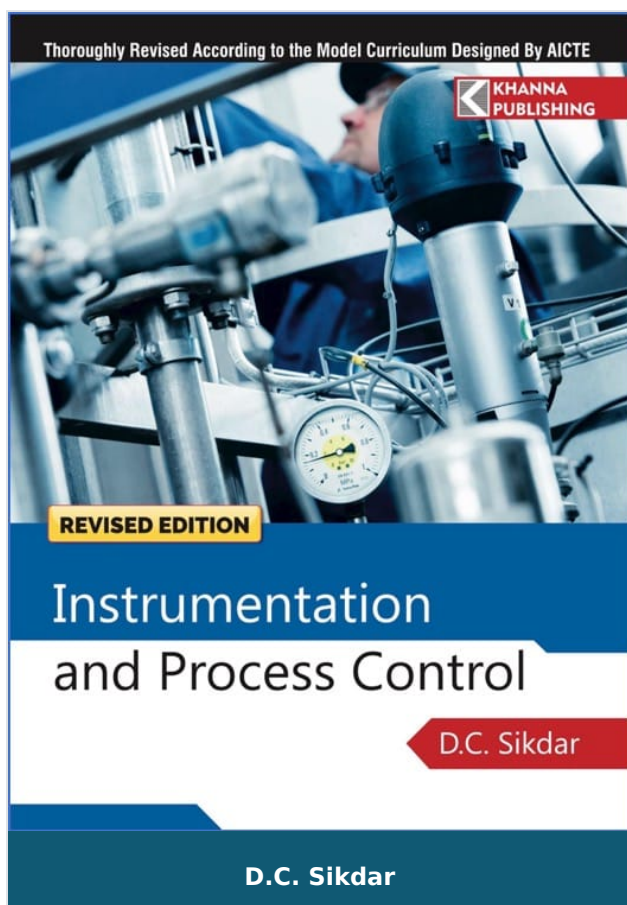




Instrumentation and Process Control

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Product Description

This book is students friendly. It also demonstrates how to solve the industry related problems that crop up in Chemical Engineering Practice. The chapters are organized in a simple way that enables that students to acquire and in depth understanding of the subject. The emphasis is given to the fundamental of measuring instrument, Laplace Transform, Basic Concept of process control, first order and Second order system, Control of Industrial Bio-processes, Controller and Final control elements, Block diagram reduction techniques, Determination of Stability of a process, Advanced control techniques and control Structure of unit operations, all coming under the realm of Process Control. Apart from the numerous illustrations, the book contains review questions, exercises and aptitude test in chemical Engineering which bridge the gap between theoretical learning and practical implementation. All numerical problems are solved in a systematic manner to reinforce the understanding of the concepts.

This book is primarily intended as a textbook for the under graduate students of Chemical Engineering, It will also be useful for other allied branches such as Medical Electronics, Aeronautical Engineering, Polymer Science and Engineering, Bio-technology as well as diploma in Chemical Engineering.

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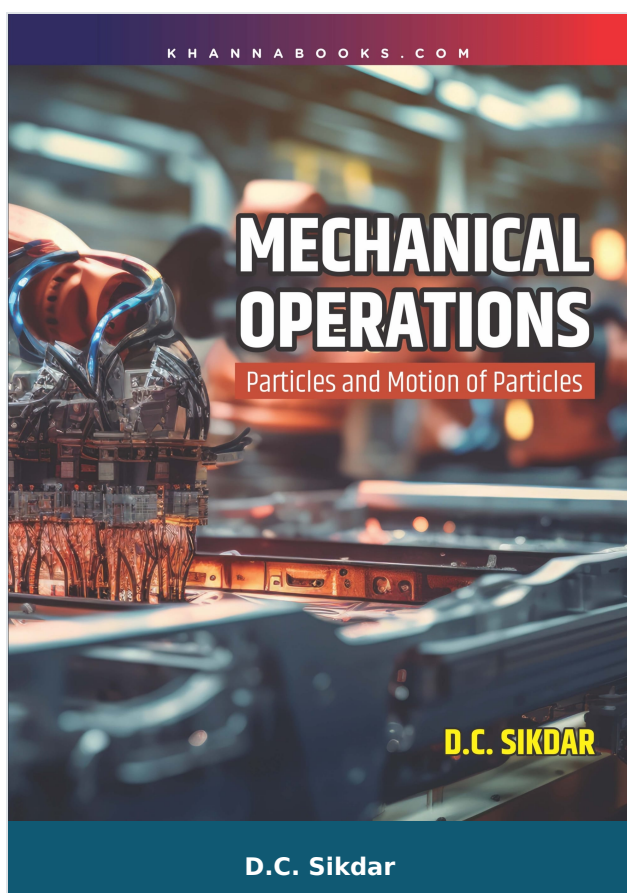
- Instrumentation Fundamental
- Pressure Measurements
- Temperature Measurements
- Flow Measurements
- Level Measurements
- Laplace Transform
- Basic Concept of Process Control and First Order System
- First Order System in Series
- Second Order System
- Industrial Bio-processes
- Controllers and Final Control Elements
- Block Diagram and Transient Response of Closed Loop Control System
- Stability
- Advanced Control Techniques
- Control Structure of Unit Operations
- Answer to Exercise Problems
- Appendix
- Index

