GURNSPAN, M.; SUCMANSCHI, Maria

Effect of insulin upon the anaphylactic shock and the liberation of histamine in dogs. Studii cerc fiziol 5 no.3:571-578 '60. (EEAI 10:2)

1. Institutul de fiziologie normala si patologica "Prof. Dr. D.Danielopolu" al Academiei R.P.R.
(INSULIN) (ANAPHYLAXIS) (HISTAMINE)

GURNY, L. [Gorny, L.], podpolkovnik Voyska Pol'skogo

Class of radiotelegraph operators. Tekh. i vooruzh. no.4:86-87 Ap '64. (MIRA 17:9)

GURO, G.

USSR/Nuclear Physics - Cosmic Rays 1 Aug 49
Absorption,
Carbon

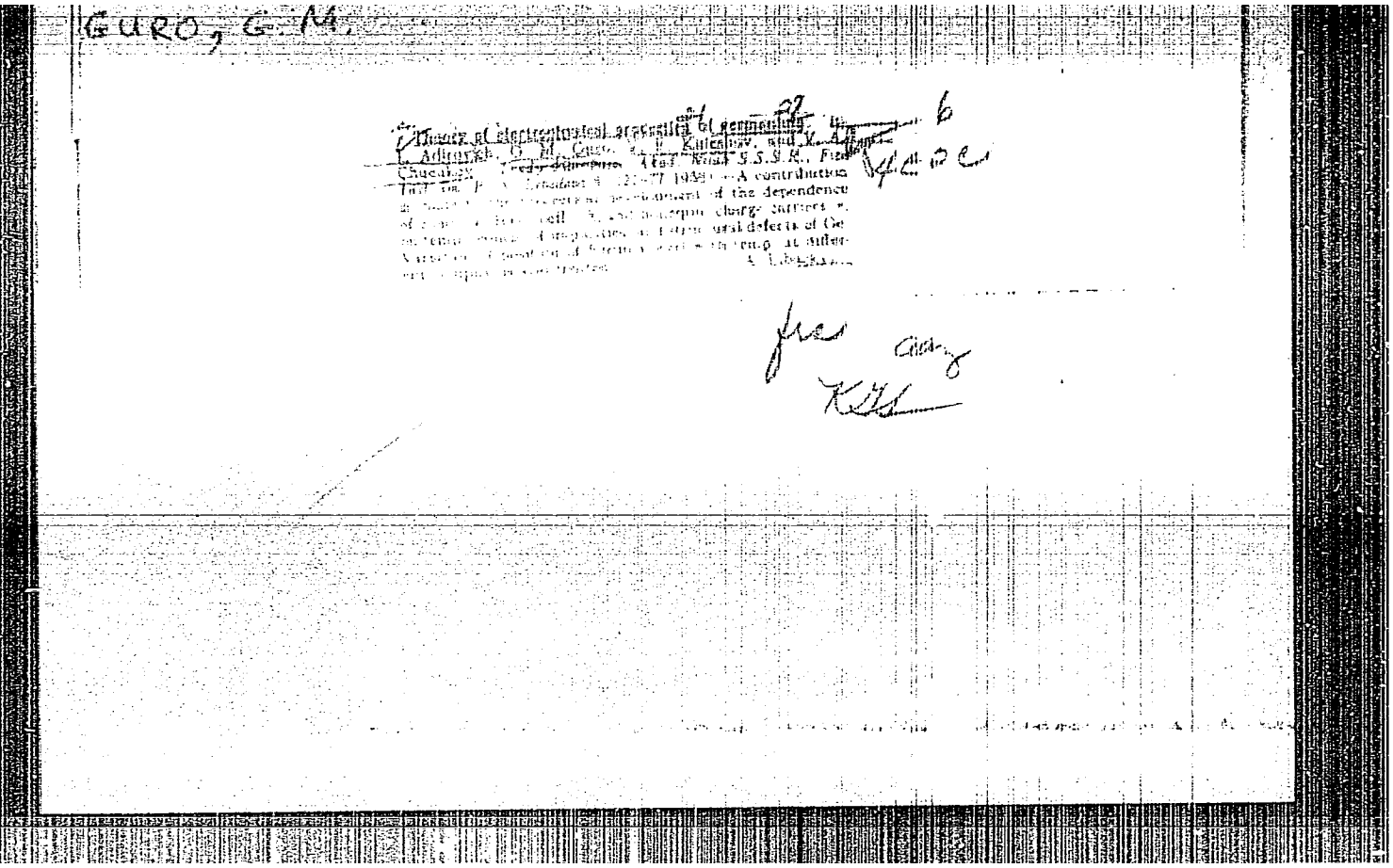
"Altitude Dependence and Curves of Absorption in Carbon for Particles Generating Pulses of 3,350 and 4,700 Ionization Chamber at Altitudes of 3,[illegible] Acad Meters," G. Guro, V. Nikolayev, L. [illegible], P. N. Lebedev Phys Inst imeni I. Chuvilo, 4 pp

Sci USSR, 4 pp

"Dok Ak Nauk SSSR" Vol LXVII, No 4

Used a 24-cm diameter spherical ionization chamber filled with argon to a pressure of 4 ats in experiments. Registered to register 4- and 7-repeated coincidences. Air layer between the two altitudes was compensated for by a layer of graphite equivalent in mass. Tables show number of pulses in an unshielded chamber and in the chamber when shielded by graphite layers with thicknesses of 64, 128, and 192 g/sq cm. Submitted by Acad D. V. Skobel'tsyn 20 May 49.

3/50T19



GURO, G. M.

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1574
AUTHOR ADIROVIČ,E.I., GURO,G.M., KULEŠOV,V.F.
TITLE The Dependence of the Life of Charge Carriers which are not in Equilibrium in Germanium on Temperature and on Composition.
PERIODICAL Zurn.eksp.i teor.fis,31, fasc.2,261-272 (1956)
Issued: 10 / 1956

The present work provides an analytical solution of the problem and the solution is written down in form of simple approximation expressions which are suited for concrete computation.

Computation of the position of FERMI levels: The position of the FERMI level at thermodynamic equilibrium is determined on the basis of a condition of normalization which is given here. In non-degenerated semiconductors the distribution of electrons in the upper zone as well as the distribution of holes in the lower zone obey BOLTZMANN'S statistics. As a level of reference of energies the position of the FERMI level in a pure semiconductor is assumed. Here only semiconductors with low activation energy of donors and acceptors are studied. A typical representative of such semiconductors is germanium; all further evaluations refer to it. In the case of donor germanium the FERMI level is positive at all temperatures. In electron germanium the concentration of the holes on acceptor levels may be neglected at all test temperatures. The domain of low temperatures can be subdivided into three temperature intervals in which various approximation expressions are possible. In the case of the usual concentrations of admixtures the upper boundary of this domain does not depend on the binding energy of the

Žurn. eksp. i teor. fis, 31, fasc. 2, 261-272 (1956) CARD 2 / 2 PA - 1574

electron on the admixture levels. For the domain of higher temperatures two temperatures are specially mentioned: Θ_3 corresponds to the equality of the admixture-dependent and independent conductivity, and Θ_4 to independent conductivity. Nearly all results obtained here hold also in the case of hole-semiconductors.

