

JOURNAL OF NATURAL GAS CHEMISTRY  
CONTENTS OF VOLUME 18

**Reviews**

- Catalytic ignition of light hydrocarbons ..... K. L. Hohn, C.-C. Huang, C. Cao (115)
- Transformation of methane to synthesis gas over metal oxides without using catalyst  
..... Reza Alizadeh, Esmail Jamshidi, Guangqing Zhang (124)
- “Intelligent” reforming catalysts: Trace noble metal-doped Ni/Mg(Al)O derived from hydrotalcites  
..... Katsuomi Takehira (237)
- Energy-Efficient coaromatization of methane and propane ..... Jianjun Guo, Hui Lou, Xiaoming Zheng (260)
- Kinetics of oxidative coupling of methane: Bridging the gap between comprehension and description  
..... M. Yu. Sinev, Z. T. Fattakhova, V. I. Lomonosov, Yu. A. Gordienko (273)

**Articles**

- Natural gas pyrolysis in double-walled reactor tubes using thermal plasma or concentrated solar radiation as external heating source ..... Stéphane Abanades, Stefania Tescari, Sylvain Rodat, Gilles Flamant (1)
- Natural gas and biofuel as feedstock for hydrogen production on Ni catalysts ..... Pasquale Corbo, Fortunato Migliardini (9)
- CO<sub>2</sub> capture from binary mixture *via* forming hydrate with the help of tetra-*n*-butyl ammonium bromide  
..... Shifeng Li, Shuanshi Fan, Jingqu Wang, Xuemei Lang, Deqing Liang (15)
- Highly selective ethylbenzene production through alkylation of dilute ethylene with gas phase-liquid phase benzene and transalkylation feed ..... Shenglin Liu, Fucun Chen, Sujuan Xie, Peng Zeng, Xiyang Du, Longya Xu (21)
- Kinetic studies of the oxidative coupling of methane over the Mn/Na<sub>2</sub>WO<sub>4</sub>/SiO<sub>2</sub> catalyst  
..... Seyed Mehdi Kamali Shahri, Seyed Mehdi Alavi (25)
- Preparation of novel Ni-Ir/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> catalyst *via* high-frequency cold plasma direct reduction process  
..... Liqiong Huang, Wei Chu, Tao Zhang, Yongxiang Yin, Xumei Tao (35)
- Modeling the oxidative coupling of methane: Heterogeneous chemistry coupled with 3D flow field simulation  
..... Yaghoobi Nakisa, Ghoreishy Mir Hamid Reza (39)
- Preparation and oxygen permeation properties of SrFe(Cu)O<sub>3- $\delta$</sub>  dense ceramic membranes  
..... Heng Zhang, Tingting Wang, Xinfu Dong, Weiming Lin (45)
- Photolysis studies on HCOOH and HCOO<sup>-</sup> in presence of TiO<sub>2</sub> photocatalyst as suspension in aqueous medium  
..... G. R. Dey, K. N. R. Nair, K. K. Pushpa (50)
- Ethanol steam reforming over Ni-Cu/Al<sub>2</sub>O<sub>3</sub>-M<sub>y</sub>O<sub>z</sub> (M = Si, La, Mg, and Zn) catalysts  
..... Lifeng Zhang, Jie Liu, Wei Li, Cuili Guo, Jinli Zhang (55)
- Study on methane selective catalytic reduction of NO on Pt/Ce<sub>0.67</sub>Zr<sub>0.33</sub>O<sub>2</sub> and its application  
..... Zhimin Liu, Kangcai Wang, Xiaoyu Zhang, Jianli Wang, Hongyan Cao, Maochu Gong, Yaoqiang Chen (66)
- Effect of combining the metals of group VI supported on H-ZSM-5 zeolite as catalysts for non-oxidative conversion of natural gas to petrochemicals ..... A. K. Aboul-Gheit, A. E. Awadallah (71)
- A DFT study on the interaction of Co with an anatase TiO<sub>2</sub> (001)-(1 $\times$ 4) surface  
..... Zhijun Zuo, Wei Huang, Peide Han, Zhihong Li, Jian Huang (78)

