

Subject index

Acidity

Characteristics of Pt/H-beta and Pt/H-mordenite catalysts for the isomerization of n-hexane 235

Acid-catalyzed conversion

On the remarkable behaviour of zeolite Beta in acid catalysis 205

Adatom migration

Bifunctional pathways in catalysis by solid acids and bases 339

Alcohol

Nickel hydroxide electrocatalysts for alcohol oxidation reactions: An evaluation by infrared spectroscopy and electrochemical methods 483

Alkylbenzenes

Zeolite based catalysts for linear alkylbenzene production: Dehydrogenation of long chain alkanes and benzene alkylation 243

The liquid phase hydrogenation of benzene and substituted alkylbenzenes over a nickel catalyst in a semi-batch reactor 23

Automotive converter

On the dynamic behavior of automotive catalysts 3

Base catalyst

Selective reactions over solid base catalysts 321

Beckmann rearrangement

Synthesis of intermediate and fine chemicals on heterogeneous catalysts with respect to environmental protection 227

Vapor phase Beckmann rearrangement of cyclohexanone oxime on the zeolite catalysts 249

Bifunctional catalysis

Reduction of nitrogen oxides with hydrocarbons catalyzed by bifunctional catalysts 157

Bifunctional pathway, concerted

Bifunctional pathways in catalysis by solid acids and bases 339

Bifunctional role

The catalytic reduction of SO₂ to elemental sulfur with H₂ or CO 193

Binary transition

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

Bismuth

The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473

Bistability

Bistability and oscillations of the NO/CO reaction on a Pt–Mo supported catalyst 59

Carbon dioxide hydrogenation

CO and CO₂ hydrogenation under mechanochemical treatment 107

Carbon monoxide

Bistability and oscillations of the NO/CO reaction on a Pt–Mo supported catalyst 59

The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473

Carbon monoxide hydrogenation

CO and CO₂ hydrogenation under mechanochemical treatment 107

Catalysis

The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473

Catalyst performance

Low temperature fuel cells: Interactions between catalysts and engineering design 401

Catalyst stability

Steam deactivation of CoZSM-5 NO_x reduction catalysts 175

Catalytic combustion

On the dynamic behavior of automotive catalysts 3

Catalytic reduction

The catalytic reduction of SO₂ to elemental sulfur with H₂ or CO 193

Ceria electrolyte

Development of solid oxide fuel cells based on a Ce(Gd)O_{2-x} electrolyte film for intermediate temperature operation 459

Characterization

Preparation and characterization of titanium-substituted MCM-41 213

Chromatography

Determination of effective diffusivities and transport parameters of porous solids in the Single-Pellet-String-Column 71

Chromium oxide

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

CO oxidation

Forced concentration oscillations of CO and O₂ in CO oxidation over Cu/Al₂O₃ 115

Co-silicate

Evidently advantageous features of metallosilicates as the catalysts for elimination of NO in the exhaust gases containing a large excess of O₂ and H₂O 169

CO₂

Catalytic solutions to reduce pollutants 163

Cobalt catalyst

The effect of water on cobalt Fischer–Tropsch catalysts studied by steady-state isotopic transient kinetic analysis (SSITKA) 79

Coking

Analysis of coke laydown in FCC catalyst through structured catalyst modelling and experimentation 85

Copper

Cu ion siting in high silica zeolites. Spectroscopy and redox properties 199

Forced concentration oscillations of CO and O₂ in CO oxidation over Cu/Al₂O₃ 115

Corrugated parallel bundle model

Analysis of coke laydown in FCC catalyst through structured catalyst modelling and experimentation 85

COS

The catalytic reduction of SO₂ to elemental sulfur with H₂ or CO 193

CoZSM-5

Steam deactivation of CoZSM-5 NO_x reduction catalysts 175

Cu-ZSM-5

Cu ion siting in high silica zeolites. Spectroscopy and redox properties 199

Cyclohexanone oxime

Vapor phase Beckmann rearrangement of cyclohexanone oxime on the zeolite catalysts 249

Deactivation

A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181

The effect of water on cobalt Fischer–Tropsch catalysts studied by steady-state isotopic transient kinetic analysis (SSITKA) 79

Dealumination

Steam deactivation of CoZSM-5 NO_x reduction catalysts 175

Decomposition

Experimental and theoretical studies of NO decomposition and reduction over metal-exchanged ZSM-5 151

Diffusion

Gas transport in porous media under dynamic conditions 31

Dynamic

3-D modeling of monolith reactors 39

Dynamic behavior

On the dynamic behavior of automotive catalysts 3

Effective diffusivity

Determination of effective diffusivities and transport parameters of porous solids in the Single-Pellet-String-Column 71

