BAKAYEV, A.A. [Bakaiev, O.O.]; BRANOVITSKAYA, S.V. [Branovyts'ka, S.V.]; MIKHALEVICH, V.S. [Mikhalevych, V.S.]; SHOR, N.Z.

Determining the characteristics of a transportation system by the method of successive analysis of variants. Dop. AN URSR no.4:469-472 '62. (MIRA 15:5)

1. Vychislitel'nyy tsentr AN USSR. Predstavleno akademikom AN USSR V.M.Glushkovym [Hlushkov, V.M.].
(Automation) (Electronic digital computers)

BAKAYEV, A.

Electronic machines work out the schedules of freight traffic. Sov.-torg. 35 no.1:15-16 Ja '62. (MIRA 15:1)

1.Glavnyy inzh. otdela ekonomicheskoy kibernetiki Vychislitel'nogo tsentra AN SSSR, g.Kiyev.
(Ukraine--Sugar--Transportation) (Electronic calculating machines)

BALON, I.D., kand.tekhn.nauk; ROMANENKO, N.T., inzh.; YUPKO, L.D., inzh.; BOLKUNOV, Ye.P., inzh.; TULUYEVSKAYA, T.A., inzh.; [illegible]ASTAFUROV, P.I., inzh.; VOLOVIK, A.V., inzh. Prinimali uchastiye: BAKAYEV, A.I.; VOKHNIK, A.R.; KOLOS, V.D.; KAYSTRO N.P. [deceased]; LITVINENKO, V.I.; MAKARCHENKO, N.M.; ONOPRIYENKO, V.P.; PALAGUTA, V.P.; PIKA, V.S.; RAGIN, B.I.; ROMANCHENKO, Ye.I.; SAYENKO, S.D.; STOLYAR, V.V.; SKORIK, N.M.; TOROPENKO, P.D.

Characteristics of making ferromanganese in large capacity blast furnaces and the effect of slag conditions on basic technical and economic indices. Stal' 23 no.12:1069-1073 D '63. (MIRA 17:2)

1. Ukrainskiy nauchno-issledovatel'skiy institut metallov i zavod "Zaporozhstal'".

PETROV, Ye.I.; NOVOSELOV, V.A.; Prinimali uchastiye: CHVANOV, P.A.; SHIROKOV, L.F.; KOROBKOV, V.P.; KULAYEV, P.A.; POPKOVA, L.F.; LEBEDEV, I.M.; BAKAYEV, A.M.

Flotation of Sibay deposit zinc ores. TSvet. met. 35 no.3: 15-18 Mr '62. (MIRA 15:4)
(Flotation) (Sibay region—Zinc ores)

ACCESSION NR:

AUTHOR:

TITLE:

SOURCE: Tsvetnyye metally, no. 2, 1965, 77-83

TOPIC TAGS: tungsten, solid tungsten, tungsten consolidation, tungsten impurity, impurity elimination

ABSTRACT: during consolidation of W has been ... tungsten anhydride with hydrogen was compacted and the compacts were sintered at ... The density ... welding increased the density to ...% and resulted in a ...% ... by 55—61% by welding ...

