



Subject index

Activation energy

Gas phase hydrogenation of phenol over supported palladium catalysts 65

Kinetics of alkane reactions on metal catalysts: activation energies and the compensation effect 41

Adsorbed cations

An investigation into the preparation of high surface area zirconia 131

Adsorption

Gas phase hydrogenation of phenol over supported palladium catalysts 65

AFI topology

Synthesis of large molecular sieve crystals with the AFI (AlPO₄-5) topology 261

Alkane hydrogenolysis

Kinetics of alkane reactions on metal catalysts: activation energies and the compensation effect 41

AlPO₄-5

Synthesis, characterization and catalytic properties of ZrAPO-5 $267\,$

Alumina catalyst

Carbonyl sulphide hydrolysis using alumina catalysts 99

Ammoxidation catalysis

Advances and future trends in selective oxidation and ammoxidation catalysis 141

(amm)Oxidation

Time on stream behaviour in the (amm)oxidation of propene/ propane over iron antimony oxide: cyclic operation 155

Antimonates

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Aromatics

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Enhancement in the reaction rates in the hydroxylation of aromatics over TS-1/H₂O₂ under solvent-free triphase conditions 185

Attenuated total reflection (ATR)

Application of infrared ATR spectroscopy to in situ reaction monitoring 411

Autoxidation

Cobalt-containing molecular sieves as catalysts for the low conversion autoxidation of pure cyclohexane. Part II. A kinetic study 177

Benzyl chloride

Para-selective chlorination of benzyl chloride to 4-chlorobenzyl chloride over zeolite catalysts 245

A comparative study on H₂SO₄, HNO₃ and HClO₄ treated metakaolinite of a natural kaolinite as Friedel–Crafts alkylation catalyst 321

BET

Transformations of ferrihydrite during calcination and sulphidation 79

Bimetallic catalysts

Fluidised bed reactor studies of H_2S decomposition over supported bimetallic Ru catalysts 23

Butanol

Catalysed synthesis of 4-heptanone from 1-butanol 71

n-Butenes

IR studies on the activation of C–H hydrocarbon bonds on oxidation catalysts 453

C-H hydrocarbon bond

IR studies on the activation of C-H hydrocarbon bonds on oxidation catalysts 453

C₈-aromatics

Zeolite containing catalysts for the conversion of C_8 -aromatics fractions 211

Ca²⁺-montmorillonite clay

Ultrasonication: a competitive method of intercalation for the preparation of alumina pillared montmorillonite catalyst 313

Carbon monoxide

Molybdenum catalyzed ethylene carbonylation. II. Spectroscopic investigation of the reactions and equilibria of molybdenum hexacarbonyl and molybdenum halocarbonyls under reaction conditions 431

Carbon rods

Characterisation of Co/Mg/Al₂O₃ high pressure partial oxidation catalysts 11

Carbonyl sulphide

Carbonyl sulphide hydrolysis using alumina catalysts 99

Carbonylation

Molybdenum catalyzed ethylene carbonylation. II. Spectroscopic investigation of the reactions and equilibria of molybdenum hexacarbonyl and molybdenum halocarbonyls under reaction conditions 431

Catalysts

Designing oxidation catalysts 105

Catalytic materials

From layer compounds to catalytic materials 303

Cerium oxide

Catalysed synthesis of 4-heptanone from 1-butanol 71

Doping effects of cerium oxide on Ni/Al_2O_3 catalysts for methanation 17

Chemometrics

Recent progress in diffuse reflectance spectroscopy of supported metal oxide catalysts 441

Clavs

From layer compounds to catalytic materials 303

CO chemisorption

Preparation of highly dispersed molybdenum on alumina by thermal decomposition of Mo(CO)₆ 123

Co

The effect of sulfur on supported cobalt Fischer–Tropsch catalysts 33

Cobalt

Characterisation of $\text{Co/Mg/Al}_2\text{O}_3$ high pressure partial oxidation catalysts 11

Coking

Catalysts for the control of coking during steam reforming 3 Compensation phenomena

