

A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION



National Bureau of Standards
Library, E-01 Admin. Bldg.
MAR 28 1970

Reference book not to be
taken from the library.

copy 1

NBS SPECIAL PUBLICATION **315-4**

Bibliography on the High Temperature Chemistry and Physics of Materials

U.S.
DEPARTMENT
OF
COMMERCE

National
Bureau
of
Standards

OCTOBER, NOVEMBER, DECEMBER 1969

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards¹ was established by an act of Congress March 3, 1901. Today, in addition to serving as the Nation's central measurement laboratory, the Bureau is a principal focal point in the Federal Government for assuring maximum application of the physical and engineering sciences to the advancement of technology in industry and commerce. To this end the Bureau conducts research and provides central national services in four broad program areas. These are: (1) basic measurements and standards, (2) materials measurements and standards, (3) technological measurements and standards, and (4) transfer of technology.

The Bureau comprises the Institute for Basic Standards, the Institute for Materials Research, the Institute for Applied Technology, the Center for Radiation Research, the Center for Computer Sciences and Technology, and the Office for Information Programs.

THE INSTITUTE FOR BASIC STANDARDS provides the central basis within the United States of a complete and consistent system of physical measurement; coordinates that system with measurement systems of other nations; and furnishes essential services leading to accurate and uniform physical measurements throughout the Nation's scientific community, industry, and commerce. The Institute consists of an Office of Measurement Services and the following technical divisions:

Applied Mathematics—Electricity—Metrology—Mechanics—Heat—Atomic and Molecular Physics—Radio Physics²—Radio Engineering²—Time and Frequency²—Astrophysics²—Cryogenics.²

THE INSTITUTE FOR MATERIALS RESEARCH conducts materials research leading to improved methods of measurement standards, and data on the properties of well-characterized materials needed by industry, commerce, educational institutions, and Government; develops, produces, and distributes standard reference materials; relates the physical and chemical properties of materials to their behavior and their interaction with their environments; and provides advisory and research services to other Government agencies. The Institute consists of an Office of Standard Reference Materials and the following divisions:

Analytical Chemistry—Polymers—Metallurgy—Inorganic Materials—Physical Chemistry.

THE INSTITUTE FOR APPLIED TECHNOLOGY provides technical services to promote the use of available technology and to facilitate technological innovation in industry and Government; cooperates with public and private organizations in the development of technological standards, and test methodologies; and provides advisory and research services for Federal, state, and local government agencies. The Institute consists of the following technical divisions and offices:

Engineering Standards—Weights and Measures—Invention and Innovation—Vehicle Systems Research—Product Evaluation—Building Research—Instrument Shops—Measurement Engineering—Electronic Technology—Technical Analysis.

THE CENTER FOR RADIATION RESEARCH engages in research, measurement, and application of radiation to the solution of Bureau mission problems and the problems of other agencies and institutions. The Center consists of the following divisions:

Reactor Radiation—Linear Radiation—Nuclear Radiation—Applied Radiation.

THE CENTER FOR COMPUTER SCIENCES AND TECHNOLOGY conducts research and provides technical services designed to aid Government agencies in the selection, acquisition, and effective use of automatic data processing equipment; and serves as the principal focus for the development of Federal standards for automatic data processing equipment, techniques, and computer languages. The Center consists of the following offices and divisions:

Information Processing Standards—Computer Information—Computer Services—Systems Development—Information Processing Technology.

THE OFFICE FOR INFORMATION PROGRAMS promotes optimum dissemination and accessibility of scientific information generated within NBS and other agencies of the Federal Government; promotes the development of the National Standard Reference Data System and a system of information analysis centers dealing with the broader aspects of the National Measurement System, and provides appropriate services to ensure that the NBS staff has optimum accessibility to the scientific information of the world. The Office consists of the following organizational units:

Office of Standard Reference Data—Clearinghouse for Federal Scientific and Technical Information³—Office of Technical Information and Publications—Library—Office of Public Information—Office of International Relations.

¹ Headquarters and Laboratories at Gaithersburg, Maryland, unless otherwise noted; mailing address Washington, D.C. 20234.

² Located at Boulder, Colorado 80302.

³ Located at 5285 Port Royal Road, Springfield, Virginia 22151.

UNITED STATES DEPARTMENT OF COMMERCE
MAURICE H. STANS, *Secretary*
NATIONAL BUREAU OF STANDARDS • LEWIS M. BRANSCOMB, *Director*

BIBLIOGRAPHY ON THE HIGH TEMPERATURE CHEMISTRY AND PHYSICS OF MATERIALS

October, November, December
1969

J. J. Diamond, Editor
Institute for Materials Research
National Bureau of Standards
Washington, D. C. 20234

Under the auspices of the
International Union of Pure and Applied Chemistry
Commission on High Temperatures and Refractories



U.S. National Bureau of Standards^t Special Publication 315-4
Nat. Bur. Stand. (U.S.), Spec. Publ. 315-3, 85 pages (Jan. 1970)
CODEN: XNBSA

Issued January 1970

MAR 28 1970

Not acc. Re

QC 100

.U57

1970

copy 1.

Contributors

PART I. Compiled by

N. F. H. Bright, Department of Energy, Mines and Resources, Ottawa, Ontario, Canada.
G. MeMaria, University of Rome, Rome, Italy.
J. J. Diamond, National Bureau of Standards, Washington, D. C., U.S.A.
H. Flood, Norwegian Institute of Technology, Trondheim, Norway.
M. Foex, C.N.R.S., Super-Refractories Laboratory, Odeillo, France.
J. Hlavac, University of Chemical Technology, Prague, Czechoslovakia.
M. G. Hocking, Imperial College of Science and Technology, London. England.
H. Nowotny, University of Vienna, Vienna, Austria.
G. D. Rieck, Eindhoven Institute of Technology, Eindhoven, Netherlands.
A. Wittmann, Vienna Institute of Technology, Vienna, Austria.

PART II. Compiled by

L. Brewer, University of California, Berkeley, California, U.S.A.

Library of Congress Catalog Card Number: 77-600413

Contents

PART I. Solids and Liquids

	Page
A. Devices for achieving temperatures above 1500 °C	1
B. Devices for measuring and controlling temperatures above 1500 °C	1
C. Devices for physical measurements at temperatures above 1000 °C	3
D. Thermodynamic properties, at temperatures below 1000 °C, of materials which melt above 1500 °C	4
E. Properties, at temperatures above 1000 °C, of materials which melt above 1500 °C	6
a. Metallic materials	6
b. Non-metallic materials	11
c. Mixed materials	16
F. Properties, at temperatures above 1000 °C, of materials which melt below 1500 °C	16
a. Metallic materials	16
b. Non-metallic materials	19
c. Mixed materials	22
G. Phase equilibria above 1000 °C	22
H. Reactions at temperatures above 1000 °C	37

PART II. Gases

A. Spectroscopy of interest to high temperature chemistry	53
B. Reaction between gases and condensed phases	60

PREFACE

This is one of a series of current-awareness bibliographies on high-temperature chemistry and physics published under the auspices of the Commission on High Temperatures and Refractories of the International Union of Pure and Applied Chemistry. The first issue covered the period October-December 1957 and, with several changes in title, format and content, the series has appeared quarterly since that time. It acquired its present format and status as a National Bureau of Standards publication with the issue covering the fourth quarter of 1968.

It is compiled by an International Working Group on Bibliographies, attached to the Commission, consisting of about fifteen scientists. Part I is compiled by the Contributors scanning the pertinent journals published in their countries and in some cases, of adjacent countries, while the literature of other countries is covered by the editor, mainly from published lists of tables of contents. Part II is obtained by searching Chemical Abstracts.

With very few exceptions, abbreviations of journal names follow the usage of Chemical Abstracts. Journal names using non-Roman alphabets are transliterated when the original is being referenced. In those cases where translation journals are referenced its name and pagination are used.

All titles are translated into English. Translations are by the contributors, the editor, Chemical Abstracts, or those published in table of contents lists.

Bibliography on the High Temperature Chemistry and Physics of Materials

October, November, December 1969

J. J. Diamond, Editor

The bibliography consists of references to research involving temperatures above 1000 °C, which were noted by the Contributors during the above three-month period. Since this is intended primarily as a current-awareness bibliography, there is no cross-referencing or indexing. This issue contains about 775 references roughly grouped under fifteen subject headings.

Key words: Bibliography, high temperature; chemistry, high temperature; high temperature chemistry; materials properties; research at high temperatures; thermophysical properties.

Part I. SOLIDS AND LIQUIDS

A. Devices for achieving temperatures above 1500 °C

1. A new method of melting without using a crucible (Stipp method)
J. J. Nickl (Forschungslab. Festkörperchem., Inst. Anorg. Chem.,
Univ. München, Germ.)
Z. Metallk. 60, 800-02 (1969)

B. Devices for measuring and controlling temperatures above 1500 °C

1. Notes on the application of the International Practical Temperature Scale of 1968
R. E. Bedford and C. G. M. Kirby (Appl. Phys. Div., Nat. Res. Council, Ottawa, Ont., Can.)
Metrologia 5 [3], 83-87 (1969)
2. International Practical Temperature Scale of 1968
R. P. Benedict (Westinghouse Electr. Co., Steam Div., Lester, Pa.)
Instr. Control Systems 42 [10], 85-89 (Oct. 1969)
3. Effective wavelength of a spectropyrometer
L. A. Boyarskii and R. I. Efremova
Measurement Techniques (USSR) [2], 214-16 (1969)
4. Temperature of metal oxide particles in flames
E. M. Bulewicz, G. Jones and P. J. Padley
Combust. Flame 13 [4], 409-12 (1969)

- B. 5. Ultrasonic thermometry
S. S. Fam, L. C. Lynnworth and E. H. Carnevale (Panametrics,
Waltham, Mass.)
Instr. Control Systems 42 [10], 107-10 (Oct. 1969)
6. Arrangement for temperature measurement in the solar furnace by
ultra-violet pyrometry
M. Foex and J. P. Coutures (Lab. Ultra-Réfract., 66-Odeillo, Fr.)
Rev. Phys. Appl. 4, 381 (1969)
7. Compensation for thermal lag of a thin wire resistance thermometer,
using a hot wire anemometer
P. Freymouth (Aerospace Eng. Sci. Dept., Univ. of Colorado,
Boulder, Colorado)
J. Sci. Instr. 2, 1001-02 (1969)
8. Representation of the temperature scale above 1337.58 K with
photoelectric direct current pyrometers
H. Kune (Phys.-Tech. Bundesanstalt, Braunschweig, DBR)
Metrologia 5 [3], 88-102 (1969)
9. Behavior of Pt/Pt-Rh and Ni/Ni-Mo thermocouples in the high
temperature vacuum furnace in the presence of material contain-
ing Cr
E. Lenz
Werkst. Korros. 20 [8], 651-58 (1969)
10. The emissivity of globar for use in temperature measurements with
an optical pyrometer
J. C. Morris and M. Dalton (Avco Co., Space Systems Div.,
Wilmington, Mass. 01887)
Appl. Optics 8 [8], 1737-38 (1969)
11. Series representation of the solution of the integral equation for
emissivity of cavities
C. L. Sydnor (Jet Propul. Lab., Calif. Inst. Tech., Pasadena,
Calif. 91103)
J. Opt. Soc. Am. 59 [10], 1288-90 (1969)
12. Manufacture of a film-type carbon resistance thermometer
H. van Dael and W. M. Star (Kamerlingh Onnes Lab., Leiden,
Netherlands)
J. Sci. Instr. 2, 910 (1969)
13. Simple temperature controller
B. Window (AERE, Harwell, U. K.)
J. Sci. Instr. 2, 894 (1969)

C. Devices for physical measurements at temperatures above 1000 °C

1. Vacuum furnace for neutron intensity measurements
M. Antonini and E. Nicotera (Com. Naz. Energ. Nucl., Ispra, Varese, Italy)
J. Sci. Instr. 2, 890-91 (1969)
2. Mass spectrometric studies of laser-produced vapor species
V. S. Ban and B. E. Knox (RCA Labs., Princeton, N. J. 08540)
Int. J. Mass Spectr. Ion Phys. 3 [1-2], 131-42 (1969)
3. High temperature continuous creep measuring apparatus
E. S. Chen, J. C. Sadak and F. K. Sautter (Watervliet Arsenal, Watervliet, N. Y. 12189)
Rev. Sci. Instr. 40 [10], 1325-27 (1969)
4. Law of maxima in species partial pressures for vaporization equilibria in two-component systems
R. K. Edwards (Argonne Nat. Lab., Chem. Eng. Div., Argonne, Ill. 60439)
High Temp. Sci. 1 [2], 232-37 (1969)
5. Techniques for determining the resistance of refractories to slag attack
D. O. E. Fahrbach, D. D. Howat and P. R. Jochens (Met. Dept., Univ. of Witwatersrand, S. Africa)
Trans. Brit. Ceram. Soc. 68, 151-58 (1969)
6. Calculation of the resistance of non-metallic melts heated by the Joule effect at low frequencies
J. Gailhbaud (Soc. St. Gobain)
Rev. Gén. Therm. [87], 263 (1969)
7. Use of the quadrupole mass filter for high-temperature studies
J. W. Hastie (Chem. Dept., Univ. Tasmania, Hobart, Australia) and D. L. Swingler (Chem. Phys. Div., C.S.I.R.O., Chem. Res. Labs., Melbourne, Australia)
High Temp. Sci. 1 [1], 46-57 (1969)
8. High temperature fibre-optical displacement probe
T. R. Hsu, R. G. Moyer and F. B. Banks (Whiteshell Nucl. Res. Establ., At. Energy Canada, Pinawa, Man., Can.)
J. Sci. Instr. 2, 1132-33 (1969)
9. Angular distribution of complex vapor molecular effusion
J. L. LaRue (Purdue Univ., 1969)
Dissertation Abstr. Int. 30B [4], 1622-23 (1969-70)

- C. 10. Application of time resolved mass spectrometry to problems in high temperature chemistry
R. T. Meyer and L. L. Ames (Sandia Lab., Albuquerque, N. M.)
Mass Spectrom. Inorg. Chem., J. L. Margrave, Ed., p. 301-24 (Amer. Chem. Soc. Adv. Chem. Ser. 72, Washington, D. C., 1968)
11. Proposed use of nozzle-beam sampling of supercritical dense gases in the mass spectrometry of nonvolatile compounds
T. A. Milne (Midwest Res. Inst., Kansas City, Mo. 64110)
Int. J. Mass Spectr. Ion Phys. 3 [1-2], 153-55 (1969)
12. An x-ray transmission diffractometer with a high temperature camera for the study of liquids
D. M. North and C. N. J. Wagner (Hammond Lab., Yale Univ., New Haven, Conn.)
J. Appl. Cryst. 2 [4], 149 (1969)
13. Making a high-temperature x-ray diffraction cell, and one of its applications
A. Revcolevschi, J. Hubert and R. Collongues (Ctr. Etudes Chim. Mét., 94-Vitry/Seine, Fr.)
C. R. Acad. Sci. 269C, 265 (1969)
14. Dilatometer with continuous recording of expansion when heating up to 2000 °C in a vacuum
G. I. Terekhov, O. S. Ivanov and P. N. Karnaushkin
Zavod. Lab. 35 [8], 1013 (1969)
15. Thermal expansion measurement
J. Valentich (Westinghouse Electr. Co., R/D Ctr., Pittsburgh, Pa.)
Instr. Control Systems 42 [10], 91-94 (Oct. 1969)
- D. Thermodynamic properties, at temperatures below 1000 °C, of materials which melt above 1500 °C
1. Heat-capacity measurements on rare-earth double oxides $R_2M_2O_7$
H. W. J. Blöte, R. F. Wielinga and W. J. Huiskamp (Kamerlingh Onnes Lab., Leiden, Neth.)
Physica 43 [4], 549-68 (1969)
2. Heat capacity of (Ba,Sr)TiO₃ solid solutions near the ferroelectric phase transformation
K. Ya. Borman, B. A. Strukov, S. A. Taraskin and V. Ya. Fritsberg (State Univ., Moscow)
Izv. Akad. Nauk SSSR, Ser. Fiz. 33 [7], 1162-63 (1969)
3. Conversion of existing calorimetrically determined thermodynamic properties to the basis of the International Practical Temperature Scale of 1968
T. B. Douglas (Nat. Bur. Std., Washington, D. C. 20234)
J. Res. Nat. Bur. Std. 73A [5], 451-70 (1969)

- D. 4. Measured enthalpy and derived thermodynamic properties of alpha beryllium nitride, Be_3N_2 , from 273 to 1200 K
T. B. Douglas and W. H. Payne (Nat. Bur. Std., Washington, D. C. 20234)
J. Res. Nat. Bur. Std. 73A [5], 471-77 (1969)
5. Enthalpies of formation of U_3O_8 and UO_2
E. J. Huber, Jr. and C. E. Holley, Jr. (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Chem. Thermodyn. 1 [3], 267-72 (1969)
6. Enthalpy of formation of EuO
E. J. Huber, Jr. and C. E. Holley, Jr. (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Chem. Thermodyn. 1 [3], 301-04 (1969)
7. Enthalpy of formation of U_2C_3
E. J. Huber, Jr., C. E. Holley, Jr. and W. G. Witteman (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Chem. Thermodyn. 1 [6], 579-87 (1969)
8. The enthalpies of formation of PuO_2 and PuN
G. K. Johnson, E. H. Van Deventer, O. L. Kruger and W. N. Hubbard (Argonne Nat. Lab., Argonne, Ill. 60439)
J. Chem. Thermodyn. 1 [1], 89-98 (1969)
9. Titanium oxynitrides TiN_xO_y formation enthalpy dependence on composition in the region $x + y > 1$
M. P. Morozova and E. I. Galbraich
Vest. Leningr. Univ., Fiz. i Khim. [3], 96-100 (1969)
10. True heat capacity of chalcogenides of rare earth elements at low temperatures. IV. La_2Te_3 entropy and enthalpy
V. V. Nogteva, I. E. Paukov and E. I. Yarembash (Kurnakov Gen. & Inorg. Chem. Inst., Moscow)
Zh. Fiz. Khim. 43 [8], 2118-19 (1969)
11. True heat capacity of rare earth chalcogenides at low temperatures. V. Nd_2S_3 entropy and enthalpy
V. V. Nogteva, I. E. Paukov and E. I. Yarembash
Zh. Fiz. Khim. 43 [9], 2344-45 (1969)
12. True heat capacity of rare earth chalcogenides at low temperatures. VI. La_2S_3 entropy and enthalpy
I. E. Paukov, V. V. Nogteva and E. I. Yarembash
Zh. Fiz. Khim. 43 [9], 2351-52 (1969)
13. Estimation of thermodynamics of high-melting carbides from their infrared absorption spectra
V. A. Tskhai and P. V. Geld
Zh. Neorg. Khim. 14 [10], 2666-71 (1969)

- D. 14. Magnetite (Fe_3O_4). Heat capacity and thermodynamic properties from 5 to 350 K, low-temperature transition
E. F. Westrum, Jr. (Chem. Dept., Univ. of Michigan, Ann Arbor, Mich. 48104) and F. Grønvold (Chem. Inst. A, Univ. of Oslo, Blindern, Oslo 3, Norway)
J. Chem. Thermodyn. 1 [6], 543-57 (1969)

E. Properties, at temperatures above 1000 °C, of materials which melt above 1500 °C

a. Metallic materials

1. The thermodynamics of vaporization of Ce
R. J. Ackermann, M. Kojima, E. G. Rauh and R. R. Walters (Chem. Div., Argonne Nat. Lab., Argonne, Ill. 60439)
J. Chem. Thermodyn. 1 [6], 527-33 (1969)
2. Effect of crystallographic orientation on the surface free energy and surface self-diffusion of solid Mo
B. C. Allen (Battelle Mem. Inst., Columbus, Ohio)
Trans. Met. Soc. AIME 245 [9], 2089-96 (1969)
3. CeC and cerium nitride carbides
J. S. Anderson, N. J. Clark and I. J. McColm (Inorg. Chem. Lab., Univ. of Oxford, U. K.)
J. Inorg. Nucl. Chem. 31, 1621-37 (1969)
4. Determination of thermodynamical data of the borides Mo_2B , W_2B and Re_3B
F. D. Baehren and D. Vollath (Inst. Mater.-u. Festkörperforsch., Kernforschungszentrums Univ. Karlsruhe, Germ.)
Planseeber. Pulvermet. 17, 180-83 (1969)
5. Thermodynamics of rare-earth-carbon systems. II. The Ho-C and Dy-C systems
G. Balducci, A. Capalbi, G. DeMaria and M. Guido (Ist. Chim. Fis., Univ. di Roma, Italy)
J. Chem. Phys. 51 [7], 2871-76 (1969)
6. Thermodynamics of rare-earth-carbon systems. III. The Er-C system
G. Balducci, G. DeMaria and M. Guido (Ist. Chim. Fis., Univ. di Roma, Italy)
J. Chem. Phys. 51 [7], 2876-79 (1969)
7. Viscosity of alloys of Cr with Fe and Si
B. A. Baum, I. A. Pavars and P. V. Geld
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 22-26 (June 1969)
8. Mechanical properties of a boron and tungsten carbide sintered material
G. Bollani (FIAT, Lab. Ric. Contr. Auto, Avio, Torino, Italy)
Met. Ital. 61, 181 (1969)

- Ea. 9. The partial molar enthalpies of solution for W and Ta in liquid rare-earth metals
D. F. Bowersox (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Nucl. Mater. 32 [1], 161-64 (1969)
10. Elastic properties and thermal expansion of NbC to high temperatures
R. F. Brenton, C. R. Saunders and C. P. Kempter (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Less-Common Metals 19 [3], 273-78 (1969)
11. Application of wetting theory to non-reactive liquid metal-graphite systems
C. P. Buhsmer and E. A. Heintz (Airco Speer Res. Lab., Niagara Falls, N. Y.)
J. Mater. Sci. 4, 592-95 (1969)
12. Thermal grooving in 3% silicon-iron
R. L. Colombo and J. Howard (Nat. Phys. Lab., Teddington, U. K.)
J. Mater. Sci. 4, 753-59 (1969)
13. Casting techniques for metallic nuclear compounds
W. Dürrschnabel (Max Planck-Inst. Metallforsch., Stuttgart, Germ.)
Z. Metallk. 60, 521-25 (1969)
14. Activated sintering of Re containing Pd additives
O. V. Dushina and L. V. Nevskaya
Porosh. Met. 9 [8], 50-52 (Aug. 1969)
15. Effects of reheating stainless steels
A. M. Edwards and A. Nicholson (Brit. Steel Co., Swinden Labs., Rotherham, U. K.)
J. Iron Steel Inst. (London) 207, 1067-81 (1969)
16. Mass spectrometric study of Mn sublimation
T. C. Ehlert (Chem. Dept., Marquette Univ., Milwaukee, Wisc. 53233)
J. Inorg. Nucl. Chem. 31 [9], 2705-10 (1969)
17. Influence of high-temperature heat treatment on surface order and faceting of some Mo, W, Ta and Re crystal surfaces
H. E. Farnsworth, C. A. Haque, D. M. Zehner and G. Barton (Barus Lab. of Surface Phys., Brown Univ., Providence, R. I. 02912)
Surface Sci. 17 [1], 1-6 (1969)
18. The enthalpy of UB_2 from 600 to 1500 K by drop calorimetry
D. R. Fredrickson and 5 others (Argonne Nat. Lab., Chem. Eng. Div., Argonne, Ill. 60439)
High Temp. Sci. 1 [3], 373-80 (1969)
19. Long distance transport of molten pig iron
M. Gerard, J. M. Nizet and J. Lecomte (S. A. Met. d'Esperance-Longdoz, Liege, Belgium)
J. Iron Steel Inst. (London) 207, 1097-1103 (1969)

- Ea. 20. Gaseous metal borides. I. On the dissociation energy of the molecules ThB, ThP, and Th₂, and predicted dissociation energies of selected diatomic transition-metal borides
K. A. Gingerich (Chem. Dept., Texas A&M Univ., College Station, Texas 77843)
High Temp. Sci. 1 [2], 258-67 (1969)
21. Heats of sublimation and properties of chemical bonds of rare earth metals
S. P. Gordienko
Zh. Fiz. Khim. 43 [9], 2359 (1969)
22. Deviations from the laws of ideal solutions in an Fe-C melt
V. A. Grigoryan and A. A. Zhukhovitskii
Izv. Akad. Nauk SSSR, Metal. [5], 61-66 (Sept.-Oct. 1969)
23. Empirical correlation of the activation energies for high temperature creep, stress-rupture and self-diffusion of solid metals with those for viscosity and self-diffusion of liquid metals
A. V. Grosse (Res. Inst. of Temple Univ., Philadelphia, Pa. 19144)
High Temp. Sci. 1 [1], 1-10 (1969)
24. Experimental study of positive ion emission from W. I
O. Kaposi and M. Riedel (L. Eotvos Univ., Phys. Chem. & Radiol. Dept., Budapest 8, Hungary)
Acta Chim. Acad. Sci. Hungar. 61 [4], 349-66 (1969)
25. Creep deformation of sintered ZrB₂ at high temperatures
M. Kinoshita, S. Kose and Y. Hamano
Bull. Govt. Ind. Res. Inst., Osaka 20 [3], 215-22 (1969)
26. Hot-pressing of ZrB₂ with binder metals
M. Kinoshita, S. Kose and Y. Hamano
Bull. Govt. Ind. Res. Inst., Osaka 20 [3], 207-14 (1969)
27. Preparation and properties of cermets based on TiC with an alloy steel binder
S. S. Kiparisov and V. K. Narva
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 12 [3], 135-39 (May-June 1969)
28. Sintering of titanium carbide influenced by ultrasound under continuous heating conditions
P. S. Kislyi and L. S. Golubyak
Porosh. Met. 9 [9], 18-22 (Sept. 1969)
29. Niobium powder compaction during hot pressing
M. S. Kovalchenko, R. Ya. Petrykina and G. V. Samsonov
Porosh. Met. 9 [9], 5-9 (Sept. 1969)

