

Subject index

Absorption

Hydrocarbon absorption in tetrachloroaluminate catalysts effects of catalyst cation, hydrocarbon polarity and charge transfers via molecular modeling 327

Activity

Relationship between hydrodesulfurization activity and morphological and structural changes in NiW hydrotreating catalysts supported on Al_2O_3 – TiO_2 mixed oxides 123

Al_2O_3 – TiO_2 mixed oxides

Relationship between hydrodesulfurization activity and morphological and structural changes in NiW hydrotreating catalysts supported on Al_2O_3 – TiO_2 mixed oxides 123

Alkylpolysulfide

Ex situ sulfidation by alkylpolysulfides: A route for the preparation of highly dispersed supported sulfides 111

Alumina aerogels

A homogeneously dispersed silica dopant for control of the textural and structural evolution of an alumina aerogel 51

Alumina

A new concept for catalysts of asphaltene conversion 225

Alumina–magnesia

New selective Mo and NiMo HDS catalysts supported on Al_2O_3 – $\text{MgO}(x)$ mixed oxides 135

Aqueous impregnation

New selective Mo and NiMo HDS catalysts supported on Al_2O_3 – $\text{MgO}(x)$ mixed oxides 135

Aromatic hydrocarbons

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

Asphaltene

A new concept for catalysts of asphaltene conversion 225
Depolymerization and demetallation treatments of asphaltene in vacuum residue 241
Effect of heavy asphaltene on stability of residual oil 347

Auto-exhaust catalysts

The preparation of high surface area CeO_2 – ZrO_2 mixed oxides by a surfactant-assisted approach 79

Boiling point distribution

High-temperature simulated distillation GC analysis of petroleum resids and their products from catalytic upgrading over Co–Mo/ Al_2O_3 catalyst 187

Bunker reactor

The shell residue hydroconversion process: development and achievements 217

Butane oxidation on supported VPO catalyst

Supported VPO catalysts for selective oxidation of butane III: Effect of preparation procedure and SiO_2 support 101

Carbazole

TPD and XRD studies of molybdenum nitride and its activity for hydrodenitrogenation of carbazole 249

Catalyst development

Challenges, catalyst technology and catalytic solutions in resid FCC 305

Catalyst modification

Formation of multilayered tin organometallic surface species. Preparation of new type of supported Sn–Pt catalysts 29

Catalyst

A new concept for catalysts of asphaltene conversion 225
Recent developments in fixed-bed catalytic residue upgrading 203

Catalytic upgrading

High-temperature simulated distillation GC analysis of petroleum resids and their products from catalytic upgrading over Co–Mo/ Al_2O_3 catalyst 187

CCR reduction

A new concept for catalysts of asphaltene conversion 225

CeO_2

The preparation of high surface area CeO_2 – ZrO_2 mixed oxides by a surfactant-assisted approach 79

Ceria–zirconia

The preparation of high surface area CeO_2 – ZrO_2 mixed oxides by a surfactant-assisted approach 79

Characterization

High-temperature simulated distillation GC analysis of petroleum resids and their products from catalytic upgrading over Co–Mo/ Al_2O_3 catalyst 187
Relationship between hydrodesulfurization activity and morphological and structural changes in NiW hydrotreating catalysts supported on Al_2O_3 – TiO_2 mixed oxides 123

Charge transfer

Hydrocarbon absorption in tetrachloroaluminate catalysts effects of catalyst cation, hydrocarbon polarity and charge transfers via molecular modeling 327

Co–Mo

Mesoporous molecular sieve MCM-41 supported Co–Mo catalyst for hydrodesulfurization of petroleum resids 261

Coal liquefaction

The use of coal liquefaction catalysts for coal/oil coprocessing and heavy oil upgrading 291

Coal–oil coprocessing

The use of coal liquefaction catalysts for coal/oil coprocessing and heavy oil upgrading 291

