
Author Index Volume 1–71

Author Index Volumes 1–50 see Volume 50

- Ackermann, J.-U.* see *Babel, W.*: Vol. 71, p. 125
- Adam, W., Lazarus, M., Saha-Möller, C. R., Weichhold, O., Hoch, U. Häring, D., Schreier, Ü.*: Bio-transformations with Peroxidases. Vol. 63, p. 73
- Allan, J. V., Roberts, S. M., Williamson, N. M.*: Polyamino Acids as Man-Made Catalysts. Vol. 63, p. 125
- Al-Rubeai, M.*: Apoptosis and Cell Culture Technology. Vol. 59, p. 225
- Al-Rubeai, M.* see *Singh, R. P.*: Vol. 62, p. 167
- Alsberg, B. K.* see *Shaw, A. D.*: Vol. 66, p. 83
- Antranikian, G.* see *Ladenstein, R.*: Vol. 61, p. 37
- Antranikian, G.* see *Müller, R.*: Vol. 61, p. 155
- Archelas, A.* see *Orru, R. V. A.*: Vol. 63, p. 145
- Argyropoulos, D. S.*: Lignin. Vol. 57, p. 127
- Arnold, F. H., Moore, J. C.*: Optimizing Industrial Enzymes by Directed Evolution. Vol. 58, p. 1
- Akhtar, M., Blanchette, R. A., Kirk, T. K.*: Fungal Delignification and Biochemical Pulping of Wood. Vol. 57, p. 159
- Autuori, F., Farrace, M. G., Oliverio, S., Piredda, L., Piacentini, G.*: “Tissie” Transglutaminase and Apoptosis. Vol. 62, p. 129
- Azerad, R.*: Microbial Models for Drug Metabolism. Vol. 63, p. 169
- Babel, W., Ackermann, J.-U., Breuer, U.*: Physiology, Regulation and Limits of the Synthesis of Poly(3HB). Vol. 71, p. 125
- Bajpai, P., Bajpai, P. K.*: Realities and Trends in Emzymatic Prebleaching of Kraft Pulp. Vol. 56, p. 1
- Bajpai, P., Bajpai, P. K.*: Reduction of Organochlorine Compounds in Bleach Plant Effluents. Vol. 57, p. 213
- Bajpai, P. K.* see *Bajpai, P.*: Vol. 56, p. 1
- Bajpai, P. K.* see *Bajpai, P.*: Vol. 57, p. 213
- Bárzana, E.*: Gas Phase Biosensors. Vol. 53, p. 1
- Bazin, M. J.* see *Markov, S. A.*: Vol. 52, p. 59
- Bellgardt, K.-H.*: Process Models for Production of β -Lactam Antibiotics. Vol. 60, p. 153
- Beppu, T.*: Development of Applied Microbiology to Modern Biotechnology in Japan. Vol. 69, p. 41
- Berovic, M.* see *Mitchell, D. A.*: Vol. 68, 61
- Beyeler, W., DaPra, E., Schneider, K.*: Automation of Industrial Bioprocesses. Vol. 70, p. 139
- Beyer, M.* see *Seidel, G.*: Vol. 66, p. 115
- Bhatia, P. K., Mukhopadhyay, A.*: Protein Glycosylation: Implications for in vivo Functions and Thereapeutic Applications. Vol. 64, p. 155
- Bisaria, V. S.* see *Ghose, T. K.*: Vol. 69, p. 87
- Blanchette R. A.* see *Akhtar, M.*: Vol. 57, p. 159
- de Bont, J.A.M.* see *van der Werf, M. J.*: Vol. 55, p. 147

- Bocker, H., Knorre, W.A.*: Antibiotica Research in Jena from Penicillin and Nourseothricin to Interferon. Vol. 70, p. 35
- Brainard, A. P.* see Ho, N. W. Y.: Vol. 65, p. 163
- Breuer, U.* see Babel, W.: Vol. 71, p. 125
- Broadhurst, D.* see Shaw, A. D.: Vol. 66, p. 83
- Bruckheimer, E. M., Cho, S. H., Sarkiss, M., Herrmann, J., McDonell, T. J.*: The Bcl-2 Gene Family and Apoptosis. Vol. 62, p. 75
- Buchert, J.* see Suurnäkki, A.: Vol. 57, p. 261
- Bungay, H. R.* see Mühlemann, H. M.: Vol. 65, p. 193
- Bungay, H. R., Isermann, H.P.*: Computer Applications in Bioprocessin. Vol. 70, p. 109
- Cao, N. J.* see Gong, C. S.: Vol. 65, p. 207
- Cao, N. J.* see Tsao, G. T.: Vol. 65, p. 243
- Carnell, A. J.*: Stereo-inversions Using Microbial Redox-Reactions. Vol. 63, p. 57
- Cen, P., Xia, L.*: Production of Cellulase by Solid-State Fermentation. Vol. 65, p. 69
- Chang, H. N.* see Lee, S. Y.: Vol. 52, p. 27
- Cheetham, P. S. J.*: Combining the Technical Push and the Business Pull for Natural Flavours. Vol. 55, p. 1
- Cho, S. H.* see Bruckheimer, E. M.: Vol. 62, p. 75
- Choi, J.* see Lee, S. Y.: Vol. 71, p. 183
- Chen, Z.* see Ho, N. W. Y.: Vol. 65, p. 163–192
- Christensen, B., Nielsen, J.*: Metabolic Network Analysis – A Powerful Tool in Metabolic Engineering. Vol. 66, p. 209
- Ciaramella, M.* see van der Oost, J.: Vol. 61, p. 87
- Contreras, B.* see Sablon, E.: Vol. 68, p. 21
- Cornet, J.-F., Dussap, C. G., Gros, J.-B.*: Kinetics and Energetics of Photosynthetic Micro-Organisms in Photobioreactors. Vol. 59, p. 153
- da Costa, M.S., Santos, H., Galinski, E.A.*: An Overview of the Role and Diversity of Compatible Solutes in Bacteria and Archaea. Vol. 61, p. 117
- Cotter, T. G.* see McKenna, S. L.: Vol. 62, p. 1
- Croteau, R.* see McCaskill, D.: Vol. 55, p. 107
- Danielsson, B.* see Xie, B.: Vol. 64, p. 1
- DaPra, E.* see Beyeler, W.: Vol. 70, p. 139
- Darzynkiewicz, Z., Traganos, F.*: Measurement of Apoptosis. Vol. 62, p. 33
- Davey, H. M.* see Shaw, A. D.: Vol. 66, p. 83
- Dean, J. F. D., LaFayette, P. R., Eriksson, K.-E. L., Merkle, S. A.*: Forest Tree Biotechnology. Vol. 57, p. 1
- Demain, A. L., Fang, A.*: The natural Functions of Secondary Metabolites. Vol. 69, p. 1
- Dochain, D., Perrier, M.*: Dynamical Modelling, Analysis, Monitoring and Control Design for Nonlinear Bioprocesses. Vol. 56, p. 147
- Du, J.* see Gong, C. S.: Vol. 65, p. 207–241
- Du, J.* see Tsao, G. T.: Vol. 65, p. 243–280
- Dueser, M.* see Raghavarao, K. S. M. S.: Vol. 68, p. 139
- Dussap, C. G.* see Cornet J.-F.: Vol. 59, p. 153
- Dutta, N. N.* see Ghosh, A. C.: Vol. 56, p. 111
- Eggeling, L., Sahm, H., de Graaf, A.A.*: Quantifying and Directing Metabolite Flux: Application to Amino Acid Overproduction. Vol. 54, p. 1
- Eggink, G.*, see Kessler, B.: Vol. 71, p. 159
- Eggink, G.*, see van der Walle, G. J. M.: Vol. 71, p. 263
- Ehrlich, H. L.* see Rusin, P.: Vol. 52, p. 1
- Elias, C. B., Joshi, J. B.*: Role of Hydrodynamic Shear on Activity and Structure of Proteins. Vol. 59, p. 47
- Elling, L.*: Glycobiotechnology: Enzymes for the Synthesis of Nucleotide Sugars. Vol. 58, p. 89

