



Subject Index

Alginate

Encapsulation of an *Agrobacterium radiobacter* extract containing D-hydantoinase and D-carbamoylase activities into alginate–chitosan polyelectrolyte complexes. Preparation of the biocatalyst 54

Alkyl xylosides

Evaluation of the transglycosylation activities of a GH 39 β -D-xylosidase for the synthesis of xylose-based glycosides 1

Amidation

Lipase-catalyzed synthesis and antibacterial activity of Nvanillylnonanamide 181

Amino acid racemase

Enzyme-assisted physicochemical enantioseparation processes: Part I. Production and characterization of a recombinant amino acid racemase 10

Ampicillin

A two-step, one-pot enzymatic synthesis of ampicillin from penicillin G potassium salt 208

Antibacterial activity

Lipase-catalyzed synthesis and antibacterial activity of Nvanillylnonanamide 181

Antioxidant

Enzymatic synthesis of palm-based ascorbyl esters 153

Asymmetric carbonyl reduction

Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98

γ -Azidoalcohols

Lipase mediated resolution of γ -azidoalcohols in aqueous and organic media: Synthesis of (R)- and (S)-fluoxetine and duloxetine 132
Immobilization of soybean (*Glycine max*) urease on alginate and chitosan beads showing improved stability: Analytical applications 138

Baeyer–Villiger oxidation

Enzymatic Baeyer–Villiger oxidation of steroids with cyclopentadecanone monooxygenase 164

Baker's yeast

Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98

Bile salt

Inhibition of human pancreatic lipase by tetrahydrolipstatin: Further kinetic studies showing its reversibility 41

Biocatalysis

Enzymatic Baeyer–Villiger oxidation of steroids with cyclopentadecanone monooxygenase 164

Biodiesel fuel

Use of mono- and diacylglycerol lipase as immobilized fungal whole cells to convert residual partial glycerides enzymatically into fatty acid methyl esters 93

Biomass support particles

Use of mono- and diacylglycerol lipase as immobilized fungal whole cells to convert residual partial glycerides enzymatically into fatty acid methyl esters 93

Bioreduction

Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98

Bioremediation

The process of thermodialysis in bioremediation of waters polluted by endocrine disruptors 199

Bisphenol A

The process of thermodialysis in bioremediation of waters polluted by endocrine disruptors 199

Burkholderia cepacia lipase

Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78

Calixarenes

Synthesis of calix[n]arene-based silica polymers for lipase immobilization 29

κ -Carrageenan

Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78

Casein hydrolyzates

Kinetics of peptide bond demasking in enzymatic hydrolysis of casein substrates 146

Catalase

Characterization and properties of catalase immobilized onto controlled pore glass and its application in batch and plug-flow type reactors 124

Chiral chromatography

Enzyme-assisted physicochemical enantioseparation processes: Part I. Production and characterization of a recombinant amino acid racemase 10

Chitosan

Encapsulation of an *Agrobacterium radiobacter* extract containing D-hydantoinase and D-carbamoylase activities into alginate–chitosan polyelectrolyte complexes. Preparation of the biocatalyst 54
Immobilization of soybean (*Glycine max*) urease on alginate and chitosan beads showing improved stability: Analytical applications 138

Chymotrypsin

Kinetics of peptide bond demasking in enzymatic hydrolysis of casein substrates 146

Co-extrusion

Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78

Controlled pore glass

Characterization and properties of catalase immobilized onto controlled pore glass and its application in batch and plug-flow type reactors 124

Covalent immobilization

Characterization and properties of catalase immobilized onto controlled pore glass and its application in batch and plug-flow type reactors 124

CRL

Control of water activity in lipase catalysed esterification of chiral alkanolic acids 6

Detergent stable

Isolation and characterization of novel α -amylase from marine *Streptomyces* sp. D1 17

Diels–Alder

Molecularly imprinted polymer catalysis of a Diels–Alder reaction 110

Direct electrochemistry

Direct electrochemistry and electrocatalysis of glucose oxidase immobilized on glassy carbon electrode modified by Nafion and ordered mesoporous silica-SBA-15 194