Conradson carbon residue

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

Controlled surface reactions

Formation of multilayered tin organometallic surface species.
Preparation of new type of supported Sn–Pt catalysts 29

Conversion

A new concept for catalysts of asphaltene conversion 225

Cracking

A new concept for catalysts of asphaltene conversion 225

Dehydrogenation

Effect of preparation method on the properties of Nb₂O₅ promoted platinum catalysts 3

Demetallation

Depolymerization and demetallation treatments of asphaltene in vacuum residue 241

Demetallization

A new concept for catalysts of asphaltene conversion 225

Depolymerization

Depolymerization and demetallation treatments of asphaltene in vacuum residue 241

Dibenzothiophene

Mesoporous molecular sieve MCM-41 supported Co–Mo catalyst for hydrodesulfurization of petroleum resids 261

Fluid catalytic cracking

Challenges, catalyst technology and catalytic solutions in resid FCC 305
Kinetic modeling of FCC process 315

Fluidized bed

A new hydrodealkylation process with fluid-beds to produce high purity naphthalene and methylnaphthalenes from heavy aromatic oils 353

Fluidized reactor

Kinetic modeling of FCC process 315

Formation of crotyl alcohol

Formation of multilayered tin organometallic surface species.
Preparation of new type of supported Sn–Pt catalysts 29

Free radical

Free radical behavior in thermal cracking reaction using petroleum heavy oil and model compounds 281

Fuel

Recent developments in fixed-bed catalytic residue upgrading 203

Ga(III)–Al(III) pillar precursors

Study of pillar precursors [Ga(III)–Al(III), Ln(III)–Al(III), Zr(IV)] for hydrothermally stable pillared clays 69

Gas chromatography

High-temperature simulated distillation GC analysis of petroleum resids and their products from catalytic upgrading over Co–Mo/Al₂O₃ catalyst 187

HDN

TPD and XRD studies of molybdenum nitride and its activity for hydrodenitrogenation of carbazole 249

Heavy oil upgrading

The use of coal liquefaction catalysts for coal/oil coprocessing and heavy oil upgrading 291

Heithaus stability evaluation method

Effect of heavy asphaltene on stability of residual oil 347

Heteronuclear hydroxides

Heteronuclear hydroxo complexes of Al(III), REM and some 3d-metals 339

Heteronuclear hydroxo complexes

Heteronuclear hydroxo complexes of Al(III), REM and some 3d-metals 339

HYCON

The shell residue hydroconversion process: development and achievements 217

Hydroconversion

Catalysis of iron sulfates on hydroconversion of 1-methylnaphthalene 161

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

Hydrodealkylation

A new hydrodealkylation process with fluid-beds to produce high purity naphthalene and methylnaphthalenes from heavy aromatic oils 353

Hydrodesulfurization catalysts

Relationship between hydrodesulfurization activity and morphological and structural changes in NiW hydrotreating catalysts supported on Al₂O₃–TiO₂ mixed oxides 123

Hydrodesulfurization

A new concept for catalysts of asphaltene conversion 225

Ex situ sulfidation by alkylpolysulfides: A route for the preparation of highly dispersed supported sulfides 111

Mesoporous molecular sieve MCM-41 supported Co–Mo catalyst for hydrodesulfurization of petroleum resids 261

New selective Mo and NiMo HDS catalysts supported on Al₂O₃–MgO(x) mixed oxides 135

Preparation of MoS₂ catalysts by in situ decomposition of tetraalkylammonium thiomolybdates 117

Hydrogen transfer

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

Hydrogenation of crotonaldehyde

Formation of multilayered tin organometallic surface species.
Preparation of new type of supported Sn–Pt catalysts 29

Hydroprocessing

Challenges, catalyst technology and catalytic solutions in resid FCC 305

Recent developments in fixed-bed catalytic residue upgrading 203

Hydrotreating catalysts

New selective Mo and NiMo HDS catalysts supported on Al₂O₃–MgO(x) mixed oxides 135

