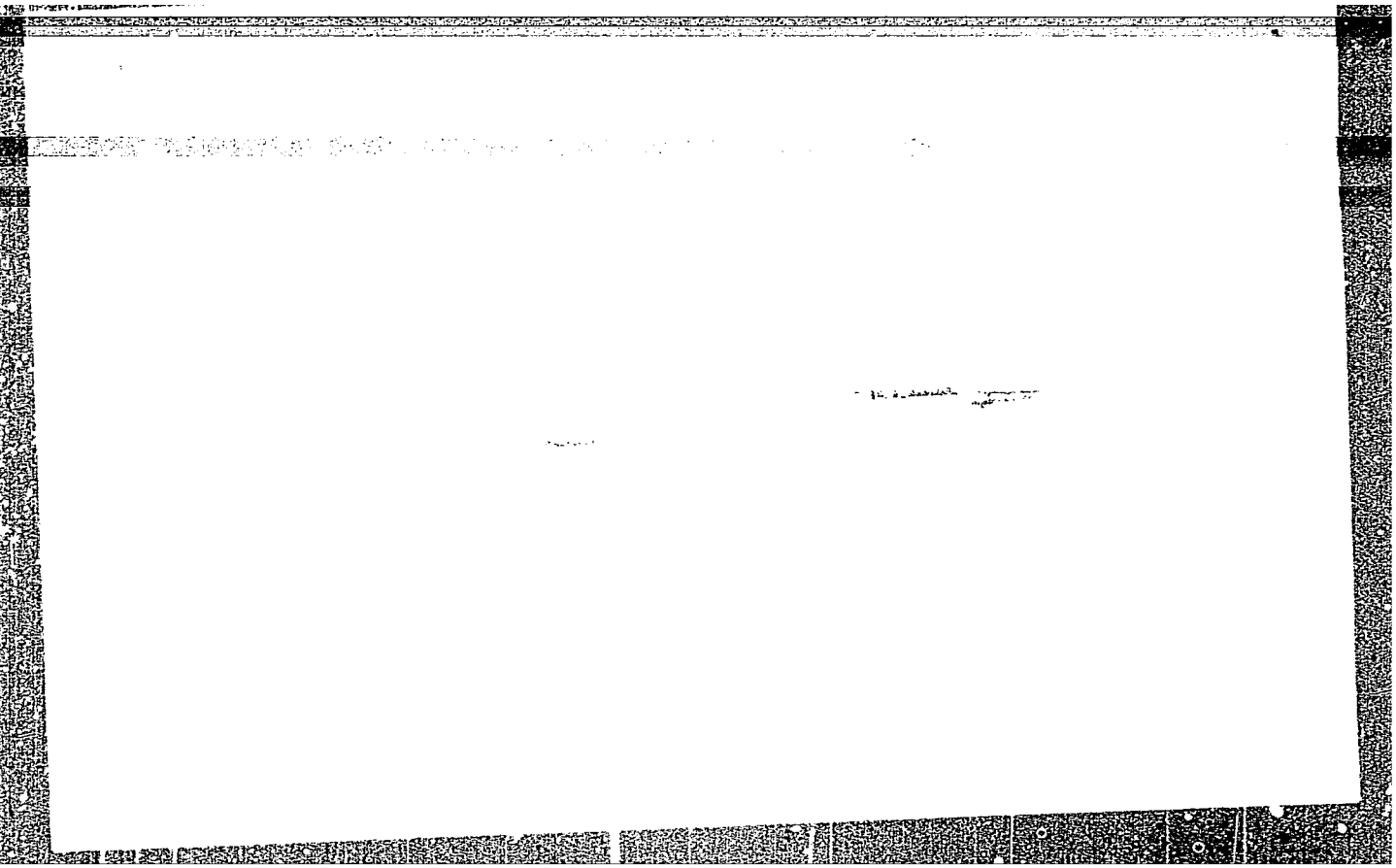


APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710004-9"

TYABIN, N. V.

"The Movement of a Sphere in a Viscous-Plastic Liquid Disperse System" Tr. Kazansk. Khim.-Tekhnol. In-ta, No 17, 1953, 84-93

The movement of a sphere in a viscous -plastic disperse system does not follow stoke's law. By using the approximation method of integrating general equations for the flow of viscous-plastic mediums, a sufficiently accurate equation for a falling sphere was a derived. This equation makes it possible to determine the rheological constants of viscous-plastic dis-perse systems from observation of a falling sphere. A rule governing the movement of a sphere in a viscous liquid can be derived from this equation as a special case. (RZhKhim, No 3, 1955)

So. Sum No 845, 7 Mar 56

1 Jan 53

TYABIN, N. V.

USSR/Physics - Liquid Flow

"Motion of Ball in Viscous Plastic Liquid Dispersion System," N. V. Tyabin

DAN SSSR, Vol 88, No 1, pp 57-60

It follows from numerous investigations that Stokes law does not hold for motion of ball in liquid dispersive medium. Author attempts to derive law of falling of ball in a viscous, plastic medium by integrating general eqs of flow of viscous plastic medium. Received 23 Oct 52.

262T77

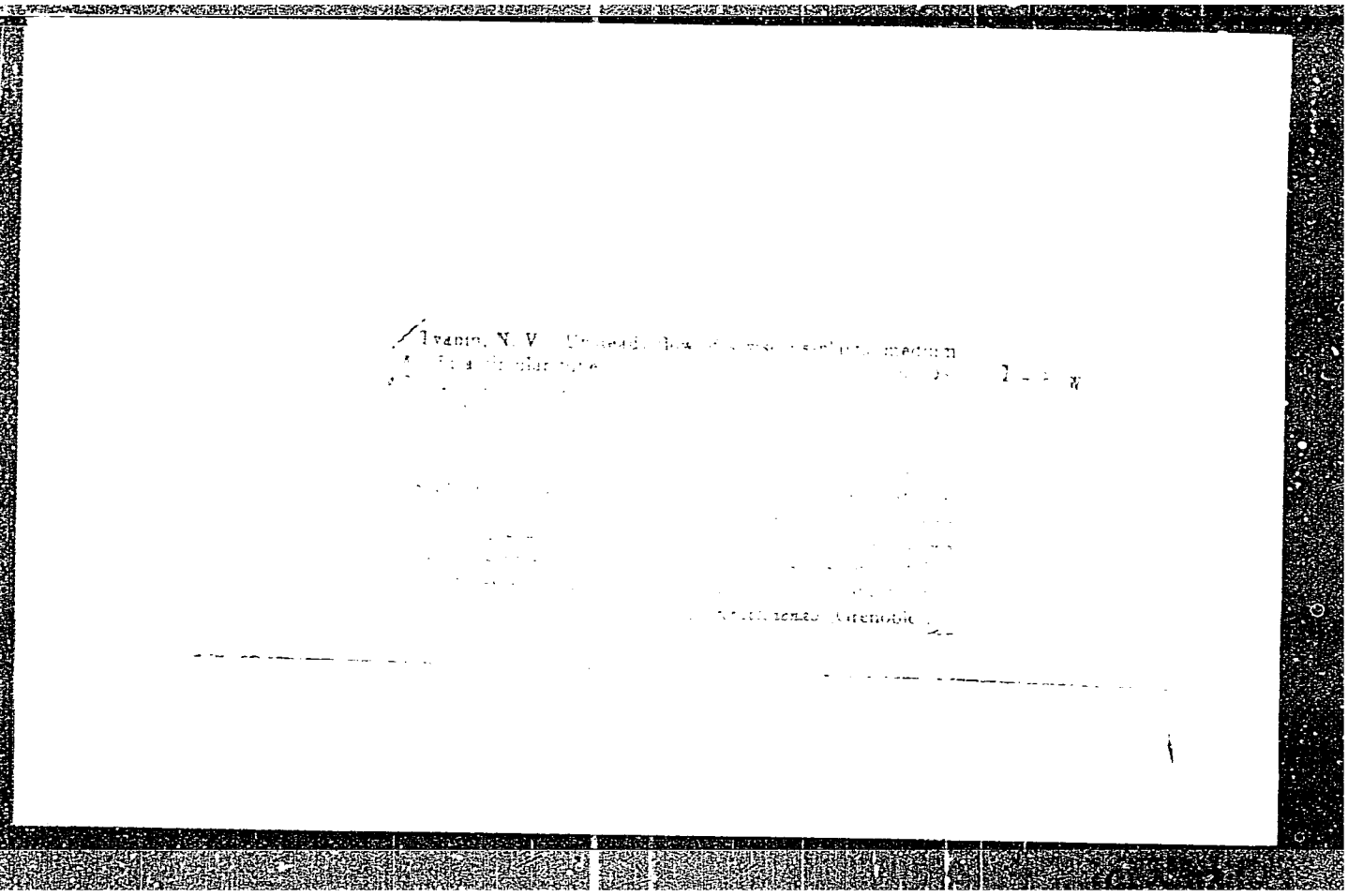
TYABIN, N. V.

Tyabin, N. V., and Pudovkin, M. A. **The flow of a viscous-plastic dispersive system in a conical diffusor.** Doklady Akad. Nauk SSSR (N.S.) 92, 53-56 (1953). (Russian)

Les auteurs étudient l'écoulement d'un milieu dispersif, doué de viscosité plastique, dans un diffuseur conique. Le phénomène est régi par les équations écrites par Tyabin; celles-ci sont simplifiées, dans le cas particulier considéré, en utilisant les conclusions expérimentales de la thèse de Mme Lazovsky; en particulier les déplacements peuvent être considérés comme radiaux. Les auteurs tiennent compte de ces faits pour former les expressions approchées des solutions des équations de Tyabin; les formules résolutives sont assez simples pour permettre une discussion détaillée de toutes les particularités du phénomène. Entre autres résultats, les auteurs donnent la loi du débit total en fonction de la pression; la relation qu'ils obtiennent est linéaire et paraît en bon accord avec l'expérience pour de grandes pressions.

J. Kravtchenko (Grenoble).

Mathematical Reviews
May 1954
Mechanics



TYABIN, N.V.

Radial flow of viscous-plastic dispersion systems in a flat capillary. (MLRA 7:5)
Dokl.AN SSSR 96 no.1:29-32 My '54.

1. Predstavleno akademikom A.I.Nekrasovym. (Capillarity)

TYABIN, N.V.

Flow of an anomalously viscous fluid between two plane plates and two coaxial cylinders. Zhur. tekh. fiz. 26 no.9:1994-2001 S '56. (MLRA 9:11)

1. Khimiko-tekhnologicheskiy institut, Kazan'.
(Fluid mechanics)

TYABIN, N.V.

"Irregular Flow of a Viscous-Plastic Dispersed System in the Layer Between Two Coaxial Cylinders and That in a Cylindrical Tube," by N. V. Tyabin, Tr Kazansk. s.-kh. in-ta, 1957, Issue 35, pp 213-225 (from Referativnyy Zhurnal -- Mekhanika, No 2, Mar 57, Abstract No 3120, by N. A. Slezkin)

"In the first part, the problems of the circular flow of a viscous-plastic medium (taking into account the limiting shear stresses) and the rectilinear motion between the two coaxial cylinders are studied. In both cases the differential equations of motion of the inner cylinder and of the medium are calculated jointly, taking into consideration the local derivative of time in respect to the average velocity (N. A. Slezkin, S. M. Targ, Dokl. AN SSSR, 1946, 54, No 3). The third part considers the problem of the irregular flow of a viscous-plastic medium in a circular cylindrical tube with the assistance of an average calculation of acceleration ('Approximate Solution of the Problem of the Irregular Motion of a Viscous-Plastic Fluid in a Circular Cylindrical Tube,' by A. Kh. Mirzadzhanzade and A. A. Abbasov, Dokl. An SSSR, Vol 107, No 2, 1956, pp 249-251). A comparison is made between the computed curve of the changing moments of friction forces and the experimental curve. In the 'starting period' there is a considerable divergence of the curves." (U)

Sum IN 1957

FD-3050

USSR/Physics - Viscosity

Card 1/1 Pub. 153 - 19/23

Author : Tyabin, N. V.

Title : Theory of anomalous viscosity of dispersive systems

Periodical : Zhur. tekh. fiz., 25, February 1955, 339-350

Abstract : One of the central problems concerning the flow of dispersive systems is the problem of anomalous viscosity, first discovered in connection with the anomalous rheological properties of sols and gels by the Russian scientist F. Schwedoff (J. de Phys. theor. et appl., 1889) and fully discussed by the present writer (Kolloidn. zhurn., 11, 6, 438, 1949). In the present work he attempts to create a phenomenological theory of flow of nonelastic anomalously viscous dispersive systems by preceeding from an analysis of the experimental dependence of velocity gradient upon tangential displacement stress, and does not touch on the nature of the anomaly of viscosity of dispersive systems. The author thanks Professor G. V. Vinogradov, early investigator of anomalous viscous properties of consistent lubricants in a wide range of velocity gradients (Trudy vt. konf. po treniyu i iznosu v mashinakh [Works on 2nd Conference on Friction and Wear in Machines], 3, 311, 1949]. Twenty ref.

Submitted : September 8, 1954

TYABIN, N.V.

Flow of two immiscible layers of viscoplastic liquids in a pipe. (MIRA 9:9)
Koll. zhur. 18 no.3:379-381 My-Je '56.
(Rheology)

TYABIN, N.V.; TSENTOVSKIY, Ya.M.; VACHAGIN, K.D.

Flow of a non-Newtonian liquid in a short plane channel. Izv.vyss.ucheb.zav.; khim.i khim.tekh. 8 no.4:580-584 '65.
(MIRA 18:11)

1. Volgogradskiy politekhnicheskiy institut i Kazanskiy khimiko-tekhnologicheskiy institut imeni Kirova.

KRYUCHKOV, A.V., starshiy prepodavatel'; TYABIN, N.V., doktor tekhn. nauk

Laws of speed and pressure distribution in a viscoplastic lubricant layer of a journal sliding bearing. Izv. vys. ucheb. zav.; mashinostr. no.9:53-59 '65. (MIRA 18:11)

29453
S/081, 61/000/017/156/166
B117/B110

26.2182

AUTHORS: Shklyar, L. A., Tyabin, N. V.

TITLE: Lubricant outflow through labyrinth packings

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1961, 475, abstract 17M238 (Tr. 3-y Vses. konferentsii po treniyu i iznosu v mashinakh. M., AN SSSR, v. 3, 1960, 154-163)

TEXT: A theoretical and experimental study was made of the outflow of oils and plastic lubricants through labyrinth packings forming different combinations of cylindrical coaxial slits and spaces between plane disks. It was shown that the resistance against axial flow in a cylindrical slit, under equal hydrodynamic conditions, is twice as large as in a radial flow in a plane clearance. The experimental arrangement constituted the model of a caterpillar drum. The lubricant outflow in the drum took place at a given temperature and pressure, both with fixed and with rotating bearing: 100 - 800 rpm. The area of the labyrinth packing inlet cross section exerts a decisive effect upon the properties of hermetically sealing. The outflow of liquid oils and kerosene is independent of the labyrinth packing

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Lubricant outflow through...

rotation. The outflow of plastic lubricants is significantly increased as the drum bushing is set in rotation. The lubricant outflow grows on a diminution of viscosity (η), and in case of plastic lubricants also on a diminution of the ultimate strength (θ). Theoretically, consumption is determined from the following formula:

$$q_{theor.} = 0.5 \cdot \pi (R_2 - R_1)^2 \cdot R_1 \cdot \eta^{-1} \left[0.33 (R_2 - R_1) l^{-1} \Delta P - \theta\right].$$

R_1 = inner radius, R_2 = outer radius, l = length of ring slot; P = pressure drop in the labyrinth packing. [Abstracter's note: Complete translation.]