Electro-oxidation

Mechanism and electrocatalysis in the direct methanol fuel cell 445

The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473

Electrocatalysis

Mechanism and electrocatalysis in the direct methanol fuel cell 445

Electrocatalyst

Development of solid oxide fuel cells based on a Ce(Gd)O_{2-x} electrolyte film for intermediate temperature operation 459

Electrocatalysts for fuel cells 393

Electrochemistry

Nickel hydroxide electrocatalysts for alcohol oxidation reactions: An evaluation by infrared spectroscopy and electrochemical methods 483

Elemental sulfur

The catalytic reduction of SO₂ to elemental sulfur with H₂ or CO 193

Engineering design

Low temperature fuel cells: Interactions between catalysts and engineering design 401

Environmental protection

Synthesis of intermediate and fine chemicals on heterogeneous catalysts with respect to environmental protection 227

Environmental catalysis

Catalytic solutions to reduce pollutants 163

Epoxide rearrangement

Synthesis of intermediate and fine chemicals on heterogeneous catalysts with respect to environmental protection 227

EPR

Characterization of solid acids by spectroscopy 361

EXAFS

Preparation and characterization of titanium-substituted MCM-41 213

External surface

Vapor phase Beckmann rearrangement of cyclohexanone oxime on the zeolite catalysts 249

FCC

Comparison of two dynamic models for FCC units 137

Fischer–Tropsch synthesis

The effect of water on cobalt Fischer–Tropsch catalysts studied by steady-state isotopic transient kinetic analysis (SSITKA) 79

Fixed-bed reactor

Modeling and simulation of SO₂ oxidation in a fixed-bed reactor with periodic flow reversal 47

Flow-reversal operation

Modeling and simulation of SO₂ oxidation in a fixed-bed reactor with periodic flow reversal 47

Forced oscillations

Forced concentration oscillations of CO and O₂ in CO oxidation over Cu/Al₂O₃ 115

Fuel cell

Aspects of the anodic oxidation of methanol 425

Electrocatalysts for fuel cells 393

Low temperature fuel cells: Interactions between catalysts and engineering design 401

Mechanism and electrocatalysis in the direct methanol fuel cell 445

The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473

- H/D exchange**
Activation of small alkanes on strong solid acids: mechanistic approaches 309
- H₂S**
The catalytic reduction of SO₂ to elemental sulfur with H₂ or CO 193
- Honeycomb reactor**
A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181
- Hydrogen**
Catalytic solutions to reduce pollutants 163
Electrocatalysts for fuel cells 393
The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473
- Hydrogen evolution**
Hydrogen spill-over effect on Pt/WO₃ anode catalysts 439
- Hydrogen spill-over effect**
Hydrogen spill-over effect on Pt/WO₃ anode catalysts 439
- Hydrogenation**
The liquid phase hydrogenation of benzene and substituted alkylbenzenes over a nickel catalyst in a semi-batch reactor 23
- In situ FTIR**
In situ FTIR study of the selective catalytic reduction of NO on Pt/ZSM-5 187
Nickel hydroxide electrocatalysts for alcohol oxidation reactions: An evaluation by infrared spectroscopy and electrochemical methods 483
- Infrared spectroscopy**
Characterization of solid acids by spectroscopy 361
- Internal reforming fuel cells**
Catalytic aspects of the steam reforming of hydrocarbons in internal reforming fuel cells 411
- Isomerization**
Characteristics of Pt/H-beta and Pt/H-mordenite catalysts for the isomerization of n-hexane 235
- Kinetics**
Forced concentration oscillations of CO and O₂ in CO oxidation over Cu/Al₂O₃ 115
The liquid phase hydrogenation of benzene and substituted alkylbenzenes over a nickel catalyst in a semi-batch reactor 23
- Low temperature**
Low temperature fuel cells: Interactions between catalysts and engineering design 401
- Lumped kinetic schemes**
Comparison of two dynamic models for FCC units 137
- Mathematical modelling**
Comparison of two dynamic models for FCC units 137
- MCM-41**
Preparation and characterization of titanium-substituted MCM-41 213
- Mechanically induced hydrogenation**
CO and CO₂ hydrogenation under mechanochemical treatment 107
- Mesoporous molecular sieve**
Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221
- Metal exchange**
Experimental and theoretical studies of NO decomposition and reduction over metal-exchanged ZSM-5 151
- Metal ion**
Cu ion siting in high silica zeolites. Spectroscopy and redox properties 199
- Metallosilicate**
Evidently advantageous features of metallosilicates as the catalysts for elimination of NO in the exhaust gases containing a large excess of O₂ and H₂O 169
- Methane reforming**
Use of transient kinetics techniques for studying the methane reforming by carbon dioxide 129
- Methanol**
Electrocatalysts for fuel cells 393
Mechanism and electrocatalysis in the direct methanol fuel cell 445
- Methanol fuel cell**
Aspects of the anodic oxidation of methanol 425
- Methanol reforming**
Development of solid oxide fuel cells based on a Ce(Gd)O_{2-x} electrolyte film for intermediate temperature operation 459
- Mn₂O₃**
Reduction of nitrogen oxides with hydrocarbons catalyzed by bifunctional catalysts 157
- Modeling, 3-D**
3-D modeling of monolith reactors 39
- Monolith reactor**
3-D modeling of monolith reactors 39
- Monolithic reactor**
On the dynamic behavior of automotive catalysts 3
- Mordenite**
A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181
- n-Hexane**
Characteristics of Pt/H-beta and Pt/H-mordenite catalysts for the isomerization of n-hexane 235
- Nickel hydroxide**
Nickel hydroxide electrocatalysts for alcohol oxidation reactions: An evaluation by infrared spectroscopy and electrochemical methods 483
- Nitric oxide**
Bistability and oscillations of the NO/CO reaction on a Pt–Mo supported catalyst 59
Experimental and theoretical studies of NO decomposition and reduction over metal-exchanged ZSM-5 151
A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181
- Nitrogen oxide**
Reduction of nitrogen oxides with hydrocarbons catalyzed by bifunctional catalysts 157
- NMR**
Characterization of solid acids by spectroscopy 361