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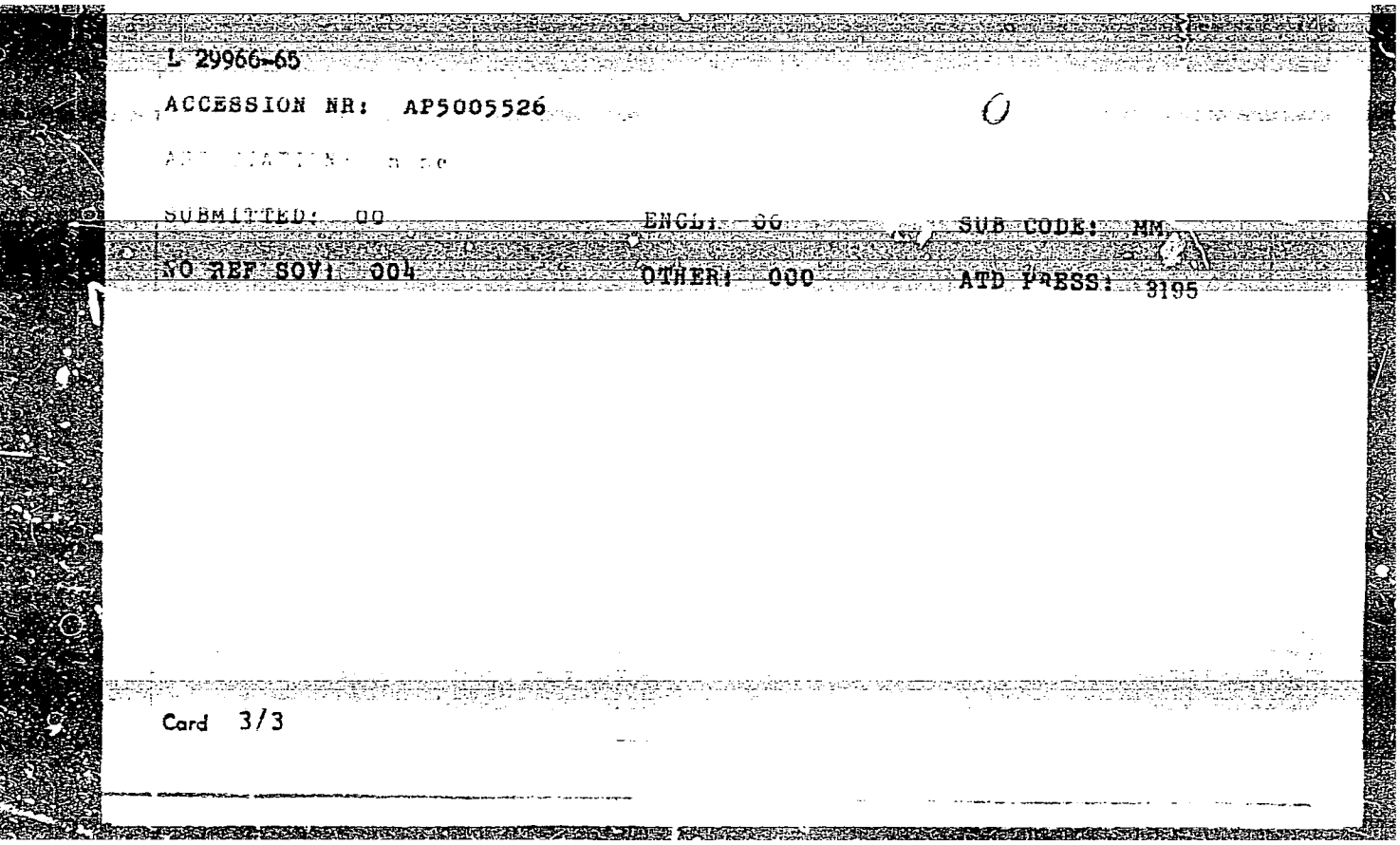
ammonium-potassium paratungstate) also was unchanged by reduction, but dropped by 50 and 63—65% in low- and high-temperature welding. However, [illegible] during reduction, sintering further reduced the K content to 3—4%, and the remaining portion evaporates [illegible] low-temperature welding. About 50% As and 70% P evaporates during reduction, and only traces of both elements remain after welding. As for high-temperature welding which removes about 20% Fe, all other operations have no effect on the Fe content in solid W. The Mo content was not affected by reduction; it decreased by 13—16% in low-temperature welding; high-temperature welding had no additional effect. Welding [illegible] the content of Si and Al to one half and one third, respectively. Thus the impurities which accompany [illegible] can be divided into three groups. 1) Volatile impurities, — As, P, (probably S) and potassium (as [illegible] — which [illegible] evaporate during reduction. 2) Impurities which are removed by low-temperature welding — Ca, K (chemically bound with W), Si, and Al; their content decreases appreciably at temperatures up to 1550C. 3) Hard-to-evaporate impurities, such as Fe, whose content begins to decrease at temperatures above 1550C and then only slightly. Mo is a nonvolatile impurity in W. Orig. art. has: 2 figures and 1 table. [MS]

Card 2/3



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ACCESSION NR: AP5005526

SUBMITTED: 00 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 000 ATD PRESS: 3195

Card 3/3

BAKAYEV, A.M.