Card 2/2

ГУЛЯЕВ, Н. В.

PHASE I BOOK EXPLOITATION SOV/5055

Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh. 3d, 1958.

Gidrodinamicheskaya teoriya smazki. Opory skol'zheniya. Smazka i smazochnye materialy (Hydrodynamic Theory of Lubrication. Slip Bearings. Lubrication and Lubricant Materials) Moscow, Izd-vo AN SSSR, 422 p. Errata slip inserted. 3,200 copies printed. (Series: Its: Trudy, v. 3)

Sponsoring Agency: Akademiya nauk SSSR. Institut mashinovedeniya. Resp. Eds. for the Section "Hydrodynamic Theory of Lubrication and Slip Bearings": Ye. M. Gut'yar, Professor, Doctor of Technical Sciences; and A. K. D'yachkov, Professor, Doctor of Technical Sciences; Resp. Ed. for the Section, "Lubrication and Lubricant Materials": G. V. Vinogradov, Professor, Doctor of Chemical Sciences; Ed. of Publishing House: M. Ya. Klebanov; Tech. Ed.: O. M. Ous'kova.

PURPOSE: This collection of articles is intended for practicing engineers and research scientists.

COVERAGE: The collection, published by the Institut mashinovedeniya AN SSSR (Institute of Science of Machines, Academy of Sciences USSR) contains papers presented at the III Vsesoyuznaya konferentsiya po treniyu i iznosu v mashinakh (Third All-Union Conference on Friction and Wear in Machines) which was held April 9-15, 1958. Problems discussed were in

SOV/5055

Hydrodynamic Theory (Cont.)

Trifonov, Ye. V. Increase of the Load-Carrying Capacity of Thrust Bearings Operating at High Sliding Speeds	128
Tyabin, N. V. Rheodynamic Theory of Viscous-Plastic Lubrication	134
Khanovich, M. G. On the Problem of the Design of Sliding Thrust Bearings	146
Shklyar, L. A., and N. V. Tyabin. Outflow of Lubricant Materials Through Labyrinth Seals	154

Reports Printed in Other Publications

Tomson, B. P. On the Problem of Using Fluid-Friction Bearings in Rolling Mills Operating With Frequent Reverses and Shock Loads (Published under the title: "Investigation of the State of the Journal in a 120°-Degree Fluid-Friction Bearing for Constant Loads and Loads with Varying Sign") (St. "Treniye i iznos v mashinakh," T. XIII, Izd-vo AN SSSR, 1959)	164
Ivanov, I. P. New Approximate Method for Calculating Thrust Bearings (Published under the title: "Vertical-Axis Bearings for Hydrogenerators. Theory and Calculation") (Izd. Tsentral'nogo byuro tekhnicheskoy informatsii MII elektroprom'yshlennosti)	164
Kaplan, M. Ya. Thrust Bearing for Superpower Turbines ("Vestn. mashinostroyeniya", No. 7, 1959)	164
Kleyman, L. I. Use of Segmented Bearings for Horizontal Electric Machines at the "Elektrosila" Plant imeni S. M. Kirov. [Published at the "Elektrosila" Plant]	164
Kunin, I. A. Development of the Hydrodynamic Theory of Lubrication of Thrust Bearings [Published in 1957 under the title: "On the Hydrodynamic Theory of Lubrication of a Bearing" (Izv. Vost. fil. AN SSSR" No. 4-5, 1957), and in 1959 under the title: "Two-Dimensional Problem of the Hydrodynamic Theory of Lubrication Taking Into Account the Dependence of the Viscosity on the Temperature" (Izv. AN SSSR", No. 2, 1959)	164

Card 6/47

YEROFEYEV, A.A.; SHKLYAR, L.A.; TYABIN, N.V.

Rotating viscosimeter of high sensitivity. Zav.lab. 26 no.3: 356-358 '60. (MIRA 13:6)

1. Khimiko-tekhnologicheskiy institut, Kazan'.
(Viscosimetry)

Tyabin, N. V.

S/179/60/000/02/009/032
E081/E241

AUTHORS: Vinogradov, G. V., Mamakov, A. A., and Tyabin, N. V. (Moscow)

TITLE: Flow of Anomalously Viscous Bodies Under Complex Stress Conditions

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk Mekhanika i mashinostroyeniye, 1960, Nr 2, pp 65-69 (USSR)

ABSTRACT: A continuation of previous work (Refs 5, 6, and 7). Data are given of experimental investigations into the flow of a residual extract (highly viscous Newtonian fluid) and a lubricant grease (anomalously viscous body) to verify the generalized flow law under the combined action of two simple shears. The data were obtained by simultaneous measurements with a double rotation viscometer (Ref 6) and a capillary viscometer with constant outflow (Ref 7). The methods and basic experimental results are given in Ref 5. Complex shear conditions were realised by the combined action on the body contained in the space between two cylinders, of an external pressure and a twisting moment, the latter being obtained by rotation of the outer cylinder. In this way, axial

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S/179/60/000/02/009/032
E081/E241

Flow of Anomalously Visccus Bodies Under Complex Stress Conditions

and circumferential flow are superimposed and the particles of the anomalously viscous body move in screw trajectories ab (Fig 1: Scheme of screw flow of grease in a narrow annular space). The generalized equation of flow is written in the form (1) (Ref 8), and in cylindrical co-ordinates r, φ, z, the quantities p_i and $\dot{e}_i$ are written in the forms (2) and (3). (The dot over $\dot{e}_i$ denotes differentiation with respect to time). p_i is the intensity of shear stress, $\dot{e}_i$ the intensity of deformation velocity, η_i the effective viscosity coefficient, p_{rr}, $p_{\varphi\varphi}$, p_{zz} are normal stresses, $\dot{e}_{rr}$, $\dot{e}_{\varphi\varphi}$, $\dot{e}_{zz}$ are volume deformation velocities, $\dot{e}_{r\varphi}$, $\dot{e}_{\varphi z}$, $\dot{e}_{zr}$ are shear deformation velocities. For the present conditions, (2) and (3) reduce to (4) and (5) with the effective viscosity in complex shear, axial shear and circumferential shear given by (6), (7) and (8), respectively. The shear stresses for pure-axial shear τ_1 and pure circumferential shear τ_2 are given by the first equations, p 67, where Δp is the difference in pressure between the ends of the annular space,

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Flow of Anomalously Viscous Bodies Under Complex Stress Conditions

H and L are the width and length of the space, M is the twisting moment, R_1 and R_2 are respectively the external and internal radii of the cylinders ($H = R_1 - R_2$). The mean deformation velocities in axial shear D_{10} and circumferential shear D_2 are found from the second equation, p 67, and the axial deformation velocity at the wall from the third equation, where Q is the outflow per second, ω the angular velocity of the rotor. Figs 2 and 3 show log η_1 log η_2 and log η_i plotted against log D_1, log D_2 and log D_i for the extract. [Fig 2. Dependence of effective viscosity (axial, circumferential and spiral flow) on velocity gradient and intensity of deformation velocity for the extract] and for the grease [Fig 3. Dependence of effective viscosity (axial, circumferential and spiral flow) on velocity gradient and intensity of deformation velocity for lubricant grease]. The key to the figures on the diagrams is at the foot of p 67. In Fig 3 $\eta_1(D_1)$ is represented by the dashed-dotted line, $\eta_2(D_2)$ by the continuous line and $\eta_i(D_i)$ by the dotted line. The lines in Fig 2 are all parallel to the log D

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S/179/60/000/02/009/032
E081/E241

Flow of Anomalously Viscous Bodies Under Complex Stress Conditions

axis, and, for a given temperature, the points corresponding to different conditions all lie on the same line. Thus the effective viscosity of the residual extract is constant, and the superposition principle applies. Fig 3 shows that the effective viscosity of the lubricant grease falls with increasing deformation velocity. At 20° and 50° the effective viscosity for axial shear is rather greater than for circumferential shear. The differences may be interpreted as a breaking down of the structure of the grease and the orientation of the soap micro-filaments. The motion of the particles in spiral flow is determined by the equations at the foot of p 68 and the top of p 69, and Fig 4 shows the dimensionless viscosity η_i/η_2 plotted against the dimensionless length of the trajectory. [Fig 4 Dependence of the dimensionless viscosity η_i/η_2 on S/L for grease at 20° and 50°.] Within the limits of experimental accuracy (5 to 10%) the points lie on the same line for both temperatures, and the effective viscosity is a function not only of the intensity of

Card 4/5

S/179/60/000/02/009/032
E081/E241

Flow of Anomalously Viscous Bodies Under Complex Stress Conditions

deformation velocity, but also of the dimensionless quantity characterising the trajectories of the particles. Thanks are expressed to V. P. Pavlov for participating in the discussion of results, and for valuable advice. There are 4 figures and 10 references, 8 of which are Soviet, 1 English and 1 German.

SUBMITTED: June 4, 1959

Card 5/5

MAMAKOV, A.A.; TYABIN, N.V.; VINOGRADOV, G.V.

Graphical method for determining the distribution of flow velocities of elastic petroleum products. Izv. vys. uchab. zav.; neft' i gaz 2 no.7:81-86 '59. (MIRA 12:12)

1.Kazanskiy khimiko-tekhnologicheskiy institut im. S.M. Kirova.
(Hydraulics)

TYABIN, N.V.; SHKLYAR, L.A.; MOSIKHIN, Ye.P.; VINOGRADOV, G.V.

Rheologic investigation of grease by the centrifuge method.
Trudy KKHTI no.16:133-150 '51 [Publ. '52]. (MIRA 12:12)
(Lubrication and lubricants)

TYABIN, N.

Theory of similitude applied to a viscoplastic fluid. Trudy KKHTI no.16:151-156 '51 [Publ. '52]. (MIRA 12:12)
(Rheology)

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

TYABIN, N.V.

Basic equations of the rheology of viscoplastic media. Trudy KKHTI no.14:38-51 '49. (MIRA 12:11)

1.Kafedra "Protsessy i apparaty, gidravlika i obshchaya khimicheskaya tekhnologiya" Kazanskogo khimiko-tekhnologicheskogo instituta im. S.M. Kirova.
(Rheology)

TYABIN, N.V.

Slow motion of a sphere in a viscoelastic fluid. Trudy KKHT no.14:52-55 '49. (MIRA 12:11)
(Rheology)

TYABIN, N.V.

Archimedes' principle and Bernoulli equation for viscoelastic fluids. Trudy KKHTI no.15:119-121 '50. [publ. '51]
(MIRA 12:12)

(Fluids)

TYABIN, N.V.

Flow of a viscoplastic medium on an inclined surface and in a conduit with a semicircular section. Trudy KKHTI no.15: 122-124 '50. [publ. '51] (MIRA 12:12)
(Fluids)

TYABIN, N.V.

Movement of a sphere in a viscoplastic disperse fluid system. Trudy KKHTI no.17:84-93 '52 [publ. '53]. (MIRA 12:11)
(Fluid dynamics) (Viscosity)

TYABIN, N.V.; FUDOVKIN, M.A.

Flow of viscoplastic fluid disperse systems in conical packing and the immersion of the cone in disperse systems. Trudy KKHTI no.17: 94-108 '52 [publ. '53]. (MIRA 12:11)

(Fluid dynamics)

TYABIN, N.V.

Dimensional analysis of flows of viscoplastic fluid [illegible].
Trudy KAITI no.1[illegible]9 '53 [publ. '54]. (MIRA 1[illegible]:11)
(Fluid dynamics) (Dimensional analysis)

TYABIN, N.V.; SHELYAR, L.A.; YOSIKIN, Ye.P.; VINOGRADOV, G.V.

Flow of lubricating grease on rotating disks under the action of centrifugal forces. Trudy KNITI no.18:123-141 '53 [publ. '54]. (MLRA 7:11)

(Lubrication and lubricants—Fluid dynamics)

TYABIN, N.V.; VINOGRADOV, G.V.

Immersion of a flat cone in lubricating grease. Trudy KKHTI no.18: 222-229 '53 [publ. '54]. (MIRA 12:1)
(Lubrication and lubricants--Testing)

MOSIKHIN, Yo.P.; SHKLYAR, L.A.; TYARI[illegible], L.V.; VINOGRADOV, G.V.

Testing lubricating greases [illegible] conditions of uniaxial traction.
Trudy [illegible] no.18:230-240 '53 [publ. '54]. (MIRA 12:11)
(Lubrication and lubricants--Testing)

10(2) SOV/64-59-5-18/28

AUTHORS: Yerofeyev, A. A., Tyabin, N. V.

TITLE: Intermixture of Viscous-plastic Disperse Systems by the Aid of Agitators

PERIODICAL: Khimicheskaya promyshlennost', 1959, Nr 5, pp 436-441 (USSR)

ABSTRACT: The process of intermixture of viscous-plastic fluids is illustrated according to the theory of resemblance (Refs 5,6). The calculations for the purpose of generalizing experimental data and calculating the necessary capacity for intermixture of viscous-plastic fluids, base on the equation $Eu_M = KRe_M^m$ (14) (Eu_M = Euler-criterion, Re_M = Reynolds criterion, K = coefficient, m = experimental value, the index M means the generalization of resemblance criterions for viscous and viscous-plastic fluids). The criterion of boundaries was laid down (being characteristic in the region, in which the fluid starts to flow with increasing velocity), and measurements were made by a testing arrangement (Fig 1) with 6 different agitators of the frame type and with 3 agitators of the turbine type (Fig 2). One of the agitator types is used in Kazanskiy neftemaslozavod

Card 1/2

Intermixture of Viscous-plastic Disperse Systems by the Aid of Agitators

(Kazan' Oil Plant). The single agitators exhibit different sizes in relation to each other (Table 1). The intimate mixture of synthetic (lubricating) greases US_s-2 and of petroleum mixtures was investigated by means of a rotation-viscosimeter RV-8. The functions between the Euler and Reynolds criterions were obtained for every used agitator by generalizing the experimental data according to methods of the theory of similarity (Fig 6, Table 2). The method of calculating the capacity, that is necessary for intermixture of viscous-plastic fluids, is suggested on the strength of results obtained. The shape of the free surface in the agitator vessel as well as the criterion of the boundaries are of no special importance to the agitator capacity required. There are 2 figures, 6 tables, and 7 references, 5 of which are Soviet.

SOV/124-57-3-3120

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 68 (USSR)

AUTHOR: Tyabin, N. V.

TITLE: Unsteady Flows of a Visco-plastic Disperse System in a Layer Contained Between Two Coaxial Cylinders and in a Cylindrical Pipe (Neustanovivshiyesya techeniya vyazko-plasticheskoy dispersnoy sistemy v sloye mezhdu dvumya soosnymi tsilindrami i v tsilindricheskoy trube)

PERIODICAL: Tr. Kazansk. s.-kh. in-ta, 1956, Nr 35, pp 213-225

ABSTRACT: In the first problem the author analyzes the circular motion of a visco-plastic medium (with the yield stress in shear taken into consideration); in the second problem, its rectilinear motion between two coaxial cylinders. In either case the author solves simultaneously the differential equation of motion of the inner cylinder and the differential equation of motion of the medium with the local time derivative of the velocity taken in an averaged form (Slezkin, N. A., Targ, S. M., Dokl. AN SSSR, 1946, Vol 54, Nr 3). In the third problem the unsteady flow of a visco-plastic medium in a round cylindrical pipe is likewise studied with an averaged value

Card 1/2

Unsteady Flows of a Visco-plastic Disperse System in a Layer (cont.)

taken for the acceleration (see RZhMekh, 1957, Nr 3, abstract 3119). A comparison is adduced between the design graph of the variation with time of the friction-force moment and experimental measurements. A considerable divergence between the above-mentioned graphs occurs in the "starting-up-period" sector.

