

USSR

UDC 612.82:612.014.48

PIONTKOVSKY, I. A., and KRUGLIKOV, R. I.

"Characteristics of Short-Term Memory in Rats Prenatally Exposed to Radiation"

Moscow, Doklady Akademii Nauk USSR, Vol 191, No 1, 1970, pp 218-220

Abstract: Characteristics of short-term memory in rats exposed to 150 on the 16th day of their prenatal development were investigated. The experiment was conducted in a plexiglas T-shaped labyrinth; the base was the starting chamber, shut off by a curtain, leading to the stem, or passageway, which led to two short corridors, right and left, each containing food at different periods. Controls and irradiated rats were accustomed to the labyrinth for 3-4 days. A signal (light and/or sound) indicated where the food was, the curtain was raised, and the rats were allowed to run for their food. After the rats tested food, they were taken up and placed again in the starting chamber. The experiment was repeated but without a signal, with the food in the same place. When the interval between the first and second runs was short (30 sec), the performance of both groups was 1/2

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PIONTKOWSKY, I. A., et al., Moscow, Doklady Akademii Nauk USSR, Vol 191, No 1, 1970, pp 218-220

much alike. When the interval was longer (1-2 min), the accuracy of performance was lessened in both groups, but more pronounced in the irradiated group, indicating the disappearance in the memory of traces of the recently performed actions.

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P UNCLASSIFIED PROCESSING DATE--0306L70
TITLE--SYNTHESIS OF HIGHER ALPHA, OMEGA DICHLOROCLEPINS BY THE ANODIC
CONDENSATION OF OMEGA CHLOROCARBOXYLIC ACIDS AND 1,3, BUTADIENE. II. -U-
AUTHOR--KHEIZOLITOVA, P.A., MIRKIN, L.A., FISCHIN, M.YA.

COUNTRY OF INFO--USSR

SOURCE--ZH. CAG. KHIM. 1970, 6(2) 219-22

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHLORINATED ORGANIC COMPOUND, ELECTROLYSIS, CARBOXYLIC ACID,
BUTADIENE, GAS CHROMATOGRAPHY, CHEMICAL SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1980/1738

STEP, NC--GR/C366/70/006/002/0219/0222

CIRC ACCESSION NO--AP0049916

UNCLASSIFIED

14
5
19

Acc. Nr.

APC049816

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

UR 0366

106538h Synthesis of higher α,ω -dichloroolefins by the anodic condensation of ω -chlorocarboxylic acids and 1,3-butadiene. II. Khrizolitova, M. A.; Mirkind, L. A.; Fioshin, M. Ya. (USSR). *Zh. Org. Khim.* 1970, 6(2), 219-22 (Russ). The electrolysis of $\text{Cl}(\text{CH}_2)_n\text{CO}_2\text{H}$ (I) or $\text{Cl}(\text{CH}_2)_n\text{CO}_2\text{H}$ (II) in the presence of $\text{H}_2\text{C}=\text{CHCH}=\text{CH}_2$ gave the following products (identified by gas chromatog.): from I, $\text{Cl}(\text{CH}_2)_n\text{CH}=\text{CH}(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}(\text{CH}=\text{CH}_2)(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}=\text{CHCH}(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}(\text{CH}=\text{CH}_2)\text{CH}(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}(\text{CH}=\text{CH}_2)\text{CH}(\text{CH}_2)_n\text{Cl}$; and from II, $\text{Cl}(\text{CH}_2)_n\text{CH}=\text{CH}(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}(\text{CH}=\text{CH}_2)(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}=\text{CHCH}(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}(\text{CH}=\text{CH}_2)\text{CH}(\text{CH}_2)_n\text{Cl}$, $\text{Cl}(\text{CH}_2)_n\text{CH}(\text{CH}=\text{CH}_2)\text{CH}(\text{CH}_2)_n\text{Cl}$. CPJR

REEL/FRAME
19801738

USSR

UDC 51:801

PIOTROVSKIY, R. G.

"Machine Translation (Some Results and Prospects)"

V sb. Probl. strukturn. lingvistiki 1971 (Problems of Structural Linguistics in 1971--collection of works), Moscow, Nauka, 1972, pp 521-533 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V538)

Translation: The following machine translation program is proposed: 1) a statistical description of the texts of a defined form and selection of units in the base sublanguage; 2) construction of an automated bilingual dictionary of word forms, words and phrases; 3) construction of the morphological-syntactic translation; 4) creation of algorithms in programs for eliminating lexical ambiguity; 5) combination of steps 2-4 into an integrated system. The impossibility of machine translation of high linguistic quality is recognized. However, the use of machines to assist a translator (the creation of automated dictionaries), classification and annotation, texts, the translation of titles and word-for-word translation by a machine is assumed possible. The results obtained in these areas are indicated. It is proposed that the success of future implementations will depend on the memory of the computers used and the development of programming languages.

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1/2 011
UNCLASSIFIED
TITLE--STEREOCHEMISTRY OF ANTIBIOTICS OF THE AUREOLIC ACID GROUP -U-
PROCESSING DATE--23OCT70
AUTHOR--(03)-BERLIN, YU.A., KOLOSOV, M.N., PIOTROVICH, L.A.
COUNTRY OF INFO--USSR
SOURCE--TETRAHEDRON LETT. 1970, (16), 1329-31
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--STEREOCHEMISTRY, ANTIBIOTIC, MOLECULAR STRUCTURE/(U)OLIVIN
ANTIBIOTIC, (U)CHROMOMYCIN ANTIBIOTIC, (U)OLIVOMYCIN ANTIBIOTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/0414
STEP NO--UK/0000/70/000/016/1329/1331
CIRC ACCESSION NO--AP0122594
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHEM. EVIDENCE IS GIVEN FOR THE
ABS. CONFIGURATION OF 1 PRIME S, 2S, 3R, 3 PRIME S, 4 PRIME R FOR OLIVIN
(1, R EQUALS R PRIME1 EQUALS R PRIME2 EQUALS H) AND CHROMOMYCIN (1, R
EQUALS ME, R PRIME1 EQUALS R PRIME2 EQUALS H), WHICH ARE THE AGLYCONES
OF AUREOLIC ACID, CHROMOCYCINS AND OLIVOMYCINS. FACILITY: INST.
CHEM. NAT. PROD., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.317:621.373

ALPAROV, A. U., PIOTROVSKIY, V. A.

"A Low-Frequency Measurement Oscillator"

Tr. Kazan. aviats. in-ta (Works of the Kazan' Aviation Institute), 1970, vyp. 121, pp 76-81 (from RZh-Radiotekhnika, No.11, Nov 70, Abstract No 11A335)

Translation: A block diagram is given for a measurement oscillator with a relative instability of $\pm 5 \cdot 10^{-5}$ and a coefficient of nonlinear distortion of 0.1%, and circuits are given for a quartz oscillator, frequency divider, and active narrow-band RC filter. The quartz oscillator contains a 2-5 kHz resonator. The frequency divider is constructed on the basis of semiconductor flip-flops in a counter circuit. The filter utilizes a double-T bridge. All are vacuum-tube circuits. Four illustrations, bibliography of three titles.
E. L.

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ROYKO, L. L., and PIPA, V. L.

"Pinch Effect in Semiconductors with Strong Degeneration of Electron-Hole Plasma"

Leningrad, Fizika Tverdogo Tela, Vol. 13, No. 2, February 1971, pp 579-584

Abstract: This article contains a study of the stationary pinch effect in a crystal in the shape of a plate under the conditions of strong degeneration of an electron-hole plasma. The effect of the mechanisms of electron pulse relaxation and electron and hole recombination on the spatial distribution of the current carriers and the voltampere characteristics of the crystal is studied. The investigation is limited to the case in which the electron mobility μ_n exceeds the hole mobility μ_p significantly (the usual case in semiconductors with a narrow forbidden zone). In this case, the pinch situation depends essentially on the detailed electron pulse relaxation mechanism and very weakly on the hole pulse relaxation mechanism. The slope of the voltampere characteristics during monomolecular recombination is much greater than the slope in the case of bimolecular recombination -- in the latter case the pinch effect leads to a decrease in the total number $1/2$.

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BOYKO, I. I., and PIPA, V. I., Fizika Tverdogo Tela, Vol 13, No 2, February 1971, pp 579-584

of carriers in the crystal. The analysis indicates that experimental study of the voltampere characteristics under pinch effect conditions can provide useful information about the predominate mechanism of conductivity in a crystal. The discussion pertains primarily to the case in which the surface generation-recombination processes can be neglected, but an equation is presented for renormalization of the critical field when the surface recombination rate on the $y = \pm d$ faces is nonzero.

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1/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SHIELDING OF CHARGED IMPURITIES IN SEMICONDUCTORS IN THE PRESENCE
OF A CURRENT -U-
AUTHOR--PIPA, V.I.
COUNTRY OF INFO--USSR
SOURCE--LENINGRAD, SOLID STATE PHYSICS; MAY 1970; PP 1323-8
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--SEMICONDUCTOR IMPURITY, ELECTRON DENSITY, ELECTRONIC
SHIELDING, DEBYE LENGTH, COULOMB FIELD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/1012 STEP NO--UR/0181/70/000/000/1323/1328
CIRC ACCESSION NO--AP0133079
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133079

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPRESSION IS OBTAINED FOR THE DENSITY DISTRIBUTION OF THE SHIELDING CHARGE AROUND CHARGED POINT IMPURITIES IN SEMICONDUCTORS IN THE PRESENCE OF A CURRENT FOR THE CASE IN WHICH THERE IS DIFFUSED MOTION OF THE CARRIERS IN THE FIELDS OF THE IMPURITIES. THE DISTRIBUTION IS SHOWN TO BE ANISOTROPIC, ELONGATED IN THE DIRECTION OF THE CARRIER CURRENT AND CHARACTERIZED BY "COMPRESSED" AND "ELONGATED" AREAS OF SHIELDING. THE PRESENCE OF A CURRENT THE POTENTIAL IS DISTINGUISHED FROM THE DEBE-HUCKEL EQUILIBRIUM POTENTIAL BY THE FACT THAT AT GREAT DISTANCES FROM A CHARGED IMPURITY THE POTENTIAL DECREASES, LIKE THE POTENTIAL OF A DIPOLE, WHILE AT SHORT DISTANCES IT TENDS, WITH AN INCREASE IN THE ATTRACTING ELECTRICAL FIELD, TOWARD THE COULOMB POTENTIAL. THE AUTHOR EXTENDS HIS THANKS TO S. I. PEKAR AND I. I. BOYKO FOR THEIR HELPFUL DISCUSSION AND ASSISTANCE IN THE WORK. FACILITY: INSTITUTE OF SEMICONDUCTORS, UKRAINIAN ACADEMY OF SCIENCES, KIEV.