Hydrotreating

Kinetics of resid hydrotreating reactions 233

Hydrotreatment

A new concept for catalysts of asphaltene conversion 225

- Recent developments in fixed-bed catalytic residue upgrading 203
- In situ activation
Preparation of MoS_2 catalysts by in situ decomposition of tetraalkylammonium thiomolybdates 117
- Iron sulfates catalyst
Catalysis of iron sulfates on hydroconversion of 1-methylnaphthalene 161
- Kinetic modeling
Kinetic modeling of FCC process 315
- Kinetics
Kinetics of resid hydrotreating reactions 233
- Light cycle oil
A new hydrodealkylation process with fluid-beds to produce high purity naphthalene and methylnaphthalenes from heavy aromatic oils 353
- $\text{Ln(III)}\text{--Al(III)}$ pillar precursors
Study of pillar precursors $[\text{Ga(III)}\text{--Al(III)}, \text{Ln(III)}\text{--Al(III)}, \text{Zr(IV)}]$ for hydrothermally stable pillared clays 69
- Magnesia
New selective Mo and NiMo HDS catalysts supported on $\text{Al}_2\text{O}_3\text{--MgO}(x)$ mixed oxides 135
- Maleic anhydride by butane oxidation
Supported VPO catalysts for selective oxidation of butane III: Effect of preparation procedure and SiO_2 support 101
- MCM-41
Mesoporous molecular sieve MCM-41 supported Co–Mo catalyst for hydrodesulfurization of petroleum resids 261
- Mechanochemistry
Preparation of MoS_2 catalysts by in situ decomposition of tetraalkylammonium thiomolybdates 117
- Mesoporous oxide
The preparation of high surface area $\text{CeO}_2\text{--ZrO}_2$ mixed oxides by a surfactant-assisted approach 79
- Metal sulfides
Ex situ sulfidation by alkylpolysulfides: A route for the preparation of highly dispersed supported sulfides 111
- 1-methylnaphthalene
Catalysis of iron sulfates on hydroconversion of 1-methylnaphthalene 161
- Methylnaphthalene
A new hydrodealkylation process with fluid-beds to produce high purity naphthalene and methylnaphthalenes from heavy aromatic oils 353
- Molecular modeling
Hydrocarbon absorption in tetrachloroaluminate catalysts effects of catalyst cation, hydrocarbon polarity and charge transfers via molecular modeling 327
- Molybdenum Nitride
TPD and XRD studies of molybdenum nitride and its activity for hydrodenitrogenation of carbazole 249
- MoS_2
Preparation of MoS_2 catalysts by in situ decomposition of tetraalkylammonium thiomolybdates 117
- Moving bed
The shell residue hydroconversion process: development and achievements 217
- Naphthalene
A new hydrodealkylation process with fluid-beds to produce high purity naphthalene and methylnaphthalenes from heavy aromatic oils 353
- Nb_2O_5
Effect of preparation method on the properties of Nb_2O_5 promoted platinum catalysts 3
- $\text{Nb}_2\text{O}_5/\text{Al}_2\text{O}_3$
Effect of preparation method on the properties of Nb_2O_5 promoted platinum catalysts 3
- Nickel–molybdenum/magnesia
New selective Mo and NiMo HDS catalysts supported on $\text{Al}_2\text{O}_3\text{--MgO}(x)$ mixed oxides 135
- NiW
Relationship between hydrodesulfurization activity and morphological and structural changes in NiW hydrotreating catalysts supported on $\text{Al}_2\text{O}_3\text{--TiO}_2$ mixed oxides 123
- NMR
Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171
- Penta-coordinated aluminum
A homogeneously dispersed silica dopant for control of the textural and structural evolution of an alumina aerogel 51
- Peptizability
Effect of heavy asphaltene on stability of residual oil 347
- Petroleum
Recent developments in fixed-bed catalytic residue upgrading 203
- Petroleum resid
Mesoporous molecular sieve MCM-41 supported Co–Mo catalyst for hydrodesulfurization of petroleum resids 261
- Petroleum resids
High-temperature simulated distillation GC analysis of petroleum resids and their products from catalytic upgrading over Co–Mo/ Al_2O_3 catalyst 187
- pH swing
A new concept for catalysts of asphaltene conversion 225
- Polarity
Hydrocarbon absorption in tetrachloroaluminate catalysts effects of catalyst cation, hydrocarbon polarity and charge transfers via molecular modeling 327
- Polynuclear aromatics
Effect of heavy asphaltene on stability of residual oil 347
- Preparation of supported VPO catalysts
Supported VPO catalysts for selective oxidation of butane III: Effect of preparation procedure and SiO_2 support 101
- Pt supported catalysts
Effect of preparation method on the properties of Nb_2O_5 promoted platinum catalysts 3
- Pt/SiO_2 catalyst
Formation of multilayered tin organometallic surface species. Preparation of new type of supported Sn–Pt catalysts 29

