

Pandey, A. (ed.): **Concise Encyclopedia of Bioresource Technology**. - Food Products Press and The Haworth Press, New York - London - Oxford 2004. 735 pp. Hardcover USD 119.96. ISBN 1-56022-980-2.

This just appearing encyclopedia is a unique resource presenting state-of-the-art research findings on biotechnological innovations and their potential for commercial exploitation.

The book was written by 109 scientists from Argentina, Australia, Brazil, Canada, Chile, France, Greece, India, Israel, Japan, Malaya, Malaysia, Mexico, New Zealand, Poland, Scotland, South Africa, South Korea, Spain, Thailand, The Netherlands, Turkey, United Kingdom, and the USA. In forty-four chapters, the application of bioresource technology is described – in environmental biotechnology, food biotechnology, and industrial biotechnology.

Part I (11 chapters) deals with environmental biotechnology: 1. biological wastewater treatment, 2. anaerobic animal-waste environments: salmonella ecology, 3. biobeneficiation, 4. biodegradation of polycyclic aromatic hydrocarbons, 5. biofiltration (mechanism, performance, parameters, *etc.*), 6. biological control of air pollution (modelling, operation and maintenance, *etc.*), 7. biomethanogenesis (biogas production, methane synthesis, microbiology of biomethanation, *etc.*), 8. bioremediation (methods, application, feature, *etc.*), 9. biological treatment of wastewater (biological reactors, membrane bioreactor, rotating biological contactors, trickling filters, waste stabilization ponds), 10. microbiologically influenced corrosion, and 11. treatment of industrial effluents (distillery, pulp and paper mill effluents, removal of heavy metals from wastewaters, tannery, textile and dye effluents).

Part II (14 chapters) summarizes the problems of food biotechnology: 1. biopolymer applications (starch, cellulose, chitin and chitosan, *etc.*), 2. biotransformations of citrus flavanone glycosides, 3. fermented milk products, 4. fermented vegetables (lactic-acid fermented vegetable, *etc.*), 5. food additive production by fermentation, 6. food-grade yeast production, 7. kefir yeast technology, 8. molecular methods for microbial detection and characterization for food safety,

9. mushroom production, 10. nutraceutical production and use, 11. prebiotics and probiotics, 12. single-cell protein, 13. vitamin production by fermentation, and 14. xanthan gum production.

Part III (19 chapters) is devoted to industrial biotechnology: 1. alcoholic fermentation (bacterial alcoholic fermentation, fruit-based alcoholic beverages, fuel ethanol production from renewable biomass resources, grape-based alcoholic beverages, malted barley, Scotch whiskey, and beer, thermotolerant and osmotolerant yeasts for alcoholic fermentation), 2. alkaloids, aflatoxins, and other secondary metabolites: production techniques, 3. amino acid production, 4. antibiotic production, 5. aroma compound production, 6. bioconversion of agroindustrial residues for bioprocesses (industry residues - cassava, coffee, palm oil, seafood), 7. biodiesel production and application, 8. biofertilizers: production, application and quality control, 9. biopulping, 10. biosurfactant production and application, 11. microbial enzymes: production and applications (*L*-glutaminase, inulinases, laccase, lignin peroxidase, lipases, pectinases, phytases, proteases, therapeutic enzymes, xylanases: production, application, properties), 12. modified oligonucleotides, 13. organic acids: production and application (citric acid, gallic acid, lactic acid), 14. pigment production, 15. polyhydroxyalkanoate production from renewable resources, 16. pretreatment of lignocellulosic substrates, 17. recycling agricultural by-products and residues for animal feeding, 18. solid-state fermentation for bioconversion of biomass (bioreactor design, engineering and general aspects, modelling), and 19. xylitol production from hemicellulosic substrates.

The book is well edited, and is accompanied with a fairly detailed subject index (more than 600 items). I am convinced that the book will be welcome by scientists, teachers, post-doctoral fellows and postgraduate students, interested in biochemistry, molecular biology, chemical engineering and enzyme technology, microbiology and microbial technology, and further disciplines.

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