N. A. Slezkin

Card 2/2

SOV/69-21-2-14/22

5(

AUTHORS: Mamakov, A.A., Tyabin, N.V., Vinogradov, G.V.

TITLE: The Application of the Similarity Theory in Calculating the Flowing Processes of Plastic Lubricants in Tubes (Primeneniye teorii podobiya k raschetu protsessov techeniya plastichnykh smazok v trubakh)

PERIODICAL: Kolloidnyy zhurnal, 1959, Nr 2, pp 208-215 (USSR)

ABSTRACT: The authors propose two methods of generalizing experimental data, and the calculation of the flow of plastic lubricants in tubes in the form of a dependency of the tube resistance coefficient on the generalized Reynolds criterium. The variable effective viscosity method consists in the determination of the generalized Reynolds criterium according to the value of the local effective viscosity for the layer contiguous to the tube wall. The constant parameter method consists in the approximation of the flow curve in the form of straight lines corresponding to the equations Shvedov-Bingham and in the determination of the generalized Reynolds criterium according to the parameters of the viscous-plastic

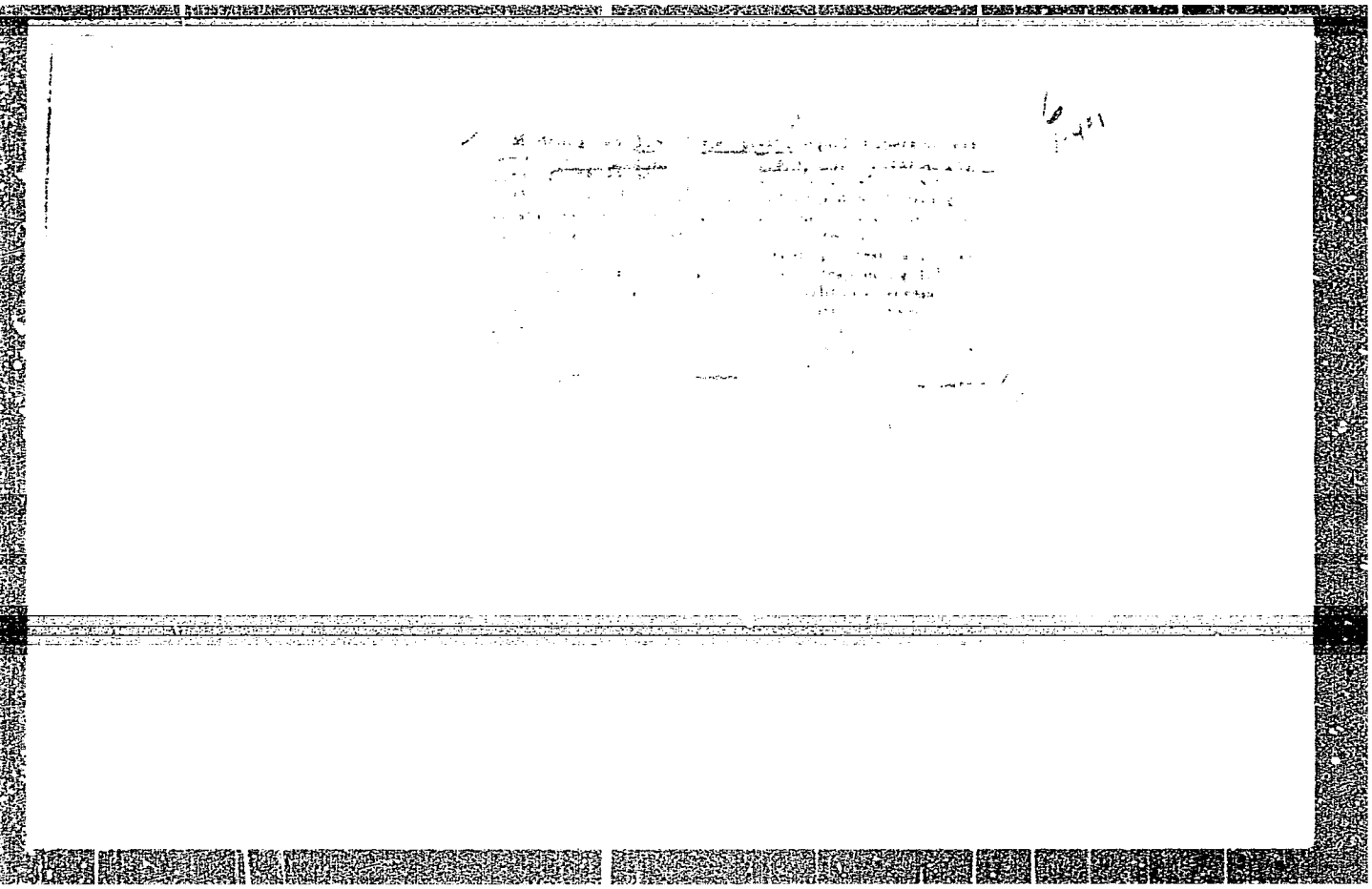
Card 1/2

The Application of the Similarity Theory in Calculating the Flowing Processes of Plastic Lubricants in Tubes

flow. The application of these methods permitted a generalization of experimental data concerning the flow of plastic lubricants in tubes at a change of the speed gradient from 0.03 to 35,400 sec.$^{-1}$, the length of the tubes by 250 times and their diameters by 36 times. The authors have found an expression of the tube resistance coefficient from the generalized Reynolds formula at the flow of plastic lubricants, and have shown that for the calculation of loss of pressure, the usual hydraulic calculation methods can be used. These are based on the method of approximating curves of the flow of plastic lubricants in rotary viscosimeters. The authors mention the following Soviet scientists: G.V. Vinogradov, V.P. Pavlov, V.G.Petrovskiy, N.V. Tyabin. There are 5 graphs and 21 references, 12 of which are Soviet and 9 English.

ASSOCIATION: Khimiko-tekhnologicheskiy institut im. S.M. Kirova, Kazan' (Chemical-Technological Institute imeni S.M. Kirov, Kazan')

SUBMITTED: May 6, 1958



TYABIN, N.V.

USSR/Physical Chemistry - Colloid Chemistry, Dispersion Systems. B-14

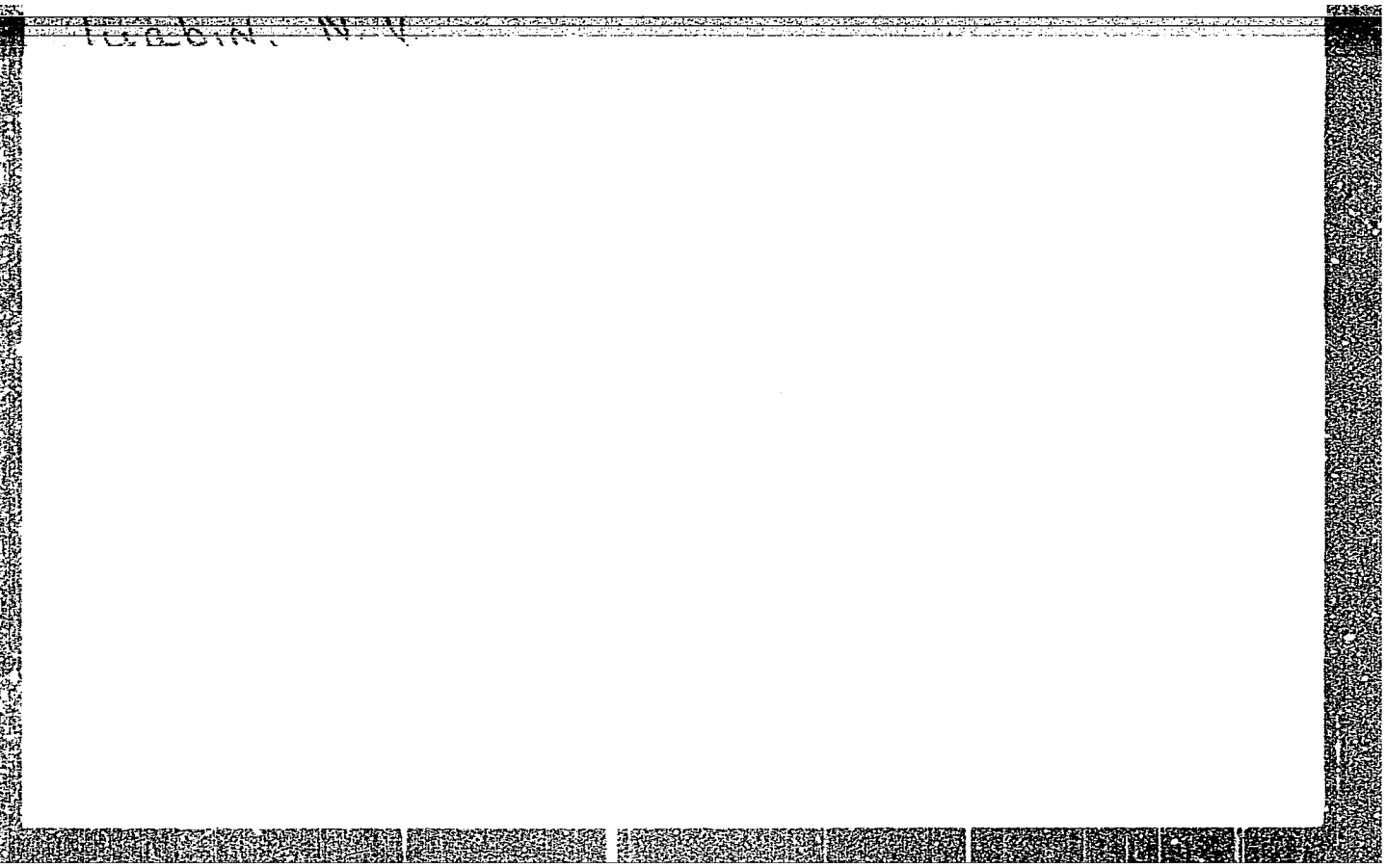
Abs Jour: Referat. Zhurnal Khimiya, No 3, 1958, 7349.

Author : N.V. Tyabin, G.V. Vinogradov.
Inst :
Title : Application of Approximation Method to Computation of Dispersion System Flows.

Orig Pub: Kolloidn. zh., 1957, 19, No 4, 505-510.

Abstract: The necessity to evaluate concrete values of maximum tangential stresses and velocity gradients at the approximation of flow curves of dispersion systems was shown on the exarple of flows of plastic lubricants in plain bearings and of bitumina along inclined planes. An expression was obtained for the rotation moment depending on the angular velocity of rotation at the flow of a plastic dispersion system in the ring-shaped clearance between coaxial cylinders, if the flow curve could be approximated with n equations of Shvedov-