UNCLASSIFIED

USSR

PIPA, V. I. (Institute of Semiconductors, Ukrainian Academy of Sciences, Kiev)

"Shielding of Charged Impurities in Semiconductors in the Presence of a Current"

Leningrad, Solid State Physics; May 1970; pp 1323-8

Abstract: An expression is obtained for the density distribution of the shielding charge around charged point impurities in semiconductors in the presence of a current for the case in which there is diffused motion of the carriers in the fields of the impurities. The distribution is shown to be anisotropic, elongated in the direction of the carrier current and characterized by "compressed" and "elongated" areas of shielding. The presence of a current the potential is distinguished from the Debye-Hückel equilibrium potential by the fact that at great distances from a charged impurity the potential decreases, like the potential of a dipole, while at short distances it tends, with an increase in the attracting electrical field, toward the Coulomb potential.

The author extends his thanks to S. I. Pekar and I. I. Boyko for their helpful discussion and assistance in the work.

The article includes 16 equations and two figures.

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UDC: 519.214

PIPIRAS, V.

Asymptotic Expansions for the Distribution Function of a Sum of Independent Lattice Random Quantities

Lit. mat. sb. (Lithuanian Mathematics Collection), 1970, 10, No 3, pp 517-536 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V46)

Translation: Let $\xi_1, \xi_2, \dots, \xi_n$ be independent random quantities which take on values of the form $a_i + hk$ (a_i and $h > 0$ are some numbers; $k = 0, \pm 1, \pm 2, \dots$; $i = 1, 2, \dots, n$). The results proved in the paper show that with the limitation $M|\xi_i|^r < \infty$ ($r > 3$ is any number; $i = 1, 2, \dots, n$) and certain other conditions, the remainder in the asymptotic expansion of the distribution func-

tion of $B_n^{-1} \sum_{i=1}^n \xi_i$ is no greater in absolute value than $\epsilon(B_n(1+|x|)) \times$

$\times (1+|x|)^{-L_{rn}}$, where the positive function $\epsilon(z) \rightarrow 0$, when $z \rightarrow \infty$. Here B_n^2 is

the variance of $\sum_{i=1}^n \xi_i$, and L_{rn} is the Lyapunov fraction. Author's abstract.

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USSR

UDC: 621.385

PIPKO, A. I., GAVRILOV, A. A., KOMISSARCHIK, V. M.

"An Installation for Vacuum Treatment of the Cathode Elements of Magnetrons"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 24, 1970, Soviet Patent No 277119, Class 21, filed 27 Dec 67, p 63

Abstract: This Author's Certificate introduces a device for vacuum treating the cathode elements of magnetrons. The unit contains a working chamber, a prevacuum chamber, a loading box, and a table for holding parts with vacuum electrical leads which can be moved out of the loading chamber into the working chamber. As a distinguishing feature of the patent, provision is made for checking the thermionic and secondary emission properties of the cathode by equipping the installation with a measuring device mounted on the working table. This device is made in the form of a cylindrical anode with an annulus in the middle, and an annular tungsten cathode surrounding the anode at the level of the annulus. The anode and cathode are fastened to insulators, and the inner surface of the anode acts as a collector of secondary and reflected electrons from the cathodes being inspected.

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1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--RELAYS OF DISCOVERIES -U-
AUTHOR--PIPKO, D. *P*
COUNTRY OF INFO--USSR
SOURCE--SOTSIALISTICHESKAYA INDUSTRIYA, AUGUST 6, 1970, P 3, COLS 2-6
DATE PUBLISHED--06AUG70

SUBJECT AREAS--MATERIALS, BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--METAL WHISKER, METALLURGIC RESEARCH FACILITY

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1882 STEP NO--UR/0533/70/000/000/0003/0003
CIRC ACCESSION NO--AN0125487

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AN0125487

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE ARTICLE GIVES A VERY BRIEF REVIEW OF THE RESEARCH ACTIVITIES AT THE INSTITUTE OF METALLURGY IMENI BAYKOV OF THE ACADEMY OF SCIENCES, U.S.S.R., IN CONJUNCTION WITH THE 100TH ANNIVERSARY OF THE BIRTHDAY OF ITS NAMESAKE A. A. BAYKOV. THE INSTITUTE'S DIRECTOR IS ACADEMICIAN N. V. AGEYEV. THE LABORATORY THAT RESEARCHES EXOTIC MATERIALS, SUCH AS WHISKERS, IS HEADED BY CORRESPONDING MEMBER OF THE ACADEMY YE. M. SAVITSKIY. ONE OF THE ASSOCIATES OF THIS LABORATORY IS CANDIDATE OF TECHNICAL SCIENCES. G. S. BURKHANOV. THE LABORATORY THAT DEALS WITH TITANIUM ALLOYS IS HEADED BY DOCTOR OF CHEMICAL SCIENCES O. S. IVANOV. HE HAS CLAIMED THAT TENSILE STRENGTH VALUE OF TITANIUM ALLOYS CAN BE RAISED TO 120-180 KG-CM SQUARED. DOCTOR OF TECHNICAL SCIENCES YU. V. TSVETKOV, CORRESPONDING MEMBER OF THE ACADEMY D. M. CHIZHIKOV, AND CANDIDATE OF TECHNICAL SCIENCES V. I. KASHIN ARE ALSO MENTIONED. A PHOTOGRAPH IS GIVEN WHICH SHOWS YU. UGASTE, JUNIOR SCIENCE ASSOCIATE OF THE X RAY SPECTRAL RESEARCH LABORATORY, AND V. KHLONOV, CHIEF MECHANIC OF THE TEST APPARATUS.

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USSR

PIPKO, D.

"A Relay of Discoveries"

Moscow, Sotsialisticheskaya Industriya, 6 Aug 70, p 3, cols. 2-6

Abstract: An account is given of an interview with N. V. Ageyev, Director of the Institute of Metallurgy imeni A. A. Baykov, and other scientists at the Institute on the occasion of the 100th anniversary of Baykov's birth. In line with modern technology's requirements for super-strong, super-light, super-hard, and super-heat-resistant materials, much attention at the Institute is being given to the development of "whiskers," artificially grown crystals. According to G. S. Burkhanov, Candidate of Technical Sciences, single crystals of practically all of the high-melting and rare metals have been obtained and studied. Under the direction of D. M. Chizhnikov, Corresponding Member of the Academy of Sciences USSR, a method has been developed for reducing metals in a plasma stream by using cheap and safe natural gas. In the plasma stream the metal and gas are inseparable. This union however, must be destroyed or the properties of the metal will suffer. "If a region of lowered pressure is created over the molten metal in the ladle, a part of the gases in the melt can escape and can be removed

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PIPKO, D., Sotsialisticheskaya Industriya, 6 Aug 70, p 3, cols. 2-6

easily," according to Candidate of Technical Sciences V. I. Kashin. Under the leadership of Academician A. A. Samarin, steels have been obtained which have new properties and increased plasticity. Tests with the new steels have shown that defects are practically absent when the most complex parts are stamped.

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CSO: 1842-W

172 010
UNCLASSIFIED
TITLE--PREPARATION OF A MECHANICALLY STRONG, LIQUID PHASE HYDROGENATION
CATALYST -U-
AUTHOR-(103)-SOKOLSKIY, D.V., GOGOL, N.A., PIPKO, G.N.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 266,735
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970,
DATE PUBLISHED--01APR70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL PATENT, CALCIUM SULFATE, CATALYTIC HYDROGENATION,
CATALYST
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1793
CIRC ACCESSION NO--AA0132059
STEP NO--UR/0482/70/000/000/0000/0000
UNCLASSIFIED

272 010

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0132059

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. A MECH. STRONG LIQ. PHASE
HYDROGENATION CATALYST WAS OBTAINED BY ADDING A BINDER, SUCH AS CASO
SUB4, TO THE CATALYTIC MASS BY CUPPTG. IT WITH A CARRIER AND AN ACTIVE
PHASE.

FACILITY: INSTITUTE OF CHEMICAL SCIENCES; ACADEMY OF
SCIENCES, KAZAKH S.S.R.

UNCLASSIFIED

1/2 010
UNCLASSIFIED
PROCESSING DATE--23OCT70
TITLE--ON THE PROBLEM OF STATISTICAL PARAMETERS CHANGE OF RIVER RUNOFF
WHEN THE HYDROGRAPH IS DIFFERENTLY CUT INTO SECTIONS WITH ANNUAL
AUTHOR--(03)-SVANIDZE, G.G., PIRANASHVILI, Z.A., KILASONIYA, A.N.
COUNTRY OF INFO--USSR
SOURCE--METEOROLOGIYA I GIDROLOGIYA, 1970, NR 6, PP 69-77
DATE PUBLISHED-----70
SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--RIVER, RUNOFF, HYDROGRAPHY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1760
STEP NO--UR/0050/70/000/006/0069/0077
CIRC ACCESSION NO--AP0125376
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0125376

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHANGES OF VALUES OF VARIATION AND
CORRELATION COEFFICIENTS WITH DIFFERENT DATES OF THE BEGINNING OF THE
HYDROLOGICAL YEAR AND VARIOUS FEATURES OF RIVER RUNOFF PROCESS ARE
ANALYSED. FACILITY: GRUZINSKIY NAUCHNO-ISSLEDOVATEL'SKIY
INSTITUT ENERGETIKI.

UNCLASSIFIED

USSR

PIRALISHVILI, SH. A.

UDC 536.24

"Vortex Counterflow Heat Exchanger"

Sb. nauch. rabot molodykh uchenykh. Kuybyshev. aviats. in-t (Collected Scientific Works of Young Scientists. Kuybyshev Aviation Institute), 1971, vyp. 1, pp 35-38 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6B816)

Translation: The vortex heat exchanger is a short cylindrical chamber to one end of which a cold heat exchange agent is fed through the vortex chamber. The cold heat exchange agent forms an intense twisted vortex flow pressed against the walls of the chamber, and it withdraws from the opposite end of the chamber. Opposite to the cold heat exchange agent, a hot heat exchange agent is pumped along the chamber axis. Preliminary experiments have demonstrated the high efficiency of this type of heat exchanger by comparison with the counterflow recuperative heat exchangers in which the hot and cold heat exchange agents are separated by a wall.

