Mines Branch Information Circular IC 190

BIBLIOGRAPHY OF HIGH-TEMPERATURE CONDENSED STATES RESEARCH PUBLISHED IN CANADA, JANUARY-MARCH, 1967

by

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SYNOPSIS

This report contains bibliographic information concerning research work on high-temperature condensed states published in Canadian journals from January 1 to March 31, 1967.

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Direction des mines

Circulaire d'information IC 190

BIBLIOGRAPHIE DES RECHERCHES EFFECTUÉES DANS LE DOMAINE DES ÉTATS CONDENSÉS AUX TEMPÉRATURES ÉLEVÉES, AU CANADA, DE JANVIER À MARS, 1967

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 de janvier 1 à mars 31, 1967.

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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 Temperatures and Refractories of the International Union of Pure and Applied Chemistry. The present document covers the three-month period from January 1 to March 31, 1967, 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, or 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.

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

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The biennial meetings of the International Union of Pure and Applied Chemistry will be held in Prague, Czechoslovakia, in the late summer of 1967. Meetings of the Commission on High Temperatures and Refractories will form a part of the business sessions associated with this Conference. If there are any matters relating to these bibliographies that any of the recipients would wish to have raised at these meetings, they are requested to communicate their wishes to the compiler of these documents, who hopes to be present as the Canadian representative at the Commission meetings.

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In the Fall of 1967, another in the series of High-Temperature 'Technology Symposia sponsored jointly by IUPAC and the Stanford Research Institute will be held at Asilomar, California. Full details will be published in the next quarterly Information Circular.

Anyone interested to receive the High-Temperature Gaseous State Bibliographies that are prepared on a quarterly basis by Professor Leo Brewer of the University of California should notify the compiler of the present document and arrangements will be made to have these Gaseous State Bibliographies sent gratis to such people.

BIBLIOGRAPHY OF WORK ON HIGH-TEMPERATURE CONDENSED STATES PUBLISHED IN CANADA, JANUARY-MARCH, 1967

International Union of Pure and Applied Chemistry Commission on High Temperatures and Refractories Bibliography (January 1 to March 31, 1967)

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

1. Laser Beam Helps Measure Temperatures of Thermonuclear Fusion.

S. A. Ramsden (Laser and Plasma Physics Section, National Research Council of Canada, Ottawa, Ontario). Canad. Controls and Instrumentation, 6 [1], 33 (1967).

2. Modern Instrumentation Helps Probe the Frontiers of Aerospace Research.

P. A. Sullivan (Institute for Aerospace Studies, University of Toronto, Toronto, Ontario).

Canad. Controls and Instrumentation, 6 [2], 37-40 and 68-69 (1967).

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

1. Photopyrometer Records Temperature Density of Materials. Anon.

Canad. Controls and Instrumentation, 6 [2], 44 (1967).

2. High-Temperature Solution Calorimetry: Part I. Development of a Spherical Solution Calorimeter.

R. Baboian, D. Laing and S. N. Flengas (Department of Metallurgy and Materials Science, University of Toronto, Toronto, Ontario).

Canad. Journ. Chem., 45 [4], 383-388 (1967).

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

- a. Metallic materials
- Experiments on a Structural Steel Using the S.O.D. Notch Toughness Test.
 D.M. Fegredo and R.C.A. Thurston (Physical Metallurgy Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).
 Canad. Metall. Quart., 5 [4], 273-314 (1966).
- The Story of Metals: Part 24. Bessemer Steel.
 R. Groves.
 Canad. Min. Journ., 88 [1], 54-55 (1967).
- The Story of Metals: Part 25. The German and the Undertaker. R. Groves. Canad. Min. Journ., 88 [3], 102-103 (1967).
- 4. Work Function of Tungsten Single Crystals.
 H. M. Love and J. R. Wilson (Department of Physics, Queen's University, Kingston, Ontario).
 Canad. Journ. Phys., 45 [1], 225-227 (1967).

b. Non-metallic materials

- Ceramic Oxide Production at Eldorado.
 R. M. Berry (Eldorado Mining and Refining Limited, Port Hope, Ontario).
 Canad. Nucl. Technol., <u>6</u> [2], 30-33 (1967).
- Pyrochlores: II. An Investigation of La₂Ce₂O₇ by Neutron Diffraction. François Brisse and Osvald Knop (Department of Chemistry, Dalhousie University, Halifax, Nova Scotia). Canad. Journ. Chem., 45 [6], 609-614 (1967).
- Observations on Paramagnetic Cooling with Synthetic Ruby.
 C. J. Campbell and R. H. Hum (Materials Research Centre, McMaster University, Hamilton, Ontario).
 Canad. Journ. Phys., 45 [3], 1413-1415 (1967).

