

Nuclear Energy and the Navy (Cont.)

SOV/6261

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2/2

KOLESANOV, F.F.; KONAREVA, A.S.; Primalni uchastiye: ABROSIMOV, V.V., inzh.;  
GAVRIN, E.G., inzh.; SUYETINA, G.F., laborant; OLENNIKOV, B.I.,  
laborant; PANOV, O.V., laborant

Pelletizing Ufaley deposit nickel ores with subsequent  
roasting. [Sbor. truč.] Nauch.-issl.inst.met. no.4:54-62  
'61. (MIRA 15:11)

(Ufaley Range--Nickel ores)  
(Ore dressing)

SHCHERBAKOV, V.A.; AEROSIMOV, Ye.V.; STUL'PIN, Ye.A.; GOROKHOV, L.S.

Mechanism of slag formation during the melting period in high  
capacity open-hearth furnaces. Izv.vys.ucheb.zav.; Chern.met.  
5 no.11:48-56 '62. (MIRA 15:12)

1. Moskovskiy institut stali i splavov.  
(Open-hearth process)      (Slag)

ABROSKIN, G.I., inzh.; KUDASHOV, A.V., inzh.; POTAPENKO, B.T., inzh.

Construction of the Golovnoy hydroelectric development on the  
Vakhsh River. Gidr. stroi. 32 no.8:7-10 Ag '62. (MIRA 15:9)  
(Golovnaya Hydroelectric Power Station)

*ABROV, N.A.*  
ABROV, N.A. (Moskva)

Curriculum of elementary mathematics in pedagogical institutes.  
Mat. v shkole no.2:17-20 Mr-Apr '58. (MIRA 11:2)  
(Mathematics--Study and teaching)

ABROYAN, I.A.

Emission from an oxide cathode bombarded by positive ions. Fiz.  
tver.tela 1 no.12:1854-1856 D '59. (MIRA 13:5)

1. Politekhnikheskiy institut im. M.I.Kalinina, Leningrad.  
(Cathodes)

26.2531  
26.2312

29755  
S/194/61/000/006/030/077  
D201/D302

AUTHOR: Abroyan, I.A.

TITLE: The effect of ion bombardment on emission of an oxide coated cathode

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1961, 2, abstract 6 G16 (Nauchno tekhn. in-form. byul. Leningr. politekhn. in-t, 1960, no. 3, 33-45)

TEXT: The effect of positive hydrogen and potassium ions on the emission of oxide coated cathodes was studied. The investigations were carried out at the residual gas pressures  $\leq 1.10^{-6}$  mm Hg., in a device consisting of an ion source 60° magn. analyzer and a measuring section. Hydrogen was let in through a palladium capillary. The energy of hydrogen ions was 10 - 70 keV. Potassium ions were obtained by calcination of a mixture of potassium carbonate with aluminum and silicon oxides. An intensitve surface ioniza-

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S/194/61/000/006/030/077  
D201/D302

The effect of ion bombardment...

tion of potassium thus occurred due to chemical reaction at temperatures 900 - 1000°C. The energy of potassium ions in the experiment was 1 - 10 keV. The ion current falling on the oxide coated cathode was  $10^{-8}$  -  $10^{-7}$  amp. The aiming of the ion beam at the oxide coated cathode caused an increase in the electron current from the cathode in all cases. Every bombarding ion releases 2,000 - 5,000 additional electrons. The ratio of the variation of the cathode emission current to the ion current causing this variation depends on the emitter temperature, the energy of bombarding ions, the intensity of the beam and also on the magnitude of electric field at the cathode surface. 7 references. [Abstracter's note: Complete translation]

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ABROYAN, I.A.; MOVNIN, S.M.

Emission of an oxide cathode bombarded by charged particles. Fiz.  
tvr. tela 3 no.2:567-574 F '61. (MIRA 14:6)

1. Leningradskiy politekhnicheskij institut im. M. I. Kalinina,  
Leningrad.

(Secondary electron emission)

9,3120 (and 1140, 1138, 1143)

S/181/61/003/002/037/050  
B102/B201

26.2431

AUTHOR: Abroyan, I. A.

TITLE: Electron emission from germanium induced by cesium-, potassium, lithium-, and hydrogen ions

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 588-594

TEXT: The ion-induced electron emission from dielectrics and semiconductors has heretofore not been systematically studied; on the other hand, this study is necessary in order to get an insight into the mechanism and underlying rules. Studies in this respect were therefore conducted on n-type germanium single crystals (resistivity 37 ohm-cm), and results are described in the present paper. The disk-shaped Ge crystals (6-7 mm in diameter) were first ground, etched with CP-4 (SR-4), and washed in distilled water. Subsequently, they were introduced (M) into the experimental setup (Fig. 1). The apparatus had a residual gas pressure of not over  $5 \cdot 10^{-8}$  mm Hg; evacuation took place with a mercury diffusion pump. The positive ions were emitted from the hot source (N) which was coated with a paste made of  $Al_2O_3 + SiO_2 +$

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Electron emission from ...

S/181/61/003/002/037/050  
B102/B201

alkali carbonate. The ion beam was focused by a system of Ni electrodes ( $D_1, D_2$ ), monitored, and caused to hit the target (M) which was arranged in the center of two collector semispheres (50 mm in diameter). The target temperature ranged between 700 and 800°C during the (static) measurements, and the primary ion beam had an amperage of  $5 \cdot 10^{-6}$  a. The electron-emission coefficient  $\gamma$  was measured as a function of the ion energy; the results are illustrated by Fig. 2.  $\gamma$  grows linearly with E for Cs, K, and Li; the inclination of the  $\gamma$  straight lines is the same as in the bombardment of metals; for all alkali ions there is a threshold energy (1000 ev for Cs, about 500 ev for K and Li), above which the kinetic ejecting of ions becomes considerable. Mass-spectroscopic studies showed that the ion beams used were by 98% ions of the same type. The curve obtained for  $H_2^+$  ions (at 500°C target temperature) shows that field-induced electron emission from germanium takes place with hydrogen bombardment.  $\gamma$  shows no dependence on the target temperature (in the range investigated), but  $\gamma(E)$  exhibits a shift to the left, if the target is exposed to heat treatment prior to the bombardment. The maximum energy of secondary electrons is about 20 ev, and the volt-ampere characteristics reveal that saturation is not-completely

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Electron emission from ...

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B102/B201

atom to excite an electron to an energy sufficient to permit its escape into the vacuum,  $n$  is the number of collisions per unit length, and  $c$  is a proportionality factor taking the primary electron distribution into account. G. G. Il'ina, G. M. Batanov, and A. G. Morozov are thanked for their cooperation. There are 3 figures, 1 table, and 14 references: 10 Soviet-bloc and 3 non-Soviet-bloc.

ASSOCIATION: Politeknicheskii institut im. M. I. Kalinina g. Leningrad  
(Polytechnic Institute imeni M. I. Kalinin, Leningrad)

SUBMITTED: June 24, 1960

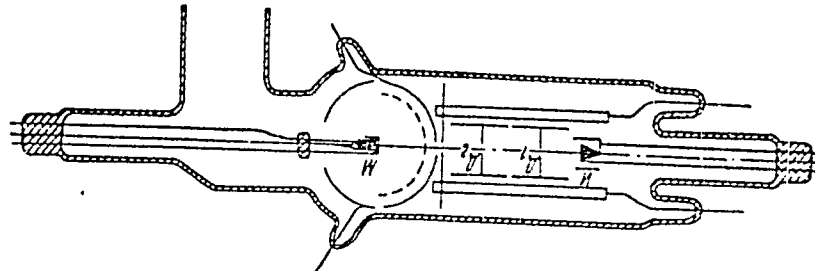


Fig. 1

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9,3120 (1143, 1138, 1140)  
26.2531

S/181/61/003/002/033/050  
B102/B201

AUTHORS: Abroyan, I. A. and Movnin, S. M.

TITLE: Emission of an oxide cathode bombarded by charged particles

PERIODICAL: Fizika tverdogo tela, v. 3, no. 2, 1961, 567-574

TEXT: Abroyan has shown in two previous papers that a beam of potassium or hydrogen ions incident upon the surface of an emitting oxide cathode gives rise to an increase of the anode current, with  $\Delta = \Delta I_a / I_1$  attaining up to 5000 electrons per ion ( $\Delta I_a$ , change of electron current of the cathode,  $I_1$ , intensity of ion current at the cathode). Further studies have been made of the effect of different positive ions upon the thermionic emission and the mechanisms of the change of the thermionic cathode current. The measurements were made on an apparatus described earlier at  $1-2 \cdot 10^{-7}$  mm Hg. The primary pulse currents had a duration of 10-200  $\mu$ sec and a frequency of 2-2000 cps. The primary and the secondary pulse currents were recorded by a linear amplifier with resistors

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Emission of an oxide cathode ...

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B102/B201

ensuring the conservation of the pulse shape. The pulse heights were measured with an CM-1 (SI-1) or 25-W (25-I) synchroscope. Oxide cathodes with coatings of (Ba,Sr)O and (Ba,Sr,Ca)O were utilized, and the effects of ion bombardment were found to be fairly equal for both types. The typical dependence of  $\Delta$  on the energy of bombarding ions is represented in Fig. 1 for 6.5 v at the hot cathode, and an anode current of 1.2 ma; (for electrons (1), hydrogen ions (2), helium ions (3), and argon ions (4), as well as, in the case of  $U_{\text{cath}} = 5.5$  v and  $I_a = 1.4$  ma, potassium ions (5)). Experiments with  $K^+$  were, however, conducted with another cathode, so that the results are not comparable. The monotonic decrease of  $\Delta$  (from 25 to 10) observed in electron bombardments of the cathode fits observations made by Pomerantz.  $\Delta$  as a function of the plate voltage  $U_a$  first exhibits an exponential rise up to about 60 v, and, with a further increase of  $U_a$  the rise is slow and practically linear (on a bombardment by 2.5-kev potassium ions, voltage of filament battery  $U_{\text{cath}} = 5.25$  v),  $I_a(U_a)$  exhibits a similar

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Emission of an oxide cathode ...

