

Journal of Molecular Catalysis B: Enzymatic 27 (2004) 275-279



www.elsevier.com/locate/molcatb

Subject Index

Acetophenone

Enantioselective bioreduction of acetophenone and its analogous by the fungus *Trichothecium* sp. 61

Acinetobacter sp

Catalytic performance of a highly enantioselective (*R*)-ester hydrolase from a new isolate *Acinetobacter* sp. CGMCC 0789 227

Acylation

Novel mannitol based non-ionic surfactants from biocatalysis 139 Additive

Pseudomonas cepacia lipase-catalysed resolution of racemic alcohols in ionic liquid using succinic anhydride: role of triethylamine in enhancement of catalytic activity 267

Adsorption

Reversible immobilization of tyrosinase onto polyethyleneimine-grafted and Cu(II) chelated poly(HEMA-co-GMA) reactive membranes 255

Agar-agar gel

Amperometric study of the inhibitory effect of carboxylic acids on tyrosinase 221

Alcoholysis

Application of factorial design to the study of an alcoholysis transformation promoted by cutinase immobilized on NaY zeolite and Accurel

Allethrin

Catalytic performance of a highly enantioselective (*R*)-ester hydrolase from a new isolate *Acinetobacter* sp. CGMCC 0789 227

Aminopeptidase P

Hydrolysis of organophosphate triesters by *Escherichia coli* aminopeptidase P 7

Arylmalonate decarboxylase

Mechanism of asymmetric decarboxylation of α -aryl- α -methylmalonate catalyzed by arylmalonate decarboxylase originated from *Alcaligenes bronchisepticus* 161

Aspergillus niger

Biotransformation of isoflavones by Aspergillus niger, as biocatalyst

Aspergillus phoenicis

Regioselective synthesis of mannobiose and mannotriose by reverse hydrolysis using a novel 1,6-α-p-mannosidase from *Aspergillus phoenicis* 215

Asymmetric protonation

Mechanism of asymmetric decarboxylation of α -aryl- α -methylmalonate catalyzed by arylmalonate decarboxylase originated from *Alcaligenes bronchisepticus* 161

Asymmetric reduction

Highly stereoselective reduction of 4-Aryl-2-oxo but-3-enoic carboxylic esters by plant cell culture of *Daucus carota* 13

Bacillus niacini

Occurrence of ofloxacin ester-hydrolyzing esterase from *Bacillus nia*cini EM001 237

Biocatalysis

Enzyme-catalyzed regioselective synthesis of lipophilic guaifenesin ester derivatives 97

Biocatalysis in ionic liquids: the stereoconvergent hydrolysis of *trans*-β-methylstyrene oxide catalyzed by soluble epoxide hydrolase 243 Biocatalyst

Biotransformation of isoflavones by Aspergillus niger, as biocatalyst 91

Biocatalytic oxidation

The biocatalytic oxidation of thujopsene by plant cultured-cells 55 Bioencapsulation

High operational stability in peroxidase-catalyzed non-aqueous sulfoxidations by encapsulation within sol-gel glasses 107

Bioreduction

Enantioselective bioreduction of acetophenone and its analogous by the fungus *Trichothecium* sp. 61

Biotransformation

Biotransformation of (1R)-(+)- and (1S)-(-)-camphor by the larvae of common cutworm ($Spodoptera\ litura$) 83

Biotransformation of isoflavones by Aspergillus niger, as biocatalyst 91

Biotransformation of (\pm) - α -ionone and β -ionone by cultured cells of Caragana chamlagu 177

Candida antarctica lipase B

Enzymatic synthesis of new aromatic esters of phloridzin 1

Enzymatic synthesis of surfactants based on polyethylene glycol and stearic or 12-hydroxystearic acid 51

Novel mannitol based non-ionic surfactants from biocatalysis. Part two: improved synthesis 233

Caragana chamlagu

Biotransformation of (\pm) - α -ionone and β -ionone by cultured cells of Caragana chamlagu 177

Carbohydrate ester

Novel mannitol based non-ionic surfactants from biocatalysis. Part two: improved synthesis 233

