

Mines Branch Information Circular IC 184

BIBLIOGRAPHY OF HIGH-TEMPERATURE CONDENSED
STATES RESEARCH PUBLISHED IN CANADA,
APRIL-JUNE, 1966

by

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SYNOPSIS

This report contains bibliographic information concerning research work on high-temperature condensed states published in Canadian journals from April 1 to June 30, 1966.

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Circulaire d'information IC 184

BIBLIOGRAPHE DES RECHERCHES EFFECTUÉES DANS
LE DOMAINE DES ÉTATS CONDENSÉS AUX TEMPÉRATURES
ÉLEVÉES, AU CANADA, D'AVRIL À JUIN 1966

par

Norman F. H. Bright*

RÉSUMÉ

Le présent rapport contient des renseignements bibliographiques sur les recherches effectuées sur les états condensés aux températures élevées, publiées dans les revues scientifiques canadiennes au cours de la période d'avril 1^{er} à juin 30, 1966.

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INTRODUCTION

This report is a further contribution to the series of bibliographic bulletins of information on high-temperature condensed states research that have been published as Mines Branch Information Circulars since March 1960 on behalf of the Commission on High Temperature and Refractories of the International Union of Pure and Applied Chemistry. The present document covers the three-month period from April 1 to June 30, 1966, and gives details of work published in Canadian scientific and technical journals during that period.

Anyone not now receiving these reports who wishes to do so, anyone who would like to receive the analogous documents relating to research on the gaseous state and on plasma phenomena, and anyone who currently receives either of these bibliographies but to whom they are no longer of interest, is requested to advise the compiler accordingly so that the appropriate changes may be made in the relevant mailing lists.

The compiler would very much appreciate being advised of any work published in Canadian journals, and lying within the scope of these bibliographies, that has escaped his notice in order that such work may be mentioned in a subsequent issue of this series of Information Circulars.

Recipients of this series of Information Circulars, who are resident in Canada, will have recently received a letter asking for details concerning research within the purview of these documents that is currently being conducted in their establishments. From the replies received to these letters up to the end of June, 1966, and from his own personal knowledge of the field, the writer has compiled lists, arranged on a provincial basis, collating the available information. This has been published as an additional Information Circular, of which all recipients of this series, whether Canadian residents or not, should recently have received copies. If further copies of this list are required, they may be obtained from the compiler.

Similar lists are in course of preparation for the various other countries that participate in the compilation of the international lists of bibliographic information. When they become available, copies will be sent to all recipients of this series of Information Circulars.

Any further information concerning these lists, these bibliographies, or any other relevant IUPAC activities, can be obtained from the compiler of this report at the following address:

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BIBLIOGRAPHY OF WORK ON HIGH-TEMPERATURE
CONDENSED STATES PUBLISHED IN CANADA,
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International Union of Pure and Applied Chemistry
Commission on High-Temperature and Refractories

Bibliography (April 1 to June 30, 1966)
for Canada

collected by Dr. Norman F. H. Bright, Mines Branch, Ottawa.

A. Devices for achieving temperatures above 1500°C

Nil

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

Nil

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

Nil

D. Properties, at temperatures below 1000°C, of materials that melt above 1500°C

a. Metallic Materials

1. Effect of Heat Treatment on the Corrosion Behaviour of Two Zirconium-Copper-Molybdenum Alloys.
C. F. Dixon and H. M. Skelly (Physical Metallurgy Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Mines Branch Research Report R 183, March 1966, Department of Mines and Technical Surveys, Ottawa.
2. The Story of Metals: Part XVII. The Secret of Sheffield Steel.
R. Groves.
Canad. Mining Journ., 87 [5], 61-62 (1966).
3. The Story of Metals: Part XVIII. Evolution of the Bellows from a Hand-operated to a Power-operated Instrument.
R. Groves.
Canad. Mining Journ., 87 [6], 80-82 (1966).

4. The Determination of Zirconium, Niobium and Hafnium in Low Alloy Steels by X-Ray Spectrography.
(Mrs.) Dorothy J. Reed (Mineral Sciences Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Mines Branch Research Report R 174, December 1965, Department of Mines and Technical Surveys, Ottawa.
5. The Complexometric Titration of Zirconium in Perchloric Acid Solution, and its Application to the Analyses of Lead Zirconate-Titanate Ceramics.
A. Hitchen (Extraction Metallurgy Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Mines Branch Research Report R 171, November 1965, Department of Mines and Technical Surveys, Ottawa.

