





Subject index

Acetylene

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Aging

CO₂ reforming of methane in a solar driven volumetric receiverreactor 165

Bimetallic

Deactivation of bi- and multimetallic reforming catalysts: influence of alloy formation on catalyst activity 37

Brnsted

An in situ DRIFTS study of the deactivation and regeneration of sulfated zirconia 55

Calcium aluminates

Carbon dioxide reforming of methane over 5 wt.% nickel calcium aluminate catalysts – effect of preparation method 175

Carbon deposition

Methane conversion to syngas in a palladium membrane reactor 83

Carbon dioxide (CO₂)

The effect of O_2 addition on the carbon dioxide reforming of methane over Pt/Zr O_2 catalysts 203

Carbon

Carbon formation on and deactivation of nickel-based/zirconia anodes in solid oxide fuel cells running on methane 137

Catalyst

Development of a novel heat-integrated wall reactor for the partial oxidation of methane to synthesis gas 71

Synthesis of methyl formate via two-step methane partial oxidation 117

Catalytic combustion

Formal treatment of catalytic combustion and catalytic conversion of methane 155

Catalytic conversion

Formal treatment of catalytic combustion and catalytic conversion of methane 155

CO₂ reforming

Carbon dioxide reforming of methane over 5 wt.% nickel calcium aluminate catalysts – effect of preparation method 175

Coke

Catalyst deactivation in the cracking of hexadecane and commercial FCC feed as studied by microactivity test–multiple cold trap (MAT–MCT) technique 13

Coke formation in fluid catalytic cracking studied with the microriser 27

Coupling

Cyclohexane, methyl- and 1,2-dimethyl-cyclohexane as the major C₂₊ products of an oxygen-free CH₄ conversion 217

Cyclohexane

Cyclohexane, methyl- and 1,2-dimethyl-cyclohexane as the major C_{2+} products of an oxygen-free CH₄ conversion 217

Deactivation

An in situ DRIFTS study of the deactivation and regeneration of sulfated zirconia 55

Catalyst deactivation in the cracking of hexadecane and commercial FCC feed as studied by microactivity test-multiple cold trap (MAT-MCT) technique 13

Coke formation in fluid catalytic cracking studied with the microriser 27

Decomposition of NO

Catalytic removal of NO 233

Diffuse reflectance

An in situ DRIFTS study of the deactivation and regeneration of sulfated zirconia 55

Dry reforming

Methane conversion to syngas in a palladium membrane reactor 83

Economic

Membrane reforming for hydrogen 193

EDX

Deactivation of bi- and multimetallic reforming catalysts: influence of alloy formation on catalyst activity 37

Elevated pressure

A comparison of the performances of selected catalysts for the partial oxidation of methane to formaldehyde at elevated pressures 127

Entrained flow reactor

Coke formation in fluid catalytic cracking studied with the microriser 27

Ethylene

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Fe-, Co- and Ni-based catalysts

Catalytic partial oxidation of methane over Ni-, Co- and Febased catalysts 107

Fluid catalytic cracking (FCC)

Catalyst deactivation in the cracking of hexadecane and commercial FCC feed as studied by microactivity test–multiple cold trap (MAT–MCT) technique 13

Coke formation in fluid catalytic cracking studied with the microriser 27

Formaldehyde dimerisation

Synthesis of methyl formate via two-step methane partial oxidation 117

Heat-exchange reactor

Development of a novel heat-integrated wall reactor for the partial oxidation of methane to synthesis gas 71

Hydroger

Membrane reforming for hydrogen 193

Hydroprocessing catalysts

Effect of catalyst surface on decomposition of nitrogen heterorings during regeneration of hydroprocessing catalysts 3

In-situ DRIFTS

An in situ DRIFTS study of the deactivation and regeneration of sulfated zirconia 55

Iridium

Deactivation of bi- and multimetallic reforming catalysts: influence of alloy formation on catalyst activity 37