Kinetics of alkane reactions on metal catalysts: activation energies and the compensation effect 41

Crystal size

Pore size and crystal size effects on the selective hydroisomerisation of C_8 paraffins over Pt–Pd/SAPO-11, Pt–Pd/SAPO-41 bifunctional catalysts 285

CVD

Enhancement of acidity and paraselectivity by the silynation in pentasil zeolites 201

Cyclic operation

Time on stream behaviour in the (amm)oxidation of propene/ propane over iron antimony oxide: cyclic operation 155

Cyclohexanol and cyclohexanone

Cobalt-containing molecular sieves as catalysts for the low conversion autoxidation of pure cyclohexane. Part II. A kinetic study 177

Deactivation

Characterisation of Co/Mg/Al₂O₃ high pressure partial oxidation catalysts 11

Deep HDS

Gas oil deep hydrodesulfurization: refractory compounds and retarded kinetics 87

Diffuse reflectance spectroscopy

Recent progress in diffuse reflectance spectroscopy of supported metal oxide catalysts 441

Digestion

An investigation into the preparation of high surface area zirconia 131

Diisopropyl ether

Single stage synthesis of diisopropyl ether – an alternative octane enhancer for lead-free petrol 327

Diphenylmethane

A comparative study on H2SO4, HNO3 and HClO4 treated

metakaolinite of a natural kaolinite as Friedel–Crafts alkylation catalyst 321

Dispersion

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Gas phase hydrogenation of phenol over supported palladium catalysts 65

Disproportionation

Enhancement of acidity and paraselectivity by the silynation in pentasil zeolites 201

Etherification

Single stage synthesis of diisopropyl ether – an alternative octane enhancer for lead-free petrol 327

Ethylbenzene

Zeolite containing catalysts for the conversion of C_8 -aromatics fractions 211

Ethylen

Molybdenum catalyzed ethylene carbonylation. II. Spectroscopic investigation of the reactions and equilibria of molybdenum hexacarbonyl and molybdenum halocarbonyls under reaction conditions 431

Ferrihydrite

Transformations of ferrihydrite during calcination and sulphidation 79

Fischer-Tropsch

The effect of sulfur on supported cobalt Fischer-Tropsch catalysts 33

Fluidised bed reactor

Fluidised bed reactor studies of H_2S decomposition over supported bimetallic Ru catalysts 23

Friedel-Crafts acylation

Acylation of aromatic compounds on H-Beta zeolites 237

Friedel-Crafts alkylation

A comparative study on H₂SO₄, HNO₃ and HClO₄ treated metakaolinite of a natural kaolinite as Friedel–Crafts alkylation catalyst 321

Fries rearrangement

Acylation of aromatic compounds on H-Beta zeolites 237

Synthesis, characterization and catalytic properties of ZrAPO-5 267

Gallium oxide

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Gas of

Gas oil deep hydrodesulfurization: refractory compounds and retarded kinetics 87

H-Beta zeolite

Acylation of aromatic compounds on H-Beta zeolites 237 H₂S decomposition

Fluidised bed reactor studies of H_2S decomposition over supported bimetallic Ru catalysts 23

Hard-soft acid-base (HSAB) principle

Influence of zeolite composition on the selectivity of alkylation reaction for the synthesis of *p*-isobutylethylbenzene: a computational study 221

Hematite

Transformations of ferrihydrite during calcination and sulphidation 79

Hentanone

Catalysed synthesis of 4-heptanone from 1-butanol 71

Heterogenization

Cobalt-containing molecular sieves as catalysts for the low conversion autoxidation of pure cyclohexane. Part II. A kinetic study 177

Horizontal ATR technique

Application of infrared ATR spectroscopy to in situ reaction monitoring 411

Hydration

Single stage synthesis of diisopropyl ether – an alternative octane enhancer for lead-free petrol 327

Hydrogenation

Hydrogenation of *p*-isobutyl acetophenone using a Ru/Al₂O₃ catalyst: reaction kinetics and modelling of a semi-batch slurry reactor 49

