

Probability & Statistics

USSR

UDC 519.24

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KONONCHUK, L. P.

"Evaluation of the Spectral Density of a Stationary Process with Gaps in Observation"

Teoriya veroyatnostey i matem. statist. Mezhved. nauchn. sb. (Probability Theory of Mathematical Statistics. Interdepartmental Scientific Collection), 1970, No 1, pp 117-217 (from RZh-Matematika, No 6, Jun 70, Abstract No 6V222)

Translation: A justified evaluation of the spectral density of a stationary process $x(t)$ is obtained on the basis of observations of the process $y(t) = \eta(t)x(t)$, $0 \leq t \leq T$, where $\eta(t)$ is a stationary homogeneous Markov process with two states 0 and 1 and an unknown correlation function.

Author's abstract

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USSR

UDC 539.375

KONONCHUK, N. I., SHIPIL', V. YA.

"Estimating the Life of Heat-Resistant Alloys as Applied to the Conditions of Nonstationary Loading"

Sb. nauch. tr. Kiev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, vyp. 1, pp 30-34 (from RZh-Mekhanika, No 11, Nov 71, Abstract No 11V518)

Translation: An analysis is performed of the most widespread method of estimating engine life based on the principle of linear summation of damage using the standard primary characteristics of the materials. In order to determine the life of parts made of heat-resistant alloys it is proposed that the characteristic features of the actual loading of the engine elements be considered, suitable calculation characteristics be obtained and natural loading programs be reduced to forced equivalent programs for control laboratory tests. The operating life by the program is determined from the condition of independence of accumulation of damage from the static and fatigue components. The degree of forcing of the laboratory test program is determined by means of the stress forcing conditions which it is recommended be obtained from the parameters of the hysteresis loop and the energy dissipation.

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USSR

UDC: 620.17.171

KONONCHUK, N. I., AKIMOV, L. M., VASIL'YEV, B. N., LAPITSKIY, Yu. A.,
BELYAYEV, M. S., BICHUTSKAYA, O. V., KOPYLOV, A. A., TIKHOMIROVA, V. A.,
Moscow

"Study and Evaluation of the Kinetics of Fatigue Rupture of Heat-Resistant Alloys"

Kiev, Problemy Prochnosti, No 11, 1970, pp 19-25

Abstract: The results of an investigation of the fatigue resistance of heat-resistant alloys with symmetrical and asymmetrical loading cycles show significant and varied sensitivity to asymmetry in the loading cycle, depending on the type of alloy and test mode (temperature, number of loading cycles, etc.). This paper studies the kinetics of the development of fatigue cracks in heat-resistant alloy on the basis of the actual endurance characteristics with symmetrical and asymmetrical loading cycles. The process of specimen rupture was divided into two stages: the stationary stage before formation of the main crack and the nonstationary stage of development of the main crack to a certain depth, for example 10% of the 1/2

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KONOCHUK, N. I., AKIMOV, L. M., VASIL'YEV, B. N., LAPITSKIY, Yu. A.,
BELYAYEV, M. S., BICHUTSKAYA, O. V., KOPYLOV, A. A., TIKHOMIROVA, V. A.,
Moscow, Kiev, Problemy Prochnosti, No 11, 1970, pp 19-23

specimen thickness. A formula is produced for the "viability factor" which, in combination with calculation of the values of Δt_1 and t_{tr} , can describe the kinetics of development of fatigue cracks in various alloys. This factor expresses the sensitivity of the alloy to the development of the fatigue crack on the basis of the experimental characteristics of endurance of real alloys.

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USSR

UDC 620.171.2

SKLYAROV, N. M., KONONCHUK, N. I., ZHUKOV, S. L., ZHUKOV, N. D., VASIL'EV, B. N., AKIMOV, E. M., LAPITSKIY, Yu. A., BELYAYEV, M. S., KRIVONOGOV, G. S., ISHCHEKNO, I. I., POGREBNIYAK, A. D., and KUFAYEV, V. N. (Moscow, Kiev)

"Estimating the Heat Resistance of Heat-Resistant Alloys Under Actual Operating Conditions"

Kiev, Problemy prochnosti, No 1, 1971, pp 13-21

Abstract: Problems concerned with estimating the endurance of heat-resistant materials under unstable loading conditions are analyzed. A method is suggested for producing and using "secondary" endurance characteristics, increasing the accuracy of estimation and calculation of guaranteed durability under operating conditions and forced equivalent loading modes. These secondary characteristics represent the dependence of the durability of materials on combinations of preceding programmed and subsequent stationary loads in various proportions. The formula of linear addition of damage applies. The secondary characteristics are produced by accelerated testing over limited test periods with extrapolation to the area of increased durability.

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Graphite

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USSR

UDC 539.216.2

GALKIN, YU. A., GUSEVA, N. P., DERGUNOVA, V. S., KONOKOTIN, V. V., KRAVETSKIY G. A., KUDINOV, V. V., AND SHORSHOROV, N. KH., Moscow,

"Interaction of Refractory Oxides with Graphite In Spraying"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 72, pp 94-99

Abstract: The interaction of refractory oxides with graphite in flame spraying was investigated in order to develop protective means against oxidation of carbographic materials. The investigated dependences included the effect of base preheating on the bonding strength with the protective coatings and its density, effects of silicate and borosilicate sublayers on the bonding strength and the activation energy of the chemical interaction of sublayers with oxide coatings, the effect of graphite porosity on the bonding strength, and the effect of addition of molybdenum, silicon, and aluminum into the sprayed oxide on the gas density and the oxidative resistance of coatings. The kinetics of the increasing bond strength of Al_2O_3 and ZrO_2 coatings sprayed on preheated graphite are analyzed. The required activation energy of the graphite surface and its strong bond with the sprayed Al_2O_3 was found to be close to the half of the energy of the atomic bond in the graphite lattice, 1/2

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GALKIN, YU. A., et al., Fizika i Khimiya Obrabotki Materialov, No 3, May-Jun 72, pp 94-99

which is in accordance with graphite preheating over 1000⁰C when spraying. Silicate and borosilicate sublayers are recommended; they guarantee a bond strength of coatings on the level of graphite strength. Five illustrations, one table, three bibliographic references.

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USSR

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UDC 621.357.1:661.418(088.S)

KONONCHIK, T. I., KISELEV, G. P., RED'KO, L. P., BONDARENKO, N. V.
SHAKHNOVSKAYA, M. Z.

"electrolytic Method of Preparing Chlorine and Alkali Using a Mercury Cathode"

Translation: A patent has been issued for an electrolytic method of preparing Cl₂ and alkali using an Hg-cathode and introducing into

the electrolyte additives which promote a reduction in the liberation of H₂ in the bath. To expand the variety of additives, polyacrylamide is used as an additive in amounts of 0.01-10 mg/liter. Data characterizing the action of polyacrylamides of various specimens on the extent of reduction of hydrogen liberation are cited.
V. N. Kudryavtsev

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USSR

KONONENKO, A. F.

"The Role of Information Concerning the Goal Function of an Opponent in Two-Person Games with Fixed Sequence of Moves"

Zh. vychisl. mat. i mat. fiz. [Journal of Computer Mathematics and Mathematical Physics], 1973, 13, No 2, pp 311-317 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V453 by the author)

Translation: An optimal guaranteeing strategy is constructed for the first player in a two-person game with non-opposite interests and with fixed sequence of moves. The solution of the game is found on the assumption of caution of the second player, who follows the principle of the guaranteed result.

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USSR

YERESHKO, F. I., KONONENKO, A. F.

"Solution of a Game with Right First Move with Inaccurate Information on the Purpose of the Other Player"

Zh. Vychisl. Mat. i Mat. Fiz. [Journal of Computer Mathematics and Mathematical Physics], 1973, Vol 13, No 1, pp 217-221 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V487, by the authors).

Translation: One game is solved with non-opposite interests with fixed sequence of moves, under the condition that the first player does not precisely know the win function of the second player, but rather has information only on the limits of its change. Otherwise, the rules of the game studied are no different from the rules formulated in RZhMat, 1971, 12V778. The solution is produced for two limiting cases of mutual placement of intervals of change of minimax wins of the first player and his wins in the area where the interests are not completely opposite. For the general case, an estimate is made of the best guaranteed result.

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USSR

UDC: 51

KONONENKO, A. M.

"Transport Polyhedra of Order $2 \times n$ "

Tr. 4-y Zimm. shkoly po mat. programmir. i smezh. voprosam, 1971, vyp. 2
(Works of the Fourth Winter School on Mathematical Programming and Related Problems, 1971, No 2), Moscow, 1971, pp 66-70 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V394)

Translation: The author determines the number of vertices of a transport polyhedron of order $2 \times n$ as a function of (a_1, a_2, \dots, a_n) , (b_1, \dots, b_n) -- the vectors of right-hand members of equations. Necessary and sufficient conditions are found for the polyhedron having a maximum number of vertices equal to $(n - \lfloor n/2 \rfloor) C_n^{\lfloor n/2 \rfloor}$ (RZh-mat, 1970, 2V479). S. Lebedev.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--TAUTOMERISM OF 5,5-DISUBSTITUTED BARBITURIC ACIDS -U-
AUTHOR-(03)-GAVRILIN, G.F., CHISTYAKOV, V.YE., KONONENKO, G.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 669-72
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--TAUTOMERISM, BARBITURATE, ORGANIC ACID, KETONE, PHARMACEUTICS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0932 STEP NO--UR/0079/70/040/003/0669/0672
CIRC ACCESSION NO--AP0124592

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124592

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA OF BARBITURIC ACIDS AND THEIR K SALTS SHOW THAT 5,5-DISUBSTITUTED ACIDS (PHONOBARBITAL AND ITS HYDRATE, CARBITAL, AMYTAL) POSSESS, IN THE SOLID STATE, THE TRIKETO OR DIKETOLACTIM STRUCTURES. HYDROLYSIS OF BENZONAL 1 HR WITH AQ. NAOH GAVE THE PRODUCT IDENTIFIED AS PH SUB2 CHCONBZCONH SUB2 M. 210DEGREES, I. E. ENOLIZATION OCCURS AT THE 4(6) CARBONYL GROUP OF BARBITURIC ACID. FACILITY: NOVOKUZNETSK. NAUCH.-ISSLED. KHIM.-FARM. INST., NOVOKUZNETSK, USSR.