- Ea. 30. Self-diffusion of carbon in UC
R. A. Krakowski (Nucl. Eng., Ohio State Univ., Columbus, Ohio 43210)
J. Nucl. Mater. 32 [1], 120-25 (1969)
31. A mass spectrometric study of the enthalpy of sublimation of technetium
O. H. Krikorian, J. H. Carpenter and R. S. Newbury (Lawrence Rad. Lab., Univ. Calif., Livermore, Calif. 94550)
High Temp. Sci. 1 [3], 313-30 (1969)
32. The thermodynamics of refractory metal silicides by an emf method
S. R. Levine (City Univ. of New York, 1969)
Dissertation Abstr. Int. 30B [1], 180-81 (1969-70)
33. The free energy of formation of Ta silicides using solid oxide electrolytes
S. R. Levine and M. Kolodney (City Coll., City Univ. of New York, N. Y.)
J. Electrochem. Soc. 116 [10], 1420-24 (1969)
34. The application of thoria-yttria electrolytes in measuring the thermodynamic properties of Cr in alloys
P. C. Lidster and H. B. Bell (Met. Dept., Univ. of Newcastle-upon-Tyne, Engl. and Met. Dept., Strathclyde Univ., Glasgow, Scotland)
Trans. Met. Soc. AIME 245 [10], 2273-77 (1969)
35. Dissociation energy of Pd₂
S. S. Lin, B. Strauss and A. Kant (Army Mater. & Mechan. Res. Ctr., Watertown, Mass. 02172)
J. Chem. Phys. 51 [5], 2282-83 (1969)
36. Studies on sintering and hot-pressing of the diborides of Ti and Zr containing additions of transition elements and their properties
R. Meyer and H. Pastor (Ugine-Carbhone, Grenoble, Fr.)
Planseeber. Pulvermet. 17, 111-22 (1969)
37. Optical properties of liquid metals at high temperatures
J. C. Miller (Cavendish Lab., Cambridge, U. K.)
Phil. Mag. 20, 1115-32 (1969)
38. Accelerated sublimation of Pt, Pd and Pt-Rh alloy when strained in air by tensile stress
I. I. Novikov, E. I. Rytvin and L. P. Ulybysheva (Steel & Alloys Inst., Moscow)
Dokl. Akad. Nauk SSSR 189 [1], 112-14 (1969)
39. Electrophysical properties of molten hexaborides of alkaline earth and rare earth metals
Yu. B. Paderno, E. S. Garf, T. Nemyskii and I. Pratska
Porosh. Met. 9 [10], 55-58 (Oct. 1969)

- Ea. 40. The radiating property and electrical resistance of TiC at high temperatures
V. A. Petrov, V. I. Chekhovskoi and A. E. Sheindlin (Acad. Sci., Inst. High Temp., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [9], 1533-36 (1969)
41. Free energy of formation of ThC
P. E. Potter (AERE, Harwell, U. K.)
J. Inorg. Nucl. Chem. 31, 1821-29 (1969)
42. Volumetric changes during the sintering of an Fe-Cr carbide composition
I. D. Radomyselskii and V. A. Dymchenko
Porosh. Met. 9 [9], 14-17 (Sept. 1969)
43. Bonding of liquid metal at low velocity impact
J. C. Remington (R. N. Eng. Coll., Mandon, Plymouth, U. K.)
J. Mater. Sci. 4, 704-12 (1969)
44. Effect of alloying additions on the thermoelectric properties of Pt
D. W. Rhys and P. Taimalu (Int. Nickel, London, NW 10)
Engelhard Ind. Tech. Bull. 10 [2], 41-47 (1969-70)
45. Melting points and microhardness of Y and rare earth metal germanides of the Ce subgroup
B. M. Rud and K. A. Lynchak
Porosh. Met. 9 [7], 51-54 (July 1969)
46. Recrystallization during the sintering of powders of Nb and Ti carbides
G. V. Samsonov and S. A. Bozhko
Porosh. Met. 9 [7], 30-35 (July 1969)
47. Cermet alloys of Re with YB₆
G. V. Samsonov and I. Ya. Kondratov
Porosh. Met. 9 [8], 87-91 (Aug. 1969)
48. Mean square amplitude of thermal vibrations in cubic metals at melting point
P. K. Sharma and N. Singh (Phys. Dept., Univ. of Allahabad, India)
Chem. Phys. Letters 4 [1], 1-2 (1969)
49. Mechanical behavior of Ta-base T-111 alloy at elevated temperature
K. D. Sheffler, J. C. Sawyer and E. A. Steigerwald (Mater. Tech. Lab., TRW Inc., Cleveland, Ohio)
ASM Trans. Quart. 62 [3], 749-58 (1969)

- Ea. 50. Exploratory study of the silicide, aluminide and boride coatings for nitridation/oxidation protection of Cr alloys
J. R. Stephens and W. D. Klopp (NASA, Lewis Res. Ctr., Cleveland, Ohio)
Trans. Met. Soc. AIME 245 [9], 1975-81 (1969)
51. On the possible influence of stacking fault energy on the creep of pure bcc metals
R. R. Vandervoort (Lawrence Rad. Lab., Livermore, Calif.)
Trans. Met. Soc. AIME 245 [10], 2269-72 (1969)
52. Atomic heats of Pd and Pt at high temperatures
O. Vollmer and R. Kohlhaas
Z. Naturforsch. 24A [10], 1669-70 (1969)
53. Bubble growth processes at grain boundaries in chemical vapor deposited W
A. Wolfenden and K. Farrell (Metals and Ceram. Div., Oak Ridge Nat. Lab., Oak Ridge, Tenn. 37830)
J. Nucl. Mater. 29, 133-43 (1969)
54. Change in the compactness and structure of sintered W blanks during their surface fusion
M. I. Zhudinov
Porosh. Met. 9 [10], 52-54 (Oct. 1969)
55. Temperature and heat conductivity of V at high temperatures
E. V. Zinovyev, R. P. Krentsis and P. V. Geld (Kirov Polytech. Inst., Sverdlovsk, USSR)
Fiz. Tverd. Tela 11 [10], 3045-47 (1969)

b. Non-metallic materials

1. The effect of density on the thermal conductivity of UO_2
R. R. Asamoto, F. L. Anselin and A. E. Conti (G. E. Adv. Prod. Opern., Sunnyvale, Calif. 94086)
J. Nucl. Mater. 29, 67-81 (1969)
2. Thermodynamic dissociation of chalcogenides of the Zn subgroup.
II. Thermodynamic dissociation of CdS and CdSe
E. I. Boev, L. A. Benderskii, N. V. Minaeva and A. M. Bunin
Zh. Fiz. Khim. 43 [9], 2234-37 (1969)
3. Characterization and sintering of reactive $MgAl_2O_4$ spinel
R. J. Bratton (Westinghouse Res. Labs., Pittsburgh, Pa.)
Am. Ceram. Soc. Bull. 48 [11], 1069-73 (1969)
4. Creep of high-alumina refractories
V. L. Burdick and D. E. Day (Ceram. Eng. Dept., Univ. Missouri at Rolla, Mo.)
Am. Ceram. Soc. Bull. 48 [12], 1109-13 (1969)

- Eb. 5. Effect of firing temperatures and composition on the creep properties of magnesite bricks
T. S. Busby and M. Carter (British Glass Ind. Res. Assn., Sheffield, U. K.)
Trans. Brit. Ceram. Soc. 68, 205-10 (1969)
6. Rate and heat of vaporization of graphite above 3000 K
J. T. Clarke and B. R. Fox (Brookhaven Nat. Lab., Upton, N. Y. 11973)
J. Chem. Phys. 51 [8], 3231-40 (1969)
7. Sintering some uranium oxides with advanced non-stoichiometry
S. Demetrescu
Rev. Chim. (Bucharest) 20 [7], 443-44 (1969)
8. Transparent Y_2O_3 by hot-pressing
S. K. Dutta and G. E. Gazza (Army Mater. Mechan. Res. Ctr., Watertown, Mass.)
Mater. Res. Bull. 4 [11], 791-96 (1969)
9. The congruently evaporating compositions of urania
R. K. Edwards, M. S. Chandrasekharaiah and P. M. Danielson (Argonne Nat. Lab., Chem. Eng. Div., Argonne, Ill. 60439)
High Temp. Sci. 1 [1], 98-113 (1969)
10. Study of the behavior of some electro-cast refractories in laboratory tests for blast furnaces
M. Esnault (Soc. Electro-Réfract., Le Pontet, Fr.)
Bull. Soc. Franc. Céram. [84], 43 (1969)
11. Fusibility of slags of the CaF_2 - TiO_2 - CaO system
P. P. Evseev, R. A. Kryuchkova, V. A. Uvarov and A. F. Filippov
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [9], 47-49 (Sept. 1969)
12. Electrical conductivity and defect structure of CeO_2 - ZrO_2 solid solutions
L. L. Fehrenbacher (Univ. of Illinois, 1969)
Dissertation Abstr. Int. 30B [3], 1314 (1969-70)
13. Experimental study of the enthalpy of synthetic anorthite between 298 and 1950 K
A. Ferrier (IRSID, St. Germain en Laye, Yvelines, Fr.)
C. R. Acad. Sci. 269C, 951 (1969)
14. Abnormal thermal expansion of ZrO_2 and HfO_2 in the temperature range 20 to 1200 °C
S. K. Filatov and V. A. Frank-Kamenetsky
Kristallografiya 14 [5], 804-08 (1969)
15. Pressure sintering of alumina
G. M. Fryer (Houldsworth Sch. of Appl. Sci., Univ. of Leeds, U. K.)
Trans. Brit. Ceram. Soc. 68, 185-99 (1969)

- Eb. 16. Conducting and insulating materials usable in a magnetohydrodynamic tube
M. Guillou
Rev. Gén. Therm. [91-92], 751 (1969)
17. Mechanical properties of polycrystalline β -SiC
T. D. Gulden (Gulf Gen. Atomic, San Diego, Calif. 92112)
J. Am. Ceram. Soc. 52 [11], 585-90 (1969)
18. Thermal cycling resistance of magnesite refractories
F. G. Hicks (C.E.R.L., Leatherhead, U. K.)
Trans. Brit. Ceram. Soc. 68, 165-72 (1969)
19. Crystallite size of pyrolytic graphite
T. Hirai (Res. Inst. for Iron, Tohoku Univ., Sendai, Japan)
J. Mater. Sci. 4, 644-46 (1969)
20. Vaporization of MgO in an oxidizing medium
T. S. Ignatova and 6 others
Ogneupory 34 [8], 55-57 (Aug. 1969)
21. High temperature constitution of sea-water magnesites and natural Greek material
D. G. Jones and D. A. Melford (Tube Investments Res. Labs., Hinxton Hall, Saffron Walden, U. K.)
Trans. Brit. Ceram. Soc. 68, 241-47 (1969)
22. Mass spectrometric studies of Pu compounds at high temperatures.
IV. The vaporization of PuN
R. A. Kent and J. A. Leary (Los Alamos Sci. Lab., Univ. of Calif., Los Alamos, N. M. 87544)
High Temp. Sci. 1 [2], 176-83 (1969)
23. Materials problems in high-temperature heat exchangers. Specific application to magnetohydrodynamics
J. Kiehl (Soc. Gén. Prod. Réfract., Venissieux)
Rev. Gén. Therm. [91-92], 743 (1969)
24. The vaporization process and rate of effusion of crystalline Sc_2Se_3
H. J. Leary, Jr. and P. G. Wahlbeck (Chem. Dept., Illinois Inst. Tech., Chicago, Ill. 60616)
High Temp. Sci. 1 [2], 277-86 (1969)
25. Enthalpy of solid UO_2 from 2500 K to its melting point
L. Leibowitz, L. W. Mishler and M. G. Chasanov (Chem. Eng. Div., Argonne Nat. Lab., 9700 South Cass Avenue, Argonne, Ill. 60439)
J. Nucl. Mater. 29, 356-58 (1969)
26. Effect of temperature on microstrains and crystallite growth in Al_2O_3
D. Lewis and E. J. Wheeler (Chem. Phys. Dept., Univ. of Surrey, Guildford, U. K.)
J. Mater. Sci. 4, 681-84 (1969)

- Eb. 27. The electrical conductivity of pure and doped Dy_2O_3 and Gd_2O_3
J. M. Macki (Ohio State Univ., 1968)
Dissertation Abstr. Int. 30B [1], 229 (1969-70)
28. Recovery of vitroc ceramic nuclear fuel. I. Stability of the
system fuel-cladding-cooling liquid
I. V. Maxim (Inst. Atom. Phys., Bucharest, Romania)
J. Nucl. Mater. 31 [3], 330-38 (1969)
29. Electrical resistivity of castable zirconias
D. B. Meadowcroft (C.E.R.L., Leatherhead, U. K.)
J. Mater. Sci. 4, 768-72 (1969)
30. Viscosity of Al_2O_3 - SiO_2 melts
B. S. Mitin and Yu. A. Nagibin
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [7], 8-10 (July 1969)
31. Vaporization and surface phases in the lead zirconate-lead titanate
system
R. L. Moon and R. M. Fulrath (Lawrence Rad. Lab. and Mater. Sci.
& Eng. Dept., Univ. of Calif., Berkeley, Calif. 94720)
J. Am. Ceram. Soc. 565-66 (1969)
32. Studies on the sublimation of IIB-VIA compounds. I. The sublima-
tion coefficient and activation energy for sublimation of single
crystalline ZnS
Z. A. Munir and M. J. Mitchell (Mater. Sci. Dept., School of Eng.,
San Jose College, San Jose, Calif. 95114)
High Temp. Sci. 1 [3], 381-87 (1969)
33. Heating tests with $(\text{Th/U})\text{O}_2$ fuel pellets having fuel-rod-like
temperature distribution
K. H. Neeb and M. Peehs (Kerntech. Lab., Siemens AG, Erlangen,
Germ. (BRD))
J. Nucl. Mater. 32 [1], 174-77 (1969)
34. Mass spectrometric study of the evaporation of BaMoO_4 and BaWO_4
C. Pupp, R. Yamdagni and R. F. Porter (Chem. Dept., Cornell Univ.,
Ithaca, N. Y.)
J. Inorg. Nucl. Chem. 31, 2021-29 (1969)
35. Continuous vacuum sublimation of silica
G. Ranc (Fac. Sci., Lab. Phys. Couches Minces, Rouen, Fr.)
Vacuum 19 [9], 409-11 (1969)
36. Equation for corundum enthalpy from 0 to 2200 K
M. A. Reshetnikov (Kurnakov Gen. & Inorg. Chem. Inst., Moscow)
Zh. Fiz. Khim. 43 [9], 2238-42 (1969)

- Eb. 37. Silicon oxynitride stability
W. R. Ryall and A. Muan (Geochem. & Mineral. Dept., Pa. State Univ.,
Univ. Park, Pa. 16802)
Science 165 [3900], 1363-64 (1969)
38. Torsion behavior of ceramic materials at high temperatures
H. E. Schwieter, H. W. Hennicke and M. Schröter (Inst. Geste-
inshüttenk., Rhein.-Westfäl. T. H., Aachen, Germ.)
Ber. Deut. Keram. Ges. 46, 416-20 (1969)
39. Activity of Cr_2O_3 in a $\text{CaO-Al}_2\text{O}_3$ melt system
V. D. Shantarin, V. A. Pavlov and S. I. Suchilnikov
Elektrokhimiya 5 [8], 989-91 (1969)
40. Melting point of Cm_2O_3
P. K. Smith (DuPont Savannah River Lab., Aiken, S. C.)
J. Inorg. Nucl. Chem. 31, 241-45 (1969)
41. Creep of CoO : the influence of stoichiometry, stress and
temperature
K. N. Strafford and H. Gartside (Met. Dept., Univ. of Liverpool,
U. K.)
J. Mater. Sci. 4, 760-67 (1969)
42. CdTe vapor pressure at high temperatures
A. V. Vanyukov, A. A. Davydov and A. S. Tomson
Zh. Fiz. Khim. 43 [9], 2364 (1969)
43. The kinetics of NiO sintering
V. I. Volkov, I. D. Tretyakov and V. V. Klimov (Chem. Reagents
Inst., Donetsk, UkSSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1717-23 (1969)
44. A Grüneisen equation of state for ThO_2 including effects of
vacancies
G. H. Winslow and R. J. Thorn (Argonne Nat. Lab., Argonne, Ill.
60439)
High Temp. Sci. 1 [1], 128-62 (1969)
45. Siliconated pyrolytic graphite
S. Yajima and T. Hirai (Res. Inst. for Iron, Tohoku Univ., Sendai,
Japan)
J. Mater. Sci. 4, 685-98 (1969)
46. Some properties of liquid aluminum oxide
I. V. Zubarev, V. I. Kostikov, B. S. Mitin, I. A. Nagibin and
V. V. Nishcheta (Steel & Alloys Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [9], 1563-65 (1969)

Ec. Mixed materials

1. Preparation and thermal conductivity of UO_2 -metal cermets with ordered structures
B. Francois and J. P. Stora (Ctr. Etudes Nucl., Grenoble, Fr.)
J. Nucl. Mater. 29, 302-14 (1969)
2. Operative principles for the adhesion and wetting of oxides with iron carbide melts
A. A. Kupriyanov and S. I. Filippov
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [9], 14-17 (Sept. 1969)
3. High temperature internal friction of TD nickel
J. H. Sovik, A. H. Clauer, R. E. Maringer and B. A. Wilcox
(Battelle Mem. Inst., Columbus, Ohio)
Trans. Met. Soc. AIME 245 [9], 1943-46 (1969)

F. Properties, at temperatures above 1000 °C, of materials which melt below 1500 °C

a. Metallic materials

1. The solubility of O_2 in binary and ternary alloys of Sn, Cu and Ag at 1200 °C
U. Block and H.-P. Stüwe (Inst. Werkstoffk., Tech. Univ. Braunschweig, Germ.)
Z. Metallk. 60, 709-12 (1969)
2. Pressure of Ca vapor over a molten Ca-Cu alloy
S. S. Bogoslovskii, A. N. Krestovnikov and N. P. Lysenko
Izv. Akad. Nauk SSSR, Metal. [5], 51-56 (Sept.-Oct. 1969)
3. Kinetics of solution of H_2 in liquid Fe alloys
W. M. Boorstein and R. D. Pehlke (Met. Eng. Dept., Univ. of Michigan, Ann Arbor, Mich.)
Trans. Met. Soc. AIME 245 [9], 1843-56 (1969)
4. Magnetic properties of liquid Co-Ge alloys
G. Busch, H.-J. Güntherodt and H. A. Meier (Lab. Festkörperphysik, E. T. H. Zurich, Switz.)
Phys. Letters 30 [2], 111 (1969)
5. Electromigration and thermomigration in gamma-uranium
J. F. D'Amico and H. B. Huntington (Phys. Dept., Rensselaer Polytechnic Inst., Troy, N. Y.)
J. Phys. Chem. Solids 30, 2607-21 (1969)
6. Mass spectrometric study of the sublimation of Mn
T. C. Ehlert
J. Inorg. Nucl. Chem. 31 [9], 2705-10 (1969)

- Fa. 7. A calorimetric study of liquid Ag and liquid Sn
R. C. Feber, C. C. Herrick and L. S. Levinson (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Chem. Thermodyn. 1 [2], 169-75 (1969)
8. Temperature dependence of the thermal emf of Ge in solid and liquid phases
V. M. Glazov, A. A. Aivazov and V. A. Evseev
Fiz. Tekh. Poluprov. 3 [8], 1124-27 (1969)
9. Thermal diffusivity and Prandtl Number of Hg and K from melting point to critical point
A. V. Grosse (Temple Univ., Philadelphia, Pa.)
J. Inorg. Nucl. Chem. 31, 1289-1301 (1969)
10. Sedimentation of titanium nitrides in molten iron
Yu. G. Gurevich and E. P. Peretykin
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [8], 24-26 (Aug. 1969)
11. Galvanic cell studies using a molten oxide electrolyte. II. Thermodynamic properties of the Pb-Au system
J. P. Hager and R. A. Walker (Met. Dept., Colorado School of Mines, Golden, Colo.)
Trans. Met. Soc. AIME 245 [10], 2307-12 (1969)
12. Galvanic cell studies using a molten oxide electrolyte. III. Thermodynamic properties of the Pb-Ag-Au system
J. P. Hager and A. R. Zambrano (Met. Dept., Colorado School of Mines, Golden, Colo.)
Trans. Met. Soc. AIME 245 [10], 2313-18 (1969)
13. Effect of Ni on the activity of N in Fe-Ni-N austenite
A. J. Heckler and J. A. Peterson (Res. & Tech., Armco Steel Co., Middletown, Ohio)
Trans. Met. Soc. AIME 245 [12], 2537-41 (1969)
14. Heats of mixing in liquid Ag binary alloys
K. Itagaki and A. Yazawa (Tohoku Univ., Res. Inst. Miner. Dressing & Met., Sendai, Japan)
Trans. Japan Inst. Metals 10 [4], 259-66 (1969)
15. Mass spectrometric studies of Pu compounds at high temperatures. III. The vapor pressure of Pu
R. A. Kent (Los Alamos Sci. Lab., Univ. of Calif., Los Alamos, N. M. 87544)
High Temp. Sci. 1 [2], 169-75 (1969)
16. Oxidation of metal during the melting of steel in large, heavily charged arc furnaces
A. I. Kholodov and V. A. Alyavdin
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 80-82 (June 1969)

- Fa. 17. Neutron diffraction on liquid Bi in temperature range from melting to boiling point
B. I. Khrushchev and A. M. Bogomolov
Fiz. Metal. Metallov. 27 [6], 1011-15 (1969)
18. Magnetic properties of Al-Mn alloys with Cr, V, Ti in the solid and liquid state
W.-U. Kopp and E. Wachtel (Max Planck Inst. Metallforsch., Stuttgart, Germ.)
Z. Metallk. 60, 771-77 (1969)
19. Effect of impurities on the surface tension of Fe melts
L. I. Levi and S. A. Gladyshev
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [7], 151-54 (July 1969)
20. Thermal and electrical properties of CoSi at 4.2-1600 K
E. N. Nikitin, P. V. Tamarin and V. I. Tarasov
Fiz. Tverd. Tela 11 [9], 2481-84 (1969)
21. Oxygen activity in molten copper
J. Osterwald, G. Reimann and W. Stichel
Z. Phys. Chem. (Frankfurt) 66 [1-3], 1-7 (1969)
22. Calculation of the thermodynamic characteristics of Fe-Si melts
M. S. Petrushevskii and P. V. Geld
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 31-35 (June 1969)
23. Temperature dependence of densities and surface tension of Fe-Ni melts
S. I. Popel, L. M. Shergin and B. V. Tsarevskii (Kirov Polytech. Inst., Sverdlovsk, USSR)
Zh. Fiz. Khim. 43 [9], 2365-68 (1969)
24. Calorimetric measurements of liquid Al-Pb alloys at temperatures up to 1500 °C
B. Predel and H. Sandig (Inst. Metallforsch., Univ. Münster/Westf., Germ.)
Z. Metallk. 60, 126-30 (1969)
25. Influence of electroslag remelting on some properties and on the O₂ content of steel
P. Ravizza and A. Masi (Lab. Studi e Ric. Cogne, S.p.A., Italy)
Met. Ital. 61, 162 (1969)
26. Oxygen activity in the Fe-O system and the effect of added elements at steel-making temperatures
H. Schenck, E. Steinmetz and P. Chang-Hee Rhee (Inst. Eisenhüttenw., Rhein.-Westfäl. T. H., Aachen, Germ.)
Arch. Eisenhüttenw. 40, 619-20 (1969)

- Fa. 27. The activity of P in liquid Fe and its control by Ni, Mn and Cr
H. Schenck, E. Steinmetz and H. Gitizad (Inst. Eisenhüttenw.,
Rhein.-Westfäl. T. H., Aachen, Germ.)
Arch. Eisenhüttenw. 40, 597-602 (1969)
28. Mass spectrometric determination of the dissociation energies of
the gaseous molecules FeSi, CoSi and NiSi
A. van der Auwera-Mahieu, N. S. McIntyre and J. Drowart (Molec.
Phys. Chem. Lab., Free Univ. of Brussels, Belgium)
Chem. Phys. Letters 4 [4], 198-200 (1969)
29. Tensimetric determination of thermodynamic functions in the Ni-Co
system
J. Vřešťál and J. Kučera (Inst. Phys. Met., Czech. Acad. Sci.,
Brno, CSSR)
Trans. Met. Soc. AIME 245 [9], 1891-95 (1969)
30. The density of aluminum at 2450-2900 K
R. P. Wilson, Jr. (Aerospace and Mech. Eng. Sci. Dept., Univ.
Calif., San Diego, Calif. 92037)
High Temp. Sci. 1 [3], 367-72 (1969)

b. Non-metallic materials

1. Softening point of borate and cabal glasses, and high PbO glasses,
in relation to their structure
A. Abou-El-Azm and H. A. El-Batal (Nat. Res. Ctr., Dokki, Cairo,
U.A.R.)
Phys. Chem. Glasses 10, 159-63 (1969)
2. Molecular kinetic processes in glass melts and the process of
structural vitrification
G. M. Bartenev, D. S. Sanditov, I. V. Razumovskaya and I. A.
Lukyanov
Ukr. Fiz. Zh. 14 [9], 1529-40 (1969)
3. Application of the growth from solution of GaP to the study of the
dissociation pressure of GaP
G. Bougnot and A. Joullie (Ctr. Etudes Electron. Solides,
34-Montpellier, Fr.)
C. R. Acad. Sci. 269C, 884 (1969)
4. The dissociation pressure of hematite
P. E. C. Bryant and W. W. Smeltzer (Dept. Met. & Mater. Sci.,
McMaster Univ., Hamilton, Ont., Can.)
J. Electrochem. Soc. 116 [10], 1409-10 (1969)
5. Formation and properties of uranium glasses
M. R. Chakrabarty (Mater. Chem. Dept., Ontario Res. Fdn., Toronto,
Ont., Canada)
Am. Ceram. Soc. Bull. 48 [11], 1076-78 (1969)

