8):1455-1462

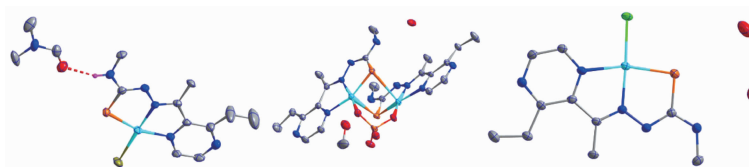


Three Cu(II) Complexes with 1-(3-Ethylpyrazin-2-yl)ethylidene)-4-methylthiosemicarbazide: Crystal Structures and DNA-Binding Properties (English)

LÜ Mu-Xuan, BIAN Lin-Yan, LI Meng-Ru, YANG Yi, WU Wei-Na, WANG Yuan, CHEN Zhong

DOI:10.11862/CJIC.2019.169

Chinese J. Inorg. Chem., **2019**,**35**(8):1463-1469



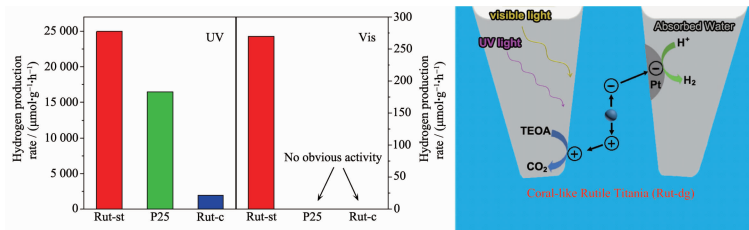
Three complexes, [Cu(L)Br]·DMF (1), [Cu(L)Cl]·2H₂O (2) and [Cu₂(L)₂(SO₄)]·H₂O·CH₃OH (3) with a thiosemicarbazone ligand bearing pyrazine unit have been synthesized and characterized. Three Cu(II) complexes can bind to DNA and possess potential pharmaceutical activity.

Preparation of Coral-like Rutile Titania with Enhanced Photocatalytic Activity under UV and Visible Light (English)

ZHU Jie, GE Feng-Juan, CHEN Yan, XU Yan, ZHANG Xue-Yang, ZOU Wei-Xin, DONG Lin

DOI:10.11862/CJIC.2019.162

Chinese J. Inorg. Chem., **2019**,**35**(8):1470-1476



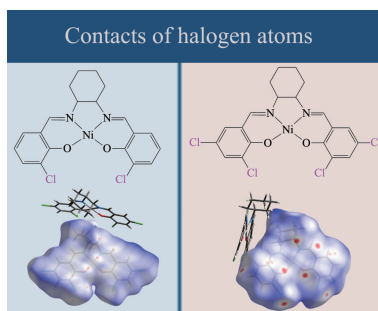
The coral-like TiO₂ prepared by solvothermal method in diethylene glycol solution obtained superior hydrogen production rate than P25 and commercial rutile TiO₂ under UV or visible light. The needle structures play an important role on the effective e⁻-h⁺ separation.

Syntheses, Crystal Structures, Hirshfeld Surface Analysis of Two Salen-Type Halogenated Schiff-Base Ni(II) Complexes (English)

WU Qiong, TANG Ya-Fang, ZI Qiao-Li

DOI:10.11862/CJIC.2019.189

Chinese J. Inorg. Chem., **2019**,**35**(8):1477-1484



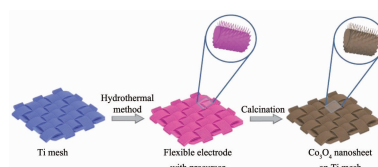
Two new salen-type halogenated Schiff-base complexes [Ni(3,5-Cl-salcy)] (**1**) and [Ni(3-Cl-salcy)] (**2**) have been synthesized and structurally characterized. Hirshfeld surface analysis shows that, although the interactions formed by halogen atom are weak, halogen atoms can play an important role in directing and stabilizing the solid structures of Schiff base complexes.

