



New Edition of
Experimental Thermodynamics

Poster presented at the
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Aims

- to produce 2 volumes, on **single** and **multiple phases**, which will give a clear description of current techniques for making **basic thermodynamic measurements**.
- to improve the quality of experimental results worldwide, with chapters written by an international team of authors who are experts in the different techniques.

Introduction

In 1975, the IUPAC Commission on Thermodynamics published a volume on *Experimental Thermodynamics*, which has been an essential guide for basic thermodynamic measurement techniques for almost 30 years.

This book is now out of date, as many new techniques have been developed. An updated version is urgently needed, because many industrial organizations have reduced their expertise in this field. Such a publication will be of great value to industrialists and academic research workers.

IUPAC Series on Experimental Thermodynamics

- Vol. V. Equations of State for Fluids and Fluid Mixtures
Eds., J.V. Sengers, R.F. Kayser, C.J. Peters, and H.J.
White, Jr. (2000)
- Vol. IV. Solution Calorimetry
Eds., K.N. Marsh and P.A.G. O'Hare (1994)
- Vol. III. Measurement of the Transport Properties of Fluids
Eds., W.A. Wakeham, A. Nagashima, and J.V. Sengers
(1991)
- Vol. II. Experimental Thermodynamics of Non-reacting Systems
Eds., B. Le Neindre and B. Vodar (1975)
- Vol. I. Calorimetry of Non-reacting Systems
Eds., J.P. McCullough and D.W. Scott (1968)

Measurement of the Thermodynamic Properties of Single Phases

Editors: A. R. H. Goodwin, Schlumberger-Doll Research
K. N. Marsh, University of Canterbury, Christchurch, NZ
W. A. Wakeham, Imperial College, London, UK

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Chap. 1 Introduction (Editors)

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b) Piston Gauges (M. Girard, C. D. Ehrlich, and J. W. Schmidt)

c) Diamond anvil (E. Abramson)

d) Low pressure (C. Sutton)

Chap. 4 Mixture preparation

- a) Preparation of mixtures (M. Hiza)
- b) Collection of natural fluids/down hole sampling
(J. Highswander and A. Kurkjian)

Chap. 5 Density

- a) Hydrostatic balance densimeters with magnetic suspension couplings (W. Wagner and R. Kleinrahm)
- b) Measurement of density with vibrating bodies (V. Mayer and A. Padua)
- c) Piezometer (L. Woolf)
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... **Single Phases** - CONTENTS (cont.)

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(J.P.M. Trusler)

Chap. 7 Calorimetry

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- b) AC Calorimetry (I. Hatta and H. Yao)
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- d) Nano-calorimetry (A.H. van Herwaarden)

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a) Relative permittivity and refractive index of fluids

(M. Moldover and K. N. Marsh)

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Measurement of Thermodynamic Properties of Multiple Phases

Editors: R. D. Weir, Royal Military College, Kingston,
Canada

Th. W. de Loos, Delft University of Technology,
The Netherlands

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