"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

KADATSKAYA, K.P.; SHASHNIKOVA, N.V.

Ecology of the tick Alveterobius alactagalis in Azerbaijan in relation to its epidemiological importance. Med. parazit. i parazit. bol. 32 no.3:320-323 My-Je'63 (MIRA 17:8)

1. In Azerbaydzhanskoy protivochumnoy stantsii (nachal'nik M.G.Akhundova).

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHNIKOVA, N.V.; ISAYEVA, E.V.

Fleas of Vinogradov's gerbil in the Nakhichevan A.S.S.R. Trudy Nauch.-issl. protivochum. inst. Kav. i Zakav. no.5: 106-118 '61. (MIRA 17:1)

1. Azerbaydzhanskaya protivochumnaya stantsiya.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

USSR/Communications Nov 48
Postal System
Airways

"Airmail Delivery to Remote Points of Tatar ASSR," A. Shashokin, Deputy Chief, Mail Communications, Repub Adm, Tatar ASSR, ½ p

"Vest Svyazi - Pochta" No 11

Over half the regions of Tatar ASSR used to be cut off from center of republic by ice in Volga, Kama, and Vyatka rivers. [illegible]tions various towns served by air mail. Flight over Chistopol'-Yelabuga-Naberezhnyye Chelny-Menzelinsk route and back takes 2½ hours.

[redacted] 23/49T17

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

BEN'KOVA, N.R.; BONCHKOVSKAYA, Yu.S.; SHASHUN'KINA, V.M.

Ionospheric disturbances of July 10-18, 1959 according to observations at ionospheric stations of the U.S.S.R. Geomag. i aer. 1 no.3:369-373 My-Je '61. (MIRA 14:9)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.

(Ionosphere)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

S/203/61/001/005/018/028
A006/A101

AUTHORS: Shapiro, B. S., Shashun'kina, V. M.

TITLE: Motions in the F-layer of the ionosphere over Tbilisi during the eclipse on February 15, 1961

PERIODICAL: Geomagnetizm i aeronomiya, v. 1, no. 5, 1961, 760 - 765

TEXT: It was previously stated that the effect of solar eclipse on the F-layer was indirect, manifesting itself in the appearance of additional motions in this layer and a corresponding redistribution of ionization. To study this phenomenon during the eclipse of February 15, 1961, the authors employed ionograms of vertical sounding to calculate and investigate N(h), i.e. the ionospheric profiles (distribution of ionization N with height h). They were calculated with the electronic "Strela" computer for the day of eclipse and the control day (19. 2. 1961) by the integral laminar method by taking into account the terrestrial magnetic field. Moreover, variations of median values of ionization N for an altitude of 240 km (N_{240}) were calculated for 5 magnetically most quiet days in February 1961. During the eclipse a decrease of ionization was observed on all levels investigated in the ionosphere with a minimum at 11 hr 20 min longitudinal

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHUN'KINA, V.M.; TURBIN, R.I.

Preliminary results of observations on the ionospheric effect of the solar eclipse of Feb. 15, 1961. Geomag. i aer. 1 no.5:835-838 S-O '61. (MIRA 15:1)

1. Institut zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln AN SSSR.
(Tiflis region--Ionosphere) (Eclipses, Solar--1961)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHUNOV, I., starshiy nauchnyy sotrudnik

Two methods and two results. Okhr.truda i sots.strakh. 4 no.12:28-29 D '61. (MIRA 14:11)

1. Ventilyatsionnaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.
(Railroads--Cars)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

POLYAKOV, V. (Sverdlovsk); BARANOV, A. (Ivanovo); TSYBUL'KO, A. (Arkhangel'sk); NECHAYEV, V. (Arkhangel'sk); KANE, A., konstruktor; BIZUNOV, N.; SHASHUNOV, I., starshiy nauchnyy sotrudnik; RUDENKO, F.; KONYAKHIN, N.; KUZ'MIN, V.; POLUYEKTOV, Ye.; MOSKALENKO, N.

Technical information. Okhr.truda i sots.strakh. 5 no.12:32-37 D '62. (MIRA 16:2)

1. Zavod "Russkiy dizel'", Leningrad (for Kane). 2. Tekhnicheskiy inspektor otdela okhrany truda TSentral'nogo komiteta profesional'nogo soyuza rabochikh i sluzhashchikh sel'skogo khozyaystva i zagotovok (for Bizunov). 3. Ventilyatsionnaya laboratoriya Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta (for Shashunov). 4. Tekhnicheskiy inspektor Moskovskogo oblastnogo soveta professional'nykh soyuzov (for Rudenko). 5. Komandir otdeleniya gazospasatel'nogo otryada Omskogo neftezavoda (for Konyakhin). 6 Tekhnicheskiy inspektor Stavropol'skogo krayevogo soveta professional'nykh soyuzov (for Moskalenko).

(Technological innovations)
(Safety appliances)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

GANDZYUG, S. (Khabarovsk); TKACHENKO, I.; SHASHUNOV, I.; GRANOVSKIY, Ya.; IGLIN, A.; BORYCHEV, N.

Technological information. Okhr.truda i sots.strakh. 6 no.1:34-37 Ja '63. (MIRA 16:1)

1. Starshiy inspektor otdela okhrany truda Vsesoyuznogo tsentral'nogo soveta professional'nykh soyuzov (for Iglin).
2. Zaveduyushchiy otdelom okhrany truda Tsentral'nogo komiteta professional'nogo soyuza rabochikh ugol'noy promyshlennosti (for Borychev).

(Technological innovations)
(Safety appliances)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHUNOV, I.S., inzh.

A mobile system for washing diesel rolling stock. Elek.i tepl. tiaga 6 no.12:42-43 D '62. (MIRA 16:2)
(Railroads—Equipment and supplies)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHUNOV, I.S., inzh.

A mobile vacuum cleaner system (from "Railway Age" and "Railway Locomotives and Cars"). Elek. i tepl. tiaga no.5: 38-39 My '63. (MIRA 16:8)

(Railroads—Rolling stock)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

KURNIKOV, A.A.; SHASHUNOV, I.S.

Improved unit for the protection of the respiration area when working in closed spaces. Mashinostroitel' no.7:36-37 Jl '63. (MIRA 16:9)

(Industrial hygiene)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHUNOV, I.S., inzh.

Ventilating pressure vessels during electric welding operations. (MIRA 16:10)
Svar. proizv. no.9:39-42 S '63.

1. Otdeleniye okhrany truda i tekhniki bezopasnosti Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

ANDRIANOV, Aleksandr Alekseyevich; POTEMKIN, S.V., glavnyy red.; MATSUYEV, L.P., zamestitel' glavnogo red.; SHAKHNAROVICH, L.A., red.; BEREZIN, V.P., red.; VESELOV, V.V., red.; GOLANDSKIY, D.B., red.; GOL'DTMAN, V.G., red.; IGNATENKO, M.A., red.; SHASHURA, M.V., red.; RIVKIN, G.M., red.; FIRSOV, L.V., red.; SHEPELEV, I.T.

[Methods of analytic decomposition of cassiterite and tin ores] Metody analiticheskogo razlozheniia kassiterita i rud olova. Magadan, 1962. 14 p. (Magadan. Vsesoiuznyi nauchno-issledovatel'skii institut zolota i redkikh metallov. Trudy Obogashchenie i metallurgiia, no.53). (MIRA 16:7)
(Cassiterite--Analysis) (Tin ores--Analysis)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHUNOV, L., starshiy nauchnyy sotrudnik

Rutile electrodes. Okhr. truda i sots. strakh. 5 no.8:39 Ag '62.
(MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta.
(Welding--Hygienic aspects)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

POTEMKIN, S.V., glav. red.; MATSUYEV, L.P., zam. glav. red.; BEREZIN, V.P., red.; VESELOV, V.V., red.; GOLANDSKIY, D.B., red.; GOL'DTMAN, V.G., red.; IGNATENKO, M.A., red.; SHASHURA, M.V., red.; RIVKIN, G.M., red.; FIRSOV, L.V., red.; SHAKHNAROVICH, L.A., red.; SHEPELEV, I.T., red.; SHAROVA, L.A., red.

[Reports for 1961] Sbornik referatov za 1961 god. Magadan, 1962. 135 p. (Its: Trudy VNII-1) (MIRA 16:7)

1. Magadan. Vsesoyuznyy nauchno-issledovatel'skiy institut zolota i redkikh metallov.
(Frozen ground) (Mining engineering) (Metallurgy)
(Building materials)

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, D.

Roots grow in the direction of the South. Znan.sila 35 no.10: 23-24 O'60. (MIRA 13:11)
(Plants, Effect of magnetism on) (Roots)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, D. (MIRA 14:3)

Invisible crew. Znan.sila 36 no.3:42 Mr '61.
(Steroids) (Microbiology)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

AID P - 5489

Subject : USSR/Aeronautics - interception

Card 1/1 Pub. 135 - 6/26

Author : Shashurin, D. V., Lt. Col.

Title : Analysis and criticism of errors in interception of aerial targets.

Periodical : Vest. vozd. flota, 3, 30-33, Mr 1957

Abstract : How a thorough analysis of errors, made by the pilots and by the personnel of the command post and the radio-technical means during the interception of aerial targets, is to be carried out after the completion of such missions is discussed by the author. The article merits attention.

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SOV/109-4-8-2/35

AUTHORS: Levitskiy, S.M. and Shashurin, I.P.

TITLE: Verification of the Applicability of the Probe Methods to the Measurement of the Charge Concentration in a High-frequency Discharge

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1238 - 1243 (USSR)

ABSTRACT: The aim of this investigation was the determination of the accuracy of the probe methods of measurement of charge concentrations in high-frequency discharges, by comparing them with the cavity-resonator method which was used as the standard. First, the double-probe method was used to measure the charge concentration in a high-frequency discharge which was excited by a 200 W high-frequency generator at various mercury-vapour pressures. Simultaneously, the charge concentrations were measured by the resonator method. The results are shown in Table 2, where the first column indicates the frequency of the discharge, the third column shows the electron concentrations measured by the resonator method, while

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

Verification of the Applicability of the Probe Methods to the Measurement of the Charge Concentration in a High-frequency Discharge

the fourth column gives the values of the ion concentration measured by the double-probe method. It is seen that the ion concentrations measured by the probe method are higher than the electron concentrations determined by the resonator method. The discrepancies can be explained by analysing the equivalent circuit of the double-probe device; this is shown in Figure 1. By investigating this circuit, it was found that the current-voltage characteristic of the double probe is affected by the parasitic capacitances of the system; the effect is illustrated in Figure 2 for various values of the parasitic capacitance. On the other hand, it is found that for the same electron concentration, the current-voltage characteristics of the double probe in a high-frequency discharge differ from those of direct-current discharge (see Curves 1 and 2 of Figure 3). With regard to the single-probe method, it was found that - although the parasitic capacitance has some effect - this is comparatively insignificant since the dynamic impedance of a single probe at high electron currents

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

is small and is usually two to two-and-a-half orders lower than the dynamic impedance of the ionic portion of the characteristics. The measurement of the electron concentration in the investigated high-frequency discharge was effected by the substitution method, i.e. the high-frequency discharge was replaced by an equivalent direct-current discharge (which produced in the resonator the same frequency shift). The values of the electron concentrations thus obtained are indicated in Table 3. From this, it is seen that the single-probe method can be applied to the measurement of the charge concentrations in high-frequency plasma. The above investigation was carried out under the assumption that in the high-frequency discharge, as well as in the equivalent direct-current discharge, the electron concentration is radially uniform. The validity of this assumption was verified by means of a special tube which was fitted with a probe which could be displaced radially. At frequencies from 3 - 20 Mc/s, it was found that the

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Verification of the Applicability of the Probe Methods to the Measurement of the Charge Concentration in a High-frequency Discharge

radial distribution of the charges was essentially constant.