- Fb. 6. Mass spectrometric study of vapor pressure over PbO
D. M. Chizhikov, E. K. Kazenas and Yu. V. Tsvetkov
Izv. Akad. Nauk SSSR, Metal. [5], 57-60 (Sept.-Oct. 1969)
7. Interaction of radiation and conduction in glass
G. K. Chui and R. Gardon (Sci. Res. Staff, Ford Motor Co., Dearborn, Mich. 48121)
J. Am. Ceram. Soc. 52 [10], 548-53 (1969)
8. The solubility of Al_4C_3 in cryolite melts
E. W. Dewing (Alcan R/D, Arvida, Que., Can.)
Trans. Met. Soc. ATME 245 [10], 2181-84 (1969)
9. Thermal decomposition of Ho, Er and Yb nitrates
L. M. Dvornikova, V. P. Sevostyanov and M. N. Ambrozhi
Izv. Vyssh. Ucheb. Zaved., Khim. Khim. Tekhnol. 12 [9], 1163-67 (1969)
10. Electrical conductivity of melts and their ability to form glasses. I. The Ge-Sb-Se system. II. The Ge-As-Se system
R. W. Haisty and H. Krebs (Inst. Inorg. Chem., Univ. of Stuttgart, Germ.)
J. Non-Crystalline Solids 1 [5], 399-436 (1969)
11. Effect of F and Cl substitution on the viscosity and fining of soda-lime and a K-Ba silicate glass
C. Hirayama and F. E. Camp (Westinghouse Res. Labs., Pittsburgh, Pa.)
Glass Technol. 10, 123-27 (1969)
12. Surface tension of gallium phosphide melts
Yu. L. Ilin, V. S. Sorokin and D. A. Yaskov
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1362-65 (1969)
13. Dissociation pressure of chalcopyrite and bornite
R. A. Isakova, M. I. Usanovich, N. A. Potanina and L. E. Ugryumova
Izv. Akad. Nauk Kaz. SSR, Ser. Khim. 19 [5], 78-81 (Sept.-Oct. 1969)
14. Viscosity and fusibility of high Ti slag melts in the TiO_2 - Ti_2O_3 -FeO system
I. A. Karyazin, A. A. Morozov and V. A. Reznichenko
Izv. Akad. Nauk SSSR, Metal. [5], 28-34 (Sept.-Oct. 1969)
15. Kinetics of the fusion of drops of slag
V. V. Khlynov, V. A. Gornovoi and Yu. V. Sorokin
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 16-21 (June 1969)
16. Energy spectrum of densified silica glass
R. M. Kimmel and D. R. Uhlmann
Phys. Chem. Glasses 10, 145 (1969)

- Fb. 17. Investigation of surface tension in melts of the $\text{Zn}(\text{PO}_3)_2$ -ZnO system
E. L. Krivov'yazov and N. K. Voskresenskaya (Kurnakov Gen. & Inorg. Chem. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1734-37 (1969)
18. Thermal dissociation of Na and K carbonates in the presence of halogens
A. N. Kruglov, V. I. Arbuzova and V. P. Kochergin
Izv. Vyssh. Ucheb. Zaved., Khim. Khim. Tekhnol. 12 [8], 1021-22 (1969)
19. Atomic oxygen separation during thermal decomposition of oxides
G. V. Malinin and Yu. M. Tolmachev
Zh. Fiz. Khim. 43 [8], 2012-15 (1969)
20. Effect of LiF and Li_3AlF_6 on the electrical conductivity of cryolite-alumina melts
K. Matiasovsky, V. Danek and M. Malinovsky (Inorg. Chem. Inst., Slovak Acad. Sci., Bratislava, CSSR)
J. Electrochem. Soc. 116 [10], 1381-83 (1969)
21. Glass ceramics for use in Si semiconductors
P. W. McMillan, G. Partridge and F. R. Ward (Nelson Res. Ctr., English Electric Co., Beaconsfield, U. K.)
J. Mater. Sci. 4, 634-40 (1969)
22. Density of molten Ag-S, Cu-S, Fe-S and Ni-S systems
M. Nagamori (Metals Res. Lab., Carnegie-Mellon Univ., Pittsburgh, Pa.)
Trans. Met. Soc. AIME 245 [9], 1897-1902 (1969)
23. Viscosity and structure of glassy systems of aluminum metaphosphate
S. V. Nemilov
Zh. Prikl. Khim. 42 [8], 1740-46 (1969)
24. Investigation of the electrical conductivity of AgGaTe_2 and AgInTe_2 in the liquid and solid states
G. F. Nikolskaya and 7 others
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1464-65 (1969)
25. Use of radioactive isotopes for the determination of losses of silver during melting of glass
V. K. Pavlovskii, I. V. Tunimanova and V. A. Tsekhomskii
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1480-81 (1969)
26. The float glass process
L. A. B. Pilkington (Pilkington Bros., St. Helens, Lancs., Engl.)
Proc. Roy. Soc. (London) 314A, 1-25 (1969)

- Fb. 27. Electrochemical equilibriums in cryolytic solutions of Al at 1300 K
M. Rey
Electrochim. Acta 14 [10], 991-1013 (1969)
28. Thermo-electrical properties of AgGaTe_2 and AgInTe_2 in the liquid and solid states
E. I. Stepenkov, G. F. Nikolskaya, N. P. Luzhnaya, A. E. Balanevskaya and L. I. Berger
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1462-63 (1969)
29. Mechanism of hydrogen diffusion in steel-smelting slags
O. A. Valoman, V. V. Pokrovskii and V. A. Kalmykov
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 74-75 (June 1969)
30. The sintering of ferrimagnetic oxides
A. Vassiliev
Ind. Céram. [616], 167 (1969)
31. Electrical conductivity of cryolite melts containing both MgF_2 and LiF
M. K. Vidyaeva and A. V. Vakhobov
Dokl. Akad. Nauk Tadzh. SSR 12 [6], 30-32 (June 1969)
32. Mass spectrometric determination of the dissociation energies of calcium and barium chlorides
K. F. Zmbov (Boris Kidrich Inst. Nucl. Sci., Belgrade, Yugoslavia)
Chem. Phys. Letters 4 [4], 191-92 (1969)
33. Mass spectrometric studies of Sc, Y, La and rare-earth fluorides
K. F. Zmbov and J. L. Margrave (Rice Univ., Houston, Tex.)
Mass Spectrom. Inorg. Chem., J. L. Margrave, Ed., p. 267-90 (Amer. Chem. Soc. Adv. Chem. Ser. 72, Washington, D. C., 1968)

c. Mixed materials

1. Change in interfacial tension during the dc and ac polarization of a metal-oxide phase boundary
A. A. Deryabin, S. I. Popel and L. N. Saburov
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 10-15 (June 1969)
2. Effects of Si_3N_4 growth temperature on charge storage in the MNOS structure
E. C. Ross, M. T. Duffy and A. M. Goodman (RCA Labs., Princeton, N. J. 08540)
Appl. Phys. Letters 15 [12], 408-09 (1969)

G. Phase equilibria above 1000 °C

1. A study of phase transformations in GeTe-SnTe system alloys
N. K. Abrikosov, S. I. Novikova, L. E. Shelimova and V. V. Zhdanova (Baikov Met. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 1895-98 (1969)

- G. 2. A study of the Bi-Pb-Te system
N. K. Abrikosov, E. V. Skudnova, L. V. Poretskaya and T. A. Osipova
(Baikov Met. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1682-86 (1969)
3. Refinement of the boundary of the single phase region of the gamma solid solution in the W-Ni-Fe ternary
V. M. Agababova and I. N. Chaporova
Porosh. Met. 9 [7], 65-72 (July 1969)
4. Phase diagram of the TiCr_2 - NbCr_2 - ZrCr_2 system
S. P. Alisova and P. B. Budberg
Izv. Akad. Nauk SSSR, Metal. [5], 191-95 (Sept.-Oct. 1969)
5. Solid state equilibria in the system BaO-SrO-SiO_2
P. Appendino and M. Appendino Montorsi (Politec., Ist. Chim. Gen. & Appl., Turin, Italy)
Ann. Chim. (Rome) 59 [8-9], 806-16 (1969)
6. The 2CaO.SiO_2 - $\text{Na}_2\text{O.Al}_2\text{O}_3$ system at sintering temperatures
B. I. Arlyuk and 5 others
Zh. Prikl. Khim. 42 [9], 1963-69 (1969)
7. Crystallization of glasses with eutectic compositions in the system $\text{Li}_2\text{O-Al}_2\text{O}_3$ - SiO_2
T. I. Barry, D. Clinton, L. A. Lay, R. A. Mercer and R. P. Miller
(Nat. Phys. Lab., Teddington, U. K.)
J. Mater. Sci. 4, 596-612 (1969)
8. Crystalline phases and glasses in the system $\text{Li}_2\text{O-CeO}_2(\text{CeO}_{1.5})$ - SiO_2
G. Bayer, J. Felsche and W. Hirsiger (Inst. Krist. Petrog., E.T.H. Zürich)
Glastech. Ber. 42, 317-21 (1969)
9. Investigation of the K_2SO_4 - V_2O_5 system
Zh. G. Bazarova, L. G. Karakchiev and L. M. Kefeli (Acad. Sci., Catalysis Inst., Novosibirsk, USSR)
Kinet. Katal. 10 [5], 1152-57 (1969)
10. Behavior of urania-rare-earth oxides at high temperatures
R. J. Beals, J. H. Handwerk and B. J. Wrona (Argonne Nat. Lab., Argonne, Ill. 60439)
J. Am. Ceram. Soc. 52 [11], 578-81 (1969)
11. The liquidus equilibria, density and surface tension for liquid alloys saturated with TiC in the Ni-Ti-C system
W. C. Bellamy (Univ. of Michigan, 1968)
Dissertation Abstr. Int. 30B [1], 226 (1969-70)

- G. 12. A study of the CdSb-CdTe system
D. P. Belotski, O. E. Panchuk, I. E. Panchuk and O. I. Rybailo
(State Univ., Chernovtsy, UkSSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1703-06 (1969)
13. Thorium-thorium dioxide phase equilibria
R. Benz (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Nucl. Mater. 29, 43-49 (1969)
14. UC-UC₂ phase boundaries
R. Benz, C. G. Hoffman and G. N. Rupert (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
High Temp. Sci. 1 [3], 342-59 (1969)
15. Thorium-carbon phase equilibria
R. Benz and P. L. Stone (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
High Temp. Sci. 1 [1], 114-27 (1969)
16. Ternary system of Li and Na metaborates and pyrophosphates
A. G. Bergman and D. I. Bondareva (Agric. Machine Const. Inst., Rostov on Don, USSR)
Zh. Neorg. Khim. 14 [9], 2548-52 (1969)
17. System of Na and K metaphosphates and metaborates
A. G. Bergman and L. N. Mikhalkovich (Eng. Const. Inst., Rostov on Don, USSR)
Zh. Neorg. Khim. 14 [10], 2872-74 (1969)
18. A supplement to the Ni-In system
K. J. Best and T. Gödecke (Max Planck-Inst. Metallforsch., Stuttgart, Germ.)
Z. Metallk. 60, 659-61 (1969)
19. Constitution of some compounds of Pt with B elements (B = Sn, Sb, Te)
S. Bhan, T. Gödecke and K. Schubert (Max Planck Inst. Metallk., Stuttgart, Germ.)
J. Less-Common Metals 19 [2], 121-40 (1969)
20. Phase formation in the Na₂CO₃-CaCO₃ system
H. W. Billhardt (Inst. Mineral., Univ. Karlsruhe, Germ.)
Glastech. Ber. 42, 272-76 (1969)
21. Study of the systems V₂O₃-GeO₂ and Ti₂O₃-GeO₂
D. Bodiot (Lab. Chim. Miner., Sorbonne, Paris)
C. R. Acad. Sci. 269C, 395 (1969)
22. Phase equilibria in the Y₂O₃-Nb₂O₅ system
I. A. Bondar, L. N. Koroleva and N. A. Toropov (Grebenshchikov Silicate Chem. Inst., Leningrad, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1730-33 (1969)

- G. 23. Subsolidus phases in the $\text{ZnS-In}_2\text{S}_3$ system
R. S. Boorman and J. K. Sutherland (Mineral. Dept., Res. & Prod.
Council, Fredericton, N.B., Can.)
J. Mater. Sci. 4, 658-71 (1969)
24. Studies on calcium uranates
C. Brisi and M. Montorsi Appendino (Politecn. Torino, Ist. Chim.
Gen. Appl., Torino, Italy)
Ann. Chim. (Rome), 59, 400 (1969)
25. Investigation of the Hf-Fe-Al system in the region up to 33.3 at. %
Hf
V. V. Burnashova, V. R. Ryabov and V. Ya. Markiv (State Univ.,
Lvov, UkSSR)
Dopovidi Akad. Nauk Ukr. RSR, Ser. A-Fiz.-Tekh. i Mat. Nauk [8],
743-44 (1969)
26. New family of Ti oxides and nature of slightly reduced rutile
L. A. Bursill, B. G. Hyde, O. Terasaki and D. Watanabe (Chem. Dept.,
Univ. of W. Australia, Nedlands, W. A.)
Phil. Mag. 20, 347-59 (1969)
27. Phase diagrams of Rh and Ir systems containing C
B. P. Burylev
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 12 [5], 112-16 (Sept.-Oct.
1969)
28. Effect of La on C solubility in liquid Fe
B. P. Burylev, V. V. Vasilev and E. M. Rybalkin (Ordzhonikidze
Met. Inst., Novokuznetsk, USSR)
Zh. Fiz. Khim. 43 [7], 1907-08 (1969)
29. A phase transition in Eu_2SiO_4
G. Busch, E. Kaldis, R. Verreault and J. Felsche (E.T.H. Zurich,
Switz.)
Mater. Res. Bull. 5 [1], 9-17 (1970)
30. Phase relations, crystal structures, and magnetic properties of
Er-Fe compounds
K. H. J. Buschow and A. S. van der Groot
Phys. Status Solidi 35 [1], 515-22 (1969)
31. The holmium-cobalt system
K. H. J. Buschow and A. S. van der Groot (Philips Res. Lab.,
Eindhoven, Netherlands)
J. Less-Common Metals 19 [3], 153-58 (1969)
32. Phase relations in refractory metal-oxygen systems
L. L. Y. Chang (Cornell Univ., Ithaca, N. Y. 14850) and B. Phillips
(LeMont Sci., Inc., Lemont, Pa. 16851)
J. Am. Ceram. Soc. 52 [10], 527-33 (1969)

- G. 33. The origin of immiscibility in silicate solutions
R. J. Charles (G. E. R/D Ctr., Schenectady, N. Y.)
Phys. Chem. Glasses 10, 169-78 (1969)
34. Phase diagram of the system LiCl-KCl-CaCrO_4
R. P. Clark, R. L. Blucher and H. J. Goldsmith
J. Chem. Eng. Data 14 [4], 465-70 (1969)
35. The hafnium-iridium system
M. I. Copeland and D. Goodrich (Albany Met. Res. Ctr., U. S. Bur.
Mines, Albany, Oregon)
J. Less-Common Metals 18 [4], 347-55 (1969)
36. The $\text{WO}_3\text{-UO}_3$ phase diagram
E. H. P. Cordfunke (Reactor Centrum Nederland, Petten, Netherlands)
J. Inorg. Nucl. Chem. 31, 1542-43 (1969)
37. Solubility of several first-long-period transition elements in
liquid Sn
J. B. Darby, Jr. and D. B. Jugle (Argonne Nat. Lab., Argonne, Ill.)
Trans. Met. Soc. AIME 245 [12], 2515-18 (1969)
38. Liquid immiscibility in binary In alloys
C. Dasarathy (British Steel Co. Res. Ctr., Port Talbot, Glamorgan,
G. B.)
Trans. Met. Soc. AIME 245 [9], 2015-19 (1969)
39. The gadolinium-lead system
J. T. Demel and K. A. Gschneidner, Jr. (Inst. Atomic Res. and Met.
Dept., Iowa State Univ., Ames, Iowa 50010)
J. Nucl. Mater. 29, 111-20 (1969)
40. Very defective crystalline solutions in fluorite-structure oxides:
 $\text{ThO}_2\text{-Ln}_2\text{O}_3$
A. M. Diness and R. Roy
J. Mater. Sci. 4, 613-24 (1969)
41. The Al-Mg-Zr phase diagram studied in the Al-rich region
M. E. Drits, E. S. Kadaner and V. I. Kuzmina
Izv. Akad. Nauk SSSR, Metal. [5], 170-73 (Sept.-Oct. 1969)
42. The iron-rich corner of the Fe-V-C system
R. Ebeling and H. Wever (Inst. Metallphys., Tech. Univ. Berlin)
Arch. Eisenhüttenw. 40, 551-55 (1969)
43. A study of the $\text{MnSi}_{1.72}\text{-ReSi}_2$ system
E. I. Elagina and N. K. Abrikosov (Acad. Sci., Baikov Met. Inst.,
Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [9], 1627-38 (1969)

- G. 44. Area of stratification in the liquid state in the Ti-Cu-Ag system
V. N. Eremenko, Yu. I. Buyanov and N. M. Paichenko
Izv. Akad. Nauk SSSR, Metal. [5], 200-02 (Sept.-Oct. 1969)
45. The Ti-Ag phase diagram
V. N. Eremenko, Yu. I. Buyanov and N. M. Panchenko
Porosh. Met. 9 [7], 55-59 (July 1969)
46. Structural transition in Fe-C-O melts
E. S. Filippov and A. N. Krestovnikov
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [9], 111-14 (Sept. 1969)
47. Phase transition in vanadium
V. A. Finkel, V. I. Glamazda and G. P. Kovtun (Acad. Sci., Phys.
Tech. Inst., Kharkov, UkSSR)
Zh. Eksper. Teor. Fiz. 57 [4], 1065-68 (1969)
48. Study of the system ThO_2 -UFH
G. Fonteneau and J. Lucas (Fac. Sci., 35-Rennes, Fr.)
C. R. Acad. Sci. 269C, 760 (1969)
49. Stability field and crystal parameters of the fluoritic phase in
the ZrO_2 - CeO_2 - Y_2O_3 system
M. Forestier, G. Robert, M. Caillet and C. Deportes (Lab. Etude
Réact. Chim. Electrochim. Minér., Grenoble (Isère), Fr.)
Mater. Res. Bull. 4 [10], 727-40 (1969)
50. Solubility of K_2UO_3 in BaUO_3
T. Fujino and K. Naito (Japan At. Energy Res. Inst., Ibaraki,
Japan)
J. Am. Ceram. Soc. 52 [11], 574-77 (1969)
51. Ternary phase diagrams for the Si-C-O system
A. Ghosh and G. R. St. Pierre (Met. Eng. Dept., Indian Inst. Tech.,
Kanpur and Met. Eng. Dept., Ohio State Univ., Columbus, Ohio)
Trans. Met. Soc. AIME 245 [9], 2106-08 (1969)
52. The Sm_2O_3 - Nb_2O_5 , Gd_2O_3 - Nb_2O_5 , Dy_2O_3 - Nb_2O_5 and Yb_2O_3 - Nb_2O_5 systems
in regions rich in Nb_2O_5
N. A. Godina, E. P. Savchenko and E. K. Keler
Zh. Neorg. Khim. 14 [8], 2214-18 (1969)
53. On the ZnO-rich phase in the ZnO- B_2O_3 system
W. Götz, V. Herrmann and R. Ihl (Schott Inst., F. Schiller-Univ.,
Jena, DDR)
Z. Anorg. Allg. Chem. 367, 281-88 (1969)
54. Precipitation and diffusion phenomena in the system MgO - Al_2O_3 - Cr_2O_3
C. D. Greskovich (Pa. State Univ., 1968)
Dissertation Abstr. Int. 30B [3], 1100-01 (1969-70)

- G. 55. Heterogeneous equilibrium in the BP-S system
Ya. Kh. Grinberg, E. G. Zhukov, V. A. Koryazhkin and Z. S. Medvedeva
Zh. Neorg. Khim. 14 [9], 2583-86 (1969)
56. Phase equilibria in the Ni-Ni₃Al-Ni₃Nb system in the 800-1200 ° range
L. N. Guseva, R. S. Mints and Yu. S. Malkov
Izv. Akad. Nauk SSSR, Metal. [5], 186-90 (Sept.-Oct. 1969)
57. Studies on the MgO-Cr₂O₃ system
D. Gutschick, I. Ebert and J. Scheve (Zentralinst. Phys. Chem.,
Deutsch. Akad. Wissen. zu Berlin, Berlin-Adlershof, DDR)
Z. Anorg. Allgem. Chem. 366, 240-48 (1969)
58. The formation of solid solutions in the systems CaF₂-YF₃, CaF₂-LaF₃,
SrF₂-LaF₃ and BaF₂-LaF₃
H. Hahn, W. Seemann and H.-L. Kohn (Chem. Inst., Univ. Hohenheim,
Germ.)
Z. Anorg. Allgem. Chem. 369, 48-58 (1969)
59. An experimental investigation of the relationship of mullite to
sillimanite
Y. Hariya, W. A. Dollase and G. C. Kennedy (Inst. Geophys. & Planet.
Phys., Univ. Calif., Los Angeles, Calif. 90024)
Am. Mineralogist 54 [9-10], 1419-41 (1969)
60. Influence of W on the γ' to η transformation and carbide reactions
in Ni-base superalloys
A. Havalda (Metal. Phys. Inst., Slovak Akad. Sci., Bratislava, CSSR)
ASM Trans. Quart. 62 [3], 581-89 (1969)
61. Solid solubility of CaO and SiO₂ in MgO and its effect on the
MgO-CaO-SiO₂ system at 1750 °C
J. W. Henney and J. W. S. Jones (AERE, Harwell, U. K.)
Trans. Brit. Ceram. Soc. 68, 201-03 (1969)
62. Reaction between SrTiO₃ and Zr and studies of the system
SrO-TiO₂-ZrO₂
J. W. Henney and J. W. S. Jones (AERE, Harwell, U. K.)
Trans. Brit. Ceram. Soc. 68, 211-14 (1969)
63. The quaternary system U-C-O-N at 1700 °C
J. L. Henry and R. Blickensderfer (Albany Met. Res. Ctr., Bureau
of Mines, Albany, Oregon 97321)
J. Am. Ceram. Soc. 52 [10], 534-39 (1969)
64. The system Nb-S
D. Hodouin (Ecole Mines Paris, 91-Corbeil Essonne, Fr.)
C. R. Acad. Sci. 269C, 1943 (1969)

- G. 65. Thermodynamics of multi-component systems containing UC and PuC.
A review
H. Holleck and H. Kleykamp (Inst. Mater.- und Festkörperforsch.,
Kernforschungszentrum Karlsruhe, Germ.)
J. Nucl. Mater. 32 [1], 1-19 (1969)
66. Changes of concentration in binary metal-gas-solutions during
simultaneous evaporation of gas and metal. I. Theoretical
considerations. II. Discussion on the changes of concentration
in the systems V-O, Nb-O, Ta-O, V-N, Nb-N and Ta-N
G. Hörz (Max Planck-Inst. Metallforsch., Stuttgart, Germ.)
Z. Metallk. 60, 115-26 (1969)
67. The system $\text{MgO-ZrO}_2\text{-SiO}_2$
D. Hossain and N. H. Brett (Ceram. Dept., Univ. of Sheffield, U. K.)
Trans. Brit. Ceram. Soc. 68, 145-50 (1969)
68. The phase relations in the $\text{VO}_2\text{-WO}_2$ system
M. Israelsson and L. Kihlborg (Inst. Inorg. and Phys. Chem.,
Univ. of Stockholm, Sweden)
Mater. Res. Bull. 5 [1], 19-29 (1970)
69. A study of $\text{Y}_2\text{O}_3\text{-HfO}_2$ system in the region rich in HfO_2
E. N. Isupova, V. B. Glushkova and E. K. Keler (Grebenshchikov
Silicate Chem. Inst., Leningrad, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 1948-52 (1969)
70. On the system Fe-Ti-C and the compound Fe_2Ti
W. Jellinghaus (Max Planck Inst. Eisenforsch., Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 843-50 (1969)
71. Phase relationship in the high-lime part of the system $\text{CaO-Nb}_2\text{O}_5$
A. Jongejan (Mines Branch, Dept. of Energy, Mines and Resources,
Ottawa, Canada)
J. Less-Common Metals 19 [3], 193-202 (1969)
72. A re-examination of the system $\text{Nb}_2\text{O}_5\text{-TiO}_2$ at liquidus temperatures
A. Jongejan and A. L. Wilkins (Mines Branch, Dept. of Energy, Mines
and Resources, Ottawa, Canada)
J. Less-Common-Metals 19 [3], 185-91 (1969)
73. Phase relationship in the high-lime part of the system $\text{CaO-Nb}_2\text{O}_5\text{-SiO}_2$
A. Jongejan and A. L. Wilkins (Mines Branch, Dept. of Energy, Mines
and Resources, Ottawa, Canada)
J. Less-Common Metals 19 [3], 203-08 (1969)
74. Crystallographic study of the systems formed by the rare earth
selenides I_2Se_3 and Ag_2Se
M. Julien-Pouzol and M. Guittard (Fac. Pharm., Paris)
C. R. Acad. Sci. 269C, 316 (1969)

- G. 75. Solid solutions in the Cu-Fe-S system, and mineralogical thermometry
G. A. Katorcha
Vestn. Akad. Nauk Kaz. SSR 25 [8], 52-55 (Aug. 1969)
76. Phase equilibria, thermodynamic and optical properties of the
system MnS-CdS
A. Khan (Rensselaer Polytech. Inst., 1968)
Dissertation Abstr. Int. 30B [1], 156 (1969-70)
77. The Mo-W-B ternary system
V. I. Kharitonov and F. I. Shamrai
Porosh. Met. 9 [7], 60-64 (July 1969)
78. Cemented carbides containing NbC and HfC
R. Kieffer, G. Trabesinger and N. Reiter (Inst. Chem. Tech. Anorg.
Stoffe, Tech. Hochschule Wien, Austria)
Planseeber. Pulvermet. 17, 25-35 (1969)
79. Phase equilibria at liquidus temperatures in the system Ca-Fe-Ti-O
S. Kimura (Pa. State Univ., 1968)
Dissertation Abstr. Int. 30B [3], 1024-25 (1969-70)
80. Constitution of the alloys of the rare earth metals and transition
elements, especially 3d metals
H. R. Kirchmayr (Inst. Angew. Phys., Tech. Hochschule Wien, Austria)
Z. Metallk. 60, 699-708 (1969)
81. Constitutional diagrams of the system U-O-F
O. Knacke, G. Lossmann and F. Müller (Lehrstuhl Met. Kernbrennstoffe
u. Theoret. Hüttenk., Rhein.-Westfäl. Tech. Hochschule, Aachen,
Germ.)
Z. Anorg. Allgem. Chem. 370, 91-103 (1969)
82. Phase composition and some properties of alloys of the Mo-Cr-B
system
P. T. Kolomytsev, N. V. Moskaleva and A. Ya. Snetkov
Porosh. Met. 9 [10], 76-81 (Oct. 1969)
83. The system Al-Mn-V
W.-U. Kopp and E. Wachtel (Max Planck Inst. Metallforsch.,
Stuttgart, Germ.)
Z. Metallk. 60, 713-19 (1969)
84. Ternary compounds in the system BaO-TiO₂-SiO₂
N. Köppen and A. Dietzel (Max Planck Inst. Silikatforsch., Würzburg,
Germ.)
Naturwiss. 56, 460-61 (1969)
85. The Ti-Zr-Cr ternary system
I. I. Kornilov, O. K. Belousov and R. S. Musaev
Izv. Akad. Nauk SSSR, Metal. [5], 196-99 (Sept.-Oct. 1969)