- Eriksson, K.-E. L.* see *Kuhad, R. C.*: Vol. 57, p. 45
Eriksson, K.-E. L. see *Dean, J. F. D.*: Vol. 57, p. 1
- Faber, K.* see *Orru, R. V. A.*: Vol. 63, p. 145
Fang, A. see *Demain, A. L.*: Vol. 69, p. 1
Farrell, R. L., Hata, K., Wall, M. B.: Solving Pitch Problems in Pulp and Paper Processes. Vol. 57, p. 197
Farrace, M. G. see *Autuori, F.*: Vol. 62, p. 129
Fiechter, A.: Biotechnology in Switzerland and a Glance at Germany. Vol. 69, p. 175
Fiechter, A. see *Ochsner, U. A.*: Vol. 53, p. 89
Foody, B. see *Tolan, J. S.*: Vol. 65, p. 41
Freitag, R., Hörvath, C.: Chromatography in the Downstream Processing of Biotechnological Products. Vol. 53, p. 17
Furstoss, R. see *Orru, R. V. A.*: Vol. 63, p. 145
- Galinski, E. A.* see *da Costa, M. S.*: Vol. 61, p. 117
Gatfield, I. L.: Biotechnological Production of Flavour-Active Lactones. Vol. 55, p. 221
Gemeiner, P. see *Stefuca, V.*: Vol. 64, p. 69
Gerlach, S. R. see *Schügerl, K.*: Vol. 60, p. 195
Ghose, T. K., Bisaria, V. S.: Development of Biotechnology in India. Vol. 69, p. 71
Ghosh, A. C., Mathur, R. K., Dutta, N. N.: Extraction and Purification of Cephalosporin Antibiotics. Vol. 56, p. 111
Ghosh, P. see *Singh, A.*: Vol. 51, p. 47
Gilbert, R. J. see *Shaw, A. D.*: Vol. 66, p. 83
Gomes, J., Menawat, A. S.: Fed-Batch Bioproduction of Spectinomycin. Vol. 59, p. 1
Gong, C. S., Cao, N. J., Du, J., Tsao, G. T.: Ethanol Production from Renewable Resources. Vol. 65, p. 207–241
Gong, C. S. see *Tsao, G. T.*: Vol. 65, p. 243
Goodacre, R. see *Shaw, A. D.*: Vol. 66, p. 83
de Graaf, A. A. see *Eggeling, L.*: Vol. 54, p. 1
de Graaf, A. A. see *Weuster-Botz, D.*: Vol. 54, p. 75
de Graaf, A. A. see *Wiechert, W.*: Vol. 54, p. 109
Grabley, S., Thiericke, R.: Bioactive Agents from Natural Sources: Trends in Discovery and Application. Vol. 64, p. 101
Griengl, H. see *Johnson, D. V.*: Vol. 63, p. 31
Gros, J.-B. see *Larroche, C.*: Vol. 55, p. 179
Gros, J.-B. see *Cornet, J. F.*: Vol. 59, p. 153
Guenette M. see *Tolan, J. S.*: Vol. 57, p. 289
Gutman, A. L., Shapira, M.: Synthetic Applications of Enzymatic Reactions in Organic Solvents. Vol. 52, p. 87
- Häring, D.* see *Adam, E.*: Vol. 63, p. 73
Hall, D. O. see *Markov, S. A.*: Vol. 52, p. 59
Hall, P. see *Mosier, N. S.*: Vol. 65, p. 23
Harvey, N. L., Kumar, S.: The Role of Caspases in Apoptosis. Vol. 62, p. 107
Hasegawa, S., Shimizu, K.: Noninferior Periodic Operation of Bioreactor Systems. Vol. 51, p. 91
Hata, K. see *Farrell, R. L.*: Vol. 57, p. 197
Hein, S. see *Steinbüchel, A.*: Vol. 71, p. 81
Hembach, T. see *Ochsner, U. A.*: Vol. 53, p. 89
Henzler, H.-J.: Particle Stress in Bioreactor. Vol. 67, p. 35
Herrmann, J. see *Bruckheimer, E. M.*: Vol. 62, p. 75
Hill, D. C., Wrigley, S. K., Nisbet, L. J.: Novel Screen Methodologies for Identification of New Microbial Metabolites with Pharmacological Activity. Vol. 59, p. 73
Hiroto, M. see *Inada, Y.*: Vol. 52, p. 129

- Ho, N. W. Y., Chen, Z., Brainard, A. P. Sedlak, M.: Successful Design and Development of Genetically Engineering Saccharomyces Yeasts for Effective Cofermentation of Glucose and Xylose from Cellulosic Biomass to Fuel Ethanol. Vol. 65, p. 163
- Hoch, U. see Adam, W.: Vol. 63, p. 73
- Holló, J., Kralovánsky, U. P.: Biotechnology in Hungary. Vol. 69, p. 151
- Hórvath, C. see Freitag, R.: Vol. 53, p. 17
- Hummel, W.: New Alcohol Dehydrogenases for the Synthesis of Chiral Compounds. Vol. 58, p.145
- Inada, Y., Matsushima, A., Hiroto, M., Nishimura, H., Kodera, Y.: Chemical Modifications of Proteins with Polyethylen Glycols. Vol. 52, p. 129
- Iyer, P. see Lee, Y. Y.: Vol. 65, p. 93-115
- Irwin, D. C. see Wilson, D. B.: Vol. 65, p. 1
- Isermann, H. P. see Bungay, H. R.: Vol. 70, p. 109
- Jeffries, T. W., Shi, N.-Q.: Genetic Engineering for Improved Xylose Fementation by Yeasts. Vol. 65, p. 117
- Jendrossek, D.: Microbial Degradation of Polyesters. Vol. 71, p. 293
- Johnson, E. A., Schroeder, W. A.: Microbial Carotenoids. Vol. 53, p. 119
- Johnson, D. V., Griengl, H.: Biocatalytic Applications of Hydroxynitrile. Vol. 63, p. 31
- Joshi, J. B. see Elias, C. B.: Vol. 59, p. 47
- Johnsurd, S. C.: Biotechnology for Solving Slime Problems in the Pulp and Paper Industry. Vol. 57, p. 311
- Kaderbhai, N. see Shaw, A. D.: Vol. 66, p. 83
- Kataoka, M. see Shimizu, S.: Vol. 58, p. 45
- Kataoka, M. see Shimizu, S.: Vol. 63, p. 109
- Katzen, R., Tsao, G. T.: A View of the History of Biochemical Engineering. Vol. 70, p. 77
- Kawai, F.: Breakdown of Plastics and Polymers by Microorganisms. Vol. 52, p. 151
- Kell, D. B. see Shaw, A. D.: Vol. 66, p. 83
- Kessler, B., Weusthuis, R., Witholt, B., Eggink, G.: Production of Microbial Polyesters: Fermentation and Downstream Processes. Vol. 71, p. 159
- Kieran, P. M., Malone, D. M., MacLoughlin, P. F.: Effects of Hydrodynamic and Interfacial Forces on Plant Cell Suspension Systems. Vol. 67, p. 139
- Kim, Y. B., Lenz, R. W.: Polyesters from Microorganisms. Vol. 71, p. 51
- King, R.: Mathematical Modelling of the Morphology of Streptomyces Species. Vol. 60, p. 95
- Kirk, T. K. see Akhtar, M.: Vol. 57, p. 159
- Knorre, W. A. see Bocker, H.: Vol. 70, p. 35
- Kobayashi, M. see Shimizu, S.: Vol. 58, p. 45
- Kobayashi, S., Uyama, H.: *In vitro* Biosynthesis of Polyesters. Vol. 71, p. 241
- Kodera, F. see Inada, Y.: Vol. 52, p. 129
- Kolattukudy, P. E.: Polyesters in Higher Plants. Vol. 71, p. 1
- de Koning, G. J. M. see van der Walle, G. A. M.: Vol. 71, p. 263
- Kossen, N. W. F.: The Morphology of Filamentous Fungi. Vol. 70, p. 1
- Krabben, P. Nielsen, J.: Modeling the Mycelium Morphology of Penicilium Species in Submerged Cultures. Vol. 60, p. 125
- Kralovánszky, U. P. see Holló, J.: Vol. 69, p. 151
- Krämer, R.: Analysis and Modeling of Substrate Uptake and Product Release by Procaroytic and Eucaryotik Cells. Vol. 54, p. 31
- Kretzmer G.: Influence of Stress on Adherent Cells. Vol. 67, p. 123
- Krieger, N. see Mitchell, D. A.: Vol. 68, p. 61
- Kuhad, R. C., Singh, A., Eriksson, K.-E. L.: Microorganisms and Enzymes Involved in the Degradation of Plant Cell Walls. Vol. 57, p. 45
- Kuhad, R. Ch. see Singh, A.: Vol. 51, p. 47
- Kumagai, H.: Microbial Production of Amino Acids in Japan. Vol. 69, p. 71
- Kumar, S. see Harvey, N. L.: Vol. 62, p. 107

