6. W. W. Carr, The measurement of instantaneous, local heat transfer from a horizontally vibrating isothermal cylinder using a differential interferometer, PhD Thesis, Georgia Institute of Technology, Atlanta, Georgia (1972).
7. W. Z. Black and W. W. Carr, Application of a differential interferometer to the measurement of heat transfer coefficients, *Rev. Scient. Instrum.* **42**, 337–340 (1971).
8. W. Z. Black and W. W. Carr, A differential interferometer and its application to heat and mass transfer measurements, ASME Paper No. 72-HT-12, presented at the ASME–AIChE Heat Transfer Conference, Denver, Colorado (August 1972).
9. R. M. Fand, Mechanism of interaction between vibrations and heat transfer, *J. Acoust. Soc. Am.* **34**, 1887–1894 (1962).
10. R. M. Fand and J. Kaye, Acoustic streaming near a heated cylinder, *J. Acoust. Soc. Am.* **32**, 579–584 (1960).

Int. J. Heat Mass Transfer. Vol. 18, p. 587. Pergamon Press 1975. Printed in Great Britain

BOOK REVIEW

W. A. GRAY and R. MÜLLER, **Engineering Calculations on Radiative Heat Transfer**, 161 pp. Pergamon Press, Oxford. Hard cover $15.50, Flexicover $7.50.

THE BOOK deals with radiative heat transfer, beginning with the basic theory and then extending to its prediction and measurement.

The text is written in a clear and concise style. It has many illustrative examples which makes it easy to digest and therefore is an excellent, yet inexpensive introduction for degree students. However, the engineer will find the text inadequate assistance for most industrial problems.

The reader is first taken through the basic principles of emissivity, absorptivity and black body radiation. Worked examples enable a feeling for these properties to be obtained. Following this introductory section the problems of direct exchange, total exchange and exchange with an emitting and/or absorbing media is dealt with in an orderly way. Many texts have dealt with this subject in a confusing manner. The authors' use of many simple examples enables the struggling swimmer the necessary life rafts. However, in these chapters the authors have perhaps allowed their preference for radiosity and mean beam lengths to become too prevalent at the expense of exchange areas.

In dealing with radiation from particles attempts are made to give simple methods of handling this complex problem. While the line of approach is good for engineering purposes the authors are a little inconsistent in their treatment and do not use illustrative examples to such a good effect as in the previous sections.

After the basic theory of radiation exchange has been explained, the authors introduce the reader to how their newly gained knowledge could be applied to a range of general furnace situations, their treatments of heating time and temperature distribution being particularly neat. However, a general treatment similar to Hottel's well stirred furnace model, plus its use to assess the effect of process variables would have been a useful addition to this chapter.

The book ends by including a useful chapter on the measurement of radiation and temperature. The reader is introduced to a range of available techniques; however, he is left slightly at a loss as to when and why to use a particular instrument. Additionally, measuring techniques such as the enthalpy probes, suction radiometer and the venturi pneumatic pyrometer could have been usefully described in this section.

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