UNCLASSIFIED

USSR

UDC: 632.95

LOPYREV, V. A., VERESHCHAGINA, T. N., ~~KOVONENKO, G. G.~~ MAKARSKIY, V. V.,
KRUPIN, K. L., Leningrad Technological Institute of the Paper and Cellulose
Industry and Northwest Polytechnical Correspondence Institute

"A Method of Synthesizing 3-(5-Amino-1,2,4-triazolyl)-alkanoic Acids"

USSR Author's Certificate No 320496, filed 25 Dec 69, published 2 Feb 72
(from RZh-Khimiya, No 15, Aug 72, Abstract No 15N475P)

Translation: A method is proposed for synthesizing 3-(5-amino-1,2,4-triazoly)-
alkanoic acids (I) by reacting a dibasic aliphatic carboxylic acid with
aminoguanidine salts. An effective and low-toxicity pesticide may be derived
from compound I. Twenty three and eight tenths grams of aminoguanidine
bicarbonate is gradually added to a solution of 20.8 grams of $\text{CH}_2(\text{COOH})_2$ in
200 ml of water at a temperature of 50-60°C, boiled for 6 hours, a solution of
10 grams of NaOH in 50 ml of water is added, boiled for 1 hour, evaporated to
50 ml, cooled, acidified with 10% HCl (acid) to a pH of about 3, the 3-(5-
amino-1,2,4-triazolyl) acetic acid is filtered off; yield 60%, melting point
186-7°C (dissociation, water). 3-(5-Amino-1,2,4-triazolyl) propionic acid is
also synthesized; yield 71%, melting point 184-5°C (dissociation, water).

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USSR

UDC: 681.3.06:51

VOROB'YEV, V. M., GOGINA, M. A., KONONENKO, I. A., and CHISTOV,
V. P.

"Programming System of the Extended FORTRAN Language for the
BESM-8 Computer"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collection of Scientific Works of the Chelyabinsk Polytechnical Institute) No 138, 1973, pp 93-98 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B151)

Translation: The purpose of extending the FORTRAN language was to create a non-machine-oriented language for recording algorithms of symbolic and digital information permitting the use of a language translator in all machines with a minimum of construction. It was also proposed to provide a succession of algorithms written in the LYaPAS language and an absorption of the broadened language by languages of higher level -- the PL/1 language, for example.

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VOROB'YEV, V. M., et al., Sb. nauch. tr. Chelyabinsk. politekhn. in-ta, No 138, 1973, pp 93-98

This last language could not be fully realized due to a number of syntactical and semantic contradictions in the FORTRAN and LYAPAS languages. It is noted that the essential characteristic of the extended language is the possibility of using it in operands of "lines of symbols" and "lines of bits" of arbitrary length. This required taking special measures for considering the effect of changes in the operand length of the computation process.

In a version in which the length of the operands may be equal to the length of the machine word there is no need for this consideration, and the translated programs are done faster. Compound names used for the formation of "cut-ins" and "cut-outs" and "lines of bits" and "lines of symbols" are introduced into the extended language. The principles for the construction of the translator and for the translation of R text into F text are given. Organization of the translation system is described. N. V.

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USSR

UDC 547.241'341

FEDOROVA, G. K., ANAN'YEVA, L. G., KONONENKO, I. M., MAKSYUFINA, L. I., and
KIRSANOV, A. V.

"Derivatives of β -Chloroalkyl- and Alken-1-ylphosphonic and Thiophosphonic
Acids"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 538-543

Abstract: Heating β -chloroalkylphosphonic acids with sodium in octane yields monosodium salts of these acids which upon solution in water split along the C-P bond. Alkoxylation of β -chloroalkylthiophosphonic acid dichlorides with alcohols in presence of acrylonitrile yields diesters of β -chloroalkylthiophosphonic acids, while alkoxylation with sodium alkoxides -- the diesters of alken-1-ylthiophosphonic acids. Amidation of β -chloroalkylphosphonic acid dichlorides with aliphatic amines produces diamides of alken-1-ylphosphonic acids, and the use of aromatic amines leads to the formation of the diamides of β -chloroalkylphosphonic acids. The reaction of triethylamine with β -chloroalkylthiophosphonic acid dichlorides yields the dichlorides of alken-1-ylphosphonic and alken-1-yl-thiophosphonic acids.

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Acc. Nr.

AP0034144

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code

UR 0078

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74275b Reaction of a double molybdate of lanthanum and an alkali metal with alkali metal molybdates in melts. Makhosoev, M. V.; Kokot, I. F.; Lutsyk, V. I.; Kononov, I. S. (USSR). Zh. Neorg. Khim. 1970, 15(1), 271-5 (Russ). Phase diagrams of the system $M\text{La}(\text{MoO}_4)_2\text{-}M'\text{MoO}_4$ (where $M = M' = \text{Li, Na, K, Rb, Cs}$) are constructed. Systems with Li and Cs salts are simple eutectic systems, with eutectic contg. 90 and 07 mole % $M'\text{MoO}_4$, m. 660 and 740°, resp. The remaining systems form the following compds.: incongruently, m. 680° $\text{Na}_2\text{La}(\text{MoO}_4)_4$, and congruently m. 860 and 835° $\text{K}_2\text{La}(\text{MoO}_4)_4$ and $\text{Rb}_2\text{La}(\text{MoO}_4)_4$, resp. HMJR

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UDC: 621.317.743

MOVCHAN, S. P., ZATENKO, N. A., and ~~KONONENKO, K. I.~~

"Waveguide Gas Discharge Indicator of UHF Power Transmission"

Moscow, Radiotekhnika i Elektronika, Vol. 15, No. 3, 1970, pp 501-504.

Abstract: An experimental article describing a method for indicating microwave power based on the interaction of an electromagnetic field and a plasma gas discharge. By using an indicator in the form of a waveguide section hermetically sealed with mica or ceramic windows, the authors succeeded in avoiding the defects connected with the glass vessels used by earlier investigators. These defects are: additional reflection of uhf power from the glass; change of field structure in the waveguide strip; uhf power losses due to radiation in the gaps between the tube and openings in the waveguide wall; reduction in the limiting sensitivity of the gas discharge indicators due to uhf power losses in the glass envelope; the variation of the sensitivity with the a-

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MOVCHAN, S. P., et al, Radiotekhnika i Elektronika, Vol 15, No 3, 1970, pp 501-504.

Abstract:

symmetry of the glass vessel and its method of preparation. A drawing of the external view and block diagram of the equipment is given. Three indicators of this type, differing in the distance between anode and cathode (40, 50, and 60 mm) were tested. The results of these tests and their explanation are given. The dependence of the indicator sensitivity on the magnitude of the discharge current was found for a discharge current variation from 0.1 to 10.0 ma in traveling as well as standing wave modes. Optimal sensitivity was observed at current discharge values of 250-750 μ a for several gases in a pressure interval of 1-10 mm Hg. The sensitivity of the indicator depends on the type of gas and the pressure. Gases tested were neon and argon.

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USSR

UDC 542.61:541.49:546.791.6

KONONENKO, L. I., BURTENKO, L. M., and VITKUN, R. A.

"Extraction of Mixed Complex Compounds of the Uranyl Ion with Tenoyltrifluoroacetone and Organic Compounds"

Leningrad, Radiokhimiya, Vol 13, No 4, 1971, pp 556-562

Abstract: Benzene extractions of mixed complex compounds of the uranyl ion with tenoyltrifluoroacetone and 1-phenyl-2,3-dimethylpyrazolone-5 (Antipyrine) or 1,10-phenanthroline, giving products with the formula UO_2TFA_2B were carried out to check on theoretically derived expressions for the distribution coefficients of the metal. A mechanism for the extraction of this type of compounds has been discussed. Formulas have been derived expressing the distribution coefficient of the uranyl ion E as a function of hydrogen ion and ligand concentrations. The E values were determined experimentally and related to pH of the solution, concentration of the ligand anions, concentration of base in the aqueous phase, as well as of the concentration of electronegative ligand and base in the organic phase. The extraction constants for these complexes were determined: for UO_2TFA_2Ant $\log K_{ex} = 3.212 \pm 0.092$, and for UO_2TFA_2Phen $\log K_{ex} = 2.53 \pm 0.01$.

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- 70 -

Inorganic Compounds

USSR

UDC 541.49

BURTENKO, L. M., and KONONENKO, J. I., Odessa Laboratories, Institute of General and Inorganic Chemistry, Academy of Sciences Ukr. SSR

"Complexes of the Uranyl Ion with Tenoyltrifluoroacetone and Derivatives of Phenyl-3-methyl-5-pyrazolone"

Kiev, Ukrainskiy Khimicheskii Zhurnal, Vol 36, No 12, Dec 70, pp 1,213-1,217

Abstract: The mixed complexes of UO_2 with tenoyltrifluoroacetone (HTTA) and bases (B) derived from phenyl-3-methyl-5-pyrazolone were investigated. The bases B were 1-phenyl-2,3-dimethyl-5-pyrazolone (antipyrine - Ant), 1-phenyl-2,3-dimethyl-4-dimethylamino-5-pyrazolone (pyramidon), and diantipyryl methane. Spectrophotometric study of the complexes in benzene solutions, obtained by combining an aqueous solution of uranyl nitrate with an EtOH solution of HTTA + B followed by extraction with benzene upon addition of urotropine to establish a pH of 6-7, showed that the complexes had the composition $UO_2(TTA)_2B$. The complexes were isolated in a solid state by precipitation with water from EtOH solutions in which $UO_2(NO_3)_2$, HTTA, and B were combined in the molar ratio 1:2:2, whereupon urotropine was added. $UO_2(TTA)_2^-$ Ant was also prepared by extracting an aqueous solution of $UO_2(NO_2)_2$ with a 1/2

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BURTENKO, L. M., and KONONENKO, L. I., *Ukrainskiy Khimicheskiy Zhurnal*, Vol 36, No 12, Dec 70, pp 1,213-1,217

benzene solution of HTTA and Ant followed by precipitation of the complex with petroleum ether from the benzene solution. The effect of the pH on the extraction with benzene of U in the form of the $UO_2(TTA)_2B$ complexes was studied. At pH 4.5-7, the extraction of UO_2^{++} in the form of $UO_2(TTA)_2B$ was 100% vs. 80-90% in the form of $UO_2(TTA)_2$.