Card : 1/2 -1-

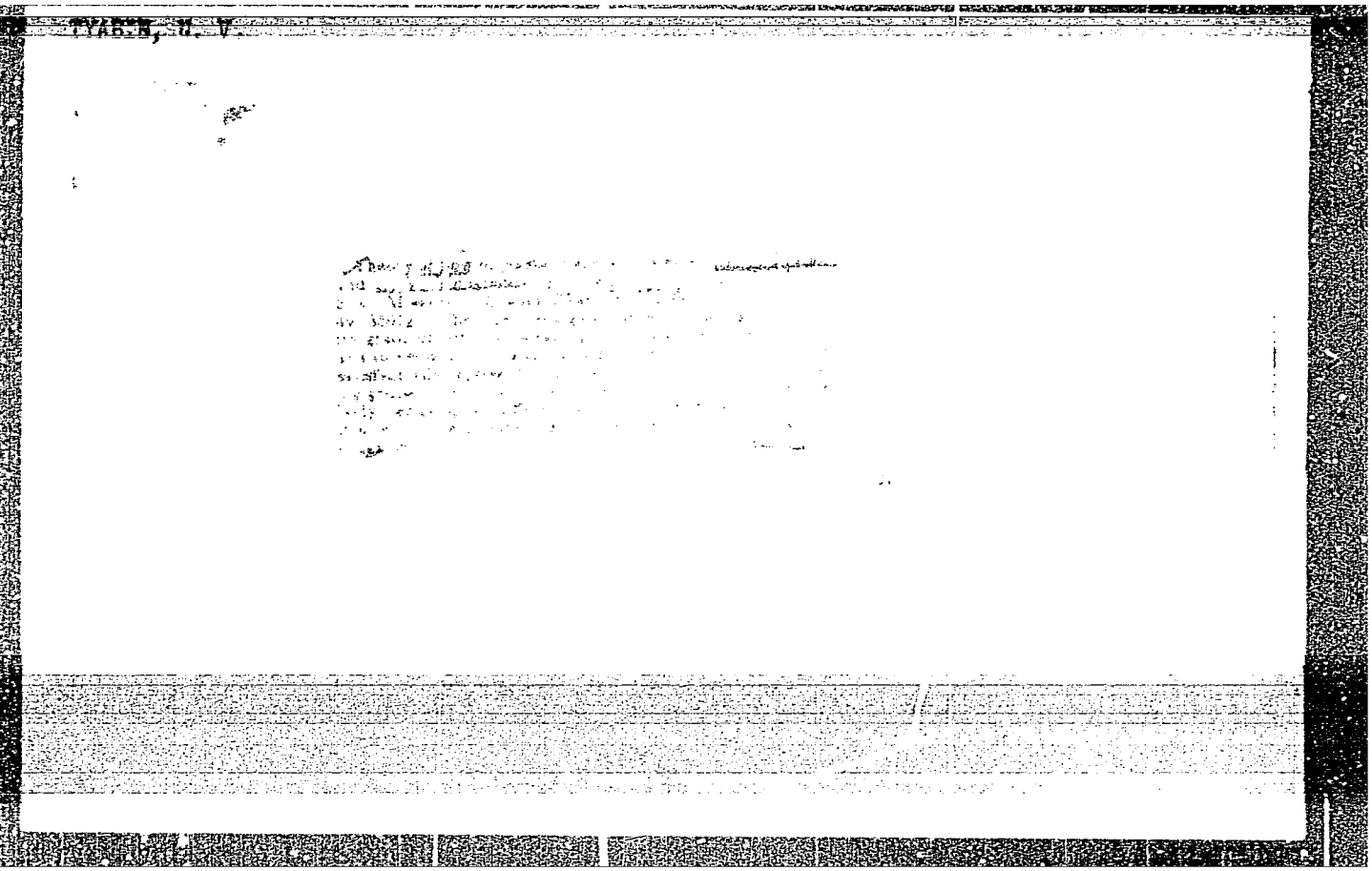


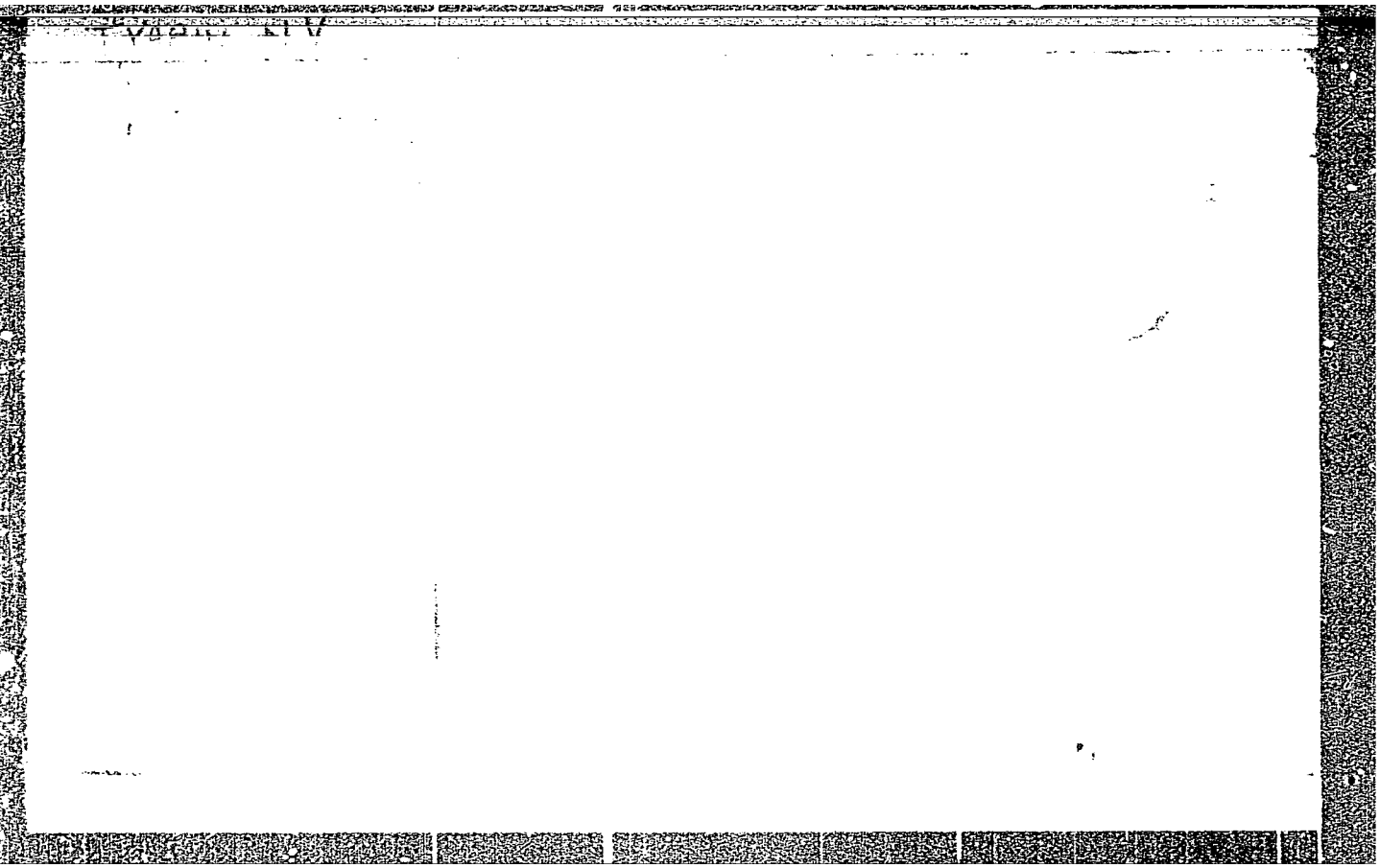
APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710004-9"

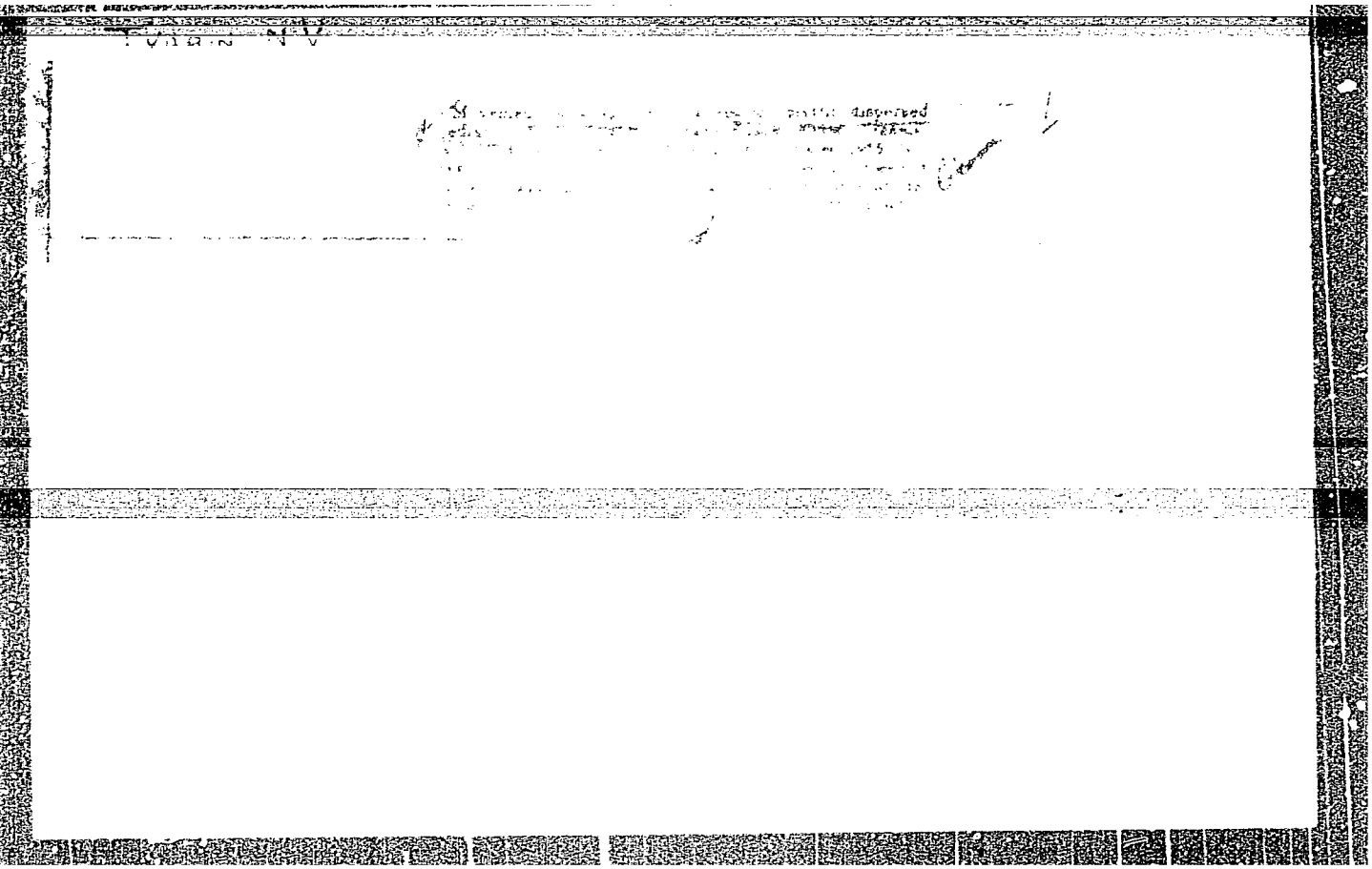
TYABIN, N.V.; VINOGRADOV, G.V.

The theory of flow of plastic dispersed systems [with summary in English]. Koll. zhur. 19 no.3:352-360 My-Je '57. (MIRA 10:8)

1. Institut nefti Akademii nauk SSSR, Moskva.
(Colloids) (Fluid dynamics)







TYABIN, N.V.

USSR/Chemical Technology - Chemical Products and Their Application. Treatment of Natural Gases and Petroleum. Motor Fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 19, 1956, 62634

Author: Tyabin, N. V., Vinogradov, G. V.

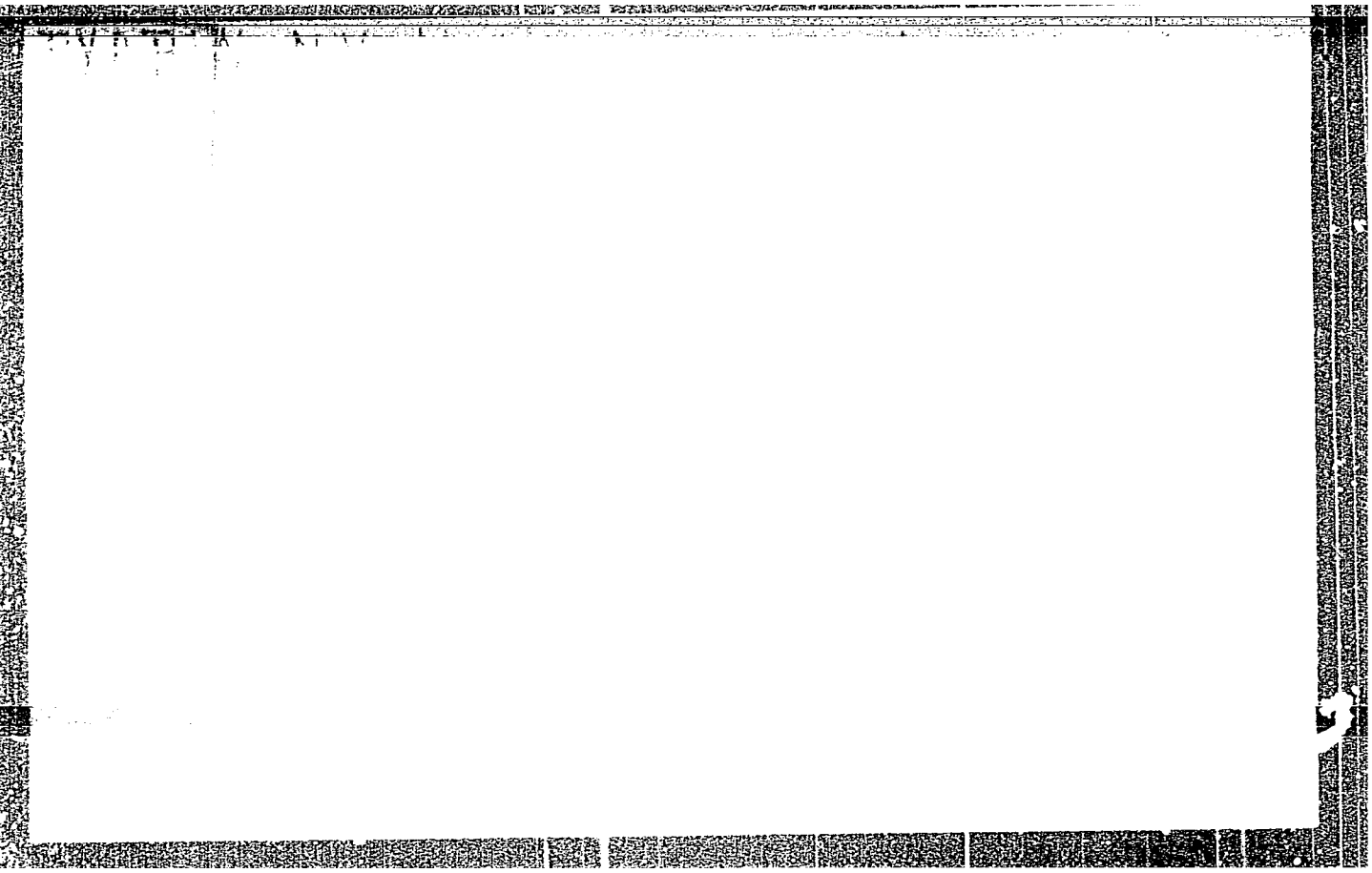
Institution: None

Title: Sinking of a Flat Wedge in Lubricant Grease

Original Periodical: Tr. Kazan. khim.-tekhnol. in-ta, 1954, No 18, 222-229

Abstract: Results of investigations of kinematics and dynamics of sinking of a wedge in lubricant greases. Derived is the law of velocity distribution during sinking of the wedge and an equation that correlates kinematic and dynamic quantities on stationary sinking of immersed wedge into the lubricant.

