Mikhaylov

PHASE I BOOK EXPLOITATION SOV/3910

Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov

Veshchestva vysokoy chistoty i reaktivy; sbornik statey (High Purity Substances and Reagents; Collection of Articles) Moscow, Goskhimizdat, 1959. 186 p. (Series: Its: Trudy, vyp. 23) Errata slip inserted. 1,700 copies printed.

Sponsoring Agency: USSR. Sovet Ministrov. Gosudarstvennyy komitet po khimii.

Ed.: Yu.V. Lyande; Tech. Ed.: Ye.G. Shpak; Editorial Board of Series: V.G. Brudz', V.M. Dziomko, R.P. Lastovskiy (Resp. Ed.), A.M. Lukin, G.E. Malkiel', G.I. Mikhaylov, G.A. Pevtsov (Deputy Resp. Ed.), and I.G. Shafran.

PURPOSE: This book is intended for personnel of chemical research and industrial chemical laboratories.

COVERAGE: The book contains 36 articles by affiliates of the Scientific Research Institute for Chemical Reagents (IREA) treating methods which may be adopted

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by different branches of industry in producing, analyzing, and studying inorganic and organic substances of high purity. Figures, tables, and references accompany each article. No personalities are mentioned.

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I. METHODS OF PREPARING HIGH PURITY SUBSTANCES AND REAGENTS

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II. METHODS OF ANALYZING HIGH PURITY SUBSTANCES AND REAGENTS

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Karanovich, G.G. Colorimetric Determination of Heavy Metals With the Aid of Thioacetamide 96

PHASE I BOOK EXPLOITATION SOV/4973

Soveshchaniye po lyuminestsentsii, 8th, 1959

Metody lyuminestsentnogo analiza; materialy soveshchaniya (Methods for Luminescence Analysis, Materials of the 8th Conference) Minsk, Izd vo AN BSSR, 1960. 147 p. 1,000 copies printed.

Sponsoring Agency: Akademiya nauk Belorusskoy SSR. Institut fiziki.

General Ed.: N. A. Borisevich; Ed.: L. Timofeyev; Tech. Ed.: N. Siderko.

PURPOSE: This collection of articles is intended for chemists and physicists interested in molecular luminescence, and for scientific personnel concerned with applications of this and related phenomena in research in the life sciences.

COVERAGE: The collection contains 28 papers read at the Eighth Conference on Luminescence, which took place 19-24 October, 1959 [place of conference not given]. These studies are concerned principally with the development of new luminescence methods for quantitative and qualitative chemical analysis, and with the applications of luminescence in medical and biological research. They discuss luminescence methods for the determination of uranium, mercury, magnesium, aluminum, boron, and other elements, as well as luminescence methods for the diagnosis of skin cancer and the detection of grippe virus, pathogenic microorganisms, etc. The structural design of new instruments for luminescence analysis is described. The conference was not concerned with studies on the phosphorescence of crystal phosphores. There is a discussion of the contributions of Soviet specialists in molecular luminescence in the course of the year and a half preceding the conference. The articles of V. K. Matveyev (p. 75) and of V. V. Patrikeyev (p. 79) have been annotated because of their importance. No personalities are mentioned. References accompany most of the articles.

Kalitina, T. A. [Institute of Nutrition of the Academy of Medical Sciences AS USSR]. Fluorescent [Immunization] Serum for the Detection of Cl. Botulinus 122

Vasilov, S. L., and V. I. Nikolayev [Chitinskiy gosudarstvennyy meditsinskiy institut (Chita State Medical Institute)]. Quantitative Determination of Cardiac Glycosides in Solutions by Objective Luminescence Analysis 127

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Mikhaylov, G. I., and N. M. Kosnikova [All Union Scientific Research Institute of Chemical Reagents]. Fluorescent Dyes for Labelling Albumens

Gruzinskiy, V. V., G. I. Morgaylik, and A. V. Yermolovich [Institute of Physics AS BeloSSR]. Determination of the Germination of Seeds of Certain Tree Species by the Luminescent Method 143

AVAILABLE: Library of Congress

PHASE I BOOK EXPLOITATION SOV/4350

Soveshchaniye po khimii, tekhnologii i primeneniyu proizvodnykh piridina i khinolina. Riga, 1957

Khimiya, tekhnologiya i primeneniye proizvodnykh piridina i khinolina; materialy soveshchaniya (Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives, Materials of the Conference) Riga, Izd-vo AN Latviyskoy SSR, 1960. 299 p. Errata slip inserted. 1,000 copies printed.

Sponsoring Agencies: Akademiya nauk Latviyskoy SSR. Institut khimii; Vsesoyuznoye khimicheskoye obshchestvo.

Ed.: S. Bazilevskaya; Tech. Ed.: A. Klyavinya; Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry, E. V. Vanaga, Candidate of Chemistry (Resp. Ed.), I. P. Zalukayev, Doctor of Chemistry, and M. M. Kalnyn'.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains 33 articles on methods of synthesizing or producing pyridine, quinoline, and their derivatives from natural sources. No personalities are mentioned. Figures, tables, and references accompany the articles.

II. SYNTHETIC MEANS OF PREPARING PYRIDINES AND QUINOLINES

Sadykov, A. S., and O. S. Otroshchenko. [Sredneaziatskiy gosudarstvennyy universitet imeni V. I. Lenina (Central Asia State University imeni V. I. Lenin)]. Synthetic Studies [illegible]

Card 4/10

Pirzhnitz, M. [illegible], B. P. [illegible], A. M. [illegible], P. Vernova, and Ye. V. Yarosh. [Yaroslavskiy [illegible] [illegible] Institut [illegible] [illegible] Experimental Plant of the Ministry [illegible] Industry]. Technical Synthesis of [illegible] and [illegible]-Methyl-5-vinylpyridine and Their Fields of Application [illegible]

Vanag, G. Ya. [Institut organicheskogo sinteza Akademii nauk Latviyskoy SSR (Institute for Organic Synthesis of the Academy of Sciences Latviyskaya SSR)]. The Transition From 1,3-Indandione to Pyridine Derivatives 111

Koton, M. M. [Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR (Institute for High Molecular Compounds of the Academy of Sciences USSR)]. Synthesis and Polymerization of Unsaturated Compounds of the Pyridine and Quinoline Series 119

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Kozlov, N. S. [Permskiy sel'skokhozyaystvennyy institut (Perm' Agricultural Institute)]. Catalytic Synthesis of Quinoline Bases From Aromatic Amines and Acetylene 131

Mindin, V. I. [Rostov State University]. Preparation of Quinaldines From Sodium Aryl Amides and Synthesis of N Arylquinaldine Salts 139

Mikhaylov, G. I. [Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov (All-Union Scientific Research Institute for Chemical Reagents)]. Study of the Hydroxyquinoline Method of Synthesizing Quinolinic Bases 145

Ternov, B. A. [Rostov State University]. Synthesis of Derivatives of Quinoline and Some N Aryllepidine Salts of Aryl Amines 151

Kozlov, N. S., and O. K. Kozlovskaya [Permskiy gosudarstvennyy pedagogicheskiy institut (Perm' State Pedagogical Institute)]. Catalytic Syntheses of 2-Phenyl-5,6-benzoquinoline Derivatives 159

Ardashev, B. I. [Rostov State University]. Catalytic Conversion of Acylated Aryl Amines to Quinolines 171

Mikhaylov, G. I. (All-Union Scientific Research Institute for Chemical Reagents) Studies in the Synthesis of 1,10-Phenanthroline 283

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MIKHAYLOV, G.I.

Works of the All-Union Scientific Research Institute of Chemical Reagents on developers optical sentitizers, desensitizers, and intermediate products for their synthesis. Zhur.nauzh.i prikl.fot.i kin. 5 no.1:74-76 Ja-F '60. (MIRA 13:5)

(Photography--Developing and developers)

POVOROZHENKO, Vladimir Vasil'yevich, prof.; SITNIK, Mikhail Danilovich; SYTSKO, Petr Aleksandrovich, dots.; MIKHAYLOV, G.I., dots., red.; NEKHAY, V.T., red.; KISLYAKOVA, M.N., tekhn. red.

[Problems of the improvement of carrying and forwarding services in the U.S.S.R.] Voprosy sovershenstvovaniia transportno-ekspeditsionnogo obsluzhivaniia v SSSR; materialy. Pod red. V.V.Povorozhenko, G.I.Mikhailova. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1963. 94 p. (MIRA 17:1)

1. Nauchno-tekhnicheskoye setevoye soveshchaniye v BIIZhT, Gomel', 1962. 2. Zaveduyushchiy sektorom Instituta kompleksnykh transportnykh problem Gosplana SSSR (for Sitnik).

MIKHAYLOV, G.I.

Synthesis of quinolinium bases. Report No.5: Synthesis, extraction, and purification of 1,10-phenanthroline. Trudy IREA no.25:66-77 '63. (MIRA 18:6)

MIKHAYLOV, G.I.; PANKOVA, E.S.; YAROVENKO, Ye.Ya.

Preparation of high-purity organic substances. Report No.1: Preparation of high-purity α-nitronaphthalene. Trudy IREA no.25:78-82 '63. (MIRA 18:6)

MIKHAYLOV, G. K.

USSR/Engineering - Hydraulics, Canals Aug 52

"On the Calculation of the Critical Depths in Trapezoidal Canals," G. K. Mikhaylov, Cand Tech Sci

Gidrotekh i Meliorats, No 8, pp 19-22

Develops methods for calcg crit depth, based on compiling tables with one entry or plotting single curve instead of nomographs. According to author, calcn is sufficiently precise and is simpler than methods presently in use.

24T40

MIKHAYLOV, G. K.

USSR/Geophysics - Geometry Jul/Aug 52

"The Geometry of an Imaginary Ground," G. K. Mikhaylov, Moscow, Inst of Mech, Acad Sci USSR

"Prik Matemat i Mekh" Vol XVI, No 4, pp 511, 512

Considers a model of a ground in the form of a set of equal round spheres tightly packed into one mass according to various laws of geometric configurations for the ultimate purpose of investigation of porous grounds through which fluids and gases flow.