Catalytic membranes

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Catalytic properties

The recombinant xylanase B of *Thermotoga maritima* is highly xylan specific and produces exclusively xylobiose from xylans, a unique character for industrial applications 207

Chloroperoxidase

Covalent immobilization of chloroperoxidase on silica gel and properties of the immobilized biocatalyst 103

β-Citronellol

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Cloud point system

Microbial transformation of hydrophobic compound in cloud point system 147

Conjugated linoleic acid

Production of monoacylglycerol of conjugated linoleic acid by esterification followed by dehydration at low temperature using *Penicillium camembertii* lipase 249

Critical micellisation concentration (CMC)

Increase of the peroxidase activity of cytochrome c-550 by the interaction with detergents 75

Cutinase

Application of factorial design to the study of an alcoholysis transformation promoted by cutinase immobilized on NaY zeolite and Accurel PA6 19

Cytochrome c

Increase of the peroxidase activity of cytochrome c-550 by the interaction with detergents 75

Daucus carota

Highly stereoselective reduction of 4-Aryl-2-oxo but-3-enoic carboxylic esters by plant cell culture of *Daucus carota* 13

Deglycosylation

Biochemical and catalytic properties of two intracellular β -glucosidases from the fungus *Penicillium decumbens* active on flavonoid glucosides 183

(Z,E)-Dienes

Regioselectivity in the reaction of hydrolases with (Z,E)-hexa-2,4-diene-1,6-diol 65

Di-O-isopropylidene-D-mannitol

Novel mannitol based non-ionic surfactants from biocatalysis. Part two: improved synthesis 233

Directed evolution

Enhanced thermostability and tolerance of high substrate concentration of an esterase by directed evolution 169

D-mannitol

Novel mannitol based non-ionic surfactants from biocatalysis 139

1,6-α-D-Mannosidase

Regioselective synthesis of mannobiose and mannotriose by reverse hydrolysis using a novel 1,6-α-D-mannosidase from *Aspergillus phoenicis* 215

Enantioselective hydrolysis

Biocatalytic resolution of nitro-substituted phenoxypropylene oxides with *Trichosporon loubierii* epoxide hydrolase and prediction of their enantiopurity variation with reaction time 155

Enantioselectivity

Catalytic performance of a highly enantioselective (R)-ester hydrolase from a new isolate Acinetobacter sp. CGMCC 0789 227

endo-Xylanase

The recombinant xylanase B of *Thermotoga maritima* is highly xylan specific and produces exclusively xylobiose from xylans, a unique character for industrial applications 207

Enzymatic activity

Covalent immobilization of chloroperoxidase on silica gel and properties of the immobilized biocatalyst 103

Enzymatic acylation

Enzymatic synthesis of new aromatic esters of phloridzin 1

Regioselectivity in the reaction of hydrolases with (*Z*,*E*)-hexa-2,4-diene-1,6-diol 65

Enzymatic catalysis

Hydrolysis of organophosphate triesters by *Escherichia coli* aminopeptidase P 7

Enzymatic kinetic resolution

Enzymatic kinetic resolution of primary alcohols by direct esterification in solvent-free system 69

Enzymatic resolution

Catalytic performance of a highly enantioselective (R)-ester hydrolase from a new isolate Acinetobacter sp. CGMCC 0789 227

Enzymatic synthesis

Enzymatic synthesis of surfactants based on polyethylene glycol and stearic or 12-hydroxystearic acid 51

Photochemical synthesis of formic acid from CO_2 with formate dehydrogenase and water-soluble zinc porphyrin 121

Enzyme stability

Covalent immobilization of chloroperoxidase on silica gel and properties of the immobilized biocatalyst 103

Epoxide hydrolase

Biocatalytic resolution of nitro-substituted phenoxypropylene oxides with *Trichosporon loubierii* epoxide hydrolase and prediction of their enantiopurity variation with reaction time 155

Error-prone PCR

An *in vitro* evaluation of a thermostable pectate lyase by using errorprone PCR 127

Esteras

Enhanced thermostability and tolerance of high substrate concentration of an esterase by directed evolution 169

