

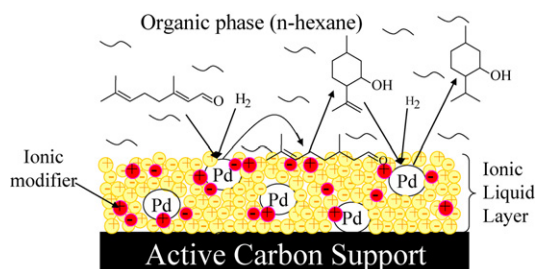


REGULAR ARTICLES

Towards one-pot synthesis of menthols from citral: Modifying Supported Ionic Liquid Catalysts (SILCAs) with Lewis and Brønsted acids

pp 209–219

Pasi Virtanen*, Hannu Karhu, Geza Toth, Krisztian Kordas, Jyri-Pekka Mikkola

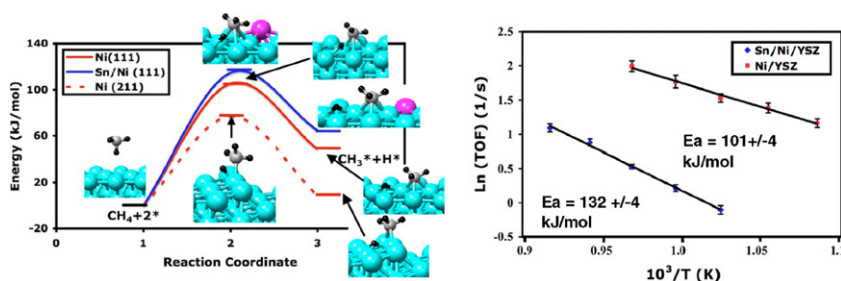


Supported Ionic Liquid Catalyst (SILCA) was modified with different Lewis and Brønsted acids and the effects of different acids to the catalyst activity and product selectivity in a reaction of menthols from citral was evaluated.

Comparative study of the kinetics of methane steam reforming on supported Ni and Sn/Ni alloy catalysts: The impact of the formation of Ni alloy on chemistry

pp 220–227

Eranda Nikolla, Johannes Schwank, Suljo Linic*

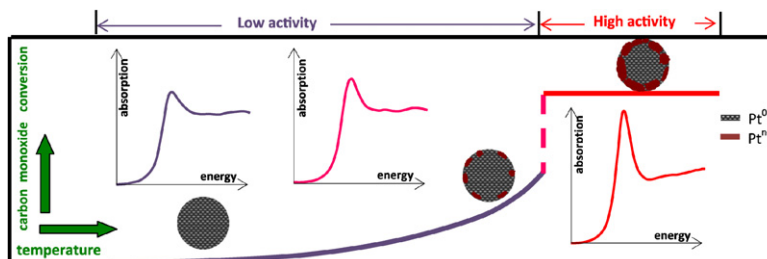


Sn atoms dispersed on supported Ni catalysts alter catalytic methane steam reforming by (i) changing the nature of the active sites, (ii) increasing the overall activation barrier, and (iii) improving the catalyst tolerance to carbon-induced deactivation.

On highly active partially oxidized platinum in carbon monoxide oxidation over supported platinum catalysts

pp 228–238

E.M.C. Alayon, J. Singh, M. Nachttegaal, M. Harfouche, J.A. van Bokhoven*

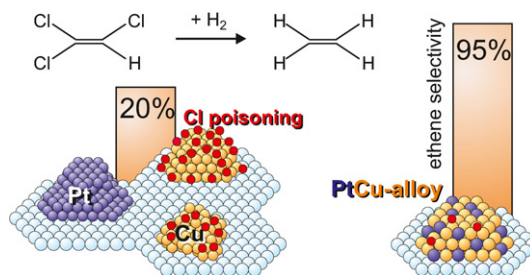


In situ XAS identified surface-oxidized platinum as the active species at high activity during carbon monoxide oxidation over supported platinum catalysts. At low activity, the platinum catalysts were metallic and poisoned by carbon monoxide.