- MnO<sub>x</sub>/Al<sub>2</sub>O<sub>3</sub>/Ce<sub>0.45</sub>Zr<sub>0.45</sub>M<sub>0.10</sub>O<sub>y</sub> (M = Mn, Y, La) catalysts used for ethanol catalytic combustion  
 ..... Hongyan Cao, Weicong Song, Maochu Gong, Jianli Wang, Shenghui Yan, Zhimin Liu, Yaoqiang Chen (83)
- Dehydrogenation of *n*-butane over vanadia catalysts supported on silica gel  
 ..... Yuebing Xu, Jiangyin Lu, Mei Zhong, Jide Wang (88)
- Conversion of CH<sub>4</sub>, steam and O<sub>2</sub> to syngas and hydrocarbons via dielectric barrier discharge  
 ..... Baowei Wang, Xu Zhang, Yongwei Liu, Genhui XU (94)
- Partial oxidation of methane to syngas catalyzed by a nickel nanowire catalyst ..... Xuebin Hong, Yaquan Wang (98)
- Investigation on the deactivation cause of lead-zinc double oxide for the synthesis of diphenyl carbonate by transesterification  
 ..... Zhihui Li, Yanji Wang, Xiaoshu Ding, Xinqiang Zhao (104)
- La<sub>2-x</sub>Ce<sub>x</sub>Cu<sub>1-y</sub>Zn<sub>y</sub>O<sub>4</sub> perovskites for high temperature water-gas shift reaction ..... S. S. Maluf, E. M. Assaf (131)
- CeO<sub>2</sub>-ZrO<sub>2</sub>-La<sub>2</sub>O<sub>3</sub>-Al<sub>2</sub>O<sub>3</sub> composite oxide and its supported palladium catalyst for the treatment of exhaust of natural gas engine vehicles  
 ..... Xiaoyu Zhang, Enyan Long, Yile Li, Jiaxiu Guo, Lijuan Zhang, Maochu Gong, Minghua Wang, Yaoqiang Chen (139)
- Reduced combustion time model for methane in gas turbine flow fields  
 ..... Mouna Lamnaouer, Robert C. Ryder, Andreja Brankovic, Eric L. Petersen (145)
- Effect of acid density of HZSM-5 on the oligomerization of ethylene in FCC dry gas  
 ..... Xue Ding, Shan Geng, Chunyi Li, Chaohe Yang, Guohui Wang (156)
- Effect of Mg/Al atom ratio of support on catalytic performance of Co-Mo/MgO-Al<sub>2</sub>O<sub>3</sub> catalyst for water gas shift reaction  
 ..... Yixin Lian, Huifang Wang, Quanxing Zheng, Weiping Fang, Yiquan Yang (161)
- Adsorption separation of carbon dioxide, methane and nitrogen on monoethanol amine modified β-zeolite  
 ..... Xiaoliang Xu, Xingxiang Zhao, Linbing Sun, Xiaoqin Liu (167)
- Removal of CO from reformed fuels by selective methanation over Ni-B-Zr-O<sub>δ</sub> catalysts  
 ..... Qihai Liu, Xinfa Dong, Yibing Song, Weiming Lin (173)
- Synthesis and applications of mesoporous Cu-Zn-Al<sub>2</sub>O<sub>3</sub> catalyst for dehydrogenation of 2-butanol  
 ..... Deren Fang, Wanzhong Ren, Zhongmin Liu, Xiufeng Xu, Lei Xu, Hongying Lü, Weiping Liao, Huimin Zhang (179)
- Nickel and potassium co-modified β-Mo<sub>2</sub>C catalyst for CO conversion  
 ..... Minglin Xiang, Juan Zou, Debao Li, Wenhui Li, Yuhan Sun, Xichun She (183)
- Suppression of methane formation during Fisher-Tropsch synthesis using manganese-cobalt oxide supported on H-5A zeolite as a catalyst ..... Syed Tajammul Hussain, Muhammad Mazhar, Muhammad Arif Nadeem (187)
- Hydrogen production *via* autothermal reforming of ethanol over noble metal catalysts supported on oxides  
 ..... Hongqing Chen, Hao Yu, Yong Tang, Minqiang Pan, Guangxing Yang, Feng Peng, Hongjuan Wang, Jian Yang (191)
- Carbon nanotubes-Nafion composites as Pt-Ru catalyst support for methanol electro-oxidation in acid media  
 ..... Shengzhou Chen, Fei Ye, Weiming Lin (199)
- Comparison of the water change characteristics between the formation and dissociation of methane hydrate and the freezing and thawing of ice in sand ..... Peng Zhang, Qingbai Wu, Yingmei Wang (205)
- Catalytic methanol decomposition to carbon monoxide and hydrogen over Pd/CeO<sub>2</sub>-ZrO<sub>2</sub>-La<sub>2</sub>O<sub>3</sub> with different Ce/Zr molar ratios ..... Hairong Wang, Yaoqiang Chen, Qiulin Zhang, Qingchao Zhu, Maochu Gong, Ming Zhao (211)
- Experimental study on geochemical characteristic of methane hydrate formed in porous media  
 ..... Qiang Chen, Changling Liu, Yuguang Ye (217)