There are 3 figures, 3 tables and 15 references, 6 of which are English, 2 German, 1 French and 6 Soviet.

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T.G. Shevchenko, Kafedra elektroniki (Kiyev State University im. T.G. Shevchenko, Chair of Electronics)

SUBMITTED: March 5, 1959

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

66702

24.2120 SOV/109-4-8-22/35

AUTHORS: Granovskiy, V.L., Luk'yanov, S.Yu., Spivak, G.V. and Sirotenko, I.G.

TITLE: Report on the Second All-Union Conference on Gas Electronics

PERIODICAL: Radiotekhnika i elektronika, 1959, Vol 4, Nr 8, pp 1339 - 1358 (USSR)

I.M. Podgornyy and N.G. Koval'skiy - "New Data on X-ray Radiation During Pulse Discharges"
V.A. Khrabrov and M.M. Sulkovskaya dealt with the investigation of the neutron radiation in powerful gas discharges in chambers with conducting walls.
N.A. Borzunov et al. - "Investigation of the Gas Discharge in a Conical Chamber".
S.M. Osovets et al. - "A Turn of Plasma in Transverse Magnetic Field".
I.G. Kesayev "Data on the Division of a Cathode Spot on Mercury in a Low-pressure Arc" (see p 1289 of the journal).
A.E. Robson (England) - "A New Theory of the Cathode Spot" (see p 1295 of the journal).
L.N. Breusova - "Positive Column in a Hydrogen Discharge With Stationary and Pulse Loads".
I.G. Nekrashevich and A.A. Labud - "Current Distribution on the Surface of Electrodes in Electric Pulse Discharges".
L.S. Eyg - "Some Properties of Gas Discharges in Low-voltage in Halogen Counters".

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G.I. Glotova and V.L. Granovskiy - "Comparison of the Initial De-ionisation in the Isotopes of Hydrogen (H and D)".
L.A. Akol'zina communicated some results on the pre-breakdown current pulses at low pressures.
M.Ya. Vasil'yeva and A.A. Zaytsev - "Charge-density oscillation Waves in Cylindrical Plasma".
L. Pekárek of Czechoslovakia communicated some information on the wave-like phenomena in gas-discharge plasma.
B.G. Brezhnev dealt with the problem of the determination of the energy of fast ions in pulse discharges.
B.B. Kadomtsev - "Convection Instability of a Plasma String".
S.I. Braginskiy and V.D. Shafranov - "Theory of a High-temperature Plasma String".
The fifth section was presided over by N.A. Kaptsov and dealt with high-frequency currents in gases. The following papers were read:
V.Ye. Golant - "Formation of Ultra-high Frequency Pulse Discharges in Inert Gases".

Card10/15

G.I. Pateyuk - "Influence of the Boundary Conditions on the Formation and Maintenance of High-frequency Discharges".
P.S. Bulkin et al. - "Investigation of a Self-maintained Ultra-high Frequency Pulse Discharge and the Process of its Development".
G.N. Zastenker and G.S. Solntsev - "Some Results of the Investigation of the Formation of Low-pressure High-frequency Discharges".
G. Margenau (USA) - "Conductivity of Weakly Ionised Plasma".
A.A. Kuzovnikov - "The Conditions of Transition From High-frequency Corona Discharge at Atmospheric Pressures".
V.Ye. Golant - "The relationship Between the Characteristics of the Ultra-high Frequency Current and the Direct Current in Gas Discharges".
B.B. Lagov'yer analysed the conductivity of the disintegrating plasma in the window of a resonance discharge tube.
S.M. Levitskiy and I.P. Shashurin dealt with the applicability of the probe method to high-frequency discharges (see p 1238 of the journal).

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The paper by V. Ye. Mitsuk et al. was devoted to the investigation of the ultra-high frequency plasma by means of the Stark effect.
G.S. Solntsev et al. dealt with the problem of electric fields in a high-frequency discharge at low pressures.
Ye. Bederau of Rumania read a paper entitled "High-frequency Discharges in Methane".
The work of the sixth section was devoted to the problems of plasma and its radiation; the section was presided over by V.A. Fabrikant. The following papers were read:
Yu.M. Kagan - "New/in the Probe Methods of Plasma Investigation"
V.I. Drozdov - "Oscillographic Measurements in Plasma".
V.A. Simonov and A.G. Mileshkin - "Investigation of the Movement of Plasma by Means of a Mass Spectrometer of the Transit Time".
A.V. Rubchinskiy - "Application of the Oscillations on a [illegible] Vapour or Gas [illegible]

SHASHURIN, I.P.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

AUTHORS: Levitskiy, S. M., Shashurin, I. P. SOV/48-23-8-5/35

TITLE: The Measurement of Concentration of Discharges in Plasma by the Method of a High-frequency Probe

PERIODICAL: Izvestiya Akademii nauk SSSR, Seriya fizicheskaya, 1959, Vol 23, Nr 8, pp 948 - 951 (USSR)

ABSTRACT: In the present paper a non-symmetrical oscillator and a bi-conductor probe are used. The construction of the tube, of the high-frequency probe, and the excitation system are described by means of figure 1a in the first part. For this non-symmetrical oscillator the reactive resistance is given by means of formula (1) from which the concentration of the charges may then be determined using formula (2). The measurement results are summarized in a diagram (Fig 2) and compared with the computed values. Simultaneously, the emission capacity of the oscillator was investigated. In the second part of the paper the bi-conductor probe is described by means of figure 1b. The concentration of electrons in the plasma depending on the wave-length is shown in the diagram in figure 3, where one curve was formed by means of the method described here, the

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The Measurement of Concentration of Discharges in Plasma by the Method of a High-frequency Probe SOV/48 [illegible]

other curve was determined by measurements with a Langmuir probe. It may be seen that the high-frequency probe gives lower values of electron concentration. The results described here were obtained with a wave-length of 2 cm and it is ascertained that the same results were obtained with a wave-length of 3 cm. The authors thank Professor N. D. Morgulis for his interest and for discussing the results. There are 3 figures and 6 references, 3 of which are Soviet.

ASSOCIATION: Kiyevskiy gos. universitet, Kafedra elektronik. (Kiyev State University, Chair of Electronics)

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

21541

S/057/61/031/004/007/018
B125/B205

24.2120 (1049, 1482, 1502) (also 3617, 3817, 2205)

AUTHORS: Levitskiy, S. M., Shashurin, I. P.

TITLE: Method of the resonance superhigh-frequency probe used to measure the concentration of charges in a plasma

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 4, 1961, 436-444

TEXT: A systematic investigation has been made of the mode of operation of a superhigh-frequency probe in the stationary plasma of a gas discharge. Besides, its possible use in an instationary plasma in the presence of a magnetic field has been checked. The method of the superhigh-frequency probe has the following advantages over the method of the hollow resonator: a certain complication of the design of the tube due to the introduction of the h-f probe into its volume; b) a disturbance of the plasma by the probe. However, these shortcomings are exhibited by almost all probe methods. The design of the tubes used for measurement is schematically shown in Fig. 1. These are gas-discharge tubes with heated oxide cathodes. Ordinary cylindrical probes were placed into the discharge tubes for control measurements and other purposes. The second part of the

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Method of the resonance...

present paper deals with the sources of error in measuring electron concentrations by the method of the superhigh-frequency probe. One of these error sources is the determination of the proper length of the superhigh-frequency system. λ_o can be determined by a direct measurement of the geometric length of the line ($\lambda_o = 2l/N$) and also by measuring its resonance frequency in the absence of plasma. The authors used both methods and obtained the same results within the limits of error. The concentration measured by a superhigh-frequency probe can be 10-20% lower than the actual charge concentration in the surrounding plasma. The experimental verification of the method of the superhigh-frequency probe was carried out chiefly in the plasma of a d-c discharge. Fig. 4 shows the relevant results of measurements in the 3-cm range. The electron concentration is plotted on the coordinate. The straight line shown in Fig. 4 was drawn according to the equation

$$\frac{1}{\lambda^2} - \frac{e^2}{\pi mc^2} n_e = \frac{N^2}{4l^2} \quad (4)$$

and represents the electron concentration at which resonance is bound to occur if the line is excited by a wave of wavelength

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

λ. The points illustrate the electron concentration measured by the method of the ordinary probe, at which resonance occurred at a given wavelength. The average deviation in concentration measurements amounts to 5%. Measurements in the range of decimeter waves showed good agreement. The electron concentrations measured by the method of the superhigh-frequency probe are 25-35% lower than those measured by the method of the ordinary probe. The resonance of the line may occur not only at N=1 but at any integral value of N. The resonances corresponding to N = 3,4,5 could be actually observed when changing the strength of the discharge current. The method of the hollow resonator has particular advantages over the ordinary probe method. These advantages are also exhibited by the method of the resonant superhigh-frequency probe which is described here. Measurements in instationary plasma were limited essentially to the following: In the case of time-dependent plasma intensity, the charge concentration at a certain instant of time will reach a value at which resonance occurs for the superhigh-frequency system. Figs. 5 and 6 illustrate measurements in a quasi-stationary and a disintegrating plasma, respectively. In this case, current pulses of a duration of 6-8 μsec could attain 300 a. The minimum is indicated by an arrow. The values

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Method of the resonance...

measured at different wavelengths were used to determine the time constant of plasma deionization, and were found to be in good agreement with data of V. L. Granovskiy. The last part of the present paper deals with measurements in plasma with constant flow in a longitudinal magnetic field. In the 3-cm range, the formulas $\varepsilon = 1 - e^2 n_e \lambda^2 / \pi mc^2$ (1) and (4) can be applied up to magnetic field strengths of $\sim$ 1000 oe. The resonance of the system becomes less distinct with an increase in the magnetic field strength, but is still very marked at field strengths of $\sim$ 1000 oe. When the magnetic field strength is increased to 700 oe and the charge concentration is kept constant, the electron current impinging on the probe is lowered by more than one order of magnitude, whereas the ion current changes by no more than 40%. The charge concentrations determined from the strength of the ion current are compiled in the attached table. There are 7 figures, 1 table, and 10 references: 8 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows: M. Biondi, Rev.Sci.Instr., 22, 500, 1951; A. Guthrie, R. K. Wakerling. The characteristics of electrical discharges in magnetic fields. Mc Graw Hill, N.Y. 1949.

