

Table of Contents

Preface and Committees

Plenary Lecture

Nanostructured Materials for Hydrogen Storage

S. Sepehri, Y.Y. Liu and G.Z. Cao

1

Catalysts Synthesis and Characterization

Influences of Surface Chemistry on Dehydrogenation Kinetics of Ammonia Borane in Porous Carbon Scaffold

S. Sepehri, B. Batalla García, Q.F. Zhang and G.Z. Cao

19

Observation on the Structure of Ordered Mesoporous Materials at High Temperature via *In Situ* X-Ray Diffraction

C.F. Zhou and J.H. Zhu

29

Synthesis of Si-Based Mesoporous Materials with Different Structural Regularity

L.F. Chen, J. López, J.A. Wang, L.E. Noreña-Franco, G.X. Yu, F.H. Cao, Y.Q. Song and X.L. Zhou

38

Comparative Studies of the CoMo/MgO, CoMo/Al₂O₃ and CoMo/MgO-MgAl₂O₄ Catalysts Prepared by a Urea-Matrix Combustion Method

L.B. Wu, D.M. Jiao, L.F. Chen, J.A. Wang and F.H. Cao

45

ZnAlFe Mixed Oxides Obtained from LDH Type Materials as Basic Catalyst for the Gas Phase Acetone Condensation

A. Mantilla, F. Tzompantzi, M. Manríquez, G. Mendoza, J.L. Fernández and R. Gómez

55

Structure Sensitivity of Sol-Gel Alkali Tantalates, ATaO₃ (A= Li, Na and K): Acetone Gas Phase Condensation

L.M. Torres-Martínez, M.E. Meza-de la Rosa, L.L. Garza-Tovar, I. Juárez-Ramírez, F. Tzompantzi, G. Del Angel, J.M. Padilla and R. Gómez

61

Phase Stabilization of Mesoporous Mn-Promoted ZrO₂: Influence of the Precursor

M.L. Hernández-Pichardo, J.A. Montoya, P. Del Angel and S.P. Paredes

68

Environmental Catalysis

Promotional Effect of Gadolinia on CuO Catalyst for Reduction of NO by Activated Carbon

Y.Y. Xue, G.Z. Lu, Y. Guo, Y.L. Guo, Y.Q. Wang and Z.G. Zhang

76

Synthesis and Photocatalytic Performance of Hierarchical Porous Titanium Phosphonate Hybrid Materials

T.Y. Ma, T.Z. Ren and Z.Y. Yuan

87

Role of Nanocrystalline Titania Phases in the Photocatalytic Oxidation of NO at Room Temperature

S. Castillo, R. Carrera, R. Camposeco, P. Del Angel, J.A. Montoya, A.L. Vázquez, M. Morán-Pineda and R. Gómez

96

Chitin/TiO₂ Composite for Photocatalytic Degradation of Phenol

K. Wan, X.H. Peng and P.J. Du

105

Catalysts for Petroleum Hydrotreating

Catalytic Properties of Ni-Mo Carbide and Nitride Phases Supported on SBA-15 and -16 in the Hydrodesulfurization of DBT

E.C. Aguilón-Martínez, J.A. Melo-Banda, L.A. Guevara, T.A. Reyes, C.E. Ramos Galván, R.R. Silva and J.M. Domínguez

111

Oxidative Removal of Dibenzothiophene by H₂O₂ over Activated Carbon-Supported Phosphotungstic Acid Catalysts

G.X. Yu, R.X. Zhou, J.B. Li, X.L. Zhou, C.L. Li, L.F. Chen and J.A. Wang

126

Adsorptive Removal of Dibenzothiophene in Diesel Fuel on an Adsorbent from Rice Hull Activated by Phosphoric Acid

G.X. Yu, J. Sun, X.M. Hou, X.L. Zhou, C.L. Li, L.F. Chen and J.A. Wang

133

Adsorption of Dibenzothiophene on Transition Metals Loaded Activated Carbon G.X. Yu, J.B. Li, X.L. Zhou, C.L. Li, L.F. Chen and J.A. Wang	141
---	-----