b. Non-Metallic Materials

1. Experiments in Fracturing Asbestos Ore with Radio-frequency Currents.
K.P. Piekarski (Department of Mechanical Engineering, University of Waterloo, Waterloo, Ontario).
Canad. Mining Journ., 87 [6], 66-69 (1966).
2. Sorption of Hydrogen and Oxygen by Cadmium Oxide.
M. J. D. Low and A. M. Kamel (School of Chemistry, Rutgers, The State University, New Brunswick, New Jersey, U. S. A.).
Canad. Journ. Chem., 44 [10], 1147-1152 (1966).
3. Ion-bombardment-induced Radiation Damage in Some Ceramics and Ionic Crystals Determined by Electron Diffraction and Gas Release Measurements.
H. J. Matzke and J. L. Whitton (Atomic Energy of Canada Limited, Chalk River, Ontario).
Canad. Journ. Phys. 44 [5], 995-1010 (1966).
4. Adsorption of Cyclohexane and Benzene on Mixed Hydroxides and Oxides of Magnesium and Aluminium.
R. I. Razouk, Sh. Nashed and F. N. Antonious (Chemistry Department, Ain Shams University, Abbassia, Cairo, Egypt).
Canad. Journ. Chem., 44 [8], 877-883 (1966).

5. Factors Affecting the Coercivity and Remanence of Artificial Magnetite.

T.T. Toomver and H. U. Ross (Department of Metallurgy and Materials Science, University of Toronto, Toronto, Ontario).
Canad. Met. Quart., 5 [1], 35-46 (1966).

c. Mixed Materials

1. The Ionoluminescence of $Zn_2SiO_4:Mn$ under Negative and Molecular Ion Bombardment.

A. van Wijngaarden, L. Hastings and E. S. Koteles (Department of Physics, University of Windsor, Windsor, Ontario).

Canad. Journ. Phys., 44 [4], 789-795 (1966).

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

Nil

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

a. Metallic Materials

1. The Third Spectrum of Rhodium (RhIII).

Laura Inglesias (Institute of Optics, Madrid - 6, Spain).
Canad. Journ. Phys., 44 [4], 895-915 (1966).

b. Non-Metallic Materials

1. Solute Incorporation During the Cyclic Solidification of Silicon.

J. R. Carruthers (Department of Metallurgy and Materials Science, University of Toronto, Toronto, Ontario).
Canad. Met. Quart., 5 [1], 55-75 (1966).

2. Spectrochemical Precision Studies with the Vacuum-Cup Electrode.

J. Lloyd Dalton and A. H. Gillieson (Mineral Sciences Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Canad. Spectroscopy, 11 [2], 76-78 (1966).

3. Pyrolytic Graphite Plate Electrodes in Emission Spectroscopy.
G. Zotov (Atomic Energy of Canada Limited, Chalk River, Ontario).
Canad. Spectroscopy, 11 [2], 40-42 (1966).

c. Mixed Materials

Nil

G. Phase Equilibria

1. Thermal Transformations of Stilbite.
F. Aumento (Department of Geology, Dalhousie University, Halifax, Nova Scotia).
Canad. Journ. Earth Sciences, 3 [3], 351-366 (1966).
2. Electrical Properties and Structures of Solid and Liquid GeS, SnS and PbS.
G. Handfield, M. D'Ambroise and M. Bourgon (Department of Chemistry, Université de Montréal, Montréal, Québec).
Canad. Journ. Chem., 44 [8], 853-860 (1966).
3. The Copper/Selenium System.
R. D. Heyding (Department of Chemistry, Queen's University, Kingston, Ontario).
Canad. Journ. Chem., 44 [10], 1233-1236 (1966).
4. Subsolidus Phase Relations in the System Ag-Sb.
S. Somanchi (Department of Geology, Osmania University, Hyderabad, A.P., India).
Canad. Journ. Earth Sciences, 3 [2], 211-222 (1966).

H. Reactions at temperatures above 1000°C

1. Heat Transfer in the Melting of Solids to Non-Newtonian Liquids.
A. H. P. Skelland (University of Notre Dame, Notre Dame, Indiana, U. S. A.).
Canad. Journ. Chem. Engg., 44 [2], 64-66 (1966).

J. Review Papers

1. Fuel Cells.
E. J. Casey and E. E. Criddle (Defence Chemical, Biological and Radiation Laboratories, Ottawa, Ontario).
Chem. in Canada, 18 [5], 25-29 (1966).
2. The Mossbauer Effect.
R. H. Goodman (Mineral Sciences Division, Mines Branch, Department of Mines and Technical Surveys, Ottawa, Ontario).
Chem. in Canada, 18 [4], 31-36 (1966).
3. A Review of EMF Methods for Oxygen Determination in Molten Metals.
Roy Littlewood (Research and Development Department, The Steel Company of Canada, Hamilton, Ontario).
Canad. Met. Quart., 5 [1], 1-17 (1966).
4. The Second Law of Thermodynamics with Applications to High-Temperature Processes.
K. J. McCallum (Department of Chemistry and Chemical Engineering, University of Saskatchewan, Saskatoon, Saskatchewan).
Chem. in Canada, 18 [6], 56-58 (1966).