Duloxetine

Lipase mediated resolution of γ -azidoalcohols in aqueous and organic media: Synthesis of (R)- and (S)-fluoxetine and duloxetine 132

Electrocatalysis

Direct electrochemistry and electrocatalysis of glucose oxidase immobilized on glassy carbon electrode modified by Nafion and ordered mesoporous silica-SBA-15 194

- Enantiomeric ratio
Control of water activity in lipase catalysed esterification of chiral alkanolic acids 6
Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98
- Enantiopure
Optimization of (*R,S*)-1-phenylethanol kinetic resolution over *Candida antarctica* lipase B in ionic liquids 24
- Encapsulation
Encapsulation of an *Agrobacterium radiobacter* extract containing D-hydantoinase and D-carbamoylase activities into alginate–chitosan polyelectrolyte complexes. Preparation of the biocatalyst 54
Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78
- Enzymatic kinetics
Kinetics of peptide bond demasking in enzymatic hydrolysis of casein substrates 146
- Enzymatic synthesis
A two-step, one-pot enzymatic synthesis of ampicillin from penicillin G potassium salt 208
- Enzyme
Synthesis of calix[n]arene-based silica polymers for lipase immobilization 29
- Enzyme activity
Ultrasonic processing of enzymes: Effect on enzymatic activity of glucose oxidase 118
- Enzyme immobilization
Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
L-Dopa synthesis using tyrosinase immobilized on magnetic beads 187
- Enzyme mimic
Molecularly imprinted polymer catalysis of a Diels-Alder reaction 110
- Enzyme processing
Ultrasonic processing of enzymes: Effect on enzymatic activity of glucose oxidase 118
- Enzyme purification
Enzyme-assisted physicochemical enantioseparation processes: Part I. Production and characterization of a recombinant amino acid racemase 10
- Enzyme stabilization
Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
- Enzyme thermostability
Glass-immobilized glycyated-trypsin: A novel modified trypsin that is remarkably thermostable 48
- Epoxide
Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98
- Esterification
Control of water activity in lipase catalysed esterification of chiral alkanolic acids 6
Magnetic nanoparticles supported ionic liquids for lipase immobilization: Enzyme activity in catalyzing esterification 103
- Extracellular proteins
Release of proteins: Insights into oxidative response of *Taxus cuspidata* cells induced by shear stress 84
- Feruloylated lipids
Enzymatic synthesis and characterization of novel feruloylated lipids in selected organic media 65
- Fluoxetine
Lipase mediated resolution of γ -azidoalcohols in aqueous and organic media: Synthesis of (*R*)- and (*S*)-fluoxetine and duloxetine 132
- Galactopyranosides
Different derivatives of a lipase display different regioselectivity in the monohydrolysis of per-O-acetylated 1-O-substituted- β -galactopyranosides 36
- Glucose
Direct electrochemistry and electrocatalysis of glucose oxidase immobilized on glassy carbon electrode modified by Nafion and ordered mesoporous silica-SBA-15 194
- Glucose oxidase
Ultrasonic processing of enzymes: Effect on enzymatic activity of glucose oxidase 118
Direct electrochemistry and electrocatalysis of glucose oxidase immobilized on glassy carbon electrode modified by Nafion and ordered mesoporous silica-SBA-15 194
- Glutaraldehyde
Synthesis of calix[n]arene-based silica polymers for lipase immobilization 29