The life τ^* of the charge carriers which are not in equilibrium increases with rising temperature at first to a maximum, after which it again decreases. At $|\mathcal{E}_F| > \mathcal{E}_L$ τ^* increases even at $\Theta \to 0$. Here $\mathcal{E}_F$ and $\mathcal{E}_L$ denote the energies of the"trap" and the hole respectively. If, however, the recombination levels are in the middle of the forbidden zone (or, more accurately, if the position of the "trap" agrees with that of the FERMI level in pure germanium), τ^* increases momentarily after which it remains constant. The relaxation of the concentration of electrons which does not correspond to equilibrium is due to two processes: 1.) Recombination of electrons in the empty "traps" which correspond to equilibrium, and 2.) Recombination of electrons corresponding to equilibrium with the surplus of empty "traps".

In conclusion three concrete examples are dealt with.

INSTITUTION: Physical Institute "P.N.LEBEDEV" of the Academy of Science in the USSR

SUBJECT USSR / PHYSICS CARD 1 / 2 PA - 1365
AUTHOR ADIROVIC, E.I., GURO, G.M.
TITLE The Characteristic Times of Electronic Processes in Semiconductors.
PERIODICAL Dokl.Akad.Nauk, 108, fasc. 3, 417-420 (1956)
Issued: 8 / 1956 reviewed: 10 / 1956

First, the electron transitions in a semiconductor containing recombination centers (traps) are given. The acceptors and donors are assumed to be totally ionized. By the subdivision of all concentrations into a part which is in equilibrium and a part which is not, as well as by the neglect of terms which are quadratic with respect to concentration, a further system of equations is obtained. This system is then solved for the damping of concentrations that are not in equilibrium at initial conditions which correspond to steady operation. The solution obtained contains 4 time-dependent parameters (which are explicitly given). Two of them are identical with the life of electrons. (W.SHOCKLEY, W.READ, Phys.Rev. 87, 835 (1952)).
These expressions are specialized for low concentrations of the recombination centers. Further, there is a characteristic time of damping which, at steady conditions, is identical with the life of the (real or unreal) carriers which are not in equilibrium. However, in the case of high concentrations of the "traps" the damping process is determined by two characteristic times. In a diagram these parameters are represented as functions of the position of the FERMI level. In the case of high concentrations of the "traps" the maximum of the life of the electrons is shifted towards the conductivity domain of the

e-type. ($F > 0$). According to the dependence of the life of the holes on the FERMI level F, another heat-dependent emission of holes from the "traps" into the valence zone occurs, and therefore a second maximum exists in the case of such a dependence. In the case of steady operation the recombination of electrons and holes in the "traps" is in equilibrium with the production of pairs. If this pair production is interrupted, uncompensated and approximately equally strong currents of electrons and holes from the zones to the "traps" are produced. The life of unreal charge carriers is introduced into the theory as a fundamental characteristic. In the case of high concentrations of the "traps" the results obtained by the authors agree with those obtained by SHOCKLEY and READ only within a certain interval. If the "traps" are in the lower half of the forbidden zone, the characteristic time of damping is equal to the life of the real current carriers. This is true for all positions of FERMI levels in electronic semiconductors as well as in sufficiently marked hole-semiconductors.

In conclusion the two main methods for the measuring of lives, the impulse method and the photoelectric method, are discussed.

INSTITUTION: Physical Institute "P.N.LEBEDEV" of the Academy of Science in the USSR.

GURO, G.M.

56-7-23/66

AUTHOR GURO, G.M.

TITLE Decay Law for Concentration of Non-equilibrium Charge Carriers in Semiconductors.
(Zakon zatukhaniya kontsentratsii neravnovesnykh nositeley zaryada v poluprovodnikakh.- Russian)

PERIODICAL Zhurnal Eksperim. i Teoret. Fiziki 1957, Vol 33, Nr 7, pp 158 - 165 (USSR)

ABSTRACT The present paper studies the kinetics and the rules governing the non-steady process of damping non equilibrium charge carriers in the case of a low concentration of the traps and any generation levels.
The Problem and its Solution: At first the equations for the kinetics of electron processes in the case of an existing damping and uniform production are given. This system is then transformed, and the concentration is divided up into an equilibrium part and a nonequilibrium part. This system can be linearized only in the case of very low generation levels. The law of damping for the general nonlinear case is here calculated according to a method developed by ARTSIMOVICH.
Summary of Conclusions: The kinetics of the damping of the non equilibrium charge carrier in semiconductors with small concentration of traps is of a complicated character. In some intervals of the concentration of the non equilibrium carriers

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56-7-23/66

Decay Law for Concentration of Non-equilibrium Charge Carriers in Semiconductors.

simple kinetic schemes of recombination predominate, which leads to the approximation of the damping law by an exponential function, a hyperbolic, or a linear function. Besides the well investigated monomolecular and bimolecular kinetics of recombination in the semiconductor there are also processes with constant recombination velocity. They correspond to a life that is proportional to the concentration of the non equilibrium charge carriers. These recombination processes take place at low temperatures in such semiconductors in which the recombination cross section of the unreal charge carriers is much greater than the cross section of the real charge carriers. In the case of certain ratios and conditions of the constants and temperature the damping of non equilibrium charge carriers develops entirely according to the monomolecular scheme. (With 1 Illustration)

ASSOCIATION: Physical Institute "P.N. LEBEDEV" of the Academy of Sciences of the USSR (Fizicheskiy institut im. P.N.Lebedeva Akademii nauk SSSR.- Russian)

PRESENTED BY: -
SUBMITTED: 25.12.1956
AVAILABLE: Library of Congress.

CARD 2/2

GURO, G.M., Cand Phys Math Sci -- (diss) "Characteristic times of electron processes in semiconductors." Mos, 1958, 10 pp including cover (Phys Inst im P.N. Lebedev of Acad Sci USSR) 150 copies (KL, 50-58, 119 120)

AUTHOR: Guro, G. M. 57-28-5-21/36

TITLE: On the Theory of the Photogalvanomagnetic Effect in Semiconductors (K teorii fotogal'vanomagnitnogo effekta v poluprovodnikakh)

PERIODICAL: Zhurnal Tekhnicheskoy Fiziki, 1958, Vol. 28, Nr 5, pp. 1036-1045 (USSR)

ABSTRACT: As is known, the measurement of the voltage and the amperage of the photogalvanomagnetic effect according to Kikoin-Noskov (Ref 1) offers the possibility to determine directly the surface recombination velocity as well as the short life of the current carriers not in equilibrium in semiconduct- Van Roosbroeck (Ref 5) gives the best rounded-off representation of this theory, investigating this problem for semi-infinite samples. He assumed, that the voltage of the photogalvanomagnetic effect in the semi-infinite sample is constant across the whole depth of the semiconductor due to the existence of circular currents. For this reason he also assumed, that the value of the voltage V_n (measured experimentally) equals the mean value $\overline{V}_n$ (computed from the one-dimensional problem of the diffusion of not equalized carriers in a weak magnetic field)(Refs 2,3). The problem con-

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cerning the voltage of the photogalvanomagnetic effect $-V_n$ and the ring currents makes only sense in samples of finite dimensions. For this reason in the present paper the author conducted an examination of an accurate solution of the two-dimensional problem of the photogalvanomagnetic longitudinal and transverse effect (Ref 6), taking into account the ring currents, in a rectangular sample at a low light intensity and weak magnetic fields. This examination yields the possibility to conduct a direct comparison with the experiment and permits to clear the part played by the ring currents, to the influence of which Van Roosbroeck pointed apart from a determination of the limits of applicability of the approximation of the semi-infinite sample. Summary: 1) A neglect of the processes at the edges of the sample furnishes the boundary conditions. In order to offer an opportunity to determine the life with an accuracy of up to 20% down to values of 10^{-8} sec in this approximation, the ratio of the length and the width of the sample must be ≥ 30. 2) More accurate formulae taking into account the processes near the edges of the sample, moreover yield a possibility to determine the short life (10^{-5} sec and below) from the voltage measurements of the photogalvanomagnetic

transverse effect on the illuminated and dark face of the sample. 3) Due to the existence of ring currents, which are created by the magnetic field, not only a quadratic photogalvanomagnetic effect takes place in the illuminated sample, which is longitudinal with respect to the magnetic field, but also a linear one, the linear, longitudinal one reaching its maximum value at the boundaries of the sample. The author thanks A. V. Rzhanov, Candidate of Physical-Mathematical Sciences, for the theme, and E. I. Adirovich, Doctor of Physical-Mathematical Sciences and Professor at Moscow State University, for valuable suggestions. There are 1 figure and 15 references, 7 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR, Moskva (Moscow, Physics Institute imeni P. N. Lebedev, AS USSR)

SUBMITTED: June 5, 1957

Card 3/3 1. Semiconductors--Electrical properties

GURO, G.M.