Card 1/1



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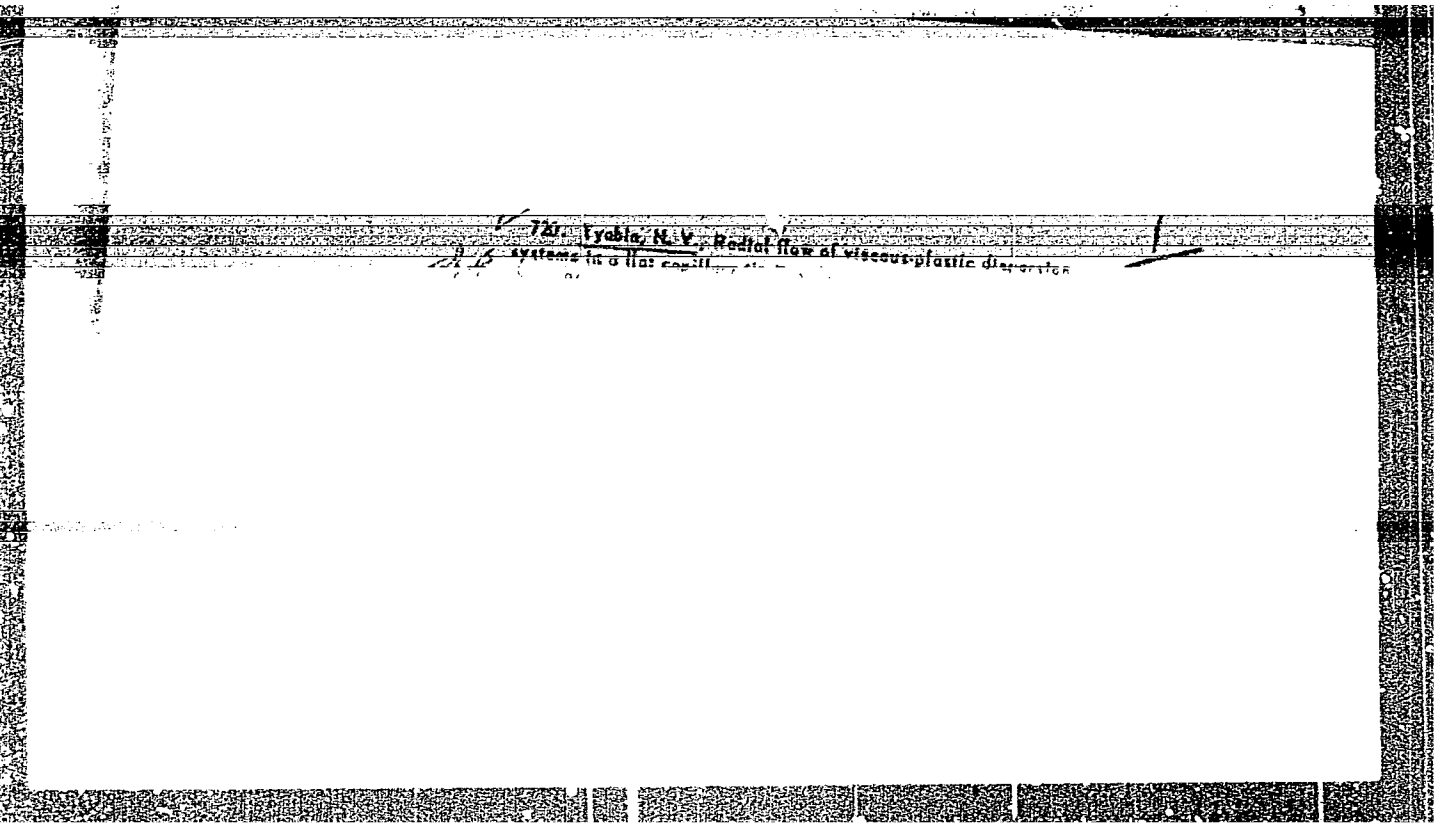
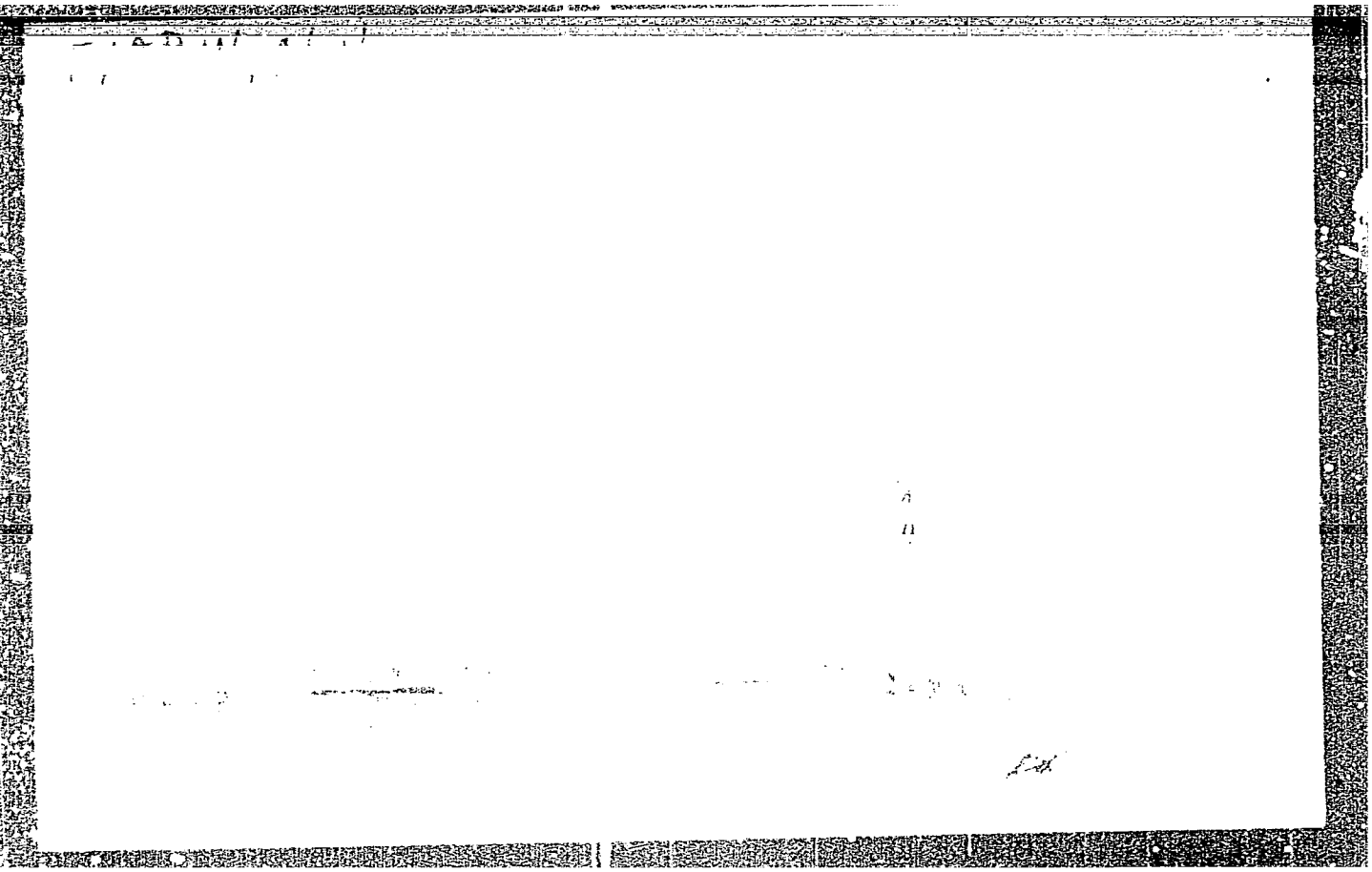
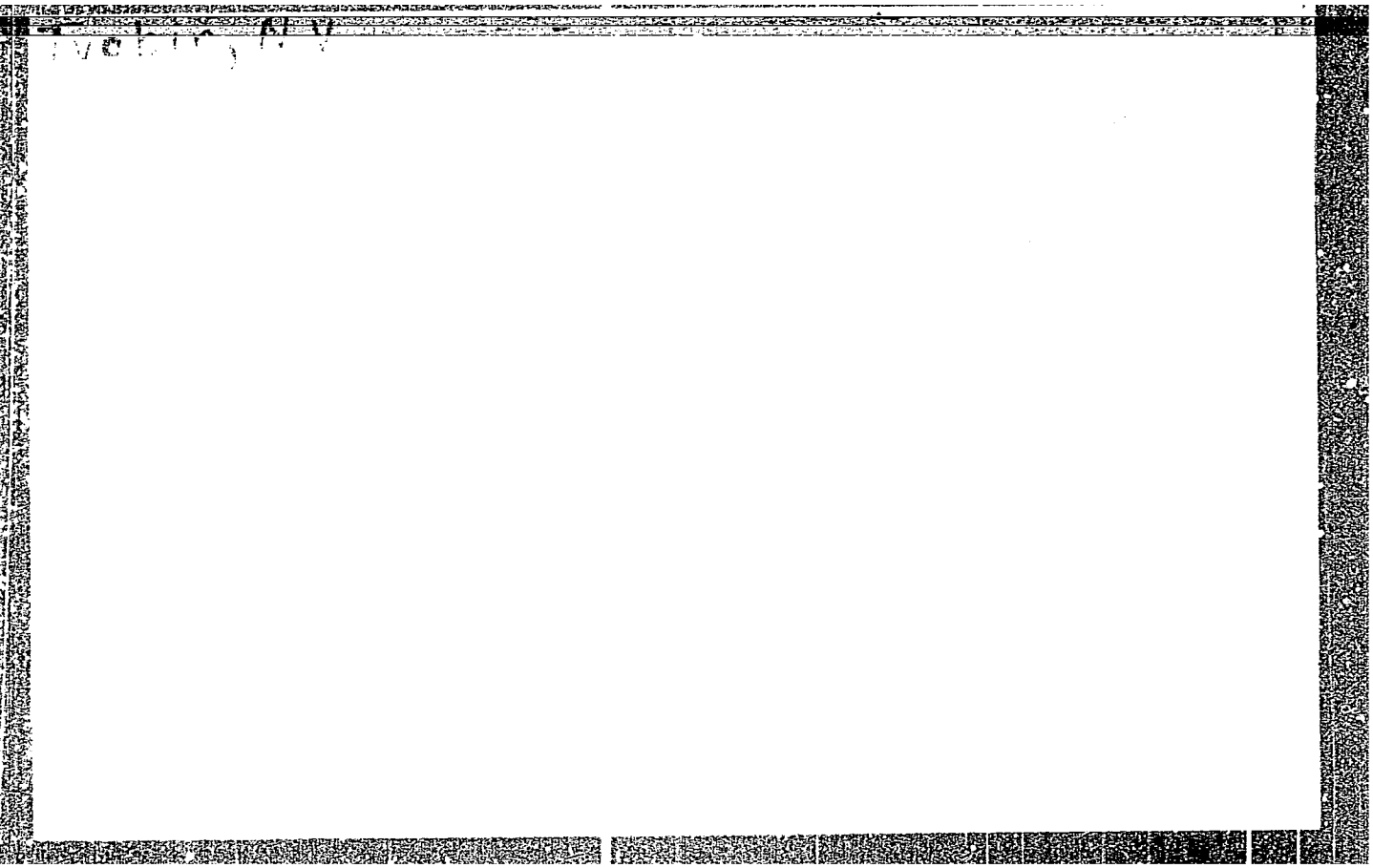




TYABIN, N. V., NOSIKHIN, Ye. P. , MKRTYAN, L. A., and VINOGRADOV, G. V.

"Behavior of Structure Dispersed Systems in the Field of Movement of Centrifugal Forces" (Povedeniye strukrirovannykh dispersnykh sistem v pole deystvia tsentrobezhnykh sil) from the book Trudy of the Third All-Union Conference on Colloid Chemistry, pp. 92-112, Iz. AN SSSR, Moscow, 1956

(Report given at above Conference, Minsk, 21-4 Dec 53)



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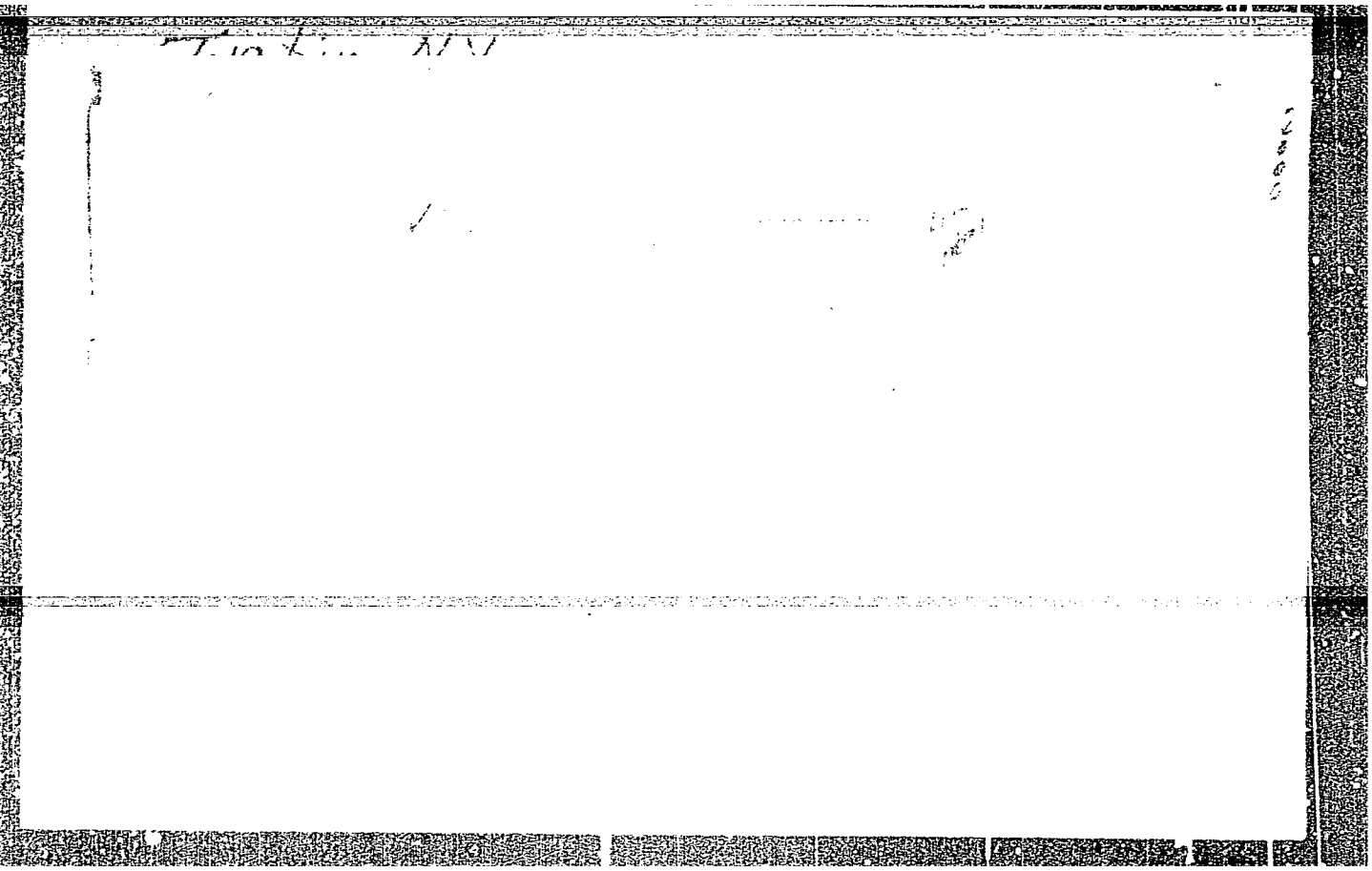


REZNIK, A.M. (brigadir), AREST, V.I., BLOKH, I.M., KIKGOF, Yu.A., ZAGARMISTR, A.M., KUPALOV-YAROPOLK, I.K., PETROV, L.V., TYABIN, V.Ye., FEDORENKO, A.N., sostaviteli; DYUKOV, A.I., KLESHCHEV, A.I., redaktory.

[All-Union unified norms for geophysical field work] Vsesoiuznye edinye normy vyrabotki na polevye geofrafisheskie raboty. [Sostaviteli: Reznik A.M. i dr. Redaktory: A.I.Diukov, A.I.Kleshchev] Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1951. 146 p. (MLRA 7:4)
(Geophysics)

YERMAKOV, L.K.; TYABIN, V.Ye.; MIKHAYLOV, A.K. [deceased]; KOMISSAROV, B.M.; PYLEVA, V.N.; SVIRIDOV, A.Ye.; NIKITINA, V.N., redaktor izdatel'stva; KRYNOCHKINA, K.V., tekhnicheskiy redaktor

[Production norms for geodetic and topographical work in geological prospecting and geophysical organizations. Supplement to the unified production norms for geodetic and topographical work in the Chief Administration of Geodesy and Cartography of the Ministry of Interior of the U.S.S.R.] Normy vyrabotki na geodezicheskie i topograficheskie raboty geologo-razvedochnykh i geofizicheskikh organizatsii. Dopolnenie k edinym normam vyrabotki na geodezicheskie i topograficheskie raboty GUGK MVD SSSR 1954 g. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane nedr, 1956. 51 p. (MLRA 10:1)

1. Russia (1923- U.S.S.R.) Ministerstvo geologii i okhrany nedr. 2. Ministerstvo geologii i okhrany nedr SSSR (for Yermakov) 3. Ministerstvo neftyanoy promyshlennosti SSSR (for Pyleva) 4. Ministerstvo ugol'noy promyshlennosti SSSR (for Sviridov)
(Geodesy) (Cartography)

TYABINA, Z.A.,
1932, No Journal reference.

TYABIN, V.Ye., redaktor; TROFIMOV, A.V., tekhnicheskiy redaktor.

[Valuation of field and office geodetic and cartographic work for geophysical prospecting in the petroleum industry] Rastsenki na polevye i kameral'nye geodezicheskie i kartograficheskie raboty pri geofizicheskikh razvedkakh v neftianoi promyshlennosti. Razrabotany Normativno-issledovatel'skoi stantsiei pri treste Mosneftegeofizika. Utverzhdeny prikazom Glavneftegeofiziki no.89 ot 14 iiulia 1952 g. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry. 1952. 178 p. (MIRA 8:5)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye geofizicheskoy i geokhimicheskoy razvedki.
(Prospecting—Geophysical methods)

VOL'TER, F.I.; TYABIKA, L.S. (Kazan')

Hemangiomas of the spine. Kaz.med.zhur. 40 no.1:84-85 Ja-F '59. (MIRA 12:10)

(SPINE--TUMORS)

AUTHORS: Kreymer, S.Ye., Tuzhilina, M.V., Golovina, V.A., Tyabina, R.A. 32-3-2/52

TITLE: The Determination of Cobalt and Cadmium in Nickel of High Purity (Opredeleniye kobal'ta i kadmiya v nikele vysokoy chistoty)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 3, pp. 262-264 (USSR)

ABSTRACT: This method of determining cobalt is based upon a suggestion made by V. P. Zhivopistsev /Refs. 1,2/ , according to which cobalt together with diantipyryl-methane and ammonium thiocyanate gives a light blue precipitation which is soluble in concentrated ammonia. From the precipitation the cobalt is colorimetrized with nitroso R-salt. Precipitation is carried out in the medium of sulfuric acid, the deposit is distinctly soluble in hot water, and must be washed with 1% ammonium thiocyante solution. The process of analysis and the results obtained when determining cobalt (0.0002% Co) are given. Determination of cadmium is carried out by a modified method, also developed by Zhivopistsev /Ref. 4/ by precipitation with diantipyryl-methane in the presence of bromide- or iodide ions. In this way it is possible to determine

Card 1/2

The Determination of Cobalt and Cadmium in Nickel of High Purity 32-3-2/52

0.0001 - 0.1% cadmium in nickel, potassium iodide being used in the case of low percentages, because it forms complexes which are not so easily soluble. If copper is present, it must be removed by precipitation with thiosulfate; after combustion of organic substances cadmium is determined polarographically. An exact process of analysis as well as a table of results obtained by the suggested and by two other methods is given. There are 2 tables and 5 references, 4 of which are Slavic.