- Ladenstein, R., Antranikian, G.*: Proteins from Hyperthermophiles: Stability and Enzymatic Catalysis Close to the Boiling Point of Water. Vol. 61, p. 37
- Ladisch, C. M.* see Mosier, N. S.: Vol. 65, p. 23
- Ladisch, R. M.* see Mosier, N. S.: Vol. 65, p. 23
- Lammers, F., Scheper, T.*: Thermal Biosensors in Biotechnology. Vol. 64, p. 35
- Larroche, C., Gros, J.-B.*: Special Transformation Processes Using Fungal Spores and Immobilized Cells. Vol. 55, p. 179
- LaFayette, P. R.* see Dean, J. F. D.: Vol. 57, p. 1
- Lazarus, M.* see Adam, W.: Vol. 63, p. 73
- Leak, D. J.* see van der Werf, M. J.: Vol. 55, p. 147
- Lee, S. Y., Chang, H. N.*: Production of Poly(hydroxyalkanoic Acid). Vol. 52, p. 27
- Lee, S. Y., Choi, J.*: Production of Microbial Polyester by Fermentation of Recombinant Microorganisms. Vol. 71, p. 183
- Lee, Y. Y., Iyer, P., Torget, R. W.*: Dilute-Acid Hydrolysis of Lignocellulosic Biomass. Vol. 65, p. 93
- Lenz, R. W.* see Kim, Y. B.: Vol. 71, p. 51
- Lievense, L. C., van't Riet, K.*: Convective Drying of Bacteria II. Factors Influencing Survival. Vol. 51, p. 71
- MacLoughlin, P. F.* see Kieran, P. M.: Vol. 67, p. 139
- Malone, D. M.* see Kieran, P. M.: Vol. 67, p. 139
- Maloney, S.* see Müller, R.: Vol. 61, p. 155
- Mandenius, C.-F.*: Electronic Noses for Bioreactor Monitoring. Vol. 66, p. 65
- Markov, S. A., Bazin, M. J., Hall, D. O.*: The Potential of Using Cyanobacteria in Photobioreactors for Hydrogen Production. Vol. 52, p. 59
- Marteinsson, V. T.* see Prieur, D.: Vol. 61, p. 23
- Mathur, R. K.* see Ghosh, A. C.: Vol. 56, p. 111
- Matsushima, A.* see Inada, Y.: Vol. 52, p. 129
- McCaskill, D., Croteau, R.*: Prospects for the Bioengineering of Isoprenoid Biosynthesis. Vol. 55, p. 107
- McDonnell, T. J.* see Bruckheimer, E. M.: Vol. 62, p. 75
- McGovern, A.* see Shaw, A. D.: Vol. 66, p. 83
- McGowan, A. J.* see McKenna, S. L.: Vol. 62, p. 1
- McKenna, S. L., McGowan, A. J., Cotter, T. G.*: Molecular Mechanisms of Programmed Cell Death. Vol. 62, p. 1
- McLoughlin, A. J.*: Controlled Release of Immobilized Cells as a Strategy to Regulate Ecological Competence of Inocula. Vol. 51, p. 1
- Menachem, S. B.* see Argyropoulos, D. S.: Vol. 57, p. 127
- Menawat, A. S.* see Gomes J.: Vol. 59, p. 1
- Menge, M.* see Mukerjee, J.: Vol. 68, p. 1
- Merkle, S. A.* see Dean, J. F. D.: Vol. 57, p. 1
- Mitchell, D. A., Berovic, M., Krieger, N.*: Biochemical Engineering Aspects of Solid State Bioprocessing. Vol. 68, p. 61
- Moore, J. C.* see Arnold, F. H.: Vol. 58, p. 1
- Mosier, N. S., Hall, P., Ladisch, C. M., Ladisch, M. R.*: Reaction Kinetics, Molecular Action, and Mechanisms of Cellulolytic Proteins. Vol. 65, p. 23
- Moracci, M.* see van der Oost, J.: Vol. 61, p. 87
- Mühlemann, H. M., Bungay, H. R.*: Research Perspectives for Bioconversion of Scrap Paper. Vol. 65, p. 193
- Müller, R., Antranikian, G., Maloney, S., Sharp, R.*: Thermophilic Degradation of Environmental Pollutants. Vol. 61, p. 155
- Mukherjee, J., Menge, M.*: Progress and Prospects of Ergot Alkaloid Research. Vol. 68, p. 1
- Mukhopadhyay, A.*: Inclusion Bodies and Purification of Proteins in Biologically Active Forms. Vol. 56, p. 61
- Mukhopadhyay, A.* see Bhatia, P. K.: Vol. 64, p. 155

