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催化学报

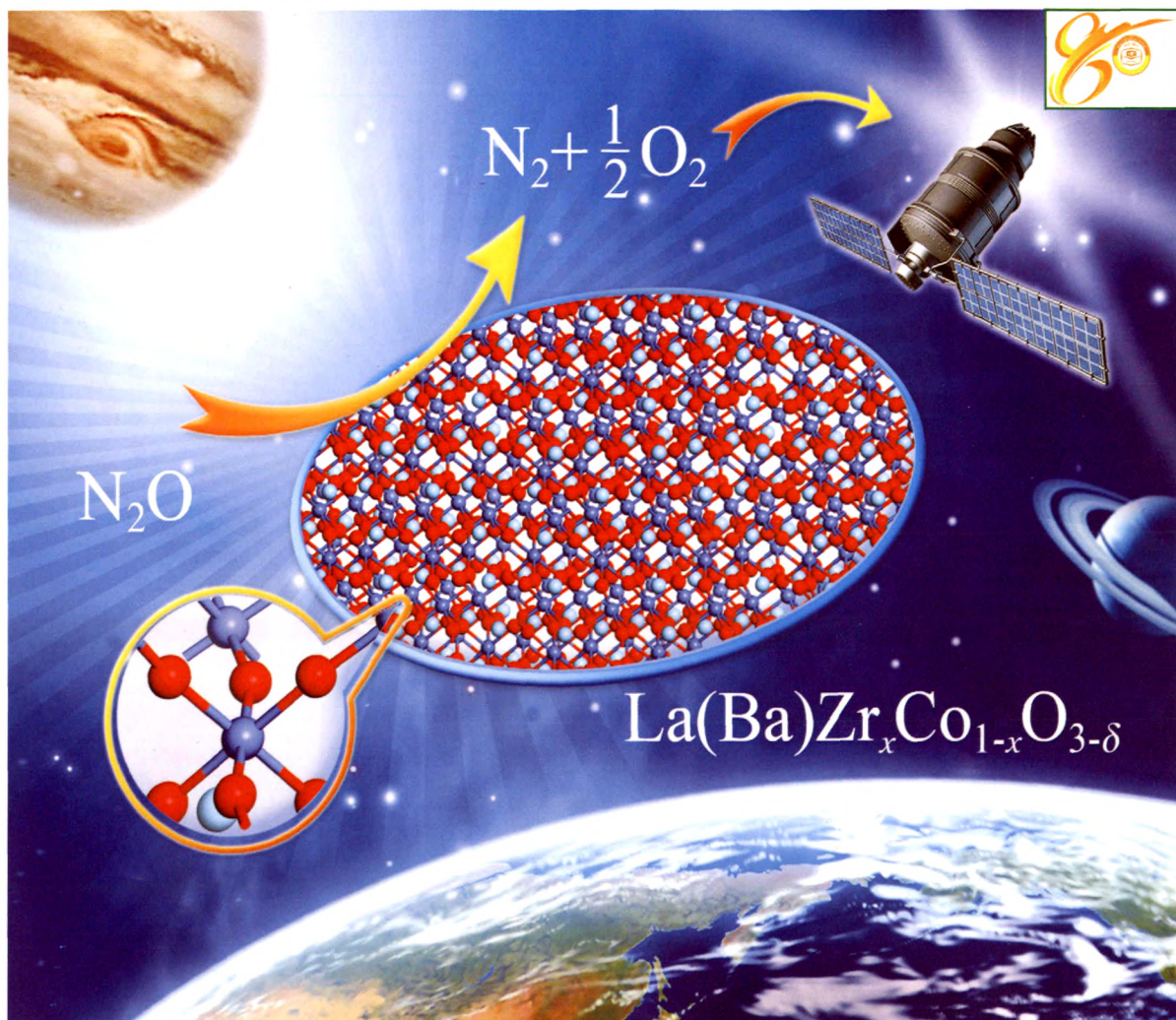
CHINESE JOURNAL OF CATALYSIS

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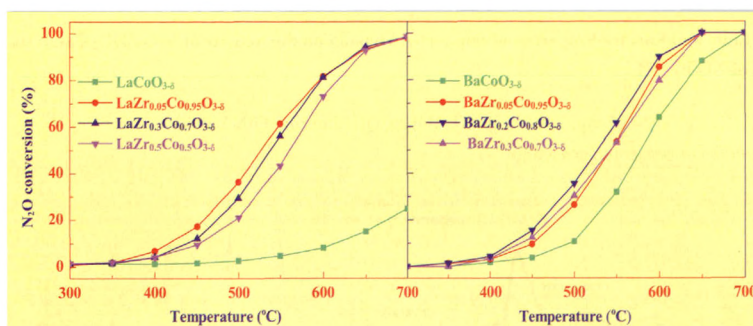
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Chin. J. Catal., 2012, 33: 907–913 doi: 10.1016/S1872-2067(11)60402-6