Reaction

Kinetics of resid hydrotreating reactions 233

Refining

Recent developments in fixed-bed catalytic residue upgrading 203

Resid

Challenges, catalyst technology and catalytic solutions in resid FCC 305

Kinetics of resid hydrotreating reactions 233

Residue hydroconversion

The shell residue hydroconversion process: development and achievements 217

Residue

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

Sepiolite

A new concept for catalysts of asphaltene conversion 225

Silica-doped alumina

A homogeneously dispersed silica dopant for control of the textural and structural evolution of an alumina aerogel 51

Simulated distillation

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

High-temperature simulated distillation GC analysis of petroleum resids and their products from catalytic upgrading over Co–Mo/Al₂O₃ catalyst 187

Sn–Pt/SiO₂ catalyst

Formation of multilayered tin organometallic surface species. Preparation of new type of supported Sn–Pt catalysts 29

Sulfidation

Ex situ sulfidation by alkylpolysulfides: A route for the preparation of highly dispersed supported sulfides 111

Sulfiding of iron sulfates

Catalysis of iron sulfates on hydroconversion of 1-methylnaphthalene 161

Sulfur

Recent developments in fixed-bed catalytic residue upgrading 203

Surface organometallic chemistry

Formation of multilayered tin organometallic surface species. Preparation of new type of supported Sn–Pt catalysts 29

Tetraalkylammonium thiosalts

Preparation of MoS₂ catalysts by in situ decomposition of tetraalkylammonium thiomolybdates 117

Tetrachloroaluminate catalysts

Hydrocarbon absorption in tetrachloroaluminate catalysts effects of catalyst cation, hydrocarbon polarity and charge transfers via molecular modeling 327

Thin-layer chromatography

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

Tin tetraethyl

Formation of multilayered tin organometallic surface species. Preparation of new type of supported Sn–Pt catalysts 29

TPD

TPD and XRD studies of molybdenum nitride and its activity for hydrodenitrogenation of carbazole 249

TWC

The preparation of high surface area CeO₂–ZrO₂ mixed oxides by a surfactant-assisted approach 79

UV spectrometry

Evaluation of hydroconverted residues. Rationalization of analytical data through hydrogen transfer balance 171

VPO catalysts supported

Supported VPO catalysts for selective oxidation of butane III: Effect of preparation procedure and SiO₂ support 101

XRD

TPD and XRD studies of molybdenum nitride and its activity for hydrodenitrogenation of carbazole 249

Zr(IV) pillar precursor

Study of pillar precursors [Ga(III)–Al(III), Ln(III)–Al(III), Zr(IV)] for hydrothermally stable pillared clays 69

ZrO₂

The preparation of high surface area CeO₂–ZrO₂ mixed oxides by a surfactant-assisted approach 79