ASSOCIATION: "Severonikel" Combine (Kombinat "Severonikel'")

AVAILABLE: Library of Congress

1. Nickel-Cobalt-Determination 2. Nickel-Cadmium-Determination

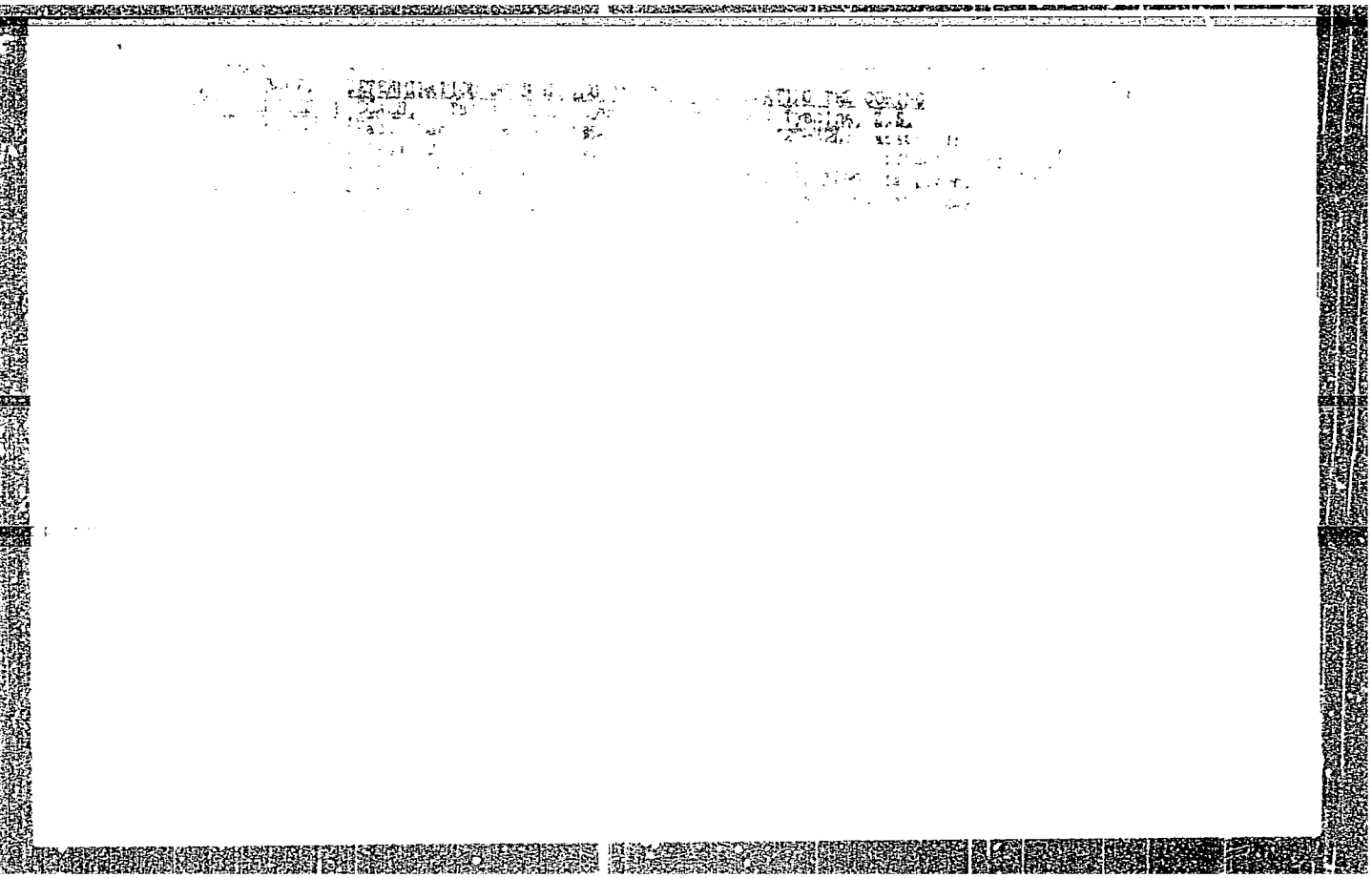
Card 2/2

TYABINA, R.A.

KREYMER, S.Ye.; TUZHILINA, N.V.; GOLOVINA, V.A.; TYABINA, R.A.

Determination of cobalt and cadmium in high-purity nickel.
Zav. lab. 24 no.3:262-264 '58. (MIRA 11:3)

1.Kombinat "Severonikel'".
(Cobalt--Analysis) (Cadmium--Analysis) (Nickel--Analysis)

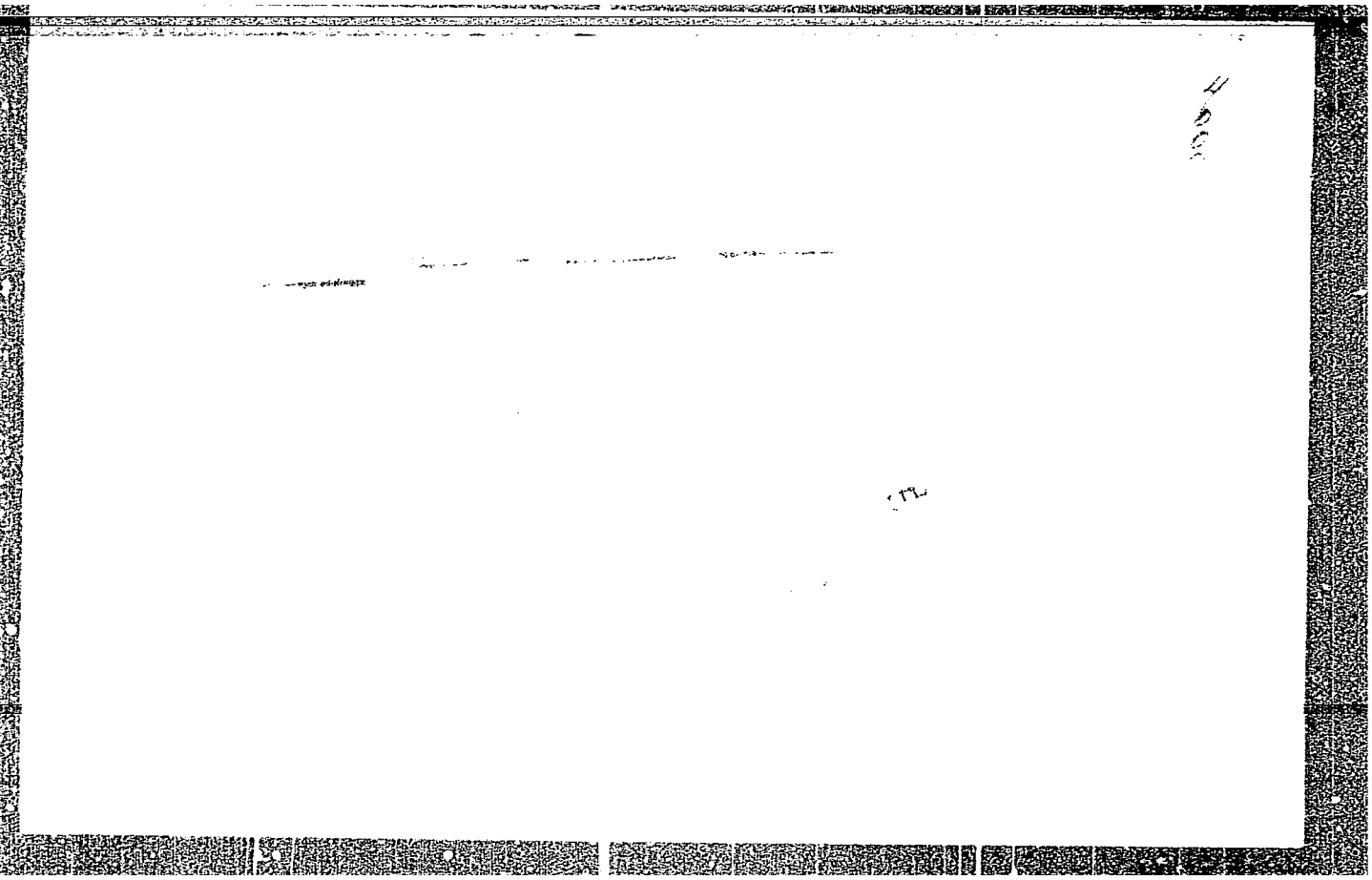


APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710004-9"

KASATOCHKIN, V.I.; TAYTS, Ye.M.; DAVYDOVA, M.A.; TYABINA, Z.S.

Changes in the structure and physicomechanical properties of coals under thermal processing. Trudy IGI 8:89-95 '59.
(MIRA 13:1)

(Coal)



USSR

ment of its strength, and formation of
quent heating, which are assumed to predict the quality of
metallurgical coke. A further study may assist in widening
the choice of blends without reduction in the

TYA[illegible], Z. S.
[illegible], Zavod Lab, 1948, 14, 1229-1232

TYABINA, Z. S.

42304: TYABINA, Z. S., TAYTS, YE. M., KOYFMAN, B. YE. - Issledovaniye mekhanicheskoy stoykosti kamennykh ugley kuznetskogo basseyna. Trudy Sect-issled. Byuro (M-vo ugol'noy prom-sti Zap. r-nov SSSR, Geol.-razvedoch. upr.), vyp. 4, 1948, s. 58-63.- Bibliogr: 8 nazv.

SO: Letopis' Zhurnal'nykh Statey , Vol. 47. 1948.

TYAGINA, Z. S.
P. I. TAITS, Zavod Lab., v. 14, Oct. 1948, p. 1229-1232

TYABINA, Z. S.
E. M. TAITS, Zavod Lab, Oct., 1948, v. 14, 1229-1232

TYABLIKOV, S. V. Cand. Physicomath. Sci.

Dissertation: "Certain New Methods in the Theory of the Crystalline State." Moscow Order of Lenon State U. imeni M. V. Lomonosov. 4 Jun. 1947.

SO: Vechernyaya Moskva, Jun. 1947 (Project #17836)

TYABLIKOV, S.

USSR/Crystallization
Crystals - Growth

May 1947

"On the Problem of Crystallization," S. Tyablikov, 4 pp - Physics Faculty, Moscow State U.

"Zhur Eksp Teor Fiziki" Vol XVII, No 5 pp. 386-89

Crystallization is treated as the result of instability of density distribution. Theoretically computed values of temperature of crystallization for argon and mercury are found to agree with known values.

9T2

TYABLIKOV, S. V.

42034: TYABLIKOV, S. V. - Povedeniye primesey v slabo-neideal'nom vyrozhdennom gaze, podchinyayushchemsya statisike boze. Zhurnal eksperim. I teoret. Fiziki, 1948, Vyp. 11. S. 1023-29. - Bibliogr: 5 nazv.

SO: Letopis' Zhurnal'nykh Statey, Vol. 47, 1948.

Journal of Experimental and Theoretical Physics, USSR, Vol. 18, No. 4, 1948

Tyablikov, S.V. (Moscow State University), Quantum-mechanical consideration of the dynamics of crystallic lattice, 368-73

"Starting with quantum equations of motion of the problem of N bodies, an investigation is made of the dynamics of a crystalline lattice. The first approximation leads to the results of the Born theory of the lattice. The results of the second approximation probably show some peculiarities of the spectra."

Source: GTRSPL, Vol. 1, No. 5

TYABLIKOV, S. V.

PA 51/49T61

USSR/Physics
Gases
Statistical Mechanics

Nov 48

"Behavior of Impurities in a Slightly Nonideal Degenerate Gas Obeying Bose Statistics," S. V. Tyablikov, Math Inst, Acad Sci USSR, 7 pp

"Zhur Eksper i Teoret Fiz" Vol XVIII, No 11

Discusses problem of power distribution of particles interacting with a system with a great number of degrees of freedom. Composes a kinetic equation for particles of the impurity, assuming correctness of usual theory of disturbances. From its fixed solution, it follows that particles are in thermal equilibrium with elementary excitations, participating with the latter in movement together with normal part of Bose gas. Submitted 18 Jun 48.

51/49T61

TYABLIKOV, S. V., KOZYREV, B. M. and AL'TSHULER, S. A.

"K Horter, Paramagnetic Relaxation", Moscow Foreign Literature Publishing House, 1949.

BOGOLYUBOV, M.M.; TYABLIKOV, S.V.

Self-energy conservation in the nonrelativistic field theory.
Dop.AN URSR no.5:10-16 '49. (MLRA 9:9)

1.Diysniy chlen AN URSR (for Bogolyubov).2.Institut matematiki AN URSR.
(Field theory) (Force and energy)

TYABLIKOV, S. V.

USSR/ Mathematics — Perturbation Method
Physics — Atomic Structure

Mar 49

"One Application of the Theory of Perturbation to the Polar Model of a Metal," N. N. Bogolyubov, S. V. Tyablikov, Math Inst, Acad Sci USSR, 5 pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 3 pp. 251-55

Presents results of one form of the theory of perturbation for a degenerate level applied to the polar model of a metal. Develops simple method enabling results of theory of perturbation to be used without recourse to method of secular equaltions. Submitted 7 Oct 49.

PA 32/49T54

TYABLIKOV, S. V.

USSR/Physics Mar 49
Quantum Mechanics
Mathematics - Applied

"The Approximation Method of Finding the Lowest Energy Levels of Electrons in Metal," N. N. Bogolyubov, S. V. Tyablikov, Math Inst, Acad Sic USSR, 12 ¼ pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 3 - стр. 256-68

Presents approximate method of secondary quanta for determining energy spectra of weakly excited states. Results are illustrated using theory of ferromagnetism as example. Establishes that definite electric current is connected with spin waves. Submitted 7 Oct 48.

FA32/49T90

TIABLIKOV, S. V.

155T80

USSR/Physics - Particles
Statistical Mechanics
Jan 50

"Theory of Nonlocalized Particles," A. A. Vlasov, 3 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 1

Remarks in response to article by S. V. Tyablikov, in same issue, "Some Comments on the Problem of Many Bodies as Set Up by A. A. Vlasov." Vlasov reaffirms two statements: (a) rejection of the spatial and velocity localization of particles as factor precedding the interaction of forces; (b) consideration of the finite bond of individual properties of particles

155T80

USSR/Physics - Particles (Contd)
Jan 50

and the laws of their motion and the total collectivity (collective interaction for arbitrary forces). Comments on Gibbsian statistics. Submitted 20 Oct 49

157T80

TYABLIKOV, S. V.