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1/3 035 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PROBLEM OF ORGANIZATION OF WORK AND IMPROVEMENT OF THE COMPETENCE
OF SHIFT MEDICAL PERSONNEL -U-
AUTHOR-(03)-KUNGNENKO, L.N., PAVLOV, N.V., SINITSYN, S.A.
COUNTRY OF INFO--USSR *K*
SOURCE--ODESSA; MOSCOW, SVETSKOYE ZDRAVOOKHRANENIYE, RUSSIAN, NO 3, 1970,
PP 46-49
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--MEDICAL PERSONNEL, SANITATION, PUBLIC HEALTH, EPIDEMIOLOGY,
NAVAL MEDICINE, MEDICAL TRAINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0554

STEP NO--UR/0753/70/000/003/0046/0049

CIRC ACCESSION NO--AP0132789

UNCLASSIFIED

2/3 035

UNCLASSIFIED

PROCESSING DATE--20NOV76

CIRC ACCESSION NO--AP0132789

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE BLACK SEA AND SEA OF AZOV MARINE HEALTH DIVISION, ORGANIZED IN 1923, HAS GROWN TO BECOME THE LARGEST AGENCY IN THE ADMINISTRATION OF THE MEDICAL SANITATION SERVICE OF WATER TRANSPORT IN THE BLACK SEA AND SEA OF AZOV BASIN. ITS SANITATION AND EPIDEMIC CONTROL ESTABLISHMENTS AND THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS ARE LOCATED IN THE FIVE SOUTHERN OBLASTS OF THE UKRAINE. THEY SERVE SEAMEN, SHIPS AND FACILITIES OF THE BLACK SEA, SEA OF AZOV AND DANUBE MARITIME SHIPPING COMPANIES, THE ODESSA ADMINISTRATION OF THE ANTARCTIC AND OCEANIC FISHING FLEET, THE SEVASTOPOL' AND DERCH' OCEAN FISHING ADMINISTRATIONS, THE WORKERS AND EMPLOYEES OF THE SHORE ADMINISTRATIONS OF SHIPPING COMPANIES AND FLEETS, OF SHIP REPAIR PLANTS PORTS, AND CONSTRUCTION ORGANIZATIONS, AND THE STUDENTS OF HIGHER AND SECONDARY EDUCATIONAL INSTITUTIONS OF THE MINISTRY OF MARITIME FLEET AND MINISTRY OF FISH ECONOMY USSR. THE BLACK SEA AZOV MARINE HEALTH DIVISION, WHICH HAS ACHIEVED IMPROVEMENT IN SERVICE TO SHIPBOARD PERSONNEL, IS PAYING MUCH ATTENTION TO IMPROVING THE QUALIFICATIONS AND SPECIALIZATION OF SHIP DOCTORS. IN THE PAST SHIPBOARD MEDICAL WORKERS HAVE BEEN TRAINED IN THE PERMANENT COURSES OF THE ODESSA INSTITUTE FOR ADVANCED TRAINING OF PHYSICIANS, BUT IN THE FIFTIES IT WAS TRANSFERRED TO ZAPOROZH'YE AND THE COURSES STOPPED. ADVANCED TRAINING AND SPECIALIZATION (IN SURGERY, TRAUMATOLOGY, AND THERAPY) HAVE BEEN CARRIED OUT IN THE CLINICS OF THE MEDICAL INSTITUTE, IN INSTITUTES FOR ADVANCED TRAINING OF PHYSICIANS, AND ON THE JOB IN THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS OF THE MARINE HEALTH DIVISION.

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PROCESSING DATE--20NOV70

GIRC ACCESSION NO--AP0132789

ABSTRACT/EXTRACT--THE SPECIFIC FEATURES OF MARINE MEDICINE ARE LOST FROM VIEW IN THIS TRAINING, ITS MOST IMPORTANT FIELDS ARE NOT GIVEN ATTENTION, AND THE COURSE WORK IS ONE SIDED. IN ORDER TO SUPPLEMENT THE PRESENT PRACTICE, THE MARINE HEALTH DIVISION, WITH THE CONSENT OF THE MINISTRY OF HEALTH UKRAINIAN SSR, THEREFORE ORGANIZED AT THE BEGINNING OF 1968 COURSES FOR SPECIALIZATION OF SHIPBOARD MEDICAL WORKERS; THE COURSES ARE GIVEN IN THE FACILITIES OF THE BASIN HOSPITAL AND SANITATION EPIDEMIOLOGY STATION AND LAST 4.5 MONTHS. THE PRINCIPAL FIELDS IN THE SYLLABUS OF THE COURSES ARE EMERGENCY SURGERY, THERAPY, STOMATOLOGY, SHIPBOARD SANITATION AND HYGIENE, SANITARY PROTECTION OF MARITIME BOARDERS, ETC. FACILITY: BLACK SEA AND SEA OF AZOV MARINE HEALTH DIVISION AND THE BASIN SANITATION EPIDEMIOLOGY STATION.

UNCLASSIFIED

USSR-

UDC 541.13

KONONENKO, L. YE., SHCHUROV, A. N., KOLOTYRKIN, V. M., TUNITSKIY, N. N.

"Electrical Conductivity of Ion-Exchange Membranes in Dry Form"

Moscow, Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 242-243

Abstract: In order to determine the possible contribution of the electron conductivity to the total conductivity of polyelectrolyte membranes, a study was made of the F-23 membrane to which 11% sodium styrenesulfonate was grafted. The membrane had an exchange capacity of 0.5 milligram-equivalents/gram. The film was converted to various forms (H^+ , Ag^+ , Cu^{2+} , Fe^{3+}), and aluminum electrodes were deposited on it in a vacuum. After prolonged drying in a vacuum and simultaneous heating at $100^\circ C$, the electrical conductivities were measured for different temperatures (from 22 to $100^\circ C$) and field intensities (from 10^2 to 10^5 volts/cm). The volt-ampere characteristics were measured by a previously described procedure [L. S. Tuzov, et al., *Vysokomolekul. sovedineniya*, A, No 9, 2414, 1967]. Examples of the volt-ampere characteristics are presented for membranes in the H^+ -form and Ag^+ -form at various temperatures with a membrane thickness of 60μ . The data show that the ion-exchange materials in the dry state can be of interest as dielectrics in which without varying the matrix by a controlled procedure, the composition of the included ions varies. Introduction of 0.5 mg-equivalents/g of metal atoms or ions into the polymer dielectric

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KONONENKO, L. YE., et al., Zhurnal Fizicheskoy Khimii, Vol XLVI, No 1, 1972, pp 242-243

has no strong effect on the conductivity of the dielectric. In dry form, the tested membranes have electron conductivity. The higher the ionization potential of the atom, the larger the activation energy of electrical conductance of the film in the corresponding form.

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Automotive

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UDC 621.842.2-585.862-185.2:620.178.311.4

USSR

RODZEVICH, N. V., Candidate of Technical Sciences, AFONSKIY, V. P., Engineer,
KARDOVSKIY, V. S., Engineer, ZHUK, Ye. I., Candidate of Technical Sciences,
KONONENKO, P. D., Engineer and CHAPALA, N. P., Engineer

"Strength of Heavy Drive Shafts"

Moscow, Vestnik Mashinostroyeniya, No 1, Jan 71, pages 28-30

Abstract: This article presents the results of a study of the strength of the drive shafts used in the power trains of heavy trucks and other transport equipment. The two types studied were designed for transmission of torques of 300 and 600 kgm. The weakest links in the heavy drive shafts when tested without rocking in bearings were the forks and X-members of the universal joints. Cracks arose in the drive shafts in areas where tensile stresses were concentrated (apertures, notches, welded joints, spline ends, separation of induction-annealed layers, etc.). In order to achieve equal strength of elements and increase the load-bearing capacity of heavy drive shafts, it is recommended that continuous splined forks of type 38KhMYuA steel with

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USSR

RODZEVICH, N. V., et al, Vestnik Mashinostroyeniya, No 1, Jan 71,
pgs 28-30

nitrided surfaces be used. The notches designed to retain the end caps of tubular splined forks should be eliminated. The X-members should be strengthened by moving the oil aperture to the end of the member and increasing the radius of the fillet in the area of transition between the cylindrical portion of the pin and the central portion of the X-member.

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USSR

UDC 669.24:539.375

DEMCHENKO, L. V., KOHOMENKO, V. A., and MORDYUK, N. S., Institute of Metal Physics, Academy of Sciences Ukr SSR

"Change of Substructure Disorientation in a Ni-Al Alloy During Ultrasonic Treatment and Creep"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1309-1312

Abstract: This work was conducted to study the changes in the substructure of Ni + 1.18 Al samples which occurred during ultrasonic exposure and creep. The change of substructure disorientation was determined by azimuthal erosion of reflections from one and the same grains at different stages of study. Microhardness was studied simultaneously. Part of the samples were investigated after deformation at room temperature for comparison of structural changes occurring due to ultrasonic treatment, which increase resistance to creep, with structural changes after mechanical-thermal treatment. Results of this work and analysis of literature data showed that dislocation sources, generating dislocation loops, are activated from ultrasonic exposure. The greater the amplitude of oscillations or treatment temperature the larger the number of dislocation sources activated and the higher the density of dislocation loops. On the other hand, stresses on the dislocations cause the dislocation loops

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USSR

DEMCHENKO, L. V., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 6, Jun 73, pp 1309-1312

to interact forming clouds and entanglements and low mobility dipoles which lead to irreversible processes. It was concluded that for high-temperature creep at the same applied load and same temperature, the sample creep rate under ultrasonic exposure is less than the creep rate of a simply annealed sample due to a much lower number of acting dislocation sources. 3 figures, 17 bibliographic references.

