



ELSEVIER

Catalysis Today 63 (2000) 553–560



www.elsevier.com/locate/cattod

## Subject index

### A Rh black catalyst

Mechanism of  $\text{N}_2\text{O}$  decomposition over a Rh black catalyst studied by a tracer method. The reaction of  $\text{N}_2\text{O}$  with  $^{18}\text{O}(\text{a})$  413

### Acetaldehyde

Evidence of furan formation from acetaldehyde over  $\beta\text{-UO}_3$  309

### Acetic acid

Unusual selectivity of oxygenate synthesis. Formation of acetic acid from syngas over unpromoted Rh in NaY zeolite 453

### Acetonitrile

A study on the alkali metal-promoted magnesium oxide system used as a catalyst for acrylonitrile synthesis from methanol and acetonitrile 189

### Acetylene

Activation of acetylene selective hydrogenation catalysts using oxygen containing compounds 209

### Acetylene hydrogenation

Selective hydrogenation of acetylene on  $\text{Pd/SiO}_2$  catalysts promoted with Ti, Nb and Ce oxides 183

### Acid

Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257

### Acrylonitrile

A study on the alkali metal-promoted magnesium oxide system used as a catalyst for acrylonitrile synthesis from methanol and acetonitrile 189

### Activated carbon

Low-temperature complete oxidation of BTX on Pt/activated carbon catalysts 419

### Activated carbon fiber

Preparation of efficient titanium oxide photocatalysts by an ionized cluster beam (ICB) method and their photocatalytic reactivities for the purification of water 63

### Active intermediates concentration

*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21

### Active sites

Selective hydrogenation of methyl oleate into unsaturated alcohols. Relationships between catalytic properties and composition of cobalt–tin catalysts 87

### Alkane activation

Dehydroisomerisation of *n*-butane over (Pt,Cu)/H-TON catalysts 237

Effect of the activation procedure on the performance of Mo/H-MFI catalysts for the non-oxidative conversion of methane to aromatics 461

### Alkylation

Balancing acidity and basicity for highly selective and stable modified MgO catalysts in the alkylation of phenol with methanol 229

Influence of aluminium sources on the synthesis and catalytic activity of mesoporous AIMCM-41 molecular sieves 291

### AIMCM-41

Influence of aluminium sources on the synthesis and catalytic activity of mesoporous AIMCM-41 molecular sieves 291

### Ammonia

Influence of cycle parameters on periodically operated fluidised bed reactor for  $\text{CH}_4$  autoreforming 507

### $\text{Ar}^+$ -sputtered surfaces

The influence of surface defects on ethanol dehydrogenation versus dehydration on the  $\text{UO}_2(1\ 1\ 1)$  surface 283

### Arabinose

Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257

### Asymmetric hydroformylation

A new chiral diphosphine ligand and its asymmetric induction in catalytic hydroformylation of olefins 531

### Asymmetric hydrolysis

The catalytic activity of new chiral salen complexes immobilized on MCM-41 in the asymmetric hydrolysis of epoxides to diols 537

### Atmospheric pressure

Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249

### Autocatalysis

Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257

### Automotive exhaust

Design of advanced automotive exhaust catalysts 337

### Autothermal reforming

Autothermal  $\text{CO}_2$  reforming of methane over NiO–MgO solid solution catalysts under pressurized condition. Effect of fluidized bed reactor and its promoting mechanism 439

### Bagasse

Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257

### Base catalysis

Acid–base properties and active site requirements for elimination reactions on alkali-promoted MgO catalysts 53