Hydroisomerisation

Pore size and crystal size effects on the selective hydroisomerisation of C_8 paraffins over Pt–Pd/SAPO-11, Pt–Pd/SAPO-41 bifunctional catalysts 285

Hydroisomerization of *n*-hexane over Pt–SAPO-11 and Pt–SAPO-31 molecular sieves 293

Hydrolysis

Carbonyl sulphide hydrolysis using alumina catalysts 99 Hydrotalcite

Structure activity relationship in Pd/hydrotalcite: effect of calcination of hydrotalcite on palladium dispersion and phenol hydrogenation 57

Hydrous zirconia

An investigation into the preparation of high surface area zirconia 131

Hydroxylation

Enhancement in the reaction rates in the hydroxylation of aromatics over TS-1/H₂O₂ under solvent-free triphase conditions 185

In situ IR

Surface acidity of MCM-41 by in situ IR studies of pyridine adsorption 253

IR spectra of adsorbed CO

The effect of sulfur on supported cobalt Fischer–Tropsch catalysts 33

IR-ATR spectra

Application of infrared ATR spectroscopy to in situ reaction monitoring 411

Isobutane/butene alkylation

Isobutane/butene alkylation on solid catalysts. Where do we stand? 193

p-Isobutylethylbenzene

Influence of zeolite composition on the selectivity of alkylation

reaction for the synthesis of p-isobutylethylbenzene: a computational study 221

Isopropanol

Direct oxidation of propane to isopropanol 171

Single stage synthesis of diisopropyl ether – an alternative octane enhancer for lead-free petrol 327

Kinetic modelling

Hydrogenation of p-isobutyl acetophenone using a Ru/Al₂O₃ catalyst: reaction kinetics and modelling of a semi-batch slurry reactor 49

Kinetics

Cobalt-containing molecular sieves as catalysts for the low conversion autoxidation of pure cyclohexane. Part II. A kinetic study 177

Gas phase hydrogenation of phenol over supported palladium catalysts 65

Langmuir-Hinshelwood kinetics

Carbonyl sulphide hydrolysis using alumina catalysts 99

Large crystals

Synthesis of large molecular sieve crystals with the AFI (AlPO $_4$ -5) topology 261

Layer compounds

From layer compounds to catalytic materials 303

Light hydrocarbons

Selective oxidation of light hydrocarbons over promoted vanadyl pyrophosphate 161

Magic angle spinning

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

Magnesium oxide

Catalysed synthesis of 4-heptanone from 1-butanol 71

MAS NMR

Surface acidity of MCM-41 by in situ IR studies of pyridine adsorption 253

Matrix effect

Gas oil deep hydrodesulfurization: refractory compounds and retarded kinetics 87

MCM-41

Surface acidity of MCM-41 by in situ IR studies of pyridine adsorption 253

Metakaolinite

A comparative study on $\rm H_2SO_4$, $\rm HNO_3$ and $\rm HClO_4$ treated metakaolinite of a natural kaolinite as Friedel–Crafts alkylation catalyst 321

Metal area

Gas phase hydrogenation of phenol over supported palladium catalysts 65

Metal dispersion measurement

Preparation of highly dispersed molybdenum on alumina by thermal decomposition of Mo(CO)₆ 123

Metal-catalysed

Kinetics of alkane reactions on metal catalysts: activation energies and the compensation effect 41

Metal-containing aluminophosphate

Characterization of metal-incorporated molecular sieves 277

Designing oxidation catalysts 105

Methylamines

Improved selectivity to lower substituted methylamines using hydrothermally treated zeolite Rho 229

Mineral acid activation

A comparative study on H_2SO_4 , HNO_3 and $HClO_4$ treated metakaolinite of a natural kaolinite as Friedel–Crafts alkylation catalyst 321