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1/2 011
UNCLASSIFIED
TITLE--CHEMISTRY OF UNSATURATED COMPOUNDS. SYNTHESIS AND SOME REACTIONS OF
TERTIARY(ALLYLETHYNYL)CARBINOLS --U-
AUTHOR--(03)-BIRENYAN, S.K., KINOYAN, E.S., VARTANYAN, S.A.
COUNTRY OF INFO--USSR
SOURCE--ARM. KHIM. ZH. 1970, 23(2), 140-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACETYLENE, ALCOHOL, ALLYL CHLORIDE, ISOMERIZATION, BUTENE,
CHEMICAL SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND, HETEROCYCLIC OXYGEN
COMPOUND, AMINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1444
STEP NO--UR/0426/70/023/002/0140/0142
CIRC ACCESSION NO--AP0116886
UNCLASSIFIED

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CIRC ACCESSION NO--AP0116886

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TERTIARY ACETYLENIC CARBINOLS RR PRIME C(OH)C TRIPLE BOND CH (I) REACT WITH ALLYL CHLORIDE OR BROMIDE AND 1,3,DICHLORO,2,BUTENE AT 40-50DEGREES UNDER N IN THE PRESENCE OF CU SUB2 CL SUB2 AND AN AQ. SOLN. OF NH SUB4 CL TO GIVE RR PRIME C(OH)C TRIPLE BOND CCH SUB2 CH:CXR DOUBLE PRIME (II), X BEING H OR CL AND R DOUBLE PRIME BEING H OR ME. ISOMERIZATION OF II (X EQUALS H) WITH HGSO SUB4 (III) IN MEQH AT 30-50DEGREES GAVE RR PRIME C:CHCOCH SUB2 CH(OME)ME (IV). SIMILARLY, II (X EQUALS CL) GAVE RR PRIME C:CHCOCH SUB2 CH:CCLME (V). II (X EQUALS H) WERE CYCLIZED TO VI BY TREATMENT WITH 10PERCENT H SUB2 SO SUB4 AND III. (ADDITIONAL SYNTHESIS AND REACTIONS SHOWN ON MICROFICHE).

FACILITY: INST. ORG. KHIM., EREVAN, USSR.

UNCLASSIFIED

USSR

UDC 8.74

GRISHINA, T. M., PIRIN, S. I., SEREBRYAKOV, V. A.

"YaRUS Expanded Programming System"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 181-189 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V462)

Translation: A programming system is described which offers the possibility for the user to have the expansions he requires by introducing new syntactic structures, defining new data structures and new operations. The base for the system is the so-called expanded language the construction of which is an iterative process. Its origin is a language λ_0 . In the $k + 1$ step of the process, the language λ_{k+1} described by means of the language λ_k is generated.

The process continues until the language is obtained with the required means of expression. In the initial state the YaRUS system comprises two languages: the TsYeNTR and the process control language. The TsYeNTR language is the base language: from this language the expansion process begins. Its base is the BCL language developed at the London Institute of Computer Engineering. The program in the TsYeNTR language comprises a series of procedures each of which includes a heading and a body. The heading, in turn, comprises the names and

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GRISHINA, T. M., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1973, pp 181-189

attributes of the name. The attributes of the name are the descriptor of the title procedure and the list of formal parameters. The body of the procedure is the module comprising the sequence of tagged elements separated by the symbol ";". The element can be a module, an alternative, a controller, the procedure call, the operator and the description. The control language is used to control the processes taking place in the system. The instructions of this language are divided into the general instructions of the TEST type and the instructions giving the operating mode of the system. The general instructions are used to initiate the problem in the system, completion of operation of the system, control of the communications channels, and calling the archive. The instructions of the TEST type are traditional instructions of the operation with an archive. The operating mode instructions provide for operation of the system in one of three modes: expansion, compilation and execution.

2/2

1/2 031
UNCLASSIFIED
TITLE--INFRARED ABSORPTION SPECTRA OF RARE EARTH SULFOSALICYLATES -U-
AUTHOR--(02)-SHESTAKOVA, M.T., PIRKES, S.B.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 993-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL BONDING, IR SPECTRUM, ABSORPTION SPECTRUM, RARE EARTH METAL, SPECTROSCOPIC ANALYSIS, THIO, LANTHANUM COMPOUND, CERIUM COMPOUND, PRASEODYMIUM COMPOUND, NEODYMIUM COMPOUND, SAMARIUM COMPOUND, EUROPIUM COMPOUND, GADOLINIUM, HOLMIUM, YUTRIUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1482
CIRC ACCESSION NO--AP0123385
STEP NO--UR/0038/70/015/004/0793/0995
UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0123385

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE IR SPECTRA OF LA, CE, PR, ND, SM, EU, GO, HO, Y, AND ER 5-SULFOSALICYLATES WERE DETD. AND THEIR ABSORPTION MAX. ARE TABULATED. THE SALTS HAVE LN-O BOND OF MARKEDLY IONIC CHARACTER.

FACILITY: SARATOV, COS. UNIV. IM. CHERNYSHEVSKOGO, SARATOV, USSR.

UNCLASSIFIED

Acc. Nr.:

AP0046777

Ref. Code:

7180113

USSR

UDC 629.113.075.001.5

PIRKOVSKIY, YU. V., RASTEGAYEV, L. G., and KAMENEV, V. D.

"Investigation of the Turn of a Two-Axle Motor Vehicle With Different Types of Drive for the Driving Wheels"

Moscow, Avtomobil'naya Promyshlennost' (Motor Vehicle Industry), No 1, 1970, pp 22-24

Translation: The relationships determining the change of power used in turning a motor vehicle with a 4x4 wheel formula depending on type of drive for the driving wheels are analyzed. Power change is associated with the presence of lateral forces causing tire drift and redistribution of torque along motor vehicle drive bridges. (2 illustrations, 6 biblio. ref.)

Reel/Frame

19790081

18 LF

USSR

UDC 669.18-412.621.746.753

PIRKULOV, V. G., TAGER, L. P., PRYANISHNIKOV, I. S., FILIPPOV, A. F., and
KLYUYEV, H. M., Elektrostal' Plant and Moscow Institute of Steel and Alloys

"Producing Charging Ingots From Metal-Abrasive Wastes of Heat-Resistant Alloys"

Moscow, Stal', No 8, Aug 73, pp 724-725

Abstract: The technology of concentrating the wastes from grinding a heat-resistant nickel-base alloy using electrical separators with corona discharge has been developed. The engineering modes were determined that provide the production of rich metallic concentrates with a metal content of almost 90% (mixture of oxidized metallic chip and alumina). The enriched concentrate was remelted in an experimental 50-kg induction furnace on a charging block with a resulting quality that satisfied specified requirements for smelting of heat-resistant alloys. Three figures, four bibliographic references.

1/1

- 79 -

USSR

UDC 530.145

AZIMOV, S. A., ARUSHANOV, G. G., and PIRMATOV, I. I.

"Stationary Values of the Differential Cross Section and Overlap Functions for High Energies"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Fizika, No 8, 1973, pp 73-79

Abstract: The extremal values obtained earlier (G. G. Arushanov, ZhETF, No 51, 1402, 1966; S. A. Azimov, et al., Izv. vuzov SSSR, Fizika, No 4, 103, 1970) for the differential cross section of elastic scattering in the diffraction cone region are generalized to the case of other angles. They are reduced to a form convenient for a comparison with experimental values which shows that all the external values are close to the experimental value. Similar results were also obtained in the case of binary inelastic reactions and overlap functions. When deriving the sample values for the overlap functions, one should preferably begin with the ordinary expansion in Legendre polynomials and not the integral representation, since the condition of unitarity in this representation, generally speaking, has a complicated form. In the case of small transmitted pulses in which the formulas can be obtained comparatively easily in both representations, they are comparable.

1/1

Entomology

USSR

UDC 595.767 (575.172)

MEDVEDEV, G. S., and PIRNAZAROV, B. P., Institute of Zoology, Academy of Sciences USSR, Leningrad, and Combined Institute of Natural Sciences, Karakalpak Branch of the Academy of Sciences Uzbek SSR, Nukus

"A New Species of Beetle of the Genus *Leptodes* Sol. (Coleoptera, Tenebrionidae) from the Coast of the Aral Sea"

Leningrad, Entomologicheskoye Obozreniye, Vol 51, No 1, 1972, pp 125-126

Abstract: A new species of beetle of the genus *Leptodes* Sol., *Leptodes* (*Leptodopsis*) *reimovi* G. Medvedev et Pirnazarov, sp. n., was discovered on the western coast of the Aral Sea at an eastern chink of the Ustyurt. The new species has some traits common with those of *L. suworowi* Rtt., but shows characteristics which distinguish it in a pronounced manner from the latter species. The discovery of a species of the subgenus *Leptodopsis* Haag-R. on the eastern reaches of the Ustyurt is of interest, because the closest areas in which species of this subgenus have been previously found are at Karatau near the Syr-Dar'ya and at the western spurs of the Gissar Ridge. One may assume that at some time in the past more favorable conditions existed for the spread of mountain species to Ustyurt across the intervening area, which is now a desert.

1/1

UDC 541.67

USSR

PIRNAZAROVA, F. N., POLTORAKOV, A. P., and EMANUEL', N. M., Tashkent
Polytechnical Institute, Institute of Chemical Physics, Academy of Sciences,
USSR

"Cation-Radicals of the Phenothiazine Type of Psychopharmacological Preparations"

Tashkent, Uzbekskiy Khimicheskiy Zhurnal, No 5, 1970, pp 62-65

Abstract: Biological activity of phenothiazine (PT) type of compounds is related to their being in the cation-radical state, which can be achieved by one electron oxidation of PT. A series of PT derivatives and some parent tricyclic structures were investigated by EPR spectroscopy. Analysis of spectral data led to a conclusion that the ability of PT-compounds to form stable cation radicals in acid media is related to the electron donor properties of PT nucleus. Transformation of the PT nucleus or the presence of an electron-accepting carbonyl group in α -position to the nitrogen lowers the electron donating activity of the PT system and consequently their ability to form cation radicals.

1/1

USSR

UDC 621.396

PIROGOV, A. A., Active Member of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Prospects for Utilizing Ballistic Antennas"

Moscow, Radiotekhnika, Vol 27, No 1, 1972, pp 83-84

Abstract: Some aspects of radiotechnical applications of ballistic antennas -- mastless antennas in the form of a rotating loop of flexible wire suspended in the air -- are discussed briefly. A laboratory operating model of the ballistic antenna was developed and manufactured, and experimental radio transmission on it demonstrated the fitness of the antenna and the excitation system. Some possible advantages of the antenna can be rapid scanning, difficulty of visual detection, fast repair in the case of breakdown, and economy.