Characteristic times of stationary electronic processes in semiconductors. Fiz.tver.tela 1 no.1:3-12 Ja '59. (MIRA 12:4)
(Semiconductors)

87543

S/053/60/072/004/003/006
B029/B056

9,4300 (also 1043,1143,1138)

AUTHOR: Guro, G. M.

TITLE: Characteristic Times of Electronic Processes in Semiconductors

PERIODICAL: Uspekhi fizicheskikh nauk, 1960, Vol. 72, No. 4, pp. 711 - 740

TEXT: V. L. Bonch-Bruyevich (Ref. 18) investigated the exciton mechanism of "radiationless" recombination. S. G. Kalashnikov (Ref. 37) exactly analyzed electronic processes in semiconductors having a set of traps with different levels. V. Ye. Lashkarev (Refs. 48,49) investigated steady processes in semiconductors with mixed conductivity, and showed that the diffusion of electrons and holes is determined by the "general characteristic length" ("length of diffusion shift"). M. I. Iglitsyn et al. (Ref. 80) determined a relation between the quantities to be measured (current passing through the contact, lifetime, mobility of minority carriers, resistance). If this relation is satisfied conditions will hold that correspond to a uniform unsteady generation. From the 91 papers

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Characteristic Times of Electronic Processes in Semiconductors

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discussed, the following conclusions may be drawn: A semiconductor constituting a system of carriers of both types and of different localization centers, has several characteristic times. Each of these times corresponds to a certain electronic process and is fully determined by the kinetic equations of these processes. Electronic processes in semiconductors may be divided into the following main groups: steady and unsteady processes with uniform (G = const) and nonuniform generation (G = f(x,y,z)) of minority carriers. Electronic processes occurring with uniform and steady generation are characterized by the times τ_e^{st} and τ_h^{st}. In some cases, these times may be determined by measuring the steady photoconductivity. In the case of steady, nonuniform generation, a bipolar diffusion is added to the processes described by τ_e^{st} and τ_h^{st} (i.e., the motion of non-equilibrium pairs). This range of absorption of non-equilibrium pairs is determined by the coefficient of the ambipolar diffusion $D = \frac{D_e D_h (n_o + p_o)}{D_e n_o + D_h p_o}$ and by the time

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Characteristic Times of Electronic Processes in Semiconductors

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$$\frac{1}{\tau_o} = \sum_{j=1}^{j=m} \frac{1}{\tau_o^j} = \sum_{j=1}^{j=m} A_e^j A_h^j \frac{p_{1o}^j (p_o + p_1^j) + n_{1o}^j (n_o + n_1^j)}{A_h^j (p_o + p_1^j) + A_e^j (n_o + n_1^j)}$$

A_e^j, A_h^j are the capture coefficients of the electrons and holes; τ_o does not depend on the concentration of adhesion centers. Therefore, all methods based upon measuring the diffusion length have a lifetime that does not depend on the existence or on the state of adhesion centers in the semiconductor. Its dependence on the state and existence of adhesion centers which contained in semiconductors may be determined from the formula derived by G. M. Guro for the longer time τ_2, which is experimentally measured. There are 13 figures and 91 references: 31 Soviet, 60 US, 2 British, and 4 German.

Card 3/3

3894
S/181/62/004/007/025/037
B102/B104

24.7700

AUTHOR: Guro, G. M.

TITLE: Influence of impact recombination on the attenuation of the non-equilibrium carrier concentration in semiconductors

PERIODICAL: Fizika tverdogo tela, v. 4, no. 7, 1962, 1938-1945

TEXT: The author studies theoretically the influence of impact recombination on attenuation of non-equilibrium carriers in the case of a small concentration of the recombination centers, when the recombination times (10^{-5}-10^{-6} sec) are much greater than the energy relaxation times (10^{-12} sec) of the carriers. Using the kinetic equations obtained earlier (Guro, ZhETF, 33, 159, 1957) a general expression for the attenuation law is worked out and is applied to the limiting cases of high and low generation levels. The solutions obtained hold for the most interesting cases of highly alloyed semiconductors ($n_0 \gg p_0$) - for small and large impact-recombination cross sections. They yield simple approximations corresponding to different recombination mechanisms, as bimolecular, monomolecular

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etc. With or without impact recombination, the greatest attenuation of the non-equilibrium carrier concentration occurs at high generation levels, in which case the attenuation obeys a hyperbolic law. In the case of low generation levels an exponential law holds: $n' \approx \Delta n \exp(-t/(\tau_{p_0}+\tau_{n_0}))$.

Intermediate regions can be observed not only with ordinary recombination but also with impact recombination. In the latter case the intermediate region is characterized by an exponential attenuation law:

$$n' \approx \Delta n e^{-\frac{t}{M_2}},$$

$$\frac{M_2}{L_3} \approx \frac{1}{N_{A.}} \frac{A^T_{\ni.} + A^T_{A.}}{A^T_{\ni.} A_{A.} + A^T_{A.} A_{\ni.}} = \tau^T_{\infty} < \tau_{p0} + \tau_{n0}.$$

Here A^T are the impact recombination coefficients, A those of ordinary recombination; $\ni$ refers to electrons, A to holes, $N_{A.}$ is the total trap concentration. The occurrence of this region is due to the high density of the non-equilibrium carriers and their small cross sections.

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Influence of impact recombination ...

The presence of a region of mixed recombination (attenuation time τ_{∞}^{T}) allows conclusions to be drawn regarding impact recombination at generation levels much below the limiting values (hyperbolic attenuation law). For low generation levels and large impact recombination cross sections the attenuation satisfies the relation $n' \approx \Delta n \exp(-t/\tau_0^T)$, where

$$\tau_0^T = \frac{1}{A_{n.}^T N_{A.}} \frac{n_0 + n_1}{(n_0 + p_0)^2} + \frac{1}{A_{n.}^T N_{A.}} \frac{p_0 + p_1}{(n_0 + p_0)^2}.$$

holds. The results of this paper hold good also for steady processes.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR Moskva
(Physics Institute imeni P. N. Lebedev AS USSR, Moscow)

SUBMITTED: March 9, 1962

S/181/62/004/012/014/052
B104/B102

AUTHORS: Guro, G.M., and Rzhanov, A.V.