- Beckmann rearrangement  
B<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> for Beckmann rearrangement of cyclohexanone oxime: optimizing of the catalyst and reaction atmosphere 275
- Benzaldehyde  
NEXAFS investigation of benzaldehyde reductive coupling to form stilbene on reduced surfaces of TiO<sub>2</sub>(0 0 1) 43
- Benzene  
Methylation of benzene with methanol over zeolite catalysts in a low pressure flow reactor 471
- Binary oxides  
Vanadium-containing catalysts for the selective oxidation of H<sub>2</sub>S to elemental sulfur in the presence of excess water 405
- Biomass gasification  
Development of Ni catalysts for gas production from biomass gasification. Reactivity in steam- and dry-reforming 427
- B<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub>  
B<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> for Beckmann rearrangement of cyclohexanone oxime: optimizing of the catalyst and reaction atmosphere 275
- Boundary layer  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387
- BTX  
Low-temperature complete oxidation of BTX on Pt/activated carbon catalysts 419
- n*-Butane isomerization  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- n*-Butane upgrading  
Dehydroisomerisation of *n*-butane over (Pt,Cu)/H-TON catalysts 237
- Butene  
Migration of butene isomers onto the acidic OH groups in small micropores of ferrierite 305
- Butene alkylation  
Performance of potassium 12-tungstophosphoric salts as catalysts for isobutane/butene alkylation in subcritical and supercritical phases 223
- p*-*t*-Butylphenol  
Influence of aluminium sources on the synthesis and catalytic activity of mesoporous AlMCM-41 molecular sieves 291
- Carbides  
Effect of the activation procedure on the performance of Mo/H-MFI catalysts for the non-oxidative conversion of methane to aromatics 461
- Carbon  
The effect of various sulfides on carbon deposition on nickel-iron particles 3
- Carbon monoxide  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387
- Carbon monoxide hydrogenation  
Active sites in Cu/ZnO/ZrO<sub>2</sub> catalysts for methanol synthesis from CO/H<sub>2</sub> 447
- Carbon particulate  
Simultaneous removal of NO and carbon particulates over lanthanoid perovskite-type catalysts 397
- Carbonylation  
Easily separable molecular catalysis 147
- Carboxylic acid  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249
- Catalysis  
Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387
- Catalyst  
Ferric-sulfide-based catalysts made using reverse micelles: Effect of preparation on performance in coal liquefaction 33
- Catalyst preparation  
B<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> for Beckmann rearrangement of cyclohexanone oxime: optimizing of the catalyst and reaction atmosphere 275
- Catalytic activity  
Effects of methane and oxygen on decomposition of nitrous oxide over metal oxide catalysts 347
- Catalytic conversion  
Catalytic conversion of methane to more useful chemicals and fuels: a challenge for the 21st century 165
- Catalytic converter  
Position dependent phenomena during deactivation of three-way catalytic converters on vehicles 371
- Catalytic oxidation  
Low-temperature complete oxidation of BTX on Pt/activated carbon catalysts 419
- Catalytic packed bed membrane reactor  
Modeling and simulation of non-isothermal catalytic packed bed membrane reactor for H<sub>2</sub>S decomposition 379
- Catalytic wet air oxidation  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249
- CBrF<sub>3</sub>  
Non-oxidative reaction of CBrF<sub>3</sub> with methane over NiZSM-5 and HZSM-5 355
- C–C bond  
The reactions of ethanol over M/CeO<sub>2</sub> catalysts. Evidence of carbon–carbon bond dissociation at low temperatures over Rh/CeO<sub>2</sub> 327
- Ceria  
Design of advanced automotive exhaust catalysts 337
- Ceria particle size  
Position dependent phenomena during deactivation of three-way catalytic converters on vehicles 371
- Ceria–zirconia  
Design of advanced automotive exhaust catalysts 337
- Cerium aluminate  
Position dependent phenomena during deactivation of three-way catalytic converters on vehicles 371
- Cerium barium magnesium hexaaluminate  
Position dependent phenomena during deactivation of three-way catalytic converters on vehicles 371
- Cerium oxide  
Partial oxidation of methane to synthesis gas: Elimination of gas phase oxygen 489

**Chabazite**

FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297

**Chemical vapor deposition**

Development of new catalysts for deep hydrodesulfurization of gas oil 123

**Chiral diphosphine**

A new chiral diphosphine ligand and its asymmetric induction in catalytic hydroformylation of olefins 531

**Chlorinated hydrocarbons**

Catalytic removal of perchloroethylene (PCE) over supported chromium oxide catalysts 215

**Chromium oxide catalyst**

Catalytic removal of perchloroethylene (PCE) over supported chromium oxide catalysts 215

**Claus process**

Modeling and simulation of non-isothermal catalytic packed bed membrane reactor for H<sub>2</sub>S decomposition 379