Catalytic performance of a highly enantioselective (*R*)-ester hydrolase from a new isolate *Acinetobacter* sp. CGMCC 0789 227

Occurrence of ofloxacin ester-hydrolyzing esterase from *Bacillus nia*cini EM001 237

Esterification

Enzymatic kinetic resolution of primary alcohols by direct esterification in solvent-free system 69

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Production of monoacylglycerol of conjugated linoleic acid by esterification followed by dehydration at low temperature using *Penicillium camembertii* lipase 249

Ethanol

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

Exserohilum halodes

Biotransformation of a 4α -hydroxylated eudesmane with *Exserohilum halodes*. Chemo-enzymatic synthesis of cryptomeridiol and 6-epi-colartin derivatives 133

Factorial design

Application of factorial design to the study of an alcoholysis transformation promoted by cutinase immobilized on NaY zeolite and Accurel PA6 19

FIA

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

Flavonoid glycoside

Enzymatic synthesis of new aromatic esters of phloridzin 1

Flavonoids glycosides

Biochemical and catalytic properties of two intracellular β -glucosidases from the fungus *Penicillium decumbens* active on flavonoid glucosides 183

Formate dehydrogenase

Photochemical synthesis of formic acid from CO_2 with formate dehydrogenase and water-soluble zinc porphyrin 121

Fungus

Enantioselective bioreduction of acetophenone and its analogous by the fungus *Trichothecium* sp. 61

Geminal dimethyl

Biotransformation of (1R)-(+)- and (1S)-(-)-camphor by the larvae of common cutworm ($Spodoptera\ litura$) 83

Glucose oxidase

High operational stability in peroxidase-catalyzed non-aqueous sulfoxidations by encapsulation within sol–gel glasses 107

β-Glucosidases

Biochemical and catalytic properties of two intracellular β -glucosidases from the fungus *Penicillium decumbens* active on flavonoid glucosides 183

Guaifenesin esters

Enzyme-catalyzed regioselective synthesis of lipophilic guaifenesin ester derivatives 97

Hansenula polymorpha alcohol oxidase

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

Hibiscus cannabinus

The biocatalytic oxidation of thujopsene by plant cultured-cells 55 Homology alignment

Mechanism of asymmetric decarboxylation of α -aryl- α -methylmalonate catalyzed by arylmalonate decarboxylase originated from *Alcaligenes bronchisepticus* 161

Horseradish peroxidase

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

High operational stability in peroxidase-catalyzed non-aqueous sulfoxidations by encapsulation within sol-gel glasses 107

Hydrolysis

Hydrolysis of organophosphate triesters by *Escherichia coli* aminopeptidase P 7

Hydrophilic membranes

Reversible immobilization of tyrosinase onto polyethyleneimine-grafted and Cu(II) chelated poly(HEMA-co-GMA) reactive membranes 255

Hydrophobic compound

Microbial transformation of hydrophobic compound in cloud point system 147

\propto -Hydroxy β , γ -unsaturated arylidine esters

Highly stereoselective reduction of 4-Aryl-2-oxo but-3-enoic carboxylic esters by plant cell culture of *Daucus carota* 13

Hydroxylation

Biotransformation of (1R)-(+)- and (1S)-(-)-camphor by the larvae of common cutworm ($Spodoptera\ litura$) 83

12-Hydroxystearic acid

Enzymatic synthesis of surfactants based on polyethylene glycol and stearic or 12-hydroxystearic acid 51

Hyperthermophilic

The recombinant xylanase B of *Thermotoga maritima* is highly xylan specific and produces exclusively xylobiose from xylans, a unique character for industrial applications 207

Immobilised bioreactors

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

Immobilised enzymes

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Immobilised lipase

Novel mannitol based non-ionic surfactants from biocatalysis 139 Immobilization

Application of factorial design to the study of an alcoholysis transformation promoted by cutinase immobilized on NaY zeolite and Accurel PA6 19

Covalent immobilization of chloroperoxidase on silica gel and properties of the immobilized biocatalyst 103

Reversible immobilization of tyrosinase onto polyethyleneimine-grafted and Cu(II) chelated poly(HEMA-co-GMA) reactive membranes 255

