TABLE OF CONTENTS

Ultraprecise Measurement of Thermal Expansion Coefficients - Recent Progress 1
S. F. Jacobs, J. W. Berthold III, J. Osmundsen

Thermal Expansion of Fused Silica from 80 to 1000K Standard Reference Material 739 13
T. A. Hahn and R. K. Kirby

Cooperative Measurement of the Thermal Expansion Behavior of Different Materials up to 1000°C by Pushrod Dilatometers 25
E. Fitzer and S. Weisenburger

Thermal Expansion Measurements to 130° by Laser Interferometry 36
W. A. Plummer

An Electrical Method for the Measurement of Coefficient of Linear Expansion 44
R. S. Shrivastava and D. S. Joshi

Economy Considerations for Pushrod-Type Dilatometers 51
G. R. Clusener

Expansion Coefficient of Coppers at 283K and Low Temperatures 59
G. K. White

Thermal Expansion of the N. B. S. Standard Copper below 30K 65
F. N. D. D. Periera and G. M. Graham

Low Temperature Thermal Expansion of Pure Zinc and a Dilute Zinc Manganese Alloy 72
H. W. Willemsen, E. Vittoratos, P. P. M. Meincke

The Thermal Expansion of Tellurium at Low Temperatures 77
S. Ahmed and S. Weintroub

Thermal Expansion of Platinum from 293 to 1900 K 87
T. A. Hahn and R. K. Kirby

The Determination of the Thermal Expansion of Platinum by X-Ray Diffraction 97
D. L. Evans and G. R. Fischer

High Pressure Equations of State for Solid Xenon and Neon as Models for Solids in the Classical and Low Temperature Limits 105
C. A. Swenson and M. S. Anderson

The Variation of Lattice Parameter of UC-ZrC Solid Solutions with Temperature and Composition 119
A. L. Bowman, N. H. Krikorian, N. G. Nereson

Anisotropy of Compressibility and Thermal Expansion of Hexagonal Selenium 131
D. McCann and L. Cartz

Thermal Expansion of Some Azides by a Single Crystal X-Ray Method 139
F. A. Mauer and T. A. Hahn

The Low Temperature Thermal Expansion of Solid Methane and Deuterated Methanes 151
F. W. Sheard

Spectroscopic Applications of Low Temperature Thermal Expansion 155
F. W. Sheard

Thermal Vacancies and Thermal Expansion 169
W. E. Schoknecht and R. O. Simmons
Thermal Expansion Coefficients for 183
Alkali Halides Containing Defects
C. R. Case, K. O. McLean, C. A. Swenson
Influence of Cobalt on Invar Characteristics 188
of Iron-Nickel Alloys
D. A. Colling
Low Temperature Invar Anomalies in Fe-Ni-Co Alloys 195
W. F. Schlosser, E. Latal, P. P. M. Meincke, G. M. Graham
Structural Inhomogeneity and Thermal Expansion 203
of Iron-Nickel Invar Alloys
G. Hausch and H. Warlimont
Shell Model Calculation of Second Grueneisenparameters and of 211
Pressure Dependence of First Grueneisenparameter for Alkali Halides
G. R. Barsch and B. N. N. Achar
The Thermal Expansion of Sodium Chloride by the Shell Model 231
M. Lagu and B. Dayal
Comparison of Various Lattice Dynamical Models for 237
the Calculation of Thermal Expansion of Solids
K. V. Namjoshi, S. S. Mitra, J. F. Vetelino
The Role of Transverse Oxygen Vibrations in Thermal 244
Expansion Behavior of Glasses and Crystals
H. T. Smyth
Thermal Expansion of Ribbon-Reinforced Composites 257
S. T. Gulati and W. A. Plummer
Effects of Thermal Expansion on the Mechanical Properties 269
of Single Phase Ceramics and Oxide Single Crystals
H. P. Kirchner
Thermal Expansion of Carbon-Carbon Composites 279
as a Function of Temperature and Orientation
R. G. Naum, C. K. Jun, P. T. B. Shaffer
Prediction of Thermal Expansion in Simple Solids and 287
Its Control in Structural Composites
S. W. Bradstreet and L. W. Davis
The Volume and Thermal Relaxation of Chlorinated 295
Polyethylenes near Their Glass-Rubber Transition
D. L. Shelley
Thermal Expansion Measurements of Simulated Lunar Rocks 302
R. E. Griffin and S. G. Demou