Transcribing geographic names. Geod. i kart. no.2:56-59 F '63.
(MIRA 16:3)

(Names, Geographical)

BAKAYEV, A.V.; GELLER, I. Kh.; DORIN, V.A.; ZAKHAROV, M.P.; NASLEDOV, D.N.; SOLOV'YEV, R.A.

Method for investigating potential distribution in selenium rectifying cells. Zav.lab. 27 no.10:1240-1242 '61. (MIRA 14:10)

1. Leningradskiy politekhnicheskiy institut im. M. I. Kalinina.
(Selenium--Electric properties)

S/139/63/000/001/012/027
E202/E420

AUTHORS: Bakayev, A.V., Geller, I.Kh., Dorin, V.A., Zakharov, P.M., Nasledov, D.N., Solov'yev, R.A.

TITLE: Distribution of potential in selenium rectifying elements between electrodes

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Fizika, no.1, 1963, 78-84

TEXT: Results of measuring potential distribution in selenium rectifying elements in the conducting direction are described. To explain in detail the mechanism of potential distribution between the electrodes, measurements were carried out at points separated by a distance of 5 μ. Since the thickness of selenium layer varies from 50 to 100 μ it was necessary to measure the potential at 10 to 20 points. In order to carry out the measurements the layer of selenium and the p-n junction region were stripped and a transverse section prepared. Both types of rectifiers, i.e. those with p-n junction between the upper electrode and the layer of selenium, and those in which the p-n junction lies between the layer of selenium and the base, were investigated. The method was based on

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Distribution of potential ...

measuring the difference of potential between one of the electrodes and a probe, the latter being placed at various points on the surface of the transverse section of the element. A special instrument incorporating a microhardness gauge of the diamond pyramid type in which the latter was replaced by a steel wedge-shaped probe was used. During measurements the probe was pressed into the selenium in order to obtain reliable results. The width of the indentation made by the probe was 1.5 to 2 μ, hence the potential could be measured at points separated by a distance of 5μ. Since the probe contact with selenium has a considerable resistance of the order of 10^8 to 10^9 ohms, a high resistance voltmeter was used in the measurements. This comprised a potentiometer with a center zero electrometer sensitive to a current of 10^{-11} A. The measurements had an absolute error of 0.001 V. Considerable care was taken in the preparation of the transverse sections. The results have shown that the main fraction of the potential applied to the element in the conducting direction falls over the p-n junction region, on the other hand the layer of selenium accounts for not more than 25% of the above fall. In addition to plotting

the potential against the distance over the CdS-(orCdSe)-Se-Bi_2Se_3-Al portions of the sandwich, preliminary volt-ampere characteristics of both types of rectifier were measured on polished and unpolished samples. There are 6 figures.

ASSOCIATION: Leningradskiy politekhnicheskiy institut imeni M.I.Kalinina (Leningrad Polytechnic Institute imeni M.I.Kalinin)

SUBMITTED: August 22, 1961

RASTORGUYEVA, V. S.; BAKAYEV, Ch. Kh.; PIREYKO, L. A.; ISAYEV, M. I.; KERIMOVA, A. A.

"Tipy dvuyazyniya u ipanskikh narodov Sovetskogo Soyuza."

report submitted for 7th Intl Cong, Anthropological & Ethnological Sciences, Moscow, 3-10 Aug 64.