Hydrodechlorination of trichloroethylene on noble metal promoted Cu-hydrotalcite-derived catalysts

pp 239–246

N. Barrabes, D. Cornado, K. Foettinger*, A. Dafinov, J. Llorca, F. Medina, G. Rupprechter

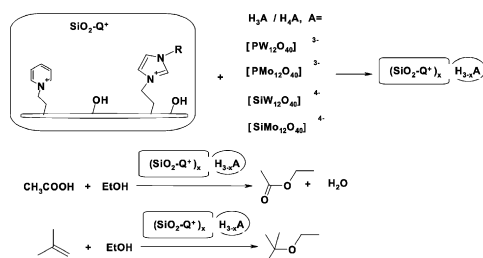


Pt (or Pd)–Cu alloy nanoparticles show superior performance in the selective hydrodechlorination of trichloroethene to ethene, as compared to catalysts containing separated particles of Pt (or Pd) and Cu. The reaction proceeds via cleavage of the C–Cl bond on Cu, with the Cu site being subsequently regenerated by spillover of hydrogen from the noble metal.

Oniumsilica-immobilized-Keggin acids: Acidity and catalytic activity for ethyl *tert*-butyl ether synthesis and acetic acid esterification with ethanol

pp 247–257

T.V. Kovalchuk, Ju.N. Kochkin, H. Sfihi, V.N. Zaitsev, J. Fraissard*

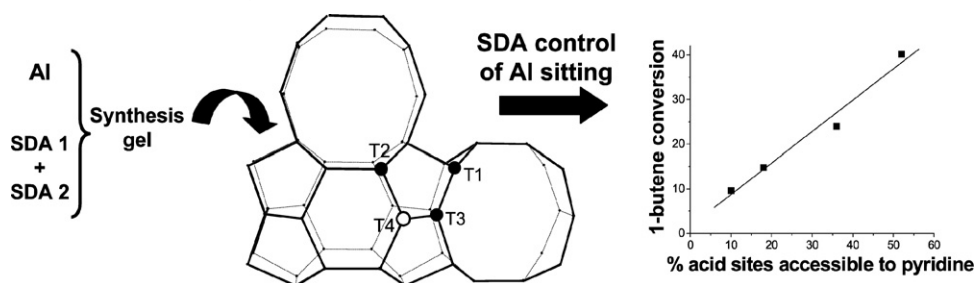


Oniumsilica-immobilized heteropolyacids display good catalytic performance and relative high structural stability in the liquid-phase synthesis of ETBE and the esterification of AcOH with EtOH.

Template-controlled acidity and catalytic activity of ferrierite crystals

pp 258–265

A.B. Pinar, C. Márquez-Álvarez, M. Grande-Casas, J. Pérez-Pariente*

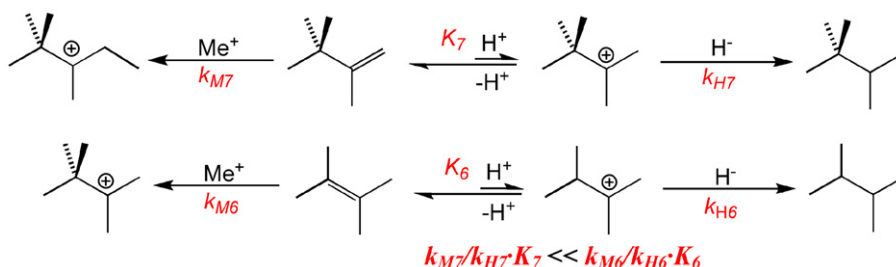


Al sitting in ferrierite crystals has been controlled by carrying out the zeolite synthesis with selected combinations of organic directing agents in fluoride medium. The catalytic activity for the isomerisation of linear butenes and *m*-xylene increased as the relative population of strong Brønsted acid groups in sterically constrained sites inside the ferrierite cavity decreased.