Molecular sieves

Characterization of metal-incorporated molecular sieves 277

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Molybdenum

Molybdenum catalyzed ethylene carbonylation. II. Spectroscopic investigation of the reactions and equilibria of molybdenum hexacarbonyl and molybdenum halocarbonyls under reaction conditions 431

Preparation of highly dispersed molybdenum on alumina by thermal decomposition of Mo(CO)₆ 123

Monolayer

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Mulliken population

Influence of zeolite composition on the selectivity of alkylation reaction for the synthesis of p-isobutylethylbenzene: a computational study 221

Ni/Al₂O₃

Doping effects of cerium oxide on Ni/Al₂O₃ catalysts for methanation 17

Olefins

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Organic pollutants

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

Oxidation

Designing oxidation catalysts 105

Direct oxidation of propane to isopropanol 171

Oxy-dehydrogenation

IR studies on the activation of C–H hydrocarbon bonds on oxidation catalysts 453

Oxydehydrogenation

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Oxygen chemisorption

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Palladium dispersion

Structure activity relationship in Pd/hydrotalcite: effect of calcination of hydrotalcite on palladium dispersion and phenol hydrogenation 57

Paradiethylbenzene

Enhancement of acidity and paraselectivity by the silynation in pentasil zeolites 201

Paraffins

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Partial oxidation reaction

Characterisation of $\text{Co/Mg/Al}_2\text{O}_3$ high pressure partial oxidation catalysts 11

Para-selective chlorination

Para-selective chlorination of benzyl chloride to 4-chlorobenzyl chloride over zeolite catalysts 245

Petroleum refining

Isobutane/butene alkylation on solid catalysts. Where do we stand? 193

pН

An investigation into the preparation of high surface area zirconia 131

Phenol hydrogenation

Structure activity relationship in Pd/hydrotalcite: effect of calcination of hydrotalcite on palladium dispersion and phenol hydrogenation 57

Phosphates

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Photocatalysis

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

Phthalocyanine

Direct oxidation of propane to isopropanol 171

Pillaring

From layer compounds to catalytic materials 303

³¹P MAS NMR spectroscopy

Synthesis of large molecular sieve crystals with the AFI (AlPO $_{\! 4^-}$ 5) topology 261

Pore size

Pore size and crystal size effects on the selective hydroisomerisation of C_8 paraffins over Pt–Pd/SAPO-11, Pt–Pd/SAPO-41 bifunctional catalysts 285

Porous structures

From layer compounds to catalytic materials 303

Precipitation

Transformations of ferrihydrite during calcination and sulphidation 79

Propan-2-ol

Ultrasonication: a competitive method of intercalation for the preparation of alumina pillared montmorillonite catalyst 313

Propane

Direct oxidation of propane to isopropanol 171

Pt-SAPO-11

Hydroisomerization of *n*-hexane over Pt–SAPO-11 and Pt–SAPO-31 molecular sieves 293

Pt-SAPO-31

Hydroisomerization of *n*-hexane over Pt–SAPO-11 and Pt–SAPO-31 molecular sieves 293

Pyridine

Surface acidity of MCM-41 by in situ IR studies of pyridine adsorption 253

Pyrrhotite

Transformations of ferrihydrite during calcination and sulphidation 79

Ouantitation

Recent progress in diffuse reflectance spectroscopy of supported metal oxide catalysts 441

Reaction monitoring

Application of infrared ATR spectroscopy to in situ reaction monitoring 411

Reformulated gasoline

Isobutane/butene alkylation on solid catalysts. Where do we stand? 193

Refractory sulfur compounds

Gas oil deep hydrodesulfurization: refractory compounds and retarded kinetics 87

Regio-selectivity

Enhancement in the reaction rates in the hydroxylation of aromatics over TS-1/H₂O₂ under solvent-free triphase conditions 185

Ruthenium

Fluidised bed reactor studies of H_2S decomposition over supported bimetallic Ru catalysts 23

SAPO

Pore size and crystal size effects on the selective hydroisomerisation of C_8 paraffins over Pt–Pd/SAPO-11, Pt–Pd/SAPO-41 bifunctional catalysts 285