Irradiated catalyst

 ${\rm CO_2}$ reforming of methane in a solar driven volumetric receiverreactor 165

Isotopic tracers

Isotopic tracing experiments in syngas production from methane on $\rm Ru/Al_2O_3$ and $\rm Ru/SiO_2$ 99

Kinetics

Coke formation in fluid catalytic cracking studied with the microriser 27

On the reaction mechanism for methane partial oxidation over yttria/zirconia 91

Mechanism and kinetics

Catalytic removal of NO 233

Membrane reforming

Membrane reforming for hydrogen 193

Methane conversion

Catalytic partial oxidation of methane over Ni-, Co- and Febased catalysts 107

Cyclohexane, methyl- and 1,2-dimethyl-cyclohexane as the major C_{2+} products of an oxygen-free CH_4 conversion 217

The oxidative chemistry of methane over supported nickel catalysts 147

Methane partial oxidation

On the reaction mechanism for methane partial oxidation over yttria/zirconia 91

Synthesis of methyl formate via two-step methane partial oxidation 117

Methane pulse

On the reaction mechanism for methane partial oxidation over yttria/zirconia 91

Methane reforming

Unraveling mechanistic features for the methane reforming by carbon dioxide over different metals and supports by TAP experiments 185

Methane

A comparison of the performances of selected catalysts for the partial oxidation of methane to formaldehyde at elevated pressures 127

Carbon dioxide reforming of methane over 5 wt.% nickel calcium aluminate catalysts – effect of preparation method 175 Carbon formation on and deactivation of nickel-based/zirconia

anodes in solid oxide fuel cells running on methane 137

Formal treatment of catalytic combustion and catalytic conversion of methane 155

Isotopic tracing experiments in syngas production from methane on $\rm Ru/Al_2O_3$ and $\rm Ru/SiO_2$ 99

Methane conversion to syngas in a palladium membrane reactor 83

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

The effect of O_2 addition on the carbon dioxide reforming of methane over Pt/Zr O_2 catalysts 203

The influence of O_2 on oxidative coupling of methane over oxide catalysts using N_2O as oxidant 211

The oxidative chemistry of methane over supported nickel catalysts 147

Methyl formate

Synthesis of methyl formate via two-step methane partial oxidation 117

Microactivity test (MAT)

Catalyst deactivation in the cracking of hexadecane and commercial FCC feed as studied by microactivity test-multiple cold trap (MAT-MCT) technique 13

Modeling

Coke formation in fluid catalytic cracking studied with the microriser 27

N_2O

The influence of O_2 on oxidative coupling of methane over oxide catalysts using N_2O as oxidant 211 $\,$

Natural gas

Development of a novel heat-integrated wall reactor for the partial oxidation of methane to synthesis gas 71

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Nickel catalysts

Carbon dioxide reforming of methane over 5 wt.% nickel calcium aluminate catalysts – effect of preparation method 175

Nickel

Carbon formation on and deactivation of nickel-based/zirconia anodes in solid oxide fuel cells running on methane 137

The oxidative chemistry of methane over supported nickel catalysts 147

Unraveling mechanistic features for the methane reforming by carbon dioxide over different metals and supports by TAP experiments 185

Nickel-copper

Cyclohexane, methyl- and 1,2-dimethyl-cyclohexane as the major C_{2+} products of an oxygen-free CH_4 conversion 217

Nitrogen heterorings

Effect of catalyst surface on decomposition of nitrogen heterorings during regeneration of hydroprocessing catalysts 3

Nitroue ovida

A comparison of the performances of selected catalysts for the partial oxidation of methane to formaldehyde at elevated pressures 127

O_2

The effect of O₂ addition on the carbon dioxide reforming of methane over Pt/ZrO₂ catalysts 203

The influence of O_2 on oxidative coupling of methane over oxide catalysts using N_2O as oxidant 211

n-Octane

Deactivation of bi- and multimetallic reforming catalysts: influence of alloy formation on catalyst activity 37