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course, a property which is conserved also on a bombardment with electrons or other ions.  $\Delta$  as a function of the voltage of filament battery goes through a maximum at  $U_{\text{cath}} \approx 6$  v, has a very low value at 4 and 8 v, and at 9 v,  $\Delta \approx 0$ . The electron current additionally emitted by the cathode rises and drops with time after an exponential law ( $1 - e^{-t/\tau}$ ,  $e^{-t/\tau}$ , respectively). For hydrogen and helium ions,  $\tau \approx 20$   $\mu\text{sec}$ , for argon and potassium ions,  $\sim 10$   $\mu\text{sec}$ . The results show that the change of the emission of an oxide cathode bombarded with positive ions cannot be explained by the slowing down of ions. The safest assumption seems to be that so-called "displacement defects" are formed in the surface layer of the oxide coating, i.e., defects caused by a displacement of ions from their positions of equilibrium in internodal positions. This assumption is above all supported by theoretical considerations. The following formulas are obtained for the penetration depth  $\delta$  of ions of the energy E and the atomic number  $z_1$ :

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Emission of an oxide cathode ...

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$$A_1 > A_2: \quad \delta = 0.6 \frac{(z_1^{2/3} + z_2^{2/3})^{1/2}}{z_1 z_2} \frac{A_1 + A_2}{A_1} A_2 \frac{E}{d} \text{ cm}$$

$$A_1 < A_2: \quad \delta = \frac{0.7}{\{\xi(1 - \cos\varphi)\}^{1/2}} \frac{(z_1^{2/3} + z_2^{2/3})^{1/2}}{z_1 z_2} \frac{A_2}{A_1 + A_2} \frac{E}{d} \text{ cm};$$

$A_1$  is the mass of the bombarding ion,  $A_2$  the mass of a target atom of the atomic number  $z_2$ ,  $d$  the density of matter in  $\mu\text{g}/\text{cm}^3$ ,  $\varphi$  the scattering angle of the ion in the laboratory system,  $\xi = \overline{\ln(E_1/E_2)}$ , the mean logarithmic decrement. At  $E = 5 \text{ kev}$ ,  $\delta = 1500 \text{ A}$  was obtained for  $\text{H}_2^+$ ,  $750 \text{ A}$  for  $\text{He}^+$ , and  $\delta = 50 \text{ A}$  for  $\text{Ar}^+$  and  $\text{K}^+$ . The mechanism of the increase of thermionic emission of the oxide cathode bombarded with fast ions is governed by the following rules: 1) increase of  $\Delta$  with  $E$ , 2) independence of  $\Delta$  of the intensity of the ion beam, 3) the inertial change of the thermionic current (the primary square pulses of

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Emission of an oxide cathode ...

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B102/B201

$1.10^{-8}$  -  $3.10^{-7}$  a gave rise to secondary pulse jags with rising and dropping times of 15-30  $\mu$ sec), 4) the similarity of  $\Delta$  and  $I_a$  as functions of the electrode potential difference, 5) the existence of a peak of the  $\Delta(T)$  curve, and, 6) the ratio of the  $\Delta$  values for different ions ( $\Delta$  rises with the atomic number of the bombarding ions).

Professor M. A. Yeremeyev is thanked for having supervised the work, and G. G. Il'ina for her measurements. Kozlyakovskaya is mentioned. There are 5 figures, 1 table, and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Leningradskiy politekhnicheskii institut im. M. I. Kalinina  
Leningrad (Leningrad Polytechnic Institute imeni M. I. Kalinin, Leningrad)

SUBMITTED: June 15, 1960

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44130

S/181/62/004/010/011/063  
B108/B104

24 7/60

AUTHOR: Abroyan, I. A.

TITLE: Conductivity induced in germanium by bombardment with potassium ions

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2719 - 2726 ✓

TEXT: The additional conductivity of n-type Ge induced by bombardment with a pulsed beam of potassium ions (100 - 10,000 ev) was studied with an arrangement similar to the usual secondary-emission apparatus (FTT, 3, 2, 588, 1961), comprising a spherical collector, an antidynatron grid, and the Ge target. The samples had previously been heated to about 800°C in vacuo. Bombarding the Ge targets gave rise to an additional conductivity pulse during each pulse of incident ions. The rise and fall of these conductivity pulses (due to excitation of electron-hole pairs, defects) is exponential. The additional conductivity increases with increasing energy of the incident ions. However, there is a threshold energy of 300 - 400 ev below which no additional conductivity is excited. The number of electron-hole pairs excited by one incident ion is a monotonic function of the ion energy E, amounting to about 900 - 1000 pairs at E = 10 kev. The fraction  
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Conductivity induced in...

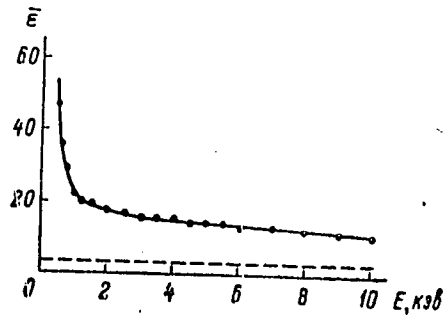
S/181/62/004/010/011/063  
B108/B104

of excited electrons going into the vacuum is  $2 - 2.5 \cdot 10^{-3}$  throughout the energy range of 1 - 10 kev. The mean energy consumed in the excitation of one pair is shown in Fig. 5 as a function of E (kev). There are 5 figures.

ASSOCIATION: Politekhnikheskiy institut im. M. I. Kalinina, Leningrad  
(Polytechnic Institute imeni M. I. Kalinin, Leningrad)

SUBMITTED: May 7, 1962

Fig. 5



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43127

S/181/62/004/011/028/049

B125/B186

24779 (also 3417)

AUTHORS: Abroyan, I. A., and Lavrov, V. P.

TITLE: Secondary emission of dielectrics and semiconductors  
resulting from potassium ion bombardment

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3254-3259

TEXT: Ion induced electron and ion emission from LiF, NaF, NaCl, KBr, CsCl and silicon monocrystals was investigated. The crystals were bombarded with potassium ions of 40-7000 ev using the pulse method of G. M. Batanov (FTT, 3, 2, 558, 1961; 3, 2, 642, 1961). A triple-electrode system was used comprising a spherical grid, an antidynatron grid and the target to be investigated. The pressure of the residual gas was  $3 \cdot 10^{-7}$  mm Hg. The K ion beam was square-pulse modulated with repetition frequencies of 0.5-50 cps, amplitudes of 0.2-0.8  $\mu$ a and a duration of 8 to 16  $\mu$ sec. Electron emission was observed only at energies of the K ions between 100 and 300 ev. The coefficient  $\gamma$  of the ion-induced electron emission was found to increase with growing ion energies, up to  $\sim 2$  kev sharply, and then slowly. KBr crystals had the highest and LiF crystals had the lowest values of  $\gamma$ . The

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Secondary emission of dielectrics...

S/181/62/004/011/028/049  
B125/B186

coefficients  $K_+$  of ion-induced ion emission of all alkali-halides were similar and similarly dependent on the energy of primary ions. The coefficients  $K_-$  became larger with increasing energies (starting with threshold energies of 300-500 ev) of the primary ions and reached saturation values of 15% at  $E \sim 1.5$  kev at most. The positive secondary particles consisted of knocked-out particles of the bombarded crystal and reflected ions of the primary beam. On increasing the temperature from room temperature to 300-400°C,  $K_+$  and  $K_-$  remain practically unchanged. The decrease of  $\gamma$  is attributed to the scattering of excited electrons from phonons. The temperature dependence of  $\gamma$  and the shifts in the spectra of the secondary electrons may be qualitatively explained by the energy losses of the excited electrons. The coefficient  $\gamma$  of silicon monocrystals showed almost a linear increase with growing energies of the bombarding ions. This increase was less at elevated temperatures, i.e. when the specimens were heated from 600-1300°C. The coefficients  $K_+$  of etched silicon monocrystal samples and of those heated to 1300°C showed a sharp increase with growing energies of the primary particles up to  $\sim 1.7$  kev followed by a decrease and

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33126

S/020/62/144/003/011/030  
B178/B104

24.7700

AUTHORS: Abroyan, I. A., and Zborovskiy, V. A.

TITLE: Excitation of electrons in germanium by potassium ions

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 531-534

TEXT: A study was made of the change in conductivity of n-type germanium single crystals bombarded with potassium ions of 400-10,000 ev energy, which is due to the excitation of valence electrons. The slowing down of these particles at a velocity  $v < v_0$  ( $v_0 = 2.2 \cdot 10^8$  cm/sec) can be determined from an investigation of the longitudinal conductivity. An electric field was created on the germanium plate onto which a potassium ion beam of 0.1-50  $\mu$ a strength, modulated by square pulses of 10-50  $\mu$ sec duration, was focused. Non-equilibrium carriers produced by the potassium ions induce an additional measurable current. It is possible to record the variation of the conduction current. The time constant  $\tau$  of the pulses is 3-5  $\mu$ sec if the specimen is not heated, and 10-20  $\mu$ sec if the target is vacuum-heated to 800°C. The lower the rate of cooling, the greater the mean lifetime,  $\tau$ ,

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Excitation of electrons in germanium ...

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of non-equilibrium carriers. The lower values of  $\Delta I_0/I_1^+$  are attributed to the increase in concentration of thermal acceptors by rapid cooling which reduces the lifetime and mobility of non-equilibrium carriers. The current of the induced conductivity is a linear function of the field strength  $\mathcal{E}$ . It is found that  $(\Delta I_0/I_1^+ \epsilon)_{K^+} = \beta (\Delta I_0/I_1^- \epsilon)_e$ , where  $\beta = f(E)$ .  $\beta$  equals 0.135, 0.114, 0.071, and 0.032 for 8, 3, 1, and 0.5 keV, respectively. The relationship between the ionization cross section and elastic collisions with lattice atoms at  $v < v_0$  can probably be obtained from a study of the conductivity of semiconductors and dielectrics. A comparison between the coefficient of ion-electron emission and the number of excited electrons makes it possible to predict the production probability of secondary particles in vacuo. There are 4 figures.