- Thermodynamic analysis of metal dusting on iron in CO-H<sub>2</sub>-H<sub>2</sub>O atmosphere  
 ..... Na Lei, Changyu Zhou, Guiming Hu, Cheng Chen (222)
- Hydrogen production from simulated hot coke oven gas by catalytic reforming over Ni/Mg(Al)O catalysts  
 ..... Hongwei Cheng, Baohua Yue, Xueguang Wang, Xionggang Lu, Weizhong Ding (225)
- Effects of the ratio of Fe to Co over Fe-Co/SiO<sub>2</sub> bimetallic catalysts on their catalytic performance for Fischer-Tropsch synthesis  
 ..... Xiangdong Ma, Qiwen Sun, Weiyong Ying, Dingye Fang (232)
- Selective oxidation of methane to formaldehyde by oxygen over silica-supported iron catalysts  
 ..... Jieli He, Yang Li, Dongli An, Qinghong Zhang, Ye Wang (288)
- Low temperature catalytic conversion of methane to formic acid by simple vanadium compound with use of H<sub>2</sub>O<sub>2</sub>  
 ..... Xin Wei, Linmin Ye, Youzhu Yuan (295)
- Oscillations during partial oxidation of methane to synthesis gas over Ru/Al<sub>2</sub>O<sub>3</sub> catalyst  
 ..... Meiliu Wang, Weizheng Weng, Haozhan Zheng, Xiaodong Yi, Chuanjing Huang, Huilin Wan (300)
- Synthesis of dimethyl ether from methane mediated by HBr (Article)  
 ..... Qin You, Zhen Liu, Wensheng Li, Xiaoping Zhou (306)
- Synthesis of self-assembled nanorod vanadium oxide bundles by sonochemical treatment  
 ..... Y. H. Taufiq-Yap, Y. C. Wong, Z. Zainal, M. Z. Hussein (312)
- Oxidation of propane over substituted Keggin phosphomolybdate salts  
 ..... T. Mazari, C. Roch. Marchal, S. Hocine, N. Salhi, C. Rabia (319)
- Nanosized cobalt-based catalyst prepared by supercritical phase condition for Fischer-Tropsch synthesis  
 ..... Jingmiao Li, Jingchang Zhang, Runduo Zhang, Weiliang Cao (325)
- Production of propene from 1-butene metathesis reaction on tungsten based heterogeneous catalysts  
 ..... Huijuan Liu, Ling Zhang, Xiujie Li, Shengjun Huang, Shenglin Liu, Wenjie Xin, Sujuan Xie, Longya Xu (331)
- Conversion of syngas to higher alcohols over Cu-Fe-Zr catalysts induced by ethanol  
 ..... Hongtao Zhang, Xiaomei Yang, Lipeng Zhou, Yunlai Su, Zhongmin Liu (337)
- Solvent effects on Pt-Ru/C catalyst for methanol electro-oxidation  
 ..... Jinwei Chen, Chunping Jiang, Hui Lu, Lan Feng, Xin Yang, Liangqiong Li, Ruilin Wang (341)
- High performance CuO-CeO<sub>2</sub> catalysts for selective oxidation of CO in excess hydrogen: Effect of hydrothermal preparation conditions ..... Pengfei Zhu, Jing Li, Qinqin Huang, Siming Yan, Mei Liu, Renxian Zhou (346)
- Effects of promoters on catalytic performance of Fe-Co/SiO<sub>2</sub> catalyst for Fischer-Tropsch synthesis  
 ..... Xiangdong Ma, Qiwen Sun, Weiyong Ying, Dingye Fang (354)
- Deep oxidation in propane oxidative dehydrogenation to propene over V<sub>2</sub>O<sub>5</sub>/γ-Al<sub>2</sub>O<sub>3</sub> studied by *in-situ* DRIFTS  
 ..... Yunbing He, Hongbing Ji, Jianhua Xu, Lefu Wang (359)
- Preparation of a kind of mesoporous carbon and its performance in adsorptive desulfurization  
 ..... Haiyun Zhou, Gang Li, Xiaoxing Wang, Changzi Jin, Yongying Chen (365)
- Disproportionation of ethylbenzene in the presence of C<sub>8</sub> aromatics ..... N. Sharnappa, S. Pai, V. V. Bokade (369)
- Promoting effect of polyoxyethylene octylphenol ether on Cu/ZnO catalysts for low-temperature methanol synthesis  
 ..... Ling Liu, Tiansheng Zhao, Qingxiang Ma, Yufang Shen (375)
- Complete oxidation of ethanol over vanadium based catalysts  
 ..... Zhe Li, Xia An, Panjie Ren, Wei Huang, Kechang Xie (379)