Card 4/10

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

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21541
S/057/61/031/004/007/018
B125/B205

Method of the resonance...

ASSOCIATION: Kiyevskiy gosudarstvennyy universitet im. T. G. Shevchenko (Kiyev State University imeni T. G. Shevchenko)

SUBMITTED: March 3, 1960

Card 5/10

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

Shashurin, J.P.

AID Nr. 974-17 22 May

PASSAGE OF A SIGNAL BETWEEN TWO HIGH-FREQUENCY PROBES INSERTED IN PLASMA (USSR)

Levitskiy, S. M., and J. P. Shashurin. Zhurnal tekhnicheskoy fiziki, v. 33, no. 4, 1963, 429-436. S/057/63/033/004/011/021

The equipment for measuring electron concentration in plasma by passing an shf signal through the plasma, consisted of an shf generator, 10-db fixed attenuator, transmitting probe, receiving probe, second 10-db adjustable attenuator, and the receiver. A wavemeter was coupled to the generator. Measurements were carried out in the frequency range from 300 to 2000 Mc. Plasma was produced in a mercury vapor discharge tube. In order to control vapor pressure, temperature of 20°C was maintained by a thermostat. The working section of the tube was 40 to 50 mm in diameter and 250 mm long, so that a sufficient distance could be kept between the probes and tube electrodes.

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PASSAGE OF A SIGNAL [Cont'd] S/057/63/033/004/011/021

The following method of investigation was used: 1) The electron concentration near the probes was measured by means of the Langmuir probes placed close by the shf probes. 2) The relationship between signal intensity and discharge current was determined at a given generator frequency. 3) Intensity of passing signals was measured by the compensation method. Signal intensity was obtained in db in relation to the intensity existing in absence of plasma, and the electron concentration was found by using a nondimensional value proportional to concentration:

$$p = \frac{\omega_0^2}{\omega^2} = \frac{4\pi e^2}{m\omega^2} n_e ,$$

where ω_0 is natural plasma frequency, ω is signal frequency, and n_e is electron concentration. Minima of the passing signals, which were regularly observed at $p \approx 1$, could be identified as plasma parallel resonance under condition $\omega_0 = \omega$. In contrast, signal maxima did not correspond to any one definite value of the parameter p, and could appear (depending on actual conditions such as probe design and signal frequency) at p_{max} values between 2 and 7.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

AID Nr. 974-17 22 May

PASSAGE OF A SIGNAL [Cont'd] S/057/63/033/004/011/021

The origin of the maximum can be explained by the resonance of a series circuit consisting of plasma and the internal capacity of the probe system. It was concluded that plasma resonance corresponds to the minimum of the passing shf signal. The observed maxima appear due to the presence of space charge layers near the probe surfaces or the excitation of waves in a plasma waveguide. An attempt to detect plasma wave excitation near the transmitting probe gave negative results. [KM]

Card 3/3

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

LEVITSKIY, S.M.; SHASHURIN, I.P.

Passage of a signal between two superhigh-frequency probes immersed in a plasma. Zhur. tekh. fiz. 33 no.4:429-436 Ap '63. (MIRA 16:9)

1. Kiyevskoy gosudarstvennyy universitet.
(Plasma (Ionized gases)) (Electronic measurements)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

L 60333-65 EWT(1)/EPF(n)-2/EWG(m)/EPA(w)-2 Pz-6/Po-4/Pi-4 IJP(c) AT

ACCESSION NR: AP5018293 UR/0057/65/035/007/1182/1188

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B

AUTHOR: Levitskiy, S. M.; Shashurin, I. P.

TITLE: Diffusion theory of a beam plasma 21

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 7, 1965, 1182-1188

TOPIC TAGS: beam plasma, plasma diffusion, plasma stability, electron beam, electron temperature, hydrogen

ABSTRACT: This paper is concerned with the stable behavior of a "beam plasma" produced by an electron beam traversing a gas parallel to an applied magnetic field. Beam plasmas are of technical interest because of the instabilities that develop in them, which make possible their application as amplifiers and oscillators, or as a means for heating plasmas. In the present paper the behavior of beam plasmas is considered only under such conditions that these instabilities do not arise. The theory of J.E.Hopson (J. Appl. Phys., 34, 8, 2425, 1963) is regarded as unsatisfactory because Hopson assumed that the plasma ions could diffuse freely in the axial direction (whereas the plasma diffusion is ambipolar in all directions), and because he employed the diffusion equation at pressures

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below which its use is justified. Hopson's conclusion that there is a limiting pressure below which a beam plasma cannot be formed is regarded as erroneous and the agreement between his experimental results and his theory as fortuitous. A theory of the stable beam plasma is developed on the assumptions that the electron beam is uniform, that the secondary electrons do not ionize, and that charged particles leave a volume element only by ambipolar diffusion (i.e., that recombination is negligible). The diffusion equations are solved for the two limiting cases that the diffusion is overwhelmingly radial (high pressure and weak magnetic field) or axial (low pressure and strong magnetic field), and the solution for the intermediate case is discussed briefly. The theoretical results are compared with experimentally measured densities of the beam plasmas produced by a 3-3 mm diameter 4 mA beam of 900 eV electrons traversing a 33-35 cm long 1 cm diameter glass tube containing hydrogen at pressures up to 0.08 mm Hg. The electron density in the plasma was determined by observing the resonant frequency shift of a cavity resonator through which passed a portion of the tube. When the longitudinal magnetic field was 92 Gauss the electron density in the plasma increased with increasing hydrogen pressure in the manner predicted by the theory: the density increased rapidly at low pressures, reached a plateau of 10^9 cm^{-3} at

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about 0.02 mm Hg, and subsequently increased as the square of the pressure. The agreement was roughly quantitative for an electron temperature of 20 000 °K. Increasing the magnetic field or the electron beam current led to instability (signaled by the appearance of high frequency electromagnetic noise) and to the disappearance of the plateau. The variation of the plasma electron density in the axial direction was measured by sliding the resonant cavity along the tube. When the operating conditions were such that the diffusion was essentially entirely radial, the plasma density was constant, as was expected. When the diffusion was mainly axial, however, the measured density increased monotonically as the measuring cavity was moved away from the electron gun, whereas a maximum was predicted at the center of the tube. This discrepance is attributed to secondary electron emission from the collector. "In conclusion, we consider it our duty to express our gratitude to Professor N.D.Morgulis for discussing the results of the work and for valuable advice and remarks." Orig. art. has: 12 formulas and 4 figures.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

L 60333-65
ACCESSION NR: AP5018293

ASSOCIATION: Kafedra elektroniki, Kiyevskiy gosudarstvennyy universitet (Electronics Department, Kiev State University)

SUBMITTED: 25Jun64 ENCL: 00 SUB CODE: ME

NR REF SOV: 006 OTHER: 001

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

ACC NR: AP6028607 SOURCE CODE: UR/0057/66/036/008/1364/1371

AUTHOR: Levitskiy, S.M.; Shashurin, I.P.

ORG: Kiev State University im. T.G.Shevchenko (Kiyevskiy gosudarstvennyy universitet)

TITLE: Perturbation of a beam plasma by the fields of the oscillations that arise in it

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 8, 1966, 1364-1371

TOPIC TAGS: hydrogen plasma, electron beam, electron temperature, plasma oscillation, plasma stability, plasma beam interaction

ABSTRACT: The authors have continued their earlier investigation (ZhTF, 35, No.7, 1965) of the plasmas produced by ionization of the residual gas in a low-vacuum chamber by an electron beam ("beam plasmas"). The present experiments, using the apparatus described in the earlier paper, were undertaken in an effort to elucidate some of the complex phenomena previously noted by the authors and others in connection with the oscillations that arise in beam plasmas. In the present experiments the beam plasmas were produced in a more than 18 cm long, 1 cm diameter glass tube containing hydrogen at from 10^{-4} to 10^{-1} mm Hg by an up to 25 mA beam of 0.5 to 1.5 keV electrons in the presence of an up to 500 Oe longitudinal magnetic field. The electron densities in the plasmas were determined from the shift in the resonant frequency of a cavity resonator enclosing part of the discharge tube, and the intensity of the plasma oscillations was observed by recording the strength of the signals in the 350 to 750

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ACC NR: AP6028607

MHz range picked up by a loop. In some of the experiments the electron temperature was measured with the aid of three 3 mm diameter plane surface probes. As a function of the electron beam current, the plasma density first increased linearly, then remained approximately constant in a certain beam current range (from about 3 to 12 mA in one case), and finally increased rapidly with further increase of the beam current. The radio noise intensity behaved similarly. The distribution of plasma density and noise intensity along the length of the tube with constant beam current was also complex: under some conditions the plasma density was constant over about one-third the length of the tube (nearest the electron gun), decreased to a minimum, and increased on approaching the anode; under these conditions the noise intensity was very low in the constant plasma density region and was maximum in the region where the plasma density gradient was large. The observed phenomena are accounted for as results of heating the plasma by its own high frequency oscillations. That such heating can occur was established by injecting rf power at the appropriate frequency into a quiet beam plasma and observing a rise in temperature. As the plasma electron temperature rises the ambipolar diffusion constant increases, and the electron density tends to decrease. When the electron temperature is sufficiently high, however, the plasma electrons ionize residual gas atoms, and the electron density tends to increase. The observed behavior of the system is ascribed to competition between these two processes, the consequent effect of the strength of the oscillations on the electron density, and the effect of the electron density gradient on the strength of the oscillations. The authors thank Ye.G.Filonenko for assistance with the experiments. Orig.art. has: 6 formulas, 4 figures and 1 table.

SUB CODE: 20 SUBM DATE: 26Jan65 ORIG.REF: 009 OTH REF: 007

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

KOMISSAR, S.I., inzhener; FEL'DMAN, M.F., kandidat tekhnicheskikh nauk; SHASHURIN, L.M., redaktor; YUDZON, D.M., tekhnicheskiy redaktor

[Care and maintenance of railroad cars according to A.T.Shcheblikin's method; practice of the Southern Railroad] Osmotr i remont vagonov po metodu A.T.Shcheblikina; opyt IUzhnoi dorogi. Moskva, Gos.transp. zhel-dor. izd-vo, 1953. 56 p. [Microfilm] (MLRA 9:8)

(Railroads--Cars--Maintenance and repair)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SIDORENKO, A. M.

