

STATISTICAL OPTIMIZATION OF BIOLOGICAL SYSTEMS

A number of books written by statisticians address the mathematical optimization of biological systems, but do not directly address statistical optimization. **Statistical Optimization of Biological Systems** covers the optimization of bioprocess systems in its entirety, devoting much-needed attention to the experimental optimization of biological systems using statistical techniques. Employing real-life bioprocess optimization problems and their solutions as examples, this book

- Describes experimental design from identifying process variables to selecting a screening design, applying response surface methodology, and conducting regression modeling
- Demonstrates the statistical analysis and optimization of different experimental designs, the results of which are used to establish important variables and optimum settings
- Details the optimization techniques employed to determine optimum levels of the process variables for both single- and multiple-response systems
- Discusses important experimental designs, such as evolutionary operation programs and Taguchi's designs
- Delineates the concept of hybrid experimental design using the essence of a genetic algorithm

Statistical Optimization of Biological Systems examines the complex nature of biological systems, the need for optimization, and the rationale of statistical and non-statistical optimization methods. More importantly, the book explains how to successfully apply mathematical and statistical techniques to the optimization of biological systems.



CRC Press
Taylor & Francis Group
an informa business

www.crcpress.com

6000 Broken Sound Parkway, NW
Suite 300, Boca Raton, FL 33487
711 Third Avenue
New York, NY 10017
2 Park Square, Milton Park
Abingdon, Oxon OX14 4RN, UK

K20325

ISBN: 978-1-4665-8708-3

