

**PRACTICAL PYROMETRY: THE
THEORY, CALIBRATION, AND USE
OF INSTRUMENTS FOR THE
MEASUREMENT OF HIGH
TEMPERATURES**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649678105

Practical Pyrometry: The Theory, Calibration, and Use of Instruments for the Measurement of High Temperatures by Ervin S. Ferry & Glenn A. Shook & Jacob R. Collins

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ERVIN S. FERRY & GLENN A. SHOOK & JACOB R. COLLINS

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BY

ERVIN S. FERRY
GLENN A. SHOOK JACOB R. COLLINS

SECOND EDITION REVISED

NEW YORK
JOHN WILEY & SONS, INC.
LONDON: CHAPMAN & HALL, LIMITED
1920

7-10-26
1345

PREFACE

THE day is already past when foundrymen and steel workers depend upon the eye to judge the temperatures of their product in the various stages of its heat treatment, when makers of ceramic products depend upon the indication of fusible cones, and when operators of cold storage plants are content to observe numerous thermometers scattered throughout their establishments. The requirements of modern industrial processes and the severe competition of commercial enterprises now require not only more precise knowledge of temperatures, but in many cases also require a continuous automatic record of the temperature state extending over an interval of time.

Several years ago, anticipating the need by technical students of a Course in High Temperature Measurements, the work of testing the various methods and apparatus was begun. After three years devoted to this survey, a course was organized and offered. It was received with such favor that it was made a required subject in the plan of study for students of chemical engineering at Purdue University. Each year since then, a new edition of Notes, in mimeographed form, has been put into the hands of the students. It has now been thought proper to put into more readable and permanent form the results of this experience.

In the present book, the needs of three distinct classes of readers have been kept in mind — college students, technically trained men who deal with processes requiring high temperature measurements, and less trained observers who may make the measurements. For the first two classes, who require much fuller theoretical discussions than the latter, are developed in some detail the principles involved. In some cases the discussion of these principles involve physical and mathematical ideas beyond the training of the average observer. For the less trained observer

are given the physical principles and manipulative details with which he would require familiarity, many of which would have been omitted if the needs of only the more trained readers had been kept in mind.

At all times the publications, experience and advice of G. K. Burgess and the other members of the staff of the Bureau of Standards have been generously extended to us and freely used. We are glad to take the opportunity to thank them for their many courtesies.

All of the illustrations have been engraved especially for this book, but some of them are copies of catalogue plates of standard commercial apparatus.

E. S. F.
G. A. S.
J. R. C.

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