2/2

USSR

UDC 534.539.376

KOZYRSKIY, G. YA., KONONENKO, V. A., KUDIMOVA, O. M., LEVITIN, V. V., MORDYUK, N. S., and ORZHITSKAYA, L. K., Institute of Metal Physics, Academy of Sciences Ukrainian SSR, and Ukrainian Scientific Research Institute of Special Steel

"Durability and Substructure of a Heat-Resistant, Precipitation-Hardened Alloy Subjected to Ultrasonic Treatment"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 4, 1973, pp 867-870

Abstract: The effect of ultrasonic irradiation on the structure and durability of KhN77TYuR industrial alloy was studied on samples quenched after eight hours at 1080°C, which were subjected to irradiation at 700°C with ultrasonic oscillation amplitude varied between 10 and 17 millicoulombs. After irradiation the samples were aged at 700°C for one or two hours and then creep tested at 700°C under a load of 46 kg/mm². It was determined that ultrasonic treatment of this alloy promotes a more uniform distribution of the carbide phase, increases ductility owing to removal of carbide from the grain boundaries, blocks dislocation sources, and intensifies aging in weak areas. The result is increased durability and decreased creep rate. 2 figures, 1 table, 4 bibliographic references.

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USSR

ARAKSIOV, A. G., KOLESNIKOV, B. P., KONONENKO, V. A., LUK'YANOV, A. N., MALOV, V. V., POLYAK, L. Z., ROZANOV, A. N., and TITOV, B. V.

"Device for Studying Structural Changes in Refractory Metals and Alloys"

USSR Authors' Certificate No 356536, Cl. G 01n 23/20, filed 7 Dec 70, published 23 Oct 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 32, 1972, p 121)

Abstract: The device, which studies structural changes during high-temperature strain in a vacuum or other environment, contains a working chamber with a beryllium window located on the front cover, a loading mechanism, clamps for the specimen, heaters, mechanisms for measurements and the recording of readings. For purposes of studying the structure of a specimen during tests, the front cover of the working chamber has mounted on it a device for X-ray analysis with a mechanism for the vertical displacement of this device along the specimen and a mechanism for rotating it around a horizontal axis.

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USSR

UDC 620.18:669.14

GRIDNEV, V. N., KONONENKO, V. A., LARIKOV, L. N., MESHIKOV, YU. YA.,
RAFALOVSKIY, V. A., and YURCHENKO, YU. F., Institute of Metal Physics, Academy
of Sciences Ukr SSR

"Effect of Plastic Deformation on the Tempering Processes of a Quenched Steel"

Kiev, Metallofizika, No 39, 1972, pp 51-54

Abstract: The features taking place in the tempering of martensite by the simultaneous action of heating steel 70 to 250°C while imparting plastic deformation by drawing (almost 10%) were studied. From the obtained calorimetric and dilatometric data it follows that during this treatment, along with acceleration of the metastable phase (martensite and austenite) decomposition, being accompanied by lowering of defect density from hardening origin and weakening of the steel, another process occurs--that of martensite decomposition products as a result of plastic deformation yielding the accumulation of new defects which increase the internal energy of the system and stimulate a more complete occurrence of the phenomena of recrystallization during repeated heating. 2 figures, 7 bibliographic references.

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Miscellaneous

USSR

UDC 669.15.018.44

KOZYSKIY, G. YA., KONONENKO, V. A., OKRAINETS, P. N., and PETRUNIN, G. A.

"Effect of Preliminary Strain on Heat Resistance of 1Kh18N9T Steel"

Metallofizika. Resp. mezhved. sb. (The Physics of Metals. Republic Interdepartmental Collection of Works), 1970, vyp. 31, pp 143-148 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I618 by authors)

Translation: A study was made of the effect of preliminary cold strain (CS) on the durability and steady-state creep rate of 1Kh18N9T steel. It was found that there are two regions of preliminary CS displaying a significant (five fold in time to rupture increased in the creep resistance of the steel. At 750° and a stress of 12 kg/mm² on region is observed in the vicinity of 1.5%, the second in the case of 5-10% strain. There is a discussion of peculiarities of the mechanisms of stabilization of the substructure created by low and high degrees of preliminary CS. Three illustrations. Bibliography with 19 titles.

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Heat Treatment

USSR

UDC 539.4.015.1

KOZYRSKIY, G. YA., KONONENKO, V. A., and PETRUNIN, G. A., Institute of Metal Physics Academy of Sciences USSR

"Forecasting the Possibility of Increasing the Heat Resistance of Metals by Mechanical Heat Treatment"

Kiev, Metallofizika, No 31, 1970, 152-157

Translation: Mechanical heat treatment as a method of increasing the heat resistance of materials does not always lead to a positive effect. Often a great deal of time, money, and effort are spent on a search for the optimum conditions of mechanical heat treatment to obtain new materials. In connection with this the following question arose: Is it possible, without resorting to expensive tests, to forecast the possibility of increasing the heat resistance of new materials by means of mechanical heat treatment according to the characteristics of structural changes which distinguish hardened from nonhardened materials during their service under operating conditions? Using as an example pure nickel and nickel alloyed with aluminum, it is shown that specific disorientation can be such an indicator for pure metals and solid solutions. Mechanical heat treatment led to a positive result only when, during a creep test, at its initial period the specific disorientation

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USSR

KOZYBSKIY, G. YA., et al., Metallofizika, No 31, 1970, pp 152-157

can serve as an indicator as to whether the material has a safety factor and whether it makes sense to subject it to mechanical heat treatment. A Study of the kinetics of the change in specific disorientation makes it possible to greatly refine the forecasts of the mechanical behavior of a material, which, in turn, leads to a significant reduction in the volume of tests when new materials are studied.

Bibliography, 10 entries. Illustrations 5.

2/2

- 28 -

Steels

USSR

UDC 539.4.015.1

KOZYRSKIY, G. YA., KONONENKO, V. A., OKRAINETS, P. N., and PETRUNIN, G. A.,
Institute of Metal Physics, Academy of Sciences UkrSSR.

"The Dependence of Heat Resistance of Kh18N9T Steel on the Value of Preliminary Deformation"

Kiev, Metallofizika, No 31, 1970, pp 143-148

Translation: This work investigated the effect of preliminary cold deformation on the durability and rate of the established creep of Kh18N9T age-hardenable steel. It was established that there are two regions of preliminary deformation in which a considerable increase (of 5 times in the time prior to fracture) in the steel's creep resistance is observed. At a temperature of 750°C and a stress of 12 kg/mm² one region is observed near 1.5% and the second, with a deformation of 5-10%. This study discusses the characteristics of the mechanisms of stabilization of the substructure created by small and large degree of preliminary deformation.
Bibliography: 19 entries, 3 illustrations.

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1/2 036 UNCLASSIFIED PROCESSING DATE--20NOV70
 TITLE--INCREASE IN HIGH TEMPERATURE CREEP RESISTANCE USING ULTRASONIC
 IRRADIATION -U-
 AUTHOR-(04)-DEYCHENKO, L.V., KOZYRSKIY, G.YA., KONONENKO, V.A., MORDYUK,
 N.S.
 CCOUNTRY OF INFO--USSR
 SOURCE--FIZ. METAL METALLOVED. 1970, 29(3), 657-9
 DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
 TOPIC TAGS--CREEP RESISTANCE, METAL CREEP, NICKEL ALLOY, ALUMINUM
 CONTAINING ALLOY, GRAIN SIZE, THERMOMECHANICAL TREATMENT, DEFORMATION
 RATE, ULTRASONIC IRRADIATION

CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--3001/0340 STEP NO--UR/0126/T0/029/003/0657/0659
 CIRC ACCESSION NO--AP0126096
 UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126096

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE STUDY WAS CARRIED OUT WITH THE ALLOY NI,AL 1.10PERCENT HAVING GRAIN SIZE 0.4-1.5 MM, WHICH WAS IRRADIATED WITH AN INTENSITY OF 50-90 W-CM PRIME2, USING THE METHOD DESCRIBED BY G. YA. K. AND V. A. K. (1966). THE RATE OF CREEP WAS DETD. AT 100-300 HR. SPECIMENS SUBJECTED TO THERMOMECH. TREATMENT AT 800DEGREES WERE USED AS CONTROLS, AND THESE SHOWED SEVERAL TIMES HIGHER DEFORMATION RATES THAN THOSE IRRADIATED WITH ULTRASOUND. THE INTENSITY OF THE ULTRASONIC IRRADN. HAD PRACTICALLY NO EFFECT ON THE DEGREE OF CREEP RATE DECREASE OF IRRADIATED SPECIMENS; HOWEVER, THE DURATION OF IRRADN. HAD AN EFFECT, AT 5-7 MIN THE STRENGTHENING OF THE ALLOY REACHED A MAX. THE OBSD. EFFECTS ARE EXPLAINED BY THE FORMATION OF A DIFFERENT SUBSTRUCTURE IN IRRADIATED SPECIMENS THAN IN DEFORMED AND ANNEALED SPECIMENS. FACILITY: INST. METALLOFIZ., KIEV, USSR.

Miscellaneous

USSR

KONONENKO, V. G., YATSENKO, S. V.

"Impact Cutting of Hot Metal on Continuous Casting Installations"

Moscow, Stal', No 3, Mar 72, pp 220-222.

Abstract: A method has been developed at the Khar'kov Aviation Institute for rapid cutting of continuous ingots by synchronous impact of blades on both sides resulting from ignition of a fuel mixture in a cylinder. Impact cutting has a number of important advantages over ordinary flame cutting: there is no waste, the ingot structure is not disrupted, cutting time is not over 0.01 sec, allowing the ingot to be cut right in the production line into billets of very short lengths. Impact cutting machines can be installed on existing continuous steel casting units without redesign with minimum capital expenditures. No additional foundation is required, since the cutting forces are not transmitted to the structural elements of the casting machine.

