



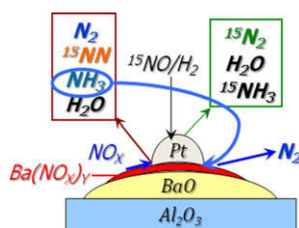
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Isotopic studies of NO_x storage and reduction on Pt/BaO/Al₂O₃ catalyst using temporal analysis of products pp 214–223

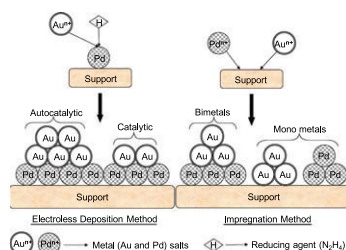
Ashok Kumar, Michael P. Harold*, Vemuri Balakotaiah*



NO_x storage and reduction–oxidation on Pt/BaO/Al₂O₃ involves the close coupling between the precious metal and storage components. The use of labeled nitric oxide, ¹⁵NO, provides direct evidence for spatial gradients in the storage phase and the possibility that the regeneration can be limited by the supply of stored NO_x to the Pt.

Synthesis and characterization of Au–Pd/SiO₂ bimetallic catalysts prepared by electroless deposition pp 224–233

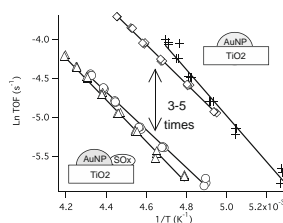
Jayakiran Rebelli, Michael Detwiler, Shuguo Ma, Christopher T. Williams, John R. Monnier*



Electroless deposition is used to synthesize a series of Au–Pd/SiO₂ catalysts with incremental coverages of Au on Pd. The Au–Pd bimetallic catalysts exhibited higher specific catalytic activity and showed structure sensitivity for propylene hydrogenation.

Depletion of CO oxidation activity of supported Au catalysts prepared from thiol-capped Au nanoparticles by sulfates formed at Au–titania boundaries: Effects of heat treatment conditions on catalytic activity pp 234–241

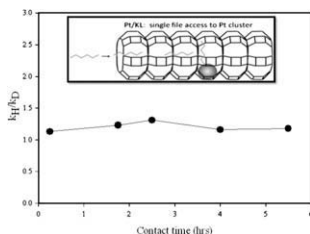
Yutaka Tai*, Wataru Yamaguchi, Masahisa Okada, Fumihiko Ohashi, Ken-ichi Shimizu, Atsushi Satsuma, Koji Tajiri, Hiroyuki Kageyama



The importance of the contribution of Au–support interfaces to the CO oxidation efficiency on Au/TiO₂ catalyst systems was revealed by removing sulfates formed at these sites.

Aromatization of hexane over Pt/KL catalyst: Role of intracrystalline diffusion on catalyst performance using isotope labeling pp 242–248

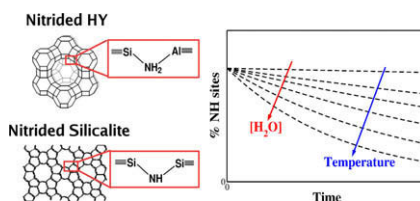
Khalid G. Azzam, Gary Jacobs, Wilson D. Shafer, Burtron H. Davis*



The kinetic isotope effect (k_H/k_D) over 1%Pt/KL was determined at 500 °C and 1 atm using an equimolar mixture of C_6H_{14} and C_6D_{14} . Results indicate that the excellent catalytic performance of Pt/KL for hexane aromatization may be explained by the unique structure of L-zeolite. The narrow windows of the uni-axial channels control hexane entry into the wider lobes where the Pt sites reside, restricting the access of hexane to Pt to a single-file basis.

Kinetic stability of nitrogen-substituted sites in HY and silicalite from first principles pp 249–255

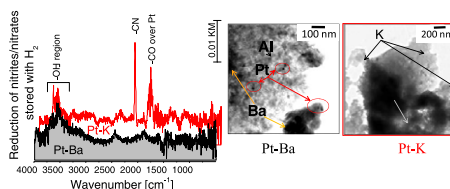
Vishal Agarwal, George W. Huber, W. Curtis Conner Jr., Scott M. Auerbach*



Nitrided HY and silicalite are predicted to remain stable below threshold temperatures (500 °C and 275 °C, respectively) even at saturation water loadings, warranting their use as shape-selective basic catalysts.

