



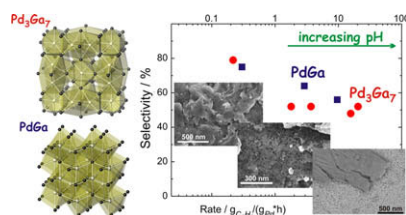
Contents

REGULAR ARTICLES

Etching of the intermetallic compounds PdGa and Pd₃Ga₇: An effective way to increase catalytic activity?

pp 93–103

Kirill Kovnir*, Jürgen Osswald, Marc Armbrüster*, Detre Teschner, Gisela Weinberg, Ute Wild, Axel Knop-Gericke, Thorsten Ressler, Yuri Grin, Robert Schlögl

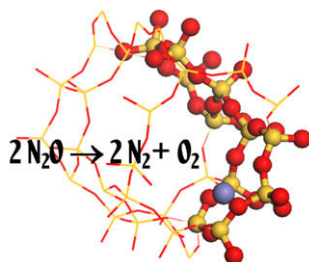


Chemical etching enhances activity while retaining high selectivity of acetylene hydrogenation catalysts, intermetallic compounds PdGa and Pd₃Ga₇.

Adsorption and reactivity of nitrogen oxides (NO₂, NO, N₂O) on Fe–zeolites

pp 104–116

Mickaël Rivallan*, Gabriele Ricchiardi, Silvia Bordiga, Adriano Zecchina*

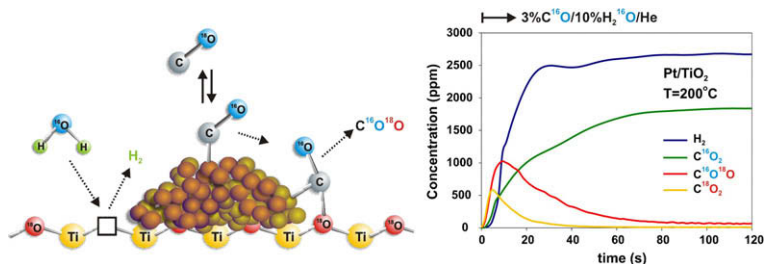


Kinetic results of N₂O decomposition reaction on Fe–MFI zeolites combined with the IR spectroscopy of the surface sites titration with N₂O, NO, and NO₂ show that low coordinated and isolated Fe²⁺ sites are the most active in N₂O decomposition. The cooperation between Fe²⁺ and Brønsted sites is also demonstrated for Fe–ZSM-5.

Kinetic and mechanistic studies of the water–gas shift reaction on Pt/TiO₂ catalyst

pp 117–129

Christos M. Kalamaras, Paraskevi Panagiotopoulou, Dimitris I. Kondarides*, Angelos M. Efstathiou*

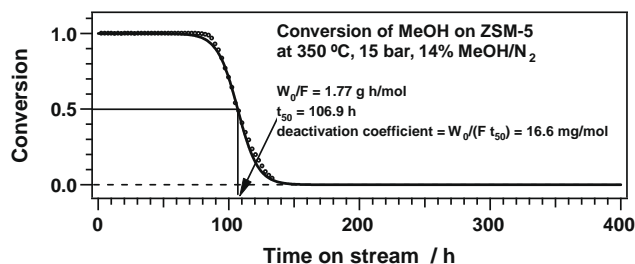


The red-ox mechanism of the water–gas shift reaction on a 0.5 wt% Pt/TiO₂ catalyst is strongly supported by steady-state isotopic transient kinetic analysis (SSITKA)–DRIFTS–Mass spectroscopy *operando* and ¹⁸O transient isotopic exchange followed by WGS experiments.

A new approach to the modeling of deactivation in the conversion of methanol on zeolite catalysts

pp 130–137

Ton V.W. Janssens

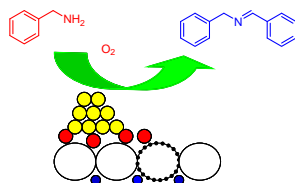


The lifetime to 50% conversion is entirely determined by the deactivation properties; differences in the slope of the decay reflect different catalytic activity.

Highly active and selective gold catalysts for the aerobic oxidative condensation of benzylamines to imines and one-pot, two-step synthesis of secondary benzylamines

pp 138–144

Abdessamad Grirrane, Avelino Corma*, Hermenegildo Garcia*

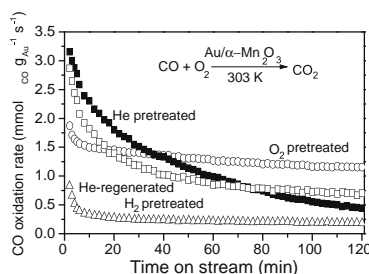


Gold nanoparticles supported on carbon are highly active for the selective oxidation of benzylamines to N-benzylimines.

Effect of pretreatment atmosphere on CO oxidation over α -Mn₂O₃ supported gold catalysts

pp 145–153

Lu-Cun Wang, Lin He, Yong-Mei Liu, Yong Cao*, He-Yong He, Kang-Nian Fan, Ji-Hua Zhuang*

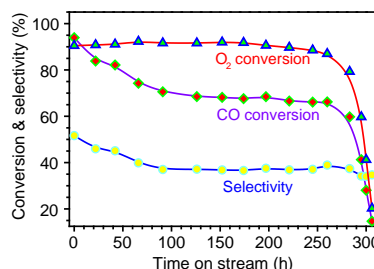


The low temperature CO oxidation over a Au/ α -Mn₂O₃ catalyst depends critically on the pretreatment gas conditions and is explained by the pretreatment-dependent metal–support synergy of the Au–MnO_x system.

Deactivation of a Au/CeO₂–Co₃O₄ catalyst during CO preferential oxidation in H₂-rich stream

pp 154–162

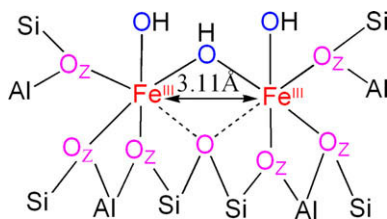
Hui Wang, Huaqing Zhu, Zhangfeng Qin, Feixue Liang, Guofu Wang, Jianguo Wang*



The catalyst loses its activity at various rates in the different periods of the CO PROX process, implying that the origins of deactivation are different.

Binuclear μ -hydroxo-bridged iron clusters derived from surface organometallic chemistry of ferrocene in cavities of HY zeolite: Local structure, bound sites, and catalytic reactivity pp 163–174

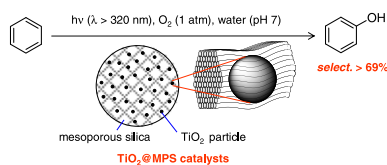
Jinlin Long, Xuxu Wang*, Zhengxin Ding, Zizhong Zhang, Huaxiang Lin, Wenxin Dai, Xianzhi Fu*



Binuclear μ -hydroxo-bridged iron clusters consisting of a $[\text{Fe}^{\text{III}}-(\mu\text{-OH})-\text{Fe}^{\text{III}}]$ core anchored on the framework-bridged oxygen sites in cavities of HY zeolite show enhanced activity towards phenol hydroxylation.

Effect of substrate polarity on photocatalytic activity of titanium dioxide particles embedded in mesoporous silica pp 175–182

Yasuhiro Shiraishi*, Yoshitsune Sugano, Daisuke Inoue, Takayuki Hirai



TiO_2 particles embedded in mesoporous silica show photocatalytic activity driven by substrate polarity. This TiO_2 @MPS system catalyzes the selective oxidation of benzene to phenol with high selectivity.