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USSR

UDC 669.71.48

KOVONENKO, V. G., SHALBAYAN, A. S., and PILIPETS, YU. G.

"Special Features of the Process of Pulsed Briquetting of Light Alloy Shavings"

Samoletostr. i tekhn. vozd. flota, Resp. mezhved. nauchno-tekhn. sb. (Aircraft Industry and Air Force Technology -- republic interdepartmental scientific and technical collection of works), 1970, vyp 20, pp 130-135 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11G126)

Translation: An experimental investigation of the process of pulsed briquetting of light alloy shavings is carried out. The mechanism of briquette formation from light alloys is considered, results of metallographic investigation are presented, and recommendations are made regarding the choice of optimal geometry and the shape of cutting tool which make it possible to obtain briquettes suitable for remelting. 5 ill., 1 table. Authors' abstract

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- 1 -

USSR

VAVILOV, V. S., GUZEYEV, N. V., ZAYATS, V. A., KONONENKO, V. L., MANDEL'SHTAM, T. S.,
and MURZIN, V. N.

"The Spectra of Photo Excitation of Free Excitons by Submillimeter Radiation in
'Ultra Pure' Germanium"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 17,
No 9, 5 May 73, pp 480 - 483

Abstract: Recent experiments have been successful in the study of characteristics of excitons in the long-wave infrared band. Absorption in the region of 2 - 5 Mev was observed in 1971. Subsequent experiments with a backwards wave tube recorded absorption by free excitons in germanium of a triplet with a maximum at 3.42 Mev. In both cases the germanium had residual impurities of $10^{12} - 10^{13} \text{ cm}^{-3}$, which does not completely exclude possible impurity effects. The authors have made tests at impurity levels no greater than $5 \cdot 10^{10} \text{ cm}^{-3}$ with a backward wave tube at 340 - 455 and 510 - 730 micrometers, as well as with a diffraction spectrometer at the far infrared region of 60 - 700 micrometers. The experiments were at 1.5 - 4.2 degrees K.

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USSR

VAVILOV, V. S., et al., Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 17, No 9, 5 May 73, pp 480 - 483

Results indicate that the binding energy of the exciton in the ground state is 3.7 Mev and that the distance between the lowest two states is 0.7 Mev, a result which agrees fairly well with theoretical predictions and with measurements in the interzonal transition region. The narrowness of the absorption lines measured indicates that kinetic energy of the excitons does not substantially contribute to broadening these lines. The broadness is apparently related to interactions between the excitons and null oscillations of the crystal lattice.

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- 24 -

UDC 535.376:621.382

USSR

GRIEKOVSKIY, V.P., KONONENKO, V.K., MARKITSKIY, YU.V., SAMOYLIVKOVICH, V.A.

"Ways Of Increasing The Efficiency Of Semiconductor Light Sources"

V sb. Elektroluminesentsiya tverd. tel. (Electroluminescence Of Solid Bodies--
Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 107-113 (from RZh--Elektronika
i yeye primeneniye, No 11, Nov 1971, Abstract No 11B371)

Translation: The dependence is studied of the indicatrix of radiation of electro-
luminescent diodes on their dimensions, form, and intensity of excitation. The
waveguide regions in which radiative recombinations take place are discussed.
Formulas are obtained which take account of all the parameters of the diode for
radiation flow, limiting efficiency, optimum effective losses, and the optimum
current in sources of coherent light. At 77° K in a regime of stimulated emission,
48-watt power was obtained experimentally with diffused gallium arsenide diodes,
and an effectiveness of the p-n junction of 53 percent attained. 1 ill. 13 ref.
Summary.

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PROCESSING DATE--13NOV70

UNCLASSIFIED

1/2 036

TITLE--GENERATION OF RADIATION AT JUNCTIONS WITH THE PARTICIPATION OF GAUSSIAN IMPURITY ZONES -U-

AUTHOR--(02)--GRIBKOVSKIY, V.P., KONONENKO, V.K.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. SPEKTRISK. 1970, 12(1), 45-56

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR JUNCTION, SEMICONDUCTOR LASER, GAUSSIAN DISTRIBUTION, IMPURITY LEVEL, STIMULATED EMISSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/1457

STEP NO--UR/0368/70/012/001/0045/0056

CIRC ACCESSION NO--AP0118446

UNCLASSIFIED

2/2 036

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0118446

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXAMN. IS MADE OF A MODEL OF RADIATION GENERATED AT JUNCTIONS WITH GAUSSIAN IMPURITY ZONE PARTICIPATION INVOLVING CALCNS. OF THRESHOLD DEPENDENCE ON LOSS IN A LASER DIODE, AND A DETN. OF THE INFLUENCE OF ALLOYING, TEMP., AND ABSORPTION BY FREE CARRIERS. ANAL. FORMULAS ARE DERIVED FOR THE SIMPLEST CASES. CALCNS. ALSO ARE MADE OF DIRECT INTERZONAL JUNCTIONS AT HIGH TEMPS.

UNCLASSIFIED

Acc. No: **AP0049798**

Abstracting Service:
CHEMICAL ABST. 5170

Ref. Code:

4R0079

K

96046e Polarographic study of unsaturated ketones with substituents. Polynuclear aromatic systems. Kotok, L. A.; Bezuglyi, V. D.; Lodygin, I. A.; ~~Kononenko, I. V.~~ (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 22-5 (Russ). Polarographic data on half-wave potentials are presented tabularly and graphically for ArCH:CHCOAr' where Ar were selected from 2-fluorenyl, Ph, 1-C₁₀H₇, 2-C₁₀H₇, or *p*-PhC₆H₄, and Ar' was selected from Ph, 1-C₁₀H₇, 9-anthryl, 2-fluorenyl, or *p*-PhC₆H₄ groups. Introduction of polycyclic substituents into the chalcones raised the polarographic activity of these and it was shown that the primary redn. reaction involves the participation of the unsat. ketone carbonyl groups. G. M. Kasolapoff

13

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Acoustical and Ultrasonic

USSR

UDC: 629.12:534.29

BESPALOVA, Ye. I., VOROTNIKOVA, M. I., KONONENKO, V. O.

"Diffraction of a Shock Wave in Water Against an Absolutely Rigid Nonmoving Cylinder"

Kiev, Prikladnaya Mekhanika, Vol 8, No 11, Nov 72, pp 3-8.

Abstract: The hydrodynamic pressure field around an infinitely long, absolutely rigid nonmoving cylinder in an acoustic medium is studied when the cylinder is struck by a shock wave with exponential pressure drop behind the leading edge. The solution, first found in the field of a Laplace transform, is sought in the space of the true variable by the method of numerical inversion using Legendre polynomials. The method is applicable for any time interval. Experimental recording of pressure at several points around metal cylinders qualitatively confirms the course of the process of loading of the cylinder with time.

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USSR

UDC 629.12:539.4.109

ANIK'YEV, I. I., VOROTNIKOVA, M. I., ~~KONONENKO, V. O.~~ (Kiev), Institute of Mechanics, Academy of Sciences, Ukrainian SSR

"Some Experimental Results With Regard to the Action of a Lateral Shock Wave in Water Upon Cylindrical Shells"

Kiev, Prikladnaya Mekhanika, Vol 7, No 9, September 1971, pp 106-109

Abstract: In the article are set forth the experimental results on a study of the process of deformation under the action of an unsteady lateral load on cylindrical shells of fiberglass-reinforced plastic and stainless steel. The shell under investigation, hermetically sealed by two fiberglass-reinforced plastic bottoms and weighted with loads such that the entire system has zero buoyancy, is placed in a working basin (a water-filled cylindrical tank). It is noted that the stability loss of the fiberglass-reinforced plastic shell takes place simultaneously in several different forms, and that the maximum deformation of the shells develops over a time which is several times longer than the time it takes for the wave front to traverse a distance equal to the shell diameter. 3 figures. 3 references.

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USSR

UDC: 534

GANIYEV, R. F., KONONENKO, V. O., Kiev

"Concerning the Mutual Relationship Between Reciprocating and Rotary Oscillations of a Solid in a Newtonian Force Field"

Moscow, Izvestiya AN SSSR: Mekhanika Tverdogo Tela, No 4, Jul/Aug 71, pp 3-12

Abstract: The authors study some interrelationships between the reciprocating oscillatory motions of the center of mass of a solid in a Newtonian force field and its angular oscillations about its center of mass in the most typical cases of resonance conditions. The study is based on analysis of the equations of disturbed motion of an artificial satellite moving in a circular orbit. The approach used is the simplest method for obtaining perceptible results which illustrate the basic mechanisms of reciprocity between the different types of oscillations, whereas the actual solutions require complex analysis which cannot always be carried out to completion without resorting to numerical calculations.

1/1

- 112 -

USSR

UDC 621.791.3:669.715+669.14.018.8

KOBYLYANSKIY, I. F., KONONENKO, Yu. F., GUSEV, V. R., TSVETKOV, Yu. F.,
OSIPOVA, K. Ya., LEPANOV, N. S., and CHULKOV, Ye. I., Engineers

"Soldering of Aluminum and Its Alloys With Stainless Steel"

Moscow, Svarochnoye Proizvodstvo, No 11, Nov 70, pp 41-44

Abstract: A method has been developed for fluxless soldering allowing firm attachment of aluminum and its alloys to steel for parts and units working at temperatures up to 400°C. The hypoeutectoid alloy produced during soldering greatly limits the formation and growth of the intermetallide layer around the soldered joint due to the high heating rate to 640°C and low force of external clamping of the parts being connected (1 kg/cm²).