Effect of Zirconium in La(Ba)Zr_xCo_{1-x}O_{3-δ} Perovskite Catalysts for N₂O Decomposition

LIU Shuang, CONG Yu, Charles KAPPENSTEIN, ZHANG Tao*

Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China; University of Poitiers, France



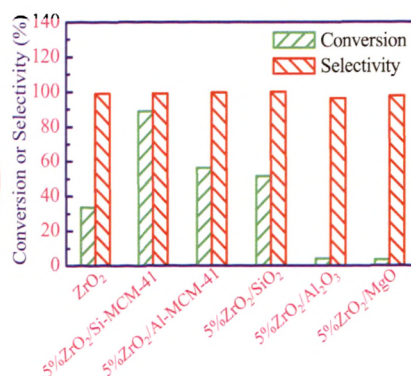
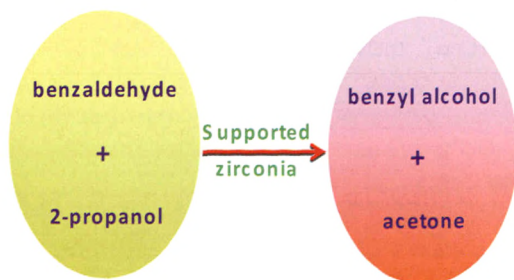
La(Ba)Zr_xCo_{1-x}O_{3-δ} catalysts were studied for the catalytic decomposition of N₂O. The addition of Zr enhanced N₂O conversion by increasing the surface area, reducibility of cobalt species, and oxygen desorption-adsorption activity.

Chin. J. Catal., 2012, 33: 914–922 doi: 10.1016/S1872-2067(11)60370-7

Support Effect in Meerwein-Ponndorf-Verley Reduction of Benzaldehyde over Supported Zirconia Catalysts

ZHANG Bo*, TANG Minhui, YUAN Jian, WU Lei

Zhejiang University of Technology

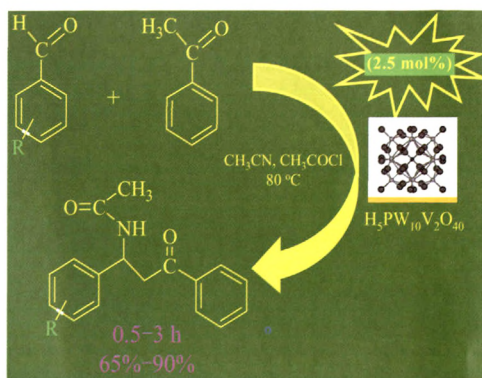


Interaction between zirconia and support plays an important role in the surface acidity of supported zirconia catalysts, which is in a good correlation with their catalytic activities in the Meerwein-Ponndorf-Verley reduction of benzaldehyde with 2-propanol.

One-Pot Four-Component Dakin-West Synthesis of β -Acetamido Ketones Catalyzed by a Vanadium-Substituted Heteropolyacid

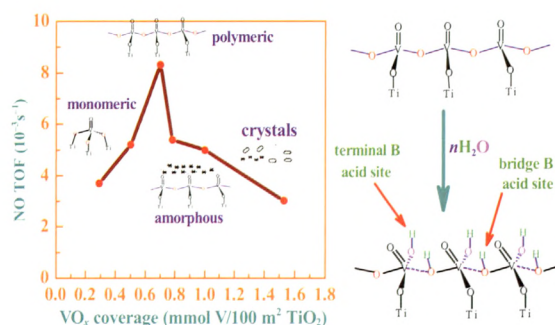
Reza TAYEBEE*, Shima TIZABI
Hakim Sabzevari University, Iran

An efficient one-pot method for the synthesis of β -acetamido ketones by $H_5PW_{10}V_2O_{40}$ as an environmentally benign and recyclable catalyst is described. The catalyst afforded short reaction times and high to excellent yields.