- Nielsen, J.* see Christensen, B.: Vol. 66, p. 209
Nielsen, J. see Krabben, P.: Vol. 60, p. 125
Nisbet, L. J. see Hill, D. C.: Vol. 59, p. 73
Nishimura, H. see Inada, Y.: Vol. 52, p. 123
- Ochsner, U. A., Hembach, T., Fiechter, A.*: Produktion of Rhamnolipid Biosurfactants. Vol. 53, p. 89
O'Connor, R.: Survival Factors and Apoptosis: Vol. 62, p. 137
Ogawa, J. see Shimizu, S.: Vol. 58, p. 45
Ohta, H.: Biocatalytic Asymmetric Decarboxylation. Vol. 63, p. 1
van der Oost, J., Ciaramella, M., Moracci, M., Pisani, F. M., Rossi, M., de Vos, W. M.: Molecular Biology of Hyperthermophilic Archaea. Vol. 61, p. 87
Oliverio, S. see Autuori, F.: Vol. 62, p. 129
Orru, R. V. A., Archelas, A., Furstoss, R., Faber, K.: Epoxide Hydrolases and Their Synthetic Applications. Vol. 63, p. 145
- Paul, G. C., Thomas, C. R.*: Characterisation of Mycelial Morphology Using Image Analysis. Vol. 60, p. 1
Perrier, M. see Dochain, D.: Vol. 56, p. 147
Piacentini, G. see Autuori, F.: Vol. 62, p. 129
Piredda, L. see Autuori, F.: Vol. 62, p. 129
Pisani, F. M. see van der Oost, J.: Vol. 61, p. 87
Pohl, M.: Protein Design on Pyruvate Decarboxylase (PDC) by Site-Directed Mutagenesis. Vol. 58, p. 15
Poirier, Y.: Production of Polyesters in Transgenic Plants. Vol. 71, p. 209
Pons, M.-N., Vivier, H.: Beyond Filamentous Species. Vol. 60, p. 61
Pons, M.-N., Vivier, H.: Biomass Quantification by Image Analysis. Vol. 66, p. 133
Prieur, D., Marteinsson, V. T.: Prokaryotes Living Under Elevated Hydrostatic Pressure. Vol. 61, p. 23
Pulz, O., Scheibenbogen, K.: Photobioreactors: Design and Performance with Respect to Light Energy Input. Vol. 59, p. 123
- Raghavarao, K. S. M. S., Dueser, M., Todd, P.*: Multistage Magnetic and Electrophoretic Extraction of Cells, Particles and Macromolecules. Vol. 68, p. 139
Ramanathan, K. see Xie, B.: Vol. 64, p. 1
van't Riet, K. see Lievens, L. C.: Vol. 51, p. 71
Roberts, S. M. see Allan, J. V.: Vol. 63, p. 125
Roehr, M.: History of Biotechnology in Austria. Vol. 69, p. 125
Rogers, P. L., Shin, H. S., Wang, B.: Biotransformation for L-Ephedrine Production. Vol. 56, p. 33
Rossi, M. see van der Oost, J.: Vol. 61, p. 87
Roychoudhury, P. K., Srivastava, A., Sahai, V.: Extractive Bioconversion of Lactic Acid. Vol. 53, p. 61
Rowland, J. J. see Shaw, A. D.: Vol. 66, p. 83
Rusin, P., Ehrlich, H. L.: Developments in Microbial Leaching – Mechanisms of Manganese Solubilization. Vol. 52, p. 1
Russell, N. J.: Molecular Adaptations in Psychrophilic Bacteria: Potential for Biotechnological Applications. Vol. 61, p. 1
- Sablon, E., Contreras, B., Vandamme, E.*: Antimicrobial Peptides of Lactic Acid Bacteria: Mode of Action, Genetics and Biosynthesis. Vol. 68, p. 21
Sahai, V. see Singh, A.: Vol. 51, p. 47
Sahai, V. see Roychoudhury, P. K.: Vol. 53, p. 61
Saha-Möller, C. R. see Adam, W.: Vol. 63, p. 73
Sahm, H. see Eggeling, L.: Vol. 54, p. 1
Saleemuddin, M.: Bioaffinity Based Immobilization of Enzymes. Vol. 64, p. 203
Santos, H. see da Costa, M. S.: Vol. 61, p. 117

- Sarkiss, M.* see Bruckheimer, E. M.: Vol. 62, p. 75
Scheibenbogen, K. see Pulz, O.: Vol. 59, p. 123
Scheper, T. see Lammers, F.: Vol. 64, p. 35
Schneider, K. see Beyeler, W.: Vol. 70, p. 139
Schreier, P.: Enzymes and Flavour Biotechnology. Vol. 55, p. 51
Schreier, P. see Adam, W.: Vol. 63, p. 73
Schroeder, W. A. see Johnson, E. A.: Vol. 53, p. 119
Schügerl, K., Gerlach, S. R., Siedenberg, D.: Influence of the Process Parameters on the Morphology and Enzyme Production of *Aspergilli*. Vol. 60, p. 195
Schügerl, K. see Seidel, G.: Vol. 66, p. 115
Schügerl, K.: Recovery of Proteins and Microorganisms from Cultivation Media by Foam Flotation. Vol. 68, p. 191
Schügerl, K.: Development of Bioreaction Engineering. Vol. 70, p. 41
Schumann, W.: Function and Regulation of Temperature-Inducible Bacterial Proteins on the Cellular Metabolism. Vol. 67, p. 1
Schuster, K. C.: Monitoring the Physiological Status in Bioprocesses on the Cellular Level. Vol. 66, p. 185
Scouroumounis, G. K. see Winterhalter, P.: Vol. 55, p. 73
Scragg, A.H.: The Production of Aromas by Plant Cell Cultures. Vol. 55, p. 239
Sedlak, M. see Ho, N. W. Y.: Vol. 65, p. 163
Seidel, G., Tollnick, C., Beyer, M., Schügerl, K.: On-line and Off-line Monitoring of the Production of Cephalosporin C by *Acremonium Chrysogenum*. Vol. 66, p. 115
Shamlou, P. A. see Yim, S. S.: Vol. 67, p. 83
Shapira, M. see Gutman, A. L.: Vol. 52, p. 87
Sharp, R. see Müller, R.: Vol. 61, p. 155
Shaw, A. D., Winson, M. K., Woodward, A. M., McGovern, A., Davey, H. M., Kaderbhai, N., Broadhurst, D., Gilbert, R. J., Taylor, J., Timmins, E. M., Alsberg, B. K., Rowland, J. J., Goodacre, R., Kell, D. B.: Rapid Analysis of High-Dimensional Bioprocesses Using Multivariate Spectroscopies and Advanced Chemometrics. Vol. 66, p. 83
Shi, N.-Q. see Jeffries, T. W.: Vol. 65, p. 117
Shimizu, S., Ogawa, J., Kataoka, M., Kobayashi, M.: Screening of Novel Microbial for the Enzymes Production of Biologically and Chemically Useful Compounds. Vol. 58, p. 45
Shimizu, K. see Hasegawa, S.: Vol. 51, p. 91
Shimizu, S., Kataoka, M.: Production of Chiral C3- and C4-Units by Microbial Enzymes. Vol. 63, p. 109
Shin, H. S. see Rogers, P. L.: Vol. 56, p. 33
Siedenberg, D. see Schügerl, K.: Vol. 60, p. 195
Singh, R. P., Al-Rubeai, M.: Apoptosis and Bioprocess Technology. Vol. 62, p. 167
Singh, A., Kuhad, R. Ch., Sahai, V., Ghosh, P.: Evaluation of Biomass. Vol. 51, p. 47
Singh, A. see Kuhad, R. C.: Vol. 57, p. 45
Sonnleitner, B.: New Concepts for Quantitative Bioprocess Research and Development. Vol. 54, p. 155
Sonnleitner, B.: Instrumentation of Biotechnological Processes. Vol. 66, p. 1
Stefuca, V., Gemeiner, P.: Investigation of Catalytic Properties of Immobilized Enzymes and Cells by Flow Microcalorimetry. Vol. 64, p. 69
Steinbüchel, A., Hein, S.: Biochemical and Molecular Basis of Microbial Synthesis of Polyhydroxyalkanoates in Microorganisms. Vol. 71, p. 81
Srivastava, A. see Roychoudhury, P. K.: Vol. 53, p. 61
Suurnäkki, A., Tenkanen, M., Buchert, J., Viikari, L.: Hemicellulases in the Bleaching of Chemical Pulp. Vol. 57, p. 261
Taylor, J. see Shaw, A. D.: Vol. 66, p. 83
Tenkanen, M. see Suurnäkki, A.: Vol. 57, p. 261
Thiericke, R. see Grabely, S.: Vol. 64, p. 101