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USSR

VLASENKO, N. A.; KONONETS, Ya. F. (Institute of Semiconductors, Ukrainian Academy of Sciences, Kiev)

"Optical and Electrical Properties of Copper Sulfide Films"

Kiev, Ukrainskiy Fizicheskiy Zhurnal; February, 1971; pp 237-43

ABSTRACT: Optical (absorption and reflection in the region of $0.4 - 1.1 \mu$) and electrical (variation of conductivity with temperature, the coefficient of the thermoelectromotive force, and the Hall effect at room temperature) properties of copper sulfide films and the variation of these properties when doping the copper sulfide with excess sulfur with the transition from Cu_2S to CuS were investigated. It is shown that copper sulfide with hole semiconductor properties, as sulfur is injected, is transformed into a strongly degenerate semiconductor and, further, into a semimetal with all the semimetallic properties: negative variation of conductivity with temperature, a small coefficient of thermoelectromotive force, and plasma reflection in the visible

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USSR

VLASENKO, N. A., et al., Ukrainskiy Fizicheskiy Zhurnal, Feb
71, pp 237-243

region of the spectrum with a hole concentration of $2.5 \cdot 10^{22} \text{ cm}^{-3}$. A model is proposed for the structure of Cu_2S bands to explain the observed variation $K(\)$, the short-wave shift of the absorption edge in the transition from Cu_2S to CuS , and the metallic properties of the latter.

The table shows the characteristics of the copper sulfide films studied.

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USSR

Vlasenko, N. A., et al., Ukrainskiy Fizicheskiy Zhurnal, Feb 71, pp 237-243

Conduc- tivity, ohm ⁻¹ .cm ⁻¹	Mobil- ity, cm ² /vsec	Coef. thermal emf, μv/deg	Carrier concent- ration, cm ⁻³	Ioniza- tion energy, ev
8·10 ⁻²	2,2	1080	2,3·10 ¹⁸	0,60
2·10 ⁻²	1,8	980	7,0·10 ¹⁸	0,42
6,3·10 ⁻²	1,6	840	2,5·10 ¹⁷	0,32
1,6	1,6	450	6,2·10 ¹⁸	0,13
5,0	2,4	300	1,5·10 ¹⁹	0,08
3,3·10 ¹	3,2	180	6,9·10 ¹⁹	0,05
3,1·10 ²	1,8	70	1,1·10 ²¹	≤0,03
3,1·10 ³	1,3	10,5	1,5·10 ²²	—
5,2·10 ⁴	1,3	8,6	2,5·10 ²³	—

3/3

1/2 024 UNCLASSIFIED PROCESSING DATE--27NOV70
 TITLE--OPTIMUM THICKNESS OF A COPPER SULFIDE LAYER IN N,CDS,P,CU SUB2-X 5
 PHOTOCELLS -U-
 AUTHOR-(03)-PAVELETS, S.YU., FEDORUS, G.A., KONONETS, YA.F.
 COUNTRY OF INFO--USSR
 SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 347-9
 DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.
 TOPIC TAGS--COPPER SULFIDE, CADMIUM, PN JUNCTION, PHOTOCONDUCTIVE CELL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAE--1994/0993

STEP NO--UR/0449/70/004/002/0347/0349

CIRC ACCESSION NO--AP0115014

UNCLASSIFIED

PROCESSING DATE--27NOV70

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0115014

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

ABSTRACT. A METHOD IS DESCRIBED FOR DETG. THE DIFFUSION LENGTH, L_{SUBD} , FOR P-N HETEROJUNCTIONS FROM THE SPECTRAL CHARACTERISTICS. THE METHOD WAS USED TO DET. L_{SUBD} FOR A CDS, CU SUB2-X S HETEROJUNCTION FROM THE SPECTRAL DISTRIBUTION OF THE SHORT CIRCUIT PHOTOCURRENT. DETNS. WERE MADE FOR A THICKNESS OF CU SUB2-X S, L EQUALS 1000-1200 ANGSTROM; L LARGER THAN L_{SUBD} FOR THESE HETEROJUNCTIONS. L_{SUBD} WAS EVALUATED AS $(2.5 \text{ PLUS OR MINUS } 1) \text{ TIMES } L_0 \text{ PRIME NEGATIVE } 6 \text{ CM.}$ SUCH A SMALL VALUE FOR THE PHOTOACTIVE REGION IN A NARROW BAND SEMICONDUCTOR IS RELATED TO HETEROGENEITIES IN THE POLYCRYST. STRUCTURE OF THE THIN CU SUB2-X S FILM. DETNS., ON FILMS OF L CONGRUENT TO 200 AND 500 ANGSTROM, OF THE PHOTOACTIVE REGION (L_{SUBP}) OF THE CU SUB2OX S LAYER SHOWED THAT FOR L CONGRUENT TO 500 ANGSTROM, L LARGER THAN L_{SUBP} , AND FOR L CONGRUENT TO 200 ANGRSTOM, L SMALLER THAN L_{SUBP} .

FACILITY: INST. POLUPROV., KIEV, USSR.

UNCLASSIFIED

Acc. Nr:

A0038044

K

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp 226-244

THEORY OF CHANNELING EFFECTS. I

Yu. Kagan, Yu. V. Kononets

A consistent method for analysis of channeling and related effects is developed which is based on the density matrix formalism and permits one to single out in a consistent manner coherent diffraction due to regularity of the medium. In the case of plane channeling and neglect of inelastic scattering the problem reduces to that of motion of a particle in a one-dimensional periodic potential $V_{eff}(x)$ which depends on the crystal temperature. States whose energies are close to the maximal values of $V_{eff}(x)$ are found to play an important role. The distance from the input surface, over which significant change of the nuclear reaction yield occurs, is studied. It is shown that spikes of the nuclear reaction yield appearing with increase of the crystal thickness (resembling an «echo») may appear. A concrete analysis is carried out for a model potential of the Kronig—Penney type. The calculations yield all the qualitative results and in particular demonstrate the quantum oscillations of the nuclear reaction yield averaged over the thickness as a function of the angle of incidence.

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UDC: 621.315.592

USSR

VLASENKO, N. A., KONONETS, Ya. F., Institute of Semiconductors, Academy of Sciences of the UkrSSR

"Investigation of the Properties of CuI Films"

Kiev, Poluprovodnikovaya Tekhnika i Mikroelektronika, Resp. Mezhved. Sb., No 7, 1972, pp 73-78

Abstract: The authors investigate the electrical properties (conductivity, temperature dependence of conductivity, and coefficient of thermoelectromotive force) and luminescence spectra of CuI films at wavelengths of 400-2500 nm and temperatures from 100 to 300 kelvins. In addition, a study is made of the way that electrical and luminescence properties are affected by conditions of film deposition, deviation from stoichiometric composition and oxygen adsorption. The films were made by vaporizing chemically pure CuI powder onto glass substrates in a vacuum of $2 \cdot 10^{-5}$ torr ($2.66 \cdot 10^{-3}$ N·m⁻²). The substrate temperature was varied from 30 to 400°C, and the rate of vaporization from 0.05 to 0.5 μm·min⁻¹ (0.833-8.33 nm·s⁻¹). Films with thicknesses of 0.5-15 μm were used in the research. The results of electrical measurements revealed two acceptor levels in the forbidden band

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USSR

VLASENKO, N. A., KONONETS, Ya. F., Poluprovodn. Tekh. i Mikroelektron.
Resp. Mezhd. Sb., No 7, 1972, pp 73-78

of CuI films at depths of 0.12 ± 0.02 eV and 0.38 ± 0.04 eV relative to the valence band. An examination of the luminescence spectrum showed four bands in the regions of 410, 417-425, 740-750 and 1200 nm. The relative intensity of these luminescence bands depends on the conditions of vaporization, temperature, and the amount of adsorbed oxygen. The possible nature of the centers and the type of transitions responsible for these bands are discussed. It is pointed out that further research is needed to clarify the question of the nature of the luminescence centers in CuI thin films.

212

USSR

UDC: 535.376

VLASENKO, N. A., GERGEL', A. N., KONONETS, Ya. F., Institute of Semiconductors, Academy of Sciences of the UkrSSR

"Investigation of Electroluminescence of a p-CuI-n-ZnS-Mn Film Structure"

Kiev, Poluprovodnikovaya Tekhnika i Mikroelektronika. Resp. Mezhd. Sb., No 7, 1972, pp 78-85

Abstract: A single-stage method is used to synthesize low-voltage electroluminescent film structures having a high coefficient of rectification and capable of light emission with excitation by voltage of both polarities. The authors study the electroluminescence spectra, current-voltage and brightness-voltage characteristics, capacitance, and change in brightness and current density with operating time of the specimen. The observed properties are explained from the standpoint of the impact mechanism of electroluminescence in the case of reverse bias, and the injection mechanism in the case of forward bias. When current flows through the film structure in the forward direction, emission characteristic of both ZnS and CuI is observed. This structure has a longer life than the previously

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USSR

VLASENKO, N. A. et al., Poluprovodn. Tekh. i Mikroelektron. Resp. Mezhved. Sb., No 7, 1972, pp 78-85

known analogous $p\text{-Cu}_x\text{S}-n\text{-ZnS}-\text{Mn}$ structure, and may find practical application in various electroluminescent devices.

2/2

medical science

KONONOV, A.G.

UDC: 362.11+616-082.4:661.31

USE OF COMPUTERS TO ANALYZE DURATION OF PATIENT HOSPITALIZATION

Article by A.G. Kononov, Candidate of Medical Science, Moscow, Soviet Union, Zdravookhraneniya, Russian, No 10, 1972, submitted 17 January 1972, pp 22-27

In the area of planning medical care for the people, one of the indices is duration of hospitalization. Unjustified extension or shortening of hospitalization results either in a smaller bed turnover and increased demand for additional bed resources or poorer treatment of patients.

These adverse consequences can be eliminated only by initiating constant control over proper hospitalization. This can be done in different ways.

The most laborious method is to analyze all charts of patients discharged from a hospital. Indeed, in order to find charts with unjustified duration of hospitalization one has to inspect the case histories of all patients, most of whom were discharged at the right time.

To facilitate and expedite the job one could analyze the charts of patients whose stay differed markedly from the average for a given illness. However, the accuracy of such an inspection would not be great, since not all of the discharges occurring at the wrong time but within the permissible interval would be picked up. Furthermore, it is difficult to establish the justified range for many illnesses.

It is impossible to check the duration of hospitalization using arithmetic means since the group of patients with each illness is not homogeneous, rather it consists of subgroups according to severity of illness. All this does not justify using such parameters as mean hospitalization, standard deviation, etc.