Effect of Dispersion State and Surface Properties of Supported Vanadia on the Activity of V_2O_5/TiO_2 Catalysts for the Selective Catalytic Reduction of NO by NH_3

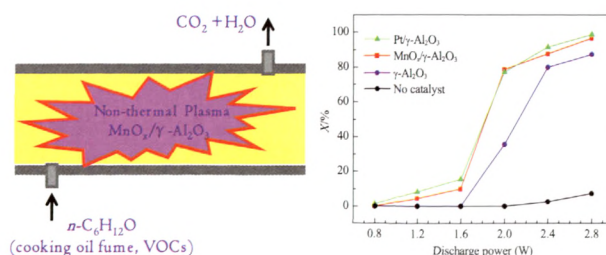
TANG Fushun, ZHUANG Ke, YANG Fang, YANG Lili, XU Bolian, QIU Jinheng, FAN Yining*
Nanjing University; Guilin University of Technology



Isolated vanadia species interact with their nearest neighbor vanadia species through bridging V–O–V bonds to form polymeric vanadia species. The Brønsted acid sites on bridging V–O(H)–V are also active sites in the SCR reaction.

Removal of Hexanal by Non-thermal Plasma and $MnO_x/\gamma-Al_2O_3$ Combination

CHEN Chunyu, LIU Tong, WANG Hui, YU Qinqin, FAN Jie, XIAO Liping*, ZHENG Xiaoming*
Zhejiang University

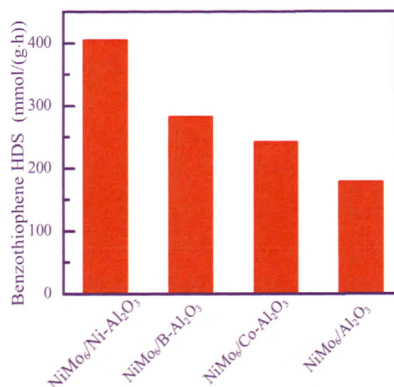


A method for degrading low concentrations of hexanal and volatile organic compounds with a combination of non-thermal plasma and $MnO_x/\gamma-Al_2O_3$ is described.

NiMo/ γ -Al₂O₃ Catalysts from Ni Heteropolyoxomolybdate and Effect of Alumina Modification by B, Co, or Ni

Radostina PALCHEVA, Luděk KALUŽA*,
 Alla SPOJAKINA, Květuše JIRÁTOVÁ, Georgi TYULIEV
 Bulgarian Academy of Sciences, Bulgaria;
 Institute of Chemical Process Fundamentals of the Academy of
 Sciences of the Czech Republic, Czech Republic

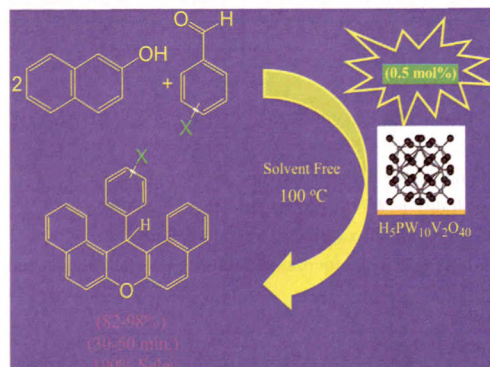
The prior loading of Ni, Co, or B onto the Al₂O₃ support helped the sulfiding of NiMo/ γ -Al₂O₃ catalysts prepared from heteropolyoxomolybdate (NH₄)₄[Ni(OH)₆Mo₆O₁₈], and increased 1-benzothiophene hydrosulfurization (HDS) activity.



Highly Efficient and Environmentally Friendly Preparation of 14-Aryl-14H-dibenzo[a,j]xanthenes Catalyzed by Tungsto-divanado-phosphoric Acid