- Thömmes, J.*: Fluidized Bed Adsorption as a Primary Recovery Step in Protein Purification. Vol. 58, p. 185
- Thomas, C. R.* see Paul, G. C.: Vol. 60, p. 1
- Timmens, E. M.* see Shaw, A. D.: Vol. 66, p. 83
- Todd, P.* see Raghavarao, K. S. M. S.: Vol. 68, p. 139
- Tolan, J. S., Guenette, M.*: Using Enzymes in Pulp Bleaching: Mill Applications. Vol. 57, p. 289
- Tolan, J. S., Foody, B.*: Cellulase from Submerged Fermentation. Vol. 65, p. 41
- Tollnick, C.* see Seidel, G.: Vol. 66, p. 115
- Traganos, F.* see Darzynkiewicz, Z.: Vol. 62, p. 33
- Torget, R. W.* see Lee, Y. Y.: Vol. 65, p. 93–115
- Tsao, G. T., Cao, N. J. Du, J., Gong, C. S.*: Production of Multifunctional Organic Acids from Renewable Resources. Vol. 65, p. 243
- Tsao, G. T.* see Gong, C. S.: Vol. 65, p. 207
- Tsao, G. T.* see Katzen, R.: Vol. 70, p. 77
- Uyama, H.* see Kobayashi, S.: Vol. 71, p. 241
- Vandamme, E.* see Sablon, E.: Vol. 68, p. 21
- Viikari, L.* see Suurnäkki, A.: Vol. 57, p. 261
- Vivier, H.* see Pons, M.-N.: Vol. 60, p. 61
- Vivier, H.* see Pons, M.-N.: Vol. 66, p. 133
- de Vos, W. M.* see van der Oost, J.: Vol. 61, p. 87
- Wang, B.* see Rogers, P. L.: Vol. 56, p. 33
- Wall, M. B.* see Farrell, R. L.: Vol. 57, p. 197
- Weichold, O.* see Adam, W.: Vol. 63, p. 73
- van der Walle, G. A. M., de Koning, G. J. M., Weusthuis, R. A., Eggink, G.*: Properties, Modifications and Applications of Biopolyester. Vol. 71, p. 263
- van der Werf, M. J., de Bont, J. A. M. Leak, D. J.*: Opportunities in Microbial Biotransformation of Monoterpenes. Vol. 55, p. 147
- Weuster-Botz, D., de Graaf, A. A.*: Reaction Engineering Methods to Study Intracellular Metabolite Concentrations. Vol. 54, p. 75
- Weusthuis, R.* see Kessler, B.: Vol. 71, p. 159
- Weusthuis, R. A.* see van der Walle, G. J. M.: Vol. 71, p. 263
- Wiechert, W., de Graaf, A. A.*: In Vivo Stationary Flux Analysis by ¹³C-Labeling Experiments. Vol. 54, p. 109
- Wiesmann, U.*: Biological Nitrogen Removal from Wastewater. Vol. 51, p. 113
- Williamson, N. M.* see Allan, J. V.: Vol. 63, p. 125
- Wilson, D. B., Irwin, D. C.*: Genetics and Properties of Cellulases. Vol. 65, p. 1
- Winson, M. K.* see Shaw, A. D.: Vol. 66, p. 83
- Winterhalter, P., Skouroumounis, G. K.*: Glycoconjugated Aroma Compounds: Occurrence, Role and Biotechnological Transformation. Vol. 55, p. 73
- Witholt, B.* see Kessler, B.: Vol. 71, p. 159
- Woodley, J. M.*: Advances in Enzyme Technology – UK Contributions. Vol. 70, p. 93
- Woodward, A. M.* see Shaw, A. D.: Vol. 66, p. 83
- Wrigley, S. K.* see Hill, D. C.: Vol. 59, p. 73
- Xia, L.* see Cen, P.: Vol. 65, p. 69
- Xie, B., Ramarathan, K., Danielsson, B.*: Principles of Enzyme Thermistor Systems: Applications to Biomedical and Other Measurements. Vol. 64, p. 1
- Yim, S. S., Shamlou, P. A.*: The Engineering Effects of Fluids Flow and Freely Suspended Biological Macro-Materials and Macromolecules. Vol. 67, p. 83

Subject Index

- Abcisic acid 26
Acetate 188, 200
Acetic acid 135, 142, 143, 151, 153
– –, activated 127
– – induction 192
Acetoacetyl-CoA 127, 129–131, 134, 136, 138
Acetoacetyl-CoA reductase 100, 103, 108, 129, 130, 195, 212
Acetoacetyl-CoA synthetase 136
Acetyl-CoA 127–138, 197, 258
Acidovorax delafieldii 302, 303
Acidovorax sp. 312
Acinetobacter calcoaceticus 143
Acinetobacter sp. 84, 88, 100
Acinetobacter sp. RA3849 90, 92, 96, 100
Acyl-ACP thioesterase 107
Acyl-enzyme intermediate 247, 253
Adhesives, pressure-sensitive 276
Aeromonas caviae 84, 87, 98, 106, 129, 130, 195, 216
Aeromonas caviae 440 73, 74
Aeromonas caviae FA440 89, 90, 92
Aeromonas caviae PHA- 109
Agave americana 13
Agrobacterium tumefaciens 211
Alcaligenes faecalis 300
Alcaligenes faecalis AE122 297, 298, 302, 303, 309
Alcaligenes faecalis T1 297-305, 309–316
Alcaligenes hydrogenophilus 200
Alcaligenes latus 84, 89, 90, 92, 96, 100, 146, 151, 162, 174, 176, 184, 188, 189
– –, PHA biosynthesis genes 189, 192
Alcaligenes sp. SH-69 84, 89, 90, 92
Alcohol formation 138
Alkane 199
 α,ω -Alkanediols 104
n-Alkanes 60
Alkanes, fluorinated/chlorinated 70
Alkanoate 199
n-Alkanoic acids 60
Alkanol 199
Alkene 199
Alkenoate 199
Alkoxyalkanoic acids 72
Alkyd paints, poly(HA_{MCL}) 278
Ammonia lyase 15
Amycolatopsis sp. 317
Anaplerotic sequences 138
Anoxygenic phototrophic bacteria 164
Antibodies 99
Application of PHA 179
Arabidopsis thaliana 110, 112, 209, 211
Armillaria mellea 35
Aromatic group 67
Aromatic polyester 250
Aureobasidium pollulans 316
Aureobasidium sp. 76
Autographa californica 112
Auxiliary substrate concept 154
Azobacter beijerinckii 57
Azorhizobium caulinodans 84, 88, 90, 92
Azotobacter beijerinckii 129, 136, 137
Azotobacter vinelandii 184
Azotobacter vinelandii UWD 163

Bacillus cereus 319
Bacillus circulans 319
Bacillus megaterium 84, 87–92, 96, 113–115, 127, 136, 152, 317, 319
Bacteriophage lysis gene E 190
Balanced growth 161
Batch process 144, 151
Biodegradable plastic 159
Biomass concentration 147, 150, 151, 153
Biomass production 161
BIOPOL 56, 162, 177
Biopolyesters 263
Bioremediation 163
Biotechnologische Forschungsgesellschaft Linz 162, 176
Blend 166, 173
Blockpolymer 173
Brassica napus 110, 112, 209, 215
Brominated carboxylic acids 70

- Bromination 71
Burkholderia cepacia 58, 84, 89, 90, 92, 96, 100, 175
Burkholderia sp. DSM 9243 118
Burkholderia sp. IPT77B 116
 Butyrate 194
 Butyrate kinase 104
 γ -Butyrolactone 58, 104