Olefins

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Oxidative coupling

The influence of O_2 on oxidative coupling of methane over oxide catalysts using $\mathrm{N}_2\mathrm{O}$ as oxidant 211

Oxidative pyrolysis

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Oxide catalysts

The influence of O_2 on oxidative coupling of methane over oxide catalysts using N_2O as oxidant 211

Oxide

Synthesis of methyl formate via two-step methane partial oxidation 117

Oxygen

A comparison of the performances of selected catalysts for the partial oxidation of methane to formaldehyde at elevated pressures 127

Palladium membrane

Methane conversion to syngas in a palladium membrane reactor

Partial oxidation

A comparison of the performances of selected catalysts for the partial oxidation of methane to formaldehyde at elevated pressures 127

Development of a novel heat-integrated wall reactor for the partial oxidation of methane to synthesis gas 71

Methane conversion to syngas in a palladium membrane reactor

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

The oxidative chemistry of methane over supported nickel catalysts 147

Pressure

Membrane reforming for hydrogen 193

Pt/ZrO₂ catalysts

The effect of O₂ addition on the carbon dioxide reforming of methane over Pt/ZrO₂ catalysts 203

Pyrolysis

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Reaction engineering

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

Receiver-reactor

CO₂ reforming of methane in a solar driven volumetric receiverreactor 165

Reforming

Carbon formation on and deactivation of nickel-based/zirconia anodes in solid oxide fuel cells running on methane 137

 CO_2 reforming of methane in a solar driven volumetric receiverreactor 165

Deactivation of bi- and multimetallic reforming catalysts: influence of alloy formation on catalyst activity 37

Regeneration

Effect of catalyst surface on decomposition of nitrogen heterorings during regeneration of hydroprocessing catalysts 3

Removal of NO

Catalytic removal of NO 233

Rhodium

Development of a novel heat-integrated wall reactor for the partial oxidation of methane to synthesis gas 71

Ru/alumina

Isotopic tracing experiments in syngas production from methane on Ru/Al_2O_3 and Ru/SiO_2 99

Ru/silica

Isotopic tracing experiments in syngas production from methane on $\rm Ru/Al_2O_3$ and $\rm Ru/SiO_2$ 99

Ruthenium

Unraveling mechanistic features for the methane reforming by carbon dioxide over different metals and supports by TAP experiments 185

Selectivity

A comparison of the performances of selected catalysts for the partial oxidation of methane to formaldehyde at elevated pressures 127

Solar testing

 CO_2 reforming of methane in a solar driven volumetric receiverreactor 165

Solid oxide fuel cells

Carbon formation on and deactivation of nickel-based/zirconia anodes in solid oxide fuel cells running on methane 137

Sulfated zirconia

An in situ DRIFTS study of the deactivation and regeneration of sulfated zirconia 55

Support

Unraveling mechanistic features for the methane reforming by carbon dioxide over different metals and supports by TAP experiments 185

Syngas

The oxidative chemistry of methane over supported nickel catalysts 147

Synthesis gas

Catalytic partial oxidation of methane over Ni-, Co- and Febased catalysts 107

Development of a novel heat-integrated wall reactor for the partial oxidation of methane to synthesis gas 71

Isotopic tracing experiments in syngas production from methane on $\rm Ru/Al_2O_3$ and $\rm Ru/SiO_2$ 99

Oxidative pyrolysis of natural gas in a spouted-bed reactor: reaction stoichiometry and experimental reactor design 223

TAP

Unraveling mechanistic features for the methane reforming by carbon dioxide over different metals and supports by TAP experiments 185

TEM

Deactivation of bi- and multimetallic reforming catalysts: influence of alloy formation on catalyst activity 37

Temperature programmed measurements

The oxidative chemistry of methane over supported nickel catalysts 147

Yttria/zirconia

On the reaction mechanism for methane partial oxidation over yttria/zirconia 91

Zirconia

Carbon formation on and deactivation of nickel-based/zirconia anodes in solid oxide fuel cells running on methane 137