1/1

- 10 -

Concrete

USSR

UDC: 66.043.2

PIROGOV, A. A., YUTINA, A. S., RAKINA, V. P. and VOLKOV, N. V., Ukrainian
Scientific Research Institute of Refractories

"Heat-Insulating Light-Weight Concretes"

Moscow, Ogneupory, No 4, Apr 72, pp 6-10

Abstract: A review is presented of the basic methods of producing heat-insulating light-weight concretes developed in recent years at the Ukrainian Scientific Research Institute of Refractories for service at temperatures from 1000 to 1400°C. Most extensive use has been made of heat-insulating concretes with various porous fillers, including porous corundum, porous alumina, kaolin, foamed chamotte, distended vermiculite, keramsit, agloporite, perlite, and granulated slags. The binders include alumina and Portland cements, liquid glass, orthophosphoric acid, and phosphates. Both the fillers and binders appear to be governing the fire properties of the heat-insulating concretes. The characteristics of high-alumina and aluminosilicate concretes and concretes with combined fillers, types of filler and binders, apparent densities, compressive strengths, heat

1/2

USSR

PIROGOV, A. A., et al, Ogneupory, No 4, Apr 72, pp 6-10

conductance, and tentative service temperature are detailed in a table. Future trends point to more effective methods of producing special porous granulated fillers using distention and foaming. (2 illustrations, 1 table, 16 bibliographic references).

2/2

- 9 -

1/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--THE NEUROCHEMICAL ANALYSIS OF THE PRIMARY RESPONSE TO FLASH
STIMULATION IN CATS UNDER NEMBITAL ANESTHESIA -U-

AUTHOR--(02)-BATUYEV, A.S., PIROGOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IMENI I. M. SECHENOVA, 1970, VOL 56,
NR 3, PP 297-304

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--BRAIN, ANESTHESIA, BARBITURATE, NEURAL TRANSMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/1614

STEP NO--UR/0239/70/056/003/0297/0304

CIRC ACCESSION NO--AP0052809

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0052809

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHEMICAL ORGANIZATION OF THE CORTICAL ELEMENTS PARTICIPATING IN THE GENESIS OF PRIMARY RESPONSE (PR) WAS STUDIED WITH APPLICATION OF DIFFERENT SUBSTANCES ON THE BRAIN SURFACE. DIFFERENT APPLICATION EFFECTS WERE REVEALED: DIMINUTION (KCL, NEMBUTAL) AND INCREASE (CHLORALOSE, ESERIN, ATROPIN) OF BOTH PR PHASES, THEIR DIFFERENTLY DIRECTED CHANGES (STRICHNIN, GABA), AFFECTING OF THE FIRST POSTIVIE PR PHASE ONLY (ADRENALIN, AMINAZINE). THE APPLICATION EFFECT OF ESERIN, ATROPIN AND CHLORALOSE INVOLVED RATHER THE FIRST PR PHASE CHANGE THAN THE NEGATIVE ONE. IT SEEMED REASONABLE TO SUGGEST THAT BOTH PR PHASES WERE GENERATED IN THE SURFACE CORTICAL LAYERS AND REFLECTED THE ACTIVATION OF BOTH INHIBITORY AND EXCITATORY CORTICAL ELEMENTS. FACILITY: THE LENINGRAD STATE UNIVERSITY, LENINGRAD.

UNCLASSIFIED

1/3 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--EFFECT OF LIME BINDERS ON THE SINTERING OF ALUMINA MASSES -U-
AUTHOR-(03)-PIROGOV, A.A., MIRAKYAN, M.M., PRIMACHENKO, V.V.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(3), 29-32
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LIME, ALUMINA, REFRACTORY MORTAR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0869 STEP NO--UR/0131/70/035/003/0029/0032
CIRC ACCESSION NO--AP0118043
UNCLASSIFIED

2/3 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118043

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TECH. AL SUB2 O SUB3, MEDICINAL GYPSUM (HEMIHYDRATE), CHALK, Ca(OH)SUB2 , AND HIGH ALUMINA CEMENT WERE CHOSEN AS INITIAL MATERIALS FOR THE STUDY OF THE EFFECT OF LIME BINDERS ON THE SINTERING OF AL SUB2 O SUB3 MASSES. THE LIME BINDERS WERE ADDED TO MASSES IN SUCH AMT. TO ACHIEVE 5PERCENT CAO IN THE FIRED SAMPLES. THIS CONTENT CORRESPONDS TO FORMING SIMILAR TO 60PERCENT CA HEXAALUMIANTE AFTER HIGH TEMP. FIRING. SAMPLES (CUBES) WERE FIRED 2 HR IN A FURNACE AT 600, 800, 1000, 1200, 1400, 1600, AND 1700DEGREES. ALL BINDERS USED INHIBIT SINTERING OF AL SUB2 O SUB3. ACCORDING TO THE INHIBITION EFFECT THE BINDERS ARE ARRANGED: HIGH ALUMINA CEMENT, Ca(OH)SUB2 , CHALK, AND GYPSUM. THE GYPSUM SHOWS THE MAX. INHIBITION EFFECT. A LOW APPARENT D. OF FIRED GYPSUM SAMPLES (1.77 G-CM PRIME3) IS CAUSED BY THE LOWERED D. OF DRIED SAMPLES AND BY THE LARGE WT. LOSS DURING FIRING. THESE SAMPLES SHOW ALSO A MIN. VOL. SHRINKAGE, NAMELY 33.2PERCENT AT 1600DEGREES (SAMPLES OF PURE AL SUB2 O SUB3 49.8PERCENT). IN SAMPLES WITH LIME BINDERS THE FIRMATION OF CA ALUMINATES ACCOMPANYING VOL. ENLARGEMENT SETS IN. THE HIGHER THE DECOMP. TEMP. OF THE LIME BINDERS, THE GREATER THE INERTIA TO SECONDARY CONTACT SINTERING OF AL SUB2 O SUB3 GRAINS AND HEXAALUMINATE FORMATION AND THE SMALLER THE SHRINKAGE. THE INTENSIVE SHRINKAGE OF MASSES WITH ALL ADDNS. BEINGS ONLY AFTER REACTIONS WHICH ARE ASSOCD. WITH THE VOL. ENLARGEMENT. A LARGER FIRING SHRINKAGE OF THE MASS WITH HIGH ALUMINA CEMENT ADDN. AT 600-900DEGREES IN COMPARISON WITH SHRINKAGES OF OTHER MASSES IS CONDITIONED BY THE DEHYDRATION OF THE CEMENT.

UNCLASSIFIED

3/3 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118043

ABSTRACT/EXTRACT--THE INHIBITION OF SINTERING UP TO 1200DEGREES OF THE
LATTER MASS CAN BE EXPLAINED BY THE TRANSITION OF MONOALUMINATE INTO
DIALUMINATE. FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOR.,
KHARKOV, USSR.

UNCLASSIFIED

USSR

P
PIROGOV, A. A., MIRAK'YAN, M. M.

"Influence of Lime Binders on the Sintering of Alumina Masses"

Moscow, Ogneupory, No 3, Mar 70, pp 29-32

Abstract: Various lime binders have various influences on compaction of alumina masses during drying and roasting. Of the binders studied, gypsum had the strongest inhibiting influence on sintering of alumina. The decreased density of roasted alumina masses with gypsum added resulted from the lower flame shrinkage, a result of the higher decomposition temperature of gypsum, and increased weight loss during roasting.

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- 52 -

Acc. Nr:

AP0046636

Abstracting Service:

CHEMICAL ABST.

4-70

Ref. Code:

UR 0131

82486m Effect of fluoride mineralizers on the sintering of alumina. Pirogov, A. A.; Mirak'yan, N. M.; Leonova, E. N.; Primachenko, V. V. (Ukr. Nauch.-Issled. Inst. Ogneupor., Kharkov, USSR). *Ogneupory* 1970, 55(1), 37-40 (Russ). The inhibiting effect of AlF_3 and CaF_2 on the sintering of Al_2O_3 was examd. Com. alumina contg. 99.42-99.49% Al_2O_3 was ground dry so as to obtain a grain size 5-10 μ , bulk d. 0.85 g/cm³, and sp. surface 11,671 cm²/g. After the addn. of 1% AlF_3 or CaF_2 of the grain size <0.2 mm and mixing, cubes (2 cm³) were prepd. and sintered at 1200-1700° for 4 hr. The fluoride mineralizers lowered the compressive strength and shrinkage of the samples. AlF_3 resulted in a stronger inhibiting effect on the sintering of Al_2O_3 at 1200-1550° than CaF_2 . W. J. Skorski

EB

REEL/FRAME

19781949

18

USSR

UDC: 621.396.69:621.314.21.024.1

VOBROVSKIY, G. A., PIROGOV, A. I.

"Change in a Complex of Static and Dynamic Characteristics and Parameters of Cores With Rectangular Hysteresis Loop After Exposure to Gamma Emission"

Dokl. Nauchno-tekhn. konferentsii po ispol'z. ionizir. izlucheniya v nar. kh-ve. Vyp. 3 (Reports of the Scientific and Technical Conference on the Use of Ionizing Radiation in the National Economy. No. 3), Tula, Prioksk. kn. izd-vo, 1970, pp 261-272 (from RZh-Radiotekhnika, No 2, Feb 71, Abstract No 2v470)

Translation: The authors present the results of measurements of a complex of characteristics of a series of core types including ribbon cores before and after long-term exposure (for a year) to continuous gamma radiation from Co-60 at a constant dose rate with temperature control of the specimen. The cores had different radiation resistances. Ribbon cores showed the least resistance. Empirical equations are presented which approximate the averaged relationships for the most radiation-sensitive parameters of ribbon cores as a function of the integral dose of gamma radiation. Six illustrations, bibliography of one title. N. S.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INFLUENCE OF EXTERNAL MAGNETIC FIELD ON STATIC AND DYNAMIC
CHARACTERISTICS OF MAGNETIC CORES WITH RECTANGULAR HYSTERESIS LOOP -U-
AUTHOR--(03)--MIKHALYCHEVA, A.P., PIROGOV, A.I., SHAMAYEV, YU.M.
COUNTRY OF INFO--USSR
SOURCE--AVTOMATIKA I TELEMEXHANIKA, 1970, NR 6, PP 149-155
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MAGNETIC CORE, EXTERNAL MAGNETIC FIELD, HYSTERESIS LOOP,
SATURATION MAGNETIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/1210 STEP NO--UR/0103/70/000/006/0149/0155
CIRC ACCESSION NO--AP0124864
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124864

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERE ARE PRESENTED THE THEORETICAL AND EXPERIMENTAL RESULTS OF THE INVESTIGATION OF THE EXTERNAL MAGNETIC FIELD INFLUENCE ON THE STATIC AND DYNAMIC CHARACTERISTICS OF THE MAGNETIC CORE WITH A RECTANGULAR HYSTERESIS LOOP PREVIOUSLY MAGNETIZED TO SATIETY.

UNCLASSIFIED

USSR

UDC: 534-8

PIROGOV, B. N., SIROTIN, G. F., SMIRNOV, Yu. G., KAVERINA, G. M.