9.3150, 24.2120

77839
SOV/57-30-3-5/15

AUTHORS: Sinel'nikov, K. D., Tolok, V. T., Nazarov, N. I., Bakayev, I. I., Bondarev, V. A., Bugay, Yu. P.

TITLE: Investigations of Ion Cyclotron Resonance in a Dense Plasma

PERIODICAL: Zhurnal tekhnicheskoy fiziki, 1960, Vol 30, Nr 3, pp 283-288 (USSR)

ABSTRACT: The heating up of plasma under ion cyclotron resonance, where the ions acquire directly the energy of the electric field, is a process which one could hope to utilize for attaining high ionic temperatures. Theory developed by Stix (see ref) indicated that at plasma densities of 10^{14} cm^3 and more, one could generate and thermalize so-called ion cyclotron waves. The authors, therefore, investigated the ion cyclotron resonance in hydrogen plasmas of density 10^{12}-10^{14} cm^3 under impulse conditions, using a device described on Fig. 1.

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Investigations of Ion Cyclotron Resonance in a Dense Plasma

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SOV/57-30-3-5/15

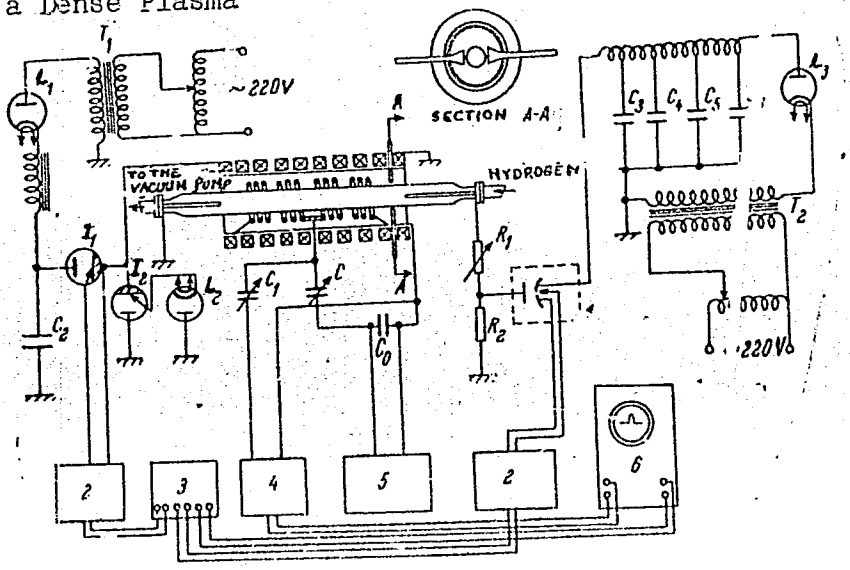

Fig. 1.
See caption on Card 3/11.

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Investigations of Ion Cyclotron Resonance in a Dense Plasma

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Caption to Fig. 1. Diagram of the experimental setup: (1) discharge tube; (2) triggering device; (3) triggering scheme; (4) detector; (5) generator of 10 mc; (6) oscillograph ENO-1.

A straight discharge represents the source of the plasma inside a 60-cm-long tube, 6 cm in diam. The discharge was generated by means of 800 μsec square potential impulses. Discharge current could go up to 500 a and was regulated by means of ballast resistance R_1.

The discharge tube was along the axis of a 70-cm-long solenoid, 20 cm in diam. Its magnetic field reached the maximum value up to 10^4 oersted in $4.7 \cdot 10^{-3}$ sec. The coil was fed by means of a battery of condensers with a maximum stored energy of 40,000 joules at potentials up to 5 kv. The uniformity of the magnetic field over a length of 45 cm was not worse than 1%. Four sections of three-turn each, connected in antiphase, served as