- G. 86. The phase diagram and attaining equilibrium in the Fe-Co-Ni system
W. Köster and W.-D. Hache
Arch. Eisenhüttenw. 40, 561-74 (1969)
87. High-temperature thermodynamic stabilities of Cr_{23}C_6 , Cr_7C_3 and Ta_2C determined by a torsion-effusion technique
A. D. Kulkarni (Univ. of Pa., 1968)
Dissertation Abstr. Int. 30B [3], 1161-62 (1969-70)
88. X-ray diffraction study of the Ti-Ni-B, Mo-Ni-B and W-Ni-B systems
Yu. B. Kuzma and M. V. Chepiga
Porosh. Met. 9 [10], 71-75 (Oct. 1969)
89. The V-Re-B system
I. B. Kuzma and D. A. Kovalyk (Franko Univ., Lvov, UkSSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1687-90 (1969)
90. Activity composition relations in CuO-CoO solid solutions
C. Landolt and A. Muan (Met. Dept., Pa. State Univ., Univ. Park, Pa.)
J. Inorg. Nucl. Chem. 31, 1319-26 (1969)
91. Investigations in the system LiNbO_3 - MgTiO_3
J. Liebertz and G. Rosenstein (Philips Zentrallab. GmbH, Aachen, Germ.)
Ber. Deut. Keram. Ges. 46, 548-50 (1969)
92. Formation of solid solutions in the LaAlO_3 - CaTiO_3 system and their electrical properties
T. F. Limar, T. P. Maidukova, L. P. Mudrolyubova and V. G. Prokhvatilov
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1773-75 (1969)
93. Properties of Ba_3P_2 and other barium phosphides
K.-E. Maass (Max Planck-Inst. Silikatforsch., 89 Würzburg, Germ.)
J. Am. Ceram. Soc. 52 [10], 566-67 (1969)
94. Some observations on the Pu-Zr-O system
P. G. Mardon, D. J. Hodkin and J. T. Dalton (AERE, Harwell, Berks., U. K.)
J. Nucl. Mater. 32 [1], 126-34 (1969)
95. Study of the liquidus temperatures of the system $\text{CaO-P}_2\text{O}_5\text{-SiO}_2\text{-Fe}$ oxide. II. 30% FeO section
H. Margot-Marette and P. V. Riboud (IRSID, St. Germain en Laye, Fr.)
Mém. Sci. Rev. Mét. 66, 591 (1969)
96. Phase equilibria in the Mo-Ni-Al system
V. Ya. Markiv, V. V. Burnashova, L. I. Pryakhina and K. P. Myasnikova
Izv. Akad. Nauk SSSR, Metal. [5], 180-85 (Sept.-Oct. 1969)

- G. 97. The system Eu-Ti-O at 1400 °C
G. J. McCarthy, W. B. White and R. Roy (Mater. Res. Lab., Pa. State Univ., Univ. Park, Pa.)
J. Inorg. Nucl. Chem. 31, 329-39 (1969)
98. A quasi-chemical treatment of interstitial solid solutions; application to carbon-austenite
R. B. McLellan and W. W. Dunn (Mech. Eng. Dept., Rice Univ., Houston, Texas)
J. Phys. Chem. Solids 30, 2631-37 (1969)
99. Crystal growth in ZnO-Al₂O₃-SiO₂ glasses
P. W. McMillan, G. Partridge and J. G. Darrant (Nelson Res. Labs., English Electric Co., Beaconhill, U. K.)
Phys. Chem. Glasses 10, 153-58 (1969)
100. Intermetallic compounds in the Er-Zn system
D. J. Michel and E. Ryba (Pennsylvania State Univ., Dept. Mater. Sci., Univ. Park, Pa. 16802)
Scripta Met. 3 [9], 683 (1969)
101. Investigation of γ and γ' -solid solutions of the Ni-Al-Nb-Mo system
R. S. Mints and V. M. Toropov (Baikov Met. Inst., Moscow)
Dokl. Akad. Nauk SSSR 189 [1], 130-34 (1969)
102. Phase relations and crystal structure of intermediate phases in the Cu-Si system in the composition range of 17 to 25 at. pct. Si
K. P. Mukherjee, J. Bandyopadhyaya and K. P. Gupta (Met. Eng. Dept., Indian Inst. Tech., Kanpur, India)
Trans. Met. Soc. AIME 245 [10], 2335-38 (1969)
103. A study of PbSe-Ni system
N. N. Myuller and L. I. Sotnikova
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 1899-1902 (1969)
104. Studies in the system La₂O₃-Yb₂O₃
H. Müller-Buschbaum and C. Teske (Inst. Anorg. u. Anal. Chem., Univ. Giessen, Germ.)
Z. Anorg. Allgem. Chem. 369, 249-54 (1969)
105. Thermodynamics of A₃O₄-B₃O₄ spinel solid solutions
A. Navrotsky (Theor. Met. Inst., T.H. Clausthal, Germ.)
J. Inorg. Nucl. Chem. 31, 59-72 (1969)
106. New phases in the Ti-Cu-Si system
J. J. Nickl and H. Sprenger (Forschungsinst. Festkörperchem., Univ. München, Germ.)
Z. Metallk. 60, 136-39 (1969)

- G. 107. The CaO-FeO system, a basis for investigations on the dissolution of lime during steel-making
K.-H. Obst and J. Stradtman
Arch. Eisenhüttenw. 40, 615-17 (1969)
108. Calculation of melting points for refractory compositions in the SiO_2 - Al_2O_3 -CaO-MgO system
F. M. Perelman and A. E. Demidov (Kurnakov Gen. & Inorg. Chem. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 2039-40 (1969)
109. Constitution of Mg-In alloys containing 23-100 at % In
K. M. Pickwick, W. A. Alexander and R. H. Gamble (Canada Dept. Energy, Mines, & Resources, Ottawa, Ont., Can.)
Can. J. Chem. 47 [18], 3417-28 (1969)
110. The system TiO_2 - V_2O_5
M. Piechotta, I. Ebert and J. Scheve (Inst. Anorg. Katalyseforsch., Deutsch. Akad. Wiss., Berlin-Adlershof)
Z. Anorg. Allgem. Chem. 368, 10-17 (1969)
111. Ternary compounds in the K_2O - ZrO_2 - SiO_2 system
I. M. Polezhaev and V. G. Chukhlantsev (Kirov Polytech. Inst., Sverdlovsk, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1828-31 (1969)
112. The Fe-B phase diagram
K. I. Portnoi, M. K. Levinskaya and V. M. Romashov
Porosh. Met. 9 [8], 66-70 (Aug. 1969)
113. Cu-Ir alloys
E. Raub and E. Röschel (Forschungsinst. Edelmetall. Metallchem., Schwäbisch-Gmünd, Germ.)
Z. Metallk. 60, 142-44 (1969)
114. Solid state reactions of CdO and the V oxides VO, V_2O_3 and VO_2
B. Reuter and K. Müller (Inst. Anorg. u. Anal. Chem., Tech. Univ. Berlin)
Z. Anorg. Allgem. Chem. 368, 174-80 (1969)
115. The system $\text{Mn}(\text{Ni}_x\text{V}_{2-x})\text{O}_4$
B. Reuter, E. Riedel and G. Buxbaum (Inst. Anorg. u. Anal. Chem., Tech. Univ. Berlin)
Z. Anorg. Allgem. Chem. 367, 113-18 (1969)
116. Nucleation of crystalline phases in silicate glasses containing iron oxides
P. S. Rogers and J. Williamson (Nuffield Res. Group, Imperial College, London, SW 7)
Glass Technol. 10, 128-33 (1969)

- G. 117. Solid solutions in the systems $\text{SrO} - \text{'FeO}_2\text{' - TiO}_2$ and $\text{SrO} - \text{CaO} - \text{Fe}_2\text{O}_3$
P. Rolando (Politec., Inst. Chim. Gen. & Appl., Turin, Italy)
Ann. Chim. (Rome) 59 [8-9], 817-27 (1969)
118. Phase diagrams of systems formed by Li molybdate with molybdates of Er, Ho and Dy
M. V. Saveleva, I. V. Shakhno, V. E. Plyushchev, A. A. Kotlyar and V. V. Kravchenko
Izv. Vyssh. Ucheb. Zaved., Khim. Khim. Tekhnol. 12 [9], 1179-82 (1969)
119. Vanadium and its alloys
E. M. Savicky and J. V. Efimov
Planseeber. Pulvermet. 17; 103-10 (1969)
120. The system $\text{Cr}_2\text{O}_3 - \text{TiO}_2$
J. Scheve, I. Ebert and J.-P. Walther (Inst. Anorg. Katalyseforsch., Deutsch. Akad. Wiss., Berlin-Adlershof)
Z. Anorg. Allgem. Chem. 368, 1-9 (1969)
121. Equilibrium studies of iron oxide-containing solid solutions within the systems Fe-Al-O, Fe-Cr-O and Fe-V-O
N. G. Schmahl and H. Dillenburg (Inst. Phys. Chem., Univ. Saarlandes, Saarbrücken, Germ.)
Z. Phys. Chem. (Frankfurt) 65, 119-38 (1969)
122. Phase equilibria and crypto-modifications in the spinel- and sesquioxide-range of the stable system Mn-Fe-O
N. G. Schmahl and D. Hennings (Inst. Phys. Chem., Univ. Saarlandes, Saarbrücken, Germ.)
Z. Phys. Chem. (Frankfurt) 64, 313-32 (1969)
123. The tungsten bronze field in the system $\text{K}_2\text{O} - \text{Li}_2\text{O} - \text{Nb}_2\text{O}_5$
B. A. Scott and 5 others (IBM Res. Ctr., Yorktown Heights, N. Y. 10598)
Mater. Res. Bull. 5 [1], 47-56 (1970)
124. Studies of the U-C constitution diagram between UC and UC_2
M. B. Sears and L. M. Ferris (Oak Ridge Nat. Lab., Oak Ridge, Tenn. 37830)
J. Nucl. Mater. 32 [1], 101-12 (1969)
125. High temperature x-ray investigation of Fe-Al-Cr, Fe-Al-Mo and Fe-Al-W alloys
Ya. P. Selisskii and M. N. Tolochko
Ukr. Fiz. Zh. (Russ. Ed.) 14 [10], 1692-94 (1969)
126. Phase diagrams for the systems $\text{MgCl}_2 - \text{MgF}_2$, $\text{CaCl}_2 - \text{MgF}_2$, and $\text{NaCl} - \text{MgF}_2$
R. A. Sharma and I. Johnson (Chem. Eng. Div., Argonne Nat. Lab., Argonne, Ill. 60439)
J. Am. Ceram. Soc. 52 [11], 612-15 (1969)

- G. 127. On solid solutions in the Mn_2TiO_4 - MnFe_2O_4 system
A. A. Shchepetkin, R. G. Zakharov and G. I. Chufarov (Acad. Sci.,
Met. Inst., Sverdlovsk, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 1953-56 (1969)
128. The W-Re-Si system
R. V. Skolozdra, T. F. Fedorov, N. M. Popova and E. I. Gladyshevskii
Porosh. Met. 9 [9], 66-69 (Sept. 1969)
129. The W-Co-Si and W-Ni-Si systems
R. V. Skolozdra, Z. P. Shipka and E. I. Gladyshevskii
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1466-68 (1969)
130. Phase and structure relationships in the V-B system
K. E. Spear and P. W. Gilles (Chem. Dept., Univ. of Kansas,
Lawrence, Kansas 66044)
High Temp. Sci. 1 [1], 86-97 (1969)
131. The HfO_2 - Y_2O_3 system
F. M. Spiridonov, L. N. Komissarova, A. G. Kocharov and V. I.
Spitsyn (Lomonosov State Univ., Inorg. Chem. Dept., Moscow)
Zh. Neorg. Khim. 14 [9], 2535-40 (1969)
132. A study of the ThO_2 - Y_2O_3 - WO_3 system
V. I. Spitsyn, A. N. Pokrovskii, N. S. Afonskii and V. K. Trunov
(Lomonosov State Univ., Moscow)
Dokl. Akad. Nauk SSSR 188 [5], 1065-68 (1969)
133. The boric oxide effect in magnesite refractories
M. I. Taylor, W. F. Ford and J. White (Ceram. Dept., Univ. of
Sheffield, U. K.)
Trans. Brit. Ceram. Soc. 68, 173-80 (1969)
134. Enquiry into the interaction of Al_2O_3 with Eu_2O_3
N. I. Timofeeva, E. N. Timofeeva, L. N. Drozdova and O. A. Mordovin
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1742-44 (1969)
135. Phase relationships in the Ni-Nb-O system in the Ni-NiO- Nb_2O_5 - NbO_2
region at 1250 °C
E. V. Tkachenko, F. Abbattista and A. Burdeze (Gorkii State Univ.,
Sverdlovsk, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 1963-68 (1969)
136. Solid solutions in the $\text{Ca}_2\text{Al}_2\text{SiO}_7$ - $\text{CaLaAl}_3\text{O}_7$ system
N. A. Toropov and A. A. Ismatov
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1439-41 (1969)
137. The systems VO_2 - NbVO_4 and VO_2 - TaVO_4
H. Trarieux, J. C. Bernier and A. Michel (Fac. Sci. Orsay, 91-
Orsay, Fr.)
Ann. Chim. (Paris) 4, 183 (1969)

- G. 138. The iron oxide apatite in the constitutional diagram Fe-FeO_n-CaO-P₂O₅
G. Trömel, W. Fix and U. Bongers (Inst. Eisenhüttenw., Tech. Univ.
Clausthal, Germ.)
Arch. Eisenhüttenw. 40, 813-19 (1969)
139. The constitutional diagram FeO_n-MnO_n-CaO-P₂O₅ in air at 1600 and
1630 °C
G. Trömel, W. Fix and H.-E. Wiemer (Inst. Eisenhüttenw., Tech.
Univ. Clausthal, Germ.)
Arch. Eisenhüttenw. 40, 673-79 (1969)
140. The Ti-rich corner of the Ti-Al-V system
T. Tsujimoto (Nat. Res. Inst. Met., Tokyo)
Trans. Japan Inst. Metals 10 [4], 281-86 (1969)
141. A study of the lead selenide-manganese selenide system
V. G. Vanyarkho, V. P. Zlomanov, A. V. Novoselova and V. N. Fokin
(Lomonosov Univ., Chem. Fac., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1699-1702 (1969)
142. A study of the PbSe-HgSe system
V. G. Vanyarkho, V. P. Zlomanov and A. V. Novoselova (Lomonosov
Univ., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 2025-26 (1969)
143. Phase diagram of the Al-Yb system
R. D. Vengrenovich and V. I. Psarev
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 12 [5], 117-19 (Sept.-Oct.
1969)
144. Alloy chemistry of σ (β -U)-related phases. II. The characteristics
of δ - and other σ -related phases in some Mo-NiX systems
A. V. Virkar and A. Raman (Max Planck-Inst. Metallforsch.,
Stuttgart, Germ.)
Z. Metallk. 60, 594-600 (1969)
145. Investigation of the V₂O₅-ZnO system
L. M. Viting and G. P. Gorbovskaia (State Univ., Gen. Chem. Dept.,
Moscow)
Vest. Mosk. Univ., Khim. 24 [5], 102-03 (Sept.-Oct. 1969)
146. A study of phase transitions in the PbZrO₃-PbTiO₃ system
D. F. Weirauch (Univ. of Illinois, 1968)
Dissertation Abstr. Int. 30B [1], 185 (1969-70)
147. Phase studies of the systems Mn-S, Mn-Se, and MnS-MnSe
H. Wiedemeier and A. G. Sigai (Chem. Dept., Rensselaer Polytech.
Inst., Troy, N. Y. 12181)
High Temp. Sci. 1 [1], 18-25 (1969)

- G. 148. An electron microscope study of the phase transformations in Ti-Cu alloys
J. C. Williams (Univ. of Washington, 1968)
Dissertation Abstr. Int. 30B [2], 677-78 (1969-70)
149. Solubility of C in Mo in the solid state
A. M. Zakharov, I. I. Novikov, V. G. Parshikov and Yu. A. Belykh
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 12 [5], 120-26 (Sept.-Oct. 1969)
150. High-temperature mineral equilibria in the CaO-SiO₂-CO₂ system
V. A. Zharikov and K. I. Shmulovich (Acad. Sci., Inst. Geol. Ore Deposits, Moscow)
Geokhimiya [9], 1039-56 (1969)
151. The condensed phase diagram of the CaF₂-BaF₂ system
B. M. Zhigarnovski and E. G. Ippolitov (Kurnakov Gen. & Inorg. Chem. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [9], 1558-62 (1969)
152. Condensed phase diagram of the BaF₂-LaF₃ system
B. M. Zhigarnovski and E. G. Ippolitov (Kurnakov Gen. & Inorg. Chem. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1806 (1969)
153. The CdO-MoO₃ system
A. N. Zobnina and I. P. Kislyakov
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1472-73 (1969)
154. Phase diagram of the Cr-Pr system
V. N. Svechnikov, G. F. Kobzenko, O. N. Kashevskaya, V. G. Ivanchenko and E. L. Martynchuk (Acad. Sci., Metallophys. Inst., Kiev, UkrSSR)
Dopovidi Akad. Nauk Ukr. RSR, Ser. A-Fiz.-Tekh. i Mat. Nauk [8], 751-53 (1969)

H. Reactions at temperatures above 1000 °C

1. The properties of Be surfaces and films. A review
R. O. Adams and J. T. Hurd (Dow Chem. Co., Rocky Flats Div., Golden, Colo. 80401)
J. Less-Common Metals 18 [4], 399-409 (1969)
2. On oxidation kinetics of tungsten
V. I. Ageev and N. I. Ionov (Ioffe Phys. Tech. Inst., Leningrad, USSR)
Fiz. Tverd. Tela 11 [11], 3200-02 (1969)
3. Features of α -corundum crystallization by the Verneuil method
I. N. Akimovich
Ukr. Fiz. Zh. 14 [8], 1201-04 (1969)

- H. 4. Some improvements in Inconel-718 brazing technology for nuclear reactors
I. Amato and M. Ravizza (FIAT, Sez. Energia Nucl., Torino, Italy)
Energia Nucl. (Milan) 16, 397 (1969)
5. Oxidation of Mn-Mg ferrite
M. Amemiya (Hitachi Ctr. Res. Lab., Kokubunji, Tokyo)
J. Inorg. Nucl. Chem. 31, 3083-93 (1969)
6. The silication kinetics of Mo and Nb from Cu-Si melts
I. I. Andreev and I. A. Dmitriev (Steel & Alloys Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1695-98 (1969)
7. The solid-liquid interface shape during crystal growth by the Czochralski method
T. Arizumi and N. Kobayashi (Nagoya Univ., Fac. Eng., Dept. Electr., Nagoya, Japan)
Japan. J. Appl. Phys. 8 [9], 1091-97 (1969)
8. Preparation and properties of dense spinel ceramics in the $MgAl_2O_4$ - Al_2O_3 system
J. T. Bailey and R. Russell (Ceram. Eng. Dept., Ohio State Univ., Ohio)
Trans. Brit. Ceram. Soc. 68, 159-64 (1969)
9. Crystallization of $Y_3Al_5O_{12}$ from solution in a melt of $BaO \cdot 0.6B_2O_3$
R. V. Bakradze and G. P. Kuznetsova
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1474-75 (1969)
10. Diffusivity of oxygen in Ni and α -Fe by an internal oxidation method
R. Barlow and P. J. Grundy (Phys. Dept., Univ. of Salford, U. K.)
J. Mater. Sci. 4, 797-801 (1969)
11. High-temperature reactions between Ta and oxides of U and Pu
W. Batey, J. I. Bramman, H. W. Irons and G. Yates (UKAEA, Dounreay Exp. Reactor Establ., Thurso, Scotland)
J. Nucl. Mater. 29, 229-34 (1969)
12. The preparation of UC
J. Bečvář (Inst. Nucl. Res., Rez near Prague, Czech.)
J. Nucl. Mater. 32 [1], 156-60 (1969)
13. Investigation of phase transformations during heating of specimens made of a mixture of MgO , SiO_2 , CaO and Fe_2O_3 oxides
A. F. Bessonov
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1431-34 (1969)
14. Effect of austenitizing treatment on the structure and properties of Fe-Mn martensite
J. D. Bolton, E. R. Petty and G. B. Allen (Met. Dept., Sheffield Polytechnic, U. K.)
J. Iron Steel Inst. (London) 207, 1314-18 (1969)

- H. 15. Synthesis of barysilite $Pb_3Si_2O_7$
D. Bordeaux, J. Lajzerowicz (Lab. Spectrom. Phys., Domaine Univ.,
38-St. Martin d'Hères, Fr.)
Bull. Soc. Franc. Miner. Crist. 92, 383 (1969)
16. Interactions between sintered magnesite and chromium ore and their
dependence of the temperature
G. Bouvier and H. Barthel (Forschungsinst., Veitscher Magnesit-Werke
AG, Leoben, Germ.)
Ber. Deut. Keram. Ges. 46, 355-65 (1969)
17. Kinetics of the pearlite reaction in high-purity Ni eutectoid
steels
D. Brown and N. Ridley (Met. Dept., Univ. of Manchester, U. K.)
J. Iron Steel Inst. (London) 207, 1232-40 (1969)
18. Oxidation of 0.14% C-3% Ni steel
G. G. Brown and K. G. Wold (Broken Hill Proprietary Co., Australia)
J. Iron Steel Inst. (London) 207, 1457-61 (1969)
19. Study of chemical diffusion by the Natano and Hall methods in
Cu-Ni couples between 800 and 1060 °C; variation of activation
energy with concentration
G. Brunel, G. Cizeron and P. Lacombe (Ecole Mines, Paris)
C. R. Acad. Sci. 269C, 895 (1969)
20. Conversion of uranium oxide microspheres to uranium carbide
microspheres
M. Buono, G. Ceccotti and A. Olivi (CAMEN - S. Piero a Grado, Pisa,
Italy)
Energia Nucl. (Milan) 16, 511 (1969)
21. Thermal decomposition of Fe, Co, and Ni dichalcogenides
L. Cambi, M. Elli and E. Guidici (Lab. Consorzio L. Cambi, Milano,
Italy)
Chim. Ind. (Milan) 51 [8], 795-810 (1969)
22. An application of Schäfer's rules to the high temperature tungsten
transport reactions
R. J. Campbell (G. E. Co., Lighting Res. Lab., Cleveland, Ohio
44112)
High Temp. Sci. 1 [3], 303-12 (1969)
23. Oxidation of $MoSi_2$
Y. A. Chang (Coll. of Appl. Sci. Eng., Univ. of Wisconsin,
Milwaukee, Wisc.)
J. Mater. Sci. 4, 641-43 (1969)
24. Oxidation behaviour of metal at its allotropic transformation
temperature
B. Chattopadhyay (Chem. Eng. Dept., Univ. of Manchester, Inst.
Sci. and Tech., Manchester, G. B.)
Thin Solid Films 4 [1], R5-8 (1969)

- H. 25. Reduction of Zn from oxide melts by C
V. M. Chumarev and T. F. Vlasova
Izv. Akad. Nauk SSSR, Metal. [5], 23-27 (Sept.-Oct. 1969)
26. Kinetics of a multicomponent heterogeneous reaction on the surface of a metal-slag interface
A. S. Churkin, G. A. Toporishchev and O. A. Esin
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [10], 21-25 (Oct. 1969)
27. Experimental results on the kinetics of growth of WC crystals in the presence of Co
M. Coster, A. Deschanvres (Fac. Sci., 14-Caen, Fr.)
C. R. Acad. Sci. 269C, 221 (1969)
28. Formation of carbides on W wires
W. J. Croft and K. J. Nygaard (Sperry Rand Res. Ctr., Sudbury, Mass.)
J. Sci. Instr. 2, 1012 (1969)
29. Epitaxial growth and properties of Si on Al_2O_3 -rich single-crystal spinel
G. W. Cullen, G. E. Gottlieb, C. C. Wang and K. H. Zaininger (RCA Labs., Princeton, N. J.)
J. Electrochem. Soc. 116 [10], 1444-49 (1969)
30. Effect of low pressures of water vapor on the oxidation and hydrogenation of Zr-Cu alloys in CO_2 at elevated temperatures
R. Darras, P. Baque and J. Sannier (C.E.N. Saclay, 91-Gif/Yvette, Essonne, Fr.)
C. R. Acad. Sci. 269C, 1913 (1969)
31. Thermal decomposition of K and Na pyrosulphates
K. J. DeVries and P. J. Gellings (Twente, Univ. of Tech., Enschede, Netherlands)
J. Inorg. Nucl. Chem. 31, 1307-13 (1969)
32. Addition of refractory compounds to molten Zr
C. F. Dixon and H. M. Skelly (Mines Branch, Dept. of Energy, Mines and Resources, Ottawa, Canada)
J. Less-Common Metals 18 [4], 440-41 (1969)
33. Study of the mechanism of the calcination reaction under pressure
A. Dogu, G. Petitjean and A. Accary (C.E.N. de Saclay, 91 Gif-sur-Yvette, Fr.)
J. Nucl. Mater. 30, 282-88 (1969)
34. Means for removing non-metallic inclusions during the vacuum vaporization of steel
V. I. Dyakonov
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 5-9 (June 1969)