For this reason, we undertook the task of developing a method of statistical detection of patients whose stay in a hospital deviated from the most typical duration by one or more days, with rapid retrieval and output of necessary information from the charts by doctors for the purpose of in-depth analysis.

JRS 57493
13 Nov 72

KONONOV, A. G.

AN AUTOMATED SYSTEM OF EVALUATING AND ANALYZING DIAGNOSTIC DISCREPANCIES IN THERAPEUTIC AND PROPRIETARY INSTITUTIONS

UNC: 616-07:616-091:551.31

JPRS 55570
29 MAR 72

Article by A.G. Kononov, candidate of medical sciences; Moscow, Sovetskaya Zdravoochraneniya, Moscow, No 2, 1972, submitted 31 August 1971, pp 22-25]

Prompt and proper treatment of patients depend on accuracy of diagnosis. Diagnostic errors are due to inadequate development of diagnostic methods as well as medical science and technology, impossibility of working the patient up because of the brief stay in the hospital and other reasons, impossibility of some tests in a given hospital because of the lack of necessary equipment, inadequate competence of doctors with reference to some diagnostic problems.

While the first three reasons for errors are practically independent of the doctor and could be arbitrarily called objective, the fourth source of errors is incompetence of the doctor (let us call such errors subjective).

Prompt and purposeful advanced training of doctors, acquainting them with the knowledge of other doctors and with their errors, active training in diagnostics, constant control and evaluation of diagnostic work -- all this guarantees a decrease in subjective errors. Usually, in order to improve diagnostics, coincidence and discrepancy of diagnosis in different therapeutic and prophylactic institutions are analyzed, as related to different groups of patients; special investigations are made of the causes of diagnostic errors. However, the laboriousness of manual methods of gathering and processing data about diagnostic discrepancies, the need to review many case histories complicates continuous work in this direction.

This requires development of methods and system of indices for rapid evaluation of quality of diagnosis with reference to each illness, methods of statistical detection of case histories with diagnostic discrepancies due to different causes, and issuance of necessary information to doctors for in-depth analysis.

The method we propose for analysis of causes of diagnostic errors will be discussed on the following example. Let us make up a table of diagnostic discrepancies as related to patients who suffered from the same disease upon admittance or discharge.

Data Processing

KONONOV, A. G.

SO: JPAS 5/19/66
5 021 71

1966 / 1102109-01130

AN AUTOMATED MEDICAL DATA PROCESSING SYSTEM IN A HOSPITAL

(Article by A. G. Kononov, Economics and Mathematics Department, General Scientific Research University, Novosibirsk Medical Institute, Novosibirsk, ~~Soviet Union~~ Zlatovodskiyevskiy, Novosibirsk, No 8, 1971, pp 32-37)

The purpose of management of hospital work is the generalization, rapidity and major with hospital work with input of case forms. It is necessary to obtain data on patients at the time of admission or while hospitalized, as well as on patients being transferred from one department to another or at the time of discharge. Such data are needed to implement operational supervision of the quality of diagnostics at different stages of medical care, of justification of their hospitalization in a given hospital, control of coordination of its work and efficiency in use of the bed capacity.

The forms available at hospitals cannot help perform all these tasks properly, since the "discharge card" is received only after the patient is discharged, the "Hospital and bed record" contains only the quantitative aspect of daily patient movement, while the information in the "system hospitalization log" cannot be rapidly processed and used.

For this reason, since 1969, a specially developed card has been introduced at Clinical Hospital No 1 in Novosibirsk, which has 1, and beds, and this card is used on a registration document. The contents and format were determined by the need to rapidly obtain and process data for the purpose of management and immediate knowledge of information about a patient.

It must be noted that expansion of information on the card will involve an increase in its size, or else using the reverse side, which will make filling and use more difficult.

Rapid processing of all information and performance of logical operations with the cards can be done only with an electronic computer (we used the Minsk-22); for this reason, to input the data in the computer only had to be put in code. Coding was done by making entries in very specific parts of the card. The complexity and degree of details were determined by the need to code the data rapidly (100 cards per hour) and by the need of effective control, when

USSR

UDC [537.226+537.311.33]:[537+535]

PONOMARENKO, V. K., KONONOV, A. N., SOROKIN, E. I., DUMANOV, M. YU.,
REYFMAN, M. B.

"Determining Certain Parameters of n-Type Silicon Carbide Crystals"

Sb. nauch. tr. Mosk. inzh.-fiz. in-t. Vech. otd. (Collection of Scientific
Works of Moscow Engineering Physics Institute. Evening Division), Chelyabinsk,
1971, pp 23-36 (from RZh Fizika, No 12, Dec 71, Abstract No 12Yel303)

Translation: It was observed from measurements of the Hall effect and electrical conductivity that the electron concentration in the crystals studied varied at room temperature from $3 \cdot 10^{16}$ to $5 \cdot 10^{17}$ cm^{-3} and the mobility μ varied from 270 to 170 $\text{cm}^2/\text{sec} \cdot \text{v}$. Scattering by thermal oscillations of the lattice makes the basic contribution to the mobility. The concentration of carriers n , as determined on the basis of the value of μ , differs from the corresponding values obtained on the basis of the Hall temperature curves by not more than 20-25%. An explicit dependence of n and μ on the dislocation density was not observed. Resume.

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USSR

UDC 911.3.613.11 (98)

NEVEROVA, N. P., and KONONOV, A. S.

"The Function of External Respiration During the Initial Acclimatization Period for Man in the Arctic"

V sb. Akklimatiz. i krayev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 123-125 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.47 by T. Koretskaya

Translation: Research was conducted on 260 people, from 19-25 years of age, arriving in the settlement of Andorra from the central zone of the USSR. The breathing rate progressively decreased regardless of the season of the newcomer's arrival. The lowest breathing rate occurred after a six month period during the polar night (15.1 ± 0.25). During the first three months some insignificant decrease in lung vital capacity was noted (from 4003.5 ± 73.1 ml to 3821.9 ± 139.9 ml). Later there was almost no difference as compared to controls. An increase in breathing volume was observed in the first six months (from 9.5 ± 0.23 to 12.7 ± 0.31), and an insignificant decrease in reserve volume. An increase in minute breathing volume was noted in winter months (from $118.0 \pm$

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USSR

NEVEROVA, N. P., et al, Akklimatiz. i krayev. patol. cheloveka na Severe, Arkhangel'sk, 1970, pp 123-125

± 10.3 to $121.0 \pm 11.5\%$) and a decrease in the summer months (to $121.4 \pm 12.0\%$). Breathing reserve increased during the period of the polar day and decreased in the period of the polar night. During the arrival period, 50% of the subjects experienced dyspnea on physical effort. During the initial stage of acclimatization hyperventilation was observed both during the polar night and the polar day. The decrease in breathing reserve during the polar night indicates a decrease in functional capacity of the external breathing apparatus.

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UDC 911.3.613.11 (98)

USSR

KONONOV, A. S.

"Human Basal Metabolism During the Acclimatization Process in the Arctic"

V sb. Akklimatiz. i krayev. patol. cheloveka na Severe (Acclimatization and Regional Pathology of Man in the Far North--collection of works), Arkhangel'sk, 1970, pp 80-81 (from RZh-36. Meditsinskaya Geografiya, No 1, Jan 71, Abstract No 1.36.45 by T. Koretskaya)

Translation: Research was conducted with 246 workers in the 19-25 age bracket who had come to reside permanently in the Arctic (the settlement of Amerma) from the central zone of the USSR. All workers lived in the same conditions, ate the same food, and worked outdoors. The Douglas-Haldane method was used in these studies. During control conditions the metabolism was $92.4 \pm 0.84\%$. After three months, the metabolism increased to $94.2 \pm 0.69\%$; after six months--to $99.9 \pm 0.89\%$; after 24 months--to $112 \pm 0.78\%$; and after 36 months--to $102.5 \pm 1.05\%$. Shifts in basal metabolism in the Arctic have a seasonal character, with an increase in the period of the polar night and a decrease during the polar day.

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USSR

UDC 620.179.15

~~KONONOV, R. A.~~, DERGOBUZOV, K. A., YEVSTIGNEYEV, V. V., ZYKOV, V. M.,
RUJENKO, V. N., and STEPANOV, Yu. M., Scientific Research Institute of
Electron Introscopy, Tomsk Polytechnic Institute imeni S. M. Kirov

"Experimental Evaluation of the Possibilities of Electron Defectoscopy"
(Paper presented at the Sixth International Conference on Nondestructive
Control Methods, June 1-5 1970, Hannover, GFR)

Sverdlovsk, Defektoskopiya, No 2, 1971, pp 94-98

Abstract: The status and prospects for fast electron defectoscopy are discussed. An account is given of investigation results of the use of betatron electron beams for defectoscopy of layer materials. It is demonstrated that radiographic and radiometric (including spectrometric) methods of electron defectoscopy can be applied successfully for solutions of many tasks with a sensitivity of 0.5%. The experimentally derived dependence of the intensity of a reflected electron flux on the thickness of the aluminum coating on the backing of different materials shows that with increasing thickness of the coating the intensity of the flux decreases or increases, depending on whether the atomic number of the coating is smaller or greater than that of the backing. Three figures, 11 bibliographic references.

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USSR

UDC: 681.3.06:51

KONONOV, B. P.

"Mathematical Methods of Analyzing Certain Complex Tests in Patentology"

[Tr.] VNII gos. patentn. ekspertizy ([Works] of the All-Union Scientific Research Institute of Patent Expertise), 1971, vyp. 4, pp 102-118 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V933)

Translation: The article is a report on individual results on the use of mathematical models in semantic analysis of certain complex texts in patentology, in particular formulas of invention. The methods of mathematical logic are used in this connection. Illustrative examples are presented. Bibliography of 19 titles. V. Mikheyev.