225T43

ARAVIN, V.I.; NUMEROV, S.N.; MIKHAYLOV, G.K., redaktor; GAVRILOV, S.S., tekhnicheskiy redaktor.

[Theory of the motion of liquids and gases in undistorted porous media] Teoriia dvizheniia zhidkostei i gazov v nedeformiruemoi poristoi srede. Moskva, Gos. izd-vo tekhniko-teoret. lit-ry, 1953. 616 p. (MLRA 7:8)
(Filters and filtration)

MIKHAYLOV, G. K.

866. Mikhailov, G. K., Application of extremely anisotropic soil patterns for approximate solution of some basic tasks on ground water flowing upon an impervious base (in Russian), *Inzhener. Sbornik, Akad. Nauk SSSR* 15, 159–168, 1953.

Author takes into account two limit cases of anisotropy where, in the first, the permeability in the axis of anisotropy perpendicular to the impervious base equals zero and, in the second, to an infinite value. Assuming the validity of Darcy's law he gives solutions for (1) seepage from reservoir with vertical pervious side into dry soil, the reservoir water level being constant and the impervious base horizontal; (2) seepage from reservoir with constant water level through rectangular dam with inclined impervious base. The difference in the rate of flow for the two extreme anisotropies is, in case (1), 5.7% and in case (2), 10.4%. The evaluation of an accurate solution in such tasks is, therefore, possible on the base of only one of the two limit cases.

As an example, the evaluation of seepage from reservoir with inclined pervious side into dry soil is presented. Assuming the hydraulic gradient to be proportional to a power of speed or to be a parabolic function of the speed, writer in the same way deals with (1) seepage through a rectangular dam on horizontal impervious base, and (2) seepage to a well. In these cases also, the difference in the rate of flow for both extreme anisotropies does not exceed 17%.

[illegible]

MIKHAYLOV, G.K.

Mathematical Reviews
Vol. 14 No. 11
December, 1953
Mechanics.

Mihailov, G. K. On filtration in trapezoidal dikes with a vertical upstream slope. Akad. Nauk SSSR. Prikl. Mat. Meh. 17, 189–199 (1953). (Russian)

This is a continuation of the investigations of a filtration problem which were begun by P. Ya. Polubarinova-Kochina [Izvestiya Akad. Nauk SSSR. Ser. Mat. 1939, 579–602; these Rev. 2, 26] and which were continued by the author [Doklady Akad. Nauk. SSSR (N.S.) 80, 553–556 (1951)]. Certain integrals, in terms of which the flow through the dam was expressed in the author's earlier paper, are here evaluated in terms of infinite series. It is shown that for special values of one of the parameters occurring in the problem, the given infinite series reduce to well-known formulas of hydraulics. *H. P. Thielman* (Ames, Iowa).

MIKHAYLOV, G. K.

Among the papers presented by the First All-Union Conference on Aerohydrodynamics (8-13 Dec 1952) convened by the Institute of Mechanics, Academy of Sciences USSR, was:

"Filtration in Trapezoidal Dams on an Impervious Foundation With a Vertical Upper Bank" by Mikhaylov, G. K.

SO: Izvestiya AN USSR, Otdeleniye Tekhnicheskikh Nauk, No. 6, Moscow, June 1953, (W-30662, 12 July 1954)

USSR/Engineering - Hydraulics, Dams Jan 52
Structural Analysis

"Concerning Filtration in Trapezoidal Dams on Horizontal Impervious Foundation," G. K. Mikhaylov, Engr

"Gidrotekh i Melio" No 1, pp 33-42

Attempts to apply hydromech analysis to calcn of earth dams without water on downstream side and to develop formulas simple and convenient for practical purpose. Discusses detn of filtration discharge in trapezoidal dams with vertical upstream slope and calcn of dam by

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USSR/Engineering - Hydraulic, Dams Jan 52
Structural Analysis
(Contd)

replacing its upstream portion with fictitious rectangle, i. e., bringing dam under investigation to its equiv dam with vertical upstream slope. Develops formula for zone of seepage and discusses approx method for detg position of free surface in dam.

202T59

MIKHAYLOV, G.K.

160. Mikhailov, G. K., Simplification of the method of calculating seepage in uniform anisotropic soil (in Russian), *Izvestiya Akad. Nauk SSSR* 19, 159–160, 1954.

Uniformly anisotropic soil is defined as "anisotropic soil, the coefficient of seepage of which, along each direction, remains constant." Elliptical equation for seepage pressure head is solved by a transformation of coordinates and introduction of a fictitious field of isotropic seepage flow. Example illustrates method.

V. L. Dutton, Canada

MIKHAYLOV, G.K.

Mikhailov, G. K. Leonhard Euler. Izv. Akad. Nauk SSSR. Otd. Tehn. Nauk 1955, no. 1, 3–26 (4 plates) (1955). (Russian) 1-F/W

Biography and discussion of Euler's work; also a large bibliography.

MIKHAYLOV, G.K.

Call Nr: AF 1108825

Transactions of the Third All-union Mathematical Congress (Cont.) Moscow Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Krasnosel'skiy, M. A. (Voronezh). On the Investigation of Bifurcation Points of Non-linear Equation. 204-205

Kreyn, S. G. (Voronezh). Mathematical Problems in the Theory of Motion of Solid Bodies With Fluid-filled Cavities. 205

Kupradze, V. D. (Tbilisi). On Some New Research at the University of Tbilisi in the Mathematical Theory of Elasticity. 205

Mikhaylov, G. K. (Moscow). Precise Solution of a Problem on Stabilized Motion of Ground Water in Vertical Plane With Free Surface and Feeding Zone. 205-206

Mention is made of Polubarinova-Kochina, P. Ya.

Movchan, A. A. (Moscow). Linear Oscillations of a Plate Moving in Gas at High Velocity. 206

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Moscow
Transactions of the Third All-union Mathematical Congress, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp.

Call Nr: AF 1108825

Mention is made of Romer, P. E., Vashchenko-Zakharchenko, M. G., Yermakov, V. P., Grave, D. A., Bukreyev, Pokrovskiy, Pfeyffer, Vel'min, V. P., Abramovich, K. F., Delone, B. N., Zhilinskiy,Ye.I., Ostrovskiy, A. M., Shmidt, O. Yu., and Chebotarev, N. G.

Kiro, S. N. (Odessa). Mathematics at the Congresses of Russian Nature Researchers and Physicians. 231-232

Chebyshev, P. L., Imshenetskiy, V. G., Markov, A. A., Korkin, A.N., Sonin, N. Ya., Zolotarev, Ye. I., Voronoy, G. F., Kovalevskaya, S.V., Zhukovskiy, N. Ye., Steklov, V. A., Davidov, A. Yu., Bugayev, N. V., Mlodzeyevskiy, B. K., Yegorov, D. F., Yermakov, V. P., Andreyev, K. A., Sintsov, D. M., Vasil'yev, A. V., Dolbni, I. P., Chaplygine, S. A., Sokhotskiy, Yu. V., Bobynin, V. V.

Kol'man, E. Ya. (Moscow). On Certain Unsolved Problems in the History of Ancient Mathematics. 232

Mikhaylov, G. K. (Moscow). The Youth of Leonard Euler and his First Scientific Works. 232

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MIKHAYLOV, G.K. (Moskva)

Maximum gradients near earthen dam drainages. Izv.AN SSSR.Otd.tekh. nauk no.2:109-112 F '56. (MLRA 9:7)

1.Institut mekhaniki AN SSSR.
(Soil percolation)

MIKHAYLOV, G.K.

Rigorous solution of the problem of ground water flow from a horizontal stratum into a basin with a heavier liquid. Dokl. AN SSSR 110 no.6:945-948 O '56. (MIRA 10:2)

1. Institut mekhaniki Akademii nauk SSSR. Predstavleno akademikom L.I. Sedovym.

(Soil percolation)

MIKHAYLOV, G.K. (Moskva).

Leonard Euler's sojourn in St. Petersburg. Isv. AN SSSR. Otd. tekh. nauk no.3:10-37 Mr '57. (MIRA 10:6)
(Euler, Leonhard, 1707-1783)

AUTHOR: MIKHAYLOV, G. K. 24-5-25/25

TITLE: Commemorating Leonard Euler. (Pamyati Leonarda Eylera)

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.5, pp.143-144 (U.S.S.R.)

ABSTRACT: Between April 15 and 18 a Jubilee Session of the Physics-Mathematics and Technical Sciences Section of the Ac.Sc. U.S.S.R. was held in Leningrad commemorating the 250th anniversary of the birth of L. Euler. About 400 Soviet and foreign guests participated. In addition to several papers about the work of Euler, a non-specified number of papers were read by Soviet and foreign scientists relating to modern problems of mathematics and mechanics. Other meetings commemorating the 250th anniversary of Euler are also mentioned.

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AVAILABLE:

MIKHAYLOV, G. K.

AUTHOR: Mikhaylov, G. K. 24-8-33/34

TITLE: In the National Soviet Committee on Applied Mechanics. (V natsional'nom komitete SSSR po teoreticheskoy i prikladnoy mekhanike).

PERIODICAL: "Izvestiya Akademii Nauk, Otdeleniye Tekhnicheskikh Nauk" (Bulletin of the Ac.Sc., Technical Sciences Section), 1957, No.8, pp.167-168 (U.S.S.R.)

ABSTRACT: In July the Presidium of the Ac.Sc. considered and approved the text on the founding of a National Committee on Theoretical and Applied Mechanics, the tasks of which include preparation of All Union meetings on theoretical and applied mechanics and of conferences on various problems of mechanics, coordination of research work, improvement of the relations between Soviet and foreign specialists, consideration of the problems relating to publication in the U.S.S.R. of journals on mechanics, to represent the Soviet Union in the International Association on Theoretical and Applied Mechanics, to take the necessary measures for the participation of Soviet specialists in mechanics in international and national foreign meetings, to inform the Soviet scientific community on the work of the International Association on Theoretical and Applied Mechanics and to help

Card 1/2

MIKHAYLOV, G.K.