In situ DRIFT–TRM study of simultaneous NO_x and soot removal over Pt–Ba and Pt–K NSR catalysts pp 256–267

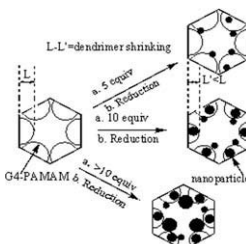
I.S. Pieta, M. García-Diéguez, C. Herrera, M.A. Larrubia, L.J. Alemany*



The catalytic activity of the Pt–Ba and Pt–K NSR catalysts as well as soot + catalyst mixtures has been studied, revealing that the catalyst regeneration is limited for Pt–K. The Pt^0/Pt_{ox} ratio is stabilized by Ba.

Monodisperse noble metal nanoparticles stabilized in SBA-15: Synthesis, characterization and application in microwave-assisted Suzuki–Miyaura coupling reaction pp 268–274

Zhaoliang Zheng, Hongfang Li, Tianfu Liu, Rong Cao*

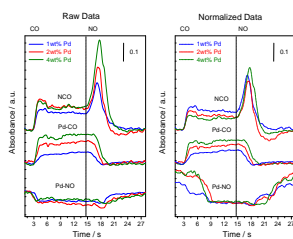


A series of noble NPs with narrow size distribution were successfully stabilized in SBA-15.

Multitechnique analysis of supported Pd particles upon dynamic, cycling CO/NO conditions: Size-dependence of the structure–activity relationship

pp 275–284

Anna Kubacka, Arturo Martínez-Arias, Marcos Fernández-García*, Marco Di Michiel, Mark A. Newton*

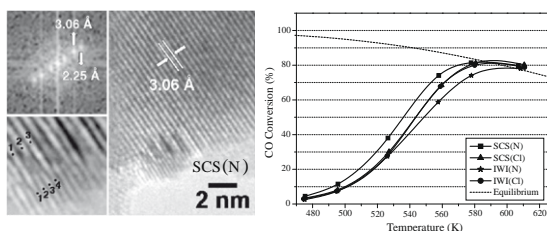


Raw and (metal-area) normalized DRIFT intensity of main surface species detected on Pd-based alumina-supported catalysts under a CO/NO cycling treatment.

Activity, durability and microstructural characterization of ex-nitrate and ex-chloride Pt/Ce_{0.56}Zr_{0.44}O₂ catalysts for low temperature water gas shift reaction

pp 285–298

Arup Gayen, Marta Boaro*, Carla de Leitenburg, Jordi Llorca, Alessandro Trovarelli

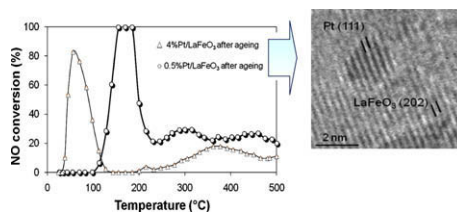


Single-step solution combustion synthesis (SCS) was used to prepare Pt/Ce_{0.56}Zr_{0.44}O₂ catalysts; despite a low surface area, these catalysts show a good dispersion of platinum coupled with a high crystallinity of the support with activity comparable or superior to conventional impregnated (IW) catalysts. Using nitrates as precursors, an epitaxial interaction between metal and support was found for the catalyst in the as prepared and reduced forms.

Structural changes of nano-Pt particles during thermal ageing: Support-induced effect and related impact on the catalytic performances

pp 299–309

J.P. Dacquin, M. Cabié, C.R. Henry, C. Lancelot, C. Dujardin, S.R. Raouf, P. Granger*

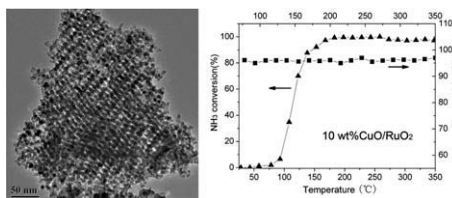


Epitaxially oriented Pt particles on the LaFeO₃ crystal lattice reflect stronger metal/support interactions, which inhibit thermal sintering, thereby illustrating the favorable effect of perovskite as a support material. The Pt on perovskite exhibits high activity in NO conversion over a wider temperature range.

Selective catalytic oxidation of ammonia to nitrogen over mesoporous CuO/RuO₂ synthesized by co-nanocasting-replication method

pp 310–317

Xiangzhi Cui, Jian Zhou, Zhengqing Ye, Hangrong Chen, Lei Li, Meiling Ruan, Jianlin Shi*



Ammonia catalytic oxidation by mesoporous CuO/RuO₂ composite synthesized by co-nanocasting-replication method was investigated. A 100% ammonia conversion and 97% N₂ selectivity can be obtained on mesostructured 10 wt.%CuO/RuO₂.