SIDORENKO, Aleksandr Mikhaylovich, kandidat tekhnicheskikh nauk; SHASHURIN, L.M., inzhener, redaktor; YUDZON, D.M., tekhnicheskiy redaktor.

[Ways for improving technical inspection work] Puti uluchsheniia raboty punktov tekhnicheskogo osmotra. Moskva, Gos. transportnoe zhel-dor.izd-vo, 1955. 28 p. (MLRA 8:11)
(Railroads--Maintenance and repair)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, L.M., redaktor; VERINA, G.P., tekhnicheskiy redaktor.

[Inspection and repair of automatic train brakes] Osmotr i remont avtotormozov v poezdakh; opyt rabety punktov tekhnicheskogo osmotra dereg TSentra, Urala, Sibiri i IUga. Moskva, Ges.transp.zhel-der. izd-vo, 1956. 27 p. (MLRA 9:6)

1.Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta.
(Railroads--Brakes)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SPIVAKOVSKIY, Aron L'vovich; SUCHILIN, Georgiy Petrovich; SHASHURIN, L.M., inzhener, redaktor; KANDYKIN, A.Ye., tekhnicheskiy redaktor

[Drain devices of railroad tank cars] Slivnye pribory zheleznodorozhnykh vagonov-tsistern. Moskva, Gos. transp. zhel-dor. izd-vo, 1956. 65 p. (MLRA 10:1)
(Tank cars)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

BEZTSENNYY, V.I., inzh., retsenzent; SHASHURIN, L.M., inzh., red.; KHITROVA, N.A., tekhn. red.

[Outstanding workers in the maintenance and operation of railroad cars]Otlichniki-vagonniki. Moskva, Transzheldorizdat, 1962. 110 p. (MIRA 16:1)

1. Glavnyy inzhener Glavnogo upravleniya vagonnogo khozyaystva Ministerwtva putey soobshcheniya (for Beztsennyy).
(Railroads--Employees) (Railroads--Cars)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

[illegible], red.

[illegible] for the [illegible] repair of all-metal passenger [illegible]. Effective as of January 1, [illegible] according to order [illegible] of the Ministry of Railroad Transportation from July [illegible] 1961 to supersede the regulations for the annual [illegible] or all-metal passenger cars approved by the Ministry of Railroad Transportation on March 20th, 1953] Pravila [illegible]povskogo remonta tsel'nometallicheskikh passazhirskikh vagonov (TsMV). [illegible] deistvie [illegible] [illegible] No.[illegible] of [illegible] 1962 g. vzamen pravil godovogo remonta tsel'nometallicheskikh passazhirskikh vagonov, utverzhdennykh [illegible] 20 marta 1953 g. [illegible], Transport, 1962. [illegible] p. (MIRA [illegible])

1. [illegible] (1[illegible]- U. [illegible]) Glavnoye upravleniye vagonnogo khozyaystva.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, P.

Workers at the Divenskiy Grain Receiving Station prepare to receive the new grain crop in an exemplary manner. Muk.-elev. prom. 29 no.5:8-10 My '63. (MIRA 16:7)

1. Direktor Divenskogo khlebopriyemnogo punkta.
(Divenskiy—Grain elevators)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S. L. (

PA 51T69

USSR/Mines Mar 1948
Mining Methods
Mining Machinery

"Subdrift System in the Khapcheranginsk Mine," S. L. Shashurin, Mining Engr, 1½ pp

"Gornyy Zhur" No 3

Gives details of working methods in the Khapcheranginsk mine, includes diagrams showing the preparation of block for exploitation, and urges mechanical instead of hand mining in the pits.

LC 51T69

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S.L., gornyy inzhener

Placer deposit mining in winter conditions. Gor.zhur. no.7:25-27 Jl '55. (MIRA 8:8)
(Hydraulic mining)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S.L.

Block caving at the Nikitovka mercury mines. Biul. TSIIN tsvet. met. no.22:2-9 '57. (MIRA 11:8)
(Nikitovka (Stalino Province)—Mercury mines and mining)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S.L., Cand Tech Sci -- (diss) "Study of the system of cave-ins in stages under conditions of strongly fissured ores and in the presence of old operations. (For example, the Nikitovsk Mercury Ore)." Gorlovka, 1958 23 pp (Novocherkassk Order of Labor Red Banner Polytechnic Inst im S. Ordzhonikidze) 150 copies. Author not shown on cover. (KL, 42-58, 116)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, Sergey Lavrent'yevich; LYASHKEVICH, A.S., gornyy inzh., retsenzent; SEMYNIN, A.P., retsenzent; ALEKSANDROV, N.N., red.; SIPYAGINA, Z.A., red.izd-va; DOBUZHINSKAYA, L.V., tekhn.red.

[Opencast placer mining; manual for qualification improvement of workers] Razrabotka rossypei otkrytym sposobom; posobie dlia povysheniia kvalifikatsii rabochikh. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1959. 208 p. (MIRA 13:4)
(Hydraulic mining) (Strip mining)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S.L., kand.tekhn.nauk

How we improved working conditions. Bezop.truda v prom. 3 no.7:28-29 Jl '59. (MIRA 12:11)
(Nikitovak (Stalino Province)--Mercury mines and mining)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S.L.

Reworking nonferrous metal deposits. Razved. i okh. nedr 27 no.2:46-49 F '61. (MIRA 14:5)

1. Nikitovskiy rtutnyy kombinat.
(Nonferrous metals)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHACHURIN, S.L.; NAGNIY, V.A.

Improving the technology of mercury production. TSvet. met. 34 no.3:56-62 Mr '61. (MIRA 14:3)
(Mercury--Metallurgy)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, Sergey Lavrent'yevich; PARTSEVSKIY, V.N., red. izd-va; IL'INSKAYA, G.M., tekhn. red.; LOMILINA, L.N., tekhn. red.

[Secondary mining of nonferrous and rare metal deposits] Povtornaia razrabotka mestorozhdenii rud tsvetnykh i redkikh metallov. Moskva, Gosgortekhizdat, 1962. 237 p. (MIRA 15:10)

(Mining engineering) (Nonferrous metals)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURIN, S.L., gornyy inzh.; PLAKSA, N.V., gornyy inzh.; OMEL'CHENKO, A.N., kand.tekhn.nauk; GLEYZER, M.I., kand.tekhn.nauk

Discussion of B.F.Novozhilov's article "Quality of ferrous metal ores and the profitableness of production." Gor. zhur. no.9: 5-9 S '63. (MIRA 16:10)

1. Nikitovskiy rtutnyy kombinat, Donetskaya obl. (for Shashurin, Plaksa). 2. Vsesoyuznyy nauchno-issledovatel'skiy markshey-derskiy institut, Leningrad (for Omel'chenko, Gleyzer).

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

[redacted], S.I., kand. tekhn. nauk; [redacted], K.V.

Pressure on the bottom of the block during the extraction of caved ore. Izv. vys. ucheb. zav.; gor. zhur. no.6:57-56 '64. (MIRA 18:3)

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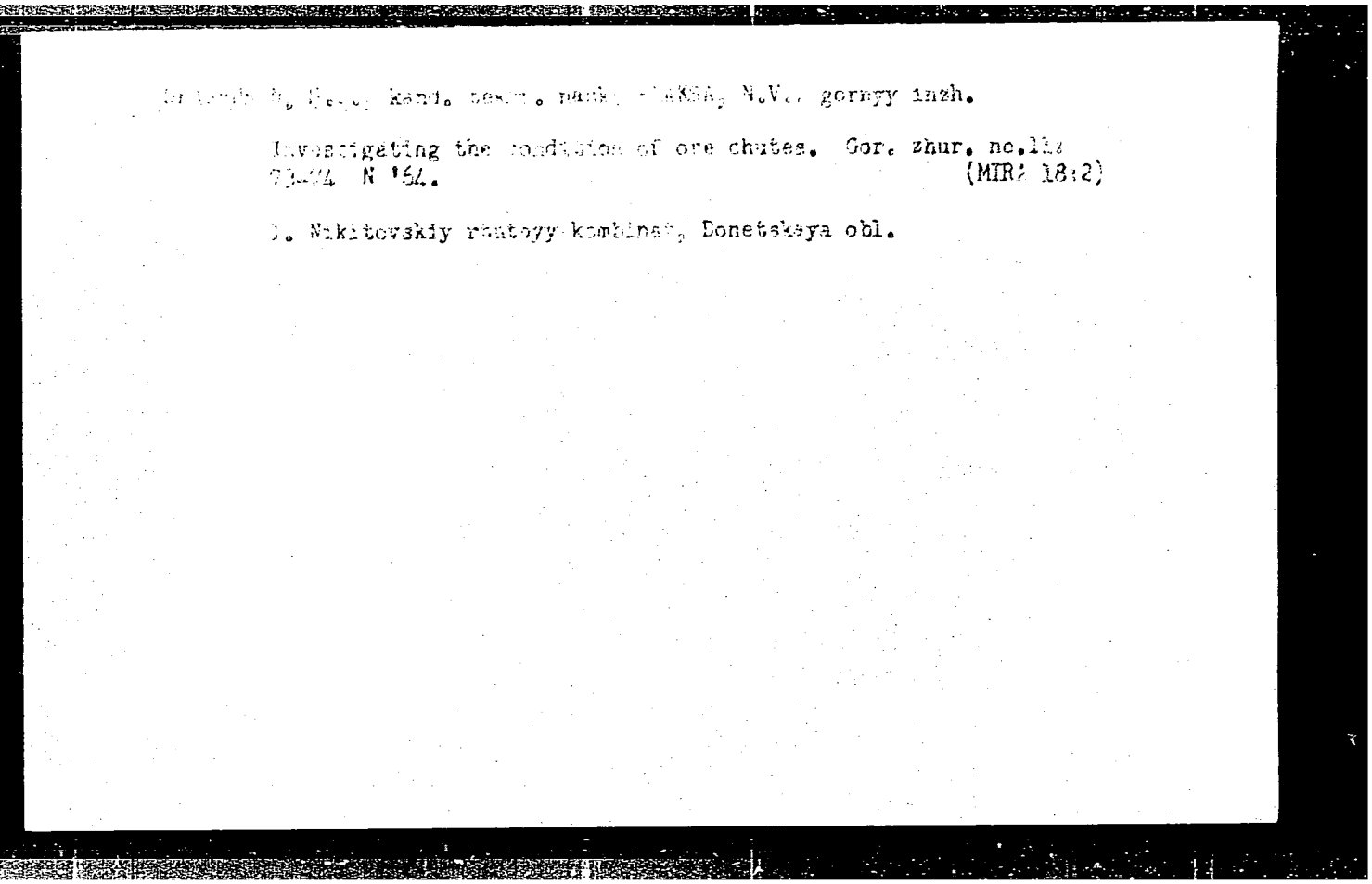
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0



[illegible] N. [illegible], kand. tekhn. nauk, [illegible]AKSHA, N.V., gornyy inzh.