- Glycation
Glass-immobilized glycyated-trypsin: A novel modified trypsin that is remarkably thermostable 48
- Glycine max*
Immobilization of soybean (*Glycine max*) urease on alginate and chitosan beads showing improved stability: Analytical applications 138
- Halophilic
Isolation and characterization of novel α -amylase from marine *Streptomyces* sp. D1 17
- D-Hydantoinase
Encapsulation of an *Agrobacterium radiobacter* extract containing D-hydantoinase and D-carbamoylase activities into alginate–chitosan polyelectrolyte complexes. Preparation of the biocatalyst 54
- Immobilisation
Laccase from *Pleurotus sajor-caju* on functionalised SBA-15 mesoporous silica: Immobilisation and use for the oxidation of phenolic compounds 175
- Immobilization
Synthesis of calix[n]arene-based silica polymers for lipase immobilization 29
Different derivatives of a lipase display different regioselectivity in the monohydrolysis of per-O-acetylated 1-O-substituted- β -galactopyranosides 36
Glass-immobilized glycyated-trypsin: A novel modified trypsin that is remarkably thermostable 48
Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78
Immobilization of soybean (*Glycine max*) urease on alginate and chitosan beads showing improved stability: Analytical applications 138
Influence of cosolvents on the hydrophobic surface immobilization topography of *Candida antarctica* lipase B 169
- Immobilized cells
Use of mono- and diacylglycerol lipase as immobilized fungal whole cells to convert residual partial glycerides enzymatically into fatty acid methyl esters 93
- Immobilized enzymes
The process of thermodialysis in bioremediation of waters polluted by endocrine disruptors 199
- Inhibition
Inhibition of human pancreatic lipase by tetrahydrolipstatin: Further kinetic studies showing its reversibility 41
- Integrated enantioseparation process
Enzyme-assisted physicochemical enantioseparation processes: Part I. Production and characterization of a recombinant amino acid racemase 10
- Ionic liquids
Optimization of (*R,S*)-1-phenylethanol kinetic resolution over *Candida antarctica* lipase B in ionic liquids 24
Magnetic nanoparticles supported ionic liquids for lipase immobilization: Enzyme activity in catalyzing esterification 103
- Ions
Control of water activity in lipase catalysed esterification of chiral alkanolic acids 6
- Kinetic model
Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98
- Kinetic resolution
Optimization of (*R,S*)-1-phenylethanol kinetic resolution over *Candida antarctica* lipase B in ionic liquids 24
Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98
Lipase mediated resolution of γ -azidoalcohols in aqueous and organic media: Synthesis of (*R*)- and (*S*)-fluoxetine and duloxetine 132
- Laccase
Laccase from *Pleurotus sajor-caju* on functionalised SBA-15 mesoporous silica: Immobilisation and use for the oxidation of phenolic compounds 175
- L-Dopa synthesis
L-Dopa synthesis using tyrosinase immobilized on magnetic beads 187
- Lipase
Control of water activity in lipase catalysed esterification of chiral alkanolic acids 6
Optimization of (*R,S*)-1-phenylethanol kinetic resolution over *Candida antarctica* lipase B in ionic liquids 24
Different derivatives of a lipase display different regioselectivity in the monohydrolysis of per-O-acetylated 1-O-substituted- β -galactopyranosides 36