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

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AEROYAN, I.A.

Induced conductivity in germanium under bombardment with  
potassium ions. Fiz.tver.tela 4 no.10:2719-2726 0 '62.

(MIRA 15:12)

1. Politekhnikheskiy institut imeni M.I.Kalinina, Leningrad.  
(Semiconductors--Effect of radiation on ion beams)  
(Potassium)



ABROYAN, I.A.; LAVROV, V.P.

Secondary emission from dielectrics and semiconductors under bombardment with potassium ions. Fiz. tver. tela 4 no.11:3254-3259 N '62. (MIRA 15:12)

1. Politekhniicheskiy institut imeni M.I. Kalinina, Leningrad.  
(Secondary electron emission)  
(Alkali metal halide crystals)

Author out  
of SEQUENCE

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SAMUOLYTE, M.; DUBICKAS, V., spets.red.; ABROMAITIENE, H., red.;  
KINDIAKOVA, O., red.; PILKAUSKAS, K., tekhn. red.

[Use of synthetic materials in the light industry; bibliography]  
Sintetiniu medziagu panaudojimas lengvojeje pramoneje; bibliografinė rodyklė. Primenanie sinteticheskikh materialov v legkoi promyshlennosti; bibliograficheskii ukazatel'. Vilnius, 1962.  
69 p. (MIRA 16:2)

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tekh. red.

[Mechanization and automation of production processes in the wood-  
working industries; bibliographical index] Medzio apdirbimo pramones  
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rodykle. Vilnius, 1961. 117 p. (MIRA 15:4)

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graphy held in Vilnius on December 16-19, 1958] Elektrofo-  
tografii i magnitografii; trudy. Pod red. I.I.Zhilevicha.  
Vil'nius, Respublikanskii in-t nauchno-tekhn. informatsii i  
propagandy, 1959. 380 p. (MIRA 17:3)

1. Nauchno-tekhnikeskaya konferentsiya po voprosam elektro-  
grafii, Vil'na, 1958. 2. Nauchno-issledovatel'skiy institut  
elektrografii, Vil'nius (for Zhilevich).

Abrahamovici, R.

Determination of iron in clays containing large amounts of organic substances. R. Abrahamovici and Hortensia Curcu. *Rev. chim. (Bucharest)* 5, 483-484 (1954).—Dissolve the clay in  $H_2SO_4$ ; add several drops of  $H_2O_2$ ; ppt. Fe with  $NH_4OH$ , filter, wash; dissolve ppt. in  $NHCl$ , boil, reduce with  $SuCl_2$ , and titrate with  $KMnO_4$ . G. A.

ABROSENKOVA, V.F.

AUTHORS Abrosenkova, V.F., Logginov, G.I., Rebinde, P.A., 20-3-24/59  
Member of the Academy

TITLE Binding of Lime Into Calcium Hydrosilicate Under Normal Conditions.  
(Svyazyvaniye izvesti v gidrosilika' kal'tsiya pri normal'nykh  
usloviyakh - Russian)

PERIODICAL Doklady Akademii Nauk SSSR, 1957, Vol 115, Nr 3, pp 509-511 (U.S.S.R.)

ABSTRACT

It is usually said that the formation of calcium hydrosilicate on the occasion of the interaction between limestone with silica in the water medium by hardening of the binding calcareous-silicious building materials can only take place by hydrothermal treatment in autoclaves at temperatures of an order of magnitude of 170°. At normal temperatures this process is assumed not to take place i.e. it is not expressed in a noticeable increase of strength of the formed production. Some building productions, as e.g. wall blocks, which are used more and more in low buildings, do not need the strength obtainable in autoclaves. On the other hand, the papers of the authors confirm the assumption that, besides a hydration hardening of the calcareous-arenaceous binding substance, the binding of the calcium hydroxide gradually develops in the surface strata of the sand grains. The better this surface was developed and the more it was activated in the common breaking process, the greater is the quantity of limestone bound into calcium hydrosilicate. By means of the radioactive isotope Ca<sup>45</sup> (as Ca<sup>45</sup>(OH)<sub>2</sub>) it was determined that the bound quantity of cal-

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Binding of Lime Into Calcium Hydrosilicate Under 20-3-24/59  
Normal Conditions.

cium is proportional on coarse-dispersed sands of the specific surface of the sand. In the first stage the chalk binding has a character of the irreversible adsorption changing into a chemical surface reaction. In the present paper the kinetics of the constant calcium binding by the sand with better developed surfaces (up to  $2,9 \text{ m}^2/\text{g}$ ) from a saturated solution was studied by the same method. In the case of the introduction of fine-pulverized sand which was activated by simultaneous grinding with limestone the strength of the productions (with a reground sand filler) was increased more and more in the course of time. The strengthening is, under natural conditions, caused by two simultaneous processes: chalk binding: 1) into calcium hydrosilicate by silica and 2) by  $\text{CO}_2$  into calcium carbonate. Both processes take place very slowly and are based upon a diffusion process. There are enough reasons for the assumption that the chalk carbonization takes place much more slowly than its silicization. This is especially confirmed by the radiostructural analysis. The line of the calcium monohydrosilicate appears after two years whereas the lines of the calcium carbonate are still lack. There are 2 figures, 2 tables, 5 Slavic references. Institute for Physical Chemistry of the Academy of Sciences of the (Institut fizicheskoy khimii Akademii nauk SSSR) USSR  
Library of Congress.

ASSOCIATION

AVAILABLE  
Card 2/2



.5(4)

SOV/69-21-4-12/22

AUTHOR: Logginov, G.I., Rebinder, P.A. and Abrosenkova, V.F.

TITLE: The Interaction at Ordinary Temperatures of Calcium Hydroxide With Sand of Various Degrees of Dispersity

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 4, pp 442-448 (USSR)

ABSTRACT: This is a study of the interaction of calcium hydroxide with sand in aqueous solution. The experiments were carried out with the aid of isotope  $Ca^{45}$ , used in the form of  $Ca^{*}(OH)_2$ . The binding kinetics of the lime were studied with the chemical methods employed for the determination of free CaO. Object of the investigation was sand (quartz sand) of the Vol'sk deposit of different dispersity<sub>2</sub> (specific surface  $S_1$ ). The dispersity varied from  $S_1=0.11 \text{ m}^2/\text{g}$  (natural state) to  $S_1$  values equal to 0.62; 0.95; 2.6 and  $5.4 \text{ m}^2/\text{g}$  (finely ground).<sub>1</sub> The experiments, which continued for 6 months, were carried out at a temperature of  $17^{\circ} \pm 1^{\circ} \text{ C}$ . Figure 1 (graph) illustrates the binding kinetics of calcium ions from a saturated  $Ca(OH)_2$  solution with sand of the above-mentioned  $S_1$  values. The

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SOV/69-21-4-12/22

The Interaction at Ordinary Temperatures of Calcium Hydroxide With Sand of Various Degrees of Dispersity

curves show that independently of the dispersity of the sand, the binding process always consists of two stages: 1) chemisorption, which ends within one hour after the start of the interaction, and 2) a very long period of chemical binding of CaO at constant rates. The second process, evidently, is connected with the formation of calcium hydrosilicate, the latter being a new phase crystallized from the gradually formed supersaturated solution. According to K.G. Krasil'nikov, this process will finally result in the full binding of CaO in the hydrosilicate, which corresponds to a final concentration of  $\sim 0.006$  g/l, i.e. to a hydrolytic equilibrium of the calcium silicate in the solution. In the case of concentrated suspensions, this process results in the development of a solid crystalline hydrosilicate structure [reference 11], as is shown by the authors' experiments with small solid blocks of lime-sand binder. The specific surface of finely ground sand was determined on the basis of adsorption at low temperature. The medium values for

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The Interaction at Ordinary Temperatures of Calcium Hydroxide With Sand of Various Degrees of Dispersity.

each dispersity served for the calculation of the space occupied by a CaO molecule (table 1). The medium value ( $S_0$ ) of this space was found to be 10.2 Å. On the basis of the medium value  $S_0$ , and the value of CaO sorption, the authors also calculated the values  $S_1$  of coarsely-dispersed sand, which cannot be determined on the basis of nitrogen adsorption. Both methods, i.e. the method of investigating the CaO binding process with the aid of isotope  $Ca^{45}$  and the method of determining the active specific surface of sand through chemisorption of the same isotope, permit determination of the surface of sands of any dispersity. Low-temperature adsorption of nitrogen serves only for the determination of the surface of highly-dispersed sands ( $> 1 \text{ m}^2/\text{g}$ ). The remaining part of the study can be summarized as follows. The dependence of the rate of CaO binding on the dispersity of sand is subject to the equation of the semicubical parabola (figure 2). The hardening of lime-silica binders

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The Interaction at Ordinary Temperatures of Calcium Hydroxide With Sand of Various Degrees of Dispersity.

can be intensified (by 50%) by activation processes, i.e. by passing the limesilica binder through a vibromill. The discovery of the mechanism of CaO binding opens new technological possibilities to increase the strength of lime-silica products by adding substances, which increase the rate of dissolving of silica in water. In addition to the above-mentioned scientist, the authors mention D.S.Sominskiy and G.S. Khodakov. There are 4 tables, 3 graphs and 16 references, 14 of which are Soviet and 2 English.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR, Moskva  
(Institute of Physical Chemistry of the AS USSR, Moscow)

SUBMITTED: 15 November, 1958

Card 4/4

LOGGINOV, G.I.; REBINDER, P.A.; ABROSENKOVA, V.F.

Interaction between calcium hydroxide and sand of various degrees  
of dispersity at ordinary temperatures. Koll.zhur. 21 no.4:  
442-448 J1-Ag '59. (MIRA 13:8)

1. Institut fizicheskoy khimii AN SSSR, Moskva.  
(Calcium hydroxide) (Silica)

ABRQSIMOV, A.