- H. 35. High-pressure Th_3P_4 -type polymorphs of rare earth sesquichalcogenides
N. L. Eatough, A. W. Webb and H. T. Hall (Chem. Dept., Brigham
Young Univ., Provo, Utah 84601)
Inorg. Chem. 8 [10], 2069-71 (1969)
36. Oxidation of Fe. III. Mössbauer spectrum and structure of wüstite
D. J. Elias and J. W. Linnett (Phys. Chem. Dept., Univ. of
Cambridge, U. K.)
Trans. Faraday Soc. 65, 2673-77 (1969)
37. Mechanism of the interaction of V_2O_5 with C
V. P. Elyutin, Yu. A. Pavlov, V. P. Polyakov and S. B. Sheboldaev
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [7], 5-7 (July 1969)
38. Effect of inclusions on the apparent diffusivity of hydrogen in
ferrous materials
G. M. Evans and E. C. Rollason (Dept. Ind. Met., Univ. of
Birmingham, U. K.)
J. Iron Steel Inst. (London) 207, 1484-90 (1969)
39. Reaction of graphite and pyrographite with Ti, Nb, Mo and W
disilicides
T. M. Evtushok and A. L. Burykina
Porosh. Met. 9 [7], 78-85 (July 1969)
40. Diffusion properties of U-Zr-Nb alloys
G. B. Fedorov, E. A. Smirnov and V. N. Gusev
At. Energ. (USSR) 27 [2], 149 (1969)
41. Reaction of Fe and Cr chlorides with oxides and spinels
G. F. Fefelova, I. S. Morozov and T. S. Shibneva
Zh. Prikl. Khim. 42 [8], 1693-98 (1969)
42. Measurement of the heat of devitrification of synthetic anorthite
A. Ferrier (IRSID, St. Germain en Laye, Yvelines, Fr.)
C. R. Acad. Sci. 269C, 185 (1969)
43. Alumina and mullite as solid electrolytes in oxygen measuring cells
W. A. Fischer and D. Janke (Max Planck Inst. Eisenforsch.,
Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 707-16 (1969)
44. MgO and the spinel $\text{MgO} \cdot \text{Al}_2\text{O}_3$ as solid electrolytes in oxygen
measuring cells
W. A. Fischer and D. Janke (Max Planck Inst. Eisenforsch.,
Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 837-41 (1969)
45. Diffusion-controlled reactions of silicides of high-melting metals
E. Fitzer (Inst. Chem. Tech., Tech. Hochschule Karlsruhe, Germ.)
Planseeber. Pulvermet. 17, 36-53 (1969)

- H. 46. Effect of deoxidation technique on oxygen content and inclusion type in a 0.2% carbon steel
A. G. Franklin, G. Rule and R. Widdowson (Steelmaking Div., BISRA/IGL, London)
J. Iron Steel Inst. (London) 207, 1208-18 (1969)
47. Compatibility of some high-temperature thermocouple materials in a C-H environment
R. J. Fries, J. E. Cummings, C. G. Hoffman and S. A. Daily (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Nucl. Mater. 32 [1], 171-73 (1969)
48. Studies on changes of texture during tempering of polycrystalline $\text{Na}_2\text{O} \cdot 2\text{CaO} \cdot 3\text{SiO}_2$
G. H. Frischat (Max Planck-Inst. Silikatforsch., Würzburg, Germ.)
Ber. Deut. Keram. Ges. 46, 316-20 (1969)
49. Preparation of a nickel ferrite from coprecipitated $\text{Ni}_{0.2}\text{Fe}_{0.8}\text{C}_2\text{O}_4 \cdot 2\text{H}_2\text{O}$
P. K. Gallagher, H. M. O'Bryan, Jr., F. Schrey and F. R. Monforte (Bell Tel. Labs., Murray Hill, N. J.)
Am. Ceram. Soc. Bull. 48 [11], 1053-59 (1969)
50. The sulfurization of W and Mo in H_2 - H_2S mixtures and in S vapor at high temperatures. I. Tungsten
J. Gerlach and H.-J. Hamel (Inst. Metallhüttenk., Tech. Univ. Berlin and Osram GmbH, Berlin)
Metall 23, 1006-11 (1969)
51. Diffusion of Ni an amorphous SiO_2 and Si_3N_4 films
R. N. Ghoshtagore (Westinghouse Res. Labs., Pittsburgh, Pa. 15235)
J. Appl. Phys. 40 [11], 4374-76 (1969)
52. Molten solution grown K-Na-Ba niobate crystals with a tungsten bronze-type structure
E. A. Giess and 5 others (IBM Res. Ctr., Yorktown Heights, N. Y. 10598)
Mater. Res. Bull. 4 [10], 741-44 (1969)
53. The effect of alloy grain-size and surface deformation on the selective oxidation of Cr in Ni-Cr alloys at 900 and 1100 °C
C. S. Giggins and F. S. Pettit (Adv. Mater. R/D Lab., Pratt & Whitney Aircraft, Middletown, Conn.)
Trans. Met. Soc. AIME 245 [12], 2509-14 (1969)
54. Oxidation of Ni-Cr alloys between 800 and 1200 °C
C. S. Giggins and F. S. Pettit (Adv. Mater. R/D Lab., Pratt & Whitney Aircraft, Middletown, Conn.)
Trans. Met. Soc. AIME 245 [12], 2495-2507 (1969)

- H. 55. Deoxidation equilibria of steel with Al and deoxidation experiments in electrical resistance furnaces; influence on the content of non-metallic inclusions
G. Gomellini, A. Piaggio and G. Violi (Italsider - Stabilimento di Lovere, Genova, Italy)
Met. Ital. 61, 295 (1969)
56. Preparation of coated (Th,U)C₂ particles by reaction, sintering and coating in a fluidized bed
T. Görgenyi, H. Huschka and W. Popp (NUKEM, Nukl.-Chem. und Met. GmbH)
J. Nucl. Mater. 29, 126-28 (1969)
57. Heat of formation of BP
P. Gross, C. Hayman and M. C. Stuart (Fulmer Res. Inst., Stoke Poges, U. K.)
Trans. Faraday Soc. 65, 2628-32 (1969)
58. The formation of a SiO₂ layer on SiC
E. Gugel, H. W. Hennicke and P. Schuster (Forschungsinst. Cremer-Gruppe Oeslau and Lehrstuhl Steine u. Erden, Tech. Univ. Clausthal, Germ.)
Ber. Deut. Keram. Ges. 46, 481-85 (1969)
59. Production of monocrystals of refractory compounds from solution in zinc melt
V. N. Gurin and 5 others (Ioffe Phys. Tech. Inst., Leningrad, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [11], 1995-98 (1969)
60. The behavior of large bubbles rising through molten Ag
R. I. L. Guthrie and A. V. Bradshaw (Imperial College, London)
Trans. Met. Soc. AIME 245 [10], 2285-92 (1969)
61. Reaction of glassy C with alkali metal vapours
M. K. Halpin and G. M. Jenkins (Met. Dept., Univ. of Swansea, U. K.)
Proc. Roy. Soc. (London) 313A, 421-31 (1969)
62. Determination of O₂ in steel by reducing fusion
M. Hanin (IRSID, St. Germain en Laye, Fr.)
Rev. Mét. 66, 611 (1969)
63. Formation mechanism of thin layers of the spinel NiAl₂O₄
K. Hardel (Inst. Anorg. u. Anal. Chem., Tech. Univ. Berlin)
Z. Phys. Chem. (Frankfurt) 65, 86-94 (1969)
64. Improved silicide coatings for the protection of Mo-0.5% Ti alloy
C. Hayman (Fulmer Res. Inst., Stoke Poges, Bucks., G. B.) and J. E. Restall (Nat. Gas Turbine Establ., Pyestock, Farnborough, Hants., G. B.)
J. Less-Common Metals 19 [1], 9-21 (1969)

- H. 65. Kinetics of decarburization in an experimental basic oxygen furnace
G. R. Hill (Carnegie-Mellon Univ., 1969)
Dissertation Abstr. Int. 30B [4], 1716 (1969-70)
66. Internal nitriding of W-base alloys containing Hf
D. J. Iden and L. Himmel (Lawrence Radiation Lab., Livermore, Calif.)
Acta Met. 17 [12], 1483-99 (1969)
67. Preparation of barium titanate film by evaporation
Y. Iijima
Zairyo 18 [192], 819-23 (1969)
68. Thermodynamic evaluation of the in vacuo alumino and carbothermal reduction of sodium aluminate and the possible formation of aluminum suboxide
S. M. Isabaev, T. D. Takenov and V. D. Ponomarev
Izv. Akad. Nauk Kaz. SSR, Ser. Khim. 19 [5], 1-6 (Sept.-Oct. 1969)
69. Vapor growth of high resistivity ZnTe
A. S. Jordan and L. Derick (Bell Tel. Labs., Murray Hill, N. J.)
J. Electrochem. Soc. 116 [10], 1424-30 (1969)
70. High temperature transport in LiNbO_3
P. J. Jorgensen and R. W. Bartlett (Stanford Res. Inst., Menlo Park, Calif.)
J. Phys. Chem. Solids 30, 2639-48 (1969)
71. The kinetics of gaseous oxidation of binary and ternary alloys of liquid Fe
R. S. Kaplan and W. O. Philbrook (Dept. Met. & Mater. Sci., Carnegie-Mellon Univ., Pittsburgh, Pa.)
Trans. Met. Soc. AIME 245 [10], 2195-2204 (1969)
72. Thermochemical properties of the system Cu-S at elevated temperatures
H. H. Kellogg (Chem. Met. Dept., Columbia Univ., New York, N. Y.)
Can. Met. Quart. 8 [1], 3-23 (1969)
73. Formation of epitaxial β -SiC films on sapphire
I. H. Khan and A. J. Learn (NASA Electr. Res. Ctr., Cambridge, Mass. 02139)
Appl. Phys. Letters 15 [12], 410-14 (1969)
74. Self and cobalt diffusion in Zr
G. V. Kidson and G. J. Young (Chalk River Nucl. Labs., At. Energy Canada, Chalk River, Ont., Can.)
Phil. Mag. 20, 1047-55 (1969)

- H. 75. A carbidothemic method for preparing 4a-6a group metals and their alloys
R. Kieffer, F. Lihl and E. Effenberger (Inst. Chem. Tech. Anorg. Stoffe and Inst. Angew. Phys., Tech. Hochschule Wien, Austria)
Z. Metallk. 60, 94-100 (1969)
76. Physicochemical factors affecting the vacuum deoxidation of steels
G. J. M. Kinsman, G. S. F. Hazeldean and M. W. Davies (BISRA/IGL, London)
J. Iron Steel Inst. (London) 207, 1463-78 (1969)
77. Degassing and evaporation from melts of fuel slags
H. Kirsch (L. u. C. Steinmüller, Gummersbach, Germ.)
Sprechsaal 102, 227-30 (1969)
78. The determination of the free enthalpies of formation of Cr carbides by means of galvanic solid cells
H. Kleykamp (Inst. Mater.-u. Festkörperforsch., Kernforschungs-zentr. Karlsruhe, Germ.)
Ber. Bunsenges. Phys. Chem. 73, 354-57 (1969)
79. Oxidation of Co-25 w/o Cr at high temperatures
P. K. Kofstad and A. Z. Hed (Battelle Mem. Inst., Columbus, Ohio)
J. Electrochem. Soc. 116 [11], 1542-50 (1969)
80. Titania in equilibrium with Fe-Ti alloys at 1600 °C
Y. Kojima, M. Inouye and J. Ohi (Met. Dept., Univ. of Nagoya, Japan)
Arch. Eisenhüttenw. 40, 667-71 (1969)
81. Growing Ag₂O crystals
F. I. Kreingold (Zhdanov State Univ., Leningrad, USSR)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [9], 1639-40 (1969)
82. The preparation and crystal structure of Sc₄C₃
N. H. Krikorian, A. L. Bowman, M. C. Krupka and G. P. Arnold (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
High Temp. Sci. 1 [3], 360-66 (1969)
83. High pressure effects within the U-C system
M. C. Krupka (Los Alamos Sci. Lab., Los Alamos, N. M.)
Am. Ceram. Soc. Bull. 48 [12], 1133-36 (1969)
84. High-pressure synthesis of Y-Th sesquicarbide: a new high-temperature superconductor
M. C. Krupka, A. L. Giorgi, N. H. Krikorian and E. G. Szklarz (Los Alamos Sci. Lab., Los Alamos, N. M. 87544)
J. Less-Common Metals 19 [2], 113-19 (1969)
85. Void formation due to thermal diffusion in Gd
J. Kumar and O. N. Srivastava (Phys. Dept., Banaras Hindu Univ., Varanasi, India)
Phil. Mag. 20, 1281-83 (1969)

- H. 86. Equilibrium in the reduction of Sm_2O_3 with C
G. M. Kyshtobaeva, E. I. Smagina and V. S. Kutsev
Zh. Fiz. Khim. 43 [9], 2400 (1969)
87. Measurement of Fe diffusion in an Fe-3% Si alloy by means of the Mössbauer technique
S. J. Lewis and P. A. Flinn (Metals Res. Lab. & Phys. Dept., Carnegie-Mellon Univ., Pittsburgh, Pa. 15213)
Appl. Phys. Letters 15 [10], 331-33 (1969)
88. Preparation and crystal chemistry of some refractory borides and phosphides
T. Lundström (Univ. Uppsala, Inst. Chem., Uppsala, Sweden)
Arkiv Kemi 31 [3], 227-66 (1969)
89. Diffusion of Si, P, S and Mn in liquid Fe
A. Majdič, D. Graf and H. Schenck (Inst. Eisenhüttenw., Rhein.-Westfäl. T. H., Aachen, Germ.)
Arch. Eisenhüttenw. 40, 627-30 (1969)
90. Solid state reactions in the system of CeO_2 with alkaline earth oxides, electrical conductivity and structures of the phases present
M. D. Mastromonaco, I. Barbariol and A. Cocco (Univ. Trieste, Ist. Chim. Appl., Fac. Eng., Trieste, Italy)
Ann. Chim. (Rome) 59, 465 (1969)
91. Contribution to the study of oxidation of an Fe melt containing Si and Mn
F. Minisci (Politecn. Milano, Ist. Electrochem., Chim. Fis. e Met., Milano, Italy)
Chim. Ind. (Milan) 51, 715 (1969)
92. Growth of V_4O_7 and V_7O_{13} single crystals
K. Nagasawa, Y. Bando and T. Takada (Kyoto Univ., Inst. Chem. Res., Uji, Japan)
Japan. J. Appl. Phys. 8 [10], 1262 (1969)
93. Growth of V_3O_5 and V_6O_{11} single crystals
K. Nagasawa, Y. Bando and T. Takada (Kyoto Univ., Inst. Chem. Res., Uji, Japan)
Japan. J. Appl. Phys. 8 [10], 1267 (1969)
94. Oxidation kinetic studies of ZnS pellets
K. Natesan and W. O. Philbrook (Dept. Met. & Mater. Sci., Carnegie-Mellon Univ., Pittsburgh, Pa.)
Trans. Met. Soc. AIME 245 [10], 2243-50 (1969)

- H. 95. On the solid state reaction between uranium oxide (U_3O_8) and MgO. I
A. Negro and I. Amato (Inst. Gen. and Appl. Chem., Fac. Architecture,
Polytechnic, Turin, Italy)
J. Less-Common Metals 19 [3], 159-71 (1969)
96. Correlation between conservation of metal and luminosity of a Zr
droplet during free-fall combustion in O_2
L. S. Nelson and H. S. Levine (Sandia Labs., Albuquerque, N. M.
87115)
High Temp. Sci. 1 [2], 163-68 (1969)
97. Kinetics of the oxidation of carbon in steel by a molten slag
Yu. P. Nikitin and V. G. Kovalenko
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [10], 9-11 (Oct. 1969)
98. Mass spectrometric study of the noble metal oxides. Ruthenium-
oxygen system
J. H. Norman, H. G. Staley and W. E. Bell (Gulf Gen. Atomic, J.
Hopkins Lab. Pure Appl. Sci., San Diego, Calif.)
Mass Spectrom. Inorg. Chem., J. L. Margrave, Ed., p. 101-14 (Amer.
Chem. Soc. Adv. Chem. Ser. 72, Washington, D. C., 1968)
99. Reactions between Cr-rich Fe melts and blast furnace slags in a
graphite crucible
W. Oelsen (Max Planck Inst. Eisenforsch., Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 743-50 (1969)
100. The effect of the alkali oxides on the reactions between C-rich
iron melts and Ca-Mg-Al silicates. I. Desulfurization,
reduction of silicic acid, reduction of Mn and evaporation of the
alkali from slags containing 2% Na_2O or 3% K_2O at 1350-1650 °C.
II. The connection of the contents of the two liquid phases by
the cross-reactions and their temperature dependence
W. Oelsen (Max Planck Inst. Eisenforsch., Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 783-95 and 797-808 (1969)
101. Effect of S on the reduction of silica from Ca-Mg-Al silicates in
the presence of Fe melts in a graphite crucible
W. Oelsen and H. Brockmann (Max Planck Inst. Eisenforsch.,
Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 767-81 (1969)
102. The co-action of gaseous N_2 in the reaction between Fe melts and
silicate slags in a graphite crucible. I. Effect of the volume
ratio of Fe melts and slags on the absorption of N_2 . II. Experiments
with prolonged melting time at temperatures of 1450-1650 °C
W. Oelsen, K.-H. Sauer and H. Keller (Max Planck Inst. Eisenforsch.,
Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 911-23 and 925-37 (1969)

- H. 103. Crystal growth and ferroelectric properties of single crystals from the ternary systems of KNbO_3 - NaNbO_3 - BaNb_2O_6 and RbNbO_3 - NaNbO_3 - BaNb_2O_6
D. F. O'Kane and 5 others (IBM Res. Div., Yorktown Heights, N. Y.)
J. Electrochem. Soc. 116 [11], 1555-60 (1969)
104. Growth of single crystals of Ca aluminates in the system $\text{CaO-Al}_2\text{O}_3$
Y. P. Oudalov and Z. S. Medvedeva (Silicate Chem. Inst., Acad. Sci. USSR, Leningrad V-164, USSR)
Mater. Res. Bull. 4 [12], 887-96 (1969)
105. Reduction of Pb and Cu ferrites by CaC_2
P. F. Panfilov, S. A. Balgozhin, V. V. Zhumakov and V. D. Ponomarev
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 12 [3], 24-28 (May-June 1969)
106. Kinetics of the reduction of FeO by C from $\text{Cu}_2\text{S-FeS-FeO}$ melts
I. P. Pazdnikov, V. I. Deev and V. I. Smirnov
Izv. Akad. Nauk SSSR, Metal. [5], 15-19 (Sept.-Oct. 1969)
107. Rate of the reduction of silicon from slags by ferrosilicon carbon
A. A. Plyshevskii, A. I. Sotnikov, O. A. Esin and L. N. Barmin
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [10], 17-20 (Oct. 1969)
108. Crystal growth of 2H SiC
J. A. Powell (NASA Lewis Res. Ctr., Cleveland, Ohio 44135)
J. Appl. Phys. 40 [11], 4660-62 (1969)
109. Conditions for the preparation of Fe-Cr powders by means of diffusion saturation
I. D. Radomyselskii, S. G. Napara-Bolgina and S. M. Kazimirenko
Porosh. Met. 9 [8], 10-16 (Aug. 1969)
110. β -SiC films
P. Rai-Choudhury and N. P. Formigoni (Westinghouse Res. Labs., Pittsburgh, Pa.)
J. Electrochem. Soc. 116 [10], 1440-43 (1969)
111. Losses of As during growth of GaAs single crystals
V. V. Rakov, B. D. Lainer and M. G. Milvidskii
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [8], 1458-59 (1969)
112. Kinetics of zircon synthesis
S. V. Ramani, E. C. Subbarao and K. V. G. K. Gokhale (Indian Inst. Tech., Kanpur, India)
J. Am. Ceram. Soc. 52 [11], 619-23 (1969)
113. On the kinetics of oxidation and reduction of wustite within its range of stability
E. Riecke and K. Bohnenkamp (Max Planck Inst. Eisenforsch., Düsseldorf, Germ.)
Arch. Eisenhüttenw. 40, 717-25 (1969)

- H. 114. The electromagnetic levitation of liquid metal sulfides and their reaction in O_2
O. C. Roberts, D. G. C. Robertson and A. E. Jenkins (School of Met., Univ. of New South Wales, Kensington, Australia)
Trans. Met. Soc. AIME 245 [11], 2413-20 (1969)
115. Use and care of Pt ware in single crystal growth by the "fluxed" melt technique
J. M. Robertson (Phys. Dept., Portsmouth Polytech., Portsmouth, Hamps., Engl.)
Engelhard Ind. Tech. Bull. 10 [3], 77-79 (1969-70)
116. Study of the dissociation of Li cryolite on fusion compared with that of Na cryolite
M. Rolin, H. Latreille and H. Pham (INSA, Villeurbanne, Lyon, Fr.)
Bull. Soc. Chim. Franc., 2271 (1969)
117. Kinetics of the action of SiC with Fe and SiO_2
I. V. Ryabchikov, N. V. Tolmoguzov, M. S. Khrushchev, V. G. Mizin and A. M. Yanvarev
Izv. Vyssh. Ucheb. Zaved., Chern. Met. 12 [6], 36-42 (June 1969)
118. Oxidation, defects and vacancy diffusion in Si
I. R. Sanders and P. S. Dobson (Phys. Met. Dept., Univ. of Birmingham, U. K.)
Phil. Mag. 20, 881-93 (1969)
119. Diffusion of Ti-44 in TiC_x
S. Sarian (Union Carbide Co., Carbon Prod. Div., Parma, Ohio 44130)
J. Appl. Phys. 40 [9], 3515-20 (1969)
120. Mechanism of the CuO reaction with NiO
V. S. Savin, V. T. Serebryanskii and N. A. Fedotov
Zh. Neorg. Khim. 14 [9], 2493-95 (1969)
121. Kinetic studies on the transition of S between C-saturated Fe and $CaO-SiO_2-Na_2O$ slags
H. Schenck, E. Steinmetz and Z. Yun (Inst. Eisenhüttenw., Rhein.-Westfäl. Tech. Hochschule, Aachen, Germ.)
Arch. Eisenhüttenw. 40, 759-65 (1969)
122. Kinetics of vacuum desulphurization of steel with Si
V. D. Sehgal (Met. Dept., Punjab Eng. College, Chandigarh, India)
J. Iron Steel Inst. (London) 207, 1507-11 (1969)
123. Conditions for preparing Ca and Ba hexaboride powders
T. I. Serebryakova and E. V. Marek
Porosh. Met. 9 [8], 4-9 (Aug. 1969)

- H. 124. β -SiC whiskers prepared on a Mo substrate
N. Setaka and Z. Inoue (Nat. Inst. Res. Inorg. Mater., Honkomagome,
Bunkyo-ku, Tokyo)
J. Am. Ceram. Soc. 52 [11], 624 (1969)
125. The diffusion of oxygen in liquid Ag and Ag-Au, Ag-Pd, Ag-Pt alloys
I. D. Shah and N. A. D. Parlee (Miner. Eng. Dept., Stanford Univ.,
Stanford, Calif.)
High Temp. Sci. 1 [2], 184-99 (1969)
126. Influence of thermal conditions during the course of crystal growth
on the qualities of a ruby single crystal
K. Shiroki (Nippon Elect. Co., Ctr. Res. Labs., Kawasaki, Japan)
Japan. J. Appl. Phys. 8 [9], 1082-90 (1969)
127. Interaction of Al and Ti, dissolved in Cr-Ni melts, with a
CaF₂-CaO slag during electroslag remelting
V. M. Shpitsberg, Yu. G. Grebtsov, M. M. Klyuev and B. I. Medovar
Izv. Akad. Nauk SSSR, Metal. [5], 67-73 (Sept.-Oct. 1969)
128. Mechanism of reaction between corundum and cristobalite in the
subsolidus region of the system Al₂O₃-SiO₂
W. G. Staley, Jr. (Pa. State Univ., 1968)
Dissertation Abstr. Int. 30B [3], 1322 (1969-70)
129. Development of noncrystalline material in subsolidus reactions
between silica and alumina
W. G. Staley, Jr. and G. W. Brindley (Mater. Res. Lab., Pennsylvania
State Univ., Univ. Park, Pa. 16802)
J. Am. Ceram. Soc. 52 [11], 616-19 (1969)
130. Diffusion studies in the Mo-Nb, Mo-Al, and Nb-Al systems with
microprobes
S. Steeb and R. Keppeler
Z. Naturforsch. 24A [10], 1601-06 (1969)
131. Reactions between carbon and oxygen in liquid iron
E. Steinmetz (Inst. Eisenhüttenw., Rhein.-Westfäl. Tech. Hochschule,
Aachen, Germ.)
Radex Rundschau 1969, 605-17
132. Sulphidation of metals and alloys
K. N. Strafford (Met. Dept., Univ. of Liverpool, U. K.)
Metals & Mater. 3, 409 (1969)
133. Diffusion of metal vapor species in porous aggregates
J. M. Svoboda and G. H. Geiger (Dept. Miner. & Metals Eng., Univ.
of Wisconsin, Madison, Wisc.)
Trans. Met. Soc. AIME 245 [11], 2363-71 (1969)

- H. 134. Studies on the TiC heater for vacuum evaporation source and its application to the Ti getter pump
S. Tabata
Rept. Govt. Ind. Res. Inst., Osaka No. 332, 45 p (Sept. 1969)
135. On a particular sensitivity to H_2 of Nb-Mo alloys
S. Talbot-Besnard (Ctr. Etudes. Chim. Mét., 94-Vitry/Seine, Fr.)
C. R. Acad. Sci. 269C, 962 (1969)
136. Formation of carbon black from acetylene at 1750-2100 K
P. A. Tesner and B. N. Altshuler (All Union Nat. Gas Inst., Moscow)
Dokl. Akad. Nauk SSSR 187 [5], 1100-02 (1969)
137. Synthesis and physicochemical properties of DyB_6
N. I. Timofeeva and E. N. Timofeeva
Zh. Prikl. Khim. 42 [10], 2339-41 (1969)
138. Oxidation of Ni containing small amounts of Cr
T. D. Tribbeck, J. W. Linnett and P. G. Dickens (Inorg. Chem. Lab., Univ. of Oxford, U. K.)
Trans. Faraday Soc. 65, 890-95 (1969)
139. Determination of O_2 in liquid steel
Ph. Tyou (Ctr. Nat. Rech. Mét., Service Rech. Anal., Liège, Belg.)
Rev. Mét. 66, 622 (1969)
140. Use of slag-metal S partition ratios to compute the low iron oxide activities in slags
A. S. Venkatadri and H. F. Bell (Met. Dept., Univ. of Strathclyde, Glasgow, Scotland)
Trans. Met. Soc. AIME 245 [10], 2319-23 (1969)
141. In vacuo reaction of UO_2 with C
V. G. Vlasov and V. V. Revebtsov
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 12 [3], 105-09 (May-June 1969)
142. Interaction of Cu and P in a Si melt
G. I. Voronkova, V. V. Voronkov, V. P. Grishin and M. I. Iglitsyn
(State Rare Met. Ind. Inst., Moscow)
Izv. Akad. Nauk SSSR, Neorg. Mater. 5 [10], 1691-94 (1969)
143. Growth and characterization of spinel single crystals for substrate use in integrated electronics
C. C. Wang (RCA Labs., Princeton, N. J. 08540)
J. Appl. Phys. 40 [9], 3433-44 (1969)
144. Czochralski growth and properties of $YAlO_3$ laser crystals
M. J. Weber, M. Bass and K. Andringa (Raytheon Res. Div., Waltham, Mass. 02154)
Appl. Phys. Letters 15 [10], 342-45 (1969)