NO

In situ FTIR study of the selective catalytic reduction of NO on Pt/ZSM-5 187

NO conversion

Evidently advantageous features of metallosilicates as the catalysts for elimination of NO in the exhaust gases containing a large excess of O₂ and H₂O 169

NO_x

Catalytic solutions to reduce pollutants 163

NO_x reduction

Steam deactivation of CoZSM-5 NO_x reduction catalysts 175

Numerical simulation

On the dynamic behavior of automotive catalysts 3

Olefin amination

Synthesis of intermediate and fine chemicals on heterogeneous catalysts with respect to environmental protection 227

Olefin

Zeolite based catalysts for linear alkylbenzene production: Dehydrogenation of long chain alkanes and benzene alkylation 243

Organic synthesis

Selective reactions over solid base catalysts 321

Oscillations

Bistability and oscillations of the NO/CO reaction on a Pt–Mo supported catalyst 59

Oxidation

Hydrogen spill-over effect on Pt/WO₃ anode catalysts 439

Modeling and simulation of SO₂ oxidation in a fixed-bed reactor with periodic flow reversal 47

Nickel hydroxide electrocatalysts for alcohol oxidation reactions: An evaluation by infrared spectroscopy and electrochemical methods 483

Oxide catalysts

Modelling the dynamics of the N₂O reduction on iron oxide 13

Oxygen diffusion

Modelling the dynamics of the N₂O reduction on iron oxide 13

Platinum

Electrocatalysts for fuel cells 393

The promotion of CO electro-oxidation on platinum–bismuth as a model for surface mediated oxygen transfer 473

Platinum-based catalyst

Zeolite based catalysts for linear alkylbenzene production: Dehydrogenation of long chain alkanes and benzene alkylation 243

Platinum–ruthenium catalyst

Aspects of the anodic oxidation of methanol 425

Porous medium

Gas transport in porous media under dynamic conditions 31

Porous solid

Determination of effective diffusivities and transport parameters of porous solids in the Single-Pellet-String-Column 71

Pt–Mo supported catalyst

Bistability and oscillations of the NO/CO reaction on a Pt–Mo supported catalyst 59

Pt/H-beta

Characteristics of Pt/H-beta and Pt/H-mordenite catalysts for the isomerization of n-hexane 235

Pt/H-mordenite

Characteristics of Pt/H-beta and Pt/H-mordenite catalysts for the isomerization of n-hexane 235

Pt/WO₃

Hydrogen spill-over effect on Pt/WO₃ anode catalysts 439

Pt/ZSM-5

In situ FTIR study of the selective catalytic reduction of NO on Pt/ZSM-5 187

Pyridine

Characteristics of Pt/H-beta and Pt/H-mordenite catalysts for the isomerization of n-hexane 235

Reaction kinetics

Comparison of two dynamic models for FCC units 137

Reaction-diffusion dynamics

The liquid phase hydrogenation of benzene and substituted alkylbenzenes over a nickel catalyst in a semi-batch reactor 23