A mechanistic explanation for selectivity in the conversion of methanol to 2,2,3-trimethylbutane (triptane): Moderate acidity allows kinetic control to operate

pp 266–276

Nilay Hazari, Jay A. Labinger*, Valerie J. Scott

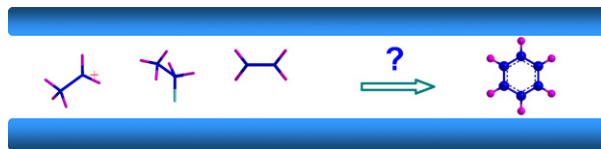


The relative rate of olefin homologation by cationic methylation vs. hydrogenation by protonation/hydride transfer increases with the degree of substitution of the olefin, a trend that explains the remarkably high selectivity observed for conversion of methanol to triptane over zinc and indium iodides.

Effect of pore size and acidity on the coke formation during ethylbenzene conversion on zeolite catalysts

pp 277–283

Jun Huang, Yijiao Jiang, V.R. Reddy Marthala, Arne Bressel, Joerg Frey, Michael Hunger*

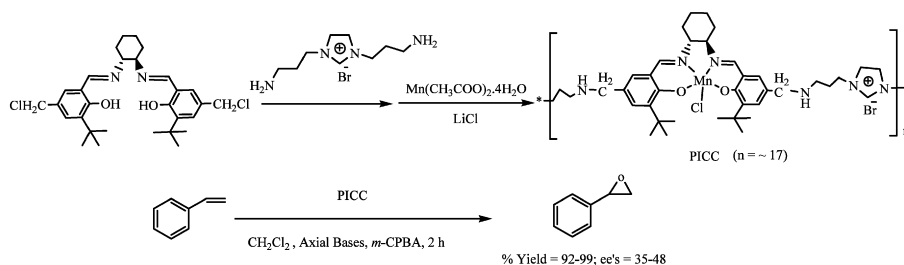


The acidity and pore size of zeolites strongly affect their catalytic behavior. *In situ* MAS NMR studies indicate that the transition state shape selectivity in the ethylbenzene disproportionation and the formation of alkylcarbenium ions are responsible for oligomerization and coke formation.

Easily recyclable polymeric ionic liquid-functionalized chiral salen Mn(III) complex for enantioselective epoxidation of styrene

pp 284–291

Rong Tan, Donghong Yin*, Ningya Yu*, Haihong Zhao, Dulin Yin

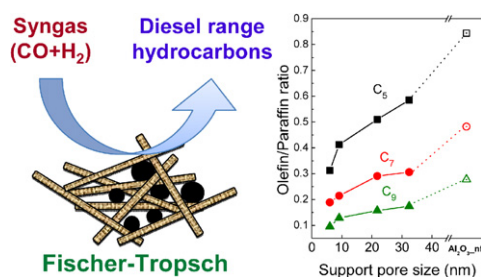


A novel polymeric ionic liquid-functionalized chiral salen Mn(III) complex was found to be an efficient catalyst for enantioselective epoxidation of styrene and can be recycled easily by control of solvent.

Nanofibrous γ -Al₂O₃ as support for Co-based Fischer–Tropsch catalysts: Pondering the relevance of diffusional and dispersion effects on catalytic performance

pp 292–305

Agustín Martínez*, Gonzalo Prieto, Joan Rollán

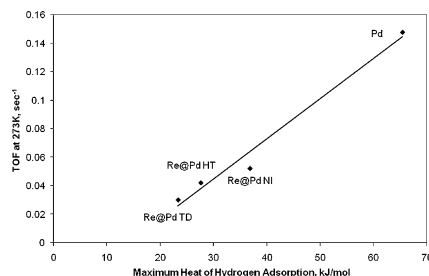


CoRu Fischer–Tropsch catalysts supported on macro-mesoporous nanofibrous γ -Al₂O₃ reconcile high metal dispersions with enhanced intrapellet transport rates resulting, at high metal loadings, in improved productivity to diesel-range hydrocarbons.