Immobilized enzyme

Activity and stability of immobilized penicillin amidase at low pH values 29

Immobilized lipase

Enzyme-catalyzed regioselective synthesis of lipophilic guaifenesin ester derivatives 97

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Ionic liquid

Biocatalysis in ionic liquids: the stereoconvergent hydrolysis of *trans*-β-methylstyrene oxide catalyzed by soluble epoxide hydrolase 243

Pseudomonas cepacia lipase-catalysed resolution of racemic alcohols in ionic liquid using succinic anhydride: role of triethylamine in enhancement of catalytic activity 267

β-Ionone

Biotransformation of (\pm) - α -ionone and β -ionone by cultured cells of Caragana chamlagu 177

(±)-α-Ionone

Biotransformation of $(\pm)\text{-}\alpha\text{-ionone}$ and $\beta\text{-ionone}$ by cultured cells of Caragana chamlagu 177

Isoflavon

Biotransformation of isoflavones by *Aspergillus niger*, as biocatalyst 91 Isopropylidene group

Novel mannitol based non-ionic surfactants from biocatalysis 139 Isothermal and non-isothermal bioreactors

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Ketoprofen

Enhanced thermostability and tolerance of high substrate concentration of an esterase by directed evolution 169

Kinetic resolution

Biocatalytic resolution of nitro-substituted phenoxypropylene oxides with *Trichosporon loubierii* epoxide hydrolase and prediction of their enantiopurity variation with reaction time 155

Pseudomonas cepacia lipase-catalysed resolution of racemic alcohols in ionic liquid using succinic anhydride: role of triethylamine in enhancement of catalytic activity 267

Kinetics

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Biochemical and catalytic properties of two intracellular β -glucosidases from the fungus *Penicillium decumbens* active on flavonoid glucosides 183

Laccases

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Lauric acid

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Levofloxacin

Occurrence of ofloxacin ester-hydrolyzing esterase from *Bacillus nia*cini EM001 237

Lipase

Enzymatic kinetic resolution of primary alcohols by direct esterification in solvent-free system 69

Production of monoacylglycerol of conjugated linoleic acid by esterification followed by dehydration at low temperature using *Penicillium* camembertii lipase 249

Lipase PS-C

Pseudomonas cepacia lipase-catalysed resolution of racemic alcohols in ionic liquid using succinic anhydride: role of triethylamine in enhancement of catalytic activity 267

Low temperature

Production of monoacylglycerol of conjugated linoleic acid by esterification followed by dehydration at low temperature using *Penicillium* camembertii lipase 249

Mannobiose

Regioselective synthesis of mannobiose and mannotriose by reverse hydrolysis using a novel 1,6-α-p-mannosidase from *Aspergillus phoenicis* 215

Mannotriose

Regioselective synthesis of mannobiose and mannotriose by reverse hydrolysis using a novel 1,6- α -D-mannosidase from *Aspergillus phoenicis* 215

Mayurone

The biocatalytic oxidation of thujopsene by plant cultured-cells 55 Microbial hydroxylation

Biotransformation of a 4α -hydroxylated eudesmane with *Exserohilum halodes*. Chemo-enzymatic synthesis of cryptomeridiol and 6-epi-colartin derivatives 133

Microbial transformation

Microbial transformation of hydrophobic compound in cloud point system 147

Monoacylglycerol

Production of monoacylglycerol of conjugated linoleic acid by esterification followed by dehydration at low temperature using *Penicillium camembertii* lipase 249

Mutants

Hydrolysis of organophosphate triesters by *Escherichia coli* aminopeptidase P 7

Nitro-substituted phenoxypropylene oxide

Biocatalytic resolution of nitro-substituted phenoxypropylene oxides with *Trichosporon loubierii* epoxide hydrolase and prediction of their enantiopurity variation with reaction time 155

Non-aqueous enzymology

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Non-ionic surfactant

Novel mannitol based non-ionic surfactants from biocatalysis 139 Nonionic surfactant