- H. 145. U metal by C reduction of oxide
H. A. Wilhelm and J. K. McClusky (USAEC Ames Lab., Iowa State Univ., Ames, Iowa)
J. Metals 21 [12], 51-56 (Dec. 1969)
146. The microstructures and kinetics of internally oxidized dilute Zr-Y alloys
B. J. S. Wilkins and J. Charter (At. Energy Canada Ltd., Whiteshell Nucl. Establ., Pinawa, Manitoba, Can.)
J. Nucl. Mater. 31 [3], 288-99 (1969)
147. The compensation law for diffusion in silicates
P. Winchell (Gulf General Atomic Inc., San Diego, Calif. 92112)
High Temp. Sci. 1 [2], 200-15 (1969)
148. Oxidation of Fe-Ni alloys
G. L. Wulf, T. J. Carter and G. R. Wallwork (School of Met., Univ. of New South Wales, Kensington, N.S.W., Australia)
Corrosion Sci. 9, 689-701 (1969)
149. Mechanisms and phases present in the reduction of calcined dolomite by Si
J. R. Wynnycky (Univ. of Toronto, 1968)
Dissertation Abstr. Int. 30B [3], 1167 (1969-70)
150. Kinetic aspects of the reduction in gaseous phase of the iron oxides and ores. II
G. Zaffuto and F. Gauzzi (Univ. Roma, Ist. Met., Rome)
Met. Ital. 61, 57 (1969)

Part II. GASES

A. Spectroscopy of Interest to High Temperature Chemistry

1. Observation of optical radio-frequency double resonance in molecular fluorescence.
Crosley, David R.; Zare, Richard N. (Joint Inst. for lab. Astrophys., Boulder, Colo.).
J. Chem. Phys. 1968, 49(9), 4231-2 (Eng).
2. Photodissociation of the hydrogen molecule.
Comes, F. J.; Schmitz, B.; Wellern, H. O.; Wenning, U. (Univ. Bonn, Bonn, Ger.).
Ber. Bunsenges, Phys. Chem. 1968, 72(8), 986-91 (Ger).
3. Temperature determination of a magnesium flame.
Roessler, Fritz (Deut.-Franzoesischen Forschunginst. St.-Ludwig, Staint-Louis, Fr.).
Opt. Acta 1968, 15(5), 487-509 (Ger).
4. Dissociation energy and vibrational terms of groundstate $X^1\Sigma_g^+$ hydrogen.
LeRoy, Robert J.; Bernstein, Richard B. (Univ. of Wisconsin, Madison, Wis.).
J. Chem. Phys. 1968, 49(10), 4312-21 (Eng).
5. Theoretical calculations of the electronic states of C_2^+ .
Verhaegen, Georges (Univ. Libre Bruxelles, Brussels, Belg.).
J. Chem. Phys. 1968, 49(10), 4696-705 (Eng).
6. Atom reactions in discharge-flow systems.
Thrush, B. A. (Univ. Cambridge, Cambridge, Engl.).
Chem. Elementarprozesse 1968, 243-51 (Eng).
7. Photoionization cross section of Li^- .
Gezalov, Kh. B.; Ivanova, A. V. (Inst. Khim. Fiz., Moscow, USSR).
Dokl. Akad. Nauk Azerb. SSR 1968, 24(6), 13-15 (Russ).
CA Vol. 70, 24100d (1969).
8. SiH_5^+ formation in ionized silane-methane mixtures.
Beggs, David P.; Lampe, Frederick W. (Pennsylvania State Univ., University Park, Pa.).
J. Chem. Phys. 1968, 49(9), 4230-1 (Eng).
9. Spin-orbit coupling in molecular Rydberg states of the nitric oxide molecule.
Ackermann, F.; Miescher, E. (Univ. Basel, Basel, Switz.).
Chem. Phys. Lett. 1968, 2(6), 351-2 (Eng).

10. Assignment of a system of bands to a GeI [germanium iodide] radical.
Chatalic, Andre; Deschamps, Pascal; Pannetier, Guy (Lab. Cinet. Chim., Fac. Sci., Paris, Fr.).
C. R. Acad. Sci., Paris, Ser. C 1968, 267(16), 948-50 (Fr.).
11. Energy-transfer reactions of N_2 ($A^3(\Sigma_u^+)$). I. Quenching and emission by cyanogen, sulfur dioxide, and other molecules. Stedman, D. D.; Meyer, Jeffrey Alan; Setser, Donald W. (Kansas State Univ., Manhattan, Kans.).
J. Amer. Chem. Soc. 1968, 90(24), 6856-8 (Eng).
12. Mean life of the $2p^2 \ ^1D$ level in carbon III. Curnutte, B.; Bickel, W. S.; Girardeau, R.; Bashkin, S. (Univ. of Arizona, Tucson, Arizona).
Phys. Lett., A 1968, 27(10), 680-1 (Eng).
13. Time-resolved nanosecond emission spectroscopy: spectral shifts due to solvent-solute relaxation. Ware, W. R.; Chow, P.; Lee, S. K. (Univ. of Minnesota, Minneapolis, Minn.).
Chem. Phys. Lett. 1968, 2(6), 356-8 (Eng).
14. Rotational structure of a band assigned to a new transition in arsenic nitride. D'Incan, Jean; Femelat, Bernadette (Univ. Lyon, Lyons, Fr.).
C.R. Acad. Sci., Paris, Ser. A B 1968, 267B (16), 796-8 (Fr).
15. Interpretation of the $4f^2 6s$, $4f^2 5d$, and $4f^2 6p$ configurations of praseodymium (III). Feneuille, Serge; Pelletier-Allard, Nicole (Lab. A. Cotton, C.N.R.S., Orsay, Fr.).
Physica 1968, 40(3), 347-56 (Fr).
16. Experimental determination of the dipole moments of the $X(^2\Sigma^+)$ and $B(^2\Sigma^+)$ states of the cyanide molecule. Thompson, Ritchie; Dalby, Frederick W. (Univ. British Columbia, Vancouver, British Columbia).
Can. J. Phys. 1968, 46(24), 2815-19 (Eng).
17. Beam foil spectroscopy. Bashkin, Stanley (Univ. of Arizona, Tucson, Ariz.)
Appl. Opt. 1968, 7(12), 2341-50 (Eng).

18. Mean life measurements using the beam foil light source.
Bickel, William S. (Univ. of Arizona, Tucson, Ariz.)
Appl. Opt. 1968, 7(12), 2367-72 (Eng).
19. Intermediate coupling line strengths in the $2p^2$ - $2p3s$ arrays
of carbon I, nitrogen II, oxygen III.
Tatum, F. B. (Radley Coll., Abingdon, Engl.).
Mon. Notic. Roy. Astron. Soc. 1968, 140(1), 87-91 (Eng).
20. The influence of an electric field on the hyperfine structure
in the $4p^2P_{3/2}$ state of the copper I spectrum by using the
level-crossing technique.
Bucka, Hans; Kraetschmer, W; Metag, V.; New, Josef (Tech.
Univ. Berlin, Berlin, Ger.).
Z. Phys. 1969, 218(1), 83-94 (Ger).
21. Internuclear distance in gaseous barium sulfide.
Clements, R. M.; Barrow, Richard F. (Oxford Univ., Oxford,
Engl.).
Chem. Commun. 1968, (22), 1408 (Eng).
22. Spectroscopic studies of the vaporization of high temperature
materials.
Linevsky, Milton J. (Missile and Space Div., Gen. Elec. Co.,
Philadelphia, Pa.).
U.S. Clearinghouse Fed. Sci. Tech. Inform., AD 1968, AD-670626,
45 pp. (Eng).
23. Absorption of oxygen at elevated temperatures (300 to 900°K.)
in the Schumann-Runge system.
Hudson, Robert D.; Carter, Virginia L. (Aerosp. Corp., Los
Angeles, Calif.).
J. Opt. Soc. Amer. 1968, 58(12), 1621-9 (Eng).
24. Molecular beam electric resonance spectroscopy of lithium
hydrides.
Rothstein, Elaine (Univ. of California, Berkeley, Calif.).
1968, 74 pp (Eng). Avail. Univ. Microfilms, Ann Arbor,
Mich., Order No. 68-13,951. From Diss. Abstr. B. 1968,
29(4), 132-5.
25. Nature of the blue-green band system in the spectrum of the
BS molecule.
Koryazhkin, V. A.; Mal'tsev, A. A. (USSR).
Vestn. Mosk. Univ., Khim. 1968, 23(4), 92-4 (Russ). CA Vol. 70,
33003b (1969).

26. Emission cross sections of the first negative band system of nitrogen by electron impact.
Aarts, J.F.M.; De Herr, Frederick J.; Vroom, D.A. (FOM-Inst. At. Molecuulfys., Amsterdam, Neth.).
Physica 1968, 40(2), 197-206 (Eng).
27. Systematic trends of atomic oscillator strengths in isoelectronic sequences.
Wiese, Wolfgang L. (Nat. Bur. of Stand., Washington, D.C.).
Appl. Opt. 1968, 7(12), 2361-6 (Eng).
28. Metal vapor line spectra in hollow cathode discharge.
Asami, Y.; Sugawara, Y.; Tokiwa, Y.; Iijima, T. (Seikie Univ., Tokyo, Japan).
Seikei Daigaku Kogakubu Kogaku Hokoku 1967, No. 4, 268-9 (Japan). CA Vol. 70, 33017j (1969).
29. Estimate of the oscillator strength of the $^2P_{3/2}, 1/2 \leftarrow ^2S_{1/2}$ transition of the hydrogen atom.
Barker, John R.; Michael, J.V. (Carnegie-Mellon Univ., Pittsburgh, Pa.).
J. Opt. Soc. Amer. 1968, 58(12), 1615-20 (Eng).
30. Spectroscopic studies of scandium monofluoride and magnesium oxide.
Green, David William (Univ. of California, Berkeley, Calif.).
1968, 147 pp. (Eng). Avail. Univ. Microfilms, Ann Arbor, Mich., Order No. 68-13,909. From Diss. Abstr. B. 1968, 29(4), 1318.
31. Selenium nitride systems evolved during the chemiluminescent reaction of active nitrogen with selenium chlorides.
Dessaux, Odile; Goudmand, Pierre (Lab. Cinet. Chim., Paris, Fr.).
C. R. Acad. Sci., Paris, Ser. C 1968, 267(19), 1198-201 (Fr).
32. Millimeter- and submillimeter-wave spectra and molecular constants of lithium fluoride and lithium chloride.
Pearson, Edwin F.; Gordy, Walter (Duke Univ., Durham, N.C.).
Phys. Rev. 1969, 177(1), 52-8 (Eng).
33. Millimeter-wave spectra and molecular constants of lithium-6 deuteride and lithium-7 deuteride.
Pearson, Edwin F.; Gordy, Walter (Duke Univ., Durham, N.C.).
Phys. Rev. 1969, 177(1), 59-61 (Eng).
34. Photodetachment of electrons from SH^- .
Steiner, Bruce (Nat. Bur. of Stand., Washington, D.C.).
J. Chem. Phys. 1968, 49(11), 5097-104 (Eng).

35. Franck-Condon factors for ionizing transitions of oxygen carbon monoxide, nitric oxide, and hydrogen for the $\text{NO}^+(\text{A}^1\Sigma - \text{X}^1\Sigma)$ band system.
Nicholls, Ralph W. (York Univ., Toronto, Ont.).
Proc. Phys. Soc., London, At. Mol. Phys. 1968, [2]1 (6), 1196-211 (Eng).
36. Nature of the first excited electronic state in MgF.
Walker, T. E. H.; Richards, William Graham (Phys. Chem. Lab., Oxford, Engl.).
Proc. Phys. Soc., London, At. Mol. Phys. 1968, [2]1 (6), 1061-5 (Eng).
37. Spectra and structure of simple free radicals.
Herzberg, Gerhard (Nat. Res. Council, Ottawa, Can.).
Kagaku To Kogyo (Tokyo) 1968, 21(4), 474-82 (Japan). CA Vol. 70, 42365y (1969).
38. Franck-Condon factors for high rotational levels of nitrogen.
Shumaker, John B., Jr. (Nat. Bur of Stand., Washington, D.C.).
J. Quant. Spectrosc. Radiat. Transfer 1969, 9(1), 153-6 (Eng).
39. Quantitative correlations between rotational and vibrational spectroscopic constants in diatomic molecules.
Calder, G. Vincent; Ruedenberg, Klaus (Iowa State Univ., Ames, Iowa).
J. Chem. Phys. 1968, 49(12), 5399-415 (Eng).
40. H_2 Lyman band oscillator strengths.
Hesser, James E.; Brooks, Neil H.; Lawrence, George M. (Princeton Univ. Observ., Princeton, N. J.).
J. Chem. Phys. 1968, 49(12), 5388-94 (Eng).
41. Rotational structure of the 3050-3250-A. system of the BiF molecule.
Chaudhry, A. K.; Upadhyay, K. N.; Rai, D. K.; Mohanty, B. S. (Banaras Hindu Univ. Varanasi, India).
Proc. Phys. Soc., London, At. Mol. Phys. 1968, [2] 1(6), 1223-4 (Eng).
42. Vacuum ultraviolet emissions of active nitrogen.
Campbell, Ian McIntyre; Thrush, Brian A. (Univ. Cambridge, Cambridge, Engl.).
Trans. Faraday Soc. 1969, 65(1), 32-40 (Eng).
43. Spatially resolved measurement of electron concentration using absorption lines of a spectral series.
Ya'akobi, B. (Hebrew Univ. Jerusalem, Jerusalem, Israel).
J. Quant. Spectrosc. Radiat. Transfer 1969, 9(1), 137-41 (Eng).

44. Potential curves from molecular continuum-continuum emission.
II. Dissociation energy of diatomic helium $A^1\Sigma_u^+$.
Smith, Allan Laslett (Yale Univ., New Haven, Conn.).
J. Chem. Phys. 1968, 49(11), 4817-24 (Eng).
45. Potential curves and R dependence of electronic transition moments from molecular continuum-continuum emission spectra.
I. Theory.
Smith, Allan Laslett (Yale Univ., New Haven, Conn.).
J. Chem. Phys. 1968, 49(11), 4813-16 (Eng).
46. Relative band strengths for the AlO blue-green system.
Linton, C.; Nicholls, Ralph W. (York Univ., Toronto, Can.).
J. Quant. Spectrosc. Radiat. Transfer 1969, 9(1), 1-11 (Eng).
47. High-resolution study of the $C^3\Pi_u \rightarrow B^3\Pi_g(0,0)$ stimulated transitions in nitrogen.
Parks, Joel H.; Rao, D. Ramachandra; Javan, Ali (Massachusetts Inst. of Technol., Cambridge, Mass.).
Appl. Phys. Lett. 1968, 13(4), 142-4 (Eng).
48. Effect of atmosphere composition on the intensity of a titanium arc spectrum and the effect of arc discharge on the surface of titanium electrodes.
Vovk, V. N.; Odinokova, L.P.; Buby, S. I.; Vasil'eva, T. G.; Androsova, N. M. (USSR).
Sb. Tr. Vses. Nauch.-Issled. Proekt. Inst. Titana 1968, 2, 334-40 (Russ). From Ref. Zh., Met. 1968, Abstr. No. 6K66. CA Vol. 70, 42564n (1969).
49. Measurement of absorption oscillator strengths of barium II lines in the 1400-2000-A. and 4100-4600-A. spectral regions.
Von Specht, Juergen (Max-Planck-Inst. Phys. Astrophys., Garching/Munich, Ger.).
Z. Naturforsch., A 1968, 23(10), 1499-507 (Ger.).
50. Forbidden lines of Fe II in the photospheric spectrum.
Emerson, D.; Mallia, E. A. (Univ. Observ., Oxford, Engl.).
Solar Phys. 1968, 5(3), 303-8 (Eng).
51. Electron concentration measurement using the forbidden 2P-3P line of lithium.
Ya'akobi, B. (Hebrew Univ. Jerusalem, Jerusalem, Israel).
J. Quant. Spectrosc. Radiat. Transfer 1969, 9(1), 143-7 (Eng).

52. Survey of the first spectrum of protactinium.
Richards, E. W. T.; Stephen, Ian; Wise, H. S. (Chem. Div.,
At. Energy Res. Estab., Harwell, Engl.).
Spectrochim. Acta, Part B 1968, 23(10), 635-42 (Eng).
53. Spectrum of oxygen v.
Bockasten, Kjell; Johansson, Bertil (Uppsala Univ., Uppsala,
Swed.). U.S. At. Energy Comm. 1968, UUIP-574, 51 pp. (Eng).
Avail. Dep. From Nucl. Sci. Abstr. 1968, 22(20), 43862.
54. Polarized Raman spectra. III. Some important sum rules.
Ting, Chen-Hanson (Nat. Taiwan Univ., Taipei, Taiwan).
J. Chin. Chem. Soc. (Taipei) 1968, 15(1-2), 1-4 (Eng).
55. Inner and outer scattering tensor for vibrational Raman effect.
Koningstein, Johannes A. (Carleton Univ., Ottawa, Can.).
Chem. Phys. Lett. 1968, 2(7), 469-70 (Eng).
56. Measurements of the mean life of the 7^3S_1 state of mercury
excited by electron impacts, and of the population rate of
such a state by the $9p^1P_1^o \rightarrow 7s^3S_1$ transition.
Pardies, Jean (Lab. Phys. Exp., Fac. Sci. Bordeaux, Talence,
Fr.).
C.R. Acad. Sci., Paris, Ser. A,B 1968, 267B(21), 1144-5 (Fr).
57. Intermediate coupling oscillator strengths in silicon I.
Armstrong, Lloyd, Jr.; Liebermann, R. (Westinghouse Res. Lab.,
Pittsburgh, Pa.).
J. Quant. Spectrosc. Radiat. Transfer 1969, 9(1), 123-8 (Eng).
58. E.S.R. of vanadium(II) oxide in argon matrix at 4°K.;
establishment of its electronic ground state.
Kasai, Paul H. (Union Carbide Res. Inst., Tarrytown, N.Y.).
J. Chem. Phys. 1968, 49(11), 4979-84 (Eng).
59. Determination of bond dissociation energies in hydrogen cyanide.
Cyanogen and cyanogen halides by the photodissociation method.
Davis, Douglas Dale; Okabe, H. (Nat. Bur. of Stand., Washing-
ton, D.C.).
J. Chem. Phys. 1968, 49(12), 5526-31 (Eng).
60. Vacuum-ultraviolet photolysis of nitrous oxide. I.
Metastable species produced at 1470 Å.
Young, Robert Allen; Black, Graham; Slinger, Tom G. (Stanford
Res. Inst., Menlo Park, Calif.).
J. Chem. Phys. 1968, 49(11), 4769-76 (Eng).

B. Reaction Between Gases and Condensed Phases

1. Tungsten oxide ions.
Rybalko, V. F.; Kolot, V. Ya.; Fogel, Ya. M. (Fiz.-Tekh. Inst., Kharkov, USSR).
Fiz. Tverd. Tela 1968, 10(10), 3176-8 (Russ)., CA Vol. 70, 14024 (1969).
2. Volatility of fluorophosphate glasses.
Urusovskaya, L. N. (USSR).
Opt.-Mekh. Prom. 1968, 35(7), 41-6 (Russ). CA Vol. 70, 14073 (1969).
3. Degassing of vanadium.
Hoerz, Gerhard (Max-Planck-Inst. Metallforsch., Stuttgart, Ger.).
Z. Metallk. 1968, 59(10), 832-4 (Ger).
4. Staurolite stability in a part of the system iron-aluminum-silicon-oxygen-hydrogen.
Richardson, Stephen W. (Geophys. Lab., Washington, D. C.)
J. Petrology 1968, 9(3), 467-88 (Eng).
5. Jadeite, analcite, nepheline, and albite at high temperature and pressures.
Newton, M.S.; Kennedy, G. C. (Univ. of California, Los Angeles, California).
Amer. J. Sci. 1968, 266(8), 728-35 (Eng).
6. Thermal stability of chloritoid at high pressure and relatively high oxygen fugacity.
Ganguly, Jibamitra; Newton, R. C. (Yale Univ., New Haven, Conn.).
J. Petrology 1968, 9(3), 444-66 (Eng).
7. Experimental studies on the system Fe-Mgo-SiO-O₂ and their bearing on the petrology of chondritic meteorites.
Larimer, John W. (Univ. of Chicago, Chicago, Ill.).
Geochim. Cosmochim. Acta 1968, 32(11), 1187-207 (Eng).
8. Effusion from Knudsen cells with conical channels.
Dunham, T. E.; Hirth, John P. (Lamp Metals and Components Dep., Gen. Elec. Co., Cleveland, Ohio).
J. Chem. Phys. 1968, 49(10), 4650-9 (Eng).
9. Partial pressure of sodium chloride vapor in a sodium chloride-strontium chloride system.
Glazov, V. I.; Naryshkin, I. I. (Leningrad. Politekh. Inst. im. Kalinina, Leningrad, (USSR).
Zh. Prikl. Khim. (Leningrad) 1968, 41(10), 2297-9 (Russ). CA Vol. 70, 23084 (1969).

10. Analysis of the vapor pressure of potassium chloride-rubidium chloride solid solutions.
Leadbetter, A. J.; Makarov, L. L. (Univ. Bristol, Bristol, Engl.).
Trans. Faraday Soc. 1968, 64(12), 3224-31 (Eng).
11. Mass spectrometric study of the vaporization of magnesium, calcium, magnesium hydride.
Ehlert, Thomas C.; Hilmer, R. M.; Beauchamp, E. A. (Marquette Univ., Milwaukee, Wis.).
J. Inorg. Nucl. Chem. 1968, 30(11), 3112-15 (Eng).
12. Reaction of oxygen at lithium oxide surfaces.
Bickley, R. I.; Stone, Frank S. (Univ. Bristol, Bristol, Engl.).
Trans. Faraday Soc. 1968, 64(12), 3393-402 (Eng).
13. Dissociation pressures in the system LaH_2 - LaH_3 , 250-450°.
Messer, Charles E.; Hung, Gilbert W. H. (Tufts Univ., Medford, Mass.).
J. Phys. Chem. 1968, 72(12), 3958-62 (Eng).
14. Dissociation of boron nitride in a gas stream.
Dushin, Yu. A.; Dmitriev, A. V. (USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1968, 4(9), 1596-8 (Russ).
15. Molecular composition of the vapor in the tellurium-selenium system.
Ustyugov, G. P.; Vigdorovich, E. N.; Kudryavtsev, A. A. (USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1968, 4(10), 1796-7 (Russ).
CA Vol. 70, 23646 (1969).
16. Phase relations between the two forms of uranium sesquinitride, U_2N_3 .
Laugier, Jean; Martin, Jean Marie (Centre Etud. Nucl. Grenoble, Fr.).
J. Nucl. Mater. 1968, 28(2), 215-17 (Fr).
17. Carbide-hydride phase formation in certain transition metals.
Bazhenova, L. M.; Medvedovs'kii, O. B. (USSR).
Visn. Kiev. Politekh. Inst., Ser. Khim., Mashinobuduv. Tekhnol. 1967, No. 3, 167-73 (Ukranian). From Ref. Zh., Met. 1967, Abst. No. 12130. CA Vol. 70, 23653 (1969).
18. Vaporization thermodynamics of trieuropium tetroxide.
Haschke, John M.; Eick, Harry A. (Michigan State Univ., East Lansing, Mich.).
J. Phys. Chem. 1968, 72(12)-4235-9 (Eng).

- B. 19. Mass spectrometric study of the rhenium-oxygen system.
Battles, James E.; Gundersen, G. E.; Edwards, Russell K. (Argonne Nat. Lab., Argonne, Ill.).
J. Phys. Chem. 1968, 72(12), 3963-9 (Eng).
20. Vaporization of aluminum phosphide.
De Maria, Giovanni; Gingerich, Karl A.; Piacente, Vincenzo (Univ. Studi Roma, Rome, Italy).
J. Chem. Phys. 1968, 49(10), 4705-10 (Eng).
21. Instrumentation for time-resolved mass spectrometry application to laser vaporization of solid materials.
Lincoln, Kenneth A. (Nav. Radiol. Def. Lab., San Francisco, Calif.).
U. S. Clearinghouse Fed. Sci. Tech. Inform. 1968, AD-669453, 24 pp. (Eng). Avail. CFSTI. From U. S. Govt. Res. Develop. Rep. 1968 68(14), 97.
22. Mass-spectrometric sampling and detection of intermediates in gaseous reactions.
Cuthbert, J. (At. Energy Res. Estab., Harwell, Engl.).
Advan. Mass Spectrom. 1966, 3, 821-39 (Eng).
23. Staurolite stability in a part of the system iron-aluminum-silicon-oxygen-hydrogen.
Richardson, Stephen W. (Geophys. Lab., Washington, D. C.).
J. Petrology 1968, 9(3), 467-88 (Eng).
24. Jadeite, analcite, nepheline, and albite at high temperatures and pressures.
Newton, M. S.; Kennedy, G. C. (Univ. of California, Los Angeles, Calif.).
Amer. J. Sci. 1968, 266(8), 728-35 (Eng).
25. Thermal stability of chloritoid at high pressure and relatively high oxygen fugacity.
Ganguly, Jibamitra; Newton, R. C. (Yale Univ., New Haven, Conn.).
J. Petrology 1968, 9(3), 444-66 (Eng).
26. Experimental studies on the system Fe-MgO-SiO₂-O₂ and their bearing on the petrology of chondritic meteorites.
Larimer, John W. (Univ. of Chicago, Chicago, Ill.).
Geochim. Cosmochim. Acta 1968, 32(11), 1187-207 (Eng).
27. Niobium-hydrogen and tantalum-hydrogen systems.
Amato, Ignazio; Negro, A (Inst. Gen. Appl. Chem., Turin, Italy).
J. Less-Common Metals 1968, 16(4), 468-71 (Eng).