Leonhard Euler's notebooks in the archives of the Academy of Sciences of the U.S.S.R. (General description and notes in mechanics). Ist.-mat. issl. no.10:67-94 '57. (MIRA 11:1)
(Euler, Leonhard, 1707-1783)

AUTHOR MIKHAYLOV, G.K., (Moscow), PA - 3o7o
TITLE The Migration of Leonhard Euler to St. Petersburg.
(K pereyezdu Leonarda Eylera v Petersburg - Russian)
PERIODICAL Izvestiia Akad. Nauk SSSR, Otdel. Tekhn., 1757, Vol 21, Nr 3, pp 1o- 37, (U.S.S.R.)
Received 6/1957 Reviewed 7/1957

ABSTRACT Based upon the first correspondence of L. Euler with D. Bernoulli and upon other sources. Eighty- one letters of D. Bernoulli to L. Euler have been preserved from the years 1726-1768 and also 2o letters of Euler. The later ones are chiefly incomplete copies, the greatest portion of Eulers answers have been lost. Most of the letters still extant can be found in the archives of the Academy of Sciences of the U.S.S.R. in Leningrad. The complete correspondence should shortly be published in its own edition. In this work the first letters are reproduced in the original and in translation, three by Bernoulli and two by Euler(1726-1727). After that there is a short describtion of Euler's life up to his being chosen as professor of the St. Petersburg Academy of Sciences. (With 1 picture, 2 photostatic copies and 17 Slavic references).

ASSOCIATION
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SUBMITTED 11.1.1956.
AVAILABLE Library of Congress.
Card 1/1

AUTHOR: Mikhaylov, G. K. 20-114-4-13/63

TITLE: Percolation in a Rectangular Cofferdam When the Capillary Rise Is Very High (O fil'tratsii v pryamougol'noy peremychke pri ves'ma bol'shoy vysote kapillyarnogo podnyatiya)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 4, pp. 725-728 (USSR)

ABSTRACT: Reference is made to several previous works on this subject. The system of motion in very high (infinitely high) cofferdams when the capillary rise is very high (infinitely high) is illustrated by a diagram. The capillary zone is assumed to be completely saturated and the motion taking place in it is assumed to satisfy Darsi's law. The author here introduces the complex potential $f = \varphi + i\Psi$, where $\varphi = -\varkappa(p/\gamma + y)+C$ applies. $\varkappa$ denotes the coefficient of percolation, and the complex coordinate of the region of motion is here described by $z=x+iy$. The region of the complex percolation velocity $w = u-iv = df/dz$ is also illustrated by a drawing. The author then introduces the complex auxiliary variable ζ and transforms the region of motion to the lower semiplane ζ. The region of w is represented by the Christoffel Schwarz formulae on the ζ plane. The extent of the suction region is determined by an equation which combines the

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Percolation in a Rectangular Cofferdam When the Capillary Rise Is Very High 20-114-4-13/63

values of pressure above and below. Thereafter the determination of the parameters is discussed. The thus resulting asymptomic dependence of the relationship of the altitudes is written down. A relation for the determination of the yield of percolation is then derived. In this relation elliptical integrals of type one, two and three occur. The numerical results obtained by these formulae for a special case are illustrated by a diagram. The present paper again confirms the possibility of a local investigation of the individual regions of the percolation flow without taking into account of the conditions of the sufficiently far removed portions of region of motion. There are 3 figures and 18 references, 12 of which are Slavic.

ASSOCIATION: Institute of Mechanics of the AS USSR (Institut mekhaniki Akademii nauk SSSR)

PRESENTED: December 27, 1956 by L. I. Sedov, Member, Academy of Sciences, USSR

SUBMITTED: October 19, 1956

Card 2/2

MIKHAYLOV, G.K.
Institute of Mechanics, USSR Academy of Sciences, Moscow.

"Unpublished Notes and Manuscripts of Leonhard Euler on Theoretical and Applied Mechanics" and "Two Approximate Methods of Solution of Problems of the Nonuniform Motion of Groundwater Along a Plane Impermeable [redacted]

[redacted].

KUKARKIN, Boris Vasil'yevich, prof.; RYBNIKOV, Konstantin Alekseyevich, prof.; BASHMAKOVA, Izabella Grigor'yevna; YUSHKEVICH, Adol'f Pavlovich; YANOVSKAYA, Sof'ya Aleksandrovna; SPASSKIY, Boris Ivanovich, dotsent; MIKHAYLOV, Glab Konstantinovich, starshiy nauchnyy sotrudnik; MATYNOV, D.Ya., prof., otv.red.; GORDEYEV, D.I., prof., red.; IVANENKO, D.D., prof., red.; KUDRYAVTSEV, P.S., prof., red.; KULIKOVSKIY, P.G., dotsent, red.; KHRGIAN, A.Kh., prof., red.; SHEVTSOV, N.S., prof., red.; VERKHUNOV, V.M., assistent, red.; KONONKOV, A.F., red.; YERMAKOV, M.S., tekhn.red.

[Programs of courses on the history of the physicomathematical sciences] Programmy po istorii fiziko-matematicheskikh nauk. Moskva, 1959. 40 p. (MIRA 12:12)

1. Moscow. Universitet. 2. Orgkomitet Vsesoyuznoy mezhvuzovskoy konferentsii po istorii fiziko-matematicheskikh nauk (for Kukarkin, Rybnikov, Spasskiy, Gordeyev, Ivanenko, Kudryavtsev, Kulikovskiy, Mikhaylov, Khrgian, Shevtsov, Verkhunov, Kononkov).
(Physics--Study and teaching)
(Mathematics--Study and teaching)

RYBNIKOV, K.A., prof., red.; SPASSKIY, B.I., dotsent, red.; GORDEYEV, D.I., prof., red.; IVANENKO, D.D., prof., red.; KUDRYAVTSEV, P.S., prof., red.; KUKARKIN, B.V., prof., red.; KULIKOVSKIY, P.G., dotsent, red.; MIKHAYLOV, G.K., starshiy nauchnyy sotrudnik, red.; KHRGIAN, A.Kh., prof., red.; SHEVTSOV, N.S., prof., red.; VERKHUNOV, V.M., assistent, red.; KONONKOV, A.F., red.; MALIKOVA, M.A., red.; SOROKINA, L.A., red.; YERMAKOV, M.S., tekhn.red.

[Summaries of papers and reports of the Interuniversity Conference on the History of Physics and Mathematics] Tezisy dokladov i soobshchenii Mezhvuzovskoi konferentsii po istorii fiziko-matematicheskikh nauk. Moskva, Izd-vo Mosk.univ., 1960. 187 p. (MIRA 13:6)

1. Mezhvuzovskaya konferentsiya po istorii fiziko-matematicheskikh nauk. 1960.
(Mathematics--Congresses) (Physics--Congresses)

MIKHAYLOV, G. K. (Moscow)

"On the Influx of Subsoil Water Into Electrically Charged Drains."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

MIKHAILOV, G. K. (Moscow)

"On Some Problems of Hydrodynamics of Porous Media in an Electical Field."

report submitted for the Xth International Congress of Applied Mechanics, Stresa, Italy, 31 Aug - 7 Sep 60.

MIKHAYLOV, G. K.

"On Some Problems of Hydrodynamics of Porous Media in an Electrical Field."

report to be submitted for the Intl. Council of the Aeronautical Sciences, Second International Congress, Zurich, Switzerland, 12-16 Sep 60.

MIKHAYLOV, G.K.

"Leonard Euler's works on mechanics relating to the theory of fluid bodies," edited by C.A. Truesdell. Reviewed by G.K. Mikhailov. Vop.ist.est.i tekh. no.9:162-165 '60.
(MIRA 13:7)

(Fluid mechanics)
(Truesdell, C.A.)

MIKHAYLOV, G.K.

History of the application of the law of kinetic energy to the flow of water from vessels. Vop.ist.est.i tekh. no.10:56-59 '60.
(MIRA 14:3)

(Hydraulics)

S/030/60/000/05/43/056
B015/B008

AUTHOR: Mikhaylov, G. K., Scientific Secretary

TITLE: Problems of Theoretical and Applied Mechanics 21

PERIODICAL: Vestnik Akademii nauk SSSR, 1960, 30 No. 5, pp. 108-110

TEXT: The All-Union Congress on Theoretical and Applied Mechanics was held in Moscow from January 27 to February 3, 1960. The Congress had been convened under the sponsorship of the Akademiya nauk SSSR (Academy of Sciences USSR) by the Natsional'nyy komitet SSSR po teoreticheskoy i prikladnoy mekhanike (National Committee of the USSR of Theoretical and Applied Mechanics) jointly with the Otdeleniye tekhnicheskikh nauk (Department of Technical Sciences), the Institut mekhaniki Akademii nauk SSSR (Institute of Mechanics of the Academy of Sciences USSR) and the Moskovskiy universitet im. M. V. Lomonosova (Moscow University imeni M. V. Lomonosov) The Congress dealt with the coordination of investigations in the field of mechanics, the familiarization with the new investigation results and the determination of the main problems and trends of further activities. The Conference was attended by more than 2000 persons, among them guests from 9 foreign

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countries. 670 lectures were delivered in 137 sessions, among them 46 by foreign scientists. The author notes the absence of reports on celestial mechanics, as well as the insufficient number of reports on the results of experimental investigations. I. I. Artobolevskiy, N. N. Bogolyubov, I. N. Vekua, G. I. Petrov, Yu. N. Rabotnov, L. I. Sedov, and N. I. Muskhelishvili summarized the results of the main achievements of Soviet mechanics in 36 surveys. A. M. Lyapunov, N. G. Chetayev, L. I. Mandel'shtam, N. M. Krylov, A. A. Andronov, and N. N. Bogolyubov reported on general mechanics. The author states next that many pupils of A. A. Andronov work in the field of the theory of automatic control. The investigations on the theory of plane flows of ideal liquids are described as being a continuation of the classic studies by N. Ye. Zhukovskiy and S. A. Chaplygin on hydro- and aeromechanics. A. A. Fridman and N. Ye. Kochin reported on achievements in the field of dynamic meteorology. In the theory of elasticity, the application of the theory of functions and of the differential equations, especially by the Tbilisskaya matematicheskaya shkola (Tbilisi Mathematical School), and the papers by N. I. Muskhelishvili on the methods of solving two-dimensional problems of the theory of elasticity are pointed out. In the field of general mechanics, the following subjects are mentioned among others: the

investigation of the stability of motion and nonlinear oscillations of mechanical systems; methods for the solution of mechanical equations; investigation of the problems of celestial ballistics. The investigation of the flight of bodies at high ultrasonic speeds, accompanied by complicated physico-chemical processes, is emphasized in the field of hydro- and aerodynamics. Studies in the field of the hydro- and aerodynamics and mechanics of solid bodies are mentioned next. The wish to hold All-Union Congresses on Theoretical and Applied Mechanics every 4 years was expressed at the Conference.