Catalysts for Petroleum Refining

Studies on the Catalytic Activity of Sulfated Zirconia Promoted with Cerium Oxide F.E. Lugo del Ángel, R. Silva-Rodrigo, A. Vázquez Rodríguez, R. García Alamilla, J. Navarrete Bolaños, A. Castillo Mares, J.A. Melo-Banda, E. Térres-Rojas and J.L. Rivera Armenta	149
Isomerization of Pinene with Al- and Ga-Modified MCM-41 Mesoporous Materials M. Díaz-García, J. Aguilar-Pliego, G. Herrera-Pérez, L. Guzmán, P. Schachat, L.E. Noreña-Franco, A. Aguilar-Elguezabal and M. Gutierrez-Arzaluz	162
Yb₂O₃ Promoted Pt-SO₄²⁻/ZrO₂-Al₂O₃ Catalyst in N-Hexane Hydroisomerization G.X. Yu, Y. Hu, D.N. Lin, X.L. Zhou, C.L. Li, L.F. Chen and J.A. Wang	174
Effect of Hydrothermal Conditions on Isomerization Activity of Pt/SO₄²⁻-ZrO₂ J.J. Zhang, Y.Q. Song, X.L. Zhou, C.L. Li, J.A. Wang and L.Y. Xu	183
Alkylation of Benzene with Propylene over H₃PW₁₂O₄₀ Supported on MCM-41 and -48 Type Mesoporous Materials M. Gómez-Ruiz, J.A. Melo-Banda, C.E. Ramos Galván, S.E. López, R.R. Silva, R.I. Alamilla and J.M. Domínguez	192

Catalysts for Fuel Production

Hydrogen Production by Steam Reforming of Methanol over a Ag/ZnO One Dimensional Catalyst R. Pérez-Hernández, A. Gutiérrez-Martínez, A. Mayoral, F. Leonard Deepak, M.E. Fernández-García, G. Mondragón-Galicia, M. Miki and M. José-Yacamán	205
Basic Ion Exchange Resins as Heterogeneous Catalysts for Biodiesel Synthesis M.G. Falco, C.D. Córdoba, M.R. Capeletti and U. Sedran	220
A Novel La₂O₃-ZnO/ZrO₂ Solid Superbase and its Catalytic Performance for Transesterification of Soybean Oil to Biodiesel X. Li, G.Z. Lu, Y.L. Guo, Y. Guo and Y.Q. Wang	228
Refinery Oil Fraction Fuels Obtained from Polyethylene Catalytic Cracking Employing Heteropolyacid-MCM-41 Materials A. Hernández, L.E. Noreña-Franco, L.F. Chen, J.A. Wang and J. Aguilar	236
Synthesis Optimization of SAPO-34 in the Presence of Mixed Template for MTO Process L.P. Ye, F.H. Cao, W.Y. Ying, D.Y. Fang and Q.W. Sun	246
Studies on Cobalt-Based Catalyst to Synthesize Heavy Hydrocarbons C. Li, P.L. Wang, W.Y. Ying and D.Y. Fang	257

Electrocatalysis

A Novel Non-Metal Oxygen Reduction Electrocatalyst Based on Platelet Carbon Nanofiber J.S. Zheng, X.S. Zhang, S. Wen, P. Li, C.A. Ma and W.K. Yuan	264
Enhanced Electrochemical Oxidation of BH₄⁻ on Pt Electrode in Alkaline Electrolyte with the Addition of Thiourea D.M. Yu, C.G. Chen, S. Lei, X.Y. Zhou and G.Z. Cao	271
Pd Nanoparticles Supported on TiO₂ Nanotubes for Ethanol Oxidation in Alkaline Media H.H. Yang, Y.H. Qin, S. Wen, X.S. Zhang, D.F. Niu, C.A. Ma and W.K. Yuan	279