"Excitation, Reception, and Propagation of Ultrasonic Surface Waves in Lithium Niobate Plates"

Leningrad, Tr. Leningr. in-t aviats. priborostr. (Works. Leningrad Institute of Aviation Instrument Building), 1972, vyp. 76, pp 44-49 (from RZh-Fizika, No 5, May 73, abstract No 5Zh612 [résumé])

Translation: The paper gives the results of experimental studies of excitation and reception of ultrasonic surface waves in Y-cut lithium niobate plates on space harmonics of multielement converters. During propagation of the surface wave, a reflection was observed under the multielement converter due to electrical and mechanical loading of the free surface. An investigation was made of the coefficient of reflection as a function of the number of electrodes and their geometry. The propagation of surface waves over the free and metallized surface of X, Y, Y₄₅, and Z-cut lithium niobate was examined. Experimental velocity diagrams are compared with theoretical diagrams published by Campbell and Jones.

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USSR

UDC: 534-8

SIROTINA, Ye. F., PIROGOV, B. N., SIROTIN, G. F.

"Excitation and Reception of Ultrasonic Surface Waves by Multiple-Element Converters on Higher Spatial Harmonics"

Leningrad, Tr. Leningr. in-t aviats. priborostr. (Works. Leningrad Institute of Aviation Instrument Building), 1972, vyp. 76, pp 71-77 (from RZh-Fizika, No 5, May 73, abstract No 5Zh606 [résumé])

Translation: A comparative description is given of methods of excitation and reception of ultrasonic surface waves. Most effective are multielement converters of the two-phase type; however, making such converters for a high-frequency band involves considerable difficulties. This paper deals with the feasibility of using higher spatial harmonics. Results are given from experimental and theoretical studies on the operation of multiple-element converters on space harmonics. The experimental results agree satisfactorily with theory in the 10-70 MHz frequency range.

1/1

- 27 -

USSR

UDC: 621.374.55:666.593.5

KAVERINA, G. M., SIROTINA, YE. F., PIROGOV, B. N., and SIROTIN, G. F.

"Using Piezoceramic Materials for Ultrasonic Delay Lines Based on Surface Waves"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation Instrument Building), Leningrad, 1972, vyp.76, pp 66-70 (from RZh-32.Metrologiya i Izmeritel'naya Tekhnika, No 5, 1973, Abstract No 5.32.468)

Translation: The authors study experimentally the excitation, reception, and propagation of ultrasonic surface waves in piezoceramic materials. It is shown that the attenuation of surface waves in the 1-10 Mc frequency range for the studied types of piezoceramics primarily depends on the granularity of the structure. Dispersion and nondispersion type delay line models are made on a piezoceramic soundguide from barium titanate and calcium with an admixture of cobalt. The frequency-amplitude and dispersion characteristics are given. Original article: three illustrations, four bibliographic entries, and one table.

1/1

USSR

UDC 669.213

BEK, R. YU., and PIROGOV, B. YA.

"Parameters of Electroelution"

Novosibirsk, Izv. Sibirskogo Otdeleniya Akademii Nauk SSSR, Ser. Khimicheskikh Nauk, No 6, 1972, pp 36-41

Abstract: Electroelution, a process which combines electrolysis with regeneration of ion exchange resin is a new, highly promising area of ion exchange technology. It reduces the total required volume of eluent, increases regeneration efficiency and reduces production time. The specific treated in this article deals with the diffusion model for electroelution of gold from an ion exchange resin. Equations are derived which enable one to predict the effects of different electroelution parameters on the efficiency of the extraction of gold, as well as select the area of the cathode to satisfy a given recovery in a prerequisite period of time. The optimum area of the cathode, so, which satisfies the diffusion control of the process, including the cost of the apparatus and operational expenses can be evaluated. The derived diffusion model for the electroelution of gold was tested experimentally at the Baleyzolot Combine Experimental Plant and found to be accurate within experimental error.

1/1

1/2 018
UNCLASSIFIED
PROCESSING DATE--02OCT70
TITLE--EFFECT OF SLOT SHAPE AND SIZE ON CURRENT DISTRIBUTION IN A SLOT
CELL -U-
AUTHOR--(03)-MASLIY, A.I., PODDUBNYI, N.P., PIROGOV, B.YA.
COUNTRY OF INFO--USSR
SOURCE--ELEKTROKHIMIYA 1970, 6(1) 70-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--ELECTRODE, ELECTROLYTIC CELL, ELECTRIC CURRENT, ANODE, CATHODE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1989/0464
STEP NO--UR/0364/70/006/001/0070/0073
CIRC ACCESSION NO--AP0107070
UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107070

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A PARALLEL ELECTRODE CELL IN WHICH THE ANODE WAS A FRACTION OF THE AREA OF THE CATHODE, THE CURRENT DISTRIBUTION AT THE CATHODE WAS CALCD. AS A FUNCTION OF THE RELATIVE AREA OF THE 2 ELECTRODES. THE SHAPE OF THE CURRENT DISTRIBUTION CURVE WAS BELL SHAPED, WITH THE MAX. VALUE OCCURRING AT THAT SEGMENT OF THE CATHODE WHICH WAS DIRECTLY OPPOSITE THE ANODE; AS THE RELATIVE SIZE APPROACHED 1, THE DISTRIBUTION BECAME MORE UNIFORM. IF THE ANODE WAS T SHAPED SO THAT PART OF IT WAS PERPENDICULAR TO THE CATHODE, THE CURRENT DISTRIBUTION AT THE CATHODE WAS STILL BELL SHAPED AND BECAME LESS UNIFORM AS THE RELATIVE AREA OF THE ANODE AND CATHODE APPROACHED 1.

UNCLASSIFIED

1/2 047 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--BENDING OF A CONSOLE, CYLINDRICAL SHELL OF FIBERGLASS PLASTIC,
WEAKENED BY A ROUND CUT -U-
AUTHOR--(02)-PIROGOV, I.M., SELITSKIY, F.I. P
COUNTRY OF INFO--USSR
SOURCE--MEKHANIKA POLIMEROV, VOL. 6, JAN.-FEB. 1970, P. 152-157
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, PHYSICS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--FIBERGLASS, REINFORCED PLASTIC, CYLINDRIC SHELL STRUCTURE,
DIGITAL COMPUTER, COMPOSITE MATERIAL, STRESS LOAD, STRESS CONCENTRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1871 STEP NO--UR/0374/70/006/000/0152/0157
CIRC ACCESSION NO--AP0112851
UNCLASSIFIED

2/2 047

UNCLASSIFIED

PROCESSING DATE--090C170

CIRC ACCESSION NO--AP0112851

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF THE STRESS CONCENTRATION IN THE REGION OF A ROUND HOLE IN THE CANTILEVER CYLINDRICAL SHELL MADE OF FIBERGLASS REINFORCED COMPOSITE SUBJECTED TO A CONCENTRATED LOAD ON THE FREE SUPPORTED END. BUBNOV METHOD TOGETHER WITH A DIGITAL COMPUTER WERE USED FOR SOLVING THIS PROBLEM. CALCULATED RESULTS ARE EXPERIMENTALLY VERIFIED USING SHELLS OF FIBERGLASS REINFORCED COMPOSITE.

FACILITY: VSESDIUZNYI ZAOCHNYI POLITEKHNICHESKII INSTITUT, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 539.3

PIROGOV, I. M.

"Concentration of Stresses Around an Elliptical Opening on the Surface of a Circular Cylinder"

Tr. Vses. n.-i. i konstrukt. in-t khim. mashinostr. (Works of the All-Union Scientific Research and Design Institute of Chemical Machine Building), 1972, No. 56, pp 18-24 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V142)

Translation: Stress concentration in the region of an elliptical opening in a circular cylindrical shell subjected to internal pressure is investigated. A method close to the familiar small-parameter method is used to solve the problem. The solution is reduced to a numerical result. A solution similar to the problem for a cylindrical shell weakened by a circular opening can be obtained as a particular case from the solution found. 10 ref. Author's abstract.

1/1

USSR

UDC 669.018.8:669.183.046.51:669.784

OKENKO, A. P., PIROGOV, N. A., SABININA, T. B., KRYAKOVSKIY, YU. V., and TYURIN, YE. I.; Moscow Institute of Steel and Alloys

"The Effect of Boron on the Separation Process of Carbides in Kh23Ni8 Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1973, pp 142-145

Abstract: A study was made of Kh23Ni8 steel without boron addition and with small boron additions (0.0012%). The VEMV-100A electron microscope was used. Boron was shown to inhibit the separation process of carbides. On cooling, after preliminary heating to 1200°C, the $Me_{23}C_6$ carbide in the steel with boron began to separate at a lower temperature ($\sim 1050^\circ\text{C}$) than in the steel without boron ($\sim 1100^\circ\text{C}$). Boron also affected the character of the distribution of carbide along the boundaries and in the body of the austenite grains. The indicated phenomena explain the improved hot plasticity of Kh23Ni8 steel in the presence of small addition of boron. Five figures, four bibliographic references.

1/1

UNCLASSIFIED

PROCESSING DATE--03JUL70

TITLE--FORMATION OF AMIDES OF 2-BENZOTHIAZOLE-SULFENIC ACID FROM
N-CHLORAMINES AND 2-MERCAPTOBENZOTHIAZOLE -L-

AUTHOR--IGNATOV, V.A., PIROGOV, F.A.

COUNTRY OF INFO--USSR

SOURCE--KHM. GETERITSKL. SOEDIN. 1970, (1), 85-92

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--THIAZOLE, BENZENE DERIVATIVE, AMIDE, MERCAPTAN, CHLORAMIDE,
OXIDATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1580/1719

STEP AC--UR/C409/70/000/001/0089/0092

CIRC ACCESSION AC--APOC49797

UNCLASSIFIED

8
5
13

Acc. Nr:

AP0049797

Abstracting Service:

CHEMICAL ABST. 5-70

Ref. Code:

21R0409

100584y Formation of amides of 2-benzothiazolesulfenic acid from N-chloramines and 2-mercaptobenzothiazole. Ignatov, V. A.; Pirogov, P. A. (Nauch.-Issled. Inst. Khimikatov. Dobavok Polim. Mater., Tombov, USSR). *Khim. Geterotsikl. Soedin.* 1970, (1), 89-92 (Russ). ArSNa (Ar = 2-benzothiazolyl), RR'NCl (R = alkyl, R' = alkyl or H), and RR'NH were reacted in H₂O, EtOH, or C₆H₆ at -3 to 65° 20-30 min, and the % yields of ArSNRR' and ArSSAr detd. The results show that the oxidn. of ArSH to ArSSAr in H₂O and EtOH is effected by HOCl, formed in the reaction $RR'NCl + H_2O \rightleftharpoons RR'NH + HOCl$. J. Panchartek

REEL/FRAME
19801719

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USSR

UDC 621.771.261

SICHEVOY, A. P., BABICH, V. K., BREZHNEV, L. A., PIROGOV, V. A.,
and OSIPOVICH, S. V.,

"Changes in the Properties of 45G Steel After Rolling on the
Three-Roller 120 Mill"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya Promyshlennost',
No 6, Nov-Dec 70, p 38

Abstract: Properties of the 45G steel after heating, rolling and subsequent cooling under various conditions were investigated. Billets 115 mm in diameter and 600 mm long were heated at various heating rates up to 1150-1200° by the induction method, then subjected to shrinkage by rolling. The study of the macrostructure showed that sulfur and phosphorus distribution along the billet cross section was satisfactory, and the magnitude of general and central porosity did not exceed 2 points. Mechanical properties of the billets had not changed rolling and cooling under various conditions. It is concluded that low-carbon manganous steel in billets 115 mm in diameter can be rolled on three-roller transverse-spiral mills in accordance with the procedure used for carbon steels.