 ϵ -Caprolactone (ϵ -CL) 252
 C_{18} acids 22
 Carbohydrates, PHA 234
 Carbon conversion efficiency 141
 Carbon substrate-related 127
 Carbon:energy-balanced substrate 141
 Carbon-carbon double bond 65
 Carbon-carbon triple bond 66
 Catalytic cycle 91
 Catalytic triad 305, 310
 Cell lysis 163, 176
 Cell wall adcrustations 3
 – –, suberized 5
 Cellular energy status 134
 Central intermediate 127, 130
 Central precursor 135, 140
 Cheese coatings 281
 Chemostat enrichment, long-term 173
 Chemostatic cultivation 152
 Chiral synthon 159, 179
 Cholic acid 244
Chromatium vinosum 85, 91, 102, 104, 114, 118, 130, 164
Chromatium vinosum D 84, 89–92, 201
Chromobacterium violaceum 57, 84, 89–92, 96, 184
 Chymotrypsin 31
 Citrate synthase 128, 131–135
 D,L-Citronellol 72
 Clear zone technique 296
Clivia minimata 13
 Closed circuit system 164
Clostridium acetobutylicum 104
Clostridium kluyveri 106, 194
 – –, succinate degradation pathway 195
Clostridium paraputrificum 309
Clostridium propionicum 104
 Co-feeding 170, 173
 CO_2 197, 201
 Coarse regulation 137
 Coenzyme A 99
 COFA-PHA 285
Comamonas acidovorans 84, 89–92, 96, 174, 297, 298, 300–303
Comamonas acidovorans 7789 316
Comamonas acidovorans TB-35 300, 317

Comamonas sp. 297, 300–305, 309, 312, 314
Comamonas testosteroni 118, 297, 298, 302, 303
 Comb-like polymers 62
 Cometabolism 79
 CONSENSUS 92
 Continuous process 151, 154
 Copolymer 166, 173
 Cotton fibers 3
 CPMAS NMR 11
 CrO_3 oxidation 11
Cromobacterium violoaceum 164
 Crotonyl-CoA hydratase 129
 Cultivation, chemostatic 152
 –, continuous 171
 –, –, high cell density 171
 –, –, two-stage 171
 –, fed-batch 153
 – process, three-stage 174
 CuO oxidation 5
 Cutan 16
 Cuticle 3, 36
 Cuticular layer/polymer 3, 4
 Cutin 5, 316
 –, biosynthesis 16
 –, composition 9
 – degradation, fungi 27
 –, depolymerization-resistant 13
 – monomers 16
 –, structure 9
 Cutin acids, C_{18} family 18
 Cutin transacylase 22
 Cutinase 5, 22, 38
 –, fungal 11
 Cyano group 169
 Cyanobacteria 164
 Cyanophenoxy group 168
p-Cyanophenoxyhexanoic acid 69
p-Cyanophenoxy group 69
 11-Cyanoundecanoic acid 72
 Cyclic acid anhydride 250
 Cyclic carbonate 257
 Cyclic dicarbonate 258
 Cyclic diester 257
 Cyclic oligomer 249
 Cyclic phosphate 258
 Cyclohexyl group 72
 Cynobacteria 201
 Cytosolic thioesterase I 192

 Decanoate 192
 Dehydration polycondensation 246
 Dendrimer 256
 Depolymerase 136, 137
 Depolymerization 5, 9

- Dicarboxylic acid 245
Dicarboxylic acid diester 246
Dicarboxylic acids 13, 14
Dissolved oxygen concentration 188
Divinyl adipate 247, 248
Divinyl ester 249
DO-stat feeding strategy 196
Dodecanoate 192, 195
Downstream process 175
Dual-carbon/nitrogen limitation 173
- Economic viability 125, 140, 146, 154
Economics 176, 185
Ectothiorhodospira shaposhnikovii 84
Efficiency 125, 138, 140–144
Egoistic principle 138
Elastase 31
Elastomeric polymer 160, 179
Electron transport phosphorylation 134, 136, 138, 141
Enantioselective polymerization 244, 245, 248, 252, 253
Energetically deficient 143
Energy budget 138, 152
Energy-consuming process 136
Energy-yielding substrates 144
Enol ester 247
Enoyl-CoA hydratase 103, 106, 195, 198
Enzymatic polymerization 242
Enzyme-activated monomer 253
Epidermal layer/cells 3, 4
Epimerase 106
Epoxidase 20
Epoxide hydrase 21
Escherichia coli 109–111, 151, 218, 314, 319
Escherichia coli LS1298 192
Escherichia coli LS5218 190, 195
Ester groups 73
Esterase 244
- Fatty acids 13
– –, free 192
– – β -oxidation route 58
– – synthesis 165, 170
– – – route, de novo 59, 63
Fed-batch cultivation 153
Fed-batch culture 188, 190, 192, 195, 196, 199
Fed-batch process 150, 151, 162–164, 171
Fermentation 160
Ferrobacillus ferrooxidans 319
Filamentation 187
Fine control 137
Fine regulation 134, 136
Fluoroform, supercritical 250
- Formate 200
Formate dehydrogenase 138
Fractionation 74
Free CoA 135, 154
Fructose 198
FtsZ 187
Fungi 27
Fusarium solani f. *pisi* 27
Fusarium solani 314
- Genetic engineering 110
Glass transition temperature 63
GLC 13
Gluconate 192, 194, 200
Glucose 187, 192, 195, 198, 200
Glycerol 14
Glycol 245, 246, 250
Gossypium hirsutum 110, 112
Growth-associated synthesis 125, 139
Growth-coupling 142
- H-transmission cycle 138
Halogen 69
Halogenated polyester 169
Hanes-Woolf plot 254
Harmful material 155
Heat of fusion 63
Hemicellulose 189
Heterogeneous system 60
Heterologous expression 108
Heteropolyester 130
Hexadecane-1,7,16-triol 17
Hexanoate 198, 200
HI-treatment 13
High cell density continuous cultivation 171
High cell density culture 195, 199
High cell density fed-batch process 172
Homogeneous systems 60
Homologous amplification 196
Homopolyester 130
Homopolymers 74, 166, 173
Hydratases 127, 129
Hydrogen sink 139
Hydrogenophaga pseudoflava 174, 318
Hydroxy acids 160, 174, 175
3-Hydroxy-*n*-alkanoate 58, 59
–, substituted 59
3-Hydroxyacyl-acyl carrier protein-coenzyme A transferase 107
(R)-Hydroxyalkanoate 259
Hydroxyalkanoic acids 72
4-Hydroxybutyl-CoA dehydrogenase 194, 195
4-Hydroxybutyl-CoA:CoA transferase 195