Reactor dynamics

Comparison of two dynamic models for FCC units 137

Redox

Cu ion siting in high silica zeolites. Spectroscopy and redox properties 199

Reduction of NO_x

Reduction of nitrogen oxides with hydrocarbons catalyzed by bifunctional catalysts 157

Reformer

Electrocatalysts for fuel cells 393

Rhenium

The effect of water on cobalt Fischer–Tropsch catalysts studied by steady-state isotopic transient kinetic analysis (SSITKA) 79

Selective catalytic reduction

A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181

In situ FTIR study of the selective catalytic reduction of NO on Pt/ZSM-5 187

Siding

Cu ion siting in high silica zeolites. Spectroscopy and redox properties 199

Silicalite

Vapor phase Beckmann rearrangement of cyclohexanone oxime on the zeolite catalysts 249

Simulation

Modeling and simulation of SO₂ oxidation in a fixed-bed reactor with periodic flow reversal 47

Single-pellet-string column (SPSC)

Determination of effective diffusivities and transport parameters of porous solids in the Single-Pellet-String-Column 71

Sintering plant

A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181

Small-alkane transformation

Activation of small alkanes on strong solid acids: mechanistic approaches 309

Sn-zeolite

Reduction of nitrogen oxides with hydrocarbons catalyzed by bifunctional catalysts 157

SO₂

The catalytic reduction of SO₂ to elemental sulfur with H₂ or CO 193

Solid acid

Bifunctional pathways in catalysis by solid acids and bases 339

Characterization of solid acids by spectroscopy 361

Solid base

Selective reactions over solid base catalysts 321

Solid oxygen fuel cell

Development of solid oxide fuel cells based on a Ce(Gd)O_{2-x} electrolyte film for intermediate temperature operation 459

SSITKA

The effect of water on cobalt Fischer–Tropsch catalysts studied by steady-state isotopic transient kinetic analysis (SSITKA) 79

Steady-state multiplicity

Comparison of two dynamic models for FCC units 137

Steam reforming catalysts

Catalytic aspects of the steam reforming of hydrocarbons in internal reforming fuel cells 411

Stochastic network model

Analysis of coke laydown in FCC catalyst through structured catalyst modelling and experimentation 85

Structured catalyst

Analysis of coke laydown in FCC catalyst through structured catalyst modelling and experimentation 85

Sulfur dioxide

Modeling and simulation of SO₂ oxidation in a fixed-bed reactor with periodic flow reversal 47

Sulfur oxides

Catalytic solutions to reduce pollutants 163

Superacidity

Activation of small alkanes on strong solid acids: mechanistic approaches 309

Textural parameters

Gas transport in porous media under dynamic conditions 31

Tertiary building unit (TBU)

On the remarkable behaviour of zeolite Beta in acid catalysis 205

Thermal stability

Evidently advantageous features of metallosilicates as the catalysts for elimination of NO in the exhaust gases containing a large excess of O₂ and H₂O 169

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

Ti-substituted

Preparation and characterization of titanium-substituted MCM-41 213

Transient kinetics

Modelling the dynamics of the N₂O reduction on iron oxide 13

Transient technique

Use of transient kinetics techniques for studying the methane reforming by carbon dioxide 129

Transition electron microscopy

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

Unsteady gas transport

Gas transport in porous media under dynamic conditions 31

X-ray diffraction

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

XANES

Preparation and characterization of titanium-substituted MCM-41 213

XPS

Characterization of solid acids by spectroscopy 361

XRD

Preparation and characterization of titanium-substituted MCM-41 213

Zeolite

A pilot plant study for selective catalytic reduction of NO by NH₃ over mordenite-type zeolite catalysts 181

Cu ion siting in high silica zeolites. Spectroscopy and redox properties 199

Experimental and theoretical studies of NO decomposition and reduction over metal-exchanged ZSM-5 151

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

Synthesis of intermediate and fine chemicals on heterogeneous catalysts with respect to environmental protection 227

Zeolite based catalysts for linear alkylbenzene production: Dehydrogenation of long chain alkanes and benzene alkylation 243

Zeolite A

Vapor phase Beckmann rearrangement of cyclohexanone oxime on the zeolite catalysts 249

Zeolite Beta

On the remarkable behaviour of zeolite Beta in acid catalysis 205

Zirconium hydride

CO and CO₂ hydrogenation under mechanochemical treatment 107

Zirconium oxide

Mesoporous molecular sieve with binary transition metal (Zr–Cr) oxide framework 221

Zirconium–nickel alloy

CO and CO₂ hydrogenation under mechanochemical treatment 107

Zirconium–nickel hydride

CO and CO₂ hydrogenation under mechanochemical treatment 107