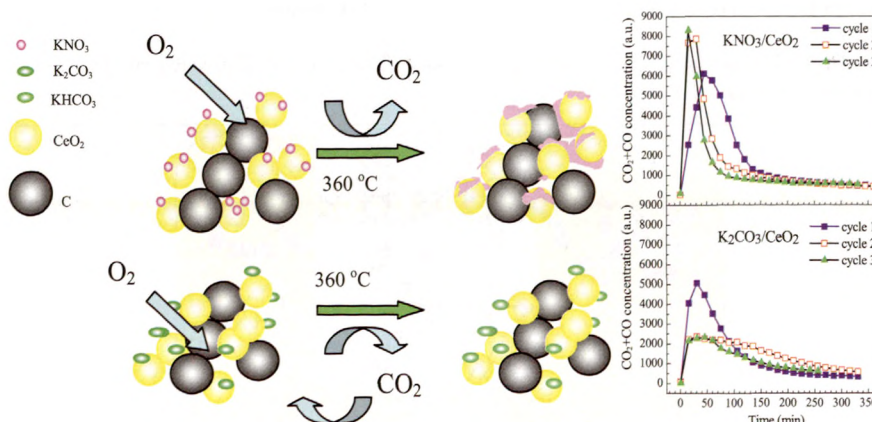
Reza TAYEBEE*, Shima TIZABI
 Hakim Sabzevari University, Iran

An environmentally benign protocol is presented for the fast and efficient preparation of aryl-14H-dibenzo[a,j]xanthenes under solvent free conditions using H₃PW₁₀V₂O₄₀ as an easily available catalyst.



Catalytic Activity and Stability of K/CeO₂ Catalysts for Diesel Soot Oxidation

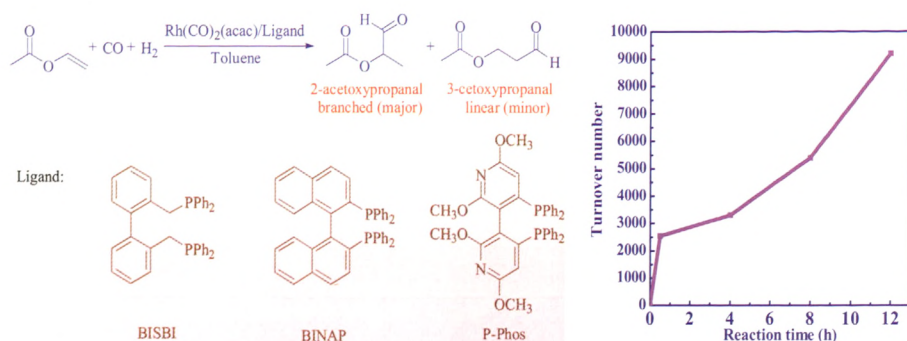
SHAN Wenjuan*, YANG Lihua, MA Na, YANG Jiali
 Liaoning Normal University



The activity and stability of KNO₃/CeO₂ catalysts were higher than those of K₂CO₃/CeO₂ for diesel soot oxidation. This behavior is attributed to the lower melting point and high surface mobility of KNO₃.

Regioselective Rhodium-Diphosphine Ligand Catalyzed Hydroformylation of Vinyl Acetate

LIANG Haoran, ZHANG Lin, ZHENG Xueli, FU Haiyan, YUAN Maolin, LI Ruixiang, CHEN Hua^{*}
Sichuan University

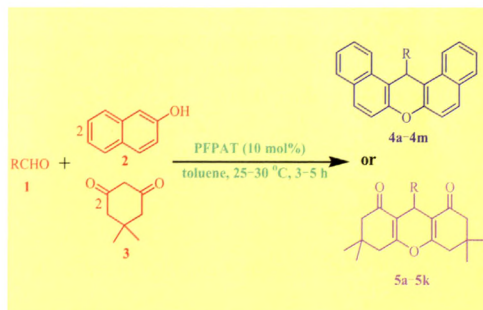


High regioselectivity and activity were achieved in Rh-catalyzed hydroformylation of vinyl acetate with the use of diphosphine ligands. The turnover number was 9200 and the catalyst was stable after 12 h.

Mild and Highly Efficient Method for Synthesis of 14-Aryl(alkyl)-14H-dibenzo[a,j]xanthenes and 1,8-Dioxoctahydroxanthene Derivatives Using Pentafluorophenylammonium Triflate as a Novel Organocatalyst

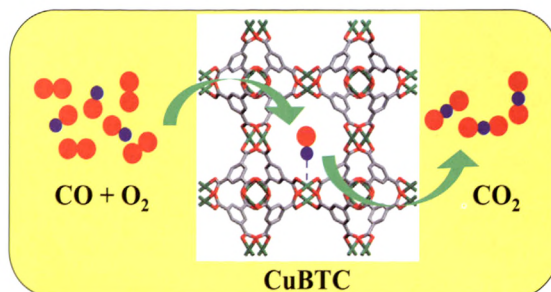
Samad KHAKSAR^{*}, Nosratollah BEHZADI
Ayatollah Amoli Branch, Islamic Azad University, Iran

The advantages of this method are many, including a high yield, clean and mild reaction conditions, high atom-economy, short reaction time, low environmental impact, wide substrate scope, and excellent product purity.