Standardization in the motorcycle industry. Za rul. 21 no.2:  
3-4 F '63. (MIRA 16:4)

1. Ekspert Gosudarstvennogo komiteta Soveta Ministrov SSSR  
po avtomatizatsii i mashinostroyeniyu.

(Motorcycle industry--Standards)

ABROSIMOV, A.A., red.; KHAVIN, T.N., red.izd-va; MEDVEDEV, L.Ya.,  
~~tekhn.red.~~; KORNEYEVA, V.I., tekhn.red.

[Production standards on planning and surveying operations paid for by the piece rate system; automobile roads and city transport] Normy vyrabotki na proektnye i izyskatel'skie raboty, oplachivaemye sdel'no. Moskva, Gos.izd-vo lit-ry po stroit., arkh. i stroit.materialam. Pt.23. [Automobile roads, city transportation] Avtomobil'nye dorogi, gorodskoi transport. 1958. 29 p. (MIRA 12:9)

1. Russia (1923- U.S.S.R.) Glavnoye upravleniye po stroitel'stvu avtomobil'nykh dorog.  
(Highway engineering)

ABROSIMOV, Andrey Alekseyevich; TARBOV, Aleksandr Alekseyevich;  
PETROVSKAYA, Ye.K., red.; MANINA, M.P., tekhn. red.

[K-750, M-62 motorcycles] Mototsikly K-750, M-61, M-62.  
Moskva, Izd-vo "Fizkul'tura i sport," 1962. 204 p.

(MIRA 16:7)

(Motorcycles)



GINTSBURG, M.G.; ABROSIMOV, A.A., inzh., red.; VASIL'YEVA, I.A.,  
red.izd-va; DEMKINA, N.F., tekhn. red.

[Construction and operation of motorcycles] Ustroistvo i  
obslyuzhivanie mototsiklov. Izd.2., perer. Moskva, Mashgiz,  
1963. 316 p. (MIRA 16:10)  
(Motorcycles)

I 10716-65 ENT(1)/EPA(s)-2/ENG(k)/EWA(h)/T Pt-L/Pt-10/Per IJP(c)/SSD/AFM/ESD(t)/  
ACCESSION NO: A113315 10716-65/ENT(1)/EPA(s)-2/ENG(k)/EWA(h)/T

AUTHORS: Abroyan, L. A.; ISEKHOVICH, G. G.

TITLE: Secondary conductivity in p-Polysilane irradiated by hydrogen ions

SYNOPSIS: Polysilane irradiated by hydrogen ions...

DESCRIPTORS: Secondary conductivity; Polysilane; Irradiation; Hydrogen ions; Conductivity; Polysilane; Irradiation; Hydrogen ions; Conductivity

ABSTRACT: The authors have studied secondary conductivity produced by  $H_1^+$ ,  $H_2^+$ , and  $H_3^+$  with energies ranging from 500 to 7000 ev. It was found that a temporary increase in conductivity occurred because of excitation of electron-hole pairs by primary ions. The number of such pairs excited by a single hydrogen ion, to the complete cessation of the process, increased steadily with increase in initial energy. The number of electron-hole pairs excited by a single ion of any of the hydrogen ions was three times the number of electron-hole pairs excited by a single electron. Three times the number of electron-hole pairs that electrons did with the same

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L 19716-65

ACCESSION NR: AP4039655

4

initial energy. Prolonged bombardment led to a considerable increase in the number of particles.

A high energy source was used in the experiment. The results of the experiment are presented in the figures.

numyantsev for his useful discussions. Orig. art. has: 5 figuras.

ASSOCIATION: Leningradskiy politekhnicheskii institut im. M. I. Kalinina  
(Leningrad Polytechnical Institute)

DATE: 24Dec63

ENCL: 00

SUB CODE: NP, IC

NO REF SOV: 006

OTHER: 005

circ 2/2

L 58874-65 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EWA(h) Pz-6/Peb IJF(c)

JD/AT  
REF ID: A65017200

UP 10181/65/007/007/2007/2012

Arroyan, I. A.; Titov, A. I.

...ed conductivity in germanium ... by potassium ions in

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2007-2012

... electrical anisotropy, ... electrical conductivity, semiconductor, germanium

... investigated as they were bombarded with ...

... mental device consisted of a sphere with two mutually perpendicular extensions. One of these contained a source of alkaline ions while the other contained the single crystal germanium target. The target was oriented in such a way that the electric field in the sample was parallel to the axis of rotation. The angle of incidence

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00974-65  
ASSOCIATION NR: AF50172

destruction of the sample when the primary current was measured (the screen was lifted only while the current pulse of induced conductivity was measured) and also protected the surface of the target from contaminations which evaporated from the ion source during its activation. It was established in the experiment that the

ASSOCIATION: Leningradskiy politekhnicheskiv institut im. M. I. Kalinina (Leningrad Polytechnic Institute)

SUBMITTED: 29Dec64

ENCL: 00

SUB CODE: NP, EM

NO REF SOV: 003

OTHER: 005

Card <sup>84</sup> 2/2

L 5409-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b)/EMA(c) LJP(c) JD

ACC NR: AP5027386

SOURCE CODE: UR/0181/65/007/011/3159/3162

AUTHOR: Abroyan, I. A.; Lavrov, V. P.; Titov, A. I.

41  
37  
13

ORG: Leningrad Polytechnic Institute (Leningradskiy politekhnicheskii institut im. M. I. Kalinina)

TITLE: Secondary emission of germanium bombarded along various crystallographic axes by potassium ions

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3159-3162

TOPIC TAGS: semiconductor single crystal, single crystal, secondary emission, germanium single crystal

ABSTRACT: The ion-electron emission of germanium single crystals is studied to determine the effect which the crystal structure of the target has on secondary emission. Germanium specimens were bombarded with potassium ions at energies up to 7 kev, and secondary emission was measured as a function of the angle of incidence. It was found that the coefficient  $\delta_{0.1}$  (the ratio of the number of ions reflected from the target at energies greater than 0.1 kev to the total number of

Card 1/2

0701301

L 5409-66 EWT(l)/EWT(m)/T/EWP(t)/EMP(b)/EMA(c) LJP(c) JD

ACC NR: AP5027386

SOURCE CODE: UR/0181/65/007/G11/3159/3162

AUTHOR: Abroyan, I. A.; Lavrov, V. P.; Titov, A. I.

ORG: Leningrad Polytechnic Institute (Leningradskiy politekhnicheskiy institut  
im. M. I. Kalinina)

TITLE: Secondary emission of germanium bombarded along various crystallographic axes by potassium ions

SOURCE: Fizika tverdogo tela, v. 7, no. 11, 1965, 3159-3162

TOPIC TAGS: semiconductor single crystal, single crystal, secondary emission, germanium single crystal

ABSTRACT: The ion-electron emission of germanium single crystals is studied to determine the effect which the crystal structure of the target has on secondary emission. Germanium specimens were bombarded with potassium ions at energies up to 7 kev, and secondary emission was measured as a function of the angle of incidence. It was found that the coefficient  $\delta_{0.1}$  (the ratio of the number of ions reflected from the target at energies greater than 0.1 kev to the total number of

Card 1/2

07011301

L 14131-66 EWT(1)/EWT(m)/T/EWP(t)/EWP(b) IJP(c) JD/AT  
ACC NR: AP6000877 SOURCE CODE: UR/0181/65/007/012/3660/3662

AUTHORS: Abroyan, I. A.; Lavrov, V. P.; Fedorova, I. G.

60  
58

ORG: Leningrad Polytechnic Institute im. M. I. Kalinin  
(Leningradskiy politekhnicheskii institut)

TITLE: Angular dependence of the secondary-emission coefficients of single crystal KBr bombarded with potassium ions

SOURCE: Fizika tverdogo tela, v. 7, no. 12, 1965, 3660-3662

TOPIC TAGS: potassium bromide, single crystal, ion bombardment, secondary emission, angular distribution

ABSTRACT: This is a companion paper to similar work by the authors on semiconductor single crystals (FTT v. 7, 3759, 1965). The present investigation is devoted to the dielectric KBr single crystals, whose (100) face was bombarded with a pulsed potassium ion beam with energy 1 -- 6 kev. The axis of rotation of the crystal coincided with the [100] direction and made a right angle to the primary beam, the divergence of which did not exceed 2.5°. During the measurements the

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ACC NR: AP6000877

target was heated to a temperature at which no surface charging by the ion beam was produced (200 -- 300C). The results yielded non-monotonic variations of the secondary-emission coefficient and of the positive and negative ion-ion emission coefficients on the angle of incidence. In view of the increasing dependence of the secondary emission coefficient on the incident-ion energy, it is deduced that at still higher energies the increase of the coefficient with the angle will be steeper. This points out the advantage of using alkali-halide compounds as cathodes for multipliers used to register ions and neutral atomic particles. The positive ion-ion emission coefficient was found to be larger by a factor 4 -- 5 than the negative coefficient. This is attributed to the fact that the reflected ions of the primary beam contribute to the coefficient of positive ion-ion emission. Authors thank M. A. Yereyev and N. N. Petrov for interest in the work and useful advice. Orig. art. has: 2 figures. 2

SUB CODE: 20/ SUBM DATE: 01Jul65/ ORIG REF: 003/ OTH REF: 001

Card

fw  
2/2

L 36322-66 EWT(1)/EWT(m)/T/EWF(t)/ETI I:P(c) GG/AT/JD/JG

ACC NR: AP6015792 (A,N) SOURCE CODE: UR/0048/66/030/005/0884/0889

AUTHOR: Abroyan, I. A.; Yeremeyev, M. A.; Petrov, N. N. 84

ORG: Leningrad Polytechnic Institute im M. I. Kalinin (Leningradskiy politekhnicheskii institut)

21 2  
TITLE: Induced conductivity and secondary emission of semiconductors and dielectrics under positive ion bombardment /Report, Twelfth All-Union Conference on the Physical Basis of Cathode Electronics held in Leningrad 22-26 October 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 884-889

TOPIC TAGS: alkali halide, single crystal, germanium, secondary electron emission, electric conductivity, ion bombardment

ABSTRACT: The authors review the results of investigations conducted in the Ion Processes Laboratory of the Electronics Department of the Leningrad Polytechnic Institute concerning electron emission under ion bombardment of alkali halide and germanium single crystals and conductivity induced in germanium crystals by ion bombardment.