Investigating the condition of ore chutes. Gor. zhur. no.11:
73-74 N '54. (MIRA 18:2)

1. Nikitovskiy rtutnyy kombinat, Donetskaya obl.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHKIN, S.L., kand. tekhn. nauk; PLAKSA, N.V., gornyy inzh.

Experience in the roller bit drilling at the Nikitovka open-pit mine. Gor. zhur. no.9:48-49 S '65. (MIRA 18:9)

1. Nikitovskiy rtutnyy kombinat.

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

ACC NR: AP6035720 (A) SOURCE CODE: UR/0413/66/000/019/0082/0082

INVENTOR: Shashurin, Yu. S.; Ryushenko, N. M.; Grigor'yev, Yu. A.

ORG: none

TITLE: Machine for dispensing, bottling, and sealing mercury. Class 40, No. 186684

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 82

TOPIC TAGS: mercury, ~~mercury production~~, ~~mining engineering~~ packaging machinery, chemical plant equipment

ABSTRACT: To prevent oxidation and losses of mercury and improve sanitary work conditions, this mercury dispensing, bottling, and sealing machine (see Fig. 1) is provided with an immobile vertical cylindrical vacuum chamber; this chamber contains a hollow piston, power-driven piston rod, and bottling unit. The latter consists of a plunger with a magnet fixed to its bottom end; a holder or chuck and a spring are mounted in the piston cavity. The machine is complete with a vacuum pump, filling tube, lifting table, and pedestal. Orig. art. has: 1 figure. [WA-96]

Card 1/2 UDC: 621.798.37.4-189.2:669.791-982

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

ACC NR: AP6035720

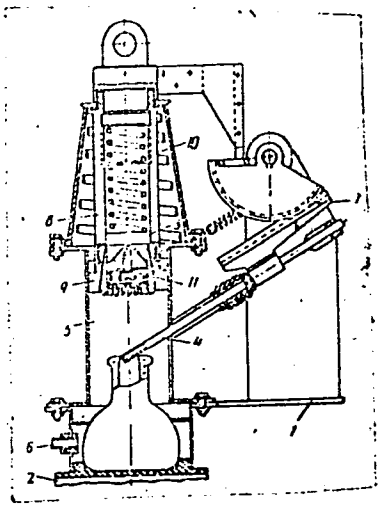

Fig. 1.

1 - Frame; 2 - lift table; 3 - sealing device; 4 - filling tube; 5 - vacuum chamber; 6 - nozzle; 7 - rack; 8 - rod; 9 - holder; 10 - spring; 11 - magnet.

SUB CODE: 13/ SUBM DATE: 04Jan65/

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

LYSENKO, V.Z.; SHASHURIN, Yu.S.

Roasting mercury ores in a fluidized bed. TSvet. met. 36 no.1: 36-39 Ja '63. (MIRA 16:5)
(Mercury--Metallurgy) (Fluidization)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

L 22556-65 EPA(s)-2/EWT(m)/EWP(t)/EWP(b) Pt-10 IJP(c) JD/JG

ACCESSION NR: AP5002186 S/0080/64/037/012/2557/2565

AUTHOR: Chernyayev, V. N.; Povedskaya, L. G.; Shashurin, Yu. S.

TITLE: Investigation of the mercury purification process. Communication III in a series of works on the rectification of metals

SOURCE: Zhurnal prikladnoy khimii, v. 37, no. 12, 1964, 2557-2565

TOPIC TAGS: mercury, purification, distillation, distillation column design, vacuum distillation

ABSTRACT: The purification of mercury by rectification and the hydrodynamic operating conditions of the plate distillation columns during the rectification were studied. The higher efficiences of vacuum distillation in comparison to distillation at atmospheric pressure were recorded. Columns of different designs were examined: a quartz column with slit plates with the cross section of the openings equal to not less than 10% of the column section was most effective. Fe, Al, Mg, Zn, Pb, Mn, Cd and Cu impurities initially present in amounts less than 1×10^{-5}

Card 1/2

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

L 22556-65
ACCESSION NR: AP5002186

wt.% were essentially completely removed or considerably reduced by vacuum distillation. Orig. art. has; 6 tables, 9 figures and 1 equation.

ASSOCIATION: None

SUBMITTED: 07Jun63 ENCL: 00 SUB CODE: GC, IC

NR REF SOV: 005 OTHER: 003

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

ACC NR: AP6035720 (A) SOURCE CODE: UR/0413/66/000/019/0082/0082

INVENTOR: Shashurin, Yu. S.; Ryushenko, N. M.; Grigor'yev, Yu. A.

ORG: none

TITLE: Machine for dispensing, bottling and sealing mercury. Class 40, No. 186684

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 19, 1966, 82

TOPIC TAGS: mercury, ~~mercury production~~, ~~mining engineering~~ packaging machinery, chemical plant equipment

ABSTRACT: To prevent oxidation and losses of mercury and improve sanitary work conditions, this mercury dispensing, bottling, and sealing machine (see Fig. 1) is provided with an immobile vertical cylindrical vacuum chamber; this chamber contains a hollow piston, power-driven piston rod, and bottling unit. The latter consists of a plunger with a magnet fixed to its bottom end; a holder or chuck and a spring are mounted in the piston cavity. The machine is complete with a vacuum pump, filling tube, lifting table, and pedestal. Orig. art. has: 1 figure. [WA-96]

Card 1/2 UDC: 621.798.37.4-189.2:669.791-982

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

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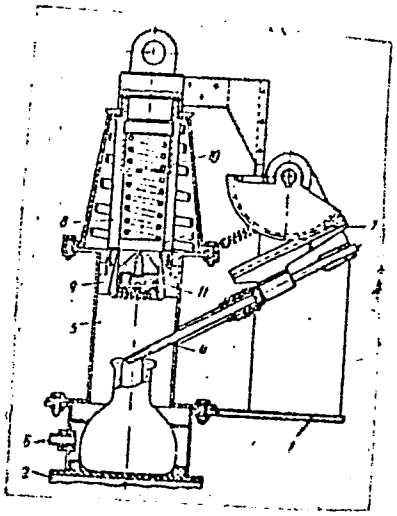

Fig. 1.

1 - Frame; 2 - lift table; 3 - sealing device; 4 - filling tube; 5 - vacuum chamber; 6 - nozzle; 7 - rack; 8 - rod; 9 - holder; 10 - spring; 11 - magnet.

SUB CODE: 13/ SUBM DATE: 04Jan65/

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

S/142/63/006/001/009/015
E192/E382

AUTHORS: Gladyshev, G.I., Kasatkin, L.V. and Shashurina, S.P.

TITLE: Propagation characteristics of electromagnetic waves in laminary periodic structures

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, v. 6, no. 1, 1963, 77 - 82

TEXT: A multilayer dielectric system can be represented by the equivalent "circuit", shown in Fig. 1. The electromagnetic waves propagate in this system between two infinite ideally-conducting planes P and Q. The elements of the system of the same type as that of the region II (see the area CEDF) have parameters ε_2 and μ_2 and thickness Δ; the elements of the type shown in region I have parameters ε_1, μ_1 and a thickness d. The period of the system is $D = d + \Delta$. The quantities V_i and I_i in the figure represent the voltages and currents in the system at the cross-sections AB, CD, EF and GH. It is first necessary to evaluate the transfer function of a symmetrical T-type quadripole ABGH in order to determine the propagation

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

characteristics in such a periodic structure. The transfer function is a product of the transfer functions of the quadripoles ABCD, CDEF and EFGH. It is shown that the characteristic equation defining the propagation function in the system is given by:

$$\operatorname{ch} \gamma_e(d+\Delta) = \operatorname{ch} \gamma_2 \Delta \operatorname{ch} \gamma_1 d + \left(\frac{Z_1}{Z_2} + \frac{Z_2}{Z_1} \right) \frac{\operatorname{sh} \gamma_2 \Delta}{2} \operatorname{sh} \gamma_1 d \quad (6)$$

where γ_1 is the propagation coefficient for the region I, γ_2 is the propagation for the region II and Z_1, Z_2 are the wave impedances of the regions I and II, respectively. The wave impedance of the system is also evaluated. Eq. (6) is used to investigate some special cases - in particular, the propagation conditions in the absence of losses. It is found that in this case the passband of the system consists of several discrete bands. The effect of thin metallic films deposited on the surfaces EF, MN and so on, is also determined. Such layers are shown to

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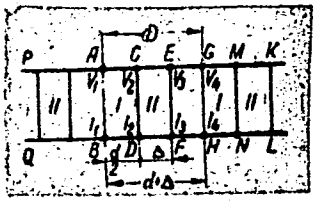
Propagation characteristics ....

introduce attenuation, which has a maximum at a certain frequency. This is explained by the shunting effect of the successive conductive layers. The frequency-dependence of the resistive and reactive components of the wave impedance of the system is also investigated. There are 4 figures.

ASSOCIATION: Institut radiotekhnicheskikh problem AN USSR (Institute of Radio-engineering Problems of the AS UkrSSR)

SUBMITTED: July 7, 1962 (initially)
October 10, 1962 (after revision)



Card 3/3 Fig. 1:

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHARHURINA, V.N.

Use of metamysin in cerebral palsy with hyperkinetic syndrome in children. Zhur. nevr. i psikh. 63 no.7:991-994 '63. (MIRA 17:7)

1. Detskiy sanatoriy N.A. (direktor I.M. Gavrilova) i otdel farmakologii (zav. - prof. S.V. Anichkov) Instituta eksperimental'noy meditsiny, Leningrad.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHURINA, Ya.N., inzh.

Results of the International Conference of the Council of mutual Economic Aid. Khim.mash. no.2:3-4 Mr-Ap '61. (MIRA 14:3)
(Chemical engineering--Congresses)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

HUNGARY / Chemical Technology. Processes & Equipment. H

Abs Jour: Ref Zhur-Khimiya, No 12, 1958, 39857

Author : Shashvari.
Inst : Not given.
Title : Thermal Treatment in the Suspended and the Pseudo-Liquefied State.

Orig Pub: Epitoanyag, 1957, 9, No 3, 138-149.