- B. 28. Sublimation rate of copper in vacuo related to absorption and to Surface structure.
Bariaux, D.; Ponslet, Andre (Univ. Libre Bruxelles, Brussels, Belg.). SCI(Soc. Che. Ind., London) Monogr. 1968, No. 28, 86-8 (Eng).
29. Fusion and vaporization characteristics of $ZrTe_3O_8$.
Sorrell, Charles A. (Univ. of Illinois, Urbana, Ill.). J. Amer. Ceram. Soc. 1968, 51(12), 674-7 (Eng).
30. Mechanism of sublimation.
Somorjai, Gabor A. (Lawrence Radiat. Lab., Univ. of California, Berkeley, Calif.). Science 1968, 162 (3855), 755-60 (Eng).
31. Kinetics of vaporization of sodium chloride.
Lester, Joseph E. (Univ. of California, Berkeley, Calif.). 1968, 126 pp. (Eng). Avail. Univ. Microfilms, Ann Arbor, Mich., Order No. 68-13,931. From Diss. Abstr. B 1968, 29(4), 1295.
32. Vaporization equilibriums in the sodium chloride-zinc chloride system.
Rice, Donald W.; Gregory, Norman W. (Univ. of Washington, Seattle, Wash.). J. Phys. Chem. 1968, 72(13), 4524-8 (Eng).
33. Association in mixed alkali halide vapors.
Guion, Jacky; Hengstenberg, D.; Blander, Milton (Aerosp. and Syst. Group, North Amer. Rockwell Corp., Thousand Oaks, Calif.). J. Phys. Chem. 1968, 72(13), 4620-7 (Eng).
34. Experimental thermochemistry at high temperatures.
Kubaschewski, Oswald (Nat. Phys. Lab., Teddington, Engl.). Naturwissenschaften 1968, 55(11), 525-33 (Ger).
35. Mass spectrometric study of the thermodynamic properties of a sodium fluoride-aluminum fluoride system. I. Calculations of enthalpy and the free energy of formation of sodium aluminum fluoride ($NaAlF_4$) in the gas phase.
Sidorov, L. N.; Kolosov, E. N. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). Zh. Fiz. Khim. 1968, 42(10), 2617-20 (Russ). CA Vol. 70, 32139 (1969).
36. Mass spectrometric study of the thermodynamic properties of a sodium fluoride-aluminum fluoride system. II. Thermodynamic properties of the condensed phase of a sodium fluoride-aluminum fluoride system.
Sidorov, L. N.; Kolosov, E. N.; Shol'ts, V. B. (Mosk. Gov. Univ. im. Lomonosova, Moscow, USSR). Zh. Fiz. Khim. 1968, 42(10), 2620-3 (Russ). CA Vol. 70, 32140 (1969).

- B. 37. Mass-spectrometric analysis of carbon species generated by laser evaporation.
Zavitsanos, P. D. (Missile and Space Div., Gen. Elec. Co., Philadelphia, Pa.).
Carbon (Oxford) 1968, 6(5), 731-7 (Eng).
38. Bending frequencies and new dimer modes in the far-infrared spectra of transition-metal dihalides.
Thompson, Kenneth R.; Carlson, K. Douglas (Case Western Reserve Univ., Cleveland, Ohio).
J. Chem. Phys. 1968, 49(10), 4379-84 (Eng).
39. Henry's-law constant measurements for fission products absorbed in silicates.
Norman, J. H.; Winchell, P.; Staley, H. G.; Tagami, M.; Hiatt, M. (Gen. At. Div., Gen. Dyn. Corp. San Diego, Calif.).
Thermodyn. Nucl. Mater., Proc. Sump., Vienna 1967 (Pub. 1968), 209-25 (Eng). Int. At. Energy Agency: Vienna, Austria.
40. High-temperature furnace (2400°K) in an oxidizing atmosphere.
Dembinski, Drzysztof; Faucher, Michele; Anthony, Anne M. (Lab. Exchanges Term., C.N.R.S., Bellevue-Meudon, Fr.).
C. R. Acad. Sci., Paris, Ser. C 1968, 267 (19), 1185-7 (Fr.).
41. Oxidation state of a metal and activity of oxygen in a rimmed steelmaking bath.
Elanskii, G. N.; Kudrin, V. A. (USSR).
Fiz.-Khim. Osn. Proizvod. Stali 1968, 161-4 (Russ). CA Vol. 70 31025 (1969).
42. Effect of pressure on the solubility of hydrogen in molten alloys of iron with titanium.
Morozov, A. N.; Danilovich, Yu. A. (USSR).
Izv. Akad. Nauk SSSR, Metal. 1968, (6), 220-2 (Russ). CA Vol. 70 31083 (1969).
43. Solubility of nitrogen and effect of oxygen in molten iron.
Wada, Harue; Gunji, Koli; Wada, Tsuguyasu (Nat. Res. Inst. Metals Tokyo, Japan).
Nippon Kinzoku Gakkaishi 1968, 32(9), 831-6 (Japan). CA Vol. 70 31084 (1969).
44. Solubility of nitrogen in molten iron-nickel and iron-chromium alloys.
Wada, Harue; Gunji, Koki; Wada, Tsuguyasu (Nat. Res. Inst. Metals Tokyo, Japan).
Nippon Kinzoku Gakkaishi 1968, 32(10), 933-8 (Japan) CA Vol. 70 31085 (1969).

- B. 45. Kinetics of gassing and degassing of Group VA metals.
Hoerz, Gerhard (Max-Planck-Inst. Metallforsch., Stuttgart, Ger.)
Metall(Berlin) 1968, 22(12), 1201-5 (Ger).
46. High-energy molecular beams.
Anderson, James B. Fenn, John B. (Princeton Univ., Princeton, N. J.).
U. S. Clearinghouse Fed. Sci. Tech. Inform., 1968, AD 673522, 18 pp.
(Eng). Avail. CFSTI. From U. S. Govt. Res. Develop. Rep. 1968
68(20), 52.
47. Parameters affecting Knudsen effusion. V. Freepath considerations
in small Knudsen cells.
Ward, John William (Los Alamos Sci. Lab., Los Alamos, N. Mex.).
J. Chem. Phys. 1968, 49(11), 5129-32 (Eng).
48. Mass-spectrometric studies of the gaseous systems gold-nickel,
gold-cobalt, and gold-iron, and dissociation energies of AuNi, AuCo,
and AuFe.
Kant, Arthur (Army Mater. and Mech. Res. Center, Water town, Mass.).
J. Chem. Phys. 1968, 49(11), 5144-6 (Eng).
49. Surface dissociation of potassium chloride by low-energy electron
bombardment.
Palmberg, P. W.; Rhodin, Thor N. (Cornell Univ., Ithaca, N. Y.).
J. Phys. Chem. Solids 1968, 29(11), 1917-24 (Eng).
50. Partial pressure of silicon over a silicon-boron alloy.
Tsephyayeva, A. V.; Priselkov, Yu. A. (USSR).
Vestn. Mosk. Univ., Khim. 1968, 23(4), 103-4 (Russ). CA Vol. 70
40925 (1969).
51. Dissociation of hydrogen on tantalum using a modulated molecular
beam technique.
Krakowski, Robert A.; Olander, Donald R. (Lawrence Radiat. Lab.,
Univ. of California, Berkeley, Calif.).
J. Chem. Phys. 1968, 49(11), 5027-41 (Eng). See CA 68: 53721.
52. Solubility of hydrogen in tungsten at high temperatures and pressures.
Mazaev, A. A.; Avarbe, R. G.; Vil'k, Yu. V. (USSR).
Izv. Akad. Nauk SSSR, Metal. 1968, (6), 223-6 (Russ). CA Vol. 70
41288 (1969).
53. Saturated vaporpressure over indium arsenide-gallium arsenide
solid solutions.
Ufimtsev, V. B.; Vigdorovich, V. N.; Krestovnikov, A. N. (Mosk.
Inst. Stali Splavov, Moscow, USSR).
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 1968, 11(5), 60-3 (Russ).
CA Vol. 70, 41379 (1969).

- B. 54. Thermodynamics of gaseous monoxide-dioxide equilibria for cerium, praseodymium, and neodymium.
Staley, H. Gene; Norman, John H. (Gulf Gen. At. Inc., San Diego, Calif.).
Int. J. Mass Spectrom. Ion Phys. 1969, 2(1), 35-43 (Eng).
55. High-temperature thermodynamic properties of oxygen-deficient urania.
Tetenbaum, Marvin; Hunt, P. D. (Chem. Eng. Div., Argonne Nat. Lab., Argonne, Ill.).
J. Chem. Phys. 1968, 49(11), 4739-44 (Eng).
56. Thermochemistry of UOS; evaporation of uranium(II) sulfide-uranium dioxide mixtures; on the attainment of equilibrium in Knudsen cells.
Cater, E. David; Rauh, E. G.; Thorn, R. J. (Univ. of Iowa, Iowa City, Iowa).
J. Chem. Phys. 1968 49(12), 5244-53 (Eng).
57. Mass-spectrometric determination of heat of sublimation of uranium.
Patoret, Andre; Drowart, Jean; Smoes, Simone (Univ. Libre, Brussels, Belg.).
Trans. Faraday Soc 1969, 65(1), 98-112 (Eng).
58. Ternary metal-nonmetal-hydrogen systems.
Korst, William L. (Atomics International, Canoga Park, Calif.).
U. S. At. Energy Comm. 1967, NAA-SR-Memo-11849, 13 pp. (Eng).
Avail. Dep.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(20), 43660.
59. Electron diffraction by a jet of high pressure carbon dioxide. Demonstration of phase changes.
Jaegle, Alain; Duguet, Alain, Rouault, Marcel (Lab. Diffraction Electron., Fac. Sci., Orsay, Fr.).
C. R. Acad. Sci., Paris, Ser. A,B 1968, 267B (20), 1081-3 (Fr).
60. Mass spectra of germanium disulfide and germanium diselenide vapors.
Karbanov, S. G.; Belousov, V. I.; Zlomanov, V. P.; Novoselova, A. V. (USSR).
Vestn. Mosk. Univ., Khim. 1968, 23(5), 93-5 (Russ). CA Vol. 70, 42031m (1969).
61. Reaction of hydrogen with cerium metal at various temperatures.
Gayer, Karl H.; Melotik, D. J. (Wayne State Univ., Detroit, Mich.).
Z. Anorg. Allg. Chem. 1968, 363(1-2), 105-12 (Eng).

- B. 62. Principles of thermometry (measurement of temperature).
Corruccini, R. J. (Cryogenic Eng. Lab., Nat. Bur. of Stand.,
Boulder, Colo.).
Treatise Anal. Chem. 1968, 8(Pt.1), 4937-90 (Eng).
63. Isopiestic balance.
Elliott, Guy R. B. (Los Alamos Sci. Lab., Los Alamos, N. Mex.).
U. S. At. Energy Comm. 1966, LA-3939, 20 pp. (Eng.). Avail.
Dep.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(19), 40486.
64. Solubility and rate of permeation of hydrogen in iron-nickel
and iron-manganese austenitic alloys.
Kodes, E. S.; Gol'tsov, V. A.; Gel'd, P. V. (USSR).
Tr. Ural. Politekh. Inst. 1968, No. 167, 20-5 (Russ). CA Vol. 70
40037u 1969.
65. Equivalent action of additive elements on the solubility,
activity and activity coefficients of nitrogen in melts rich
in iron. II. Multicomponent systems of Fe-N-X₁-X₂ . . . X_n
at 1600°C.
Schuermann, Eberhard; Kunze, Hans D. (Tech. Hochsch, Clausthal,
Ger.).
Arch. Eisenhuettenw. 1967, 38(9), 685-9 (Ger). See CA 69:79417x
66. Contamination of reactive metals in vacuum heat-treating at
various vacuum levels.
Bunshah, Rointan F. (Lawrence Radiat. Lab., University of Calif.
Livermore, Calif.).
U. S. At. Energy Comm. 1968, UCRL-71029 16 pp. (Eng). Avail.
Dep.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(20), 43572.
67. Solubility of nitrogen in cobalt, cobalt-titanium, and cobalt-
molybdenum melts.
Averin, V. V.; Cherkasov, P. A.; Samarin, A. M. (USSR).
Fiz.-Khim. Osn. Proizvod. Stali 1968, 287-92 (Russ). CA Vol 70
40218d 1969.
68. Solubility of nitrogen and conditions for the formation of
nitrides in molten alloys based on iron and nickel.
Isaev, V. F.; Danilovich, Yu. A.; Morozov, A. N. (USSR).
Fiz.-Khim. Osn. Proizvod. Stali 1968 296-301 (Russ). CA Vol. 70
40220y 1969.
69. Solubility of nitrogen in molten nickel-base alloys.
Stomakhin, A. Ya.; Polyakov, A. Yu. (USSR).
Fiz.-Khim. Osn. Proizvod. Stali 1968, 292-5 (Russ). CA Vol. 70
40221z 1969.

- B. 70. Physical-chemical bases and technological development of the production of pure molybdenum trioxide by sublimation.
Belyaevskaya, L. V.; Zelikman, A. N.; Kunev, D.; Prosenkova, T. E.; Naramovskii, I. V. (USSR).
Sb., Mosk. Inst. Stali Splavov 1968, No. 45, 46-60 (Russ) CA Vol. 70 49050a (1969).
71. Effect of temperature on water solubility in an albite melt at high pressures.
Kadik, A. A.; Lebedev, E. B. (Inst. Geokhim. Anal. Khim. im. Vernadskogo, Moscow, USSR).
Geokhimiya 1968, (12), 1444-55 (Russ) CA Vol. 70, 49310k (1969)
72. Activity of arsenic in dilute arsenic-lead alloys at 703°.
McClincy, R. J.; Larson, Andrew H. (Colorado Sch. of Mines, Golden, Colo.).
Trans. Met. Soc. AIME (Amer. Inst. Mining, Met., Petrol. Eng.) 1969, 245, 173 (Eng).
73. Chemical activities of chromium and molybdenum in solid chromium-molybdenum alloys.
Dickson, D. S.; Myers, James R.; Pool, Monte J.; Saxer, Richard K. (Air Force Inst. of Technol., Wright-Patterson Air Force Base, Ohio).
Trans. Met. Soc. AIME (Amer. Inst. Mining, Met., Petrol. Eng.) 1969, 245, 175-7 (Eng).
74. High-temperature solubility of nitrogen in tungsten.
Fromm, Eckehard; Jehn, Hermann (Inst. Sondermet., Max-Planck-Inst. Metallforsch., Stuttgart, Ger.).
J. Less-Common Metals 1969, 17(1), 124-6 (Ger).
75. Solubility of nitrogen in molten nickel and in nickel-chromium, nickel-molybdenum, and nickel-tungsten metals.
Fedorchenko, V. I.; Averin, V. V.; Samarin, A. M. (Inst. Met. im. Baikova, Moscow, USSR).
Dokl. Akad. Nauk SSSR 1968 183(4), 894-6 (Russ).
76. Development of a triple Knudsen cell and its use to study the activity of copper in the b.c.c (body-centered-cubic) β -phase of the titanium-copper system.
Hackworth, James V. (Univ. of Cincinnati, Cincinnati, Ohio).
1968, 90 pp. (Eng). Avail. Univ. Microfilms, Ann Arbor, Mich., Order No. 68-15202. From Diss. Abstr. B 1968, 29(5), 1705-6.
77. Permeation, diffusion, and solubility of deuterium in Pyrex Glass.
Laska, H. M.; Doremus, R. H.; Jorgensen, Paul J. (Gen. Elec. Res. and Develop. Center, Schenectady, N.Y.).
J. Chem. Phys. 1969, 50(1), 135-7 (Eng).

- B. 78. Heat of proton solvation.
De Pas, M.; Leventhal, J. J.; Friedman, L. (Chem. Dept.,
Brookhaven Nat. Lab., Upton, N. Y.)
J. Chem. Phys. 1968, 49(12), 5543-4.
79. Chemical transport with sulfur as transport agent.
Schaefer, H.; Wehmeier, F.; Trenkel, M. (Westfael-Wilhelms Univ.
Muenster, Muenster, Ger.).
J. Less-Common Metals 1968, 16(3), 290-1 (Ger).
80. Vapor pressure over liquid antimony sulfide.
Ryazantsev, A. A.; Pashinkin, A. S.; Novoselova, A. V. (USSR).
Vestn. Mosk. Univ., Khim. 1968, 23(5), 95-6 (Russ). CA Vol. 70,
50820 (1969).
81. Saturated vapor pressure of solid and liquid germanium monosulfides and
monoselenides.
Karbanov, S. G.; Zlomanov, V. P.; Novoselova, A. V. (Mosk. Gos.
Univ. im. Lomonosova, Moscow, USSR).
Izv. Akad. Nauk. SSSR, Neorg. Mater. 1968, 4(11), 1874-7 (Russ).
CA Vol. 70, 50822 (1969).
82. Experimental measurement of vapor pressure of potassium on a
constant volume piezometer.
Shpil'rain, E. E.; Totskii, E. E.; Shereshevskii, V. A. (USSR).
Teplofiz. Vys. Temp. 1968, 6(5), 924-6 (Russ). CA Vol. 70,
50825 (1969).
83. Vapor pressure and composition in sodium chloride-iron(III)
chloride and sodium chloride-aluminum chloride systems.
Galitskii, N. V. (USSR).
Zh. Neorg. Khim. 1968, 13(11), 3120-5 (Russ). CA Vol. 70,
50826 (1969)
84. Molecular composition of tellurium in the gas phase.
Ustyugov, G. P.; Vigdorovick, E. N. (USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1968, 4(11), 2022-4 (Russ).
CA Vol. 70, 50827 (1969).
85. Mass-spectrometric investigation of oxygen adsorption on the
(110) face of a molybdenum single crystal.
Vas'ko, M. P.; Ptushins'kii, Yu. G. (Inst. Fiz., Kiev, USSR).
Ukr. Fiz. Zh. (Ukr. Ed.) 1968, 13(10), 1730-2 (Ukrain).
CA Vol. 70, 50860 (1969).
86. Kinetics of the attack of rhenium by atomic and diatomic oxygen
at high temperatures.
Rosner, Daniel E.; Allendorf, H. Donald (Aero Chem. Res. Lab.,
Inc., Sybron Corp., Princeton, N. J.).
J. Chem. Phys. 1968, 49(12), 5553-5.

- B. 87. Silver-oxygen system in the pressure range 0.2-750 atm., and some measurements on silver-nitrogen and gold-oxygen equilibriums. Baker, Edward H.; Talukdar, M. I. (Imp. Coll., London, Engl.). Inst. Mining Met., Trans. Sect. C 1968, 77 (Sept.), C128-C133.
88. Three-dimensional diagram for the silver-oxygen system. Baker, Edward H.; Talukdar, M. I. (Imp. Coll., London, Engl.). Inst. Mining Met., Trans. Sect. C 1968, 77 (Sept.), C168-C169.
89. Determination of high-temperature solution thermodynamics using a mass spectrometer. Svedberg, Robert C. (Imp. Coll. Sci. Technol., London, Engl.). Mod. Aspects Mass Spectrom., Proc. NATO Advan. Study Inst. Mass Spectrom., 2nd 1966 (Pub. 1968), 169-94 (Eng).
90. Determination of thermodynamic parameters of crystalline oxide mixed phases by measurement of oxygen partial pressure. Schroecke, H.; Trumm, A. (Univ. Muenchen, Munich, Ger). Neues Jahrb, Mineral., Abh. 1968, 109(1-2), 1-24 (Ger).
91. MONAT: Fortran 63 program for computing thermodynamic properties of monatomic ideal gases. Fontana, Mario H. (Oak Ridge Nat. Lab., Oak Ridge, Tenn.). U. S. At. Energy Comm. 1968, ORNL-4305, 19 pp. (Eng). Avail. Dep.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(22), 47113.
92. Thermodynamic study of titanium vanadium, and chromium halides. Shchukarev, S. A.; Korol'kov, D. V. (USSR). Probl. Sovrem. Khim. Koord. Soedin., Leningrad. Gos. Univ. 1968, No. 2, 52-76 (Russ). CA Vol. 70, 51280 (1969).
93. Thermodynamics of gaseous forms of selenium oxides and hydrates. Dobrotin, R. B.; Suvorov, A. V.; Gadzhiev, S. M. (USSR). Probl. Sovrem. Khim. Koord. Soedin., Leningrad. Gos. Univ. 1968, No. 2, 23-52 (Russ). CA Vol. 70, 51281 (1969).
94. Thermodynamic functions of dissociating steam in the range 1000-5000°K. and 0.001-100 bars. Kmonicek, Vladimir; Hoffer, Vladimir (Ceskoslov. Akad. Ved., Prague, Czech.). Acta Tech. (Prague) 1968, 13(4), 501-12.
95. Vaporization of strontium atom and ion from strontium oxide on tungsten and rhenium. Asano, Mitsuru; Kubo, Kenji; Magari, Saburo (Kyoto Univ., Kyoto, Japan). Shitsuryo Bunseki 1968, 16(4), 315-22.

- B. 96. Mass spectrometric studies of plutonium compounds of high temperatures. I. Heats of vaporization of gold and plutonium and the heat of decomposition of plutonium mononitride. Kent, Richard A.; Leary, Joseph A. (Los Alamos Sci. Lab., Los Alamos, N. Mex.).
U. S. At. Energy Comm. 1968, LA-3902, 20 pp. (Eng). Avail.
Dept.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(18), 37713.
97. Heat capacity and thermodynamic functions of selenium dioxide. Mal'tsev, A. K.; Pashinkin, A. S.; Bakeeva, S. S.; Zhdanov, V. M. (Mosk. Khim.-Tekhnol. Inst. im. Mendeleeva, Moscow, USSR).
Zh. Fiz. Khim. 1968, 42(10), 2615-17 (Russ). CA Vol. 70, 51338 (1969).
98. Direct measurement at 1100° of the partial molar mixing enthalpies of oxygen in UO_{2+x} close to uranium dioxide, using a Calvet high-temperature microcalorimeter. Gerdanian, P.; Dode, M. (Lab. Chim. Thermodyn., Fac. Sci., Orsay, Fr.).
Thermodyn. Nucl. Mater., Proc. Symp., Vienna 1967, (Pub. 1968), 41-54 (Fr).
99. Zinc oxide vapor pressure measurement at high temperature. Bratanov, V.; Kunchev, K. (Bulg.). Rudodobiv Met. 1968, 23(3), 38-41 (Bulg.).
100. Approximate calculation of the vaporization entropy of some inorganic compounds. Ivanova, L. I. (Krasnoyarsk. Inst. Tsvet. Metal., Krasnoyarsk, USSR)
Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 1968, 11(4), 11-15 (Russ). CA Vol. 70, 51366 (1969).
101. Preparation of crystals of the tungsten oxides, WO_2 and $W_{20}O_{58}$, by chemical transport reactions. Kleber, Will; Raidt, Helmut; Dehlwes, U. (Humboldt-Univ., Berlin, Ger.).
Krist. Tech. 1968, 3(2), 153-60 (Ger).
102. Crystal growth of ternary metal oxides by chemical transport. Emmenegger, Franzpeter (Lab. RCA Ltd., Zurich, Switz.).
J. Cryst. Growth 1968, 3-4, 135-140.
103. Transport reaction for the growth of praseodymium phosphide. Mironov, K. E. (Inst. Inorg. Chem., Novosibirsk, USSR).
J. Cryst. Growth 1968, 3-4, 150-2 (Eng).
104. Thermal stability of praseodymium monophosphide. Mironov, K. E.; Vasil'eva, I. G.; Mironov, Yu. I.; Prokhorova, N. M. (Inst. Neorg. Khim., Novosibirsk, USSR).
Izv. Akad. Nauk SSSR, Neorg. Khim. 1968, 4(11), 1869-73 (Russ). CA Vol. 70, 51617 (1969).

- B. 105. Mass-spectrometric evidence of N_5^+ .
Broemer, Herbert H.; Fette, Klaus (Tech. Univ., Brunswick, Ger.).
Phys. Lett. A 1968, 28(2), 127-8 (Eng).
106. Mass-spectrographic analysis of silver-membrane oxygen leak.
Burroughs, E. G. (Night Vision Lab., Fort Belvoir, Ba.).
Rev. Sci. Instrum. 1969, 40(1), 33-5.
107. Photodetachment of $[OH(H_2O)]^-$.
Golub, Stephen; Steiner, Bruce (Nat. Bur. of Stand., Washington, D. C.).
J. Chem. Phys. 1968, 49(11), 5191-2.
108. Chemistry of gaseous ions.
Mahan, Bruce H. (Univ. of California, Calif.).
Vortex 1968, 29(9), 454-63 (Eng).
109. Crystals and molecules in molecular jets. Electron-diffraction study.
Raoult, Bernard; Farges, Jean; Rouault, Marcel (Lab. Diffraction Electron., Fac. Sci., Orsay, Fr.).
C. R. Acad. Sci., Paris, Ser. A B 1968, 267B (18), 942-5 (Fr.).
110. Reactively sputtered oxide films.
Lieberman, M. L.; Medrud, Ronald C. (Res. and Develop. Lab., Corning Glass Works, Corning, N. Y.).
J. Electrochem. Soc. 1969, 116(2), 242-7.
111. Diffusion of hydrogen in a Cu_3Pd alloy.
Vykhodets, V. B.; Gol'tsov, V. A.; Gel'd, P. V. (Ural. Politekh. Inst. im. Kirova, Sverdlovsk, USSR).
Fiz. Metal. Metalloved. 1968, 26 (5), 933-5 (Russ). CA Vol. 70 61213 (1969).
112. Vapor pressure of tellurium dioxide.
Malinauskas, Anthony P. (Oak Ridge Nat. Lab., Oak Ridge, Tenn.).
U. S. At. Energy Comm. 1968, ORNL-4300, 19 pp. (Eng). Avail. Dept.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(23), 49818.
113. Vapor pressure of aluminum chloride in fused aluminum chloride-potassium chloride and aluminum chloride-lithium chloride mixtures.
Narita, Toshio; Ishikawa, Tatsuo; Midorikawa, Rinzo (Hokkaido Univ., Sapporo, Japan).
Denki Kagaku 1968, 36(10), 749-54 (Japan). CA Vol. 70, 61313 (1969).
114. Measurements of arc temperatures (about 6000°K.) by line reversal.
Snelleman, W. (Dept. Phys., Utrecht, Neth.).
Abundance Determinations Stellar Spectra, Int. Astron. Union, Symp., 26th 1964 (Pub. 1966), 89-91.