TITLE: Kinetics of the nonequilibrium conductivity in the case of high generation levels

PERIODICAL: Fizika tverdogo tela, v. 4, no. 12, 1962, 3441-3445

TEXT: How the period that the carriers are trapped in a recombination center affects the kinetics of the nonequilibrium conductivity in the case of high generation levels is studied. For the case of low generation levels, the effect of the carrier lifetime on the excited levels of the recombination centers in stationary processes was investigated by A.V. Rzhanov (FTT, 3, 3691, 1961) as an extension of the recombination theory by W. Shockley and W. Read (Phys.Rev., 87, 835, 1952). G.M. Guro (ZhETF, 33, 158, 1957) derived an attenuation law of the carrier equilibrium concentration at arbitrary deviations from thermodynamic equilibrium, assuming, however, that recombination takes place via the ground state of the recombination center. The same conception is adopted here, but a more general expression for the recombination rate is taken as initial equation, whereby the effect of the

Kinetics of the nonequilibrium ...

trapping period of the carriers is considered. By using equations and symbols from previous studies, the recombination rate is shown to prevent the setting of a stationary carrier concentration if the constant generation rate of nonequilibrium carriers exceeds a certain limit $G_o = N_t/\tau_r$. Here τ_r is the sum of electron and hole lifetimes on the excited levels of the recombination centers. There are 2 figures.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR, Moskva
(Physics Institute imeni P.N. Lebedev AS USSR, Moscow)

SUBMITTED: July 6, 1962

L 45719-65 EWA(k)/FBD/EWG(r)/EWT(l)/EEC(k)-2/EEC(t)/T/EEC(b)-2/EWP(b)/EWA(m)-2/EWA(b) Pm-4/Pn-4/Po-4/Pf-4/Peb/Pi-4/Pl-4 LJP(c) WG/GG

ACCESSION NR: AP5010508 UR/0056/65/048/004/1132/1138

65
64
8

AUTHOR: Gudzenko, L. I.; Guro, G. M.

TITLE: Coherent division of quanta

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 4, 1965, 1132-1138

15 21

TOPIC TAGS: laser, laser action, quantum mechanical system, frequency divider

ABSTRACT: The problem considered applies essentially to the case when the same frequency corresponds to transitions between a large number of energy levels in a quantum mechanical system. This may concern, for example, the operating principle of an effective frequency divider (a physical instrument which greatly reduces the frequency yet conserves a large fraction of the incoming radiation power). The decisive element of such a converter is a quantum-mechanical system that includes a band bounded from above, consisting of a large number of practically equidistant levels. It is shown that a frequency divider can be produced by placing such a medium in a resonator of sufficiently large Q, and that

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ACCESSION NR: AP5010508 3

the energy transformation can have sufficiently high efficiency if the contribution of the nonradiative transitions is sufficiently small. The conditions for steady state amplification are considered for the limiting cases of low and high intensity of the amplified emission. Examples of physical media that may serve for this purpose are a gas consisting of nonequilibrium excited diatomic molecules, whose equidistant-level band is made up of vibrational levels, a semiconductor in a magnetic field, or a solid with conduction electrons in a strong electric field. "The authors thank A. M. Prokhorov and I. I. Sobel'man for a discussion." Orig. art. has: 2 figures and 9 formulas. [02]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Physics Institute, Academy of Sciences SSSR)

SUBMITTED: 15Oct64 ENCL: 00 SUB CODE: EC

NO REF SOV: 003 OTHER: 001 ATD PRESS: 4001

Card 2/2

ACC NR: AP7003532 SOURCE CODE: UR/0386/67/005/001/0009/0012

AUTHOR: Guro, G. M.; Ivanchik, I. I.; Kovtonyuk, N. F.

ORG: Physics Institute im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Semiconducting properties of ferroelectrics

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 5, no. 1, 1967, 9-12

TOPIC TAGS: barium titanate, ferroelectric material, pn junction, forbidden band, electric polarization, light emission

ABSTRACT: Using the known fact that a ferroelectric crystal such as $BaTiO_3$ is similar to a p-n junction in which the regions of high free-carrier density are separated by a broad dielectric gap, the authors estimate the free-carrier densities in the n and p regions, and the free-carrier and electric-field distributions over the thickness of a $BaTiO_3$ plate. The estimates are made separately for an ideally pure crystal and for a real crystal with impurities. Analysis based on the band structure and on calculations of the induced potential difference lead to the following conclusions. 1. A $BaTiO_3$ crystal connected in an electric circuit will behave like a p-n junction with symmetric current-voltage characteristic. The symmetry of the characteristic is a result of repolarization, which causes the current to flow in one direction relative to the p-n junction. 2. During repolarization, nuclei of the opposite phase

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ACC NR: AP7003532

grow through the crystal. At the instant when opposite ends of nuclei meet, recombination takes place and is accompanied by emission of light. The frequency of such emission can be of the order of the width of the forbidden band, corresponding to violet light in the case of $BaTiO_3$. The emission should take place over the entire volume of the crystal and is flash-like. Work aimed at observing this emission is now under way. 3. Thin layers with anomalously high free-carrier density should exist near the surfaces of crystals not equipped with electrodes. Thus, the electric conductivity along the surface should be much higher than in the direction perpendicular to the surface. The authors thank B. M. Vul, V. A. Rassushin, and N. A. Penin for a discussion of the results. Orig. art. has: 3 figures and 4 formulas.

SUB CODE: 20/ SUBM DATE: 29Sep66/ ORIG REF: 002/ OTH REF: 004

Card 2/2

GURO, P.Ye.; KHAR'KOVSKIY, S.Ye.

Design of foundation slabs for centrifugal pumps. Koks i khim. no.9:57 '62. (MIRA 16:10)

1. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy koksokhimicheskoy promyshlennosti.
(Pumping machinery—Foundations)

GUROCHKIN, D. T., KASHKINA, A. A.

DAIRY CATTLE

Yearly yield of 6092 kilos of milk per cow. Sots. zhiv. 14 No. 8, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. UNCLASSIFIED.

GUROK, G. A.

GUROK, G. A. - "Investigation of the Influence of Concentration of Electrolytes in Water in a Dielectric and on Its Dielectric Permeability and Coefficient of Absorption." Sub 13 Nov 52, Moscow Oblast Pedagogical Inst. (Dissertation for the Degree of Candidate in Physicomathematical Sciences).

SO: Vechernaya Moskva January-December 1952

GUROK, G. A.

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5587

Author: Gurok, G. A.

Institution: Moscow Oblast Pedagogical Institute

Title: Determination by the Electric Method of Moisture in Petroleum Products in the Presence of Various Salts in the Water

Original Publication: Uch. zap. Mosk. obl. ped. in-ta, 1955, 33, 255-273

Abstract: Moisture content of petroleum products is determined from the value of their dielectric constant which is determined by the method of Drude-Coolidge. Magnitude of dielectric constant depends on the volumetric content of water and on the degree of dispersion of the emulsion. If the emulsion includes electrolytes it is necessary to use a calibration curve which is plotted by utilizing samples containing the same amount of electrolyte.

Card 1/1

GUROV, A., polkovnik, kand.ekonomicheskikh nauk

"Military ideology of West German revanche plotters" by A. V. Beshentsev. Reviewed by A.Gurov. Komm.Vooruzh.Sil 2 no.13: 90-93 Jl '62. (MIRA 15:7)
(Germany, West--Military policy) (Beshentsev, A.V.)

DAVANKOV, A.B.; ZUBAKOVA, L.B.; GUROV, A.A.

Determination of the constants of copolymerization of 2-methyl-5-vinylpyridine with triethylene glycol dimethacrylate. Vysokom.soed. 6 no.2: 237-240 F '64. (MIRA 17:2)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni Mendeleyeva.

GUROV, Aleksandr Aleksandrovich, polkovnik; BEZDENEZHNYKH, P.T., polkovnik, red.; STREL'NIKOVA, M.A., tekhn.red.