- Enzymatic synthesis and characterization of novel feruloylated lipids in selected organic media 65
- Lipase mediated resolution of γ -azidoalcohols in aqueous and organic media: Synthesis of (*R*)- and (*S*)-fluoxetine and duloxetine 132
- Influence of cosolvents on the hydrophobic surface immobilization topography of *Candida antarctica* lipase B 169
- Lipase-catalyzed synthesis and antibacterial activity of Nvanillylnonanamide 181
- Lipase immobilization
- Magnetic nanoparticles supported ionic liquids for lipase immobilization: Enzyme activity in catalyzing esterification 103
- Liquid core capsule
- Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78
- Magnetic beads
- L-Dopa synthesis using tyrosinase immobilized on magnetic beads 187
- Magnetic nanoparticle
- Magnetic nanoparticles supported ionic liquids for lipase immobilization: Enzyme activity in catalyzing esterification 103
- Marine
- Isolation and characterization of novel α -amylase from marine *Streptomyces* sp. D1 17
- Methanolysis
- Use of mono- and diacylglycerol lipase as immobilized fungal whole cells to convert residual partial glycerides enzymatically into fatty acid methyl esters 93
- Molecularly imprinted polymer
- Molecularly imprinted polymer catalysis of a Diels-Alder reaction 110
- Monohydrolysis
- Different derivatives of a lipase display different regioselectivity in the monohydrolysis of per-*O*-acetylated 1-*O*-substituted- β -galactopyranosides 36
- Monooxygenase
- Enzymatic Baeyer-Villiger oxidation of steroids with cyclopentadecanone monooxygenase 164
- Multimeric enzymes
- Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
- Multipoint covalent attachment
- Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
- N-carbamoyl-D-amino acid amidohydrolase
- Encapsulation of an *Agrobacterium radiobacter* extract containing D-hydantoinase and D-carbamoylase activities into alginate-chitosan polyelectrolyte complexes. Preparation of the biocatalyst 54
- Non-isothermal bioreactors
- The process of thermodialysis in bioremediation of waters polluted by endocrine disruptors 199
- Novozyme 435
- Enzymatic synthesis of palm-based ascorbyl esters 153
- N-vanillylnonanamide
- Lipase-catalyzed synthesis and antibacterial activity of Nvanillylnonanamide 181
- Olive mill wastewaters
- Laccase from *Pleurotus sajor-caju* on functionalised SBA-15 mesoporous silica: Immobilisation and use for the oxidation of phenolic compounds 175
- One-pot
- A two-step, one-pot enzymatic synthesis of ampicillin from penicillin G potassium salt 208
- Optimization
- Optimization of (*R,S*)-1-phenylethanol kinetic resolution over *Candida antarctica* lipase B in ionic liquids 24
- Oriented immobilization
- Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
- Orlistat
- Inhibition of human pancreatic lipase by tetrahydrolipstatin: Further kinetic studies showing its reversibility 41
- Oxidative response
- Release of proteins: Insights into oxidative response of *Taxus cuspidata* cells induced by shear stress 84
- Packed-bed reactor
- Use of mono- and diacylglycerol lipase as immobilized fungal whole cells to convert residual partial glycerides enzymatically into fatty acid methyl esters 93
- Palm oil
- Enzymatic synthesis of palm-based ascorbyl esters 153
- Palm-based ascorbyl esters
- Enzymatic synthesis of palm-based ascorbyl esters 153
- Pancreatic lipase
- Inhibition of human pancreatic lipase by tetrahydrolipstatin: Further kinetic studies showing its reversibility 41
- Partial glyceride lipase
- Use of mono- and diacylglycerol lipase as immobilized fungal whole cells to convert residual partial glycerides enzymatically into fatty acid methyl esters 93
- Penicillin acylase
- A two-step, one-pot enzymatic synthesis of ampicillin from penicillin G potassium salt 208
- Penicillin G potassium
- A two-step, one-pot enzymatic synthesis of ampicillin from penicillin G potassium salt 208
- Peptide bond demasking
- Kinetics of peptide bond demasking in enzymatic hydrolysis of casein substrates 146
- Phenolic compounds
- Laccase from *Pleurotus sajor-caju* on functionalised SBA-15 mesoporous silica: Immobilisation and use for the oxidation of phenolic compounds 175
- p-Hydroxyphenylglycine
- Encapsulation of an *Agrobacterium radiobacter* extract containing D-hydantoinase and D-carbamoylase activities into alginate-chitosan polyelectrolyte complexes. Preparation of the biocatalyst 54
- Preferential crystallization
- Enzyme-assisted physicochemical enantioseparation processes: Part I. Production and characterization of a recombinant amino acid racemase 10
- Productivity
- Characterization and properties of catalase immobilized onto controlled pore glass and its application in batch and plug-flow type reactors 124
- Property
- Properties of a xylanase from *Streptomyces matensis* being suitable for xylooligosaccharides production 72
- Protein adsorption
- Influence of cosolvents on the hydrophobic surface immobilization topography of *Candida antarctica* lipase B 169
- Protein modification
- Glass-immobilized glycated-trypsin: A novel modified trypsin that is remarkably thermostable 48
- Protein purification
- Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
- Purification
- Properties of a xylanase from *Streptomyces matensis* being suitable for xylooligosaccharides production 72
- Racemic epoxy ketone
- Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98
- Reactivation
- Inhibition of human pancreatic lipase by tetrahydrolipstatin: Further kinetic studies showing its reversibility 41
- Reactors
- Characterization and properties of catalase immobilized onto controlled pore glass and its application in batch and plug-flow type reactors 124
- Regioselectivity
- Different derivatives of a lipase display different regioselectivity in the monohydrolysis of per-*O*-acetylated 1-*O*-substituted- β -galactopyranosides 36
- Saccharomyces cerevisiae*
- Kinetic resolution of racemic 5,6-epoxy-bicyclo[2.2.1]heptane-2-one using genetically engineered *Saccharomyces cerevisiae* 98
- SBA-15
- Direct electrochemistry and electrocatalysis of glucose oxidase immobilized on glassy carbon electrode modified by Nafion and ordered mesoporous silica-SBA-15 194
- SBA-15 mesoporous silica
- Laccase from *Pleurotus sajor-caju* on functionalised SBA-15 mesoporous silica: Immobilisation and use for the oxidation of phenolic compounds 175
- Selective transesterification
- Enzymatic synthesis and characterization of novel feruloylated lipids in selected organic media 65