Abstract: A technique is described for calcining finely granulated and dust-like materials in suspended and pseudo-liquefied states, as well as the computation factors and the thermal heat transfer. The computation methods for pneumatic transportation and the process for settling cyclone dust are described. The possibilities of applying thermal treatment to materials in a suspended and in pseudo-liquefied states is investigated.

Card 1/1

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASHYN, M.M., kand.med.nauk

Prevention of climacteric hemorrhages. Ped., akush. i gin. 22 no.6: 43-45 '60. (MIRA 14:10)

1. Otdeleniye neoperativnykh metodov lecheniya (zaveduyushchiy - prof. S.P.Khaskin) Instituta akusherstva i ginekologii AMN SSSR (direktor - chlen-korrespondent AMN SSSR prof. P.A.Beloshapko [Bieloshapko, P.A.] [deceased]) i Zakarpatskiy nauchno-issledovatel'skiy institut okhrany materinstva i detstva (direktor - kand.med. nauk Ya.V.Stovbunenko).

(CLIMACTERIC) (HEMORRHAGE)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASKIN, A. S.

Proizvodstvo zubchatykh tsepei. Moskva, Mashgiz, 1945. 39 p. diagrs.

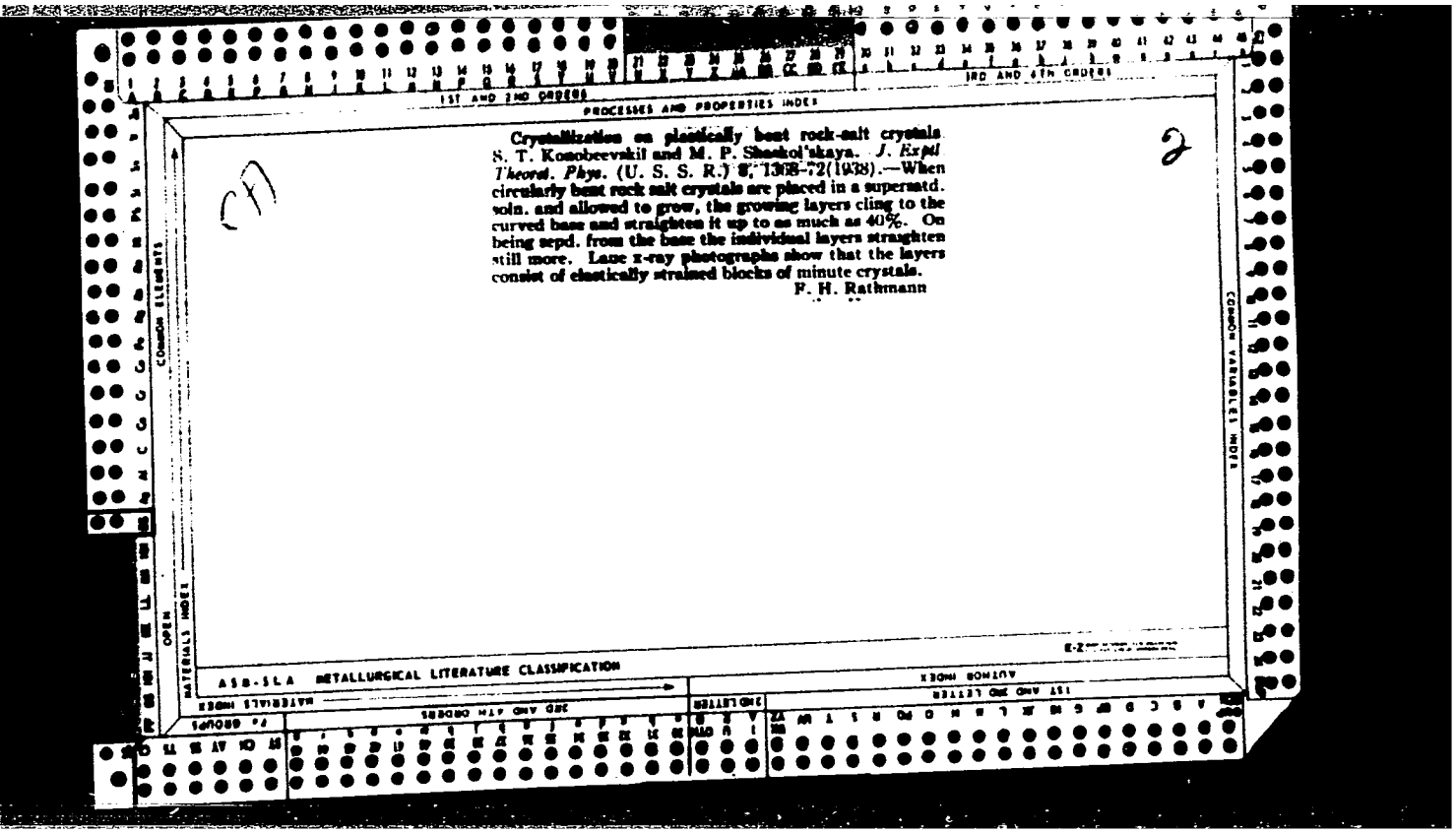
Production of toothed link-belts.

DLC: TJ1117.S45

SO: Manufacturing and Mechanical Engineering in the Soviet Union, Library of Congress, 1953.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0



Crystallization on plastically bent rock-salt crystals. S. T. Konobeevskiĭ and M. P. Shaskol'skaya. *J. Exptl Theoret. Phys.* (U. S. S. R.) 8, 1368-72(1938).—When circularly bent rock salt crystals are placed in a supersatd. soln. and allowed to grow, the growing layers cling to the curved base and straighten it up to as much as 40%. On being sepd. from the base the individual layers straighten still more. Laue x-ray photographs show that the layers consist of elastically strained blocks of minute crystals.
F. H. Rathmann

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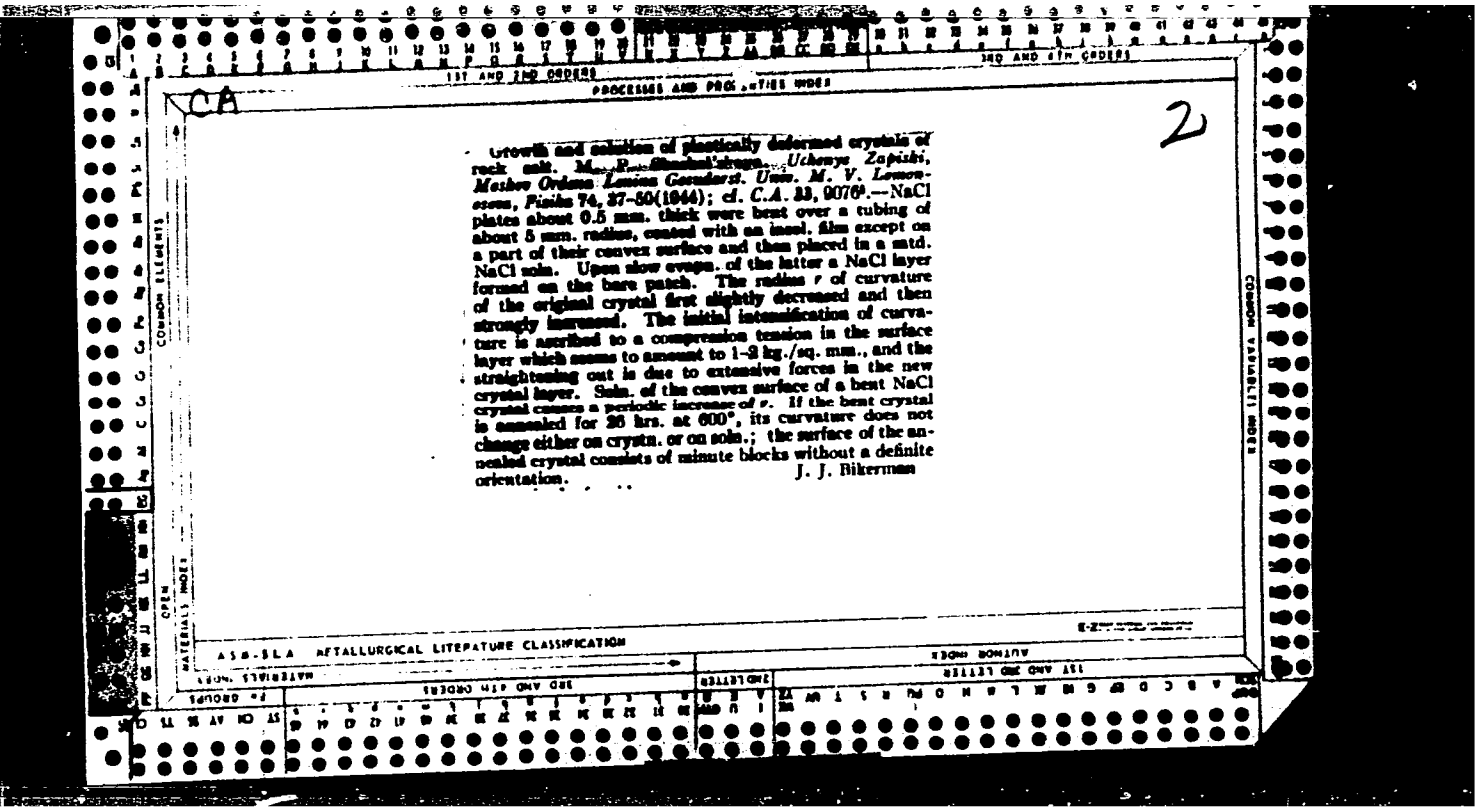
"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0