[Ideological sword bearers for the munition industry monopolies in West Germany] Ideinye oruzhenostsy voenno-promyshlennykh monopolii FRG; kritika revanshistskikh ekonomicheskikh kontseptsii. Moskva, Voen.izd-vo M-va obor.SSSR, 1959. 165 p. (MIRA 12:12)
(Germany, West--Firearms industry and trade)

GUROV, Aleksandr Aleksandrovich, polkovnik, kand.ekonom.nauk;
ROMANOV, I.M., red.; MURASHOVA, L.A., tekhn.red.

[Technical progress and militarism] Tekhnicheskii progress i militarizm; politiko-ekonomicheskii ocherk. Moskva, Voenizdat, 1963. 144 p. (MIRA 16:6)
(Militarism) (Armaments)

SOV/124-58-10-11738

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 10, p 143 (USSR)

AUTHOR: Gurov, A. F.

TITLE: On the Rational Clamping of an Airscrew Propeller Blade by Means of Shaft Thread (O ratsional'nom rez'bovom kreplenii lopasti vozdushnogo vinta)

PERIODICAL: Tr. Mosk. aviats. in-ta, 1954, Nr 38, pp 52-67

ABSTRACT: The author examines five different constructional designs of a fundamental three-thread type and calculates the load distribution along the blade-root threads and the shaft of the propeller. Calculations are performed according to the method proposed by N. Ye Zhukovskiy. This method considers the propeller as a rod with annular projections. It is assumed that there is constant and complete contact along all the turns of the threads. The thread turn that carries the greatest load in each particular design is isolated and a formula is given for computing its load depending on the number of turns of the thread. Stress calculations are performed for threads chamfered at the base of the shaft as well as for unchamfered threads. The magnitude of the centrifugal

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On the Rational Clamping of an Airscrew Propeller Blade (cont.)

force is taken as 60 metric tons and that of the bending moment as 100 ton/cm.

V. F. Vorob'yev

Card 2/2

GUROV, A.F., kandidat tekhnicheskikh nauk.

Direct determination of dynamic rigidity of aerial propellers.
Trudy MAI no.55:63-92 '56. (MLRA 9:10)

(Propellers, Aerial)

GUROV, A.F., kandidat tekhnicheskikh nauk.

Using the integral method for determining the critical speed of rotation for shafts. Trudy MAI no.74:3-38 '56. (MLRA 10:5)
(Shafts and shafting)

PHASE I BOOK EXPLOITATION

SOV/3190
SOV/11-M-115

Gurov, Aleksey Fedorovich

Izgibnyye kolebaniya detaley i uzlov aviatsionnykh gazoturbinnykh dvigateley. (Bending Vibrations of Parts and Elements of Aircraft Gas Turbine Engines) Moscow, Oborongiz, 1959. 358 p. (Series: Moscow. Aviatsionnyy institut im. Sergo Ordzhonikidze. Trudy, vyp. 115) Errata slip inserted. 2,600 copies printed.

Sponsoring Agencies: Moscow. Aviatsionnyy institut im. Sergo Ordzhonikidze and USSR Ministerstvo vysshego obrazovaniya.

Eds.: S. I. Bumshteyn, Engineer and N. A. Gortsuyeva; Tech. Ed.: V. P. Rozhin; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for engineers and aircraft engine design specialists concerned with stability and vibrations, and also for students, teachers, and aspirants in these fields.

COVERAGE: The book presents studies on vibrations of the housing, critical speeds of the shaft of aircraft engines and the compound vibrations of complex elastic systems. A method of determining the frequencies of natural

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and forced vibrations of turbine blades, propeller blades and shafts is given. Methods of determining the dynamic rigidity and pliability of various systems are described. The book contains two chapters. In the first chapter, the author discusses natural bending vibrations of various statically determined systems of gas turbine engines; derives a general integral equation of a rotating and stationary shaft; derives an integral equation of vibration for particular cases of vibration; gives calculation methods of uniform integral equations; and gives examples of the application of equations derived in this chapter. In the second chapter, the author considers forced vibrations of various systems; derives general integral equations of forced vibration of rotating and stationary shafts; determines dynamic rigidity and pliability of various systems; examines nonhomogeneous integral equations of vibrations and the numerical methods of their solutions; studies the general theory of the dynamics of elastic systems, compound vibrations of elastic systems, the method of dynamic rigidity and dynamic pliability; and presents examples of calculating compound vibrations of systems. The author thanks Professor G. S. Skubachevskiy; V. Ya. Natanzon (deceased), Doctor of Technical Sciences; S. K. Tumanskiy, Doctor of Technical Sciences; A. N. Oguryechnikov, Docent; Professor A. Yu. Romashevskiy, Honored Scientist and Engineer; Professor I. A. Birger, Doctor of Technical Sciences; A. Ye.

Kobrinskiy, Doctor of Technical Sciences; L. N. Lukasheva, S. A. Shteynman, A. Ye. Burnova, V. A. Balabanova. There are 42 references: 38 Soviet, 3 English, and 1 German.

TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 7/7

AC/aak
5-23-60

PHASE I BOOK EXPLOITATION SOV/6016

Gurov, Aleksey Fedorovich

Sovmestnyye kolebaniya v gazoturbinnykh dvigatelyakh (Joint Vibrations in Gas-Turbine Engines) Moscow, Oborongiz, 1962. 140 p. (Series: Moscow. Aviatsionnyy institut. Trudy, vyp. 144) 2600 copies printed.

Sponsoring Agency: Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya RSFSR. Moskovskiy ordena Lenina aviatsionnyy institut im. Sergo Ordzhonikidze.

Ed. of Publishing House: V. M. Tokar'; Tech. Ed.: P. V. Shcherbakov; Managing Ed.: A. S. Zaymovskaya, Engineer.

PURPOSE: This book is intended for readers concerned with engine dynamics and calculations, and for advanced students.

COVERAGE: The book presents the dynamic-yield method, a relatively simple graphic method for calculating resonant operating regimes

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of an engine during the design stage. The rotor-shaft and engine-body supports are assumed to yield under load. Attention is given to the calculation of critical speeds and resonant operating regimes of an engine, with the engine-body rigidity being commensurable with, or lower than, that of the rotor (a case often met in aircraft-engine designing). Resonant vibrations of the engine shaft and other components are considered. A discussion of a technique for eliminating dangerous resonances is included. The calculation examples given do not refer to any existing engines. No personalities are mentioned. There are 4 references, all Soviet.

TABLE OF CONTENTS [Abridged]:

ZHIRITSKIY, Georgiy Sergeyevich, prof.; LOKAY, Viktor Iosifovich; MAKSUTOVA, Makhfuzya Karimovna; STRUNKIN, Valentin Aleksandrovich; GUROV, A.F., doktor tekhn. nauk, prof., retsenzent; KHOLSHCHEVNIKOV, K.V., doktor tekhn. nauk, prof., retsenzent; KULAGIN, I.I., doktor tekhn.nauk, prof., retsenzent; LEPESHINSKIY, I.A., inzh., red.; BOGOMOLOVA, M.F., red.izd-va; NOVIK, A.Ya., tekhn. red.

[Gas turbines of aircraft engines] Gazovye turbiny aviatsionnykh dvigatelei. Moskva, Oborongiz, 1963. 604 p. (MIRA 16:9)

(Gas turbines) (Airplanes—Engines)

ACC NR: AM6029659 Monograph UR/

Gurov, Aleksey Fedorovich

Calculations for stability and oscillations of rocket engines (Raschety na prochnost' i kolebaniya v raketnykh dvigatelyakh) Moscow, Izd-vo "Mashinostroyeniye", 1966. 455 p. illus., biblio. 8000 copies printed. Textbook for students at aviation institutes.