Layered $\text{Co}_3\text{O}_4/\text{Ti}$ Nanosheet Flexible Electrode with Low Transfer Resistance for Supercapacitor (English)

HAN Dan-Dan, ZHAO Yuan, SHEN Ye, DING Yuan-Sheng, CHENG Zhen-Yu, JING Xiao-Yan, ZHANG Xue-Yi

DOI:10.11862/CJIC.2019.165

Chinese J. Inorg. Chem., **2019**,**35**(8):1485-1492



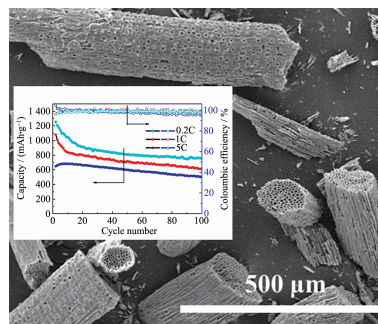
The layered Co_3O_4 nanosheet arrays on Ti mesh with porous surface were adopted to optimize the transfer resistance and improve electrochemical performance of the flexible electrode.

Biomass Derived Highly-Ordered Carbon Tube as Cathode Material for High Performance Lithium-Sulfur Batteries (English)

ZHANG Meng-Yuan, YOU Xiao-Long, LIU Li-Jun, Maru Dessie Walle, LI Ya-Juan, LIU You-Nian

DOI:10.11862/CJIC.2019.178

Chinese J. Inorg. Chem., **2019**,**35**(8):1493-1499



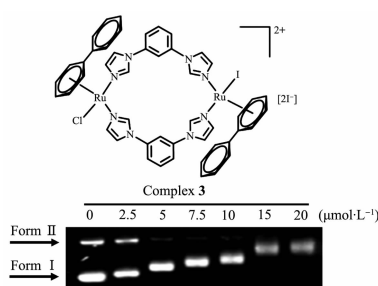
A highly-ordered carbon tube (OCT) was prepared via a facile method and possessed high specific area and pore volume. The as-prepared material exhibited superior electrochemical performances for lithium sulfur battery.

DNA Targeting Rigid Dinuclear Ruthenium-Arene Complexes (English)

LI Ji, HAO Yuan-Yuan, QIAN Yong, XUE Xu-Lin, SU Zhi, LIU Hong-Ke

DOI:10.11862/CJIC.2019.184

Chinese J. Inorg. Chem., **2019**,**35**(8):1500-1508



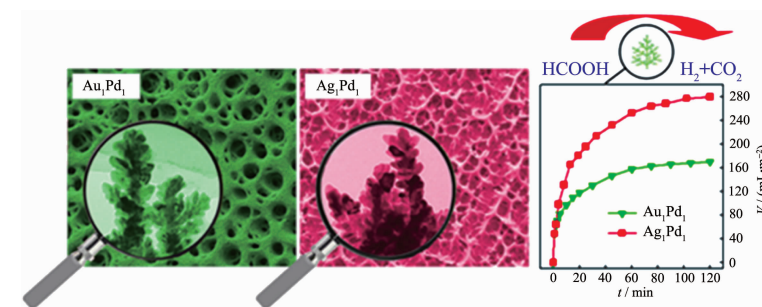
Dinuclear Ru-arene complex **3** with iodine as the coordinative and counter anions exhibits the best anticancer behavior and the strongest binding capacity to DNA among three complexes.

Hydrogen Production from Formic Acid Decomposition Using AuPd and AgPd Dendritic Nanocatalysts (English)

LIU Jun, XIE Jia-Qi, WU Xin-Hua, LI Rong, LAN Li-Xin

DOI:10.11862/CJIC.2019.172

Chinese J. Inorg. Chem., **2019**,**35**(8):1509-1519



Hydrogen production from formic acid decomposition using AuPd and AgPd dendritic nanocatalysts. The AgPd catalyst shows a higher rate of hydrogen production compared to the AuPd catalyst.