



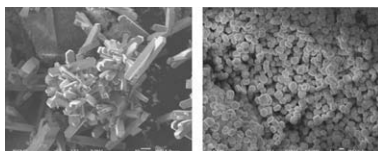
Contents

REGULAR ARTICLES

Influence of the zeolite synthesis route on its catalytic properties in the methanol to olefin reaction

pp 1–7

Svetlana Ivanova*, Charline Lebrun, Estelle Vanhaecke, Cuong Pham-Huu, Benoit Louis*

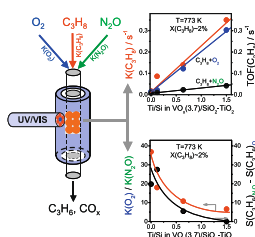


The influence of the zeolite ZSM-5 synthesis procedure (hydroxide and fluoride route) on its catalytic performances in the Methanol to Olefin (MTO) reaction has been investigated. In addition, a new concept in the preparation of zeolite materials has been employed, so-called in-situ zeolite synthesis. The silica superficial layer from the support itself was used as a silica source in this procedure. Depending on the preparation procedure, structured zeolite catalysts exhibited different performances in terms of activity and selectivity.

Dynamics of redox behavior of nano-sized VO_x species over Ti-Si-MCM-41 from time-resolved in situ UV/Vis analysis

pp 8–18

Olga Ovsitser, Maymol Cherian, Angelika Brückner, Evgenii V. Kondratenko*

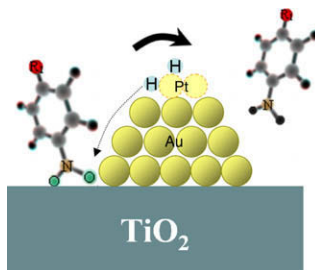


Time-resolved in situ UV/Vis spectroscopy related the activity and selectivity of highly dispersed VO_x species over Ti-Si-MCM-41 materials in propane oxidation to propene with the constants of reduction ($K(\text{C}_3\text{H}_8)$) and reoxidation ($K(\text{O}_2)$, $K(\text{N}_2\text{O})$) of these species.

Design of highly active and chemoselective bimetallic gold–platinum hydrogenation catalysts through kinetic and isotopic studies

pp 19–25

Pedro Serna, Patricia Concepción, Avelino Corma*

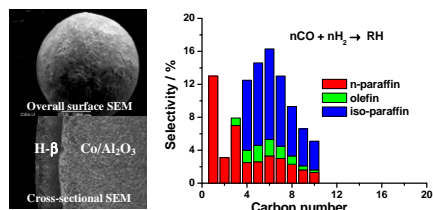


Bimetallic gold–platinum catalysts with optimised Pt contents have been designed through kinetic and isotopic studies, showing the highest activity reported up to now for the chemoselective hydrogenation of substituted nitroaromatic compounds.

One-step synthesis of H-β zeolite-encapsulated Co/Al₂O₃ Fischer–Tropsch catalyst with high spatial selectivity

pp 26–34

Xingang Li, Jingjiang He, Ming Meng, Yoshiharu Yoneyama, Noritatsu Tsubaki*

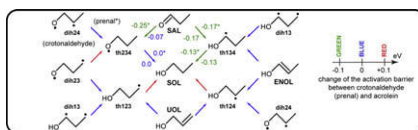


A H-β zeolite coating has been directly applied over Co/Al₂O₃ pellets by a hydrothermal synthesis method. This tailor-made encapsulated catalyst possesses extremely high spatial selectivity for isoparaffin synthesis from syngas.

Theoretical elucidation of the selectivity changes for the hydrogenation of unsaturated aldehydes on Pt(1 1 1)

pp 35–42

Slimane Laref, Françoise Delbecq, David Loffreda*



From an original use of generalized Brønsted–Evans–Polanyi relations and density functional theory calculations, the key question of the selectivity of the hydrogenation of unsaturated aldehydes on Pt(1 1 1) has been elucidated. In particular, the enhanced selectivity to SOL (saturated alcohol) is explained by a significant lowering of the surface transformation barriers from SAL (saturated aldehyde) to SOL.

Mo-containing tetragonal tungsten bronzes. The influence of tellurium on catalytic behaviour in selective oxidation of propene

pp 43–53

P. Botella, E. García-González, B. Solsona, E. Rodríguez-Castellón, J.M. González-Calbet, J.M. López Nieto*

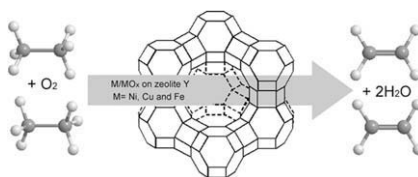


Te-containing multicomponent Mo-based catalysts presenting tetragonal tungsten bronze (TTB) structure show high selectivity in the partial oxidation of propene to acrolein. The highest yield to acrolein achieved with Te/Mo atomic ratios in bulk of 0.03.