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the coil for introducing the high-frequency power into the plasma. Axial periodicity of the electromagnetic wave was 11 cm. The inductivity (1 μH) of the coil together with the C and C_o capacitance constituted a resonance circuit with a Q-factor of 270, and was driven by a 1 kw generator supplying a continuous range of 6-12 mc oscillations. Ion cyclotron resonance was observed through the change in potential across the resonant circuit which was transmitted through the capacitance C to a germanium detector, and then to the amplifier of the vertical deflections of the oscillograph ENO-1. The triggering circuit enabled a buildup of the discharge at all values of the magnetic field. Density of the plasma was deduced by L. A. Dushin and V. I. Konenko from the condition of transmission of millimeter waves. Tests showed that the relation between the resonant peak and the generator frequency follows the law $\omega_{ci} = eH/me$ for plasma densities $n \leqslant 10^{12}$ cm^{-3}.

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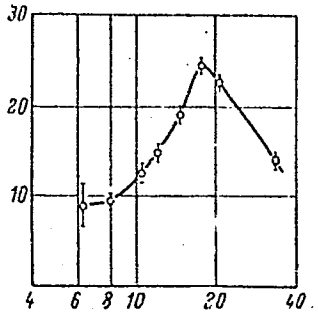
Figures 3 and 4 show that the optimum conditions for absorption of the high frequency power by the plasma are determined by the density of the neutral and charged particles. Measurements of the half-widths of the resonant curves show strong interactions between the accelerated ions and neutral atoms.



Card 5/11 Fig. 3. (Caption on Card 6/11)

Fig. 3. Resonant absorption of h-f power versus hydrogen pressure at constant discharge current. The abscissa represents pressure in μ Hg; the ordinate shows amplitude of resonant absorption in relative units.

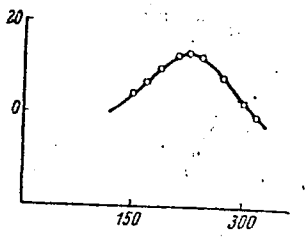


Fig. 4. Resonant absorption of h-f power versus discharge current in hydrogen at 7.5 μ Hg pressure. The abscissa represents current in amperes; the ordinate is same as on Fig. 3.

Similar results were obtained by Dubova and others (results to be published in Atomnaya energiya) at FTI AN USSR (PTI AS UkrSSR) investigating the cyclotron resonance under stationary conditions in a PIG source of plasma, fed by means of a generator of a few hundredths of a milliwatt. That work showed also that the Coulomb collisions have little influence on the consumption of energy by resonant ions. The authors investigated also the relationship between the power absorption and frequency, the displacement of the resonant peak and the intensity of the discharge current, and the relationship between the resonant absorption of the power and the time after the discharge current was cut off (see Fig. 9). Since this time is related to the density of the plasma, the curve testifies that there exists an optimum density of the plasma for absorption of power.

Investigations of Ion Cyclotron Resonance in a Dense Plasma

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SOV/57-30-3-5/15

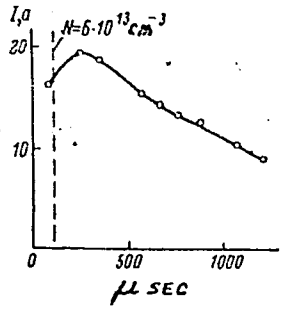

Fig. 9. Resonant absorption of h-f power versus time after cutting off discharge current. Pressure 15 μ Hg; discharge current 250 a.

At densities higher than the optimum one, the authors suspect that a kind of h-f field screening effect of the plasma occurs. The authors also observed that with the increase of plasma density, an asymmetry of the resonant absorption peak appears