- Flotation Characteristics of Ilmenite. Hyung Sup Choi, Yeun Sik Kim and Young Hyum Paik (Korean Institute of Science and Technology, Seoul, Korea). Canad. Min. Metall. Bull., 60 [658], 217-220 (1967).
- 5. Preparation of Urania and Urania-Zirconia Microspheres by a Sol-Gel Process.

P. A. Haas, S. D. Clinton and A. T. Kleinsteuber (Oak Ridge National Laboratory, U. S. Atomic Energy Commission, Oak Ridge, Tennessee, U. S. A.). Canad. Journ. Chem. Engg., 44 [6], 348-353 (1967).

 The Application of Electric Sorting to Minerals Beneficiation.
 R. A. Wyman (Mineral Processing Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).
 Mines Branch Technical Bulletin TB 82, July, 1966 (Department of Energy, Mines and Resources, Ottawa, Ontario).

c. Mixed materials

Nil

E. <u>Properties</u>, 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

Nil

G. Phase equilibria

 Ageing in Niobium-Rich Niobium-Hafnium -Carbon Alloys.
 D. C. Briggs and L. R. Harmatiuk (Physical Metallurgy Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).

Mines Branch Research Report R185, September, 1966

(Department of Energy, Mines and Resources, Ottawa, Ontario).

2. Sulphides in the Muskox Intrusion.

J. A. Chamberlain (Geological Survey of Canada, Department of Energy, Mines and Resources, Ottawa, Ontario). Canad. Journ. Earth Sciences, 4 [1], 105-154 (1967).

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3. Chromian Spinel as a Petrogenic Indicator: Part 2. Petrologic Applications.

T. N. Irvine (Geological Survey of Canada, Department of Energy, Mines and Resources, Ottawa, Ontario). Canad. Journ. Earth Sciences, 4 [1], 71-103 (1967).

- 4. Alpha-Beta Phase Transition in Mn²⁺-Doped Mg₂P₂O₇.
 Z. Melkvi, C.V. Stager and C. Calvo (McMaster University, Hamilton, Ontario).
 Canad. Journ. Phys., 45 [1], 83-91 (1967).
- 5. A Study of the Iron-Rich Portion of the Fe-U Phase Diagram.
 G. G. Michaud (Ontario Research Foundation, Toronto, Ontario).
 Canad. Metall. Quart., 5 [4], 355-365 (1966).
- 6. The Rhodium/Selenium System.
 T. E. Rummery and R. D. Heyding (Department of Chemistry, Queen's University, Kingston, Ontario).
 Canad. Journ. Chem., 45 [2], 131-137 (1967).

H. Reactions at temperatures above 1000°C

- Calcination of Limestone in a Tubular Reactor. Ephraim Kehat and Alexander Markin (Chemical Engineering Department Technion, Israel Institute of Technology, Haifa, Israel). Canad. Journ. Chem. Engg., 45 [1], 40-45 (1967).
- Determination of Oxygen in Titanium by Isotopic Dilution.
 C. R. Masson, S. G. Whiteway, W. D. Jamieson and C. A. Collings (National Research Council of Canada, Atlantic Regional Laboratory, Halifax, Nova Scotia).
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 B. B. L. Seth and H. U. Ross (Department of Metallurgy and Materials Science, University of Toronto, Toronto, Ontario).
 Canad. Metall. Quart., 5 [4], 315-328 (1966).
- 4. Alcan Pilots 2400°F Process Equipment: Part 1.
 F. W. Southam.
 Canad. Chem. Processing, 51 [2], 45-48 (1967).
- Recovery of Aluminum by Subhalide Process: Part 2.
 F. W. Southam.
 Canad. Chem. Processing, 51 [3], 75-78 (1967).

6. Vacuum Heat Treating.
G. F. Straschek (Canadian General Electric Company Limited, Peterborough, Ontario).
Canad. Metalworking, 30 [1], 44-46 (1967).

J. Review Article

NFHB:(PFS):vb

1. Objectives of Canadian Carbonization Research.

C. W. Drake (Algoma Steel Corporation Limited, Sault Ste. Marie, Ontario) and J. H. Walsh (Fuels and Mining Practice Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).

Canad. Min. Metall. Bull., 60 [658], 203-206 (1967).