For fixed energy of incident atomic ions the secondary emission coefficient of an alkali halide crystal decreased with increasing ion mass; the coefficient for 0.6 keV H<sup>+</sup> ions incident on the (100) face of an NaCl crystal was 2, and for 0.6 keV Ar<sup>+</sup> ions the secondary emission coefficient was 0.7. The secondary emission coefficients at 0.6 keV incident ion energy for H<sup>+</sup>, H<sub>2</sub><sup>+</sup>, and H<sub>3</sub><sup>+</sup> ions were approximately equal, but

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L 36322-66

ACC NR: APG015792

at 10 keV the secondary emission coefficients for hydrogen molecular ions were greater than for protons, and the data were not compatible with the hypothesis that the molecular ion dissociates in the first collision. The secondary emission coefficient decreased with increasing temperature of the crystal; this is ascribed to scattering of electrons on their way to the crystal surface by phonons. Measurements were made at incident ion energies down to 10 eV. Different ions behaved very differently at very low energies; for some ions ( $\text{Ho}^+$  and  $\text{Ne}^+$  on alkali halide crystals) the secondary emission coefficient remained finite at the very lowest energies, whereas for other ions there was a threshold energy below which secondary emission did not occur. The conductivity induced in germanium crystals by a unit flux of bombarding ions increased with increasing ions energy and decreased with increasing ion mass. From a comparison of the conductivity induced by ion bombardment with that induced by electron bombardment it was estimated that a 100 eV  $\text{K}^+$  ion incident on germanium gives rise to about 6 electron-hole pairs. When the incident ion energy was equal to the threshold value of F. Seitz (Disc. Faraday Soc., 5, 271 (1949)), at least 30 % of the energy of incident  $\text{H}^+$  ions and 5 % of the energy of  $\text{K}^+$  ions was expended in inelastic collisions. The induced conductivity was maximum and the secondary emission coefficient was minimum when the ions were incident in one of the "transparent" directions  $[110]$ ,  $[111]$ , and  $[112]$ . From a comparison of the induced conductivity and secondary emission coefficients of germanium for electron and  $\text{K}^+$  ion bombardment, it was estimated that only one in several thousand of excited electrons escapes from the crystal. Orig. art. has: 1 formula, 7 figures, and 1 table.

SUB CODE: 20/

SUBM DATE: 00/

ORIG REF: 005/

OTH REF: 001

Card 2/2

L 00663-67 EWT(1)/EWT(m)/T/EWP(t)/FTI IJP(c) JD/GG

ACC NR: APG015786 (A, N) SOURCE CODE: UR/0048/66/030/005/0865/0867

AUTHOR: Abroyan, I. A.; Titov, A. I.

ORG: Leningrad Polytechnic Institute im. M.I.Kalinin (Leningradskiy politekhnicheskii institut)

TITLE: Changes in radiation conductivity under ion bombardment / Report, Twelfth All-Union Conference on the Physical Bases of Cathode Electronics held in Leningrad 22-26 October 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 5, 1966, 865-867

TOPIC TAGS: germanium, single crystal, ion bombardment, lattice defect, electric conductivity, radiation effect

ABSTRACT: The effect of bombardment with 3 keV  $K^+$  ions on the coefficient of radiation-induced conductivity (ratio of the induced conductivity to the inducing radiation flux) of a 35 Ohm cm germanium crystal has been investigated by a technique that is described elsewhere by the authors (Fiz. tverdogo tela, 7, 2007 (1965)). The surface of the target was perpendicular to the [111] axis and the bombarding ions were incident in the [100] direction. A dose of  $10^{14}$  ions/cm<sup>2</sup> was found to reduce the radiation-induced conductivity coefficient by an order of magnitude. The radiation-induced conductivity coefficient, as a function of the incidence angle of the inducing radiation, showed a pronounced maximum at an incidence angle of  $35^\circ$ , corresponding to incidence in the

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L 00663-67  
ACC NR: AP6015786

[110] direction. Although increasing the dose of 3 keV  $K^+$  ions from zero to  $3 \times 10^{14}$  ions/cm<sup>2</sup> greatly reduced the radiation conductivity coefficient, it did not affect the position and relative height of this maximum. The number of pairs of Frenkel defects due to the ion bombardment was estimated by dividing the energy dose by half the threshold energy for producing a pair of defects. For the  $3 \times 10^{14}$  ions/cm<sup>2</sup> does this calculation gave a defect density of  $1.8 \times 10^{16}$  cm<sup>-2</sup>, corresponding to about 20 interstitial germanium atoms in each channel in the [110] direction. The authors argue that so high a density of defects should alter the dependence of the radiation conductivity coefficient on the incidence angle, and conclude that the defect density was not actually so high as calculated. Two possible reasons for the discrepancy are suggested: either there may have been a partial anneal of interstitial atom - vacancy pairs, or a particle moving in the [100] direction in a germanium crystal may expend considerably more than half its energy in collisions in which the energy transfer is below the threshold for defect production. Orig. art. has: 1 formula and 2 figures.

SUB CODE: 20/

SUM DATE: 00/

ORIG REF: 004/

OTH REF: 002

Card 2/2 vlr

radiation of antimony 124. A. V. Zolotarev, E. P. 2  
M. A. Abramov, A. A. Zolotarev, G. M. Gulya

ABROJIAN, M. A.

95

8/089/62/013/006/019/027  
B102/B186

AUTHORS: G. T. and M. R.

TITLE: Nauchnaya konferentsiya Moskovskogo inzhenerno-fizicheskogo instituta (Scientific Conference of the Moscow Engineering Physics Institute) 1962

PERIODICAL: Atomnaya energiya, v. 13, no. 6, 1962, 603 - 606

TEXT: The annual conference took place in May 1962 with more than 400 delegates participating. A review is given of these lectures that are assumed to be of interest for the readers of Atomnaya energiya. They are following: A. I. Leypunskiy, future of fast reactors; A. A. Vasil'yev, design of accelerators for superhigh energies; I. Ya. Pomeranchuk, analyticity, unitarity, and asymptotic behavior of strong interactions at high energies; A. B. Migdal, phenomenological theory for the many-body problem; Yu. D. Fizevskiy, deceleration of medium-energy antiprotons in matter; Yu. M. Kogan, Ya. A. Iosilevskiy, theory of the Mössbauer effect; M. I. Ryazanov, theory of ionisation losses in nonhomogeneous medium; Yu. B. Ivanov, A. A. Rukhadse, h-f conductivity of subcritical plasma;

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Nauchnaya konferentsiya...

S/089/62/013/006/019/027  
B102/B186

design of 30-Mev electron linear accelerator; Ye. G. Pyatnov, A. A. Glaskov, V. G. Lopato, A. I. Finogenov, G. N. Skepskiy, V. D. Seleznev, experimental characteristics of low-energy electron linear accelerators; G. A. Zeytlenk, V. M. Levin, S. I. Piskunov, V. L. Smirnov, V. K. Khokhlov, radio-circuit parameters of ЛУЭ (LUE)-type accelerators; G. A. Tyagunov, O. A. Val'dner, B. M. Gokhberg, S. I. Korshunov, V. I. Kotov, Ye. M. Moroz, accelerator classification and terminology; O. S. Milovanov, V. B. Varaksin, P. R. Zenkevich, theoretical analysis of magnetron operation; A. G. Tragov, P. R. Zenkevich, calculation of attenuation in a diaphragmated waveguide; Yu. P. Lazarenko, A. V. Ryabtsev, optimum attenuation length for linear accelerator; A. A. Zhigarev, R. Ye. Yeliseyev, review on trajectographs; I. G. Morozova, G. A. Tyagunov, review on more than 500 ion sources; M. A. Abroyan, V. L. Komarov, duoplasmatron-type source; V. S. Kusnetsov, A. I. Solnyshkov, calculation and production of intense ion beams; V. M. Rybin (Ye. V. Armenskiy), inductive current transmitters of high sensitivity; V. I. Korosa, G. A. Tyagunov, kinetic description of linear acceleration of relativistic electrons; A. D. Vlasov, phase oscillations in linear accelerators; E. L. Burshcheyn, G. V. Voskresenskiy, beam field effects in the waveguide of an electron linear accelerator; R. S. Bobovikov,

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"APPROVED FOR RELEASE: 06/05/2000      CIA-RDP86-00513R000100310006-0

SOLNYSHKOV, A. I. ; KOMAROV, V. P.; KUZNETSOV, V. S.; ABROYAN, M. A.; IVANOV, N. F.  
ZHELEZNIKOV, P. G.; ROYFE, I. M.; ZABLITSKAYA, G. R.; IVLEV, I. V. ; LATMANISOVA, G. M.  
and GERASIMOV, V. P.

Current Injector for a Strong Focussed Linac.

report presented at the Intl. Conf. on High Energy Accelerators, Dubna, August 1963.

APPROVED FOR RELEASE: 06/05/2000      CIA-RDP86-00513R000100310006-0"

ACCESSION NR: AT4035115

S/3092/63/000/001/0119/0133

AUTHORS: Abroyan, M. A.; Komarov, V. L.