ASSOCIATION: Natsional'nyy komitet SSSR po teoreticheskoy i prikladnoy mekhanike (National Committee of the USSR for Theoretical and Applied Mechanics)

LAVRENT'YEV, M.A., otv.red.; MIKHAYLOV, G.K., red.; BITSADZE, A.V., red.; VEKUA, I.N., red.; DZHANELIDZE, G.Yu., red.; LUR'YE, A.I., red.; MANDZHAVIDZE, G.F., red.; MIKHAYLOV, G.K., red.; SEDOV, L.I., red.; SOBOLEV, S.L., red.; SOKOLOVSKIY, V.V., red.; KHRISTIANOVICH, S.A., red.; SHERMAN, D.I., red.; RYVKIN, A.Z., red.izd-va; VOLKOVA, V.V., tekhn.red.

[Problems in the mechanics of solids] Problemy mekhaniki sploshnoi sredy; k semidesiatiletiiu akademika N.I.Muskhelishvili. Moskva, 1961. 577 p. (MIRA 14:3)

1. Akademiya nauk SSSR.
(Mechanics, Analytic) (Elastic solids)

MIKHAYLOV, G.K.

Chemical geography of the tributaries of Votkinsk Reservoir. (MIRA 16:3)
Khim.geog. no.1:81-91 '61.
(Votkinsk Reservoir--Geochemistry)

KOPELEVICH, Yu.Kh.; KRUTIKOVA, M.V.; MIKHAYLOV, G.K.; RASKIN, N.M.; KNYAZEV, G.A., red.; SMIRNOV, V.I.; YUSHKEVICH, A.P.; TRAVIN, N.V., red.izd-va; BOCHEVER, V.T., tekhn.red.

[Manuscripts of L.Euler's works in the archives of the Academy of Sciences of the U.S.S.R.] Rukopisnye materialy L.Eilera v arkhive Akademii nauk SSSR. Moskva, Izd-vo Akad. nauk SSSR. Vol.1. [Scientific description] Nauchnoe opisanie. 1962. 427 p. (Akademiia nauk SSSR. Arkhiv. Trudy, no.17). (MIRA 15:4)

(Euler, Leonhard, 1707-1783)

ARKHANGEL'SKIY, V.A.; KARTVELISHVILI, N.A.; MIKHAYLOV, G.K.

On E.P.Kovalenko's investigations on the "Unsteady flow of water in open beds." Izv.AN SSSR.Otd.tekh.nauk.Mekn. i mashinostr. no.4:183-184 Jl-Ag '62. (MIRA 15:8)
(Hydrodynamics) (Kovalenko, E.P.)

MIKHAYLOV, G.K.

Hydrogeological features of the Belebey sediments of the middle Kama Valley. Izv.vys.ucheb.zav.; geol.i razv. 5 no.3:109-114 Mr '62. (MIRA 15:4)

1. Permskiy gosudarstvennyy universitet imeni A.M.Gor'kogo.
(Kama Valley--Water, Underground)

ARKHANGEL'SKIY, V.A.; KARTVELISHVILI, N.A.; MIKHAYLOV, G.K.

Apropos of E.P.Kovalenko's study on the unsteady motion of water in open channels. Inzh.-fiz.zhur. 5 no.8:130-132 Ag '62. (MIRA 15:11)

1. Institut mekhaniki AN SSSR, Moskva.
(Hydrodynamics)

MAKSIMOVICH, G.A., prof., red.; BALKOV, V.A., dots., red.; VASIL'YEV, B.V., dots., red.; GORBUNOVA, K.A., dots., red.; MATVEYEV, B.K., dots., red.; MIKHAYLOV, G.K., inzh., red.; OBORIN, V.A., dots., red.; PECHERKIN, I.A., dots., red.; STARTSEV, V.S., dots., red.; SHMANOVSKIY, L.A., inzh., red.

[Methods for studying karst; transactions] Metodika izucheniia karsta; trudy. Perm', Permskii gos. univ. Nos. 2, 4, 5, 10. 1963. (MIRA 17:12)

1. Vsesoyuznoye soveshchaniye po metodike izucheniya karsta.

MIKHAYLOV, G.K.

Ocher clastic karst cave. Peshchery no.3:43-46 '63.

First special speleological work in Russia. Ibid.:101-102
(MIRA 18:2)

MIKHAYLOV, G.K.

Method for conducting aerovisual observations in hydrogeological surveying. Razved. i okh. nedr 29 no.6:59-60 Je '63. (MIRA 18:11)

1. Permskiy gosudarstvennyy universitet im. Gor'kogo.

RYBNIKOV, K.A., prof., red.; SPASSKIY, B.I., dots., red.; KUDRYAVTSEV, P.S., prof., red.; KULIKOVSKIY, P.G., dots., red.; LITINETSKIY, I.B., dots., red.; MIKHAYLOV, G.K., st. nauchnyy sotr., red.; VERKHUNOV, V.M., kand. fiz.-matem. nauk, red.; KONONKOV, A.F., kand. fiz.-matem. nauk, red., SOROKINA, L.A., nauchnyy red.; VERKHUNOV, V.M., nauchnyy red.; GRIDASOVA, Ye.S., red.izd-va; GOROKHOVA, S.S., tekhn. red.

[Problems of the history of the physical and mathematical sciences] Voprosy istorii fiziko-matematicheskikh nauk. Moskva, Gos. izd-vo "Vysshaia shkola," 1963. 522 p. (MIRA 16:7)
(Physics) (Mathematics)

MIKHAYLOV, G.K., red.

[Abstracts of papers of the Second All-Union Congress on Theoretical and Applied Mechanics, January 29-February 5, 1964, in Moscow] Annotatsii dokladov vtorogo Vsesoiuznogo s"ezda po teoreticheskoi i prikladnoi mekhanike. Moskva, Izd-vo "Nauka," 1964. 245 p. (MIRA 17:3)

1. Vsesoyuznyy s"yezd po teoreticheskoy i prikladnoy mekhanike. 2d, Moscow, 1964.

BARENBLATT, G.I. (Moscow); KOCHINA, P.Ya. (Novosibirsk); MIKHAYLOV, G.K. (Moscow)

"Basic problems of the theory of fluid motion in porous media"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

MIKHAILOV, G.K. (Moskva)

International symposium on the applications of the theory of functions in solid state mechanics. Zhur. vych. mat. i mat. fiz. 4 no.3:[illegible] My-Je '64. (MIR [illegible])

KALININ, S.V.; MIKHAYLOV, G.K.

Second All-Union Conference on Present-day Problems in Mechanics. Vest. AN SSSR 34 no.5:142-144 My '64. (MIRA 17:6)

MUSKHELISHVILI, N.I., red.; SEDOV, L.I., red.; MIKHAYLOV, G.K., red.

[Transactions of the International Symposium on Applications of the Theory of Functions in Continuum Mechanics] Trudy Mezhdunarodnogo simpoziuma prilozheniia teorii funktsii v mekhanike sploshnoi sredy. Moskva, Nauka. Vol.2. 1965. 476 p. (MIRA 18:11)

1. International Symposium on Applications of the Theory of Functions in Continuum Mechanics, Tiflis. 1963.

MIKHAYLOV, G. M.

"Automatic Brakes on Timber-Carrying Narrow-Gauge Railways," Gospolit., Moscow, 1954. 100 pp.

MIKHAYLOV, G.M., insh.; SAVEL'YEVA, N.N.

Reusable portable buildings for assembling yards. Mont. i spets.rab.v strei. 22 no.11:25-26 N'60. (MIRA 13:10)

1. Orgenergostroy.
(Buildings, Prefabricated)

S/117/61/000/003/011/011
A004/A101

AUTHORS: Brovman, M. Ya., Mikhaylov, G. M.

TITLE: Wire bearings

PERIODICAL: Mashinostroitel', no. 3, 1961, 36

TEXT: In mechanical engineering antifriction bearings with racers of high-alloyed steel being in short supply are widely used. In large-size antifriction bearings of machines and assemblies with relatively small loads at low rotation speeds, bearings of a more simple design can be used. In such bearings the anti-friction tracks for the balls are made of high-strength cold-drawn wire, in roller bearings they are made of high-strength steel strip. If necessary, the bearing can be assembled without racer. In such a case grooves are cut in the shaft and bearing housing and wire racers are fitted, which, together with the shaft and housing, act as bearings. Bearings with wire tracks were tested at the experimental laboratory of the Yuzhuralmashzavod Plant. It was found that wire tracks should be used whose diameter is 4 - 5 times less than the ball diameter. According to test data, the coefficient of friction of such bearings varies in the range of 0.005 - 0.009. Angle α is selected within 30 - 60°. The repair of

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A/004/A101

Wire bearings

wire bearings consists in replacing the worn tracks. There are 3 figures. [Abstractor's note: Essentially complete translation]

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DOBROSKOK, I.I.; SURIN, Ye.V.; BROVMAN, M.Ya.; MIKHAYLOV, G.M.; KRULEVETSKIY, S.A. Prinimali uchastiye: ASFANDIYAROV, R.F.; BELOV, Ye.M.; IVANOV, V.I.; MARKOV, V.I.; SOLOV'YEV, Yu.P.; PIMENOV, F.A.; TUROMSHEV, A.F.; KHVES'KO, V.A.; NIKITSKIY, N.V.