Oxidative dehydrogenation (ODH) of ethane with O₂ as oxidant on selected transition metal-loaded zeolites

pp 54–62

Xufeng Lin, Cathleen A. Hoel, Wolfgang M.H. Sachtler, Kenneth R. Poepelmeier*, Eric Weitz*

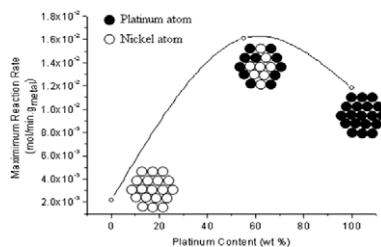


Metal-loaded zeolite Y catalyzed oxidative dehydrogenation of C₂H₆ to C₂H₄.

PtNi catalysts prepared via borohydride reduction for hydrogenation of benzene

pp 63–71

N.H.H. Abu Bakar, M.M. Bettahar*, M. Abu Bakar, S. Monteverdi, J. Ismail, M. Alnot

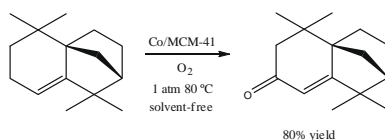


Pt/Ni–silica catalysts were prepared via co and step impregnation using NaBH₄ as a reducing agent. Pt₅₅Ni₄₅-Cl (co-impregnated) exhibited superior reactivity compared to the monometallic catalysts. Alloying and Pt segregation may contribute to this enhanced activity.

Cobalt-catalyzed oxidation of terpenes: Co-MCM-41 as an efficient shape-selective heterogeneous catalyst for aerobic oxidation of isolongifolene under solvent-free conditions

pp 72–79

Patricia A. Robles-Dutenhefner, Kelly A. da Silva Rocha, Edésia M.B. Sousa, Elena V. Gusevskaya*

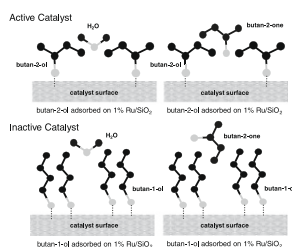


Co-MCM-41, which contains cobalt incorporated into the framework, is an efficient, environmentally friendly solid catalyst for the liquid-phase aerobic oxidation of isolongifolene into isolongifolene-9-one which is highly valuable for perfume industry.

Deactivation and regeneration of ruthenium on silica in the liquid-phase hydrogenation of butan-2-one

pp 80–88

Haresh G. Manyar, Daniel Weber, Helen Daly, Jillian M. Thompson, David W. Rooney, Lynn F. Gladden, E. Hugh Stitt, J. Jose Delgado, Serafin Bernal, Christopher Hardacre*

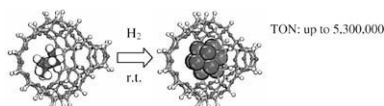


Deactivation of a Ru/SiO₂ catalyst for butan-2-one hydrogenation in water has been found to be associated with the formation of Ru(OH)_x; however, this effect may be mitigated by the presence of secondary alcohols which form a hydrophobic surface coating.

Generation of the active Pd cluster catalyst in the Suzuki–Miyaura reactions: Effect of the activation with H₂ studied by means of quick XAFS

pp 89–98

Kazu Okumura*, Hirotsuke Matsui, Takashi Sanada, Masazumi Arai, Tetsuo Honma, Sayaka Hirayama, Miki Niwa

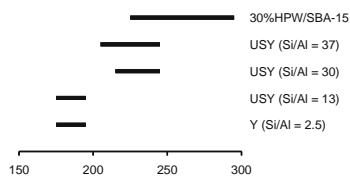


Pd clusters generated in the supercage of a USY zeolite worked as efficient catalysts in the Suzuki–Miyaura reactions.

Bifunctional conversion of *n*-decane over HPW heteropoly acid incorporated into SBA-15 during synthesis

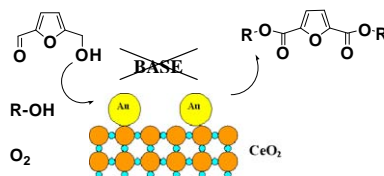
pp 99–108

B.C. Gagea, Y. Lorgouilloux, Y. Altintas, P.A. Jacobs, J.A. Martens*

Temperature where *n*-decane hydroisomerization yield exceeds 45%.**Biomass into chemicals: One pot-base free oxidative esterification of 5-hydroxymethyl-2-furfural into 2,5-dimethylfuroate with gold on nanoparticulated ceria**

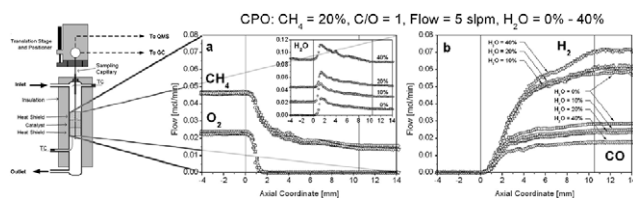
pp 109–116

O. Casanova, S. Iborra, A. Corma*

Gold nanoparticles supported onto nanoparticulated cerium oxide catalyzed the oxidative esterification of HMF into DMF with oxygen and *n*-alcohols in the absence of a base.**Effects of H₂O and CO₂ addition in catalytic partial oxidation of methane on Rh**

pp 117–129

Brian C. Michael, Alessandro Donazzi, Lanny D. Schmidt*

Spatial profiles of autothermal methane CPO on Rh-based catalysts illustrate the effects of H₂O and CO₂ addition on mass transfer, water gas shift, and steam reforming.