TOPIC TAGS: rocket engine, rocket engine component, turbopump, aerodynamic stability, thermal stability, dynamic stress, vibration stress

PURPOSE AND COVERAGE: This is a textbook for students in aviation institutes of higher education taking a course in "Design, Planning, and Strength Calculation of Rocket Engines" as well as by design-engineers and specialists. In the book are presented methods for calculating parts and units of rocket engines for strength and vibration of the turbine blades of a turbopump unit, the strength of a turbopump unit's turbine disks, and the permissible stresses and the reserve strength of the engine parts. Calculations are presented for the strength of the case shell of the engine and combustion chamber; also examined are the common vibrations of the various complex systems, critical shaft rpm, the elimination of vibrations, and damping. The author expresses his gratitude to professors G. S. Skubachevskiy and G. G. Gakhun for their assistance, and to professors I. A. Birger and A. M. Soyfer for their review of the manuscript. There are 37 references, 35 of which are Soviet.

Card 1/2 UDC: 629.13.03:621.455-63

ACC NR: AM6029659

TABLE OF CONTENTS (Abridged)

SUB CODE: 21/ SUBM DATE: 02Apr66/ ORIG REF: 035/ OTH REF: 002/

Card 2/2

S/148/60/000/010/005/018
A161/A030

AUTHORS: Medzhibozhskiy, M.Ya.; Gurov, A.K.

TITLE: Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, 1960 No. 10, pp. 67 - 78

TEXT: The effect of blowing was studied in a 30-ton furnace working with the basic scrap process and firing cold coke gas, with a tar addition for flame carburation. The air blow pipe was lined with magnesite chrome mortar, had a 25 mm inner diameter, and was introduced into the bath through the charging door at 35 - 45°, 100 - 300 mm below the metal surface. Air was fed at a rate of 400 - 750 m^3/h under 5-6 atm pressure in the line. A total of 57 heats with air blowing were studied and compared with conventional processes and the oxygen process. Dust samples from the smoke gas were taken by an ejector through water-cooled pipe (Figure 1) into three trap vessels with distilled water, and dedusted gas passed a gas flow meter. Metal temperature was measured with a submersion thermocouple connected to a recording electronic potentiometer. The previously stated (Ref. 2,

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Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

3) phenomenon was confirmed - that the oxygen from the atmosphere in the furnace played the major part in oxidation of carbon in the bath (69 - 70% of total), and the effect of blowing compressed air was near the effect of oxygen blow. Direct observations proved that blowing must be started after the metal has reached a certain overheat over the point of liquidus, i.e., about 40°C above it, for the carbon burning rate dropped abruptly at lower overheating or underheating. The volume of compressed air had a determining effect on the carbon burning rate (v_c) (Fig. 2) and the v_c rose faster than in direct proportion with increasing air volume. This is explained by the growth of the oxygen share absorbed by metal from the hot air in the furnace. The metal temperature had a noticable effect on v_c only in the temperature range from 1380 - 1500°C, and not the absolute temperature value but the degree of overheat produced the effect. This proves that the carbon oxidation value during blowing is limited by diffusion processes whose rate depends on the viscosity of metal and slag, and not by chemical reactions whose rate grows steeply with increasing temperature. As is known, the viscosity of liquid steel is low and decreases only little with increasing temperature, but near the liquidus point the effect is high, i.e. between -40 and

Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

+40°C from the liquidus (Fig. 4). When metal contains 2%C (liquidus temperature at 1368°), blowing at 1400 - 1420° has high decarbonizing effect. The dust separation is high with pure oxygen blowing, probably not through the evaporation of iron only, but also through the evaporation of FeO and mechanical separation of particles. As is obvious from the calculations and diagrams of L.M. Yefimov, (Ref. 8), the addition of nitrogen to the blast abruptly decreases the intensity of evaporation of iron. The following results have been calculated for 1800°K bath temperature:

O_2 content in blast (%)	100	50	21 (compressed air)
N_2/O_2 ratio	0	1	3.762
Intensity of iron evaporation in kg-atom Fe/kg-mol O_2	0.4	0.26	0

Calculations prove that a considerable reduction of dust drag-out can be achieved by a) deeper submersion of the oxygen or air jet into metal, b) lowering the temperature by addition of nitrogen to blast, c) blowing oxygen at relatively low C content in metal. The quantity of dust in combustion products is slightly higher with compressed air blowing than in usual process, but much lower than with oxygen blowing. In an investigation with 70-ton furnaces (Ref. 1), the dust quantity was

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A161/A030

Oxidation of Carbon, Rise in Temperature and Dust Separation with Compressed Air Blow Through Open-Hearth Bath

20 times higher with oxygen blowing than in the usual process; in a 30-ton furnace (the subject experiments) the difference would be even larger. In the case of compressed air blowing, the dust separation is much lower than in the case of oxygen, and blowing can still be started at a high C content in the bath. This is very important in the scrap-ore process where C content reaches 3.0% and more. Blowing in the fusion period enables a much lower use of iron ore in charge, and in combination with intense mixing by compressed air this will cut the fusion period. In this respect compressed air has great advantages, for oxygen blowing is usually employed only during finishing, at a relatively low C content (to prevent high dust separation and furnace lining wear). Data obtained in this investigation and published previously (Ref. 10), (on the durability of 380-ton and 200--ton furnaces) prove that the durability of lining is approximately the same with compressed air blowing as in conventional process, and much higher than with oxygen blowing. It was not possible to determine the chemical composition of separate dust samples because of the low weight (0.05 - 6 g), and the samples were mixed. The mean components content is about the same as in the usual process: iron oxides predominate. There are 5 figures, 5 tables and 11 references, 10 Soviet and 1 German.

Card 4/5

KRAMAROV, A.D.; TOLSTOGUZOV, N.V.; ZARVIN, Ye.Ya.; TIMMERMAN, V.P.; LEVIN, A.M.; GUROV, A.K.

Making manganese alloys from Usa deposit manganese ores. Izv. vys. ucheb. zav.; chern. met. no.12:46-54 '60. (MIRA 14:1)

1. Sibirskiy metallurgicheskiy institut.
(Usa Valley—Manganese ores)
(Manganese alloys—Metallurgy)

ZARVIN, Ye.Ya.; KRAMAROV, A.D.; TOLSTOGUZOV, N.V.; GUROV, A.K.; LEVIN, A.M.; TIMMERMAN, V.P.

Use of silicomanganese made of Usa ores for the reduction of steel. Izv. vys. ucheb. zav.; chern. met. no.12:55-62 '60. (MIRA 14:1)

1. Sibirskiy metallurgicheskiy institut.
(Usa Valley--Ore deposits)
(Silicon-manganese alloys)

S/148/61/000/002/002/011
A161/A133

AUTHOR: Medzhibozhskiy, M. Ya., Gurov, A. K.

TITLE: The effect of compressed air blowing on the melting indices of the open-hearth scrap process

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no. 2, 1961, 32 - 38

TEXT: The article presents the results of experimental open-hearth steel melting that had been described by the authors previously: (Ref. 1: M. Ya. Medzhibozhskiy, A. K. Gurov, Izv. vyssh. uch zavedeniy. Chern. met., no. 10, 1960). The charge of the ordinary heat consists of 25% pig iron, 75 scrap, 0.6 coke and 2.0 lime. In the test heats the coke content was raised to 0.8%, and in individual heats to 1.5. An increased carbon content in the charge and the iron ore additions during finishing made it possible to blow the bath through during the second half of the smelting period (when the scrap is molten and the entire bath covered with liquid metal and slag) and in the first half of finishing. The effect of air blowing on the smelting time required for 30-ton heats was determined by comparing the time of each of 57 test heats with 2 - 3 ordinary heats of same steel grade.

