Mines Branch Information Circular IC 187

BIBLIOGRAPHY OF HIGH-TEMPERATURE CONDENSED STATES RESEARCH PUBLISHED IN CANADA, OCTOBER-DECEMBER, 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 October 1 to December 31, 1966.

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Direction des mines

Circulaire d'information IC 187

BIBLIOGRAPHIE DES RECHERCHES EFFECTUÉES DANS LE DOMAINE DES ÉTATS CONDENSÉS AUX TEMPÉRATURES ÉLEVÉES, AU CANADA, D'OCTOBRE À DÉCEMBRE, 1966

par

Norman F. H. Bright*

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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'octobre 1 à décembre 31, 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 Temperatures and Refractories of the International Union of Pure and Applied Chemistry. The present document covers the three-month period from October 1 to December 31, 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, 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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Canada.

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.

BIBLIOGRAPHY OF WORK ON HIGH-TEMPERATURE CONDENSED STATES PUBLISHED IN CANADA, OCTOBER-DECEMBER, 1966

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

Bibliography (October 1 to December 31, 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

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E. H. McLaren and E. G. Murdock (Division of Applied Physics, National Research Council, Ottawa, Ontario).
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C. Devices for physical measurements at temperatures above 1000°C

1. Instrumentation of the Oxygen Steelmaking Process.
A. G. Taylor (Dominion Foundries and Steel Limited, Hamilton, Ontario).
Canad. Controls and Instrumentation, 5 [11], 24-26 (1966).

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

a. Metallic materials

1. Calculation of the Electronic Structure of Liquid Metals.
L. E. Ballantine (Theoretical Physics Institute, University of Alberta, Edmonton, Alberta).
Canad. Journ. Phys. 44 [11], 2533-2552 (1966).

2. Direct Electric-Field Electrotransport of Carbon and Nitrogen in Iron and Iron Alloys.
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Canad. Journ. Phys., 44 [10], 2375-2386 (1966).

3. Hall-Field Electrotransport of Carbon and Nitrogen in α-Iron.
M. J. Bibby and W. V. Youdelis (Department of Engineering Materials, University of Windsor, Windsor, Ontario).
Canad. Journ. Phys., 44 [10], 2363-2374 (1966).

4. Study of As-Rolled Carbon Steels over Ranges of Uranium, Sulphur and Carbon Contents.
D. K. Faurschou (Physical Metallurgy Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).
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5. The Effect of Fatigue on the Ductile-Brittle Transition Temperature of Two Mild Steels.
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7. The Low-Temperature Thermal Conductivity, Electrical Resistivity and Thermoelectric Power of Dilute Silver Alloys with Manganese.
H. L. Malm and S. B. Woods (Department of Physics, University of Alberta, Edmonton, Alberta).
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b. Non-metallic materials

1. Measurement of the Surface Areas of Powder by Krypton Gas Adsorption Method. Construction and Operation of the Apparatus.
Syed M. Ahmed (Mineral Sciences Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).
Mines Branch Technical Bulletin TB 84, July, 1966 (Department of Energy, Mines and Resources, Ottawa, Ontario).

2. Heat Transfer Efficiency in a Fluidized Bed.
Yehoshua Dayan, Arie Kupferberg and William Resnick (Department of Chemical Engineering, Israel Institute of Technology, Haifa, Israel).
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3. Proton and Alpha-particle Channeling as a Tool for Locating Foreign Atoms in Crystals.
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N. E. Hedgecock and S. C. Chakravartty (Department of Physics, University of Windsor, Windsor, Ontario).
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D. J. Huntley (Physics Department, Simon Fraser University, Burnaby 2, British Columbia).
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K. R. Jeffrey and R. L. Armstrong (McLennan Laboratories, University of Toronto, Toronto, Ontario).
Canad. Journ. Phys., 44 [10], 2315-2328 (1966).

7. Catalytic Hydrodesulphurization of Thiophene: VI. Comparisons over Molybdenum Disilicide, Cobalt Molybdate and Chromia Catalysts.
S. Kolboe and C. H. Amberg (Division of Applied Chemistry, National Research Council of Canada, Ottawa, Ontario).
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8. Strength and Permeability of Cement-Stabilized Backfill.
J. R. Rawling, J. M. Toguri and D. G. Cerigo (Noranda Research Centre, Pointe Claire, Quebec).
Canad. Mining Journ., 87 [12], 43-47 (1966).

c. Mixed materials

1. High Resistance Anodic Oxide Films on Aluminium.
A. C. Harkness and L. Young (British Columbia Research Council, Vancouver, British Columbia).
Canad. Journ. Chem., 44 [20], 2409-2413 (1966).

2. Heat Transfer Limitations on Nuclear Reactor Fuel Elements.
J. T. Rogers (Atomic Power Department, Canadian General Electric Limited, Peterborough, Ontario).
Canad. Journ. Chem. Engg., 44 [5], 289-298 (1966).

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

a. Metallic materials

Nil

b. Non-metallic materials

1. Effect of Thermionic Emission on Electrochemical Measurements at High Temperatures.
S. G. Whiteway and C. R. Masson (Atlantic Regional Laboratory, National Research Council of Canada, Halifax, Nova Scotia).
Canad. Journ. Chem., 44 [20], 2421-2427 (1966).

c. Mixed materials

Nil

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

a. Metallic materials

Nil

b. Non-metallic materials

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John F. G. Hicks (location not stated).
Canad. Clay and Ceram., 40 [9], 20-22 (1966).

c. Mixed materials

Nil

G. Phase equilibria

Nil

H. Reactions at temperatures above 1000°C

1. 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 (1966).

2. Is Processing at 2000°F Now Possible?
U. Martius (Department of Engineering and Metallurgy, Ontario Research Foundation, Toronto, Ontario).
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3. The Kinetics of Hematite Reduction by Partly Reformed Natural Gas.
P. K. Strangway and H. U. Ross (Department of Metallurgy and Materials Science, University of Toronto, Toronto, Ontario).
Canad. Met. Quart., 5 [3], 221-235 (1966).

4. A Study of the Reaction Temperatures Obtained During the Isothermal Reduction of Iron Ores.
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J. Review article

1. A Review of the Mechanisms of Fatigue.
R. K. Ham (Department of Metallurgy and Metallurgical Engineering, McMaster University, Hamilton, Ontario).
Canad. Met. Quart., 5 [3], 161-179 (1966).