Investigating the power parameters of a continuous steel casting plant. Stal' 22 no.3:223-225 Mr '62. (MIRA 15:3)

1. Yuzhnoural'skiy mashinostroitel'nyy zavod (for Asfandiyarov, Belov, Ivanov, Markov, Solov'yev). 2. Novolipetskiy metallurgicheskiy zavod (for Pimenov, Turomshev, Khves'ko). 3. TSentral'nyy nauchno-issledovatel-skiy institut chernoy metallurgii (for Nikitskiy).
(Continuous casting--Equipment and supplies)

L 12854-63 EWT(1)/BDS AFFTC/ASD JXT(LJP)
ACCESSION NR: AP3001667 S/0065/63/000/006/0021/0024

AUTHOR: Mikhaylov, G. M.; Nikolayev, A. M. 53

TITLE: Generalized equation for the settling of spherical particles 21

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 6, 1963, 21-24

TOPIC TAGS: equations, free settling spherical particles, laminar motion, turbulent motion, transitional motion, Reynolds number, Archimedes number

ABSTRACT: The proposed new general equation for restricted and free settling of spherical particles as shown in the enclosure is valid for all three systems of motion: laminar, turbulent, and transitional. The derivation of the equation is given. Its accuracy compares favorably with results obtainable from known hydrodynamic equations.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. Kirova, Kazan (Chemical Technology Institute)

SUBMITTED: 00 DATE ACQ: 08Jul63 ENCL: 01

SUB CODE: none NO REF SOV: 009 OTHER: 000

Card 1/2

GABUDA, S.P.; MIKHAYLOV, G.M.; ALEKSANDROV, K.S.

Behavior of zeolite water and the symmetry of harmotome. Dokl. AN SSSR 153 no.6:1360-1362 D '63. (MIRA 17:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom M.M. Dubininym.

BROVMAN, M.Ya.; MIKHAYLOV, G.M.

Use of graphite bushings in the sliding bearings of coke machinery. Koks i khim. no.6:56 '63. (MIRA 16:9)

1. Yuzhno-Ural'skiy zavod tyazhelogo mashinostroyeniya.
(Coke industry—Equipment and supplies)

GABUDA, S.F.; GAGARINSKIY, Yu.V.; ITSKE, A.G.; MIKHAYLOV, Yu.N.

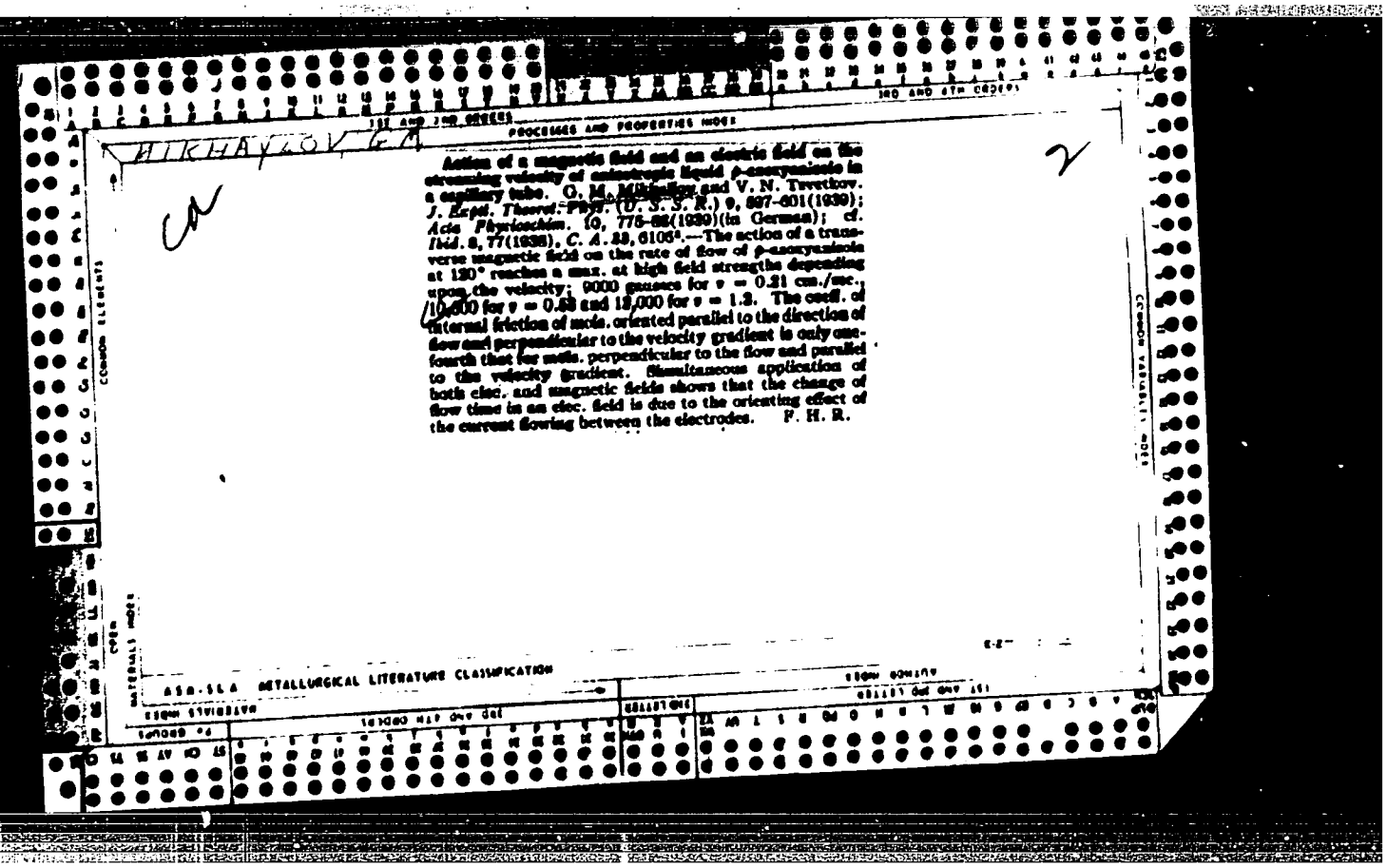
Magnetic resonance of F^{19} nuclei in uranium and thorium tetrafluorides. Zhur. strukt. khim. 5 no.5:798-801 S-O '64. (MIRA 18:1)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk, i Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk.

KACHELKIN, L.I.; RUSHNOV, N.P.; KOROBOV, V.V.; MIKHAYLOV, G.M.; CHEREZOVA, V.M.

[Use of lumbering wastes] Ispol'zovanie otkhodov lesozagotovok. Moskva, Lesnaia promyshlennost', 1965. 322 p. (MIRA 18:6)

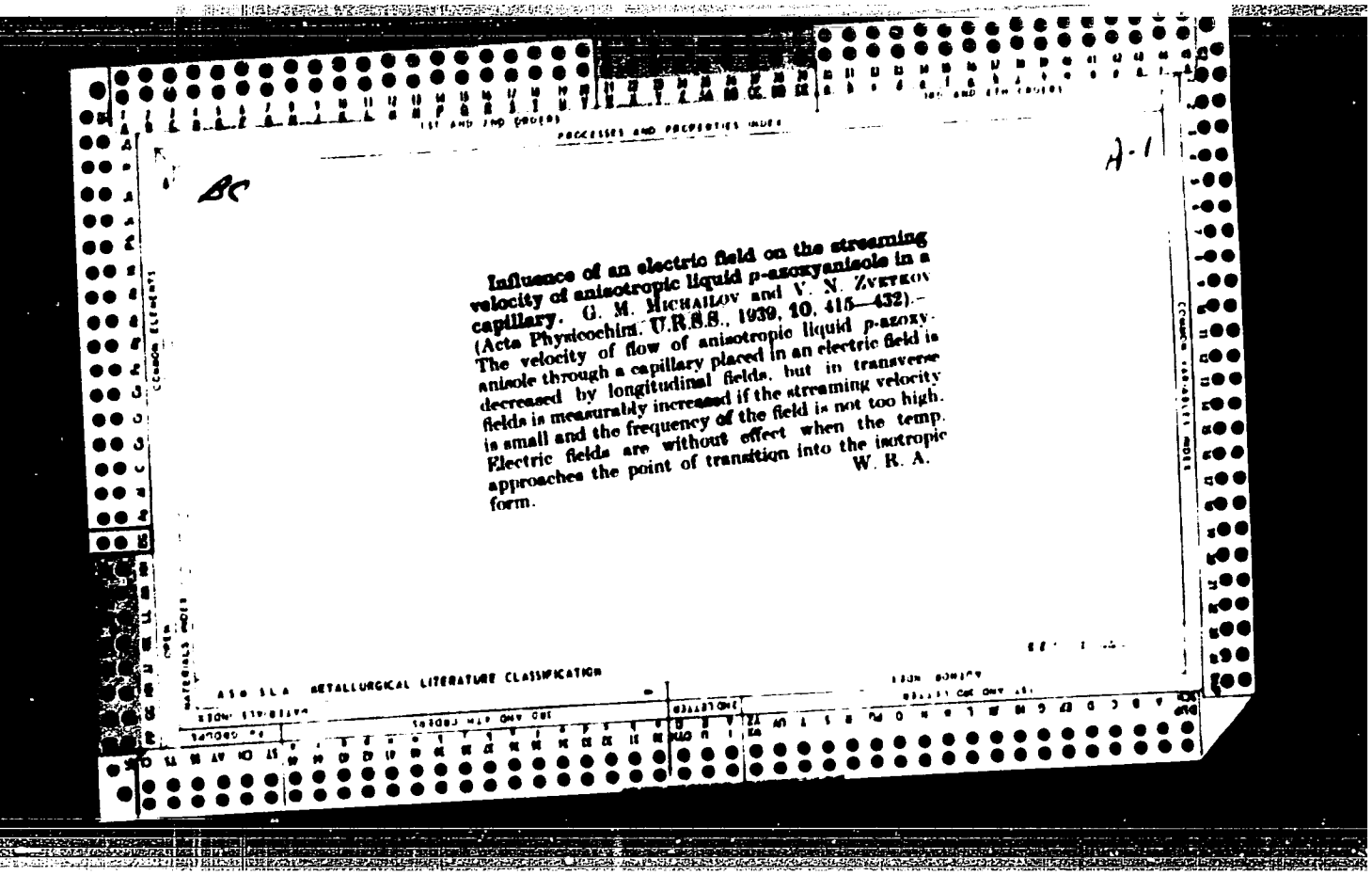
1. Nachal'nik laboratorii ispol'zovaniya drevesiny i drevesnykh otkhodov TSentral'nogo nauchno-issledovatel'skogo instuta mekhanizatsii i energetiki lesnoi promyshlennosti (for Kachelkin).



