

BOOK REVIEW

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NONSTATIONARY HEAT TRANSFER*

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Nonstationary heat transfer is very important in many modern technical processes, and the topic has always attracted the attention of specialists; now it is at the center of attention for many researchers and technologists. Engineering practice imposes rigid specifications on the accuracy and convenience of calculation methods on process kinetics.

Unfortunately, nonstationary heat transfer is given little space in textbooks, which deal mainly with stationary heat transfer. The theory of nonstationary heat transfer is dealt with fully in special monographs, but these are usually too complicated for a systematic exposition within the framework of current training schemes for engineers, even those whose practical activities are directly involved with the topic. This applies also to publications in the periodical press, which usually deal with individual very specialized studies.

This recent book undoubtedly deserves careful attention and detailed discussion.

The book is a small volume dealing with the interaction between a solid and a surrounding moving medium under external and internal conditions; the contents constitute an analysis and extension of Soviet and other researches, with due emphasis on the authors' own researches.

The major practical value of the monograph is that it is designed to analyze detailed problems and present solutions. Particular note should be made of the considerable attention given to the formulation of boundary conditions on the basis of careful experiments.

The solutions are given in detailed form (for the temperature, heat flux, and so on) and also as generalized equations; the latter naturally contain arguments representing variations in the physical setting in time, and it is thus possible to analyze the time course of the process.

The authors have not restricted themselves to presenting the general principles of the theory and solutions to detailed problems; much attention is given also to elucidating the physical meanings of the results, and also of the causes of various defects specific to nonstationary processes. This method of exposition undoubtedly has major advantages, and it is to be hoped that the study of this small book will extend the reader's horizon.

We also hope that future publications by these authors will extend the treatment to nonstationary heat transfer accompanied by mass transfer, which is so important in modern technology. Naturally, the book would then have to be larger.

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