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USSR

UDC 577.4

PIROGOV, V. V.

"Peculiarities of a Logical Complex-Control Model"

V sb. Modelir. slozhn. sistem (Complex System Simulation -- Collection of Works), Vyp. 1, Riga, "Zinatne," 1972, pp 3-18 (from RZh-Matematika, No 6, Jun 73, Abstract No 6V741 from author's abstract)

Translation: The basis for the complex analysis of control processes in complex systems is a logical model of complex control. The article considers peculiarities of such a model for complex production-type systems, as well as some problems in complex control.

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USSR

PIROGOV, V. V.

"Peculiarities of a Logic Model of Complex Control"

Modelir. Slozhn. Sistem [Modeling of Complex Systems -- Collection of Works],
No 1, Riga, Zinatne Press, 1972, pp 3-18 (Translated from Referativnyy
Zhurnal Kibernetika, No 6, 1973, Abstract No 6V741, by the author).

Translation: The basis for combined analysis of control processes in complex
systems is a logical model of complex control. This article studies the
peculiarities of such a model for complex production-type systems, as well as
certain problems of complex control.

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USSR

UDC 51

BIDER, U. YA., GROMOV, G. G., PIROGOV, V. V.

"Multilevel Optimization in the Problems of Reconstructing Complex Systems"

V sb. Sistemotekhnika (Systems Engineering--collection of works), Kiev, 1971,
pp 293-302 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V383)

No abstract

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1/2 009
TITLE--CONTROL SYSTEM AUTOMATION -U- UNCLASSIFIED
PROCESSING DATE--04DEC70
AUTHOR--PIROGOV, V.V. P
COUNTRY OF INFO--USSR
SOURCE--LATV. PSR ZINAT. AKAD. VESTIS (USSR), NO. 3, P. 65-78, 1970
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, ALGORITHM, DESIGN STANDARD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/1707 STEP NO--UR/0197/70/000/003/0065/0078
CIRC ACCESSION NO--AP0136948
UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136948

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESIGN PROCEDURES ARE DISCUSSED. EIGHT PROCEDURAL STEPS (R SUB1-R SUB8) ARE DETAILED TO BE FOLLOWED AFTER THE CONTROL SYSTEM OBJECTIVES HAD BEEN DEFINED. THESE ARE: R1 REFORMULATION OF CONTROL SYSTEM OBJECTIVES IN MATHEMATICAL TERMS OR ALGORITHMS; R2 DEFINING RESTRICTION; R3 SELECTION OF CONTROL PARAMETERS; R4 OPTIMIZATION; R5 REALIZATION OF TECHNOLOGICAL DETAILS; R6 PRACTICAL CONSIDERATIONS (PERMISSIBLE TOLERANCE, MANUFACTURING DETAILS ETC.); R7 MODELLING; R8 COMMISSIONING. INTERDEPENDENCE OF VARIOUS STEPS IS ILLUSTRATED BY 2 GRAPHS. SYNTHESIS OF DESIGN PROCEEDINGS IS ELABORATED IN GENERAL TERMS.

UNCLASSIFIED

USSR

UDC 621.787.621.9048.6:669.2/.8

KARTYSHEV, B. N., Candidate of Technical Sciences; and PIROGOV, YE. V. and
KHOPOSHEV, I. A., Engineers

"Effectiveness of the Hardening of Alloys AK-6 and V-93 by Vibration Treatment
in an Abrasive Medium"

Moscow, Vestnik Mashinostroyeniya, No 11, Dec 73, pp 71-72

Abstract: Results are presented of an investigation of the hardening of
alloys AK-6 and V-93 by vibration treatment in a medium of abrasive granules.
The experimental procedure is described. The conclusion is drawn that such
hardening is entirely feasible and highly beneficial. On the basis of the con-
ducted research, technological processes have been worked out for hardening
these alloys in this manner. 1 figure. 2 references.

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Receivers and Transmitters

USSR

UDC: 621.376.232

PIROGOV, Yu. A.

"Reaction of a Virtual Cathode to a Microwave Signal"

Kiev, IVUZ: Radioelektronika, Vol 15, No 3, Mar 72, pp 283-289

Abstract: The author discusses some of the unsettled issues involving the properties of the virtual cathode which arises between the electrodes of a modified diode (a two-electrode gap into which electrons are injected at velocities appreciably different from zero). Expressions are derived for the detector current in two limiting cases: in the small-signal approximation (from both SHF and low-frequency signals), and in the case of a strong microwave signal. A one-dimensional modified diode formed by flat electrodes (a grid and plate) in some (multi-electrode) device is considered. It is experimentally shown that the sign of the detector current is determined not only by the potential of the virtual cathode, but by the signal power level as well. The results include those of other authors as special cases.

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USSR

UDC 546.46'21'11'212,54-17

PIROGOV, YU. A., ALAPIN, B. G., and PROKUDIN, V. YU.

"Study of Thermal Conversions of the Crystalline Trihydrate of Bisubstituted Magnesium Phosphate"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 8, No 5, 1972, pp 878-880

Abstract: Phase conversions of the crystalline trihydrate of bisubstituted magnesium phosphate are studied in the 20-900 ° C temperature interval. The data from the literature on the formation of magnesium tetrametaphosphate upon heating of $MgHPO_4$ were not confirmed. It was established that the crystalline trihydrate of bisubstituted magnesium phosphate is converted upon heating to pyrophosphate through an amorphous phase. The magnesium pyrophosphate forms microcrystalline aggregate pseudomorphoses from the initial muberiite crystals.

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52

USSR

UDC 621.385.623.5:621.372.235

DEVYATKOV, M.N., KCSTIYENKO, A.I., PIROGOV, YU. A., ROMANYUK, S.K.

"Investigation Of Reflex Klystrons In Regimes Of Rectification And Bias"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 9, pp 86-90 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12A165)

Translation: Reflex klystrons for the 3-cm, 8-mm, and 4-mm band were investigated in regimes of rectification and signal bias. Their sensitivity in a rectification regime is not lower, and in a number of cases is higher, than the sensitivity of crystal rectifiers for corresponding wave bands. Author's Abstract.

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1/3 014 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--PHASE COMPOSITION OF MAGNESITE CHROMITE REFRACTORIES WITH GUNITE
COATINGS AFTER SERVICE IN THE ROOF OF AN OPEN HEARTH FURNACE -U-
AUTHOR--(05)--PYATIKOP, P.D., PIROGOV, YU A., BOLTYANSKIY, A.V., GURSKIY,
G.L., KOBYLKO, V.S.
COUNTRY OF INFO--USSR
SOURCE--OGNEUPORY 1970, 35(3), 37-40
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--OPEN HEARTH FURNACE, SPINEL, OXIDE REFRACTORY, PHASE
COMPOSITION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0875 STEP NO--UR/0131/70/035/003/0037/0040
CIRC ACCESSION NO--AP0118046
UNCLASSIFIED

2/3 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118046

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR THE COATING OF REFRACTORIES GUNITE POWDER OF COMPN. CR SUB2 O SUB3 31.5-7.7, MGO 33.8-42.8, CAO 0.54-1.6, AL SUB2 O SUB3 4.7-6.5, SIO SUB2 4.2-5.5, AND FE SUB2 O SUB3 8.5-10.5PERCENT WAS USED. ON THE BRICKS WITH GUNITE COATINGS AFTER SERVICE IN THE ROOF OF AN OPEN HEARTH FURNACE 4 STRUCTURAL ZONES WERE FOUND: (1) SLIGHTLY CHANGED ZONE, 100-50 MM THICK, (2) THE TRANSITION ZONE, 30-60 MM, (3) WORKING ZONE, 15-25 MM, AND (4) GUNITE COATING ZONE, 20-5 MM. IN THE DIRECTION FROM (1) TO (4) THE CONTENT OF CAO, FEO, FE SUB2 O SUB3 INCREASES WHILE THAT OF MGO AND CR SUB2 O SUB3 DECREASES. THE MAX. SIO SUB2 CONTENT IS FOUND IN (2). (1) SHOWS THE NONUNIFORM GRANULAR STRUCTURE; IT CONSISTS OF PERICLASE (60-70), CR SPINEL (25-30), AND SILICATES (10-12PERCENT). THE PERICLASE (0.2-2.5) AND CR SPINEL (0.5-3.0 MM) GRAINS ARE CEMENTED WITH A FINE GRANULAR MASS. THE SILICATES ARE REPRESENTED BY MONTICELLITE AND RARELY BY FORSTERITE. THE HOMOGENEOUS DISTRIBUTION OF PORES OF THE CRACK FORMS IS OBSERVABLE. (2) IS ANALOGOUS TO (1) ACCORDING TO THE MINERALOGICAL COMPN. BUT IT DIFFERS FROM (1) IN THE FOLLOWING ASPECTS: (1) IT HAS A MORE UNIFORMLY DISTRIBUTED PERICLASE GRAINS, (B) THE PERICLASE GRAINS ARE LARGER, (C) A CONSIDERABLE HIGHER CONTENT (18PERCENT) OF SILICATES IN WHICH MONTICELLITE PREVALIS, (D) THE PRACTICAL ABSENCE OF FINE CRACKS AND ON THE OTHER HAND THE PRESENCE OF LARGE AMT. OF PORES OF SIZES 0.03-1 MM. (3) IS COMPOSED OF SECONDARY SPINEL, CR SPINEL PERICLASE, AND SILICATES. THE SECONDARY SPINELS FORM THE MAIN COMPONENT (63-70PERCENT) WITH BLACK GRAINS 0.05-0.3 MM.