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It is mentioned that analogous experiments had been conducted previously in large-capacity furnaces at the Kuznetskiy metallurgicheskiy kombinat (Kuznetsk Metallurgical Combine) and at the "Zaporozhstal" Plant, and air blowing did not impair the mechanical properties of the steel. Conclusions: 1) Air blowing for 15 min reduced the smelting time of 30-ton heats by 33 min (average). The time again was 42 min on the average per heat. The furnace productivity rose by 9 to 13%. 2) The output of serviceable metal in percent of the whole metal charge (including ore) was practically the same as in the ordinary process. 3) The iron oxide content was about the same in the ordinary and the test melts. 4) Air blowing considerably accelerates the formation of highly basic slag. 5) The carbon burning rate in 30-ton heats was 1.3 - 1.6%/h at 600 m^3/h average air consumption, which is about 4 times faster than in the ordinary process. 6) Air blowing did not spoil metal in any respect (i.e. the mechanical properties, the content of oxygen, nitrogen, hydrogen, nonmetallic inclusions and harmful impurities in the finished steel). 7) Furnace lining service life was about the same as usual. 8) The separation of dust in the process with air blowing is insignificant, and blowing may be started during the smelting at a high carbon content. This shortens the longest heat period - smelting. 9) The conditional fuel consumption was reduced by 10%. 10) The temperature of the furnace top and bottom lining, as well as of the fumes in the

The effect of compressed air blowing on the melting ...

flue at the stack is only slightly higher than usual and not above the permissible value. This is achieved by the reduced fuel consumption and the increase in fan air consumption during blowing. There are 1 figure, 5 tables and 4 Soviet-bloc references.

ASSOCIATION: Sibirskiy metallurgicheskiy institut (Siberian Metallurgical Institute)

SUBMITTED: November 25, 1959

S/148/62/000/012/001/008
E071/E131

AUTHORS: Medzhibozhskiy, M.Ya., Privalov, M.M., Gurov, A.K., and Nokrushin, V.V.

TITLE: Features of the technology and quality of steel for different variants of air injection into the flame and the bath of a large open hearth furnace

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Chernaya metallurgiya, no.12, 1962, 41-55

TEXT: The investigation was carried out on a 400 ton open hearth furnace operating with 60-62% hot metal charge and fired with a mixture of coke oven gas and producer gas. The experimental method, and the technical, thermal and economic criteria of operation, have been described previously (Izv. VUZ, Chernaya metallurgiya, no.8, 1962). It is concluded that: the injection of compressed air into the flame and the bath led to improvements as measured by all the criteria. Blowing the bath had the following effects: a) the dephosphorisation of the metal was completed during the melting period; b) the desulphurisation of steel is considerably speeded up; c) the rate of carbon elimination

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Features of the technology and ...

increases by a factor of 1.5 - 2.0 and during the actual blowing period by a factor of 2.0 - 2.2; d) the rate of increase of the metal temperature is accelerated by 70% and amounts to 114 °C/hour; e) slag formation is accelerated, resulting in the early formation of a homogeneous slag. The rate of carbon elimination is most strongly influenced by the excess of oxygen in the furnace gases at the burner intake. An increase of the flow rate and pressure of the injected air is effective if it is accompanied by an increase in the excess oxygen in the furnace atmosphere. A clear relationship between the rate of carbon elimination and the excess of oxygen in the furnace atmosphere permits the use of air injection into the bath for the automatic control of refining. The use of air injection into the bath does not cause a deterioration in steel quality in comparison with steel produced by other methods of air injection or with steel produced by conventional methods. It is particularly important that in the course of the heat as well as in the finished steel, the content of nitrogen and oxygen in the metal both during the heat and in the finished steel shall remain the same as in heats with air

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Features of the technology and ... S/148/62/000/012/001/008
E071/E151

injection to the flame only, or in heats carried out by the conventional methods.
There are 6 figures and 6 tables.

ASSOCIATION: Sibirskiy metallurgicheskiy institut
(Siberian Metallurgical Institute)

SUBMITTED: December 27, 1961

Card 3/3

MEDZHIBOZHSKIY, M.Ya.; PRIVALOV, M.M.; GUROV, A.K.; MOKRUSHIN, V.V.; GRITSKOV, V.S.

Efficiency of the various variants for injecting compressed air into the fuel spray and the bath of large open-hearth furnaces. Izv. vys. ucheb. zav.; chern. met. 5 no.8:35-43 '62. (MIRA 15:9)

1. Sibirskiy metallurgicheskiy institut i Kuznetskiy metallurgicheskiy kombinat.

(Open-hearth furnaces) (Compressed air)

MEDZHIBOZHSKIY, M. Ya.; PRIVALOV, M. M.; GUROV, A. K.; MOKRUSHIN, V. V.

Peculiarities of the technology and quality of the steel produced by various alternates of blowing compressed air into the flame and the bath of large-capacity open-hearth furnaces. Izv. vys. ucheb. zav.; chern. met. 5 no.12:41-55 '62. (MIRA 16:1)

1. Sibirskiy metallurgicheskiy institut.

(Open-hearth process—Quality control)

MEDZHIBOZHSKIY, M.Ya.; PRIVALOV, M.M.; GUROV, A.K.; MOKRUSHIN, V.V.; GRITSKOV, V.S.; Prinimali uchastiye: TSYMBAL, V.P.; BYCHKOV, P.M.; KURGUZKIN, V.P.; VALOV, M.Ye.; SHCHEKOLKIN, M.S.

Making a combined use of compressed air in a high-capacity open-hearth furnace. Stal' 22 no.10:894-900 O'62. (MIRA 15:10)
(Open-hearth furnaces) (Compressed air)

MEDZHIBOZHSKIY, M. Ya.; GUROV, A.K.

Blowing an open-hearth heat with compressed air. Metallurg 9 no.1:16-19 Ja '64 (MIR 18:1)

1. Sibirskiy metallurgicheskiy institut.

GUROV, A.N., dotsent; LOGINOV, A.P., dotsent [deceased]; RABINOVICH, G.L., dotsent; RUSIN, Z.Kh., dotsent; EYDINOVA, L.L., dotsent; TORF, I.F., prepodavatel'; ALEKSANDROV, A.M., prof., red.; FILIPPOVA, E., red.; LEBEDEV, A., tekhn. red.

[State budget of the U.S.S.R.] Gosudarstvennyi biudzhet SSSR. Moskva, Gosfinizdat, 1961. 560 p. (MIRA 15:2)

1. Kafedra Gosudarstvennogo byudzheta SSSR Leningradskogo finansovo-ekonomicheskogo instituta (for all except Filippova, Lebedev).

(Budget)

ACC NR: AP6036367 SOURCE CODE: UP/0109/66/011/011/1944/1952

AUTHOR: Tereshin, O. N.; Gurov, A. Ye.; Antipenkov, I. I.