MIKHAYLOV, G.M.

Action of a magnetic field and an electric field on the streaming velocity of anisotropic liquid p-azoxyanisole in a capillary tube. G. M. Mikhailov and V. N. Tsvetkov. *J. Exptl. Theoret. Phys. (U. S. S. R.)* 9, 597-601(1939); *Acta Physiochim.* 10, 775-82(1939)(in German); cf. *Ibid.* 8, 77(1938). *C. A.* 33, 6106⁴.—The action of a transverse magnetic field on the rate of flow of p-azoxyanisole at 120° reaches a max. at high field strengths depending upon the velocity; 9000 gausses for v = 0.21 cm./sec., 10,000 for v = 0.53 and 12,000 for v = 1.3. The coeff. of internal friction of mols. oriented parallel to the direction of flow and perpendicular to the velocity gradient is only one-fourth that for mols. perpendicular to the flow and parallel to the velocity gradient. Simultaneous application of both elec. and magnetic fields shows that the change of flow time in an elec. field is due to the orienting effect of the current flowing between the electrodes. F. H. R.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

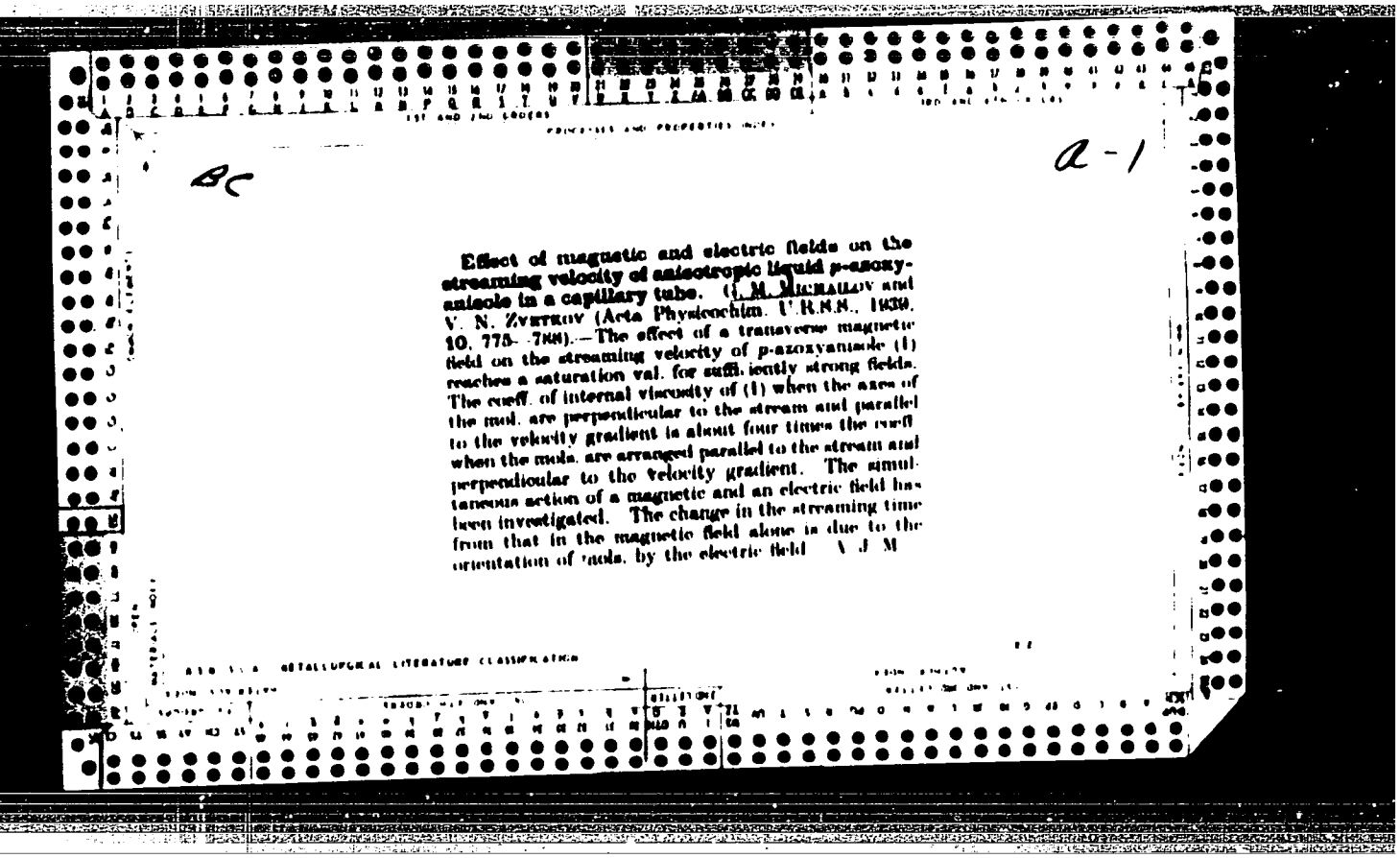


BC

A-1

Influence of an electric field on the streaming velocity of anisotropic liquid *p*-azoxyanisole in a capillary. G. M. MICHAILOV and V. N. ZVETKOV (Acta Physicochim. U.R.S.S., 1939, **10**, 415—432).—The velocity of flow of anisotropic liquid *p*-azoxyanisole through a capillary placed in an electric field is decreased by longitudinal fields, but in transverse fields is measurably increased if the streaming velocity is small and the frequency of the field is not too high. Electric fields are without effect when the temp. approaches the point of transition into the isotropic form.

W. R. A.



BC

A-1

Effect of magnetic and electric fields on the streaming velocity of anisotropic liquid p-azoxyanisole in a capillary tube. (J. M. Mikhailov and V. N. Zvetkov (Acta Physicochim. U.R.S.S., 1939, 10, 775–788).—The effect of a transverse magnetic field on the streaming velocity of p-azoxyanisole (I) reaches a saturation val. for sufficiently strong fields. The coeff. of internal viscosity of (I) when the axes of the mol. are perpendicular to the stream and parallel to the velocity gradient is about four times the coeff. when the mols. are arranged parallel to the stream and perpendicular to the velocity gradient. The simultaneous action of a magnetic and an electric field has been investigated. The change in the streaming time from that in the magnetic field alone is due to the orientation of mols. by the electric field V. J. M

GRINCHENKO, I.V.; LUNDIN, A.G.; MIKHAYLOV, G.M.

Installation for studying the magnetic resonance of atomic nuclei.
Trudy Sib.tekh.inst. no.24:1-12 '59. (MIRA 14:3)
(Nuclear magnetic resonance and relaxation)

LUNDIN, A.G.; MIKHAYLOV, G.M.

Determining moisture in wood by a nuclear magnetic resonance method. Trudy Sib.tekh.inst. no.24 30-36 '59. (MIRA 14:3)
(Wood--Moisture) (Nuclear magnetic resonance)

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S/120/60/000/02/024/052
E041/E421

24.7900

AUTHORS: Lundin, A.G. and Mikhaylov, G.M.

TITLE: A Spectrometer for Investigating Nuclear Magnetic Resonance in Crystals

PERIODICAL: Pribory i tekhnika eksperimenta 1960 Nr 2 pp 90-92 (USSR)

ABSTRACT: An important feature of all such instruments is the means adopted to orient the field with respect to the crystal axis. In this version, a horseshoe magnet rotates about the sample. The non-uniformity of the field is less than 0.03 oersted within a 1 cm^3 volume. The magnet gap-width is 35 mm the effective working area is 225 cm^2. The magnet wound with 20000 turns of 1 mm dia wire, weighs 500 kg. There are also supplementary windings of 6000 and 4000 turns of 0.41 mm dia wire, intending for smooth variation of the average value of the field and for modulating its intensity. The pole pieces are 60 mm thick of CT-3 steel and optically flat. A field of about 4500 oersteds is produced in the gap with a main-winding current of 600 mA. As an antimicrophony measure the magnet

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A Spectrometer for Investigating Nuclear Magnetic Resonance in Crystals

together with its mounting, is fixed to a concrete base having a volume of 6 m^3. The mounting consists of a circular steel plate and a wagon wheel. The main winding is fed from a commercial rectifier with a UIP -1 electronic stabilizer. The circuit diagram of the spectrometer is in Fig 2. The autodyne oscillator is a triode-connected 6Zh9P pentode with a slope of 25 mA/V. The level of oscillation is stabilized by feedback taken from the detector load. After detection and low-frequency amplification, the signal is passed through a narrow-band (1 c/s) amplifier tuned to 70 c/s. This is followed by a synchronous detector with time-constants of 1 or 10 seconds. The spectra are recorded on a self-balancing potentiometer type EPP-09. Slow variations in field are produced by varying the current in the 6P15P pentode by means of the potentiometer coupled through reduction gearing to the synchronous motor SD-2. The heaters of the oscillator and amplifier valves are fed from an accumulator. Careful

Card 2/3 electrostatic screening is also necessary around the

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A Spectrometer for Investigating Nuclear Magnetic Resonance in Crystals

oscillator. Crystals containing hydrogen and fluorine have been investigated in the range of oscillator frequencies 1 to 20 Mc/s. The resolving power for hydrogen in a 3000 oersted field is 300 c/s. Fig 3 shows absorption spectra for monocrystalline rochelle salt when the X-axis of the crystal coincides with the rotation axis of the magnet and the field direction is successively Z and Y. The modulation amplitude was 2 oersted. There are 3 figures and 3 references, 2 of which are Soviet and 1 English.

