

NEW!

HEAT TRANSFER IN SINGLE AND MULTIPHASE SYSTEMS

Greg F. Naterer

UNIVERSITY OF MANITOBA, WINNIPEG, CANADA

A COMPLETE RESOURCE FOR SOLVING MULTIPHASE ENGINEERING PROBLEMS

From power generation and energy storage to materials processing and aircraft de-icing, heat transfer plays a pivotal role in a multitude of engineering technologies. Most of these involve multiphase phenomena, which require knowledge of heat transfer beyond that acquired in introductory courses. But until now, it has been virtually impossible to find a single source of information that covers heat transfer in each of its multi-phase modes.

Heat Transfer in Single and Multiphase Systems fills that void, providing complete coverage of heat transfer fundamentals and the range of multiphase phenomena, including boiling, condensation, solidification, and droplet flows. Beginning with the basic principles, the author systematically examines single- and multi-phase heat transfer, heat exchangers, and computational methods, and for each class of multiphase flow, he discusses terminology, flow classifications, two-phase flow maps, and solution techniques. The treatment includes discussions on current trends in both research and industry, including the application of theory to emerging technologies.

A wealth of worked examples, case studies, and end-of-chapter problems complement the author's clear prose, and the unified, presentation stimulates an appreciation of the analogies and similarities between the different multi-phase systems. **Heat Transfer in Single and Multiphase Systems** not only provides a single source of reference for solving practical heat transfer problems, but also forms an ideal text for upper-level and graduate coursework.

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FEATURES

- Forms a complete reference for heat transfer fundamentals and multiphase problems
- Includes analytical solution methods, computer modeling, and experimental data
- Contains numerous worked examples, practical case studies, and end-of-chapter problems
- Discusses emerging applications such as thermal management of microelectronic assemblies and solidification processing of metals and polymers

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