Applied Microbial Physiology: A Practical Approach (Practical Approach Series)

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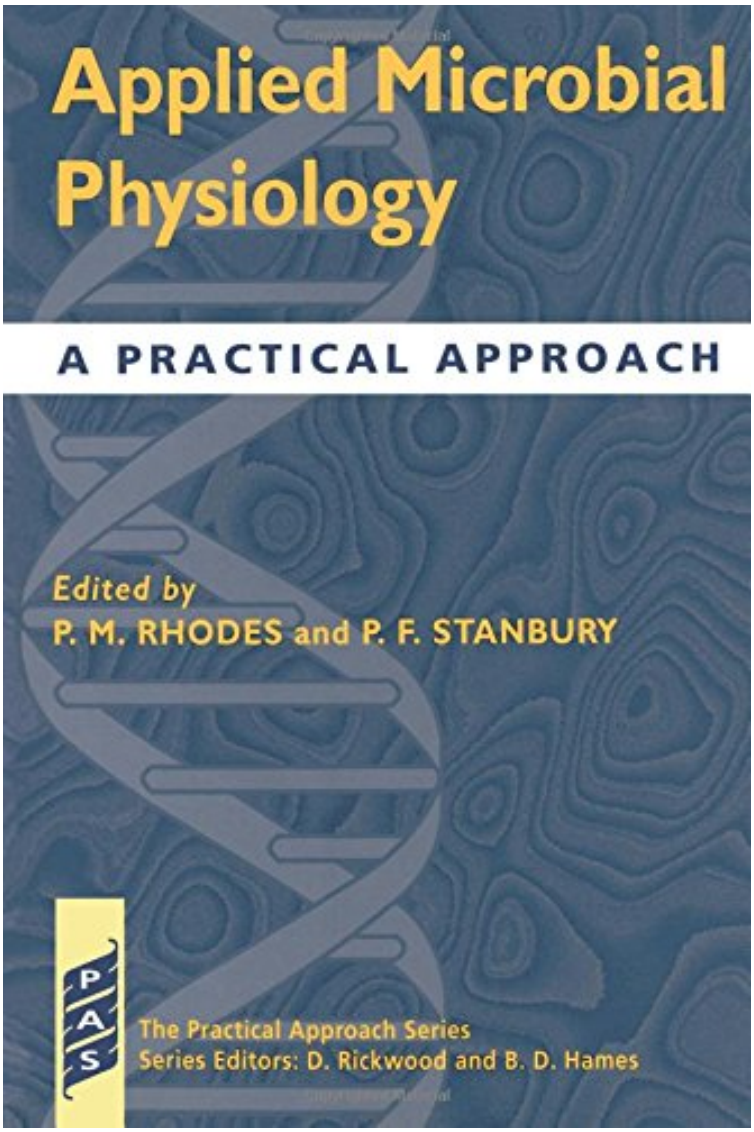

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In recent years, the rapid growth in biotechnology has led to an upsurge in interest in microbial technology among biochemists, molecular biologists, geneticists, virologists, endocrinologists, and clinicians. Advances in microbial physiology have helped scientists realize a rational approach to optimization of product yield based on analysis of cultures, growth kinetics, and biochemical pathways; its applications also extend to microbiology and biotechnology. This book arises from both the need for practical information to enable the isolation, handling, and culture of organisms, and the necessity to generate and analyze data enabling the development of the process. Chapters cover the "husbandry" of microbiology, the generation of data by chemical and physical analysis, and the interpretation of such data. This is considered from two points of view. On one hand, kinetic analyses of growth and product formation have frequently illuminated the development of fermentation processes. More recently, though, the analysis of the flux of metabolites through intermediate biochemical pathways has shown up important facts in metabolic engineering through the application of molecular biology techniques in microbial physiology. This is a useful resource and guide to the successful culture of microorganisms in pure form, optimizing the culture conditions and the scaling-up process to enable more detailed study.

"The editors note that during the rapid development of biotechnology, scientists from many biological or medical disciplines have come to rely on the use of microorganisms to produce substances of commercial value. In many cases, the scientists do not have the training of a microbiologist, and this book seeks to provide the type of information that will enable them to move from research results to the point of production. . . . The contributors are well-known scientists in their fields. There are two appendixes, a useful list of 66 suppliers of equipment and chemicals . . . and an extensive list of the larger culture collections around the world. . . . All of the chapters are well written, and the book gives a good general perspective of the immense complexity of biotechnology."--The Quarterly of BiologyAbout the AuthorDr P. Malcolm Rhodes, Bioscot Ltd, King's Buildings, West Mains Road, Edinburgh EH9 3JF. Tel: 0131 662 4551. Fax: 0131 662 4279. Dr Peter Stanbury, Dept of Biosciences, University of Hertfordshire, Hatfield Campus, Hatfield, Herts AL10 9AD