Effect of Activation Temperature on Catalytic Performance of CuBTC for CO Oxidation

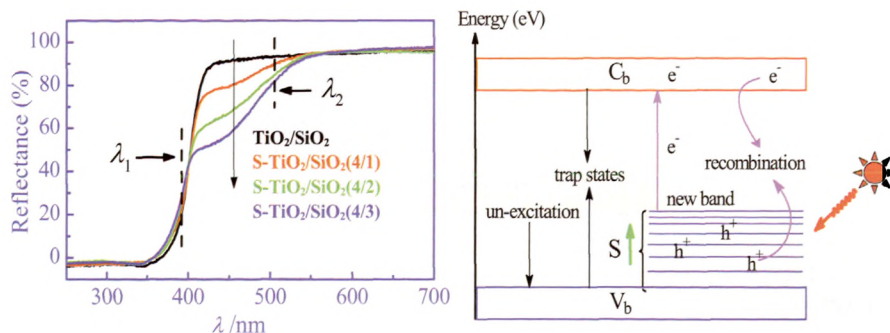
QIU Wenge^{*}, WANG Yu, LI Chuanqiang, ZHAN Zongcheng, ZI Xuehong, ZHANG Guizhen, WANG Rui, HE Hong^{*}
Beijing University of Technology



CuBTC (BTC = benzene-1,3,5-tricarboxylate) was an effective catalyst for CO oxidation. Its activity depended on the activation temperature.

Preparation and Properties of Sulfur-Doped Visible-Light Response S-TiO₂/SiO₂ Photocatalyst

CHEN Xiaoyun*, LU Dongfang, LIN Shufang
Fujian Agriculture and Forestry University

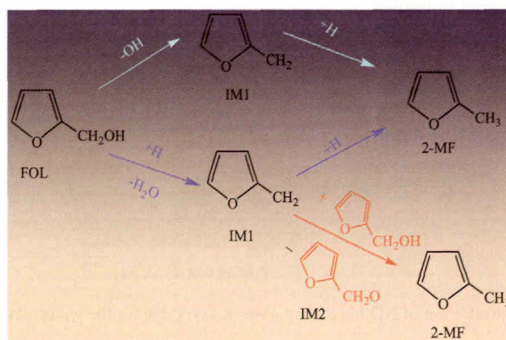


S-TiO₂/SiO₂ with suitable S-doping exhibited higher activity under ultraviolet light, artificial visible light, and solar irradiation, and exhibited better decanting ability and less deactivation.

Reaction Mechanism for 2-Methylfuran Formation during Hydrogenation of Furfuryl Alcohol Catalyzed by Cu(111) Plane

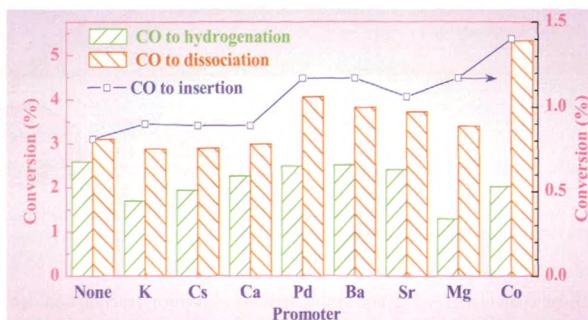
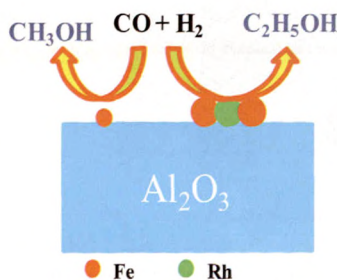
XIA Mingyu, CAO Xiaoxia, NI Zheming*, SHI Wei, FU Xiaowei
Zhejiang University of Technology

Three possible mechanisms for 2-methylfuran formation on Cu(111) plane were investigated by the density functional theory. Intermediate ψ CH₂ and ψ CH₂O can be obtained by the furfuryl alcohol decomposition.



