

Table of contents

- **BASIC CONCEPTS Modeling**
- **Fundamentals Formulation of Dynamic Models**
- **Chemical Kinetics**
- **Microbial Growth Kinetics**
- **Process Dynamics Fundamentals**
- **Signal and Process Dynamics**
- **Time Constants**
- **Fundamentals of Automatic Control**
- **Numerical Aspects of Dynamic Behavior**
- **Modelling Of Stagewise Processes**
- **Stirred Tank Reactors**
- **Stage-wise Mass Transfer**
- **Differential Flow And Reaction Applications**
- **Diffusion and Heat Conduction Tubular Chemical Reactors**
- **Differential Mass Transfer, Heat Transfer Applications**
- **Simulation Examples Of Chemical Engineering Processes**
- **Simulation Tools Batch Reactor Examples**
- **Continuous Tank Reactor Examples**
- **Tubular Reactor Examples**
- **Semi-Continuous Reactor Examples**
- **Mixing-Model Examples**
- **Tank Flow Examples**
- **Process Control Examples**
- **Mass Transfer Process Examples**
- **Distillation Process Examples**
- **Heat Transfer Examples**
- **Diffusion Process Examples**
- **Biological Reaction Examples**
- **Appendix: Using the Berkeley Madonna Dynamic Simulator**