Correlation of H₂ heat of adsorption and ethylene hydrogenation activity for supported Re@Pd overlayer catalysts

pp 306–314

Michael P. Latusek, Brett P. Spigarelli, Rebecca M. Heimerl, Joseph H. Holles*

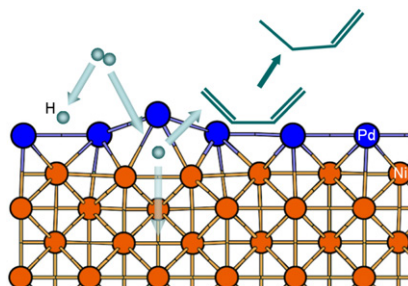


Bimetallic overlayer Pd on Re (Re@Pd) catalysts showed decreased H₂ heat of adsorption and ethylene hydrogenation activity compared to Pd. A correlation relating hydrogen adsorption strength and activity was developed.

Alkene hydrogenation on metal surfaces: Why and when are Pd overlayers more efficient catalysts than bulk Pd?

pp 315–320

Ana Valcarcel, Franck Morfin, Laurent Piccolo *

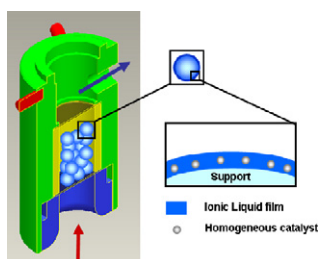


Palladium surfaces become more active hydrogenation catalysts if hydrogen dissolution into the metal can be blocked.

Supported ionic liquid phase (SILP) catalyzed hydroformylation of 1-butene in a gradient-free loop reactor

pp 321–327

Marco Haumann*, Michael Jakuttis, Sebastian Werner, Peter Wasserscheid

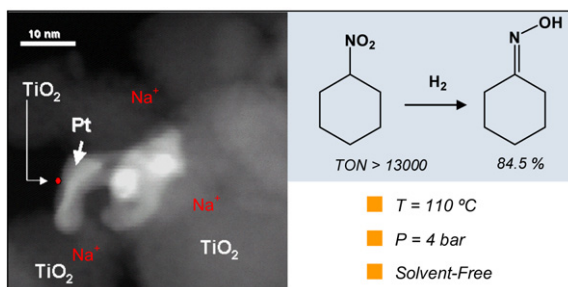


Supported Ionic Liquid Phase (SILP) catalytic materials have been employed in the gas-phase hydroformylation of 1-butene. In order to study the intrinsic kinetics of the immobilized rhodium-diphosphine catalyst complex, a gradient-free loop reactor (Berty-type) has been employed. Data from fixed bed and Berty reactor were found to be in good agreement with respect to activation energy and reaction order. Ex-situ NMR studies of fresh and used SILP catalysts confirmed that the ligand remained intact after prolonged time on stream.

Selective hydrogenation of nitrocyclohexane to cyclohexanone oxime with H₂ on decorated Pt nanoparticles

pp 328–334

Pedro Serna, M. López-Haro, J.J. Calvino, Avelino Corma*

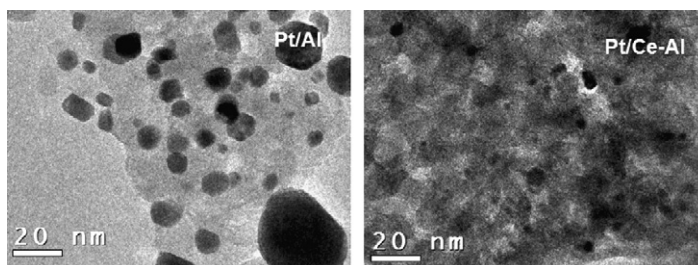


Acid-free decorated Pt/TiO₂ catalyst promotes the selective hydrogenation of nitrocyclohexane to cyclohexanone oxime under green and mild reaction conditions.