- Shear stress
 - Release of proteins: Insights into oxidative response of *Taxus cuspidata* cells induced by shear stress 84
- Soybean
 - Immobilization of soybean (*Glycine max*) urease on alginate and chitosan beads showing improved stability: Analytical applications 138
- Stability
 - Physical and stability characteristics of *Burkholderia cepacia* lipase encapsulated in κ -carrageenan 78
- Steroids
 - Enzymatic Baeyer–Villiger oxidation of steroids with cyclopentadecanone monooxygenase 164
- Streptomyces
 - Isolation and characterization of novel α -amylase from marine *Streptomyces* sp. D1 17
- Streptomyces matensis*
 - Properties of a xylanase from *Streptomyces matensis* being suitable for xylooligosaccharides production 72
- Supercritical carbon dioxide
 - Lipase-catalyzed synthesis and antibacterial activity of Nvanillylnonanamide 181
- Surfactant
 - Isolation and characterization of novel α -amylase from marine *Streptomyces* sp. D1 17
- Taxus cuspidata* cells
 - Release of proteins: Insights into oxidative response of *Taxus cuspidata* cells induced by shear stress 84
- Tetrahydropipstatin
 - Inhibition of human pancreatic lipase by tetrahydropipstatin: Further kinetic studies showing its reversibility 41
- Thermal stability
 - Synthesis of calix[n]arene-based silica polymers for lipase immobilization 29
- Thermodialysis
 - The process of thermodialysis in bioremediation of waters polluted by endocrine disruptors 199
- Thermophilic enzymes
 - Purification and stabilization of a glutamate dehydrogenase from *Thermus thermophilus* via oriented multisubunit plus multipoint covalent immobilization 158
- Transglycosylation
 - Evaluation of the transglycosylation activities of a GH 39 β -D-xylosidase for the synthesis of xylose-based glycosides 1
- Transition state analogue
 - Molecularly imprinted polymer catalysis of a Diels–Alder reaction 110
- Tributyrin
 - Enzymatic synthesis and characterization of novel feruloylated lipids in selected organic media 65
- Trypsin
 - Glass-immobilized glycosylated-trypsin: A novel modified trypsin that is remarkably thermostable 48
 - Kinetics of peptide bond demasking in enzymatic hydrolysis of casein substrates 146
- Tyrosinase
 - L-Dopa synthesis using tyrosinase immobilized on magnetic beads 187
- Ultrasonication
 - Ultrasonic processing of enzymes: Effect on enzymatic activity of glucose oxidase 118
- Urease
 - Immobilization of soybean (*Glycine max*) urease on alginate and chitosan beads showing improved stability: Analytical applications 138
- Water activity
 - Control of water activity in lipase catalysed esterification of chiral alkanolic acids 6
- Wheat bran
 - Evaluation of the transglycosylation activities of a GH 39 β -D-xylosidase for the synthesis of xylose-based glycosides 1
- β -Xylosidase
 - Evaluation of the transglycosylation activities of a GH 39 β -D-xylosidase for the synthesis of xylose-based glycosides 1
- Xylanase
 - Evaluation of the transglycosylation activities of a GH 39 β -D-xylosidase for the synthesis of xylose-based glycosides 1
 - Properties of a xylanase from *Streptomyces matensis* being suitable for xylooligosaccharides production 72
- Xylooligosaccharide
 - Properties of a xylanase from *Streptomyces matensis* being suitable for xylooligosaccharides production 72