UNCLASSIFIED

3/3 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118046

ABSTRACT/EXTRACT--THE CR SPINEL AND SECONDARY SPINEL GRAINS ARE IN CLOSE CONTACT. THE PERICLASE IN THE FORM OF CORRODED GRAINS IS CLOSELY PERMEATED WITH THE SECONDARY SPINEL INCLUSIONS. SILICATES ARE PRESENT AS MONTICELLITE AND MERWINITE. ZONE (4) CONSISTS OF SECONDARY SPINEL (85-8), CR SPINEL (SIMILAR TO 6), AND SILICATES (6-15PERCENT).
FACILITY: UKR. NAUCH.-ISSLED. INST. OGNEUPOR., KHARKOV, USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INVESTIGATION OF SPHERICAL MIRROR OPEN RESONATORS IN THE 2 MM
WAVELENGTH BAND -U-
AUTHOR--(02)-AFONIN, D.G., PIROGOV, YU.A.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK MOSKOVSKOGO UNIV. FIZ. ASTRON. (USSR), VOL. 11, NO. 1.
P.93-4 1970
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LASER MIRROR, RESONATOR Q FACTOR, OPEN RESONATOR
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1990/1324 STEP NO--UR/0188/70/011/001/0093/0094
CIRC ACCESSION NO--AP0109408
UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0109408

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INVESTIGATION OF THE CHANGE OF Q
VALUES OF RESONATORS WITH THE APERTURE OF THE SPHERICAL MIRROR AND OF
THE CHANGE OF THE RADIUS OF THE CAUSTIC SURFACE IN THE VICINITY OF
MIRRORS. MEASUREMENT RESULTS ARE COMPARED WITH THEORETICAL DATA.

UNCLASSIFIED

USSR

P
PYATIKOP, P. D., PIROGOV, YU. A., BOLTYANSKIY, A. V., GURSKIY,
G. L., KOBYLKO, V. S.

"Phase Composition of Magnesite-Chromite Refractories With
Gunit Coatings After Service in the Crown of an Open-Hearth
Furnace"

Moscow, Ogneupory, No 3, Mar 70, pp 37-40

Abstract: Guniting the rear walls of open-hearth furnaces at
"Zaporozhstal'" plant has increased their life from 180-200 to
500 and more cycles. The rear wall is gunited with a semidry
powder mixture at least once per day. The composition of the
powder is: 31.5-37.7% Cr_2O_3 , 33.8-42.8% MgO , 0.54-1.6% CaO ,
4.7-6.5% Al_2O_3 , 4.2-5.5% SiO_2 , 8.5-10.5% Fe_2O_3 , weight loss
1.7-3.0%. The powder contains not over 7% particles over 1 mm,
20-25% particles less than 0.071 mm. The binder and moistener
used is an aqueous solution of liquid glass with a density of
1.17-1.20 g/cm³. The authors studied the chemical and phase
compositions of the magnesite-chromite refractories which had
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USSR

PYATIKOP, P. D., et al., Ogneupory, No 3, Mar 70, pp 37-40

been used in the rear line of the crown of an open-hearth furnace operating with oxygen injection. Photographs showing the general appearance and microstructure of the refractories are presented, as well as a graph of the oxide content of the refractories after usage. The guniting of the working surface of the refractories forms a layer of highly refractory materials, protecting the brick from the effects of dust, preventing deep penetration of silicate melts into the cold zones of the brick, and consequently decreasing the rate of conversion of the brick and the intensity of brick wear during service.

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USSR

UDC 537.312.5

SAVITSKIY, Ye. M., PIROGOVA, S. V., and BUROV, I. V.

"Calculated and Experimental Values of Electrical Conductivity of Single Crystals of Alloys in the Molybdenum-Niobium and Tungsten-Tantalum Systems at 4.2°K"

Monokristally Tugoplavkikh i Redkikh Metallov [Single Crystals of Refractory and Rare Metals -- Collection of Works], Nauka Press, 1971, pp 89-94

Translation: The electrical conductivity of alloys in the molybdenum-niobium and tungsten-tantalum systems are calculated near absolute zero on the assumption that the Fermi surface area of the alloys is an order of magnitude less than for the spherical Fermi surface, while the transverse scattering cross section is equal to $2\pi (\sqrt{2}\Lambda_F)^2$, where Λ_F is the wavelength of a conductivity electron at the Fermi level. The electrical conductivity of monocrystalline alloys in the molybdenum-niobium and tungsten-tantalum systems is measured at 293, 77, and 4.2°K throughout the entire concentration interval. The calculated and experimental values of electrical conductivity of 4.2°K are in good agreement. 4 Tables; 5 Figures; 14 Biblio. Refs.

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USSR

PIROGOVA, Ye., Candidate of Medical Sciences, Central Scientific Research
Institute of Sanitary Education

"Longevity Lies in Movement"

Frunze, Sovetskaya Kirigiziya, 19 Jan 71, p 4

Abstract: Man has always dreamed of living longer while at the same time maintaining health, lucidity, and creative energy. Now the Soviet government has made longevity its concern. The most comprehensive research efforts, resources, and treatment techniques cannot, however, take the place of the keen concern of each of us for his own health and for the welfare of others. Science has made great strides in treatment and preventive medicine. Yet no medicine can give us a long life of high productivity. It is not the pharmacy that adds years to our life, but physical activity. Physical activity can prevent, or be a treatment for, many illnesses; it raises resistance to illness, and postpones old age. Premature senility may result from illness or lack of muscular exertion. Academician A. I. Berg estimates that 100 years ago 94 percent of all work was accomplished through muscular effort, while now only one percent requires use of muscles. The amount of movement required for health must
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USSR

PIROGOVA, Ye., Sovetskaya Kirgiziya, 19 Jan 71, p 4

therefore be consciously added to one's life. Limitation of activity leads to serious organ disturbance and premature senility. Prof. I. V. Muravov demonstrated that when physical activity was severely curtailed, laboratory animals showed a marked decrease in life span: from the usual 529 days to 82. The older organism is more affected by limitation of activity. After two weeks of enforced lack of activity, 33.3 percent of old rats and 16.6 percent of young rats died under the same conditions. Hypokinesia is now more frequently diagnosed as a disease; it affects circulation which affects longevity and work productivity. Myocardial infarct is observed 2-3 times more frequently within intellectual professions than within working classes; arteriosclerosis is significantly rarer among people with a regular schedule of physical exercise. There are 21,000 persons in the USSR who are over 100 years old. They show no evidence of arteriosclerotic disease, and all lead active physical lives. A sensible exercise program improves memory, tissue metabolism; lowers blood cholesterol levels; and improves circulatory and motor activity. A physician should be consulted in planning an individual program geared to specific needs.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--MOVEMENT IS THE KEY TO LONG LIFE -U-
AUTHOR--PIROGOVA, YE. *P*
COUNTRY OF INFO--USSR
SOURCE--KIEV, RABOCHAYA GAZETA, 2 JAN 70, P 4
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--BIOLOGIC AGING, EXERCISE, HYPODYNAMIA

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1117 STEP NO--UR/9015/70/000/000/0004/0004
CIRC ACCESSION NO--AN0121678
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AN0121678

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DRUGS CANNOT ENSURE LONG LIFE OR MENTAL ALERTNESS. MEDICAL SCIENCE KNOWS OF NOTHING THAN CAN PREVENT PREMATURE AGING OR ADD YEARS EXCEPT PHYSICAL ACTIVITY. THE BODY NEEDS EXERCISE IN ORDER TO FUNCTION OPTIMALLY. LACK OF MUSCULAR EXERTION IS DESTRUCTIVE. PROFESSOR MURAVOV'S EXPERIMENTS WITH RATS SHOWED THAT ANIMALS KEPT UNDER CONDITIONS OF ENFORCE IMMOBILITY LIVED ONLY 82 DAYS, COMPARED WITH 529 DAYS FOR CONTROLS. THE AGING ORGANISM IS PARTICULARLY SENSITIVE TO INSUFFICIENT MOVEMENT. TWO WEEKS OF IMMOBILITY KILLED 33 PERCENT OF THE OLD RATS BUT ONLY 16.6 PERCENT OF THE YOUNG ONES. THE PHYSIOLOGICAL EFFECTS OF LACK OF EXERCISE ARE DESCRIBED, AND INDIVIDUALIZED TRAINING PROGRAMS IN CONSULTATION WITH A PHYSICIAN ARE RECOMMENDED.

UNCLASSIFIED

USSR

P
PIROGOVA, Ye., Candidate of Medical Sciences

"Movement Is the Key to Long Life"

Kiev, Rabochaya Gazeta, 21 Jan 70, p 4

Abstract: Drugs cannot ensure long life or mental alertness. Medical science knows of nothing that can prevent premature aging or add years except physical activity. The body needs exercise in order to function optimally. Lack of muscular exertion is destructive. Professor Muravov's experiments with rats showed that animals kept under conditions of enforced immobility lived only 82 days, compared with 529 days for controls. The aging organism is particularly sensitive to insufficient movement. Two weeks of immobility killed 33 percent of the old rats but only 16.6 percent of the young ones. The physiological effects of lack of exercise are described, and individualized training programs in consultation with a physician are recommended.

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USSR

UDC 621.372.823

PIROTTI, YE. L., KRAVCHENKO, V. F., KHIZHINYAK, N. A.

"Theory of Scattering of Electromagnetic Waves on Regularly Shaped Inhomogeneities in Cylindrical Wave Guides"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 15, pp 12-18 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B105)

Translation: Integrodifferential equations are used to solve the problem of scattering of electromagnetic waves on inhomogeneities of the ellipsoid type.

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USSR

UDC: 621.372.852.6

4
BAKLANOV, O. D., BAL'ZAMOV, B. N., USTIMENKO, V. V., IVANOV, N. S., KRAV-
CHENKO, V. F., ZHILKOV, V. S., KHIZHNIK, N. A., PIROTTI, Ye. L.

"An Impedance Transformer Based on a Cylindrical Waveguide"

Pribory i sistemy avtomatiki. Resp. mezhved. nauch.-tekhn. sb. (Devices and
Systems for Automation. Republic Interdepartmental Scientific and Technical
Collection), 1970, vyp. 14, pp 11-15 (from RZh-Radiotekhnika, No 5, May 71,
Abstract No 5B152)

Translation: The paper describes the design of an impedance transformer based
on a cylindrical waveguide. An analysis of the results of experimental
studies shows that practical realization of the device is feasible in micro-
wave technology. The proposed design may find application in synthesis of
automatic lines based on cylindrical waveguides. Resumé.

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USSR

UDC: 621.372.852.6

PIROTTI, Ye. L., BAKLANOV, O. D., BAL'ZAMOV, B. N., KRAVCHENKO, V. F.,
~~MIKOV~~, V. S., KHIZHNIK, N. A., USTIMENKO, V. V.