TITLE: Pulsed large-current ion source

SOURCE: Moscow. Nauchno-issledovatel'skiy institut elektrofizicheskoy apparatury\*. Elektrofizicheskaya apparatura; sbornik statey, no. 1, 1963, 119-133, and chart B facing away from p.204

TOPIC TAGS: ionized plasma, plasma jet, plasma source, proton synchrotron, plasma injection, ion beam, ion source

ABSTRACT: In view of the lack of published data on ion sources with beam currents on the order of 1 ampere and above, the authors report an investigation of a pulsed ion source of the dual plasmatron type, intended for pre-injection in a proton synchrotron. The present dual-plasmatron output limit, approximately 530 milliamperes, has been increased by modifying the geometry in the ion selection

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ACCESSION NR: AT4035115

region and by operating at a forced discharge mode. In addition to attaining large current it was necessary to impart to the beam definite optical characteristics to match it to the optical system of the accelerator tube. The plasma generation principle is the same as proposed by Ardenne (Tabellen der Elektronenphysik, Ionenphysik und Uebermikroskopie, Veb Deutsch. Verlag der Wissenschaften, Berlin, 1956). The pulsed current reaches 1.5 amperes, and a focused ion beam with a current of approximately 170 milliamperes can be obtained, with a minimum diameter of 10 mm at 70 keV. Experiments show that if an immersion lens with larger potentials and compensation is used, a much larger ion current can be focused in this diameter. The present value of the beam current is limited by the limits of plasma flow through the emission aperture in the selection region, and by the slight divergence of the plasma as it diffuses through a small aperture. Further increase in the ion current can be attained by increasing the source dimensions and source parameters. A continuous current of 1 ampere can be attained by improving the cooling

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ACCESSION NR: AT4035115

of the anode and of the grid in the drawing electrode. Multi-jet plasma sources, which produce a dense plasma with large surface in the selection region, will contribute to the production of larger ion beams. The authors thank I. F. Maly\*shev for interest in the work, F. G. Zheleznikov and A. I. Solny\*shkov for a useful discussion, and V. S. Fokin, V. A. Grinevich, and I. N. Dorofeyev for help with the work. Orig. art. has: 12 figures.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 07May64

ENCL: 02

SUB CODE: ME, NP

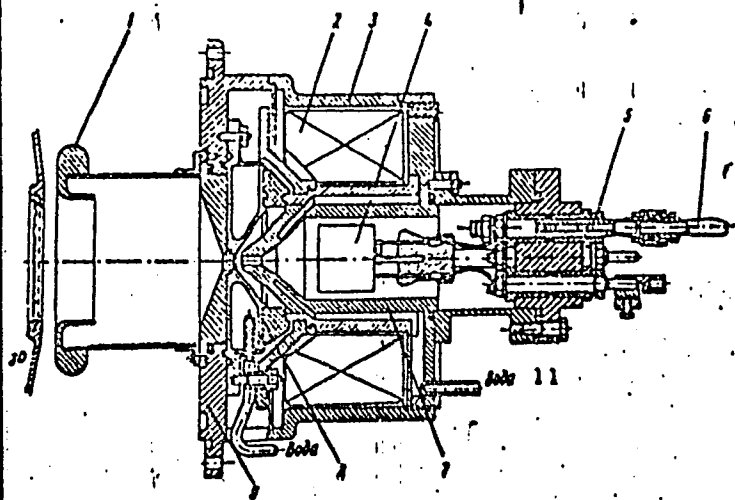
NR REF SOV: 006

OTHER: 003

Card 3/5

ACCESSION NR: AT4035115

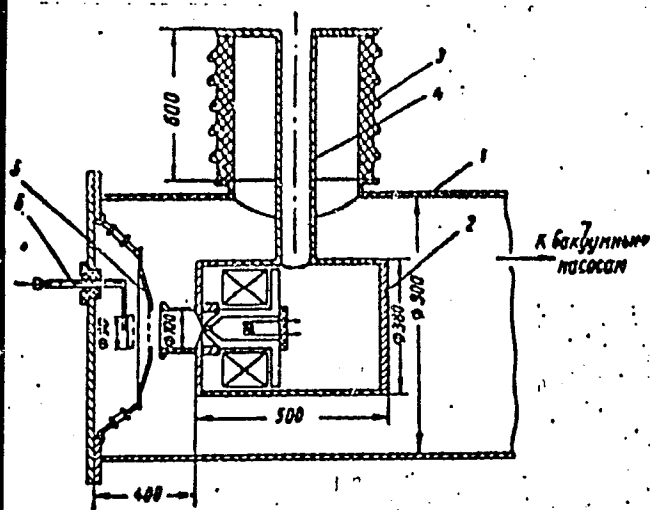
ENCLOSURE: 01



Construction of ion source

- 1 -- gasket, 2 -- coil, 3 -- armor,
- 4 -- cathode, 5 -- cathod current lead, 6 -- gas supply, 7 -- intermediate anode, 8 -- cooling unit, 9 -- principal anode, 10 -- drawing electrode with grid, 11 -- water

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Principal diagram of test stand

- 1 -- vacuum container, 2 -- auxiliary container in which the source is located,
- 3 -- 200 kV insulator, 4 -- connecting tube through which the source is fed and cooled,
- 5 -- drawing electrode with grid,
- 6 -- moving collector, 7 -- to vacuum pumps

Card 5/5

L 59241-65 EWT(m)/EPA(w)-2/EWA(m)-2 Pt-7 IJP(c) GS

ACCESSION NR: AT5007937

S/0000/64/000/000/0507/0512

59

AUTHOR: Abroyan, M. A.; Gerasimov, V. P.; Zheleznikov, F. G.; Zablotskaya, G. R.;

Abroyan, M. A.; Gerasimov, V. P.; Zheleznikov, F. G.; Zablotskaya, G. R.

TOPIC TAGS: linear accelerator, strong focusing accelerator, electron optics

ABSTRACT: Conditions governing injection in linear particle accelerators determined

Card 1/3

L 59241-65

ACCESSION NR: AT5007937

considerable contribution to the design of the...  
ing of the selected version of the...  
...  
...  
... The author discusses the full...  
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Card 2/3



L 59241-65

ACCESSION NR: AT5007937

SUBMITTED: 26May64

ENCL: 00

SUB CODE:

NP

NO REL SOV: 003

OTHER: 002

Card 3/3

R/033/52/000/001/007/007  
D272/5304

AUTHORS: Lăzărescu, I., Abrudan, G. and Arghir, G.

TITLED: On the machining accuracy of conical components

PERIODICAL: Mecanica aplicata, <sup>13</sup>no. 1, 1962, 219-234

TEXT: An analytical study was performed on the effects of geometric parameters in external and internal machining of conical items, assuming rectilinear and hyperbolic cutting edges. Formulas are derived for the coefficients of the hyperbolic errors; the latter are found to increase with growth of the disengaging angle  $\gamma$ ; the hyperbolic errors of the profiled disc cutting tool increase with growth of the angles  $\gamma$  and  $\varepsilon$  ( $\varepsilon = \gamma + \alpha$ ,  $\alpha$  being the positioning angle of the cutting tool); the hyperbolic error of the tool is much higher than that of the component itself when  $d$  or  $d_1$  (the small or the large diameters of the truncated conical component) is equal to that of the disc profiled cutting tool  $D$ ; the hyperbolic error of the cutting tool increases up to a certain value

Card 1/2

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ABRUDAN, I., ing.

Insulating joints installed at the sections of insulated rails.  
Rev cailor fer 10 no.3:143-144 Mr '62.

1. Sectia C.T. lucrari noi, Cluj.

ABRUDAN, I., ing.

Determining the number of plates for the transpositions of telephonic circuits with the aid of tables. Rev callor for 10 no.4:193-195 Ap '62.

1. Sectia C. T. lucrari noi, Cluj.

ABRUDAN, I., ing.

Installation for the automatic start of the semi-diesel  
aggregates TN-25 h.p. Rev callor fer 10 no.2:85-87 F '62.

1. Seful sectiei C. T. Lucrari Noi, Cluj.

ABRUDAN, Ioan, ing.

Signaling blade for exit railway signals applied on the  
"Fabrica de telefoane" signal type. Rev cailor fer 10  
no.5:255-256 My '62.

1. Seful Sectiei C.T. Lucrari Noi, Cluj.

ABRUDAN, V., ing.; CIOBANU, M., ing.; PETRESCU, Gh., ing.; VILVOI, V.; IONESCU, C., ing.; KESTENBAUM, S.; FORRAI, St., ing.; FUCIU, Martian; NILA, Vasile, ing.; AROMINESEI, Alexandru; MORARU, Nicolae, ing.; BOGHICI, A.; SIMIONESCU, M.

Reduction of specific consumptions of metal. Probleme econ 17 no.12:137-141 D '64.

1. Technical Director, Arad Plant of Railroad Cars (for Abrudan). 2. Chief Technologist, Arad Plant of Railroad Cars (for Ciobanu). 3. Technical Director, "1 Mai" Plant, Ploiesti (for Petrescu). 4. Chief Planning Engineer, "1 Mai" Plant, Ploiesti (for Vilvoi). 5. Director, "Infratirea" Machine Tool Plant, Oradea (for Ionescu). 6. Assistant Chief Engineer, "Infratirea" Machine Tool Plant, Oradea (for Kestenbaum). 7. Chief Technologist, "Infratirea" Machine Tool Plant, Oradea (for Forrai). 8. Director, Arad Plant of Lathes (for Fuciu). 9. Chief Technologist, Arad Plant of Lathes (for Nila). 10. Chief Engineer, Arad Plant of Lathes (for Arominesei). 11. Technical Director, "Independenta" Plant, Sibiu (for Moraru). 12. Director, Sinaia Mechanical Plant (for Boghici). 13. Chief Engineer, Sinaia Mechanical Plant (for Simionescu).

ABRUKHIN, A.L.

Errors in the form of dynamograms in teledynamometric systems.  
Neft. khoz. 39 no.6:50-54 Je '61. (MIRA 14:8)  
(Dynamometer) (Telemetry) (Oil wells)



ARRUKIN, A.I.

Varying the amplification factor of amplifiers used in electronic  
controllers. Priborostroenie no.5:28-29 My '60. (MIRA 14:5)  
(Amplifiers, Electron-tube)

AERUKIN, A. L.

"Time-Pulse Converters of the All-Union Scientific Research Institute of the Ministry of Petroleum Industry," paper delivered at the All-Union Conference on Telemetering and the National Economy, 29 Nov - 4 Dec 1954, Moscow

ABRUKIN, A.L.

