

an advanced course in

# cellular

## Bioprocess Technology

**Fundamentals and Frontiers**

# Cellular Bioprocess Technology

## An advanced course in bioprocessing

### University of Minnesota 2006

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The content of this CD-ROM is distilled from course lecture materials over the past 20 years. Each of the wide-ranging topics covered within the chapters begins by delivering fundamental concepts and proceeds to illustrate how those concepts apply to process design and optimization. In addition, this CD-ROM contains tutorials, templates and simulations using various quantitative analytical techniques. Many bioprocess analysis tools have become relatively easy to use even for those who do not have formal training in engineering. The use of these tools will help greatly in process analysis as well as in exploring various process strategies. We emphasize applying relatively simple quantitative analyses in order to understand the kinetics of biochemical reactions and utilizing biological insight to dissect biochemical reactions. It is the integration of engineering analysis and biological insight that will drive process enhancement and technological innovation.

This CD-ROM is the product of the contributions of many current and former members of the Biochemical Engineering Laboratory at the University of Minnesota. We thank them for their intellect, dedication, and hard work.

# Cellular Bioprocess Technology

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## Templates, Algorithms and Programs

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*(requires Mathcad 7 or higher)*

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## Credits

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Production of this CD-ROM was made possible by the hard work and ingenuity of many members of the Biochemical Engineering Laboratory of the University of Minnesota, under the direction of Prof. Wei-Shou Hu.

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