ASSOCIATION: Institut fiziki Sibirskogo Otdeleniye AN SSSR, Sibirskiy tekhnologicheskiy institut (Institute of Physics of the Siberian Section AS USSR, Siberian Technological Institute)

SUBMITTED: January 23, 1959

Card 3/3

AUTHORS: Aleksandrov, K. S., L[illegible], A. I., Mikhaylov, T. M.

TITLE: Concerning the Distribution of Hydrogen Atoms in the Structure of Guanidine Aluminum Sulfate Hexahydrate

PERIODICAL: Kristallografiya, [illegible], No. 1, pp. [illegible] (USSR)

ABSTRACT: The ferroelectric single crystals of $C(NH_2)_3 Al(SO_4)_2 \cdot 6H_2O$ had in the last been studied by the method of nuclear magnetic resonance, and their symmetry C_{3v}, space group C^1_{3v} - P31m, a = 11.[illegible] A, c = [illegible] A were known as well as the presence of 3 molecular weights per unit cell of octahedral $Al(H_2O)_6$, tetrahedral SO_4, and triangular $C(NH_2)_3$ groups in their structures. Using the same method, the authors sought to establish the distribution of hydrogen atoms in their structure. The authors reject one of the two possible proton dispositions suggested by R. Spence and J. Miller for

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Concerning the Distribution of Hydrogen Atoms in the Structure of Guanidine Aluminum Sulfate Hexahydrate

the guanidine group in addition to D. McCall's data without comment. For their own experiments they used specimens in the form of orthorhombic prisms, [illegible] from the crystals transverse to X, Y, Z axes. The absorption spectra from these prisms were obtained by taking measurements after each turn of the magnetic field for 15° around X, Y or Z axis. The period [illegible] of the obtained curves was 60° and pointed to the rhombohedral symmetry of crystals. As determined according to the maximum split of absorption lines in a field parallel to Y axis, one of the p - p vectors of the molecules of crystallization water was parallel to the magnetic field and two others under 60° to it. When the magnetic field was parallel to Z axis (3-fold rotor) of the crystal, all the 3 p - p vectors produced equal split of absorption lines, indicating that the

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vectors lie on a plane normal to Z. The experimenta
permitted drawing of the model shown in Fig. 3.

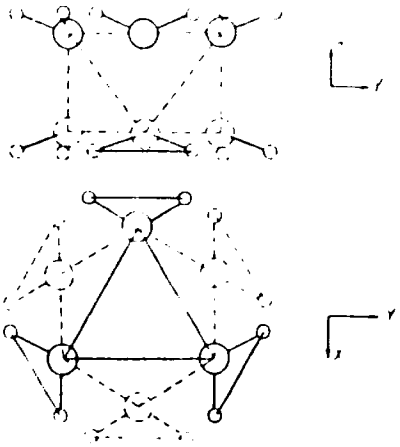

Fig. 3. Model showing distribution of hydrogen atoms (small circles) around oxygen atoms (large circles) which form an octahedron around Al of guanidine aluminum sulfate.

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Concerning the Distribution of Hydrogen Atoms in the Structure of Guanidine Aluminum Sulfate Hexahydrate

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The bond angle H-O-H is close to 105°; both N - to - H and O - to - H distances are close to 1.00 A, while H - to - H is 1.63 A. The experiments proved that all NH_2 triangles in $C(NH_2)_3$ group lie on one plane. The model still needs refinement. The structure changes accompanying spontaneous polarization and taking place in an applied field are not yet clear. S.P. Gabuda is acknowledged for help in calculations and discussions. There are 3 figures; and 8 references, 4 U.S., 3 Soviet, 1 Danish. The U.S. references are: R. Spence, J. Muller, J. Chem. Phys., 26, 3, 706 (1957); D. McCall, J. Chem. Phys., 26, 3, 706 (1957); A. Holden, B. Matthias, W. Merz, J. Remeika, Phys. Rev., 98, 2, 546 (1955); L. Pauling, Nature of the Chemical Bond, Cornell University Press, 1948.

ASSOCIATION: Institute of Physics of the Siberian Branch of the Academy of Sciences of the USSR and Siberian Technological Institute (Institut fiziki Sibirskogo

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Determining the Distribution of Hydrogen Atoms in the Structure of Guanidine Aluminum Sulfate Hexahydrate

18103
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otdeleniya AN SSSR i Sibirskiy tekhnologicheskiy institut.)

SUBMITTED: July 6, 1959

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84997

9.2180

S/048/60/024/010/006/033
B013/B063

AUTHORS: Lundin, A. G., Aleksandrov, K. S., Mikhaylov, G. M., and Gabuda, S. P.

TITLE: Study of Some Piezoelectric Substances by the Method of Nuclear Magnetic Resonance

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 10, pp. 1195-1197

TEXT: The application of the method of nuclear magnetic resonance to the study of polycrystalline specimens is dealt with. This method served for examining polycrystalline specimens of Rochelle salt, triglycine sulfate and potassium ferrocyanide. The tests were conducted within a temperature range covering the phase transition points of these substances. For an increase of the signal level, the specimens which had a volume of about 2 cm^3, were pressed by applying a pressure of 100 kp/cm^{-2}. The experimental arrangement is described in Ref. 8. The following results were obtained: Rochelle salt - $KNaC_4H_4O_6 \cdot 4H_2O$: at a temperature of +23°C (Fig. 1, 1) the second moment exhibits a jump of 4 oe^2. This is in agree-

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ment with the data of Ref. 6. No modification of the second moment was observed in the region of the lower Curie point. Triglycine sulfate - $(NH_3CH_2COO)_3 \cdot H_2SO_4$: Curve 2 (Fig. 1) shows that the second moment retains the same magnitude in a wide temperature range, and amounts to ~ 8 oe^2. Experimental results do not contradict the data of Ref. 10. Potassium ferrocyanide $K_4Fe(CN)_6 \cdot 3H_2O$: The piezoelectric phase transition at -22°C was discovered in 1959 (Ref. 11). Curve 3 (Fig. 1) shows the change of the line width with phase transition. Fig. 2 gives the modification in the form of the resonance line derived on the passage through the Curie point. P. P. Kobeko and I. V. Kurchatov are mentioned. The present paper was read at the Third Conference on Piezoelectricity, which took place in Moscow, from January 25 to 30, 1960. There are 2 figures and 13 references: 4 Soviet.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics of the Siberian Branch of the Academy of Sciences USSR)

LUNDIN, A.G.; MIKHAYLOV, G.M.; GABUDA, S.P.

Studying the reorientation of the guanidinum ion in the ferroelectric $C(NH_2)_3 . Al(SO_4)_2 . 6H_2O$ by the nuclear magnetic resonance method. Zhur. eksp. i teor. fiz. 40 no.5:1282-1288 My '61. (MIRA 14:7)

1. Institut fiziki Sibirskogo otdeleniya Akademii nauk i Sibirskiy tekhnologicheskiy institut.
(Ferroelectric substances) (Guanidinium) (Nuclear magnetic resonance)

26690

S/056/61/041/005/005/038
B104/B108

24.7900 (1144, 1163, 1482)

AUTHORS: Mikhaylov, G. M., Lundin, A. G., Sabitov, S. P.

TITLE: Magnetic resonance of F^{19} nuclei in the $(NH_4)_2BeF_4$ ferroelectric

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 5(11), 1961, 1370-1374

TEXT: The authors studied the second moment of the nuclear magnetic resonance absorption line of F^{19} in $(NH_4)_2BeF_4$ in the temperature range of from -183°C to room temperature. The second moment of this line is determined by the structure of the crystal and may be calculated by Van Vleck's formula (Phys. Rev., 74, 1168, 1948). The authors assume that the $(BeF_4)^{2-}$ ion is a regular tetrahedron with the Be atom as its center. The distances F-F and F-Be are 2.63 and 1.61 Å, respectively. Moreover, it is assumed that the $(BeF_4)^{2-}$ ions and the $(NH_4)^{+}$ ions in the structure

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Magnetic resonance of F^{19} nuclei ..

of $(NH_4)_2BeF_4$ are located just as the $(SO_4)^{2-}$ ions and the $(NH_4)^+$ ions in the structure of $(NH_4)_2SO_4$. The second moment of the nuclear magnetic resonance absorption line of F^{19} is shown as a function of temperature in Fig. 1. The change of the second moment in the range from -100 to -20°C is a result of an ordinary rotational transition, connected with a reorientation of the $(BeF_4)^{2-}$ ions around a fixed axis. This axis coincides with the c axis of the crystal. The height of the potential barrier of reorientation as determined from the temperature dependence of the second moment is found to be 9.5 ± 0.4 kcal/mole. B. Mattias and D. Remeyka (Sb. Fizika dielektrikov (Physics of Dielectrics); Gostekhizdat, 1960, p. 305) are mentioned. The authors thank V. A. Koptsik for submitting the crystal investigated, and K. S. Aleksandrov for his interest and valuable advice. There are 3 figures, 1 table, and 12 references: 4 Soviet and 8 non-Soviet. The 4 most recent references to English-language publications read as follows: R. Pepinsky, F. Yona. Phys. Rev., 105, 344, 1957; Y. Okaya, K. Vedam, R. Pepinsky. Acta Cryst.

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Magnetic resonance of F^{19} nuclei... S/056/61/041/005/038/038
B104/B108

11, 307, 1958; R. Blinc, I. Levstek, Phys. and Chem. Solids, 12, 295, 1960, T. P. Das. J. Chem. Phys., 27, 674, 1957.

AUTHOR: Institut fiziki sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics of the Siberian Department of the Academy of Sciences USSR)

SUBMITTED: May 16, 1961

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88408

S/020/61/136/004/021/026
B028/B060

9.4300 (1043, 1137, 1138)

AUTHORS: Lundin, A. G., Mikhaylov, G. M., and Gabuda, S. P.