**CO oxidation**

Easily separable molecular catalysis 147

**Coal liquefaction**

Ferric-sulfide-based catalysts made using reverse micelles: Effect of preparation on performance in coal liquefaction 33

**Combustion**

Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387

**Co-MFI**

The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133

**Complete oxidation**

Catalytic removal of perchloroethylene (PCE) over supported chromium oxide catalysts 215

**Contamination**

Position dependent phenomena during deactivation of three-way catalytic converters on vehicles 371

**Conversion**

Ferric-sulfide-based catalysts made using reverse micelles: Effect of preparation on performance in coal liquefaction 33

**Cr<sub>2</sub>O<sub>3</sub> promoted**

Cr<sub>2</sub>O<sub>3</sub> promoted skeletal Cu catalysts for the reactions of methanol steam reforming and water gas shift 499

**Cu/ZnO/ZrO<sub>2</sub> catalyst**

Active sites in Cu/ZnO/ZrO<sub>2</sub> catalysts for methanol synthesis from CO/H<sub>2</sub> 447

**Cu-MFI**

The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133

**CVOCs**

Catalytic removal of perchloroethylene (PCE) over supported chromium oxide catalysts 215

**Cyanogen**

The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133

**Cyclohexanone oxime**

B<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> for Beckmann rearrangement of cyclohexanone oxime: optimizing of the catalyst and reaction atmosphere 275

**Deactivation of sulfated zirconia**

*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21

**Decomposition**

Effects of methane and oxygen on decomposition of nitrous oxide over metal oxide catalysts 347

**Dehydroisomerisation**

Dehydroisomerisation of *n*-butane over (Pt,Cu)/H-TON catalysts 237

**Deodorization**

Purification/deodorization of indoor air and gaseous effluents by TiO<sub>2</sub> photocatalysis 363

**Disproportionation**

Shape selective conversion of 1,2,4-trimethylbenzene over zeolite NU-87 267

**Dry reforming of methane**

Methane reforming with CO<sub>2</sub> over Ni/ZrO<sub>2</sub>-CeO<sub>2</sub> catalysts prepared by sol-gel 71

**Dry-reforming**

Development of Ni catalysts for gas production from biomass gasification. Reactivity in steam- and dry-reforming 427

**Elimination reactions**

Acid-base properties and active site requirements for elimination reactions on alkali-promoted MgO catalysts 53

**Ethanol dehydration**

The influence of surface defects on ethanol dehydrogenation versus dehydration on the UO<sub>2</sub>(1 1 1) surface 283

**Ethanol dehydrogenation**

The influence of surface defects on ethanol dehydrogenation versus dehydration on the UO<sub>2</sub>(1 1 1) surface 283

The reactions of ethanol over M/CeO<sub>2</sub> catalysts. Evidence of carbon-carbon bond dissociation at low temperatures over Rh/CeO<sub>2</sub> 327

**Ethanol-IR**

The reactions of ethanol over M/CeO<sub>2</sub> catalysts. Evidence of carbon-carbon bond dissociation at low temperatures over Rh/CeO<sub>2</sub> 327

**Ethylene polymerization**

Characteristics of ethylene polymerization over Ziegler-Natta/metallocene catalysts. Comparison between hybrid and mixed catalysts 523

**Eu**

FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297

**Excellent correlation**

Methylation of benzene with methanol over zeolite catalysts in a low pressure flow reactor 471

**Fe-MFI**

The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133

**Ferrierite**

Migration of butene isomers onto the acidic OH groups in small micropores of ferrierite 305