Performance of Promoted Rh-Fe/Al₂O₃ Catalysts for CO Hydrogenation to Ethanol

CHEN Weimiao, DING Yunjie*, SONG Xiangeng, ZHU Hejun, YAN Li, WANG Tao
Dalian Institute of Chemical Physics, Chinese Academy of Sciences

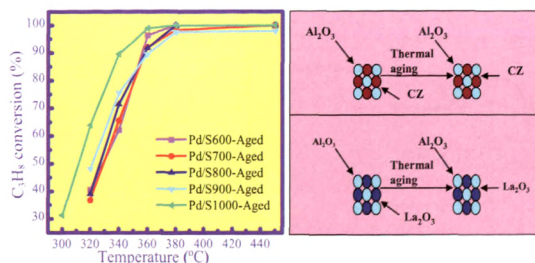


Ethanol formation from CO hydrogenation over Rh/Fe/Al₂O₃ is enhanced by adding some promoters.

CZA-LA Complex Oxide Supported Pd Close-Coupled Catalysts: Effects of Support Calcination Temperature

FANG Ruimei, HE Shengnan, CUI Yajuan, SHI Zhonghua*, GONG Maochu, CHEN Yaoqiang

Sichuan University

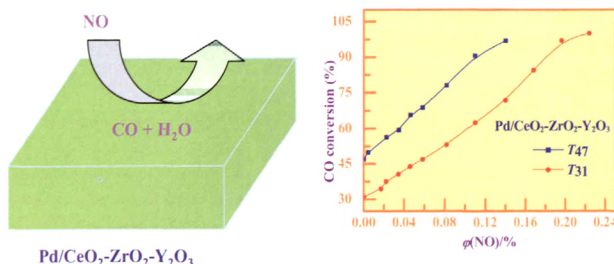


The figures are C₃H₈ conversion over aged Pd close-coupled catalyst samples and the support prepared by the simultaneous co-precipitation method.

Comparison of Automotive Exhaust Purification Performance of Monolith Catalysts Pd/La₂O₃-Al₂O₃ and Pd/CeO₂-ZrO₂-Y₂O₃

CUI Yajuan, HE Shengnan, FANG Ruimei, SHI Zhonghua*, GONG Maochu, CHEN Yaoqiang

Sichuan University

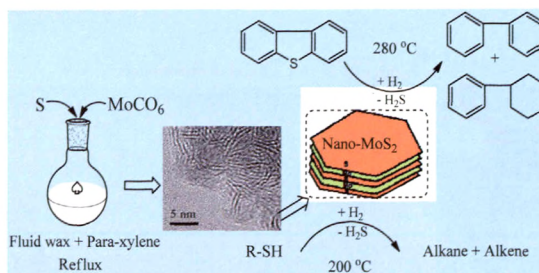


The addition of NO in reactant gases is favorable for the water-gas shift over the Pd/ CeO₂-ZrO₂-Y₂O₃ catalyst.

Preparation of MoS₂ Nanocatalyst and Its Application in Hydrosulfurization

FAN Xiaobing, LIU Fang, YAO Siyu, DENG Xianhe, ZHOU Wenjuan, KOU Yuan*

Peking University

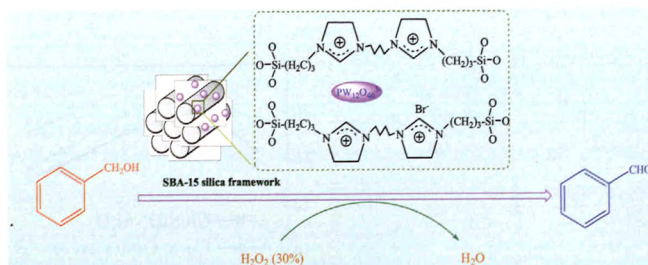


The MoS₂ nanocatalyst of 3–5 layers, synthesized via a chemical reaction between molybdenum carbonyl and chalcogen, was used for the hydrosulfurization of *n*-dodecanethiol and dibenzothiophene (DBT), and the substrate conversion was 100% at 200 °C for dodecanethiol and at 280 °C for DBT.