AID P - 3963

Subject : USSR/Mining  
Card 1/2 Pub. 78 - 8/27  
Author : AbruKin, A. L.  
Title : Teledynametrical recording of depth oil well pumping.  
Periodical : Neft. khoz., v. 33, #12, 26-31, D 1955  
Abstract : In order to control the operation of pumping in deep wells, teledynameters are installed for recording on dynamograms the data necessary for the appraisal of the performance and state of fitness of the sucker-rod pumping equipment. These teledynameters are installed individually in each well and are connected by an electric circuit to a dispatching center from which the dynamogram of each well can be switched with a dynamoscope for observation of stresses and stroke displacements. A teledynametrical circuit designed by the All-Union Scientific Research Institute (VNII) is described. Diagrams. 4 references, 1947-1954.

Neft. khoz., v. 33, #12, 26-31, D 1955

AID P - 3963

Card 2/2 Pub. 78 - 8/27

Institution : None

Submitted : No date

ABRUKIN, A. L.

"Time Impulse Transformer for Telemetry" (Vremyainpul'snyy preobrazovatel' dlya teleizmereniya) from the book Telemechanization in the National Economy, pp. 348-351, Iz. AN SSSR, Moscow, 1956

(Given at meeting held in Moscow 29 Nov to 4 Dec 54 by Inst. of Automatics and Telemechanics)

ABRUKIN, A.L., starshiy inzhener.

Remote control of well operations. Neftianik 1 no.1:24-25 Ja '56.  
(MLRA 9:7)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut po dobyche nefi.  
(Oil wells--Equipment and supplies) (Remote control)

ABRUKIN, A. L. Cand Tech Sci -- (diss) "The Method of  
Teledynamomentering <sup>of deep</sup> ~~Applied to Underground-Pump~~ Wells." Mos, 1957.  
11 pp 20 cm. (Academy of Sciences USSR, Inst of Automation and  
Telemechanics), 105 copies (KL, 26-57, 107)

AUTHOR: Abruksin, A.L.

TITLE: Teledynamomentering Deep Wells (Teledinamometrirovaniye glubinnonasosnykh skvazhin)

PERIODICAL: Naftyanoye Khozyayostvo, 1957, Nr.4, pp.26-34 (USSR)

ABSTRACT: It is time to throw some light on certain practical and theoretical questions pertaining to teledynamomentering. According to the requirements of the VNII (All-Union Scientific Research Institute), a teledynamomentering system should be simple and convenient. It should require a minimum of instrument parts. Its remote control lines should not exceed 2 - 3 in number. The instruments should operate with a minimum of static and dynamic error, the latter not exceeding the allowable margin of error of the dynamograph. Voltage fluctuations, electrical interference, etc., should have no appreciable effect on the performance of the system. Operation should be easy and simple. With the teledynamometer and selector systems it is possible to check rapidly a large number of wells. They should also afford a very rapid transfer of operations from one well to another. The author proceeds to discuss the following points: deep well dynamographic readings made with the aid of periodic curves; the principle on which teledynamomentering is based; cer-

Card 1/2



ABRUKIN, M. L.

AUTHOR:                  None Given    30-58 4-37/44

TITLE:                    Dissertations (Dissertatsii). Department of Technical  
Sciences (Otdeleniye tekhnicheskikh nauk). July-December  
1957 (Iyul'-Dekabr' 1957 g.)

PERIODICAL:              Vestnik Akademii Nauk SSSR, 1958,                                  Nr 4,  
pp. 123-123 (USSR)

ABSTRACT:                1) At the Institute of Automation and Remote Control (Institut  
avtomatiki i telemekhaniki) the following dissertations for  
the degree of Candidate of Technical Sciences were defended:  
A. L. Abruin - Method of the Remote Dynamometric Control of  
the Pumps in Deep Mineral Oil Bore Holes (Metod teledinamo-  
metrirovaniya glubinnonasosnykh neftyanykh skvazhin).  
G. G. Jordan - Investigation of the Method of Automatic Control  
of the Liquid Level by Means of Radioisotope Radiation  
(Issledovaniye metoda avtomaticheskogo kontrolya urovnya  
zhidkosti s pomoshch'yu izlucheniya radioizotopov).  
A. B. Chelyustkin - Automatic Control of the Electric Drive  
and Mechanisms of the Cogging Mill Train (Avtomaticheskoye  
upravleniye elektroprivodami i mekhanizmami bluminga).

Card 1/4                2) At the Mining Institute (Institut gornogo dela) the

Dissertations. Department of Technical Sciences.  
July-December 1957

30-58-4-37/44

following dissertations were defended:

a) for the degree of Doctor of Technical Sciences:

A. Ch. Musin - Investigation of the System With Open Purification Space With Adaption to the Exploitation of Sloped Deposits of Dzhezkazgan (Issledovaniye sistem s otkrytym oobistnym prostranstvom primenitel'no k razrabotke pologopadayushchikh zalezhey Dzhezkazgana).

b) for the degree of the Candidate of Technical Sciences:

M. A. Al'tshuler - Improvement of the Exploitation System by Means of Mine Production (Usovershenstvovaniye sistemy razrabotki s minnoy otboykoy).

F. A. Barsukov - Investigation of the Important Parameters of the Subterranean Extraction by Means of Deep Gaps in the Exploitation of Thick Deposits of Solid Ores With a Magnetic Anomaly of Kursk (Issledovaniye osnovnykh parametrov podzemnoy otboyki glubokimi skvazhinami pri razrabotke moshchnykh mestorozhdeniy krepkiykh rud Kurskoy magnitnoy anomalii).

V. I. Golomolzin - Determination of the Optimum Parameters of the Pits Under the Conditions of the Krasnoarmeysk District of the Donets Basin (Opredeleniye optimal'nykh parametrov shakht v usloviyakh Krasnoarmeyskogo rayona Donetskogo basseyna)

Card 2/4

Dissertations. Department of Technical Sciences.  
July-December 1957

30-58 -4-37/44

G. P. Nikonov - Investigation of the Hollowing Out of Uncovered Rocks in a Hydraulic Excavator Exploitation of Coal Deposits (Issledovaniye razmyva vskryshnykh porod pri gidromonitornoy razrabotke ugol'nykh mestorozhdeniy).

A. D. Pomortsev - Investigation of the Suitability of the Exploitation of Steep Layers of a Thickness of 2-4 , by Means of a Shield System (Issledovaniye tselesoobraznosti razrabotki krutopadayushchikh plastov moshchnost'yu 2-4 m shchitovoy sistemoy).

3) At the Institute for Combustible Mineral Resources (Institut goryuchikh iskopayemykh) the following dissertations for the degree of Candidate of Technical Sciences was defended:

A. N. Strukov - Influence of the Properties of Coke on the Melting Process of Metal in the Cupola Furnace (Vliyaniye svoystv koksa na protsess plavki metalla v vagranke).

4) At the Institute of Metallurgy imeni A. A. Baykov (Institut metallurgii imeni A. A. Baykova) the following dissertations for the degree of the Candidate of Technical sciences were defended:

Card 3/4

M. I. Gromov - Investigation of the Desulfurization Process

Dissertations. Department of Technical Sciences.  
July-December 1957

30-58-4-37/44

of Pig Iron in a Rotation Furnace (Issledovaniye protsessa desul'furatsii chuguna vo vrashchayushcheysya pechi).  
E. S. Kadaner - Application of the Method of Quantitative Autoradiography for the Investigation of the Microheterogeneity of Light Metal Alloys (Primeneniye metoda kolichestvennoy avtoradiografii dlya issledovaniya mikroneodnorodnosti legkikh plavov).

A. S. Medvedev - Properties of Alloys Soldered by Means of Tin - Lead Solders as well as Some Problems of Soldering of the Air Separation Apparatuses (Svoystva soyedineniy, payannykh olovyanno-svintsevymi pripoyami i nekotoryye voprosy payki vozdukhorazdelitel'nykh apparatov).

L. V. Pliginskaya - On the Problem of the Electro - Precipitation of Nickel From Sulfate Solutions (K voprosu elektroosazhdeniya nikelya iz sernokislykh rastvorov).

1. Mining engineering---Bibliography      2. Bibliography---  
Mining engineering

Card 4/4

9 (5)

AUTHOR:

Abruikin, A. L., Engineer

SOV/119-59-6-5/18

TITLE:

Dynamic Working Conditions and the Equivalent Circuit Diagram of an Inductive Transformer-Feeler (Dinamicheskiy rezhim i ekvivalentnaya skhema induktivnogo transformatornogo datchika)

PERIODICAL:

Priborostroyeniye, 1959, Nr 6, pp 13 - 15 (USSR)

ABSTRACT:

The present paper deals with the working conditions of an inductive feeler belonging to the differential transformer type, which serves for the measurement of slight changes of position (Fig 1). As is usual in the analysis of circuits containing a transformer, also here the transformer is represented by an equivalent circuit diagram (Fig 2). Under certain conditions, this representation may be made by means of a bipolar linear system. These conditions involve: 1) Neglect of the surface effect in the distribution of the magnetic current; 2) Assumption of a linear connection between magnetic induction and voltage of the magnetic field; 3) Neglect of the losses arising from magnetic reversal and eddy currents. First, the equations are derived concerning the primary and secondary circuit of the feeler in the static condition (inoperative armature). In consequence of the conditions mentioned the computation yields

Card 1/2

Dynamic Working Conditions and the Equivalent Circuit SOV/119-59-6-5/18  
Diagram of an Inductive Transformer-Feeler

somewhat higher values as compared to experimental data. The further computation concerns the dynamic working conditions with shifted armature. The condition for the minimum error arising in consequence of an electromotive force occurring with shifted armature, is derived from the relation between the change of position of the feeler and the voltage frequency of the feeding system. There are 2 figures and 5 Soviet references.

Card 2/2

S/194/62/000/006/069/232  
D295/D308

16.8/60

AUTHOR:

Abruikin, A.L.

TITLE:

Some theoretical and engineering problems of the design of frequency telemechanical systems for dispersed objects

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-2-177 yu (Tr. Vses. neftegaz. n.-i. in-t, no. 35, 1961, 81-97)

TEXT: A number of frequency-type telemechanical systems (the ЧТ-1 (ChT-1), the ЧТ-2K (ChT-2K), the ГУФ (GUF) etc.) have been recently developed, in which there is one frequency relay, tuned to its own particular frequency, at each actuating point. Tests of the ChT-1 and ChT-2 have shown that the probability of faulty selection is fairly high owing to the neglect of a number of factors. In order to increase reliability, the range of selection frequencies (which for the ChT-1 is meant to be within 40-330 c/s) has been considerably widened in some recent developments. In the ChT-3, to ensure even greater reliability, use is made of a linearly increasing se-  
Card 1/2

Some theoretical and engineering ...