- Fin**  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387
- Fischer–Tropsch synthesis**  
Catalytic conversion of methane to more useful chemicals and fuels: a challenge for the 21st century 165
- Fluidized bed reactor**  
Autothermal CO<sub>2</sub> reforming of methane over NiO–MgO solid solution catalysts under pressurized condition. Effect of fluidized bed reactor and its promoting mechanism 439
- Formic acid**  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249
- FTIR**  
Factors controlling the selectivity of V<sub>2</sub>O<sub>5</sub> supported catalysts in the oxidative dehydrogenation of propane 197
- FT-IR**  
FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297
- Furan**  
Evidence of furan formation from acetaldehyde over  $\beta$ -UO<sub>3</sub> 309
- Gas oil**  
Development of new catalysts for deep hydrodesulfurization of gas oil 123
- Gd**  
FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297
- Glucose**  
Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257
- Halon 1301**  
Non-oxidative reaction of CBrF<sub>3</sub> with methane over NiZSM-5 and HZSM-5 355
- Heat extraction**  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387
- Heterogenized homogeneous catalysts**  
Easily separable molecular catalysis 147
- H<sub>2</sub>S decomposition**  
Modeling and simulation of non-isothermal catalytic packed bed membrane reactor for H<sub>2</sub>S decomposition 379
- H<sub>2</sub>S selective oxidation**  
Vanadium-containing catalysts for the selective oxidation of H<sub>2</sub>S to elemental sulfur in the presence of excess water 405
- Hybrid catalyst**  
Characteristics of ethylene polymerization over Ziegler–Natta/metalocene catalysts. Comparison between hybrid and mixed catalysts 523
- Hydrocarbon-SCR**  
The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133
- Hydrodehalogenation**  
Non-oxidative reaction of CBrF<sub>3</sub> with methane over NiZSM-5 and HZSM-5 355
- Hydrodesulfurization**  
Development of new catalysts for deep hydrodesulfurization of gas oil 123
- Hydrogen cyanide**  
The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133
- Hydrolysis**  
Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257
- HZSM-5**  
Non-oxidative reaction of CBrF<sub>3</sub> with methane over NiZSM-5 and HZSM-5 355
- In situ time-resolved FTIR**  
Mechanistic study of partial oxidation of methane to synthesis gas over supported rhodium and ruthenium catalysts using in situ time-resolved FTIR spectroscopy 317
- Indoor air**  
Purification/deodorization of indoor air and gaseous effluents by TiO<sub>2</sub> photocatalysis 363
- Ionized cluster beam method**  
Preparation of efficient titanium oxide photocatalysts by an ionized cluster beam (ICB) method and their photocatalytic reactivities for the purification of water 63
- Iron sulfide**  
Ferric-sulfide-based catalysts made using reverse micelles: Effect of preparation on performance in coal liquefaction 33
- Isobutane**  
The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133
- Isobutane alkylation**  
Performance of potassium 12-tungstophosphoric salts as catalysts for isobutane/butene alkylation in subcritical and supercritical phases 223
- Isomerization**  
Shape selective conversion of 1,2,4-trimethylbenzene over zeolite NU-87 267
- Isotopic transient kinetic analysis**  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- K/MgO**  
A study on the alkali metal-promoted magnesium oxide system used as a catalyst for acrylonitrile synthesis from methanol and acetonitrile 189
- Kinetics**  
Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257  
Kinetics of internal steam reforming of methane on Ni/YSZ-based anodes for solid oxide fuel cells 479
- Maleic acid**  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249