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from the side of magnetic fields with a higher resonance value. They explain this asymmetry by an escape of a part of the h-f power into the generation of ionic cyclotron waves described by Stix. A general quantitative comparison with the theory cannot be attempted, however, since the experiment does not satisfy all the separate conditions of the theory. The authors, nevertheless, compared some of the data. The theory predicts a maximum power absorption at an ion density of n = 2 to $4 \cdot 10^{12}$ cm^{-3}, while the experiment yields a value of $4 \cdot 10^{13}$ cm^{-3}. Similar results are obtained discussing the asymmetry of the peak which agree with the results on the stellarator V-65. The authors, therefore, conclude that the h-f power penetrates poorly into a plasma with densities above $5 \cdot 10^{12}$ cm^{-3}. It is of paramount importance to confirm unequivocally, by experiment, the existence of ionic cyclotron waves and the possibility of their thermalization, which in case of positive answers

would make it possible to heat plasmas with densities above 10^{13} cm^{-3}. The authors note that there also exist other possibilities for keeping the parameter

$$\gamma \sim \frac{n\lambda^3}{T_i^{1/2}}$$

close to 1, and so achieving plasma heating at higher plasma densities. Here λ = length of the period of the excitation coil; T_i = ion temperature. While the dependence on T_i is quite weak, a reduction of λ by a half allows the increase of density by one order of magnitude. In addition, a smaller λ corresponds to a larger h-f power absorption W, since $W \sim 1/\lambda^2$. The reduction of λ presents, therefore, a very attractive possibility, and the authors consider it a matter of expediency to conduct supplementary investigation of this problem. There are 9 figures; and 5 references, 2 Soviet, 3 U.S. The U.S. references are: K. S. W. Champion,

Investigations of Ion Cyclotron Resonance in a Dense Plasma

77839
SOV/57-30-3-5/15

Proc. Phys. Soc., 70, 446 B, 212, 1957; T. N. Stix, R. W. Palladino, Proc of 1958 Gen. Conf. A (15, p 360); T. N. Stix, Proc. of 1958 Gen. Conf. A (15, p 361).

ASSOCIATION: Physico-Technical Institute AS UkrSSR, Khar'kov (Fiziko-tekhnicheskiy institut AN USSR, Khar'kov)

SUBMITTED: October 22, 1959

Card 11/11

L 11939-63 EWT(1)/EWG(k)/BDS/EEC(b)-2/ES(w)-2 AFFTC/ASD/ESD-3/AFWL/
SSD Pi-4/Po-4/Pab-4/Pz-4 AT/IJP(C)

ACCESSION NR: AP3003967 S/0089/63/015/001/0003/0006

AUTHORS: Bakayev, I. I.; Zalesskiy, Yu. G.; Nazarov, N. I.; Ukrainskiy, A. M.; Tolok, V. T.

84
83

TITLE: Ion cyclotron resonance in a moving plasma

SOURCE: Atomnaya energiya, v. 15, no. 1, 1963, 3-6

TOPIC TAGS: ion cyclotron resonance, moving plasma, pinch, plasma density, Doppler effect

ABSTRACT: In the heating of a stationary plasma by means of an ion cyclotron resonance, the time required for a considerable acceleration of plasma ions is not more than 10^{-5} sec. Therefore for the pinches moving with a velocity of 10^7 cm/sec, the length of the heating section is not unreasonable (about 1m.). In the present work, the generation and absorption of ion cyclotron waves in a moving plasma pinch has been observed. The absorption of high frequency energy occured at two frequencies shifted to both sides from a certain average frequency, because of Doppler effect. "Magnetic shores" are important for the damping of ion cyclotron waves. By measuring the Doppler effect and the resonance frequencies, the average velocity of the pinch was found (6.7×10^6 cm/sec), and the plasma density (7×10^{12} cm^3).

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L 11939-63

ACCESSION NR: AP3003967

"The authors express their deep gratitude to K. D. Sinel'nikov for discussion of the results". Orig. art. has: 5 figures and 3 equations.

ASSOCIATION: none

SUBMITTED: 22Sep62 DATE ACQ: 08Aug63 ENCL: 00

SUB CODE: PH NO REF SOV: 002 OTHER: 002

Card 2/2

BAKEYEV, M.