S/194/62/000/006/069/232  
D295/D308

lection signal, which is limited in voltage to a value not exceeding twice the value of the operating voltage of the frequency relay. The jump-wise insertion of signal, previously adopted, led to spurious operation owing to transient over-current and over-voltage. A mathematical analysis is given of the selection process with a linearly-increasing signal; the methods of applying the selection signal are compared, and the selection-reliability factor is calculated. Three circuit versions of frequency relays in combination with transistors are investigated. 5 references. [Abstractor's note: Complete translation.]

Card 2/2



ABRUKIN, A.L.; OLEGOV, D.O.

Study of the stability of resonance relay networks for the  
ChT-3-type system. Trudy VNII no.35:117-121 '61. (MIRA 15:1)  
(Oil fields--Equipment and supplies)  
(Remote control)

ABRUKIN, Abram L'vovich; KHIRNYKH, Leonid Andreyevich; PEREVERZEV, V.V., red.; GOR'KOVA, A.A., ved. red.; YAKOVLEVA, Z. I., tekhn. red.

[Remote control in petroleum production] Telemekhanizatsiia  
dolychi nefiti. Moskva, Gostoptekhizdat, 1962. 302 p.  
(MIRA 16:2)

(Remote control)  
(Oil fields--Equipment and supplies)

ABRUKIN A.L. 1

IVANKOV, P.A., TATEISHVILI, O.S., ABRUKIN, A.L.

Electric model tests, control and automation of deep well pumps.

Report to be submitted for the Sixth World Petroleum Congress,  
Frankfurt, 16-26 June 63

L 41717-66 EWT(d)/EWP(1) IJP(c) BR/SG  
ACC NR: AT6011828 (A) SOURCE CODE: UR/3176/65/000/001/0090/0102

AUTHOR: Abruin, A. L.

65  
PAI

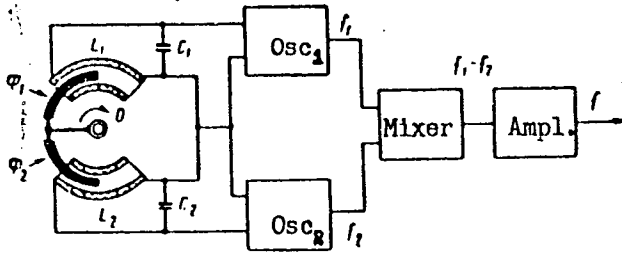
ORG: none

TITLE: Ferrite-transistor angle-to-frequency converter 160

SOURCE: Vsesoyuznyy nauchno-issledovatel'skiy i proyektno-konstruktorskiy institut kompleksnoy avtomatizatsii v neftyanoy i gazovoy promyshlennosti. Trudy, no. 1, 1965. Avtomatizatsiya tekhnologicheskikh protsessov (Automation of technological processes), 90-102

TOPIC TAGS: angle frequency converter, signal transducer, oscillation, flow meter, torque, transistorized oscillator, ferrite, transistor

ABSTRACT: The development of a new signal transducer for converting the angle of torsion of a string-type flowmeter into frequency is reported. The well-known ferrite-core-inductance oscillator-frequency control principle is used (see figure). Purely constructional advantages, such as small size, no appreciable friction or reactive torque, are claimed. Factors influencing the linearity, stability, and accuracy of



Angle-to-frequency signal transducer

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L 41717-66

ACC NR: AT6011828

operation of the transducer are analyzed. Experimental plots of oscillator frequency (20—45 kc) and coil inductance vs. angle are shown; within  $20^{\circ}$ — $90^{\circ}$ , the above characteristics are nearly linear; they correspond to an output beat-frequency band of 20 kc. The conditions of transistorized-oscillator stability are briefly reviewed on the basis of various published sources. Laboratory tests revealed that the oscillator frequency drifts by  $5 \times 10^{-5}$  per 1 v of supply voltage; the beat frequency (15 kc) changed by 14 cps upon a change in temperature from 20C to 84C. The transducer was tested in conjunction with a depth petroleum string-type flowmeter, at the NPU Leninogorsk-neft' oilfields, in 1963. Orig. art. has: 5 figures and 20 formulas.

SUB CODE: 09 / SUBM DATE: none / ORIG REF: 004 / OTH REF: 002

Card 2/2 -191

SUD, Isaak Izrailevich, inzh.; SULKHANISHVILI, Ivan Nikolayevich,  
kand. tekhn. nauk; SHKOL'NIKOV, Bernard Markovich, kand. tekhn.  
nauk. Prinsipal uchastiye ABRUKIN, A.L., kand. tekhn. nauk;  
SIDOROV, V.N., inzh., ved. red.; POLOSINA, A.S., tekhn. red.

[Oil-field electrical engineering handbook] Spravochnik  
neftepromyslovogo elektrika. [By] I.I.Sud, I.N.Sulkhanishvili,  
B.M.Shkol'nikov. Moskva, Gostoptekhizdat, 1961. 510 p.  
(MIRA 15:4)

(Petroleum industry--Electric equipment)

*АБРУКИН, Н.*

АБРУКИН, Н.

School five-year plan. IUn.tekh.no.12:8-9 D '57. (MIRA 10:12)

1. Srednyaya shkola No.1, stantsiya Kitab, Uzbekskaya SSR.  
(Schools--Exercises and recreations)

15-57-1-380

: Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,  
pp 60-61 (USSR)

AUTHOR: Abrukina, R. Ye.

TITLE: The Paleogeography of the Galician Gulf (K paleo-  
grafii Galitsiyskogo zaliva)

PERIODICAL: Uch. zap. Kishinevsk. un-ta, 1955, pp 7-12.

ABSTRACT: The shallow-water Galician Gulf in Lower Sarmatian  
time occupied the southern part of the Dnestr River  
valley, northern Bessarabia and northern Bucovina,  
extending on the southwest to the Carpathian high-  
mountain flysch. On the east, the Galician Gulf is  
connected to the Crimean-Caucasian region of the  
Sarmatian basin. In northern Bucovina--the deepest  
(approximately 200 m) part of the gulf, and possibly  
the part with the highest salinity--clays with layers  
of fine-grained sands and plant remains were deposited  
during the Sarmatian interval. The alternation of  
sediment is explained by periodic, probably seasonal,

Card 1/3



15-57-1-380

## The Paleogeography of the Galician Gulf (Cont.)

changes in the physical-geographical environment. The wealth and variety of a mediterranean fauna disappears. A uniform fauna of molluscs, predominantly pelecypods, is present; Modiola incrassata Orb., Syndesmya reflexa Eichw., Donax dentiger Eichw., Ervillea dissita Eichw., Mastra eichwaldi Lask., Cardium lithopodolicum Dub., C. praeplicatum (Hilb) Lask., C. ruthenicum (Hilb) Lask. A few poorly-preserved species of Cerythium are found, and foraminifers (miliolids, elphidiins, nonionids, cibicidins, and rotaliids) are also present. To the north, along the right bank of the Dnestr, the rocks give way to shallow-water sandstones and oolitic limestones. The same time interval is represented by bryozoan and serpulitic reefs (along the line from Nagoryany to Lipkany) in the northern part of the Galician Gulf (northern Bessarabia). These rocks accumulated on reef structures of a second mediterranean epoch. Fine-grained marls and clays were deposited on both sides of this zone. Such sediments are explained by a lack of streams emptying into this part of the Galician Gulf. The gulf migrated to the east in Middle Sarmatian time, in response to the Carpathian uplift. The western shore passed into northern Bucovina along an arc through

Card 2/3

15-57-1-380

The Paleogeography of the Galician Gulf (Cont.)

Berdo, Tsetsino, Storozhinets and farther to the south and southeast. Sandy oolitic limestones and conglomerates were deposited in the shallow-water northern Bucovina bay of the Galician Gulf. To the south, deep-water clays accumulated. The rocks contain a few predominantly immature and small (in a rapidly advancing sea) Middle Sarmatian molluscs (Tapes gregarius Partsch., Mastra tapesoides Sinz., and others) and bryozoans of the genera Microporella, Diastopora, and Cellepora. Deposits in the shallower water parts contain benthonic foraminifers: miliolids, elphidiins, cibicidins and Nubecularia novorossica Karr. and Sinz. The Galician Gulf finally dried up in Upper Sarmatian time.

Card 3/3

Yu. Ye. B.

Use of the method of Tepler's bands in the quantitative investigation of a jet flame. S. A. Abramov and P. V. Klevtsov (V. I. Ufeyanov-Leach, ~~S. A. Abramov~~, Karum). *Zhur. Fiz. Khim.*, 27, 1147-51 (1953). - The Tepler-band method was used to det. the distribution for n. d., and the temp. within the inner cone of a flame. The flame used was a 10% mixt. of CO and air burned in a glass tube with an inside diam. of 5.9 mm. and a length of 700 mm. The value of the max. temp. (1763°) agrees with that obtained by the method of rotating spectral lines (1850°). The Tepler-band method is satisfactory for studying the structure of a flame.

J. Rovtar Leach

9/1/55  
LW

✓ Possibility of the application of interference phenomena in  
 the Loepler apparatus for quantitative investigation.  
 Abulov and A. G. Shadrin, *Zhur. Tekh. Fiz.* 23, 2200  
 (1953). — Although the interference phenomena in Maksutov's  
 modification of the Loepler apparatus are not  
 optical. Leningrad-Moscow, 1948. — The mirror-microscope  
 Loepler app. still require a stricter interpretation in terms  
 of modern ~~phys. laws~~, they can never be used for  
 empirical and quantitative investigations. — The  
 and the interference phenomena in the Loepler app.  
 terms of modern optics. — It is necessary to  
 obtained by the Loepler apparatus. — It is necessary  
 with particular care to study the

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