Size control synthesis of sulfur doped titanium dioxide (anatase) nanoparticles, its optical property and its photo catalytic reactivity for $\text{CO}_2 + \text{H}_2\text{O}$ conversion and phenol degradation	S. Tajammul Hussain, Khaiber Khan, R. Hussain (383)
Effect of Cu promoter on Ni-based SBA-15 catalysts for partial oxidation of methane to syngas	Fabien Habimana, Xiujin Li, Shengfu Ji, Bao Lang, Daoan Sun, Chengyue Li (392)
Catalytic performance of rhodium chalcogen halides and rhodium chalcogenides over silica supports in methane oxidative carbonylation	S. V. Volkov, G. R. Kosmambetova, L. B. Kharkova, O. V. Shvets, O. G. Yanko, V. I. Gritsenko, P. E. Strizhak (399)
Hydrogen production from coke oven gas over $\text{LiNi}/\gamma\text{-Al}_2\text{O}_3$ catalyst modified by rare earth metal oxide in a membrane reactor	Zhibin Yang, Yunyan Zhang, Weizhong Ding, Yuwen Zhang, Peijun Shen, Yuding Zhou, Yong Liu, Shaoqing Huang, Xionggang Lu (407)
Influence of $\text{CeO}_2$ and $\text{La}_2\text{O}_3$ on properties of palladium catalysts used for emission control of natural gas vehicles	Yile Li, Xiaoyu Zhang, Enyan Long, Hongmei Li, Dongdong Wu, Li Cai, Maochu Gong, Yaoqiang Chen (415)
Oxidation of NO over cobalt oxide supported on mesoporous silica	Yan Huang, Dongmei Gao, Zhiquan Tong, Junfeng Zhang, He Luo (421)
Activation pressure studies with an iron-based catalyst for slurry Fischer-Tropsch synthesis	Qinglan Hao, Liang Bai, Hongwei Xiang, Yongwang Li (429)
Monolithic macroporous catalysts — a new route for miniaturization of water-gas shift reactor	Hao Liang, Yuan Zhang, Yuan Liu (436)
Effects of additive gases on dimethyl ether conversion through dielectric barrier discharge	Baowei Wang, Xiaolei Cao, Yigang Yan, Genhui Xu (441)
Effect of ZnO on the performance of $\text{Ag}/\text{SiO}_2$ catalyst for the vapor-phase synthesis of 3-methylindole	Yang Hu, Wenhui Lü, Dongyan Liu, Jing Liu, Lei Shi, Qi Sun (445)
A comparative study of $\text{CuO}/\text{TiO}_2\text{-SnO}_2$ , $\text{CuO}/\text{TiO}_2$ and $\text{CuO}/\text{SnO}_2$ catalysts for low-temperature CO oxidation	Kairong Li, Yaojie Wang, Shurong Wang, Baolin Zhu, Shoumin Zhang, Weiping Huang, Shihua Wu (449)
A novel correlation for estimation of hydrate forming condition of natural gases	Alireza Bahadori, Hari. B. Vuthaluru (453)
Effect of $\text{CeO}_2$ preparation method and Cu loading on $\text{CuO}/\text{CeO}_2$ catalysts for methane combustion	Weiling Yang, Dao Li, Dongmei Xu, Xingyi Wang (458)
Partial oxidation of simulated hot coke oven gas to syngas over $\text{Ru-Ni}/\text{Mg}(\text{Al})\text{O}$ catalyst in a ceramic membrane reactor	Hongwei Cheng, Xionggang Lu, Xu Liu, Yuwen Zhang, Weizhong Ding (467)
<b>Research notes</b>	
Comparison of reduction behavior of $\text{Fe}_2\text{O}_3$ , ZnO and $\text{ZnFe}_2\text{O}_4$ by TPR technique	Meisheng Liang, Wenkai Kang, Kechang Xie (110)