Microbial transformation of hydrophobic compound in cloud point system 147

Non-ionic surfactant

Novel mannitol based non-ionic surfactants from biocatalysis. Part two: improved synthesis 233

Novozym SP 435

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Ofloxacin

Occurrence of ofloxacin ester-hydrolyzing esterase from *Bacillus nia*cini EM001 237

Oligosaccharide synthesis

Regioselective synthesis of mannobiose and mannotriose by reverse hydrolysis using a novel 1,6-α-D-mannosidase from *Aspergillus phoenicis* 215

Operational stability

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

Organophosphate triesters

Hydrolysis of organophosphate triesters by *Escherichia coli* aminopeptidase P 7

Parameters optimization

Microbial transformation of hydrophobic compound in cloud point system 147

Pectate lyase

An *in vitro* evaluation of a thermostable pectate lyase by using errorprone PCR 127

Penicillin acylase

Activity and stability of immobilized penicillin amidase at low pH values 29

Penicillin G hydrolysis

Activity and stability of immobilized penicillin amidase at low pH values 29

Penicillium camembertii

Production of monoacylglycerol of conjugated linoleic acid by esterification followed by dehydration at low temperature using *Penicillium camembertii* lipase 249

Penicillium decumbens

Biochemical and catalytic properties of two intracellular β -glucosidases from the fungus *Penicillium decumbens* active on flavonoid glucosides 183

Peroxidase activity

Increase of the peroxidase activity of cytochrome c-550 by the interaction with detergents 75

pH optimization

Activity and stability of immobilized penicillin amidase at low pH values 29

pH profile

Mechanism of asymmetric decarboxylation of α -aryl- α -methylmalonate catalyzed by arylmalonate decarboxylase originated from *Alcaligenes bronchisepticus* 161

Phenols

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Phloridzin

Enzymatic synthesis of new aromatic esters of phloridzin 1

Photochemical formic acid synthesis

Photochemical synthesis of formic acid from ${\rm CO_2}$ with formate dehydrogenase and water-soluble zinc porphyrin 121

Plant catalyst

Biotransformation of (\pm) - α -ionone and β -ionone by cultured cells of Caragana chamlagu 177

Plant cultured-cells

The biocatalytic oxidation of thujopsene by plant cultured-cells55

Plant tissue culture

Highly stereoselective reduction of 4-Aryl-2-oxo but-3-enoic carboxylic esters by plant cell culture of *Daucus carota* 13

Polyethylene glycol ester

Enzymatic synthesis of surfactants based on polyethylene glycol and stearic or 12-hydroxystearic acid 51

Polyethylenimine

Reversible immobilization of tyrosinase onto polyethyleneimine-grafted and Cu(II) chelated poly(HEMA-co-GMA) reactive membranes 255

PPO inhibitors

Amperometric study of the inhibitory effect of carboxylic acids on tyrosinase 221

Primary alcohol

Enzymatic kinetic resolution of primary alcohols by direct esterification in solvent-free system 69

Purification

Biochemical and catalytic properties of two intracellular β -glucosidases from the fungus *Penicillium decumbens* active on flavonoid glucosides 183

Random mutation

An *in vitro* evaluation of a thermostable pectate lyase by using errorprone PCR 127

Reaction mechanism

Mechanism of asymmetric decarboxylation of α -aryl- α -methylmalonate catalyzed by arylmalonate decarboxylase originated from *Alcaligenes bronchisepticus* 161

Regio-selective

Biotransformation of (1R)-(+)- and (1S)-(-)-camphor by the larvae of common cutworm (*Spodoptera litura*) 83

Regioselective acylation

Regioselectivity in the reaction of hydrolases with (Z,E)-hexa-2,4-diene-1,6-diol 65

Regioselectivity

Enzyme-catalyzed regioselective synthesis of lipophilic guaifenesin ester derivatives 97

Rhus vernicifera

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Sesquiterpene lactones

Biotransformation of a 4α -hydroxylated eudesmane with *Exserohilum halodes*. Chemo-enzymatic synthesis of cryptomeridiol and 6-epi-colartin derivatives 133