- MCM-22**  
Shape selective conversion of 1,2,4-trimethylbenzene over zeolite NU-87 267
- MCM-41**  
The catalytic activity of new chiral salen complexes immobilized on MCM-41 in the asymmetric hydrolysis of epoxides to diols 537
- Mechanism**  
The mechanism of the selective reduction of nitrogen oxides by hydrocarbons on zeolite catalysts 133
- Mechano-catalyst**  
Mechano-catalytic overall water splitting on some mixed oxides 175
- Mesoporous molecular sieves**  
Influence of aluminium sources on the synthesis and catalytic activity of mesoporous AlMCM-41 molecular sieves 291
- Metal carbonyls**  
Unusual selectivity of oxygenate synthesis. Formation of acetic acid from syngas over unpromoted Rh in NaY zeolite 453
- Metal oxide catalysts**  
Effects of methane and oxygen on decomposition of nitrous oxide over metal oxide catalysts 347
- Metal oxides**  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- Methane**  
Catalytic conversion of methane to more useful chemicals and fuels: a challenge for the 21st century 165  
Non-oxidative reaction of CBrF<sub>3</sub> with methane over NiZSM-5 and HZSM-5 355  
Methylation of benzene with methanol over zeolite catalysts in a low pressure flow reactor 471  
Kinetics of internal steam reforming of methane on Ni/YSZ-based anodes for solid oxide fuel cells 479  
Partial oxidation of methane to synthesis gas: Elimination of gas phase oxygen 489
- Methane activation**  
Easily separable molecular catalysis 147  
New aspects of syngas production and use 159
- Methane upgrading**  
Effect of the activation procedure on the performance of Mo/H-MFI catalysts for the non-oxidative conversion of methane to aromatics 461
- Methanol**  
A study on the alkali metal-promoted magnesium oxide system used as a catalyst for acrylonitrile synthesis from methanol and acetonitrile 189  
Methylation of benzene with methanol over zeolite catalysts in a low pressure flow reactor 471  
Influence of cycle parameters on periodically operated fluidised bed reactor for CH<sub>4</sub> autoreforming 507
- Methanol steam reforming**  
Cr<sub>2</sub>O<sub>3</sub> promoted skeletal Cu catalysts for the reactions of methanol steam reforming and water gas shift 499
- Methanol synthesis**  
Active sites in Cu/ZnO/ZrO<sub>2</sub> catalysts for methanol synthesis from CO/H<sub>2</sub> 447
- Methyl oleate**  
Selective hydrogenation of methyl oleate into unsaturated alcohols. Relationships between catalytic properties and composition of cobalt–tin catalysts 87
- Methylation**  
Methylation of benzene with methanol over zeolite catalysts in a low pressure flow reactor 471
- Mixed catalyst**  
Characteristics of ethylene polymerization over Ziegler–Natta/metalloocene catalysts. Comparison between hybrid and mixed catalysts 523
- Mixed oxides**  
Mechano-catalytic overall water splitting on some mixed oxides 175
- Modified magnesium oxides**  
Balancing acidity and basicity for highly selective and stable modified MgO catalysts in the alkylation of phenol with methanol 229
- Monolith**  
Position dependent phenomena during deactivation of three-way catalytic converters on vehicles 371
- Montmorillonite**  
Easily separable molecular catalysis 147
- New chiral salen complexes**  
The catalytic activity of new chiral salen complexes immobilized on MCM-41 in the asymmetric hydrolysis of epoxides to diols 537
- NEXAFS**  
NEXAFS investigation of benzaldehyde reductive coupling to form stilbene on reduced surfaces of TiO<sub>2</sub>(0 0 1) 43
- Ni/ZrO<sub>2</sub>–CeO<sub>2</sub> catalyst**  
Methane reforming with CO<sub>2</sub> over Ni/ZrO<sub>2</sub>–CeO<sub>2</sub> catalysts prepared by sol–gel 71
- Nickel–iron particles**  
The effect of various sulfides on carbon deposition on nickel–iron particles 3
- Nickel–olivine interaction**  
Development of Ni catalysts for gas production from biomass gasification. Reactivity in steam- and dry-reforming 427
- NiO–MgO solid solution**  
Autothermal CO<sub>2</sub> reforming of methane over NiO–MgO solid solution catalysts under pressurized condition. Effect of fluidized bed reactor and its promoting mechanism 439
- Nitrous oxide**  
Effects of methane and oxygen on decomposition of nitrous oxide over metal oxide catalysts 347
- Ni-YSZ anode**  
Kinetics of internal steam reforming of methane on Ni/YSZ-based anodes for solid oxide fuel cells 479
- NiZSM-5**  
Non-oxidative reaction of CBrF<sub>3</sub> with methane over NiZSM-5 and HZSM-5 355
- NO**  
FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297