- 4-Hydroxybutyrate 55, 58, 104
 D-(-)-3-Hydroxybutyrate dehydrogenase
 136-138
 3-Hydroxybutyrate dimer hydrolase 312
 3-Hydroxybutyrate oligomer hydrolase 312
 4-Hydroxybutyric acid 195, 196
 3-Hydroxybutyryl-CoA 103
 D-(-)-3-Hydroxybutyryl-CoA 127, 129
 3-Hydroxydecanoate (3HD) 199
 3-Hydroxydodecanoate (3HDD) 199
 18-Hydroxy-9,10-epoxy-C₁₈ acid 7
 16-Hydroxyhexadecanoic acid 6
 4-Hydroxyhexanoic acid 200
 16-Hydroxy-10-oxo-C₁₆ acid 6
 3-Hydroxy-4-pentenoate 58
 Hydroxypropionate 104 3-
 Hydroxyvalerates 55, 58, 104
 4-Hydroxyvaleric acid 196
 3-Hydroxyvaleryl-CoA 197
 Hypodermis, roots 3
- ICI 105
 In vitro PHA biosynthesis 110
 Inhibitors 99
 Intracellular breakdown 136, 154
 IPTG 192
 Isocitrate dehydrogenase leaky mutant 197
- Ketoacyl-CoA reductase 106
 β -Ketothiolase 100, 103, 105, 108, 117
 3-Ketothiolase 127, 129-131, 134, 135, 138,
 152, 154
 β -Ketothiolase 195
 3-Ketovaleryl-CoA 129, 130
Klebsiella aerogenes 109, 110, 198, 201
Klebsiella oxytoca 110, 204
- LabVIEW control system 170
Lac promoter 192
 Lactide 251
Lactococcus lactis 163
 Lactone 251
 Lactose 189
 Lamellar appearance 3
Lamprocystis roseopersicina 3112 84
 Latex 176
Legionella pneumophila 318
Lemna minor 218
 Lignin degradation 35
 Limitation 127, 130, 131, 137, 138, 151-153
 Linear dissimilatory sequence 138
 Lipase 243
 -, immobilized 253
 -, surfactant-coated 253
 Lipase box 393, 304, 305
- Lipoxygenase 23
 Localization of PHA Synthases 99
 LOFA-PHA 285
 LSIMS 11
- Macrolide 253
 Macromonomer 256, 257
 Mannose 198
 Mass spectrometry 5
 Medium chain length PHAs (MCL-PHA)
 55, 192, 194, 198, 199
 Melting transition temperature 63
 Metabolic engineering 107, 111, 185
 Methanotrophic bacteria 162
 Methyl-branched alkylester 167
 Methyl-branched 3HA 72
 Methylmalonyl-CoA 131
 - pathway 105
Methylobacterium extorquens 92, 98, 136, 163
Methylobacterium extorquens IBT6 84, 88,
 90
Methylobacterium organophilum 151, 163
Methylobacterium rhodesianum 129, 130,
 134, 138, 146, 151, 152
Methylocystis 151
Methylosinus trichosporium OB3b 163
 Methylotrophic bacteria 162
 Methylotrophs 184
Metylobacterium extorquens 201
 Microbial polyester 159
Micrococcus halodenitrificans 318
 Mixing substrates 143
 Molasses 189
 Molecular mass 130, 137, 154
 - - distribution 130, 137, 154
 Molecular weight 184, 190
 Mono-halogenated organic substrate 70
 Monsanto 162, 177, 178
 Multi-fluorinated 3HA 70
 Multicarbon substrate 135, 138, 152
Mycena meliigena 35
Mycoplana rubra 110
Mycoplana rubra B346 201
- NaOH digestion 190
Nicotiana tabacum 110, 112
 Nitrobenzene 5
 Nitrogen limitation 163, 171
 Nitrophenoxy group 168
 Nitrophenyl group 168
p-Nitrophenylalkanoates, substrates for
 depolymerases 302, 305, 310, 313
 NMR spectroscopy 5
Nocardia corallina 57, 84, 87-92, 98, 106,
 131

- Nocardia corallina* N^o724 58
Non-solvent-based recovery 161, 175
Nuclease 200
Nutrient limitation 161
- Octanoate 198, 200
Oilseed crops, PHA 234
Oleic acid 20
– – induction 192
Oleosins 113
On-line gas chromatography 170
Organic substrates, non-alkyl based 63
– –, unrelated 59
Overflow metabolism 127, 137
 β -Oxidation pathway 192, 194
 β -Oxidation process 65
Oxyacid 244
Oxyacid ester 244
Oxyanion hole (putative of depolymerases)
305
Oxygen limitation 164
Oxygen transfer 171, 172
- P/O-quotient 136, 142, 143
P(3HB-co-3HA) 198
Paecilomyces lilacinus 297, 300
Paints, high solid alkyd-like 277
Pancreatic lipase 33
Paracoccus denitrificans 84, 89, 90, 92, 98,
114, 118, 151, 154, 163, 201
PCL (poly[caprolactone]) 316
Pectinaceous layer 3
Penicillium cyclopium 76
Penicillium funiculosum 297, 300
Penicillium pinophilum 297
Peroxidase 25
Petrochemistry 178
pH-stat cultures 164
pH-stat fed-batch culture 187, 189
PHA 159
–, bacteria 226
–, extraction 227
–, functionalized 172
– granules 113, 190
–, synthesis in plants 211
PHA depolymerases 117
PHA operon 108
PHA polymerase 165, 258
PHA synthase 85–91, 99, 108, 192, 195, 212
– – activity 190
PHA-producing recombinant crops 178
PhaF 200
PHA_{MCL} depolymerase 100
phaR, regulator of poly(3HB) depolymerase
synthesis 314
PHAs 210, 263
–, biodegradable plastics/elastomers 224
–, physical mixtures 75
–, short chain length 55, 56, 198, 274
Phasins 113, 114, 118, 198
PHB 210, 263, 265
Phenazine methosulfonate 99
Phenolics 13
Phenoxy groups 68, 168
Phenyl group 167
Phenylalanine 15
Phenylboronic acid 29
Phenylpropanoic acids 14
5-Phenylvaleric acid 67
Phosphate limitation 162
4-Phosphopantetheinyl moiety 97
Phosphotransbutyrylase 104
Photoconversion 164
Photosynthetic bacteria 164
Phylogenetic tree 90
Physarium polycephalum 76, 300, 316, 317
Plant cuticles 11
Plant metabolic pathways 225
Plant oil 198
Plastic recycling 178
pO₂-stat 171
Pollen cutinase 33, 34
Polyanhydride 250
Polycarbonate 258
Polyester, lipid-derived 3
–, unsaturated 165, 166, 170, 249
Polyester family 139
Polyesteramides 317
Polyesterase 28
Polyesterurethanes 317
Polyethylene 177
Polyhydroxyalkanoates (PHAs) 184, 210,
263
Polyhydroxybutyrate (PHB) 210, 263
Polylactides 317
Poly- β -malate 76
Polymerase 127, 129, 130
Polypropylene 177
Poly(depsipeptide) 258
Poly(HA), artificial 296
–, cyclic, metabolism 318
–, emulsion 296
–, mobilization 317
–, overlay agar 295
–, structure of native 318
Poly(HA) degradation, activator compound
319
– –, effect on survival 318
– –, extracellular 294
– –, fungi 297