Silica gel

Covalent immobilization of chloroperoxidase on silica gel and properties of the immobilized biocatalyst 103

Site-directed mutagenesis

Mechanism of asymmetric decarboxylation of α -aryl- α -methylmalonate catalyzed by arylmalonate decarboxylase originated from *Alcaligenes bronchisepticus* 161

Sol-ge

High operational stability in peroxidase-catalyzed non-aqueous sulfoxidations by encapsulation within sol-gel glasses 107

Solubilization

Microbial transformation of hydrophobic compound in cloud point system 147

Solvent-free system

Enzymatic kinetic resolution of primary alcohols by direct esterification in solvent-free system 69

Spodoptera litura

Biotransformation of (1*R*)-(+)- and (1*S*)-(-)-camphor by the larvae of common cutworm (*Spodoptera litura*) 83

Stabilization

Enhanced thermostability and tolerance of high substrate concentration of an esterase by directed evolution 169

Stereoconvergent hydrolysis

Biocatalysis in ionic liquids: the stereoconvergent hydrolysis of *trans*-β-methylstyrene oxide catalyzed by soluble epoxide hydrolase 243

Succinic anhydride

Pseudomonas cepacia lipase-catalysed resolution of racemic alcohols in ionic liquid using succinic anhydride: role of triethylamine in enhancement of catalytic activity 267

Sulfoxidation

High operational stability in peroxidase-catalyzed non-aqueous sulfoxidations by encapsulation within sol-gel glasses 107

Surfactants

Enzymatic synthesis of surfactants based on polyethylene glycol and stearic or 12-hydroxystearic acid 51

Increase of the peroxidase activity of cytochrome c-550 by the interaction with detergents 75

Terpenes

Synthesis of citronellol laurate in organic media catalyzed by immobilized lipases: kinetic studies 113

Theoretical prediction

Biocatalytic resolution of nitro-substituted phenoxypropylene oxides with *Trichosporon loubierii* epoxide hydrolase and prediction of their enantiopurity variation with reaction time 155

Thermal stability

Thermal and operational stabilities of *Hansenula polymorpha* alcohol oxidase 37

Thermostability

An *in vitro* evaluation of a thermostable pectate lyase by using errorprone PCR 127

Thermotoga maritima

The recombinant xylanase B of *Thermotoga maritima* is highly xylan specific and produces exclusively xylobiose from xylans, a unique character for industrial applications 207

Thujopsene

The biocatalytic oxidation of thujopsene by plant cultured-cells 55

Transesterification

Enzyme-catalyzed regioselective synthesis of lipophilic guaifenesin ester derivatives 97

Trichosporon loubierii

Biocatalytic resolution of nitro-substituted phenoxypropylene oxides with *Trichosporon loubierii* epoxide hydrolase and prediction of their enantiopurity variation with reaction time 155

Trichothecium

Enantioselective bioreduction of acetophenone and its analogous by the fungus *Trichothecium* sp. 61

Two-phase reaction

Activity and stability of immobilized penicillin amidase at low pH values 29

Tyrosinase

Amperometric study of the inhibitory effect of carboxylic acids on tyrosinase 221

Reversible immobilization of tyrosinase onto polyethyleneiminegrafted and Cu(II) chelated poly(HEMA-co-GMA) reactive membranes 255

Waste water detoxification

Isothermal and non-isothermal bioreactors in the detoxification of waste waters polluted by aromatic compounds by means of immobilised laccase from *Rhus vernicifera* 191

Whole-cell biotransformation

Biotransformation of a 4α -hydroxylated eudesmane with *Exserohilum halodes*. Chemo-enzymatic synthesis of cryptomeridiol and 6-epi-colartin derivatives 133

Xylobiose

The recombinant xylanase B of *Thermotoga maritima* is highly xylan specific and produces exclusively xylobiose from xylans, a unique character for industrial applications 207

Zeolites

Application of factorial design to the study of an alcoholysis transformation promoted by cutinase immobilized on NaY zeolite and Accurel PA6 19

Zinc porphyrin

Photochemical synthesis of formic acid from CO_2 with formate dehydrogenase and water-soluble zinc porphyrin 121