USSR/Physics - Plasma Jan 50
Statistical Mechanics

"Some Comments on the Problem of Many Bodies as Set Up by A. A. Vlasov," S. V. Tyablikov, Math Inst, Acad Sci USSR, 7 pp

"Zhur Eksper i Teoret Fiz" Vol XX, No 1, [illegible]

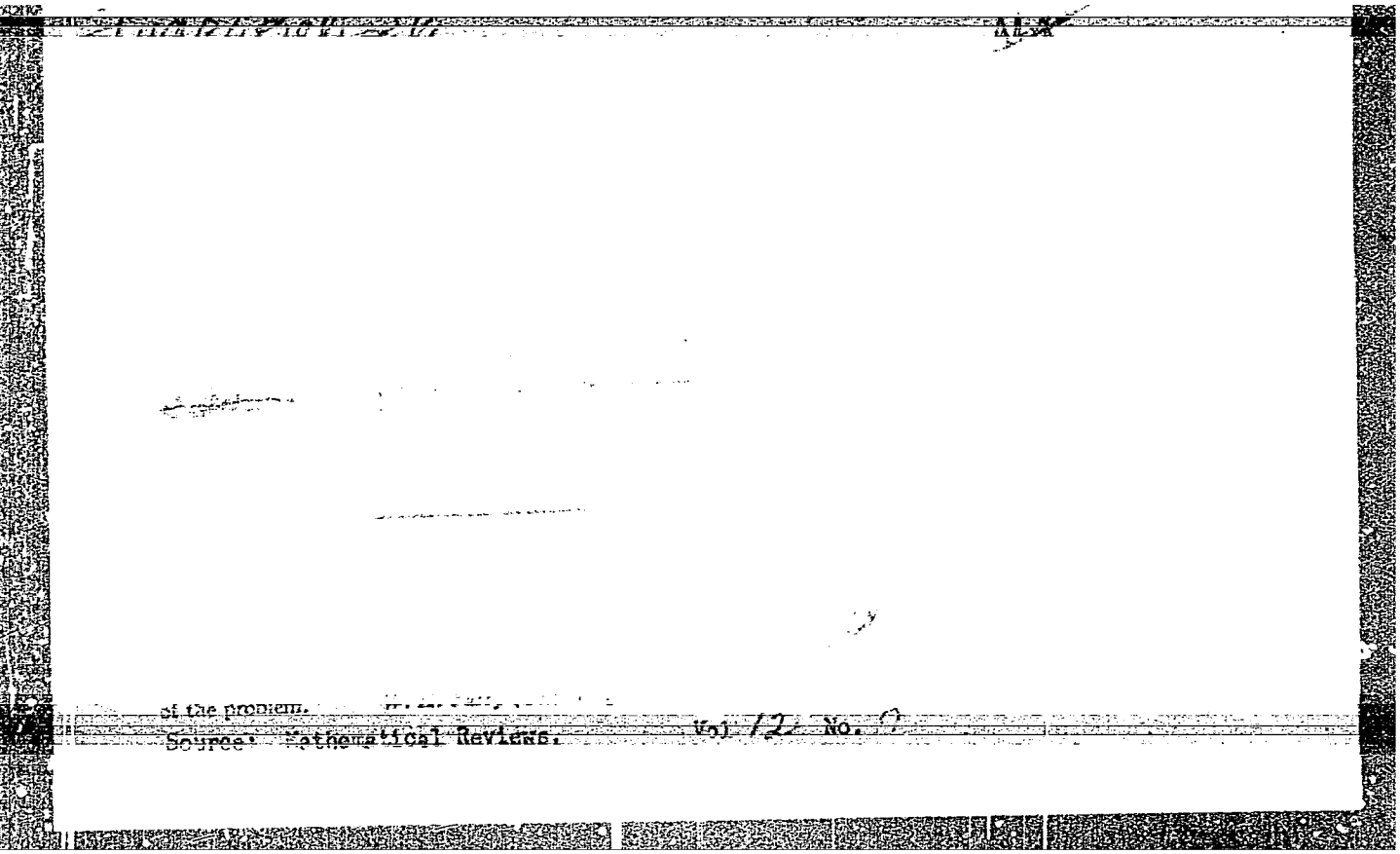
Vlasov has made significant contributions to the plasma theory, including method of "self-congruent fields" and his mathematical treatment of "lagging and leading potentials" and their "half-sums." Recently, however, Vlasov has published a number of works relating to certain problems in the theory of

155T83

USSR/Physics - Plasma (Contd) Jan 50

condensed media and the general problem of many bodies, in which he has extended his methods from plasma theory to a completely different type of problem. Author maintains this extension is not justified and criticizes the recently published works in detail.
Submitted 13 May 49.

155T83



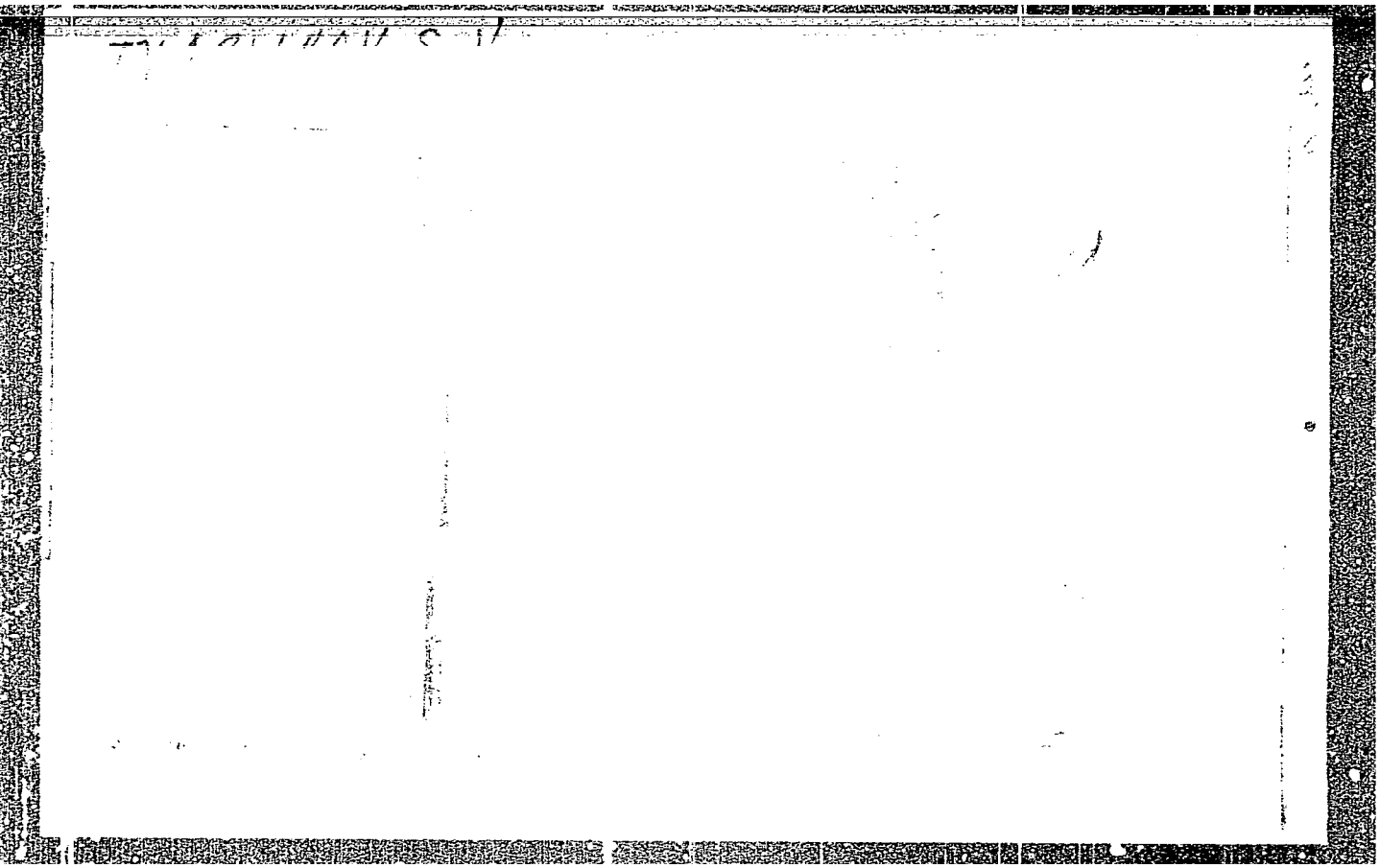
of the problem.

Source: Mathematical Reviews, Vol. 12 No. 6

TYABLIKOV, S.V.; LASHKAR'OV, V.Ye., diysnyy chlen.

Energy spectrum of electrons in ionized crystals (weak link theory). Dop.AN URSR no.4:239-242 '51. (MLRA 6:9)

1. Akademiya nauk Ukrayins'koyi RSR (for Lashkar'ov). 2. Matematychnyy instytut im. V.A.Steklova Akademiyi nauk SRSR (for Tyablikov).
(Crystallography)



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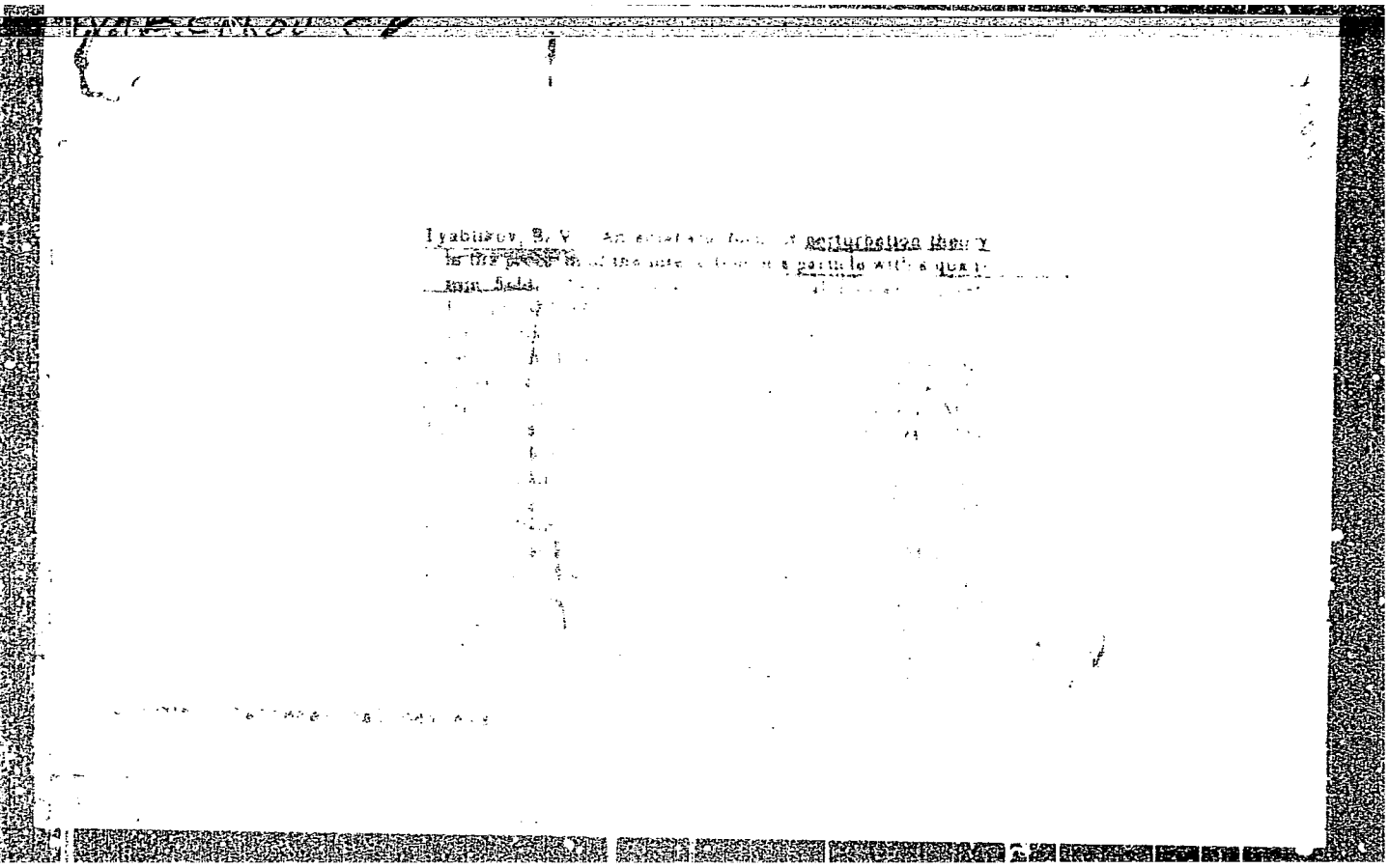


TYABLIKOV, S. V.

185T101

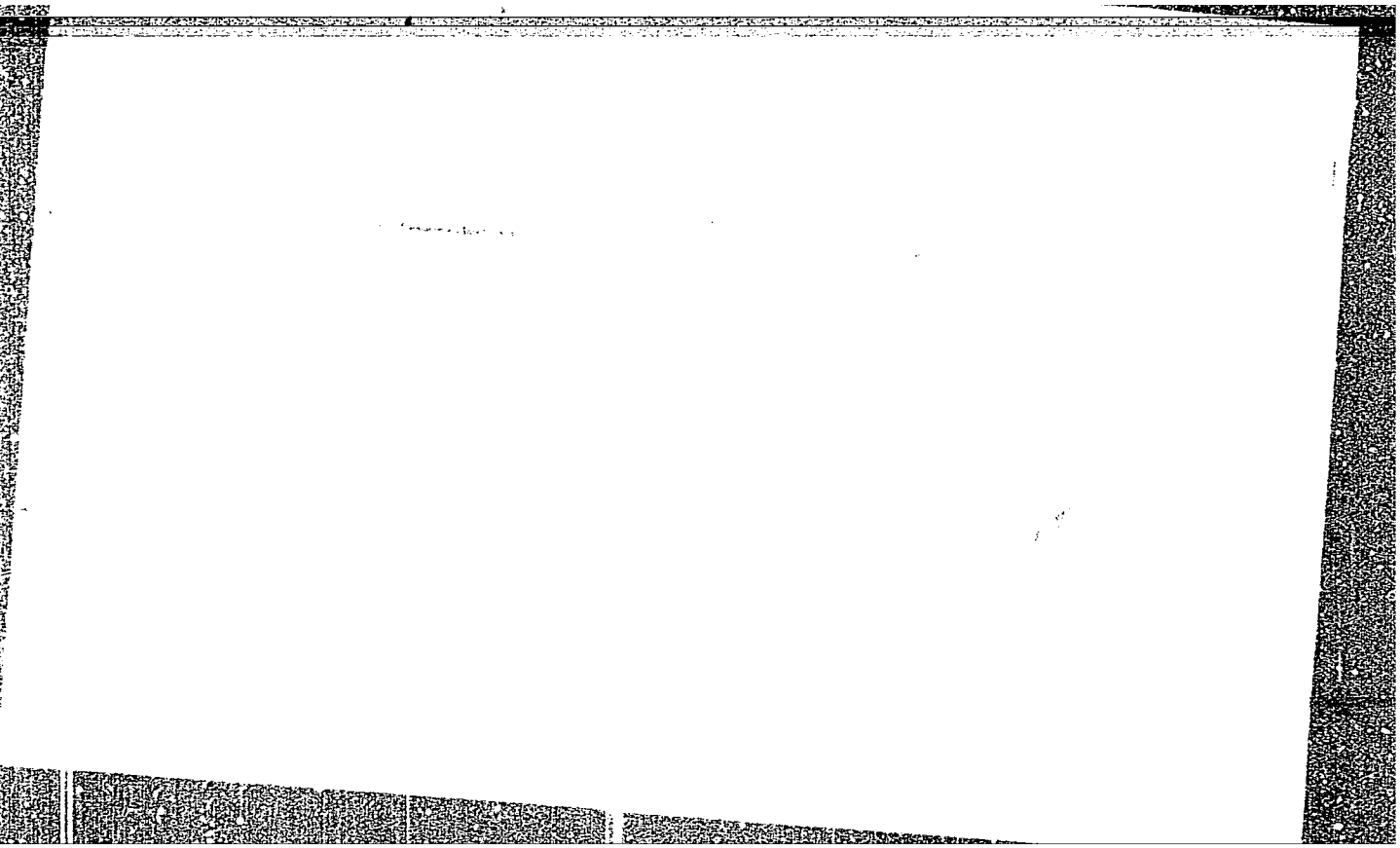
USSR/Physics - Electron Gas 21 Feb 51

"Theory of Elementary Excitations in Weakly Nonideal Electron Gas in a Crystal," V. L. Bonch-Bruyevich, S. V. Tyablikov, Inst Phys Chem, and Math Inst, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXVI, No 6, pp 817-819

Considers problem on energy spectrum of syst of electrons in crystallic lattice under assumption that interaction of electrons is small, i.e., density of electrons is considered small in comparison with number of atoms (or ions) per unit vol of the lattice. Authors were assisted by N. N. Bogolyubov and F. F. Vol'kenshteyn. Submitted 22 Dec 50 by Acad A.F. Ioffe.