Methods of calculating the vapor pressure of complex water - salt systems. Izv. AN Kazakh. SSR.Ser. khim. no.1:15-21 '60. (MIRA 13:11)
(Systems (Chemistry)) (Vapor pressure)

BAKAYEV, M.T., kandidat tekhnicheskikh nauk.

Theoretical principles in determining the dead weight of a scraper. Izv. AN Kazakh. SSR Ser. gor. dela no.3:24-27 '51. (MLRA 9:6)
(Scrapers)

BAKAYEV, M. T., [illegible], A. Ch., and SIRAZUTDINOV, A.M.

"Violations of the Rules Governing Technical Exploitation During the Working of Lead Deposits," Razvedka i Okhrana Nedr, No. 2, pp 49-53, 1954

SO: W-31429, 8 Sep 55

БАКАЕВ, М.Т.

MUSIN, A.Ch.; BAKAYEV, M.T.; PONOMAREV, V.A.

Investigating physical and mechanical properties of rocks in Dzhezkazgan ore deposits. Trudy Inst. gor. dela AN Kazakh. SSR 2:137-157 '57. (MIRA 10:12)
(Dzhezkazgan--Ore deposits) (Rocks--Testing)

BAKAYEV, M.T.; KULAKOV, A.Ya.

Supporting and controlling the roofs of chambers in Dzhezkazgan mines. Izv. AN Kazakh. SSR. Ser. gor. dela no.1:105-108 '58.
(MIRA 16:5)

(Dzhezkazgan District--Mine roof bolting)

BAKAYEV, M.T.; DOLGIKH, N.P.

Approximate estimate of rod bolting elements and their position in mine supports. Izv. AN Kazakh. SSR. Ser. gor. dela no.1:36-41 '59. (MIRA 12:9)

(Mine roof bolting)

MUSIN, A.Ch., doktor tekhn. nauk; BAKAYEV, M.T., kand. tekhn. nauk

Measures for preventing breast caving. Bezop. truda v prom. 3 no.11:14-15 N '59. (MIRA 13:3)

1.Chlen-korrespondent AN Kazakhskoy SSR (for Musin)
(Copper mines and mining--Safety measures)

BAKAYEV, M.T., MUSINA, R.M.

Method of rock testing for shear (slip). Izv. AN Kazakh. SSR. Ser. gor dela no.1:101-107 '60. (MIRA 13:10)
(Rocks--Testing)

MUSIN, A.Ch.; BAKAYEV, M.T.

Roof caving in stope areas of Dzhezkazgan. Trudy Inst. gor. dela AN Kazakh.SSR. 4:3-20 '60. (MIRA 13:9)
(Dzhezkazgan--Mining engineering)

MUSIN, A.Ch.; BAKAYEV, M.T.

Parameters of the chamber and pillar system in Dzhezkazgan deposit mines. Trudy Inst. gor. dela AN Kazakh. SSR 7:49-60 '60. (MIRA 14:6)
(Dzhezkazgan region--Mining engineering)

MUSIN, A.Ch.; BAKAYEV, M.T.; TAKELEKOV, K.Zh.

Centrifugal modeling in studying the stability of chamber roofs as applied to the conditions in Dzhezkazgan. Izv. AN Kazakh. SSR. Ser. gor. dela no.1:3-17 '61. (MIRA:15:2)
(Dzhezkazgan District--Rock pressure)
(Mining engineering)

BAKAYEV, M.T.; BOCHKAREV, B.N.

Efficient exploitation of Leninogorsk and Zyryanovsk complex metal deposits. Razved. i okh. nedr 27 no.5:33-36 My '61. (MIRA 14:9)

1. Gosgortekhnadzor Kazakhskoy SSR.
(Kazakhstan--Mining engineering)

MUSIN, Alikhan Chuzhebayevich; BAKAYEV, Maslud Tairovich; OVSYANNIKOV, Petr Ivanovich; BASHLYKIN, I.I., otv. red.; SLAVOROSOV, A.Kh., red. izd-va; LOMILINA, L.N., tekhn. red.; LAVRENT'YEVA, L.G., tekhn. red.