- NO<sub>x</sub>**  
Simultaneous removal of NO and carbon particulates over lanthanoid perovskite-type catalysts 397
- N<sub>2</sub>O decomposition**  
Mechanism of N<sub>2</sub>O decomposition over a Rh black catalyst studied by a tracer method. The reaction of N<sub>2</sub>O with <sup>18</sup>O(a) 413
- N<sub>2</sub>O pretreatment**  
Activation of acetylene selective hydrogenation catalysts using oxygen containing compounds 209
- NU-87**  
Shape selective conversion of 1,2,4-trimethylbenzene over zeolite NU-87 267
- <sup>18</sup>O isotope**  
Mechanism of N<sub>2</sub>O decomposition over a Rh black catalyst studied by a tracer method. The reaction of N<sub>2</sub>O with <sup>18</sup>O(a) 413
- ODH of propane**  
Factors controlling the selectivity of V<sub>2</sub>O<sub>5</sub> supported catalysts in the oxidative dehydrogenation of propane 197
- Oleyl oleate**  
Selective hydrogenation of methyl oleate into unsaturated alcohols. Relationships between catalytic properties and composition of cobalt–tin catalysts 87
- Oxalic acid**  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249
- Oxygenate synthesis**  
Unusual selectivity of oxygenate synthesis. Formation of acetic acid from syngas over unpromoted Rh in NaY zeolite 453
- Palladium**  
Easily separable molecular catalysis 147
- Palladium catalyst**  
Selective hydrogenation of acetylene on Pd/SiO<sub>2</sub> catalysts promoted with Ti, Nb and Ce oxides 183
- Partial oxidation**  
Partial oxidation of methane to synthesis gas:.. Elimination of gas phase oxygen 489
- Partial oxidation of methane**  
Mechanistic study of partial oxidation of methane to synthesis gas over supported rhodium and ruthenium catalysts using in situ time-resolved FTIR spectroscopy 317
- Perchloroethylene (PCE)**  
Catalytic removal of perchloroethylene (PCE) over supported chromium oxide catalysts 215
- Perovskite oxide**  
Simultaneous removal of NO and carbon particulates over lanthanoid perovskite-type catalysts 397
- Phenol**  
Balancing acidity and basicity for highly selective and stable modified MgO catalysts in the alkylation of phenol with methanol 229
- Photocatalyst**  
Preparation of efficient titanium oxide photocatalysts by an ionized cluster beam (ICB) method and their photocatalytic reactivities for the purification of water 63
- Platinum**  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387  
Partial oxidation of methane to synthesis gas:.. Elimination of gas phase oxygen 489
- Platinum–copper catalysts**  
Dehydroisomerisation of *n*-butane over (Pt,Cu)/H-TON catalysts 237
- Porous silica glass**  
Preparation of efficient titanium oxide photocatalysts by an ionized cluster beam (ICB) method and their photocatalytic reactivities for the purification of water 63
- Pre-calcination temperature**  
B<sub>2</sub>O<sub>3</sub>/ZrO<sub>2</sub> for Beckmann rearrangement of cyclohexanone oxime: optimizing of the catalyst and reaction atmosphere 275
- Promoter**  
New aspects of syngas production and use 159  
Selective hydrogenation of acetylene on Pd/SiO<sub>2</sub> catalysts promoted with Ti, Nb and Ce oxides 183
- Propane**  
Modelling of the catalytic combustion of lean fuel flowing over a fin with heat extraction from the trailing edge 387
- 2-Propanol**  
Acid–base properties and active site requirements for elimination reactions on alkali-promoted MgO catalysts 53
- Propionitrile**  
A study on the alkali metal-promoted magnesium oxide system used as a catalyst for acrylonitrile synthesis from methanol and acetonitrile 189
- Pt**  
Low-temperature complete oxidation of BTX on Pt/activated carbon catalysts 419
- Pt/Al<sub>2</sub>O<sub>3</sub>**  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249
- Purification**  
Purification/deodorization of indoor air and gaseous effluents by TiO<sub>2</sub> photocatalysis 363
- Purification of water**  
Preparation of efficient titanium oxide photocatalysts by an ionized cluster beam (ICB) method and their photocatalytic reactivities for the purification of water 63
- Reaction mechanism**  
Mechanistic study of partial oxidation of methane to synthesis gas over supported rhodium and ruthenium catalysts using in situ time-resolved FTIR spectroscopy 317  
Mechanism of N<sub>2</sub>O decomposition over a Rh black catalyst studied by a tracer method. The reaction of N<sub>2</sub>O with <sup>18</sup>O(a) 413
- Reactor**  
Influence of cycle parameters on periodically operated fluidised bed reactor for CH<sub>4</sub> autoreforming 507
- Redox**  
Vanadium-containing catalysts for the selective oxidation of H<sub>2</sub>S to elemental sulfur in the presence of excess water 405