Preparation and Catalytic Performance of Tungstophosphoric Acid Supported on Periodic Mesoporous Organosilica of SBA-15

LIU Cheng, TAN Rong*, SUN Wenqing, YIN Donghong*

Hunan Normal University; China Tobacco Hunan Industrial Corporation

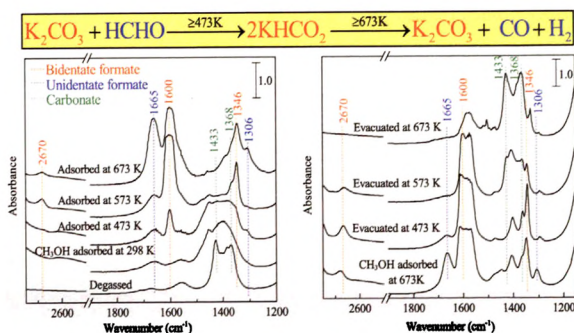


Keggin-type 12-tungstophosphoric acid ($\text{H}_3\text{PW}_{12}\text{O}_{40} \cdot x\text{H}_2\text{O}$) was successfully immobilized onto the bridging bis-imidazolium ionic liquid moieties functionalized periodic mesoporous organosilica (Bis-PlmBr-PMO-SBA-15) by the way of anion-exchange. The resultant catalyst was more efficient than bulk HPW or siliceous SBA-15-supported Keggin-type 12-tungstophosphate catalyst (HPW/SBA-15) in the selective oxidation of benzyl alcohol by 30% H_2O_2 .

Formation and Function of Formate in the Side-Chain Alkylation of Toluene with Methanol

LIN Dan, ZHAO Huimin, ZHANG Xiaoyue, LAN Dongxue, CHUN Yuan*

Nanjing University

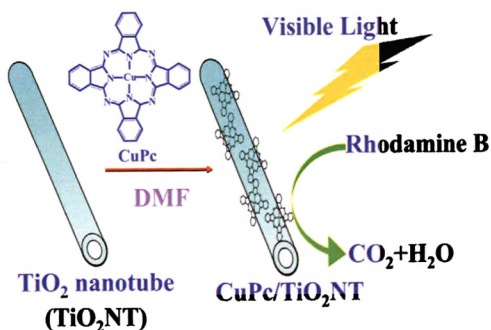


In the side-chain alkylation of toluene with methanol, formate species were formed on $\text{K}_2\text{CO}_3/\text{KX}$ surface and derived from the reaction of carbonates with formaldehyde, the dehydrogenation product of methanol.

Synthesis of CuPc/TiO₂ Nanotube Composite Materials with Large Surface Area and Their Photocatalytic Activity under Visible Light

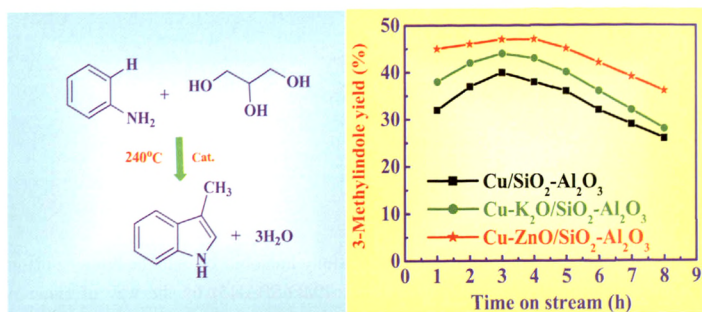
LIAO Lan, HUANG Caixia, CHEN Jinsong, WU Yueting, HAN Zhizhong, PAN Haibo*, SHEN Shuifa
Fuzhou University

CuPc/TiO₂NT with high surface area of 244.2 m^2/g was prepared by an immersion method. Compared with pure TiO₂NT, 0.2%CuPc/TiO₂NT exhibited higher photocatalytic activity for the degradation of rhodamine B under visible light.



Promoting Effect of ZnO or K₂O on Cu/SiO₂-Al₂O₃ Catalyst for Vapor-Phase Synthesis of 3-Methylindole from Glycerol and Aniline

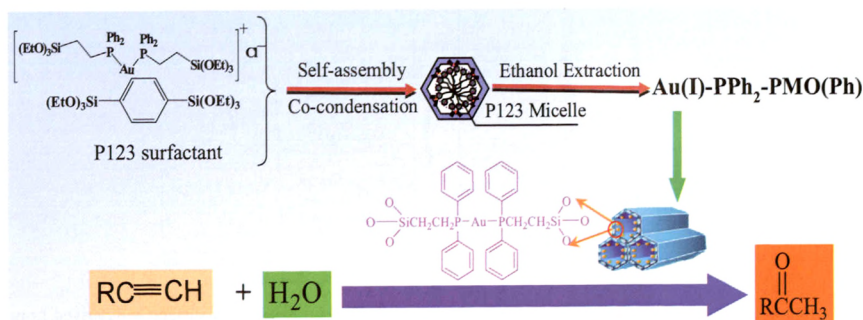
ZHANG Yue, SUN Wei, SHI Lei*, SUN Qi
Liaoning Normal University