- Poly(HA) degradation, activator compound
 - -, intracellular 294, 317
 - -, properties of *R. rubrum* depolymerase 320
 Poly(HA) depolymerase, exo-/endo-hydrolase activity 310
 - -, catalytic mechanism 305
 - -, dependence on substrate 314
 - -, dependence on succinate transport 314
 - -, glycosylation 302
 - -, regulation 313
 - -, substrate binding domain 305
 - -, structural genes 302
 - -, biochemical properties 297
 Poly(HA_{MCL}) 266
 - crosslinked 284
 - depolymerase, properties 309
 - latex 281
 Poly(HA_{SCL}) 269
 Poly(3HA_{MCL}) 83, 106, 165
 - synthesis in plants 220
 Poly(3HB) 52, 83, 115, 160, 184, 187-189, 196, 198, 201, 204, 210
 Poly(3HB-co-3HV) 56, 83, 105, 160, 184, 190, 192, 195-198, 204, 216, 270
 -, fractionation 75
 Poly(3HB-co-4HB) 104
 Poly(3HO-co-3HHx) 115
 Poly(3-hydroxy-*n*-alkanoate) 56
 Poly(3-hydroxybutyrate) [P(3HB)] 52, 83, 115, 160, 184, 187-189, 196, 198, 201, 204, 210
 -, atactic 315
 - content 144-148, 152-154
 - cycle 125, 136, 137, 154
 -, denatured polymer 295, 296
 - depolymerase synthesis, repression 313
 - -free biomass 144, 147
 -, native granules 295, 318-320
 Poly(4-hydroxybutyrate) [P(4HB)] 194, 195
 Poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) [P(3HB-co-3HHx)] 195, 198
 Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) [P(3HB-co-3HV)] 56, 83, 105, 160, 184, 190, 192, 195-198, 204, 216, 270
 Poly(3-hydroxybutyrate-co-3-hydroxyvalerate-co-3-hydroxyheptanoate) 198
 Poly(3-hydroxyhexanoate-co-3-hydroxyoctanoate) [P(3HHx-co-3HO)] 199, 200
 Poly(3-hydroxypivalate) 58
 Poly(6-hydroxyhexanoate) 316
 Poly(3-hydroxy-4-pentenoic acid) 116
 Poly(3-hydroxy-5-phenylvaleric acid) 116
 Poly(hydroxyalkanoate) (PHA) 258
 Poly(L-malate) 316
 Poly(malic acid) 252
 Potassium limitation 163
 Potato 23
 -, transgenic 25
 Precursor synthesis 140
 Primary structures 88
 Production rate 125, 144
 Productivity 126, 146, 147, 151, 153, 177
 Propionic acid 190, 192, 197, 198, 204
 Propionyl-CoA 130, 131
 Protease 248, 250, 251
Protomonas extorquens 151, 163
 Pseudomonads 165, 184, 198, 199
Pseudomonas acidophila 84, 200
Pseudomonas aeruginosa 84, 88, 90, 92, 100, 101, 106, 115, 175, 192, 221, 303, 320
Pseudomonas citronellolis 72, 84
Pseudomonas fluorescens 84
Pseudomonas fluorescens GK13 297, 300-305, 309, 312, 314
Pseudomonas lemoignei 297, 298, 302-305, 309, 313-316, 319
Pseudomonas mendocina 26, 84, 88, 90, 92, 100, 101, 300, 314
Pseudomonas oleovorans 58, 65, 68-75, 84, 85, 88-92, 100, 101, 106-110, 115, 116, 131, 165, 192, 199, 200, 220, 303, 320
Pseudomonas oxalaticus 174
Pseudomonas putida 58, 63, 64, 68-71, 106, 107, 111, 165, 199, 221
Pseudomonas putida BM01 84, 101
Pseudomonas putida GPp104 73, 109, 198, 200
Pseudomonas putida KT2442 84
Pseudomonas putida U 84
Pseudomonas sp. 61-63, 73, 74, 84, 88-92, 96, 100, 101, 198, 300, 303, 313, 320
Pseudomonas sp. A1 300
Pseudomonas sp. A33 73, 74
Pseudomonas sp. DSMZ1650 84
Pseudomonas sp. GP4BH1 84, 100
Pseudomonas sp. HJ-2 57, 64, 75
Pseudomonas sp. K 163
Pseudomonas resinovorans 303, 320
Pseudomonas stutzeri 297, 300, 302, 303, 309, 312
 Purple non-sulfur bacteria 164
 Purple sulfur bacteria 164
 Pyrenebutylmetahnephosphoryl fluoride 31
Ralstonia eutropha 52, 57, 58, 83-92, 96, 100, 105, 111-118, 129, 136, 138, 151, 152, 162-164, 174, 175, 184-187, 195-198, 211, 218

- Ralstonia eutropha* H16 84, 303, 316, 318–320
Ralstonia eutropha PHA biosynthesis genes 187, 189, 190, 199, 200
Ralstonia eutropha PHB-4 109
Ralstonia eutropha SH69 57
Ralstonia opacus MR22 58
Ralstonia pickettii 297, 302, 303
Random copolymers 74
Random polyester 253
Reducing equivalents 131
Reducing power 131, 135–143
Regioselective polymerization 244, 249
Regulation 117
Related substrate 130, 131
Renewable plastic 159, 170
Rhizobium etli 84, 88, 90, 92
Rhodobacter capsulatus 84, 89, 90, 92, 98
Rhodobacter sphaeroides 84, 89, 90, 92, 98
Rhodobacter sphaeroides RV 164
Rhodococcus ruber 57, 73, 87, 98, 105, 129, 131, 164, 175, 198, 217
Rhodococcus ruber NCIMB40126 58
Rhodococcus ruber PP2 84, 88, 90, 92
Rhodocyclus gelatinosus 198
Rhodomicrobium vanielii 130
Rhodopseudomonas spheroides 130
Rhodospirillum 146
Rhodospirillum rubrum 58, 103, 313, 319, 320
Rhodospirillum rubrum ATCC25903 84, 88, 90, 92
Rhodospirillum rubrum Ha 84, 88, 90, 92, 98
Rickettsia prowazekii 84, 87, 89, 90, 92, 98, 100
Ring-opening polymerization 251
Rosellinia desmazieresii 35
Rosmarinus officinalis 19
Rubbers, biodegradable 284
Rushton turbine impellers 188
- Saccharomyces cerevisiae* 110, 111
Salmonella typhimurium 218
Saturated polyester 165, 166
SCL-PHA 55, 56, 198, 274
SDS-PAGE 27
Serine esterase 29
Sheet-like layers 62
Simultaneous utilization 143
Sinorhizobium meliloti 41 84, 88, 90, 92, 98, 118
Solanum tuberosum 110, 112
Solvent extraction 175
Solvent tolerance 173
Solvent-based recovery 161, 175
Spodoptera frugiperda 103, 110, 112
Staphylococcus aureus 176, 200
Stereoselective polymerization 72
Strategic survival polymer 125, 137
Streptomyces exfoliatus K10 297, 300–303, 312
Streptomyces scabies 26
Suberan 16
Suberin 5, 13
–, aromatic core 5
–, biosynthesis 23
– degradation 34
Suberization 26
Substrate specificity 86
Succinate 194
Succinic semialdehyde dehydrogenase 195
Succinyl-CoA 131, 136
– transferase 136
Sudan red [dye for poly(HA) staining] 296
Supercritical fluorooform 250
Surfactant-coated lipase 253
Sustainable polymer 179
Synechococcus sp. 201
Synechococcus sp. MA19 164
Synechococcus sp. PCC7002 110
Synechocystis sp. PCC6803 84, 86–92, 102
Synthase 129–131, 134, 135
Syntrophomonas wolfei 84, 130
- TCA cycle 131, 134–139
Telechelics 257
Thiocapsa pfennigii 86, 87, 102, 104, 116, 164, 200
Thiocapsa pfennigii 9111 84, 89–92
Thiocystis violacea 86, 102, 118, 164
Thiocystis violacea 2311 84, 89, 90, 92
Thiolate group 97
Thiolytic reaction 129
Threonine 192
Tissue slices, suberized 15
TOFA 285
Tolyl group 168
Transesterification 5, 11
Transferase 22
Transgenic plants 113, 209
Transhydrogenase 138
Trichomes 3
Trichoplusia ni 109, 110
Triglycerides 29
Trimethylsilyl derivative 5
Triol 249
Trioleyl glycerol 29
Tripalmitoyl glycerol 29
Two-liquid phase fed-batch culture 170
Two-stage continuous cultivation 171
Two-step fed batch process 161–163, 172

- Ultra-high molecular weight 163
Umbellularia californica 107
10-Undecenoic acid 65
10-Undecynoic acid 66
Unlimited growth 152
Unrelated substrate 131
- Valeric acid 190
 γ -Valerolactone 104
Valine 192
Velocity 125, 152, 153
Vibrio harveyi 309
Victim substrate 143, 144
- Wax esters 28
Waxes, soluble 4
Whey 189
- Xylose 190
- Yield 125, 129, 135, 138–146, 154, 177
Yield coefficients 125, 140, 144
- Zea mays* 110, 112
ZENECA BioProducts 105, 162, 175
Zoestra marina 3
Zoogloea ramigera 57, 84, 89–92, 98, 129,
136, 313, 320