

Radiometric Temperature Measurements: I. Fundamentals, 376 pp and Radiometric Temperature Measurements: II. Applications, 480 pp. Edited by Z.M. Zhang, B.K. Tsai, and G. Machin, Elsevier, Amsterdam, 2010

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Published online: 3 April 2010
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The science and art of radiation thermometry in engineering applications are given a thorough review in the two books on *Radiometric Temperature Measurements*. These volumes (Vols. 42 and 43) are part of the series *Experimental Methods in the Physical Sciences*, published by Academic Press–Elsevier. The editors of the volumes are Prof. Zhuomin Zhang of Georgia Tech, Dr. Benjamin Tsai of the US National Institute of Standards and Technology and Dr. Graham Machin of the UK National Physical Laboratory.

The editors have authored or coauthored some chapters, and have also gathered an international group of experts for covering others.

Volume 42 consists of seven chapters in 376 pages, covering fundamentals, radiative properties, design of radiation thermometers, blackbody and other radiation source characteristics, and various basic methods for radiation thermometry for solids and thin films.

Volume 43 also has seven chapters with 480 pages, covering industrial applications, characterization of blackbody sources, and applications in semiconductor manufacturing, steel production, firefighting, remote sensing through the atmosphere, and medical applications.

This reviewer was impressed by the scope and depth of coverage afforded to this rapidly developing and very important class of measurement techniques. Non-contact temperature measurement has many applications, as it avoids contamination of the measured material, can handle extremely high temperatures, and can usually (but not always) be a nonintrusive measurement method. Many of the pitfalls common in

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application of radiation thermometry are pointed out in these volumes, and methods for avoiding the common errors in application are given.

These volumes should be a part of the library of anyone using radiation thermometry in engineering applications.