The effects of CeO₂ on the activity and stability of Pt supported catalysts for methane reforming, as addressed by *in situ* temperature resolved XAFS and TEM analysis

pp 335–344

A.P. Ferreira, D. Zanchet, J.C.S. Araújo, J.W.C. Liberatori, E.F. Souza-Aguiar, F.B. Noronha, J.M.C. Bueno*

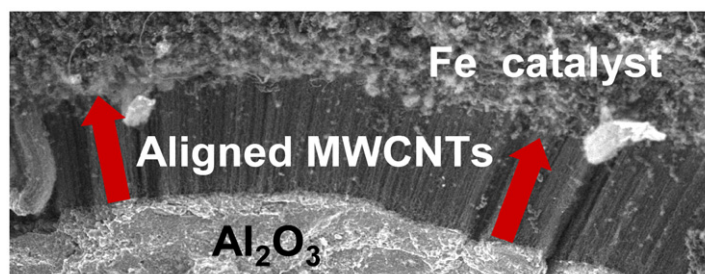


Addition of Ce to Pt/Al₂O₃ catalysts increases their performance in methane reforming, due to the improved thermal stability of the support and the interaction of reduced Pt nanoparticles with Ce, which prevents their migration.

An original growth mode of MWCNTs on alumina supported iron catalysts

pp 345–358

Régis Philippe, Brigitte Caussat, Andrea Falqui, Yolande Kihn, Philippe Kalck, Serge Bordère, Dominique Plee, Patrice Gaillard, Daniel Bernard, Philippe Serp*

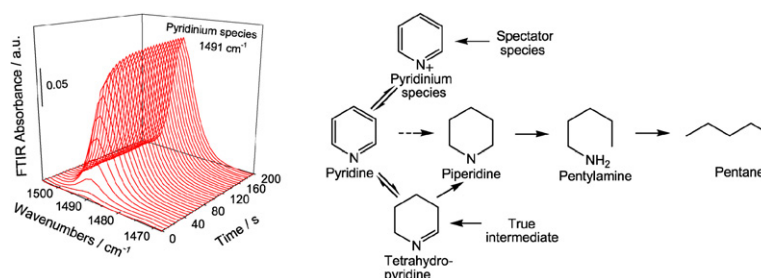


MWCNTs grow aligned between the Al₂O₃ support and the iron surface catalytic film.

A general method for determining the role of spectroscopically observed species in reaction mechanisms: Analysis of coverage transients (ACT)

pp 359–371

Travis Gott, S. Ted Oyama*

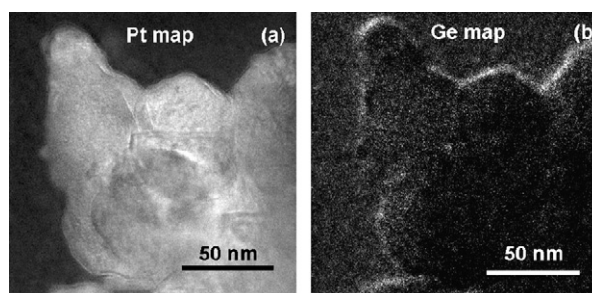


The transient reaction rate of a pyridinium species did not correspond to the overall reaction rate, demonstrating that mere observation of an adsorbed species is not sufficient to prove it is a reaction intermediate.

Preparation, characterization and catalytic testing of GePt catalysts

pp 372–379

N. Györfy, I. Bakos, S. Szabó, L. Tóth, U. Wild, R. Schlögl, Z. Paál*

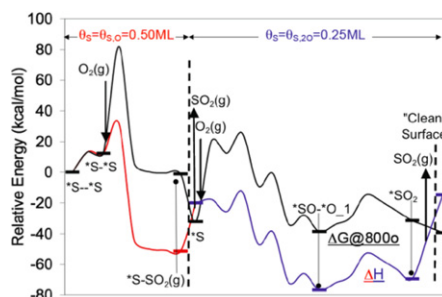


Ge deposited on to Pt black and Pt/SiO₂ occupied a fraction of edge sites on the surface (as shown on the ETEM picture) and promoted the formation of saturated ring opening products from methylcyclopentane.

A DFT study on the removal of adsorbed sulfur from a nickel(111) surface: Reducing anode poisoning

pp 380–389

Natasha M. Galea, John M.H. Lo*, Tom Ziegler



DFT calculations have revealed that the complete removal of sulfur adatoms from the sulfur-poisoned Ni(111) surfaces of the Ni-based SOFC anodes can be accomplished by direct oxidation during the post-treatment process.