[Using the microseismic method for studying the massif of rocks] Primenenie mikroseismicheskogo metoda dlia issledovaniia massiva gornykh porod. Moskva, Gosgortekhizdat, 1962. 61 p. (MIRA 16:3)

(Microseisms) (Rocks--Testing)

BAKAYEV, M.T.; NUGMANOV, K.Kh.; SEYDUALIYEV, Z.S.; IBRAYEV, Sh.I.; ULUKBEKOV, O.K.; MUSIN, A.Ch., doktor tekhn. nauk, prof., red.; ABDRAKHMANOV, A., kand. filolog. nauk; ASAINOV, M., red.; AYTMUKHAMBETOVA, S., red.; ZHUKOVA, N.D., red.; KHUDYAKOV, A.G., tekhn. red.

[Russian-Kazakh dictionary of terminology]Russko-kazakhskii terminologicheskii slovar'. Alma-Ata, Izd-vo Akad. nauk Kazakhskoi SSR. Vol.12[Mining]Gornoe delo. 1961 281 p. (MIRA 15:11)

1. Akademiya nauk Kazakhskoy SSR, Alma-Ata. Institut yazykoznaniya.

(Mining engineering--Dictionaries)
(Russian language--Dictionaries--Kazakh)

BYUYRIN, A.I.; BAKAYEV, M.T.; URUMOV, T.M.; SALYKOV, K.; YESHPANOV, D.Ye.

Expediency of widening the panels in the Dzhezkazgan Mine.
Trudy Inst.gor.dela AN Kazakh.SSR 9:13-20 '62. (MIRA 15:8)
(Dzhezkazgan District--Mining engineering)

BAKAYEV, M.T.; GUBIN, V.I.

Evaluation of methods of mining ore in the Dzhezkazgan Mine. Trudy Inst. gor. dela AN Kazakh. SSSR 10:67-74 '63. (MIRA 16:8)

(Dzhezkazgan District—Mining engineering)

BAKAYEV, M.T.; PETROV, A.A.

Seismic effect of underground blasting in Dzhezkazgan mines. Trudy Inst. gor. dela AN Kazakh. SSSR 10:137-142 '63. (MIRA 16:8)

(Dzhezkazgan District—Blasting) (Seismometry)

BAKAYEV, M.T.

Practice of using soundings in metal mines. Trudy Inst. gor. dela AN Kazakh. SSSR 10:204-211 '63. (MIRA 16:8)

(Rocks--Acoustic properties)

BAKAYEV, M.T.

Methodology of determining some parameters for a mining system under the conditions found in the Dzhezkazgan Mine. Trudy Inst. gor. dela AN Kazakh. SSR 11:42-47 '63. (MIRA 16:8)

(Dzhezkazgan District--Mining engineering)

BAKAYEV, M.T.; ARYKOV, A.I.

Fracture tectonics of Dzhezkazgan mineral deposits and stability of blocks. Trudy Inst. gor. dela AN Kazakh.SSR 12:122-129 '63. (MIRA 17:8)

BAKAYEV, M.T.; TLEUZHANOV, N.T.

Investigating the influence of the borehole diameter on the blast effect in Dzheskazgan mines. Trudy Inst.gor.dela AN Kazakh.SSR 14:42-47 '64. (MIRA 18:1)

BAKAYEV, M.T.; GUBIN, V.I.; SAPARGALIYEV, M.S.

Using straight cuts before drilling with a self-propelled drilling rig. Trudy Inst. gor. dela AN Kazakh.SSR 12:22-29 '63. (MIRA 17:8)

BAKAYEV, M.T.; TLEUZHANOV, N.T.

Investigating the effect of the distance between blastholes on the blast effect in the Dzhezkazgan mines. Trudy Inst. gor. dela AN Kazakh. SSR. 19:56-60 '65. (MIRA 18:12)