

Mines Branch Information Circular IC 265

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

JANUARY - MARCH, 1971

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, 1971.

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BIBLIOGRAPHIE DES RECHERCHES EFFECTUÉES
DANS LE DOMAINE DES ÉTATS CONDENSÉS AUX
TEMPÉRATURES ÉLEVÉES, AU CANADA,
DE JANVIER À MARS, 1971

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, 1971.

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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, 1971, 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, or anyone who currently receives 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 XXVIth IUPAC Conference, i. e., the business meetings of the Union, will take place in Washington, D. C., during the period July 15th to 24th, 1971. The Commission on High Temperatures and Refractories will hold meetings during that period and the collator of these bibliographies hopes to be present. If there are any matters that any recipient of these documents would like to have discussed at these meetings, it would be appreciated if he would communicate with the author in good time.

The XXIIIrd International Congress of IUPAC, i. e., the technical sessions, will contain very little of interest to the recipients of these documents as the main areas to be dealt with are Organic Chemistry and Macromolecular Chemistry. For the sake of completeness, however, a list of the subjects to be discussed in the various symposia is given below.

A. Organic Chemistry Symposia

1. Applications of Quantum Mechanics to Organic Chemistry.
2. Short-Lived Intermediates.
3. Spectroscopy in Structure Determination.
4. New Natural Product Syntheses.
5. Intramolecular Rearrangements, Valence Isomerization, and Cyclo-addition.
6. Insect Chemistry.
7. General Methods of Synthesis.
8. Organo-Transition Metal Chemistry.
9. Photochemistry.
10. Medicinal Chemistry.
11. Free Radicals and Homolytic Mechanisms.
12. Small Rings.
13. Biosynthesis.

B. Macromolecular Chemistry Symposia

1. Dynamics of Conformational Change in Macromolecules.
2. Photochemistry of Macromolecules.
3. New Developments in Ionic Polymerization.
4. Electrical and Optical Properties of Polymers.
5. New Developments in Free-Radical Polymerization.
6. Membranes ———— Structure and Transport.
7. Reactions and Modifications of Polymers.
8. Heterophase Polymer Systems.
9. Medical Polymers.
10. Polymerization and Co-Polymerization of Heterocyclics.
11. Olefin Co-Polymers.
12. Developments in Polymer Morphology.
13. Interface and Adhesion Problems in Polymer Composites.
14. New Monomers and Polymers.

C. Joint Symposia

1. Heterogeneous Catalysis.
2. Mechanism of Enzyme Action.
3. Advances in Conformational Analysis.
4. Ion-Pair Processes.
5. Synthesis and Conformation of Biopolymers.

The recipients of these bibliographies who have been in the habit of also receiving the international documents, hitherto published by the N.B.S., but now to be published from the Imperial College of Science and Technology, London, England, will realize that the delay in receiving these latter documents, if ordered, has been associated with the mail strike in Great Britain. Now that this dispute has been settled, it is hoped that the delivery of these international bibliographies can be initiated on a regular basis. In the previous issues of the Canadian document, details were given concerning the cost of the international bibliography and the place from which they can be obtained.



BIBLIOGRAPHY OF WORK ON HIGH-TEMPERATURE
CONDENSED STATES PUBLISHED IN CANADA,
JANUARY - MARCH, 1971

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

Bibliography (January 1 to March 31, 1971)
for Canada

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

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A. Devices for achieving temperatures above 1500°C

Nil

B. Devices for measuring and controlling temperatures above 1000°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. Effects of Alloying on Polarization and Corrosion of Type 430 Stainless Steel.

G. J. Biefer (Physical Metallurgy Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).
Canad. Metall. Quart., 9[4], 537-550 (1970).

b. Non-metallic materials

1. The Determination of Quartz in Dusts by Infrared Spectroscopy.

A. H. Gillieson and D. M. Farrell (Mineral Sciences Division, Mines Branch, Department of Energy, Mines and Resources, Ottawa, Ontario).
Canad. Spectroscopy, 16 [1], 21-26 (1971).

2. Electron Concentration and Mobility in Semi-Metallic CdO.

F. P. Koffyberg (Department of Physics, Brock University, St. Catharines, Ontario).
Canad. Journ. Phys., 49 [4], 435-440 (1971).

3. Temperature Variation of the Frequency of Longitudinal Inter-Planar Oscillations in Pyrolytic Graphite.

A. P. Roy (Department of Physics, McMaster University, Hamilton, Ontario).

Canad. Journ. Phys., 49 [2], 277-279 (1971).

c. Mixed materials

Nil

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

a. Metallic materials

1. Crystal Dynamics and Electronic Specific Heats of Palladium and Copper.

A. P. Miller and B. N. Brockhouse (Department of Physics, McMaster University, Hamilton, Ontario).

Canad. Journ. Phys., 49 [6], 704-723 (1971).

b. Non-metallic materials

Nil

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

1. Activities and Ionic Distributions in Cobalt Silicate Melts.

I. B. Smith and C. R. Masson (Atlantic Regional Laboratory, National Research Council of Canada, Halifax, Nova Scotia).

Canad. Journ. Chem., 49 [5], 683-690 (1971).

c. Mixed materials

Nil

G. Phase equilibria above 700°C

1. Solubility Limit for Sulphur in Nickel Between 637°C and 1400°C.
R. J. Brigham, H. Neumayer and J. S. Kirkaldy
(Department of Metallurgy and Materials Science, McMaster University, Hamilton, Ontario).
Canad. Metall. Quart., 9 [4], 525-529 (1970).
2. Phase Equilibria in the System $\text{NaAlSi}_3\text{O}_8$ - NaAlSiO_4 - H_2O , with Special Emphasis on the Stability of Analcite.
Ki-Tae Kim and B. J. Burley (Department of Geology, McMaster University, Hamilton, Ontario).
Canad. Journ. Earth Sciences, 8 [3], 311-337 (1971).

H. Reactions at temperatures above 700°C

1. Diffusion of Copper in Liquid Fayalite Slags.
F. Ajersch and J. M. Toguri (Department of Metallurgy and Materials Science, University of Toronto, Toronto, Ontario).
Canad. Metall. Quart., 9 [4], 507-511 (1970).
2. Contribution à l'Étude de l'Oxydation du Cobalt - Mesure de l'Énergie d'Activation entre 475°C et 1325°C.
F. Morin et M. Rigaud (Département de génie métallurgie, École Polytechnique, Montréal, Québec).
Canad. Metall. Quart., 9 [4], 521-523 (1970).
3. Growth of Wüstite Scales on Steels.
W. W. Smeltzer, L. A. Morris and R. C. Logani (Department of Metallurgy and Materials Science, McMaster University, Hamilton, Ontario).
Canad. Metall. Quart., 9 [4], 513-519 (1970).