TITLE: Behavior of Crystal Water in the $K_4Fe(CN)_6 \cdot 3H_2O$ Ferroelectric

PERIODICAL: Doklady Akademii nauk SSSR, 1961, Vol. 136, No. 4, pp. 864-867

TEXT: Monoclinic crystals of this salt have four $K_4Fe(CN)_6 \cdot 3H_2O$ molecules per elementary cell (a=9.32A, b=16.84A, c=9.32A). A study of this salt by the method of the magnetic proton resonance led to the discovery of a considerable change of the second moment of proton absorption lines on the passage through the Curie point. The second moment of absorption lines is given by

$S = \int_{-\infty}^{+\infty} f(H) \cdot (H - H_0)^2 dH$, where f(H) is the normalized function of the line shape, $(H - H_0)$ = difference between magnetic field strength and resonance field strength; it characterizes the interaction of protons in

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Behavior of Crystal Water in the $K_4Fe(CN)_6 \cdot 3H_2O$ Ferroelectric

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matter, and its change points to a change in the position or in the mobility of the protons. The signal-to-noise ratio was increased by using crystal powder pressed at 150 kg/cm^2 in a cylinder 13 mm in diameter and 20 mm long. Single crystals ($12\times6\times20$cm^3 and $12\times8\times20$cm^3) were also examined in a special Dewar vessel at temperatures between 77 and 400°K. Absorption spectra were taken at a magnetic field strength H_0 = 3000 oersteds with a change of field strength of 0.0194 and 0.0097 oe/sec. Fig. 1 shows the dependence of the second moment of the lines on temperature, Fig. 2 the proton resonance spectra at various temperatures. The second moment was calculated with $S = S_0+S_1$; S_0 = intramolecular part, caused by a pair interaction of protons in the H_2O molecule, S_1 = intermolecular part caused by the interaction of "pair" protons with other nuclei which display a magnetic moment. The following relations hold for polycrystals: $S_0 = 358.1\cdot10^{-48} r^{-6}$,

$$S_1 = 358.1\cdot10^{-48} \sum_j r_j^{-6} + \frac{4}{15} \sum_k I_k(I_k+1) g_k^2 \beta^2 r_k^{-6},$$ where r = distance in cm

Behavior of Crystal Water in the $K_4Fe(CN)_6 \cdot 3H_2O$ Ferroelectric

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between the protons in the H_2O molecule, r_k = distance from other nuclei with spin I_k and the hydromagnetic ratio g_k, r_j = distance from protons of other H_2O molecules, β = nuclear magneton. Fig. 3 shows an absorption line of a $K_4Fe(CN)_6 \cdot 3H_2O$ single crystal at -183°C with a maximum splitting of ΔH_{max} = 21.6 oersteds. The widening of the line peak is mainly caused by intermolecular interaction. The calculation for the intermolecular part gives $S_1 = 0.6 \pm 0.66$ oe^2. S_0 calculated on the basis of $\Delta H_{max} = 3\mu r^{-3}$ (μ = magnetic moment of the protons, r=1.575±0.015A) gives 23.5±1.2 oe^2. The second moment of 23.5 oe^2 is typical of the rigid H_2O molecule in the crystal hydrate. There are two reasons accounting for S dropping at -150°C: distance of protons from one another, or appearance of rotational or translational degrees of freedom at the H_2O molecule. Doublet lines disappear at -35°C, which is indicative of the fact that at this temperature all molecules undergo rearrangement. For the "third" water molecule in $K_4Fe(CN)_6 \cdot 3H_2O$, the doublet disappears only at -20°. Near the Curie point, the drop of the potential barrier proves that a rearrangement of the molecules connected with a change of symmetry. The central peak of

Behavior of Crystal Water in the $K_4Fe(CN)_6 \cdot 3H_2O$ Ferroelectric

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the curve at +60°C is due to self-diffusion of the H_2O molecule. There are 3 figures and 10 references: 4 Soviet, 2 Japanese, and 4 US.

ASSOCIATION: Institut fiziki Sibirskogo otdeleniya Akademii nauk SSSR (Institute of Physics of the Siberian Department, Academy of Sciences USSR). Sibirskiy tekhnologicheskiy institut Krasnoyarsk (Siberian Technological Institute Krasnoyarsk)

PRESENTED: July 21, 1960, by V. N. Kondrat'yev, Academician

SUBMITTED: August 18, 1960

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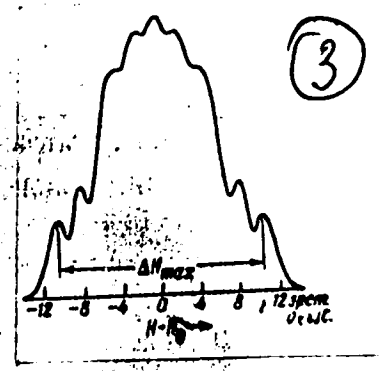
B028/B060

Рис. 1. Температурная зависимость второго момента линии протонного магнитного резонанса для поликристаллического $K_4Fe(CN)_6 \cdot 3H_2O$.



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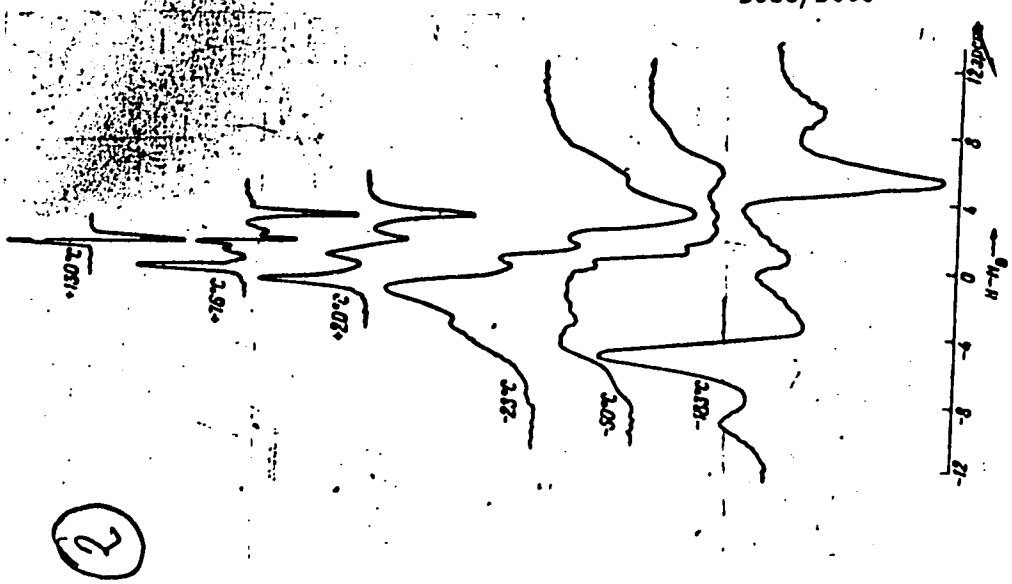

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MIKHAYLOV, G.M.; LUNDIN, A.G.; GABUDA, S.P.; ALEKSANDROV, K.S.

Proton magnetic resonance in selenurea. Dokl. AN SSSR 141 no.6: 1406-1408 D '61. (MIRA 14:12)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Sibirskiy tekhnologicheskiy institut. Predstavleno akademikom V.N.Kondrat'yevym.
(Urea) (Nuclear magnetic resonance and relaxation)

MIKHAYLOV, G. M.

"NMR-studies of the phase transitions in ferroelectrics."

report presented at the Symposium on Phase Transitions in Solids, 6th General Assembly, Intl. Union of Crystallography, Rome, Italy, 16-18 Sep 1963.

(Institute of Physics, Siberian Department, Academy of Sciences, Krasnojarsk, USSR)

GABUDA, S.P., MIKHAYLOV, G.M.

Reorientation of water molecules in heulandite. Izv. SO AN SSSR no. 11 Ser.khim.nauk no.3:123-125 '63. (MIRA 17:3)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk.

GABUDA, S.P.; LUNDIN, A.G.; MIKHAYLOV, G.M.

Magnetic resonance of protons in desmine. Geokhimiia no.4: 436-439 Ap '63. (MIRA 16:7)

1. Institut fiziki, Krasnoyarsk.
(Protons) (Stilbite)
(Nuclear magnetic resonance and relaxation)

GABUDA, S.P.; MIKHAYLOV, G.M.

Magnetic resonance of protons of water in zeolites at low temperatures.
Zhur.strukt.khim. 4 no.3:446-447 My-Je '63. (MIRA 16:6)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk.
(Zeolites--Spectra)

MIKHAYLOV, G.M.; NIKOLAYEV, A.M.

Generalized regularity of the hydraulics of a fixed granular bed. Izv.vys.ucheb.zav.;khim.i khim.tekh. 6 no.5:861-864 '63. (MIRA 16:12)

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni Kirova, kafedra khimicheskogo mashinostroyeniya.

GABUDA, S.P.; LUNDIN, A.G.; MIKHAYLOV, G.M.; ALEKSANDROV, K.S.

Position of hydrogen atoms in natrolite. Kristallografiia 8 no.3:388-392 My-Je '63. (MIRA 16:11)

1. Institut fiziki Sibirskogo otdeleniya AN SSSR i Sibirskiy tekhnologicheskiy institut.

MIKHAYLOV, G.M. (Novorossiysk); AGIBALOV, V.Ye. (Novorossiysk)

Mechanization of operations. Zhel. dor. transp. 46 no.1:72-75 Ja '64. (MIRA 17:8)

1. Glavnyy inzh. Novorossiyskogo vagonoremontnogo zavoda (for Mikhaylov). 2. Zamestitel' nachal'nika planovo-proizvodstvennogo otdela Novorossiyskogo vagonoremontnogo zavoda (for Agibalov).

BELITSKIY, I.A.; BUKIN, G.V., [illegible]

Investigation of lamprophyre using the method of nuclear magnetic resonance. Dokl. AN SSSR 169 no.5 [illegible] (MIRA 18:1)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR. Predstavleno akademikom V.S. Sobolevym.

GAGARINSKIY Yu.V.; GAPON, A.I.; MIKHAYLOV, G.M.

Proton magnetic resonance in uranium tetrafluoride crystal hydrates. Zhur. strukt. khim. 5 no.3:383-386 My-Je '64. (MIRA 17:7)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR, Novosibirsk. Sibirskiy fiziko-tekhnicheskiy institut i Institut fiziki Sibirskogo otdeleniya AN SSSR, Krasnoyarsk.