"A Method of Calculating Impedance Transformers Based on Rectangular Waveguides"

Pribery i sistemy avtomatiki. Resp. mezhved. nauch.-tekhn. sb. (Devices and Systems for Automation. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 11-15 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5B151)

Translation: The authors proposed a fundamentally new method of calculating an impedance transformer on the basis of a strict solution of the internal problem of electrodynamics using integrodifferential equations. An analysis of the results of computational and experimental research shows that the procedure for calculating and designing the proposed model may find extensive practical application in a number of microwave devices as well as in the development of an automatic waveguide line. Five illustrations, bibliography of five titles. Resumé.

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USSR

UDC 621.372.822

PIROTTI, YE. L., KHIZHNYAK, N. A., KRAVCHENKO, V. F.

"Study of Scattering of Electromagnetic Waves on Regular-Shaped Bodies in a Rectangular Wave Guide"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 60-69 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B102)

Translation: Integrodifferential equations are used to solve the problem of scattering of electromagnetic waves on a group of ellipsoids.

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1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SCATTERING OF ELECTROMAGNETIC WAVES AT REGULARLY SHAPED BODIES
SITUATED IN A MICROWAVE DUCT -U-
AUTHOR--(03)-PIROTTI, YE.L., KRAVCHENKO, V.P., KHEZHNYAK, M.A.
COUNTRY OF INFO--USSR
SOURCE--AKADEMIYA NAUK UKRAINS'KOI RSR, DOPOVIDI, SERIYA A,
FIZIKO-TEKHNICHNI I MATEMATICHNI NAUKI, VOL. 32, MAY 1970, P. 464-467
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--ELECTROMAGNETIC WAVE SCATTERING, CIRCULAR WAVEGUIDE,
RECTANGULAR WAVEGUIDE, INTEGRAL EQUATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1644 STEP NO--UR/0441/70/032/000/0464/0467
CIRC ACCESSION NO--AT0133549

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0133549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ANALYSIS OF THE SCATTERING OF ELECTROMAGNETIC WAVES AT A GROUP OF ELLIPSOIDAL INHOMOGENEITIES LOCATED IN WAVEGUIDES OF RECTANGULAR AND CIRCULAR CROSS SECTION. THE ANALYSIS MAKES USE OF INTEGRAL EQUATIONS, WHICH MAKES IT POSSIBLE TO SATISFY SIMULTANEOUSLY THE BOUNDARY CONDITIONS AT THE INHOMOGENEITIES AND AT THE WAVEGUIDE WALLS. EXPRESSIONS ARE DERIVED FOR CALCULATING THE STRUCTURE OF THE STRAY FIELD AND THE REFLECTION AND TRANSMISSION COEFFICIENTS FOR ANY DISTRIBUTION OF THE SCATTERERS IN THE WAVEGUIDE. EXPRESSIONS FOR THE SCATTERING AT ONE AND AT TWO SPHERICAL INHOMOGENEITIES ARE ALSO OBTAINED. THE EXPRESSIONS ARE CONVENIENT FOR USE IN CALCULATIONS AND PHYSICAL ANALYSIS.

UNCLASSIFIED

USSR

UDC 536.46:533.6

LISITSYN, V. I., PIROZHENKO, A. A., VILYUNOV, V. N.

"On the Induction Period in the Combustion of a Disperse System"

V sb. Goreniye i vzryv (Combustion and Explosion -- Collection of Works),
Moscow, "Nauka", 1972, pp 186-190 (from RZh-Mekhanika, No 3, Mar 73, Abstract
No 3B934)

Translation: Criteria for the applicability of a steady-state heat transfer coefficient to describe heat exchange between particles and a gas are discussed. Quasistationary representations of the course of inert (from radiation) and chemical heating are proposed on the basis of an analysis of combustion by a flow of radiant energy. Temperature profiles of both stages are matched with an accuracy up to the continuity of the first derivatives. It is possible for the process to occur in combustion regimes only by combustion when heat losses deep in the cold layers are inconsiderable. The time for the conversion of the surface from a heat source into an outlet is determined by the incandescent surface in ignition regimes. The curvature of the surface has no effect on

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USSR

LISITSYN, V. I., et al, Gorennye i vzryv, Moscow, "Nauka", 1972, pp 186-190

processes in the chemical boundary layer and takes on important meaning for the heating zone: critical conditions are shown. The agreement between computer calculations and the approximate calculations is satisfactory in both regimes. 7 ref. Authors' abstract.

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SESSION V

V-1. STUDY OF THE PROCESS OF GROWTH OF EPITAXIAL LAYERS USING A DIGITAL COMPUTER

Article by E. A. Mikh, A. A. Pirozhnikov, T. I. Novosibirsk, I. I. Stepanov, P. I. Prokhorov, N. I. Stepanov, Poluprovodnikov Kh. Krasnolov, I. Plenok, Burestan, 12-17 June, 1972, p 301

A study was made of the process of the deposition of an epitaxial layer from the gas phase as the object of control for which the deposition rate is the output parameter. Its characteristics can be determined by numerical solution of the nonstationary Navier-Stokes equations for a compressible gas using a digital computer. Such characteristics can be used both for designing epitaxial reactors and control systems and for optimizing the technological process.

The calculated characteristics of the growth processes of an epitaxial layer of silicon in a horizontal reactor are determined. Here, the reaction kinetics and the variation of the properties of the vapor-gas mixture ($H_2 + SiCl_4$) are considered.

A comparison is made of the calculated and the experimental characteristics.

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UDC 621.372.82

PIROZHENKO, V. K.

"Determination of the Coupling Coefficients in Coupled Cavity Transmission Lines"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 15, pp 72-76 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4B150)

Translation: The coupling coefficients are calculated in terms of the parameters of equivalent currents approximating the reciprocal effect of coupled lines. The bibliography has 3 entries.

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USSR

UDC 621.372.8.092.22

PIROZHENKO, V. K.

"Theory of Guide Systems Coupled by a Lattice Partition"

Radiotekhnika. Resp. mezhved. nauchno-tekhn. sb. (Radio Engineering. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 15, pp 77-82 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract 4B119)

Translation: A calculation procedure based on approximating a lattice by a layer of anisotropic dielectric with periodically varying parameters is presented. There is 1 illustration and a 7-entry bibliography.

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UDC 542.61:(546.799.5+546.799.6)

CHUDINOV, E. G., PIROZHKOV, S. V., and STEPANCHIKOV, V. I.

"Studies of the Separation of Americium and Curium During the Extraction With Methyldioctylammonium Nitrate From Lithium Nitrate Solutions"

Leningrad, Radiokhimiya, Vol XIII, No 2, 1971, pp 208-215

Abstract: The example of extraction with methyldioctylammonium nitrate is used to determine the dependence of the americium and curium separation factor on the concentration of the extractant, lithium nitrate and nitric acid. The experimental procedure and results are described. Statistical methods of planning the experiments were used to find the optimal separation conditions. The data obtained made it possible not only to discover the effective extraction conditions but also to obtain information about the mechanism of extraction of trivalent actinide elements with trialkylammonium salts.

The separation of Am and Cm in the trivalent state by extraction by methyldioctylammonium nitrate from LiNO_3 solutions was studied as a function of variation of the concentration of methyldioctylammonium nitrate, LiNO_3 and the pH. Equations relating the separation factor and the distribution
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CHUDINOV, E. G., et al., Radiokhimiya, Vol XIII, No 2, 1971, pp 208-215

coefficients to the variation of the above parameters were obtained. In the given system a relatively high Am and Cm separation factor (~ 3) is achieved, and it depends little on the methyldioctylammonium nitrate and LiNO_3 concentrations. Analysis of the regression equations from the point of view of the extraction mechanism permits reproduction of the true form of the extraction function.

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UDC 669.14.620.192.43/.49

NIKITIN, B. M., PIROZHKOVA, V. P., and YAKOVLEV, B. F., Zaporozh'ye

"On the Nature of Inclusions in Electroslag Melted Steel"

Moscow, Izvestiya Akademii Nauk SSSR, No 5, 1973, pp 65-68

Abstract; The nature of inclusions on splits and of the mechanism of their generation in electroslag melted steel was investigated in order to clarify observed defects in the production of some steel brands by the ESM method. Microsections of specimens of 30KhGSNA and 38KhMYUA brands of steel, which was produced in industrial furnaces with the application of ANF-6 slag, were investigated by crystallo-optical and chemical methods. The results made it possible to indicate the probable mechanism of the formation of inclusions on splits of electroslag steel. The non-metallic films on the splits in fractures of specimens of electroslag steel contain oxides, nitrides, and sub-oxides or aluminum; the relation between them is determined by the composition of the remelted steel. In 38KhMYUA steel the nitride inclusions possess a defective crystalline form; they consist for the most part of aluminum nitride and finely dispersed metallic aluminum. Four figures, four formulas, ten bibliographic references.

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Steels

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UDC 620.192.45:669.141.247

LITVINOVA, T. I., RAYCHENKO, T. F., PETROV, A. K., and PIROZHKOVA, V. P.,
UkrNIIspeStal' [Ukrainian Scientific Research Institute of Special Steels,
Alloys and Ferroalloys]

"Mechanism of Magnesian Spinel Formation in Steels"

Moscow, Stal', No 7, Jul 71, pp 650-653

Abstract: The authors made a detailed petrographic study of cobbings from the working layer of industrial electric-furnace hearths in melts of steels ShKh15, 45G17YuZ, Kh18N10T, 25KhGSA, and 30KhGSNA and studied the phase composition of melting slags and nonmetallic inclusions forming in these steels. In addition, these same brands of steel were obtained under laboratory conditions in a 50-kg induction furnace with a magnesite rammed lining, and iron, manganese, chromium, aluminum, and other metals were smelted in magnesite crucibles with a one-hour holding time. All laboratory melt products (metals, slags, fettling), as well as products of the interaction of the smelted metals with periclase were studied by the petrographic method. Solid solutions and complex chemical compounds were studied by the X-ray analysis method.

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LITVINOVA, T. I., et al., Stal', No 7, Jul 71, pp 650-653

It was found that the source of magnesian spinel inclusion formation in the steels is the magnesite furnace lining, which undergoes mechanical erosion and is exposed to the chemical action of the main steel components during melting. Results of the petrographic study of the working zone of the furnace hearth, melting slags, and nonmetallic inclusions indicate that the fine-crystalline variety of magnesian spinel inclusions (up to 5 microns) is formed directly in the liquid phase (metal and slag) and that this process develops most intensively during teeming of the steel as a result of reoxidation of the metal (as per the findings of YU. A. SHUL'TE). The presence of periclase relics in the macrocrystalline variety of spinel inclusions (20-40 microns) suggests that the inclusions get into the metal with the slag emulsion. On the basis of the described conditions of formation, magnesian spinel inclusions cannot be grouped as either exogenous or endogenous, but are the product of their interaction with each other.

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