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D.C. Sikdar D. C. Sikdar (Ph.D.) is an associate professor, Department of Chemical Engineering, Dayananda Sagar College of Engineering, Bangalore, with more than two

and half decades of teaching experience. Prof. Sikdar has published many papers in national and international journals of repute. he has received Best Research Thesis Award from Karnataka State Bio-fuel Development Board for guiding M.Tech Thesis on "Development of Bio-Hydrogen Dependent Fuel Cell using Micro Algae" in 2012. Prof. Sikdar is also a member of Indian Society of Technical Education (ISTE) and Indian Institute of Chemical Engineers (IICChE).



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MECHANICAL OPERATIONS

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1. Introduction.
2. Particle Technology.
3. Size Reduction.
4. Flow of Fluid Past Immersed Bodies.
4. Motion of Particles Through Fluids.
6. Sedimentation.
7. Filtration.
8. Agitation and Mixing.
9. Sampling Storage and Conveying of Solids.
10. Magnetic Separations.
11. Jigging.

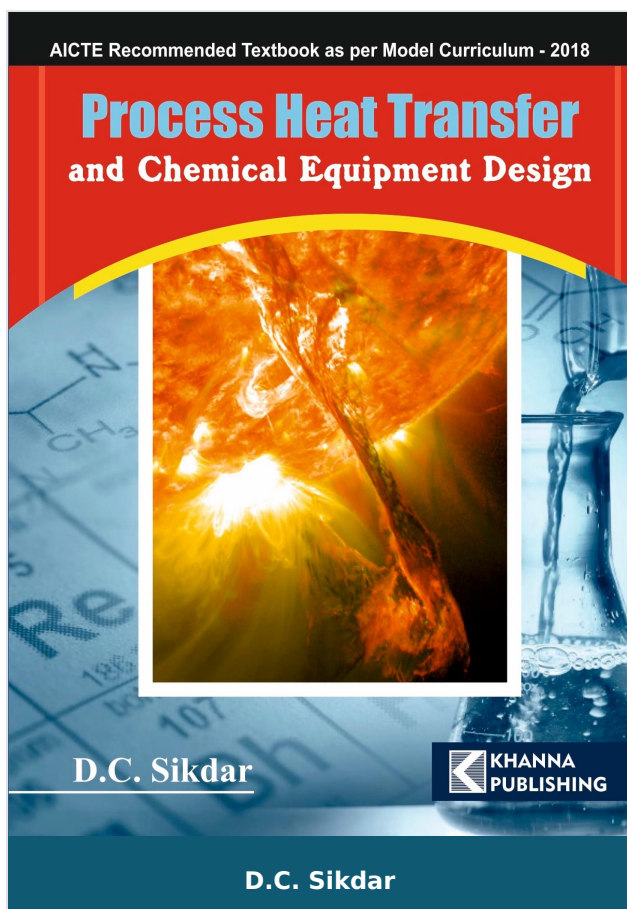
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- Introduction.
- Particle Technology.
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Process Heat Transfer and Chemical Equipment Design

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Product Description

This book is students friendly. It also demonstrates how to solve the industry related problems that crop up in Chemical Engineering Practice. The chapters are organized in a simple way that enables the students to acquire an in depth understanding of the subject. The emphasis is given to the Basic concept of heat transfer, conduction, Insulations, Convection, Extended surface- Fins, Dimensionless group and Dimensional analysis, Heat transfer analogy, Heat transfer with phase change, Heat transfer equipment, Design of heat transfer equipment and Radiation, all coming under the realm of Process Heat Transfer. Apart from the numerous illustrations, the book contains review questions, exercises and aptitude test in Chemical Engineering which bridge the gap between theoretical learning and practical implementation. All numerical problems are solved in a systematic manner to reinforce the understanding of the concepts.

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Key Features:

- * Theoretical concept is explained with examples.
- * Numerical problems are solved in systematic manner to reinforce the understanding of the concepts.
- * Included a large number of diagrams illustrating industrial physical problems.
- * Only essential theory is discussed under each topic.

* Stepwise procedure is given for solving problems under the topic of Chemical Equipment Design.

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- Basic Concept at Heat Transfer
- Conduction
- Insulations
- Convection
- Extended Surface- Fins
- Dimensionless Group and Dimensional Analysis
- Heat Transfer Analogy
- Heat Transfer with Phase Change
- Heat Transfer Equipment
- Design of Heat Transfer Equipment
- Radiation
- Answer to Exercise Problems
- Aptitude Test in Heat Transfer
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