Selective inhibition

Gas oil deep hydrodesulfurization: refractory compounds and retarded kinetics 87

Selective oxidation

Advances and future trends in selective oxidation and ammoxidation catalysis 141

Selective oxidation of light hydrocarbons over promoted vanadyl pyrophosphate 161

Selectivity

Improved selectivity to lower substituted methylamines using hydrothermally treated zeolite Rho 229

SIMPLISMA

Recent progress in diffuse reflectance spectroscopy of supported metal oxide catalysts 441

SiO₂

The effect of sulfur on supported cobalt Fischer–Tropsch catalysts 33

Solid acids

Isobutane/butene alkylation on solid catalysts. Where do we stand? 193

Solid-state NMR

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

Steam reforming

Catalysts for the control of coking during steam reforming 3

Stream behaviour

Time on stream behaviour in the (amm)oxidation of propene/propane over iron antimony oxide: cyclic operation 155

Sulphidation

Transformations of ferrihydrite during calcination and sulphidation 79

Supported catalysts

The effect of sulfur on supported cobalt Fischer-Tropsch catalysts 33

Surface chemistry

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

Surface processes

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

Synthesis gas

Catalysts for the control of coking during steam reforming 3 ynthesis

Synthesis of large molecular sieve crystals with the AFI (AlPO $_4$ -5) topology 261

Temperature programmed methanation

Doping effects of cerium oxide on Ni/Al₂O₃ catalysts for methanation 17

Temperature programmed reduction

Doping effects of cerium oxide on Ni/Al₂O₃ catalysts for methanation 17

TEOS

Enhancement of acidity and paraselectivity by the silynation in pentasil zeolites 201

Thermal stability

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

TiO_2

The effect of sulfur on supported cobalt Fischer–Tropsch catalysts 33

Titania-alumina

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Titania-silica

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Titania-zirconia

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Titanium silicate TS-1

Enhancement in the reaction rates in the hydroxylation of aromatics over TS-1/H₂O₂ under solvent-free triphase conditions 185

Titanium-based catalysts

In situ solid-state NMR studies of ethanol photocatalysis: characterization of surface sites and their reactivities 353

TPD of ammonia

Synthesis, characterization and catalytic properties of ZrAPO-5 267

TPR

The effect of sulfur on supported cobalt Fischer-Tropsch catalysts 33

TPS

Transformations of ferrihydrite during calcination and sulphidation 79

Triphase-catalysis

Enhancement in the reaction rates in the hydroxylation of aromatics over TS-1/H₂O₂ under solvent-free triphase conditions 185

Troilite

Transformations of ferrihydrite during calcination and sulphidation 79

Vanadium oxide

Design of stable and reactive vanadium oxide catalysts supported on binary oxides 115

Vanadyl pyrophosphate

Selective oxidation of light hydrocarbons over promoted vanadyl pyrophosphate 161

VOC destruction

Designing oxidation catalysts 105

XPS

Transformations of ferrihydrite during calcination and sulphidation 79

Xylene

Zeolite containing catalysts for the conversion of C_8 -aromatics fractions 211

m-Xylene isomerization

Synthesis, characterization and catalytic properties of ZrAPO-5 267

Zeolite catalyst

Direct oxidation of propane to isopropanol 171

Zeolite catalysts

Para-selective chlorination of benzyl chloride to 4-chlorobenzyl chloride over zeolite catalysts 245

Zeolite rho

Improved selectivity to lower substituted methylamines using hydrothermally treated zeolite Rho 229

Zeolite 3

Ultrasonication: a competitive method of intercalation for the preparation of alumina pillared montmorillonite catalyst 313

Zeolites

Influence of zeolite composition on the selectivity of alkylation reaction for the synthesis of p-isobutylethylbenzene: a computational study 221

ZrAPO-5

Synthesis, characterization and catalytic properties of ZrAPO-5 267

ZSM-5

Enhancement of acidity and paraselectivity by the silynation in pentasil zeolites 201