CA

2

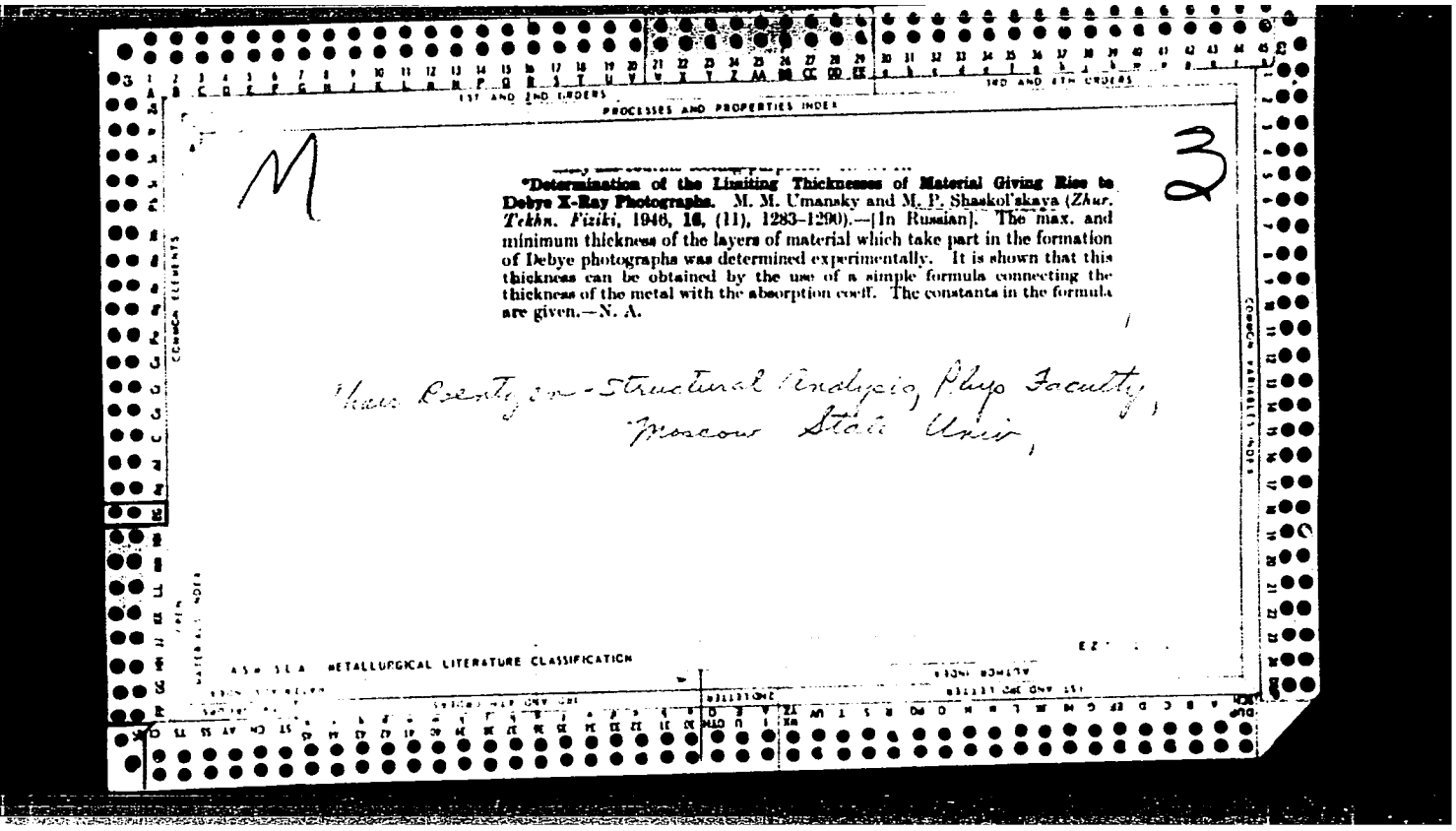
Growth and solution of plastically deformed crystals of rock salt. M... P... Shubnikov, *Uchenye Zapiski, Moskov Ordena Lenina Gosudarst. Univ. M. V. Lomonosova, Fizika* 74, 37–50(1944); *cf. C.A.* 33, 9076⁹.—NaCl plates about 0.5 mm. thick were bent over a tubing of about 5 mm. radius, coated with an insol. film except on a part of their convex surface and then placed in a satd. NaCl soln. Upon slow evapn. of the latter a NaCl layer formed on the bare patch. The radius *r* of curvature of the original crystal first slightly decreased and then strongly increased. The initial intensification of curvature is ascribed to a compression tension in the surface layer which seems to amount to 1–2 kg./sq. mm., and the straightening out is due to extensive forces in the new crystal layer. Soln. of the convex surface of a bent NaCl crystal causes a periodic increase of *r*. If the bent crystal is annealed for 26 hrs. at 600°, its curvature does not change either on crystn. or on soln.; the surface of the annealed crystal consists of minute blocks without a definite orientation.

J. J. Bikerman

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

1ST AND 2ND ORDERS



PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

M

3

"Determination of the Limiting Thicknesses of Material Giving Rise to Debye X-Ray Photographs. M. M. Umansky and M. P. Shaskol'skaya (*Zhur. Tekhn. Fiziki*, 1946, **16**, (11), 1283–1290).—[In Russian]. The max. and minimum thickness of the layers of material which take part in the formation of Debye photographs was determined experimentally. It is shown that this thickness can be obtained by the use of a simple formula connecting the thickness of the metal with the absorption coeff. The constants in the formula are given.—N. A.

Chair Roentgen-Structural Analysis, Phys Faculty, Moscow State Univ,

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASKOL'SKAYA, Marianna Petrovna; LESHKOVTSEV, V.A., redaktor; KUZNETSOVA, Ye.B., redaktor; MURASHOVA, N.Ya., tekhnicheskiy redaktor.

[Crystals] Kristally. Moskva, Gos.izd-vo tekhniko-teoret.lit-ry, 1956. 228 p. (Crystals) (MLRA 9:6)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASKOL'SKAYA, M.P. (Moskva)

Irene Joliot-Curie. Fiz. v shkole 16 no.4:26-29 Jl-Ag '56.
(Joliot-Curie, Irene, 1897-1956) (MLRA 9:9)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASKOL'SKAYA, M.P.

Irène Joliot-Curie; obituary. Usp.fiz.nauk. 59 no.4:583-590 Ag '56.
(MLRA 9:11)

(Joliot-Curie, Irène, 1897-1956)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

AUTHOR: Kochnov, V.Ye. and Shaskol'skaya, M.P. 70-2-11/24

TITLE: Investigation of slip lines in crystals of silver chloride. (Issledovaniye liniy skolzheniya v kristallakh khloristogo serebra)

PERIODICAL: "Kristallografiya" (Crystallography), 1957, Vol.2, No.2, pp. 274-277 (U.S.S.R.)

ABSTRACT: As regard mechanical properties crystals of AgCl behave like a transparent metal and have an extension curve like that of Cu but weakened ten times. Plates of AgCl were prepared from single crystal cylinders by pressing and rolling followed by 10-24 hours annealing at 400-440 C. The plates were several tenths of a millimetre thick, corresponding to one grain width, and the area of each grain varied between tenths mm^2 and 500 mm^2. The plates were examined under a polarising microscope while being stretched. Birefringence bands (as described by Obreimov, Brilliantov and Shubnikov) were visible and enabled the process to be followed. Fine sinuous lines were observed not parallel to the birefringence lines. Examination in oblique illumination showed the latter to be step of height about 4 000 Å. It is therefore clear that the fine lines are traces of slipping. The majority of the slip lines arise by the merging rectilinear traces of the slipping which

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"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

70-2-11/24

Investigation of slip lines in crystals of silver chloride. (Cont.)

appear in the early stages of the process. The process of plastic deformation in AgCl is concluded to be extremely close to that in metals.

x Phys. Zeit. Sowjetunion. 6, 587, 1934 and Zh.Rus.Fiz.-Khim. Obshch. (Fiz.) 58, 817, 1926.

There are 14 photographs and 7 references, 3 of which are Slavic.

Card 2/2

ASSOCIATION: Moscow Steel Institute (Moskovskiy Institut Stali)

SUBMITTED: September 22, 1956.

AVAILABLE: Library of Congress

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

AUTHORS: Shaskol'skaya, M.P. and Vekilov, Yu. Kh.

TITLE: Etch Figures on Slip Lines and on the Faces of Polygonalized Blocks in Crystals of Silver Chloride. (Figury travleniya na liniyakh skol'zheniya i na granitsakh poligonal'nykh blokov v kristallakh khloristogo serebra).

PERIODICAL: Kristallografiya, 1957, Vol.2, Nr 4, pp.548-551 + 8 plates (USSR).

ABSTRACT: Polycrystalline sheets of silver chloride, which were only one crystal thick, were prepared by methods described by the authors and by Zhitnikov (Zh.Tekh.Fiz., Vol.26, 772, 1956). Single crystals, made by passing a melt through a furnace, were pressed and then rolled into a sheet 0.3 mm in thickness corresponding to a deformation of 98%. 6 to 8 hours annealing at 150-200 C served to relieve strains. The sheets were etched by thiosulphate solution to clean the surfaces and flattened by squeezing between two plastic plates. A second annealing at 400 + 10 C was given for 6 hours. The area of each grain had then become about 1 cm^2. The sheet could then be stretched at 0.07 mm/min on the stage of a microscope. When lightly etched etch pits in rectangular networks become apparent. These often coincide with the

Card 1/2

such figures depends on the time of annealing; if this is extended beyond 6 to 8 hours no network is found. If one of these etched crystals is slowly extended then slip lines appear. They are nearly perpendicular to the series of etch pits [illegible] tems. On crystals deformed after annealing etch pits appear only along the wavy slip lines. A gradual displacement of the grain boundaries can be brought out by etching. There are 8 plates and 1 figure, also 10 references, of which 2 are Slavic.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-

ASSOCIATION: Stalin Institute of Steel, Moscow. (Moskovskiy Institut Stali im. I.V. Stalina).

SUBMITTED: March 5, 1957.

AVAILABLE: Library of Congress.

Card 2/2

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASKOLSKAYA, M. P. and SIN-[redacted]HUY-FAN

"The Investigation of Plastical Deformation in the Crystals of Sodium Chloride and Silver Chloride,"

paper presented at the Conf. on Mechanical Properties of Non-Metallic Solids, Leniggrad, USSR, 19-26 May 58.

Institute of Steel, Moscow.

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SHASKOL'SKAYA, Marianna Petrovna; EL'TSIN, Iosif Abramovich; KHAYKIN, S.E., prof., red.; ZHABOTINSKIY, Ye.Ye., red.; KRYUCHKOVA, V.N., tekhn.red.

[Collection of selected problems in physics] Sbornik izbrannykh zadach po fizike. Pod red. S.E.Khaikina. Moskva, Gos.izd-vo fiziko-matem.lit-ry, 1959. 207 p. (MIRA 12:11)
(Physics--Problems, exercises, etc.)

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SOV/70-4-1-13/26

AUTHORS: Shaskol'skaya, M.P. and Sung Jai-fang

TITLE: On the Mechanism of Plastic Deformation in Crystals of Rock Salt (O mekhanizme plasticheskoy deformatsii v kristallakh kamennoy soli)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 1, pp 74 - 80 (USSR)

ABSTRACT: The formation of a band of birefringence on uniform compression and extension of a single crystal of rock salt is compared with the study of the superficial relief of the side faces of the crystal by a micro-interferometric method. It is shown that in the initial stages of plastic deformation the birefringent bands are conditioned by the slipping. To each band of birefringence there correspond steps in the side faces, the heights of the steps on opposite faces of the crystal never being the same. The crystal is in a state of tension on one side of the band and in a state of compression on the other. The double refraction appears to be caused by the residual strains thus produced.

Acknowledgments are made to Professor B.N. Finkel'shteyn, V.L. Indenbom, I.V. Stepanov and M.A. Vasil'eva for their advice.