185T101



APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710004-9"

TYABLIKOV, S. V.

USSR/Physics - Polaron Ionic Crystals Mar/Apr 52

"Some Peculiarities of the Interaction of Electron With Lattice in Ionic Crystals," S.V. Tyablikov

"Iz Ak Nauk SSSR, Ser Fiz" Vol XVI, No 2, p 232

Brief contents of a report. Eigenfunctions and eigenvalues of the energy of an electron interacting with polarizing waves are found in approximation of strong and weak bonds. In the case of weak bond the dependence of effective mass and fluctuating radius of polaron on temp is found.

The addn to mutual energy of 2 electrons, produced by their interaction with the phonon field, is computed. In the case of strong bond, results for energy and effective mass of polaron are obtained.

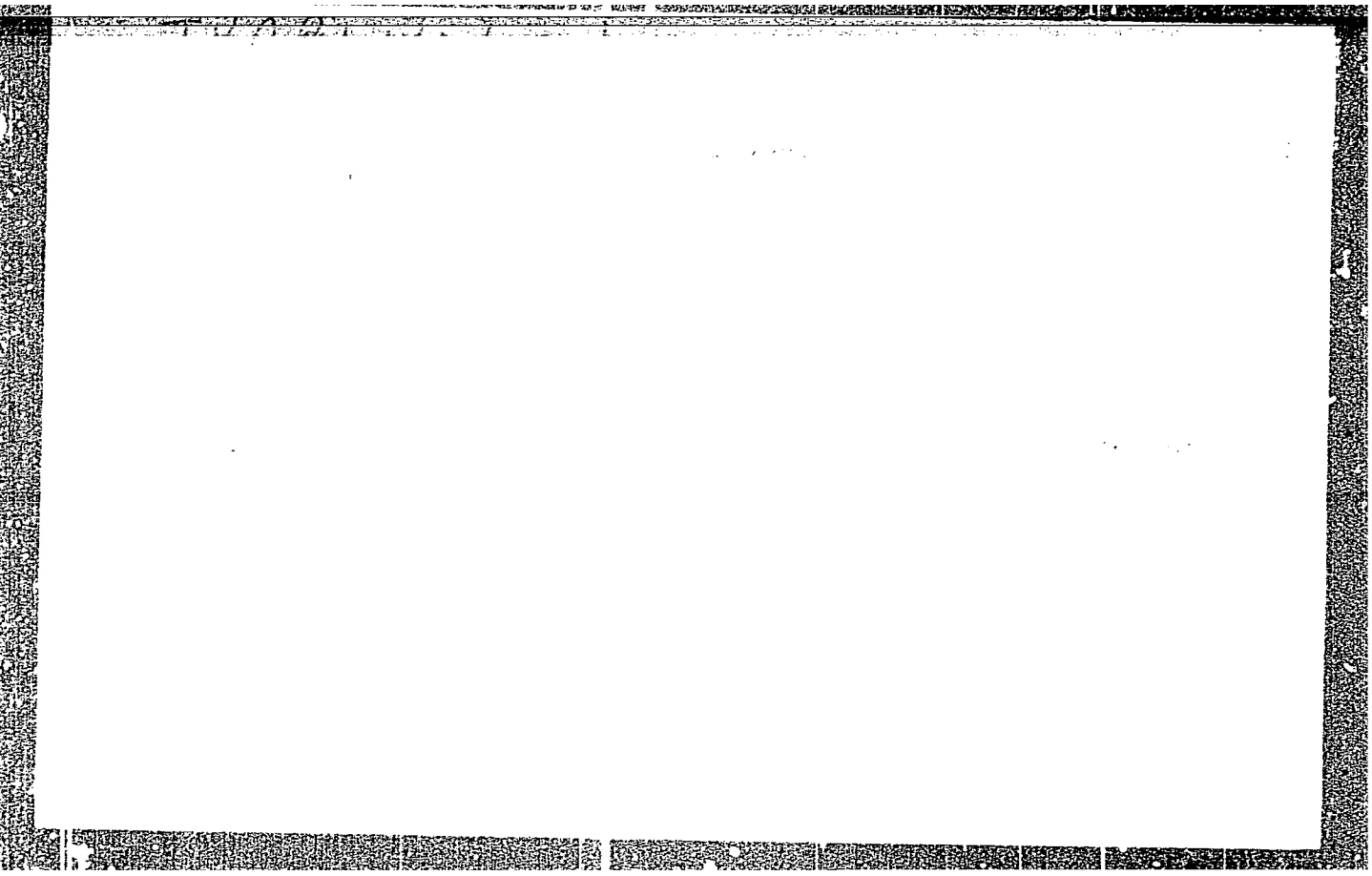
220T105

TYABLIKOV, S.V.

Electrons

Energy spectrum of electrons in ionic crystals (with strong bond). Zhur.tekh.fiz 22, no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, AUGUST 1952 ~~1953~~, Uncl.



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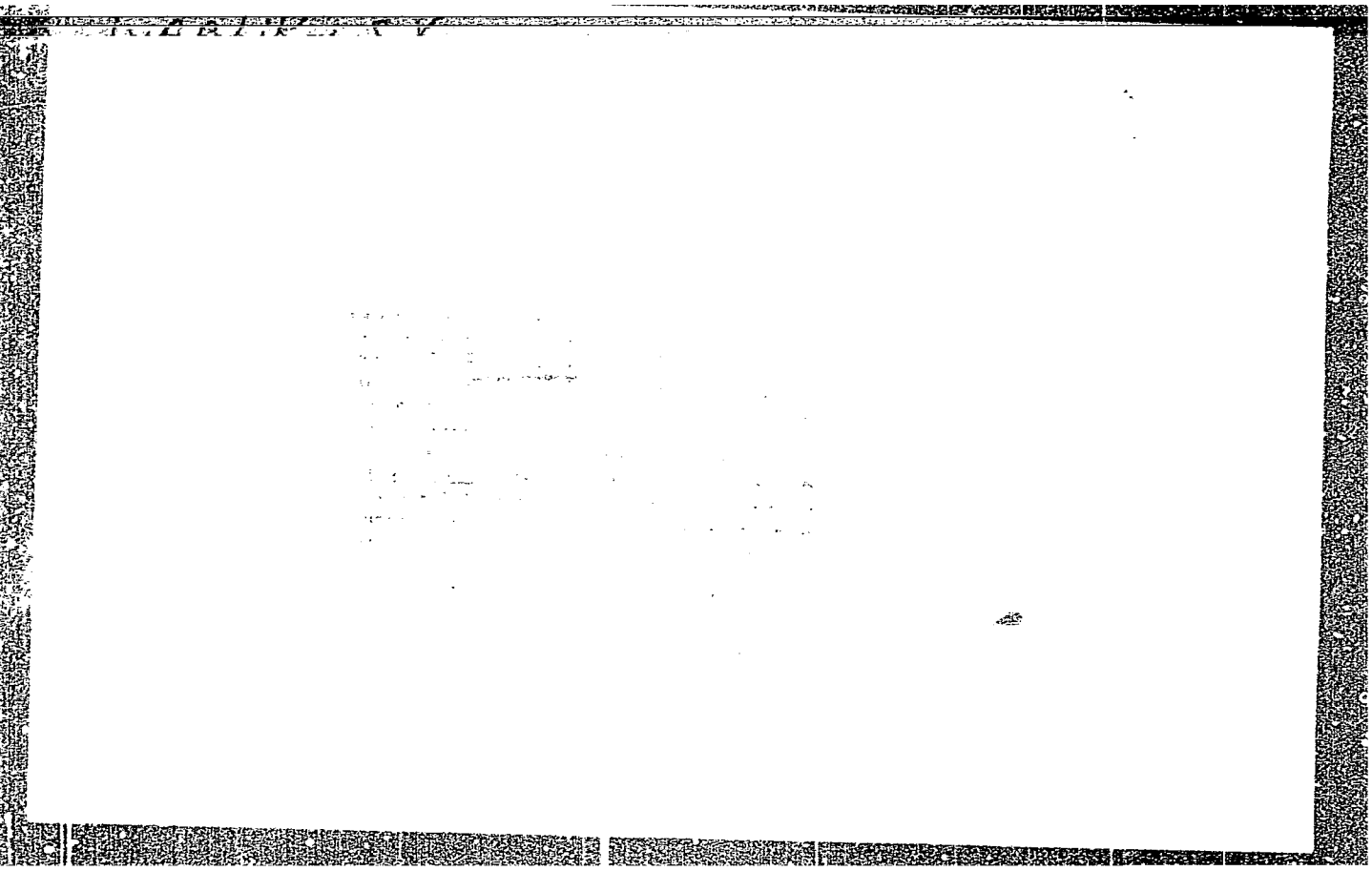


APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001757710004-9"

TYABLIKOV, S. V.

TA 242T100

USSR/Physics - Semiconductors Nov 52

"Review of S. I. Pekar's Investigations Into the Electron Theory of Crystals'," S. V. Tyablikov

"Uspekhi Fiz Nauk" Vol 48, No 3, pp 447-451

Subject monograph summarizes recent investigations conducted by S. I. Pekar, his students and associates, pertaining to theory of semiconductors and dielectrics with ionic crystalline lattice. Bibliographic data: "Issledovaniya po elektronnoy teorii kristallov," Moscow-Leningrad, Gostekhizdat, 1951, 256 pp.

242T100

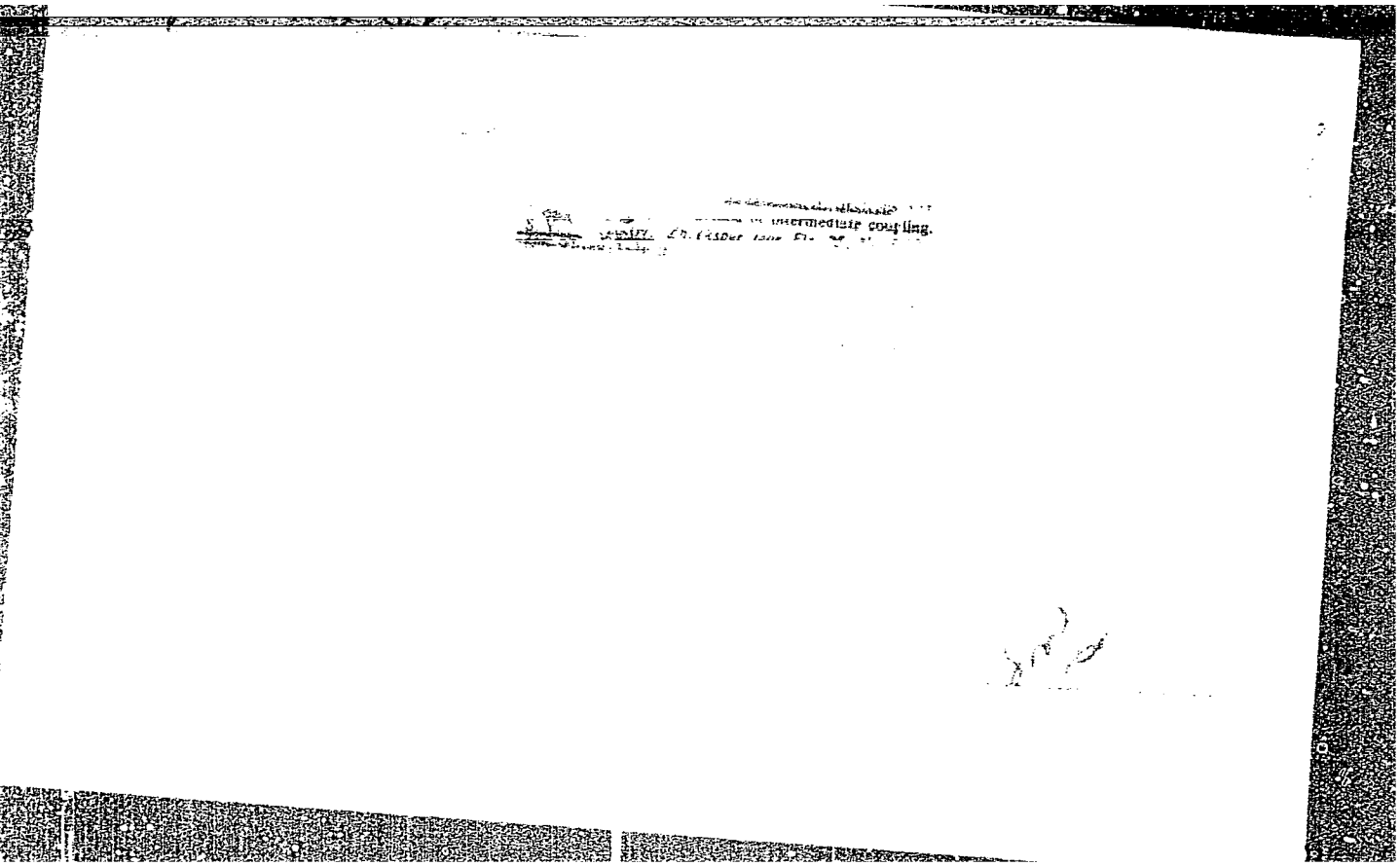
TYABLIKOV, S. V.

Mathematical Reviews.
May 1954
Mathematical Physics

10-7-54

Tyablikov, S. V. Questions of invariance under translation in the theory of adiabatic approximation. Ukrain. Mat. Žurnal 5, 152–158 (1953). (Russian)

A quantum-mechanical system with internal degrees of freedom is bound to a fixed centre by an external force. As the strength of the external force tends to zero, the system will in the limit become free and acquire the property of being invariant under translations. The quantum-mechanical description of this limiting process is worked out in detail. The purpose of the paper seems to be mainly pedagogical. *F. J. Dyson* (Princeton, N. J.).



TYABLIKOV, Sergey Vladimirovich

Mathematical Inst imeni Steklov Acad Sci, USSR, Academic degree of Doctor of Physico-Mathematical Sciences, based on his defense, 13 December 1954, in the Council of the Moscow Order of Lenin State U imeni Lomonosov, of his dissertation: "The peculiarities of the conduct of electrons of conductivity in the theory of ionic crystals".

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no 8, 2 April 55, Byulleten' MVO SSSR, No. 14, July Moscow pp 4-22, Uncl.
JPRS/NY-429

TYABLIKOV, S. V.

USSR/Physics - Electron energy spectrum

FD 418

Card 1/1 Pub. 147-4/16

Author : Tyablikov, S. V.

Title : Energy spectrum of an electron in a polar crystal. II

Periodical : Zhur. eksp. i teor. fiz. 545-550, May 1954

Abstract : Investigates the form of the energy spectrum of a "surplus" electron in a polar crystal under assumption that the interaction of an electron with polarized oscillations possesses an adiabatic character. Carries out a treatment approximating the method of almost free electrons.

Institution : Mathematics Institute, Acad Sci USSR

Submitted : October 8, 1953

TYABLIKOV, S. V, and BOGOLYUBOV, N. N., (Moscow)

"Approximative secondary quantization methods in the quantum theory of magnetizm," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.

TYABLIKOV, S. V. (Moscow)

"On the Theory of Antiferromagnetism," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.

TYABLIKOV, S. V., and GUSEV, A. A., (Moscow)

"On the Temperature and Field dependence of Magnetic Anisotropy Constants," a paper submitted at the International Conference on Physics of Magnetic Phenomena, Sverdlovsk, 23-31 May 56.