ORG: none

TITLE: Antenna with a limited excitation region

SOURCE: Radiotekhnika i elektronika, v. 11, no. 11, 1966, 1944-1952

TOPIC TAGS: antenna, slot antenna

ABSTRACT: The problem is considered of obtaining a radiating surface based on a slotted periodic structure with a given radiation pattern and a given controlled (limited) excitation region. A connection is established between the coefficients of asymptotic expansion for which an antenna field, produced by a system of radiation sources, is absent in the far zone. This permits solution of the antenna synthesis problem for the case in which separate conditions are imposed on both the near field and the radiation pattern. Two co-phase and two antiphase radiation sources are considered in particular. Expressions are derived for the impedance function which depends on distribution of the primary sources, radiation pattern, and a law governing the current droop. The radiation characteristics of such a system were calculated and experimentally investigated. Theoretical and experimental results are in good agreement. Orig. art. has: 6 figures and 33 formulas.

SUB CODE: 09/ SUBM DATE: 01Jun65/ ORIG REF: 006/ ATD PRESS: 5106

Card 1/1

GUROV, B.G.

GUROV, B.G. (Chlyabinsk)

Foreign bodies in the bladder. Fel'd. i akush. 23 no.1:25-27 Ja '58.
(BLADDER--FOREIGN BODIES) (MIRA 11:3)

GUROV, B.M.

Effect of periodic brief shocks on diffusion processes. Trudy MPI 152:7-13 '63. (MIRA 17:4)

CHIRKOV, A.A.; GUROV, B.M.

Use of cast iron crushers for the calibration of piezoelectric pressure gauges. Trudy NPI 152:15-20 '63. (MIRA 17:4)

ACC NR: AR6005808 SOURCE CODE: UR/0137/65/000/010/I028/I028

AUTHOR: Gurov, B. M.; Chirkov, A. A.

TITLE: Effect of shock-wave treatment on the electric resistance of AMTs annealed aluminum alloy and ALZO cast aluminum alloy

SOURCE: Ref. zh. Metallurgiya, Abs. 10I190

REF SOURCE: Uch. zap. Kabardino-Balkarsk. un-t. Ser. fiz.-matem., vyp. 22, 1964, 218-219

TOPIC TAGS: aluminum alloy property, aluminum alloy, shock wave, crystal defect, electric resistance / AMTs aluminum alloy, ALZO aluminum alloy

ABSTRACT: The mechanism of action of shock waves on specimens of AMTs and ALZO alloys was investigated. The integral intensity of x-ray interference line (400) with respect to AMTs increases with increase in peak voltage while its width somewhat decreases. The length of ALZO specimens then decreases. It is assumed that shock waves cause a reduction in the concentration of point defects in the solid solution. A shock wave in AMTs yanks a dislocation out of its cloud so that the latter becomes thermodynamically unstable, which

UDC: 669.715:537.311.33

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ACC NR: AR6005808

contributes to the diffusion of the dislocation toward the boundaries of blocks and grains. In the ALZO alloy the shock wave contributes to the release of nonequilibrium atoms, which leads to a decrease in the electric resistance and size of the specimen. Shock-wave treatment under conditions assuring absence of plastic deformation leads to an increase in the mobility of nonequilibrium atoms. I. Dekhtyar. [Translation of abstract]

SUB CODE: 11, 20, 13

Card 2/2

L 46104-66 EWT(1)/EWP(m)/EWT(m)/T/EWP(t)/ETI IJP(c) JD/WW

ACC NR: AR6000448 SOURCE CODE: UR/0137/65/000/009/I018/I018

AUTHOR: Gurov, B. M. 18 B

TITLE: An investigation of the influence of shock waves on the decrepitation of supersaturated solid solutions of hardened alloys D1 and V93

SOURCE: Ref. zh. Metallurgiya, Abs. 9I107

REF SOURCE: Uzh. zap. Kabardino- Balkarsk. un-t. Ser. fiz.-matem., vyp. 22, 1964, 215-217

TOPIC TAGS: shock wave, solid solution, metal aging, aluminum alloy / D1 aluminum alloy, V93 aluminum alloy

ABSTRACT: Hardened specimens of aluminum alloys D1 and V93 were placed in a liquid in which shock waves with frequency of ≤ 5 sec^{-1} were generated. Maximum pressure in the liquid was converted into maximum stresses in the specimen. The aging processes were studied at 80C by measuring hardness, electrical resistivity ($\Delta\rho/\rho$) and by x-rays. No anomalous change was observed in the physical or mechanical properties of alloy D1, but an acceleration of the aging process was noted in alloy V93. E. Kadaner [Translation of abstract]

SUB CODE: 11, 20

Card 1/1 IC

UDC: 669.715.017.3:621.785.78

GUROV, D.P., student; SAPITSKIY, K. F., nauchnyy rukovoditel', kand. tekhn.nauk

Possible alternative for the chamber system in mining Berestovoe seam with use of the Gumennik cutter-loader. Sbor. nauch. rab. stud. SNO DII no.2:153-158 '57. (MIRA 11:12)

1.Gornyy fakul'tet Donetskogo industrial'nogo instituta im. N.S. Khrushcheva. 2.Predsedatel' Soveta studencheskogo nauchnogo obshchestva Donetskogo industrial'nogo instituta im. N.S. Khrushcheva (for Sapitskiy).
(Donets Basin--Coal mines and mining)
(Coal mining machinery)

K.

USSR/Forestry - Forest Crops.

Abs Jour : Ref Zhur - Biol., No 15, 1958, 68037

Author : Grozdov, B.V., Gurov, F.M., Pavlov, V.M., Nikonchuk, V.N.

Inst : Bryansk Forest Economy Institute.

Title : Introducing Some Quick-Growing Tree Species into the Forests of Bryansk Oblast'.

Orig Pub : Tr. Bryanskogo lesokhoz. in-ta, 1957, 8, 55-64.

Abstract : Data on investigations of the growth rate of larch crops of different geographic derivations demonstrate that the most favorable for conditions in Bryansk, Kaluga, and Smolensk oblast's are the European larch (of plain derivation), the Polish larch, and Sukachev larch from the southwestern part of its habitat (especially the large-coned variant). The best soil for larches is a leached chernozem with a loess subsoil; next best are grey,

Card 1/2

GROZDOV, Boris Vladimirovich, prof., doktor biolog.nauk; GUROV, F.M., dotsent, red.; PETERSON, A., tekhred.

[Guide to the Michurin Garden and arboretums of Bryansk and its environs] Putevoditel' po Michurinskomu sadu, dendrariiam Brianska i ego okrestnostei. Briansk, Izd-vo "Brianskii rabochii," 1959. 26 p. (MIRA 13:11)

1. Vsesoyuznyy tsentral'nyy sovet professional'nykh soyuzov. Turistsko-ekskursionnoye upravleniye.
(Bryansk region--Arboretums)

ACC NR: AP6023021 (A) SOURCE CODE: UR/0016/66/000/004/0082/0085

AUTHOR: Gurov, G. (Colonel)

ORG: None

TITLE: Training the battery for night operations

SOURCE: Voyennyy vestnik, no. 4, 1966, 82-85

TOPIC TAGS: military training, military personnel, antiaircraft weapon, helicopter, attack aircraft, fire control equipment

ABSTRACT: A night exercise designed to train antiaircraft artillery troops to cope with night attacks and night reconnaissance by low flying aircraft and helicopters is described. The exercise lasted for five hours, from 1800-2300, and involved taking up firing positions (1 hour) firing at "enemy" aircraft using automatic fire control equipment (1 hour); movement to a new firing position (1 hour, 30 minutes); operation of the battery when pursued by an enemy (1 hour); discussion of the exercise (30 minutes). The drill plan is shown in detail and characteristic errors are listed as critique subjects. Orig. art. has: 1 figure.

SUB CODE: 05,19/SUBM DATE: None

Card 1/1

GUROV, G.F., podpolkovnik meditsinskoy sluzhby

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