Card 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SOV/70-4-1-13/26

On the Mechanism of Plastic Deformation in Crystals of Rock Salt

There are 10 figures and 12 references, 8 of which are Soviet and 4 English.

ASSOCIATION: Institut stali im. I.V. Stalina
(I.V. Stalin Institute of Steel)

SUBMITTED: June 10, 1958

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SOV/70-4-1-14/26

AUTHORS: Shaskol'skaya, M.P. and Sung Jui-fang

TITLE: Etch Figures and Dislocations on Bands of Birefringence in Crystals of Rock Salt (Figury travleniya i dislokatsii na polosakh dvupreiomleniya v kristallakh kamennoy soli)

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 1, pp 81 - 84 + 4 plates (USSR)

ABSTRACT: It was found that etch figures on plastically deformed crystals of rock salt are distributed in straight lines corresponding to the bands of birefringence. This confirms the assumption made earlier by the authors that the bands of birefringence represent slip bands and that double refraction is due to strains which are formed by the retention of dislocations. An estimate of the number of etch figures and of the difference in the slipping on opposite faces of the crystal gives the possibility of qualitatively verifying the assumption that there is a one-to-one correspondence between the etch figures and the dislocations. Acknowledgment is made to Professor B.N. Finkel'shteyn for his advice. There are 7 figures and 8 references, 5 of which are Soviet and 3 English.

Card 1/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

Etch Figures and Dislocations on Bands of Birefringence in Crystals of Rock Salt SOV/70-4-1-14/26

ASSOCIATION: Institut stali im. I.V. Stalina
(I.V. Stalin Institute of Steel)

SUBMITTED: June 21, 1958

Card 2/2

APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0"

"APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R001548710005-0

SOV/70-4-4-20/34

AUTHORS: Sun Jui-fang and Shaskol'skaya, M.P.

TITLE: On the Unique Correspondence Between Etch Figures and Dislocations

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 4, pp 590 - 593 + 1 plate (USSR)

ABSTRACT: The number of etch figures along bands of birefringence in a plastically deformed crystal of rock salt is compared with the difference of the magnitudes of the displacements corresponding to the emergence of the bands on the side faces of the crystal.
The association of dislocations and etch pits has been demonstrated hitherto only by comparing the theoretical dislocation density with the experimentally found etch pit density. Slip in NaCl-type crystals was studied simultaneously by polarised light and by surface interferometric methods and showed that the slip was non-uniform. It was shown that a birefringence band in such a crystal represents a series of edge dislocations and that at the ends of the birefringence bands there exists a measurable difference in the magnitudes of the displacements in the

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slip plane. If all etch figures in one row correspond to dislocations of one sign, then the number of etch figures multiplied by the Burger's vector should give the difference in slip between the two ends of the birefringence band. The latter can be measured by the step height on the side face of the crystal. This was done with fair agreement and reasons for the decrease in the numbers of dislocations in a slipband are discussed. There are 2 figures, 1 table and 4 references, 3 of which are Soviet and 1 English.

ASSOCIATION: Moskovskiy institut stali im. I.V. Stalina (Moscow Steel Institute im. I. V. Stalin)

SUBMITTED: February 2, 1959

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24(0)
AUTHOR. Shaskol'skaya, M. P.

SOV/53-67-1-1/12

TITLE: Memories of Frederic Joliot-Curie (Pamyati Frederika Zholio-Kyuri)
Frederic Joliot-Curie (Frederik Zholic-Kyuri)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 67, Nr 1, pp 3-15 (USSR)

ABSTRACT: The authoress of the present paper gives a detailed curriculum vitae of French Physicist Joliot-Curie, who died in the Fall of 1958. Joliot-Curie was Chairman of the World Peace Council, Holder of the Nobel Prize and of the Lenin Prize, Member of the Central Committee of the French Communist Party, Foreign Member, AS USSR, Chairman of the World Federation of Scientists, and Honorary Chairman of the Society France-USSR. Also several of the deceased's scientific works and discoveries are discussed. Particular mention is made of his friendly attitude towards the USSR and to his visits to that country. In May 1958 Joliot-Curie was for the last time in Russia. Photos attached to the article show Joliot at the Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute for Nuclear Research), in Dubna, in the company of several scientists: Professor D. I. Blokhintsev, Director of the Joint

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Memories of Frederic Joliot-Curie.
Frederic Joliot-Curie SOV/53-67-1-1/12

Institute for Nuclear Research; Professor Vaclav Votruba, Vice-Director of this Institute (Czechoslovakia); S. G. Korneyev, Deputy Chief of the Foreign Department, AS USSR; Professor Bruno Pontekorvo; Academician Leopold Infeld (Leopol'd Infel'd)(Poland). There are 2 figures and 44 references, 13 of which are Soviet.

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16(1) SOV/2o-128-1-17/58

AUTHORS: Vekilov, Yu. Kh., Shaskol'skaya, M. P.

TITLE: Influence of Plastic Deformation on Internal Friction and the Shear Modulus in Silver Chloride

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 128, Nr 1, pp 71 - 72 (USSR)

ABSTRACT: This article presents preliminary results of an investigation of internal friction in AgCl crystals: The authors investigated the temperature dependence of internal friction and the shear modulus by means of a relaxator of the type RKF-MIS. The samples were 20 mm long and had a radius of 0.75 mm. They were prepared in the following manner: The AgCl single crystals were pressed on a 5o-ton press through a hole 2 mm wide at room temperature, and the resultant wire was drawn out without intermediary tempering until a diameter of 0.75 mm was attained. Relaxation has probably not taken place between the individual operations. Internal friction was ascertained from the amount of the decrement of damping :

$Q^{-1} = \Delta/\pi = (1/\pi n) \ln(A_1/A_n)$, where n denotes the number of

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oscillations between the amplitudes A_1 and A_n. The temperature dependence of the shear modulus $G \sim f^2$ was simultaneously recorded, where f denotes the frequency of oscillations. A line of a diagram illustrates the temperature dependence of internal friction of deformed samples. At 20° it holds: $Q^{-1}=10^{-2}$. The branch of internal friction corresponding to high temperatures begins to run at room temperature, and already at 75° it holds: $Q^{-1}=10^{-1}$. After the measurements the deformed samples were annealed directly in the device for five hours at 240° and then cooled in a furnace. They recrystallized completely and obtained fine-grained structure. The other two lines of the above diagram show the temperature dependence of Q^{-1} and of the shear modulus G of annealed polycrystalline AgCl samples. At 20°, Q^{-1} is smaller by two orders than in the case of deformed samples, and attained a value of $(5-8).10^{-4}$ in the individual samples. Internal friction begins to rise at 200°. It attains a peak at 200°, which results in a corresponding variation of the modulus. This peak is obviously connected with the relaxation of tensions at the grain boundaries. The temperature de-

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pendence of the shear modulus differs in deformed and annealed state. The modulus in deformed state depends on temperature more strongly than in annealed state. At 20°, the moduli differ by 13 -17%, thus considerably exceeding the error of measurement. The sign of the modulus variation is anomalous because the modulus usually becomes smaller during deformation. The authors thank Yu. V. Piguzov for valuable advice in measurements. There are 1 figure and 7 references, 5 of which are Soviet.

ASSOCIATION: Moskovskiy institut stali im. I. V. Stalina (Moscow Steel Institute imeni I. V. Stalin)

PRESENTED: April 22, 1959, by G. V. Kurdyumov, Academician

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PHASE I BOOK EXPLOITATION SOV/4042

Leningrad. Universitet

Polyarizatsionno-opticheskiy metod issledovaniya napryazheniy; trudy konferentsii 13-21 fevralya 1958 goda (Optical Polarization Method for Stress Analysis; Transactions of the Conference of February 13-21, 1958). [Leningrad] Izd-vo Leningradskogo univ., 1960. 451 p. Errata slip inserted. 2,400 copies printed.

Resp. Ed.: S.P. Shikhobalov; Ed.: Ye.V. Shchemeleva; Tech. Ed.: S.D. Vodolagina; Editorial Board: S.G. Gutman, L.M. Kachanov, V.M. Krasnov, T.D. Maksutova, N.I. Prigorovskiy, V.M. Proshko, N.S. Rozanov, and Ye.I. [illegible]shteyn.

PURPOSE: This collection of 58 articles is intended for scientists and engineers concerned with experimental stress analysis of machine parts and structural components.

COVERAGE: The collection contains reports presented at the conference on optical polarization methods in stress analysis held February 13 - 21, 1958, in Leningrad and attended by 324 delegates including representatives of the People's Republic of China, the Polish People's Republic, the German Democratic Republic, and the Republic of Czechoslovakia. The reports discuss general theoretical problems and new methods of investigation and describe apparatus and materials used in the optical method. Solutions of specific two-dimensional and three-dimensional problems occurring in shipbuilding, aircraft design, engine construction, in various branches of heavy and precision machine design, in mining, metallurgy, hydraulic structures, railroad transport, in structural mechanics, geodynamics, in the control of stresses in products of the glass and electronic industry, etc., are given. Solution of the three-dimensional problem by means of the method of photoelasticity is introduced and the use of this method for the solution of problems associated with plasticity, creep, dynamics, hydrodynamics, etc., is demonstrated. Reports previously published elsewhere are printed here in abbreviated form. No personalities are mentioned. References are found at the end of 47 of the reports.

Optical Polarization Method (Cont.) SOV/4042

33. Shaskol'skaya, M.P., and V.Ye. Kochnov. On the Use of Silver Chloride for Studying Plastic Deformation Processes by Means of the Optical Polarization Method. 268

34. Zhitnikov, R.A. Optical Method for Investigating Neutralized States of Stress in Fine-Grained Polycrystals 272

35. Kochnov, V.Ye. Modeling Several Cases of Plastic Deformation of Metals in Polycrystalline Silver Chloride 280

36. Kosmodamianskiy, A.S. Elastic Equilibrium of an Anisotropic Plate With a Curved Elastic Core 284

VIII. INVESTIGATION OF MINING AND GEOLOGICAL PROBLEMS

37. Ozovskiy, M.V., D.N. Osokina, and I.M. Kuznetsova. Use of the Optical Polarization Method in the Simulation of Geological Processes 290

38. Trumbachev, V.F. Use of the Optical Method for Investigating Stress Distribution Near Mine Excavations 304

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SHASKOLSKAYA, M. P.

~~"S2-X-2~~. The Distribution of Stresses and the Generation of Dislocations Caused by Cleavage Cracks in Ionic Crystals."

Chair of Physics, Moscow Steel Inst., USSR.

paper submitted for 5th Gen. Assembly, Symposium on Lattice Defects, Intl. Union of Crystallography, Cambridge U.K. Aug 1960.

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