- B. 115. Molecular association of rubidium and cesium halides in the gas phase.
Murgulescu, Ilie G.; Topor, Letitia (Inst. Phys. Chem., Bucharest, Rom.).
Rev. Roum. Chim. 1968, 13 (9), 1109-18 .
116. Thermodynamic properties of mixtures of fused salts. VIII. Saturated Vapor composition of a sodium chloride-sodium iodide system.
Yarym-Agaev, N. L.; Tseitlenok, T. A. (Donets. Politekh. Inst., Donetsk, USSR).
Zh. Fiz. Khim. 1968, 42(12), 3028-32 (Russ). CA Vol. 70, 61796 (1969).
117. Partial excess entropies of hydrogen in metals.
Gallagher, P. T.; Oates, W. A. (Univ. Newcastle, Newcastle, Aust.).
Trans. Met. Soc. AIME (Amer. Inst. Mining, Met., Petrol. Eng.) 1969, 245, 179-82 (Eng).
118. Thermodynamic properties of molecular lithium in an ideal-gas state.
Artym, R. I. (Mosk. Energ. Inst., Moscow, USSR).
Teplofiz. Vys. Temp. 1968, 6(6), 1010-15 (Russ). CA Vol. 70, 61829 (1969).
119. Dissociation energy of the molecule $TiO(g)$ and the thermodynamics of the system titanium-oxygen.
Drowart, Jean; Coppens, Philip; Smoes, Simone (Univ. Libre, Brussels, Belg.).
J. Chem. Phys. 1969, 50(2), 1046-8.
120. Dissociation energy of $TiO(g)$ and the high-temperature vaporization and thermodynamics of the titanium oxides.
V. Gilles, Paul W.; Hampson, Peter J.; Wahlbeck, Phillip G. (Univ. of Kansas, Lawrence, Kans.).
J. Chem. Phys. 1969, 50(2), 1048-9.
121. Thermodynamic study of liquid and solid manganese-gold alloys.
Spencer, P. J.; Pratt, John N. (Univ. Birmingham, Birmingham, Engl.).
Rev. Int. Hautes Temp. Refract. 1968, 5(3), 155-9.
122. Thermodynamic properties of copper-manganese alloys.
Krenzer, R. W.; Pool, Monte, J.; Kanfman, Larry (Univ. of Denver, Denver, Colo.).
Trans. Met. Soc. AIME (Amer. Inst. Mining, Met., Petrol. Eng.) 1969, 245(1), 91-8.

- B. 123. Mass-spectrometric studies of the vaporization of refractory metals in oxygen at low pressures.
Rovner, Lee H.; Drowart, A.; Degreve, F.; Drowart, Jean (Univ. Brussels, Brussels, Belg.).
U. S. Clearinghouse Fed. Sci. Tech. Inform., AD 1968, AD-675319, 66 pp. Avail. CFSTI. From U. S. Govt. Res. Develop. Rep. 1968, 68(22), 64.
124. Stability of tobermorite in the system calcium oxide-silicon oxide-water at elevated temperatures and pressures.
Speakman, K. (Bldg. Res. Sta., Watford, Engl.).
Mineral. Mag. 1968, 36(284), 1090-103.
125. Activity of antimony sesquioxide in lead monoxide-antimony sesquioxide and lead monoxide-silica-antimony trioxide slags.
McClincy, R. J.; Larson, Andrew H. (Colorado Sch. of Mines, Golden, Colo.).
Trans. Met. Soc. AIME (Amer. Inst. Mining, Met., Petrol. Eng), 1969, 245(1), 23-7.
126. Tin smelting. I. Activity measurements in tin-lead, tin-bismuth, tin-thallium and tin-lead-bismuth alloys at 1100°C.
Yazawa, Akira; Koike, Kazuo (Tohoku Univ., Sendai, Japan).
Nippon Kogyo Kaishi 1968, 84(2), 1593-6 (Japan) CA Vol. 70, 59834 (1969).
127. Equivalent effect of added elements on the solubility, activity, and activity coefficient of sulfur in ternary and multicomponent high-iron alloys at 1600°.
Schuermann, Eberhard; Kunze, Hans Dieter (Tech. Hochsch., Clausthal, Ger.).
Arch Eisenhuettenw. 1967, 38(10), 767-72 (Ger.).
128. Sulfur in liquid iron alloys. II. Effects of alloying elements.
Banya, Shiro; Chipman, John (Massachusetts Inst. of Technol., Cambridge, Mass.).
Trans. Met. Soc., AIME (Amer. Inst. Mining, Met., Petrol. Eng.) 1969, 245, 133-43.
129. Sulfur in liquid iron alloys. III. Multicomponent systems.
Banya, Shiro; Chipman, John (Tohoku Univ., Sendai, Japan).
Trans. Met. Soc. AIME (Amer. Inst. Mining, Met., Petrol. Eng.) 1969, 245(2), 391-6.
130. Absorption rate sticking probabilities for oxygen on niobium and dilute niobium-zirconium alloys.
Barrett, Charles A. (Lewis Res. Center, Cleveland, Ohio).
NASA Tech. Note 1968, NASA-TN-D-4885 38 pp. (Eng). Avail. CFSTI

- B. 131. Temperature measurement with tungsten-rhenium and tungsten molybdenum thermocouples and methods for their calibration. Ergardt, N. N. (USSR). Izmer. Tekh. 1968, (10), 24-7 (Russ). CA Vol. 70, 69490 (1969).
132. Platinum-molybdenum thermocouple. Tseng, Y.; Robertson, A.; Zysk, Edward D. (Engelhard Ind. Div., Engelhard Miner, and Chem. Corp., Newark, N. J.). Engelhard Ind., Tech. Bull. 1968, 9(3), 77-84 (Eng).
133. Constitution and melting properties of high-titanium slags. Tuset, Johan Kr. (Techn. Univ. Norway, Trondheim, Norway). Tidsskr. Kjemi, Bergv. Met. 1968, 28(11), 232-40.
134. Solubility of hydrogen in nickel-palladium system alloys. Lipets, T. V.; Vert, Zh. L.; Tverdovskii, I. P. (USSR). Elektrokhimiya 1969, 5(1), 71-4 (Russ). CA Vol. 70, 70656 (1969).
135. Vapor pressure and critical point of cesium. Silver, Ira L. (Columbia Univ., New York, N. Y.). 1968, 150 pp. Avail. Univ. Microfilms, Ann Arbor, Mich., Order No. 68-16,934. From Diss. Abstr. B 1968, 29(6), 2061-2.
136. Saturated vapor pressure of aluminum. Kulifeev, V. K.; Ukhlinov, G. A. (Mosk. Inst. Stali Splavov, Moscow, USSR). Izv. Vyssh. Ucheb. Zaved., Tsvet. Met. 1968, 11(6), 43-5 (Russ). CA Vol. 70, 71256 (1969).
137. Saturated vapor pressure and vapor density of fused thallous nitrate. Cleaver, B.; Neil, B. C. J. (Univ Southampton, Southampton, Engl.). Trans. Faraday Soc. 1969, 65(3), 703-7.
138. Gallium-bromine phase diagram. Kulyukin, V. N.; Petrov, E. S. (Inst. Fiz.-Khim. Osn. Pererab. Miner. Syr'ya, Novosibirsk, USSR). Izv. Sib. Otd. Akad. Nauk SSSR, Ser. Khim. Nauk 1968, (5), 24-9 (Russ). CA Vol. 70, 71468 (1969).
139. Curium-oxygen system. Chikalla, Thomas D.; Eyring, LeRoy (Pacific Northwest Lab., Battelle Mem. Inst., Washington, D. C.). J. Inorg. Nucl. Chem. 1969, 31(1), 85-93.

- B. 140. Solubility of nitrogen in molten niobium and molybdenum.
Kozina, L. N.; Revyakin, A. V.; Samarin, A. M. (USSR).
Dokl. Akad. Nauk SSSR 1969, 184(2), 397-9 (Russ). CA Vol. 70,
71504 (1969).
141. Stability of the gaseous ammonium chloride molecule.
Goldfinger, Paul; Verhaegen, Georges (Univ. Libre, Brussels,
Belg.).
J. Chem. Phys. 1969, 50(3), 1467-71.
142. Properties of alkali metal compounds at high temperatures.
II. Measurement of the dissociation pressure of potassium
carbonate in the temperature range from 900 to 1500°K.
Kosugi, Tetsuo (Hitachi Res. Lab., Hitachi Ltd., Hitachi,
Japan).
Kogyo Kagaku Zasshi 1968, 71(10), 1581-6 (Japan). CA Vol. 70,
71565 (1969).
143. Mass spectrometric determination of the dissociation energies
of the gaseous rare earth monosulfides.
Smoes, Simone; Coppens, Philip; Bergman, C.; Drowart, Jean
(Libre Univ., Brussels, Belg.).
Trans. Faraday Soc. 1969, 65(3), 682-7.
144. Mass spectrometric investigation of the vaporization,
thermodynamics, and dissociation energies of lanthanum mono-
sulfide, scandium monosulfide, yttrium monosulfide zirconium
monosulfide, and uranium monoxide.
Steiger, Ronald P. (Univ. of Iowa, Iowa City, Iowa). 1968,
91 pp. (Eng). Avail. Univ. Microfilms, Ann Arbor, Mich.,
Order No. 68-16,863. From Diss. Abstr. B 1968, 29(6), 2009.
145. Etching characteristics of silicon carbide in hydrogen.
Harris, J. M.; Gatos, Harry C.; Witt, August F. (Massachusetts
Inst. of Technol., Cambridge, Mass.).
J. Electrochem. Soc. 1969, 116(3), 380-3.
146. Thermophysical properties of sodium: recommended values.
Golden, Gerald H.; Tokar, John V.; Miller, David.
Reactor Fuel-Process. Technol. 1967 (Pub. 1968), 11(1), 27-48.
147. Chemical properties and behavior of urania above 1500°.
Fryxell, Robert E. (Nucl. Mater. and Propul. Oper., Gen. Elec.
Co., Cincinnati, Ohio).
U. S. At. Energy Comm. 1966, GEMP-439, 13 pp. Avail. Dep.;
CFSTI. From Nucl. Sci. Abstr. 1968, 22(21), 45815.
148. High-temperature thermodynamic measurements involving solid
electrolyte systems.
Steele, B. C. H. (Imp. Coll., London, Engl.).
Electromotive Force Meas. High-Temp. Syst., Proc. Symp. 1967
(Pub. 1968), 3-27 (Eng).

- B. 149. Nonstoichiometric measurements in dioxides of the rutile structure.
Zador, Susan (Imp. Coll., London, Engl.).
Electromotive Force Meas. High-Temp. Syst., Proc. Symp. 1967
(Pub. 1968), 145-50.
150. Solid oxides of platinum and rhodium. Formation in high pressures of oxygen.
Chaston, Jack C. (Johnson, Matthey and Co. Ltd., London, Engl.).
Platinum Metals Rev. 1969, 13(1), 28-9.
151. Evaluation of equilibrium of iron oxide reduction processes under conditions similar to those in the blast-furnace shaft.
Janowski, Jan (Akad. Gorn.-Hutn. Krawkowie, Met. Odlew. 1968
No. 30, 5-127 (Pol.). CA Vol. 70, 80141 (1969).
152. Activity of the iron oxide in iron oxide-magnesium oxide-silicon dioxide slags at 1600°.
Kojima, Yasushi; Inouye, Michio; Sano, Kokichi (Japan).
Arch. Eisenhuettenw. 1969, 40(1), 37-40 (Ger).
153. Hydrogen solubility in slags of the calcium oxide-iron oxide-silicon dioxide system.
Wahlster, Manfred; Reichel, Hans H. (Ger).
Arch. Eisenhuettenw. 1969, 40(1), 19-25 (Ger).
154. High temperature volatilization from $\text{Na}_2\text{O}-\text{K}_2\text{O}-(\text{B}_2\text{O}_3+\text{SiO}_2)$ and $\text{Na}_2\text{O}-\text{Li}_2\text{O}-(\text{B}_2\text{O}_3+\text{SiO}_2)$ systems.
Shimbo, Masaru (Tokyo Shibaura Elec. Co., Kawasaki, Japan).
Yogyo Kyokai Shi 1968, 76(880), 431-2.
155. Study of sodium atom-oxygen molecule collisions using merging beams.
Neynaber, Roy H.; Myers, Benjamin F.; Trujillo, S. M. (Space Sci. Lab., Gen. Dyn./Convair, San Diego, Calif.).
Phys. Rev. 1969, 180(1), 139-46.
156. Gaseous sublimation products of silicon monoxide.
Chambers Edmund S.; Lee, Edward Louis; Morrison, R. D.
(Lawrence Radiat. Lab., Univ. of California, Livermore, Calif.)
U. S. At. Energy Comm. 1968, UCRL-50469, 12 pp. (Eng). Avail.
Dep.; CFSTI. From Nucl. Sci. Abstr. 1968, 22(23), 50897.
157. Mechanism of volatilization and oxidation of platinum, palladium, and their alloys.
Rytvin, E. I.; Ulybysheva, L. P. (USSR).
Izv. Akad. Nauk. SSSR, Metal. 1969, (1), 247-52 (Russ).
CA Vol. 70, 81108 (1969).

- B. 158. Interchalcogen compounds. III. Selenium-tellurium system. Cooper, Ronald; Culka, Jan V. (Univ. Melbourne, Parkville, Aust.).
J. Inorg. Nucl. Chem. 1969, 31(3), 685-8.
159. Degassing kinetics of vanadium-oxygen solid solutions. Hoerz, Gerhard (Max-Planck-Inst. Metallforsch., Stuttgart, Ger.).
Z. Metallk. 1969, 60(1), 50-7 (Ger).
160. Vaporization thermodynamics of europium monoxide. Haschke, John M.; Eick, Harry A. (Michigan State Univ., East Lansing, Mich.).
J. Phys. Chem. 1969, 73(2), 374-7 (Eng).
161. Vapor pressures of manganese chloride and study of the equilibrium reaction $Mn(c) + MnCl_2(g) \rightleftharpoons 2MnCl(g)$ at high temperatures. Murthy, B. Radha Krishna; Dadape, V. V. (Nat. Chem. Lab., Poona, India).
Indian J. Chem. 1968, 6(12), 714-17 (Eng).
162. Thermodynamic properties of plutonium nitride by galvanostatic potential determination. Campbell, George Melvin (Los Alamos Sci. Lab., Los Alamos, N. Mex.).
J. Phys. Chem. 1969, 73(2), 350-5.
163. Mass-spectrometric study of the thermodynamics of a sodium fluoride-beryllium fluoride system. I. Vapor composition and partial pressure. Sidorov, L. N.; Belousov, V. I.; Akishin, P. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR).
Zh. Fiz. Khim. 1969, 43(1), 80-5 (Russ). CA Vol. 70, 81642 (1969).
164. Thermodynamic studies of zinc sulfide in copper mattes. I. Azuma Kiyoshi; Goto, Sakichi (Univ. Tokyo, Tokyo, Japan).
Nippon Kogyo Kaishi 1968, 84(964), 1082-8 (Japan). CA Vol. 70, 81650 (1969).
165. Heat of solution and diffusivity of nitrogen in molybdenum. Evans, John Howard; Eyre, B. L. (Met. Div., At. Energy Res. Estab., Harwell, Engl.).
Int. Conf. Vacancies Interstitials Metals. Prepr. Conf. Pap. 1968, 2, 858-69 (Eng).
166. Mass spectrometric determination of the dissociation energy of gold monoboride. Gingerich, Karl A. (Texas A and M Univ., College Station, Tex.).
Z. Naturforsch. A 1969, 24(2), 293 (Ger).

- B. 167. Physical-chemical study of the lead telluride-germanium telluride system.
Karbanov, S. G.; Zlomanov, V. P.; Novoselova, A. V.; Metlin, Yu. G. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1969, 5(2), 270-4 (Russ).
CA Vol. 70, 81440 (1969).
168. Vapor-phase growth of single crystals of high-melting fluorides.
I. Magnesium fluoride.
Recker, Kurt; Leckebusch, R. (Univ. Bonn, Bonn, Ger.).
J. Cryst. Growth 1969, 5(2), 125-31 (Ger).
169. Electrochemical measurements of oxygen in silver and copper.
Diaz, C. M.; Richardson, Frederick D. (Univ. Chile, Santiago, Chile).
Electromotive Force Meas. High-Temp. Syst., Proc. Symp. 1967
(Pub. 1968), 29-41.
170. Determination of the thermodynamic data of nickel oxide doped with lithium and iron on the basis of electromotive force measurements of solid-oxide galvanic cells.
Deren, Jerzy; Rog, Grzegorz (Acad. Mining Met., Cracow, Poland).
Bull. Acad. Pol. Sci., Ser. Sci. Chim. 1968, 16(9), 491-4 (Eng).
171. In vacuo behavior of molybdenum disilicide, tungsten disilicide, and tantalum disilicide at high temperatures.
Ivanov, V. E.; Nechiporenko, E. P.; Krivoruchko, V. M.; Patokin, A. P.; Poltavtsev, N. S. (Fiz.-Tekh. Inst., Kharkov, USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1969, 5(1), 8-14 (Russ).
CA Vol. 70, 83763 (1969).
172. Stability of merwinite in the calcium oxide-magnesium oxide-silicon dioxide-carbon dioxide system.
Shmulovich, K. I. (USSR).
Dokl. Akad. Nauk SSSR 1969, 184(5), 1177-9 (Russ). CA Vol. 70, 89544 (1969).
173. Solubility of hydrogen in nickel-molybdenum and nickel-tungsten alloys.
Lange, Klaus W.; Schenck, Hermann (Rheinisch-Westfael. Tech. Hochsch. Aachen, Aachen, Ger.).
Z. Metallk. 1969, 60(1), 62-8 (Ger).
174. Simultaneous study of the solubility and hydrogen diffusion parameters in metals and alloys.
Kunin, L. L.; Fedorov, S. N. (USSR).
Metody Opred. Issold. Sostoyaniya Gazov Metal. 1968, 228-37 (Russ). From Ref. Zh., Met. 1968, Abstr. No. 81600.

- B. 175. Solubility of hydrogen in liquid titanium and nickel metals by the noncrucible process method.
Kalinyuk, N. N. (USSR).
Metody Opred. Issold. Sostoyaniya Gazov Metal. 1968, 238-42 (Russ). CA Vol. 70, 90208, (1969).
176. Hydrogen solubility in aluminum to the boiling point of the metal.
Grigorenko, G. M.; Lakomskii, V. I. (USSR).
Metody Opred. Issold. Sostoyaniya Gazov Metal. 1968, 246-9 (Russ).
From Ref. Zh., Met. 1968, Abstr. No. 8A42.
177. Volatility of glass components from the melt.
Weyl, Woldemar, A. (pennsylvania State Univ., University Park, Pa.).
J. Can. Ceram. Soc. 1968, 37, 19-24.
178. Multiatomic clusters emerging from a metal surface under ion bombardment.
Hortig, Guenther; Mueller, Michael (Max-Planck-Inst. Kernphys., Heidelberg, Ger.).
Z. Phys. 1969, 221(2), 119-21 (Eng).
179. Proof of the existence of triatomic molecules in a molecular jet obtained by charge exchange in a beam of triatomic hydrogen.
Devienne, F. Marcel (Lab. Phys. Mol. Hautes Energ., Peymeinade, Fr.).
C. R. Acad. Sci., Paris, Ser. A,B 1968, 267B(23), 1279-81 (Fr).
180. Vaporization of titanium dioxide.
Semenov, G. A. (Leningrad. Gos. Univ. im. Zhdanova, Leningrad, USSR).
Izv. Akad. Nauk SSSR, Neorg Mater. 1969, 5(1), 67-73 (Russ).
CA Vol. 70, 90869 (1969).
181. Vapor pressure above molten antimony selenide.
Ryazantsev, A. A.; Pashinkin, A. S.; Novoselova, A. V. (USSR).
Vestn. Mosk. Univ., Khim. 1969, 24(1), 79-80 (Russ). CA Vol. 70, 91038 (1969).
182. Saturated vapor pressure of bismuth selenide and bismuth telluride.
Ustyugov, G. P.; Vigdorovich, E. N.; Timoshin, I. A. (USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1969, 5(1), 166-7 (Russ).
CA Vol. 70, 91039.
183. Vapor pressures and heats of sublimation of cobalt dihalides.
Hill, Stephen D.; Cleland, C. A.; Adams, Arnold; Landsberg, Arne; Block, Frank E. (Albany Met. Res. Center, U. S. Bur. of Mines, Albany, Oreg.).
J. Chem. Eng. Data 1969, 14(1), 84-9 (Eng).

- B. 184. Lead monoxide vapor pressure in the $\text{Pb}(\text{Ti}_{1-x}\text{Zr}_x)\text{O}_3$ system.
Haerdtl, Karl H.; Rau, Hans (Phillips Zentrallab. G. m. b. H., Aachen, Ger.).
Solid State Commun. 1969, 7(1), 41-5 (Eng).
185. Saturated vapor pressure in the lead telluride-tin telluride system.
Sokolov, V. V.; Ryazantsev, A. A.; Pashinkin, A. S.; Novoselova, A. V. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1969, 5(2), 275-8 (Russ).
CA Vol. 70, 91042 (1969).
186. Saturated vapor pressure in the lead telluride-lead selenide system.
Sokolov, V. V.; Dolgikh, V. A.; Pashinkin, A. S.; Novoselova, A. V. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1969, 5(2), 279-82 (Russ).
CA Vol. 70, 91043 (1969).
187. Solvent vapor pressures over dilute solutions of tin in mercury.
Conant, Donald R. (Los Alamos Sci. Lab., Los Alamos, N. Mex.).
J. Chem. Eng. Data 1969, 14(1), 9-13 (Eng).
188. Vapor pressure and composition in the sodium bromide-aluminum bromide system.
Suvorov, A. V.; Malkova, A. S. (USSR).
Vestn. Leningrad. Univ., Fiz., Khim. 1968, 23(22), 113-17 (Russ).
CA Vol. 70, 91045, (1969).
189. Saturated vapor pressure of solid tellurides of tin and lead and of lead selenide.
Sokolov, A. V.; Pashinkin, A. S.; Novoselova, A. V.; Ryazantsev, A. A.; Dolgikh, V. A.; Klinshikova, S. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater 1969, 5(1), 15-19 (Russ).
CA Vol. 70, 91046 (1969).
190. Vaporization characteristics of zinc chloride, zinc bromide, and zinc iodide and some thermodynamic properties of the zinc chloride-sodium chloride system.
Rice, Donald W. (Univ. of Washington, Seattle, Wash.), 1968, 148 pp. (Eng). Avail. Univ. Microfilms, Ann Arbor, Mich., Order No. 69-1208. From Diss. Abstr. B 1969, 29(7), 2390-1.
191. Liquid-vapor phase equilibrium in tellurium-impurity binary system.
Ustyugov, G. P.; Vigdorovich, E. N.; Bezobrazov, E. G. (USSR).
Izv. Akad. Nauk SSSR, Neorg Mater. 1969, 5(2), 363-4 (Russ).
CA Vol. 70, 91225 (1969).

- B. 192. Chemical equilibriums encountered in the chromium plating of steel. Cerny, Cestmir; Bartovska, Lidmila; Bartovsky, Thomas (Tech. Hochsch. Chem., Prague, Czech.).
Werkst. Dorros. (Weinheim) 1969, 20(2), 125-6 (Ger).
193. Thermal dissociation of boron sulfide B_2S_3 . Grinberg, Ya. Kh.; Zhukov, E. G.; Koryazhkin, V. A. (Inst. Obshch. Neorg. Khim. im. Kurnakova, Moscow, USSR).
Dokl. Akad. Nauk SSSR 1969, 184(4), 847-9 (Russ). CA Vol. 70, 91288 (1969).
194. Chemistry of niobium and tantalum. LXXI. Thermodynamic stability of the seven phases existing between the 2.00 and 2.50 oxygen/niobium ratio. Schaefer, Harald; Bergner, Dieter; Gruhn, Reginald (Univ. Muenster, Muenster, Ger.).
Z. Anorg. Allg. Chem. 1969, 365(1-2), 31-50 (Ger).
195. Effect of crystal lattice defects on the thermodynamic properties of wustite-magnesium oxide solid solutions. Vorob'ev, Yu. P.; Bogacheva, E. G.; Men, A. N.; Chufarov, G. I. (Inst. Met., Sverdlovsk, USSR).
Izv. Akad. Nauk SSSR, Neorg. Mater. 1969, 5(2), 394-7 (Russ). CA Vol. 70, 91338 (1969).
196. Vapor pressure of the cadmium chloride-lead chloride system. George, L. C.; Doerr, Robert M.; Visnapuu, Aarne (Met. Res. Center. U. S. Dept. of the Interior, Rolla, Mo.).
J. Chem. Eng. Data 1969, 14(1), 23-6 (Eng).
197. Vaporization and thermodynamic properties of silicon nitride. Ryklis, E. A.; Bolgar A. S.; Fesenko, V. V. (Inst. Probl. Materialoved., Kiev, USSR).
Porosh. Met. 1969, 9(1), 92-6 (Russ). CA Vol. 70, 91360 (1969).
198. Thermodynamics of rare-earth-carbon systems. I. The cerium-carbon system. Balducci, Giovanni; Capalbi, Antonio; De Maria, Giovanni; Guido, Marcella (Univ. Roma, Rome, Italy).
J. Chem. Phys. 1969, 50(5), 1969-74 (Eng). CA Vol. 70, 91362 (1969).
199. Thermodynamic properties of the oxides of copper and nickel. Kellogg, Herbert H. (Columbia Univ., New York, N. Y.).
J. Chem. Eng. Data 1969, 14(1), 41-4 (Eng).

**Announcement of New Bibliographies
on the High Temperature Chemistry
and Physics of Materials**

Superintendent of Documents,
Government Printing Office,
Washington, D.C. 20402

Dear Sir:

Please add my name to the announcement list of new publications to be issued in the series: National Bureau of Standards Special Publication 315-.

Name

Company

Address

City State Zip Code

(Notification Key N-380)