- Reductive coupling**  
NEXAFS investigation of benzaldehyde reductive coupling to form stilbene on reduced surfaces of  $\text{TiO}_2(0\ 0\ 1)$  43
- Reverse micelle**  
Ferric-sulfide-based catalysts made using reverse micelles: Effect of preparation on performance in coal liquefaction 33
- Reverse water-gas shift reaction**  
Methane reforming with  $\text{CO}_2$  over  $\text{Ni/ZrO}_2\text{--CeO}_2$  catalysts prepared by sol–gel 71
- RH catalyst**  
Unusual selectivity of oxygenate synthesis. Formation of acetic acid from syngas over unpromoted Rh in NaY zeolite 453
- Rh/CeO<sub>2</sub>-ethanol**  
The reactions of ethanol over  $\text{M/CeO}_2$  catalysts. Evidence of carbon–carbon bond dissociation at low temperatures over Rh/ $\text{CeO}_2$  327
- Rhodium**  
Mechanistic study of partial oxidation of methane to synthesis gas over supported rhodium and ruthenium catalysts using in situ time-resolved FTIR spectroscopy 317  
Design of advanced automotive exhaust catalysts 337  
Partial oxidation of methane to synthesis gas: Elimination of gas phase oxygen 489
- Rhodium catalyst**  
A new chiral diphosphine ligand and its asymmetric induction in catalytic hydroformylation of olefins 531
- Ruthenium**  
Mechanistic study of partial oxidation of methane to synthesis gas over supported rhodium and ruthenium catalysts using in situ time-resolved FTIR spectroscopy 317
- SAPO-18**  
FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297
- Selective hydrogenation**  
Selective hydrogenation of methyl oleate into unsaturated alcohols. Relationships between catalytic properties and composition of cobalt–tin catalysts 87  
Activation of acetylene selective hydrogenation catalysts using oxygen containing compounds 209
- Silver promoted palladium catalyst**  
Activation of acetylene selective hydrogenation catalysts using oxygen containing compounds 209
- Skeletal copper catalysts**  
 $\text{Cr}_2\text{O}_3$  promoted skeletal Cu catalysts for the reactions of methanol steam reforming and water gas shift 499
- Sol-gel**  
Methane reforming with  $\text{CO}_2$  over  $\text{Ni/ZrO}_2\text{--CeO}_2$  catalysts prepared by sol–gel 71
- Solid acids**  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- SSITKA**  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- Steam reforming**  
New aspects of syngas production and use 159
- Steam-reforming**  
Development of Ni catalysts for gas production from biomass gasification. Reactivity in steam- and dry-reforming 427
- Stilbene**  
NEXAFS investigation of benzaldehyde reductive coupling to form stilbene on reduced surfaces of  $\text{TiO}_2(0\ 0\ 1)$  43
- Subcritical/supercritical conditions**  
Performance of potassium 12-tungstophosphoric salts as catalysts for isobutane/butene alkylation in subcritical and supercritical phases 223
- Sulfated zirconia**  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- Sulfides**  
The effect of various sulfides on carbon deposition on nickel–iron particles 3
- Sulfonated resin**  
Catalytic wet air oxidation of carboxylic acids at atmospheric pressure 249
- Sulfur**  
Vanadium-containing catalysts for the selective oxidation of  $\text{H}_2\text{S}$  to elemental sulfur in the presence of excess water 405
- Supported catalysts**  
Factors controlling the selectivity of  $\text{V}_2\text{O}_5$  supported catalysts in the oxidative dehydrogenation of propane 197
- Surface oxidation**  
The influence of surface defects on ethanol dehydrogenation versus dehydration on the  $\text{UO}_2(1\ 1\ 1)$  surface 283
- Surface reaction parameters**  
*n*-Butane isomerization on sulfated zirconia: active site heterogeneity and deactivation 21
- Syngas**  
New aspects of syngas production and use 159  
Unusual selectivity of oxygenate synthesis. Formation of acetic acid from syngas over unpromoted Rh in NaY zeolite 453
- Synthesis gas**  
Mechanistic study of partial oxidation of methane to synthesis gas over supported rhodium and ruthenium catalysts using in situ time-resolved FTIR spectroscopy 317  
Partial oxidation of methane to synthesis gas: Elimination of gas phase oxygen 489
- Tb**  
FT-IR studies of the NO adsorption on rare earth (Eu/Gd/Tb) exchanged new generation silicoaluminophosphate catalysts of chabazite type 297
- TEM**  
Factors controlling the selectivity of  $\text{V}_2\text{O}_5$  supported catalysts in the oxidative dehydrogenation of propane 197
- Three-way catalyst**  
Design of advanced automotive exhaust catalysts 337
- TiO<sub>2</sub> photocatalysis**  
Purification/deodorization of indoor air and gaseous effluents by  $\text{TiO}_2$  photocatalysis 363