Adding ZnO or K₂O promoter to Cu/SiO₂-Al₂O₃ could improve the performance of the catalyst for the synthesis of 3-methylindole from glycerol and aniline and ZnO exhibited better efficiency than K₂O.

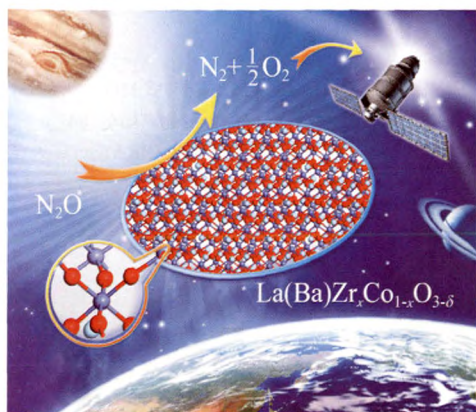
Periodic Mesoporous Organogold(I)silica Catalysts for Hydration of Alkyne to Acetophenone in Water Medium

ZHU Fengxia*, ZHOU Jianfeng, ZHU Huiqin, LI Hexing
Huaiyin Normal University; Shanghai Normal University



An organogold(I)silica catalyst with periodic mesoporous structure was synthesized by co-condensation of phenyl silane and organometal bridged silane, and the catalyst exhibited higher activity than the free Au(PPh₃)Cl and Au-PPh₂-PMO(Ph)-G (prepared by grafting method) in hydration of alkyne and could be used repetitively.

In This Issue



封面: 刘爽等研究了 $\text{La}(\text{Ba})\text{Zr}_x\text{Co}_{1-x}\text{O}_{3-\delta}$ 催化剂用于 N_2O 分解反应, 发现锆掺杂可增大比表面积, 改善晶格结构, 提高钴物种的还原及氧吸附脱附能力, 从而提高催化剂活性. 见本期第 907~913 页.

Cover: Liu and coworkers in their article on pages 907–913 reported $\text{La}(\text{Ba})\text{Zr}_x\text{Co}_{1-x}\text{O}_{3-\delta}$ catalysts for N_2O decomposition. The introduction of Zr enhanced N_2O conversion via improving surface area, oxygen vacancy, reducibility of the perovskite, and desorption-adsorption properties of oxygen.

About the Journal

Chinese Journal of Catalysis is published monthly by Chinese Chemical Society and Dalian Institute of Chemical Physics, Chinese Academy of Sciences. The objective of the journal is to publish original, rigorous, and scholarly contributions in the fields of heterogeneous and homogeneous catalysis. The journal accepts papers in Chinese and English.

Scope of the Journal

- New trends in heterogeneous and homogeneous catalysis in relation to energy, environment, new materials, petroleum chemicals, and fine chemicals
- Scientific bases for the preparation and activation of catalysts of commercial interest or that are representative models
- Scientific methods for the characterization of heterogeneous catalysts, especially methods for in situ characterization
- New heterogeneous and homogeneous catalytic reactions of potential practical interest in environment, energy, and fine chemicals applications
- Relationship between homogeneous and heterogeneous catalysis
- Theoretical studies on the structure and reactivity of catalysts
- The journal also accepts contributions dealing with other issues related to catalysis, such as photo-catalysis, bio-catalysis, surface science, and chemical kinetics.

Types of Contributions

Reviews are surveys of recent progress on important topics of catalysis, with entire, systematic, and important information. Authors should have published articles in the field. More than 60 references are suggested.

Communications rapidly report studies with significant innovation and major academic value. They are limited to four Journal pages. After publication, their full-text papers can also be submitted to this or other journals.

Articles are original full-text reports on innovative, systematic, and complete results in catalysis.

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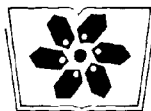
0.752 (ISI) 0.732 (ISI, 5-Year Impact Factor)
0.777 (ISTIC)

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(CUIHUA XUEBAO)

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