TiO<sub>2</sub>(001)

NEXAFS investigation of benzaldehyde reductive coupling to form stilbene on reduced surfaces of TiO<sub>2</sub>(0 0 1) 43

## Titanium oxide

Preparation of efficient titanium oxide photocatalysts by an ionized cluster beam (ICB) method and their photocatalytic reactivities for the purification of water 63

## TON

Dehydroisomerisation of *n*-butane over (Pt,Cu)/H-TON catalysts 237

## TPD

Evidence of furan formation from acetaldehyde over β-UO<sub>3</sub> 309

## TPD-ethanol

The reactions of ethanol over M/CeO<sub>2</sub> catalysts. Evidence of carbon–carbon bond dissociation at low temperatures over Rh/CeO<sub>2</sub> 327

## Transition-metal oxide

Selective hydrogenation of acetylene on Pd/SiO<sub>2</sub> catalysts promoted with Ti, Nb and Ce oxides 183

## 1,2,4-trimethylbenzene

Shape selective conversion of 1,2,4-trimethylbenzene over zeolite NU-87 267

## 12-tungstophosphoric salts

Performance of potassium 12-tungstophosphoric salts as catalysts for isobutane/butene alkylation in subcritical and supercritical phases 223

UO<sub>2</sub>(111)

The influence of surface defects on ethanol dehydrogenation versus dehydration on the UO<sub>2</sub>(1 1 1) surface 283

V<sub>2</sub>O<sub>5</sub>

Factors controlling the selectivity of V<sub>2</sub>O<sub>5</sub> supported catalysts in the oxidative dehydrogenation of propane 197

## VOC

Low-temperature complete oxidation of BTX on Pt/activated carbon catalysts 419

VTiO<sub>x</sub>

Vanadium-containing catalysts for the selective oxidation of H<sub>2</sub>S to elemental sulfur in the presence of excess water 405

## Water gas shift

Cr<sub>2</sub>O<sub>3</sub> promoted skeletal Cu catalysts for the reactions of methanol steam reforming and water gas shift 499

## Water splitting

Mechano-catalytic overall water splitting on some mixed oxides 175

## X-ray diffraction

Evidence of furan formation from acetaldehyde over β-UO<sub>3</sub> 309

## 2,6-Xylenol

Balancing acidity and basicity for highly selective and stable modified MgO catalysts in the alkylation of phenol with methanol 229

## Xylose

Measured kinetics of the acid-catalysed hydrolysis of sugar cane bagasse to produce xylose 257

## Yield

Ferric-sulfide-based catalysts made using reverse micelles: Effect of preparation on performance in coal liquefaction 33

## Zeolite catalysis

Effect of the activation procedure on the performance of Mo/H-MFI catalysts for the non-oxidative conversion of methane to aromatics 461

## Zeolites

Dehydroisomerisation of *n*-butane over (Pt,Cu)/H-TON catalysts 237

Migration of butene isomers onto the acidic OH groups in small micropores of ferrierite 305

Unusual selectivity of oxygenate synthesis. Formation of acetic acid from syngas over unpromoted Rh in NaY zeolite 453

## Zeolites' performance

Methylation of benzene with methanol over zeolite catalysts in a low pressure flow reactor 471

## Ziegler–Natta/metalocene catalysts

Characteristics of ethylene polymerization over Ziegler–Natta/metalocene catalysts. Comparison between hybrid and mixed catalysts 523

ZrO<sub>2</sub> effect

Active sites in Cu/ZnO/ZrO<sub>2</sub> catalysts for methanol synthesis from CO/H<sub>2</sub> 447