1/1

Acc. Nr **AAO 036072**

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code
UK 0000

69605e Production of sponge iron in a shaft furnace without fusion. Kononov, M. I.; Krashennikov, E. A.; Kavazey, V. F.; ~~Vasil'ev, E. N.; Nasonov, P. Ya.; Timofey, E. P.~~
 (Bardin, I. P., Central Scientific-Research Institute of Ferrous Metallurgy) Brit. 1,76,740 (Cl. C 21b), 07 Jan 1970, Appl. 07 Mar 1968; 6 pp. Finely crushed oxide such as Fe ore is rapidly reduced with crushed solid reducing agent above 1000° without fusion, sticking to the sides of the shaft, or excessive contamination of the sponge iron by the reducing agent ashes, in a shaft, the upper part of which is heated to ~1100° by hot gases passing through flues extending horizontally around the side walls, with the reducing agent fed at the top through a funnel with a 2nd funnel inside it, to form a tubular mass of the agent descending around the circumference of the shaft. Near the base of the shaft, a H₂O cooler surrounds the shaft and below it an annular bottom plate stops the downward flow of the reducing-agent residu or ashes, which are scraped out laterally by rotary rakes to keep fresh agent descending. At the shaft axis, a column of fine granular oxide or ore descends from a central feed-funnel at the top, as a column in contact with the reducing agent through the heated and cooled shaft zones, and through the central hole in the bottom plate where the reduced and sintered sponge product is cleaned by rotary brushes, drawn downward and compressed by cogging rolls, and sheared or sawed into billets of

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convenient length. The shaft can alternatively be provided with 3 concentric feed funnels, so that the descending ore is reduced to sponge as a tubular shape, or as 2 rectangular billets, by both exterior and interior contacts with reducing agent. The designs and arrangements of the app. are clearly described and illustrated with little detail. The ore being reduced can be mixed with a carbonaceous agent of low ash content to hasten redn., and with lime or similar agent for desulfurizing; and since it does not touch the sides of the shaft, it cannot stick to them.

George P. Comstock

2/2

19720827

1/2 007 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--SYNTHESIS OF ENANTHOLACTAM BASED ON CYCLOPENTADIENE -U-
AUTHOR--(05)-ARTERYEV, A.A., GENKINA, YE.V., GOLOVKIN, G.V., KONDNOV, N.E.,
MALINNOVA, A.B.
COUNTRY OF INFO--USSR
SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(5), 1137-40
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--LACTAM, CYCLIC GROUP, HEPTANE, AROMATIC KETONE, OXIME
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO--FD70/605001/E04 STEP NO--UR/0080/70/043/005/1137/1140
CIRC ACCESSION NO--AP0139368
UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0139368

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE MONOMER (I) WAS PREPD. BY A SERIES OF REACTIONS FROM CYCLOPENTADIENE (II). THUS, II WAS CONDENSED WITH C SUB2 H SUB2 AT 420DEGREES AND 2 ATM, THE RESULTANT CYCLOHEPTATRIENE HYDROGENATED CATALYTICALLY AT 250DEGREES, AND THE CYCLOHEPTANE PRODUCED WAS TREATED WITH NOCL PLUS HCL IN THE PRESENCE OF LIGHT, AND FINALLY THE CYCLOHEPTANONE OXIME HYDROCHLORIDE WAS ISOMERIZED TO I (IN 85-90PERCENT YIELD) AT 120-30DEGREES IN THE PRESENCE OF H SUB2 SO SUB4. FACILITY: GDS. NAUCH.-ISSLED. PROEKT. INST. AZOTN. PROM. PROD. ORG. SIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--FORMATION OF COKE IN STATIONARY AND FLUIDIZED BEDS OF AN ALUMINA.
CHROMIA, POTASSIA CATALYST DURING N HEPTANE DEHYDROCYCLIZATION -U-
AUTHOR--(C5)--NEVIKOVA, L.A., IVANOVA, N.G., ROZENGART, M.I., KONONOV, N.F.,
MEDVEDOVSKAYA, I.I.
COUNTRY OF INFO--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(11), 37-41.

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COKE, FLUIDIZED BED, ALUMINA, CHROMIUM OXIDE, POTASSIUM OXIDE,
CATALYST ACTIVITY, CYCLIZATION, HEPTANE, AROMATIC HYDROCARBON/(U)KA237
CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2101

STEP NO--UR/0204/70/010/001/0037/0041

CIRC ACCESSION NO--AP0125685

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125685

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCREASED COKE FORMATION DUE TO INCREASED CONTACT TIME AND TEMP. IN A STATIONARY BED OF 2.9 TIMES 2.2 MM PARTICLES OF AL,CR,K OXIDE CATALYST KA,237 WAS ABOUT THE SAME AS THAT IN A FLUIDIZED BED OF 63-84 MU PARTICLES OF THE SAME CATALYST DURING DEHYDROCYCLIZATION OF N HEPTANE (I) AT 510-40 AND 510-50DEGREES, RESP., BUT THE INCREASE WAS NONLINEAR IN THE CASE OF THE STATIONARY CATALYST LAYER. COKE DEPOSITS DECREASED MONOTONICALLY THROUGH THE LATTER BUT WERE EVENLY DISTRIBUTED IN THE FLUIDIZED BED. AT 510DEGREES AND AN INPUT RATE OF SIMILAR TO 0.5 HR PRIMENEGATIVE1 WHEN THE COKE YIELD WAS 1.2PERCENT, AROMATIC HYDROCARBON YEILDS INCREASED FROM 41.9 TO 63.2 AND 55.1PERCENT AS THE LENGTH OF THE RUN WAS RAISED FROM 1 TO 2 AND 3 HR, BUT WHEN A HEPTANE FRACTION (31.4PERCENT N HEPTANE, 46.4PERCENT OTHER ALKANES, 21.2PERCENT ISOHEPTANES, 17.2PERCENT NAPHTHENES, AND 5PERCENT AROMATIC HYDROCARBONS) WAS SUBSTITUTED AND THE COKE YIELD WAS 5.1PERCENT, AROMATIC HYDROCARBON YIELDS DECREASED FROM 24.9 TO 18.5 AND 15.6PERCENT. AT 548DEGREES, WHEN COKE YIELDS WERE 1.9 AND 8.6PERCENT, AROMATIC HYDROCARBON YIELDS FROM RUNS OF THE RESP. LENGTHS WERE 69.9, 69.0, AND 70.5PERCENT FOR 1 AND 44.9, 33.9, AND 18.0) FOR THE HEPTANE FRACTION. REDUCED CATALYTIC ACTIVITY WAS MARKED ONLY FOR A COKE CONTENT IS GREATER THAN OR EQUAL TO 8PERCENT. FACILITY: INST. ORG.

KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—KINETICS OF EPSILON CAPROLACTAM VINYLATION --U--

AUTHOR—(05)—KCNNOV, N.F., ZARUTSKIY, V.V., POGORELOV, A.G., PISARENKO,
V.N., KOSMINSKAYA, G.A.
COUNTRY OF INFO—USSR

SOURCE—ZH. FIZ. KHIM. 1970, 44(2), 412-15

DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—REACTION KINETICS, CAPROLACTAM, VINYL COMPOUND, ORGANIC
SYNTHESIS, ACTIVATION ENERGY

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE--2000/0893

STEP NO—UR/C076/70/044/002/0412/0415

CIRC ACCESSION NO--AP0124556

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF THE SYNTHESIS OF N,VINYLCAPROLACTAM (I) FROM C SUB2 H SUB2 AND CAPROLACTAM (II) WITH NA CAPROLACTAM CATALYST AT 125-45DEGREES WERE STUDIED. EXPTL. CONDITIONS WERE CHOSEN TO PROVIDE A NON RANDOMIZED COMPLETE FACTORIAL PLAN FOR THE VARIABLE TEMP., REACTION TIME, AND CATALYST CONCN. AT 2 LEVELS. WITH THE USE OF AN ITERATIVE METHOD, VALUES WERE CALCD. FOR THE PRE EXPONENTIAL FACTORS, ACTIVATION ENERGIES, AND REACTION ORDERS WITH RESPECT TO THE REACTANTS, FOR THE REACTIONS INVOLVED IN THE SCHEME II PLUS C SUB2 H SUB2 YIELDS I; II YIELDS RESINOUS PRODUCTS.
FACILITY: INST. ORG. KHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--SEPARATION OF MIXTURES OF C SUB6 HYDROCARBONS OF GASOLINE
 FRACTIONS. IV. PHASE EQUILIBRIUM IN SYSTEMS FORMED BY C SUB6
 AUTHOR--MAKAROVSKIY, YA.I., KOGAN, V.B., KONONOV, N.F., VAYNBERG, A.M.
 COUNTRY OF INFO--USSR
 SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 289-95
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY, PROPULSION AND FUELS
 TOPIC TAGS--CHEMICAL SEPERATION, MULTICOMPONENT CHEMICAL MIXTURE,
 CYCLOHEXANE, BENZENE, CYCLOPENTANE, AROMATIC ALCOHOL, PHASE EQUILIBRIUM,
 GASOLINE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY REEL/FRAME--1990/2041 STEP NO--UR/0080/70/043/002/0289/0295
 CIRC ACCESSION NO--AP0109973
 UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--11SEP70

CYRC ACCESSION NO--AP0109973

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MUTUAL SOLY. OF BINARY SYSTEMS CONSISTING OF HYDROCARBONS (N-C SUB6 H SUB14 (I), METHYLCYCLOPENTANE (II), CYCLOHEXANE (III), C SUB6 H SUB6 (IV), OR N-C SUB7 H SUB16 (V)) AND TETRAHYDROFURFURYL ALC. (VI) (B. 175-6DEGREES; D PRIME20 1.0501, AND N PRIME2 SUBD PRIME0 1.4520), THE MUTUAL SOLY. OF THE TERNARY SYSTEM I II VI, THE INFLUENCE OF VI ON THE FUGACITY OF THE COMPONENTS OF THE SYSTEMS I II AND III C SUB6 H SUB6, PHASE EQUIL. AT ATM. IN THE BINARY SYSTEMS CONSISTING OF HYDROCARBONS (I, III, OR C SUB6 H SUB6) AND VI, AND THE PHASE EQUIL. IN THE TERNARY SYSTEM I II VI WERE STUDIED. AROMATIC AND NAPHTHENIC HYDROCARBONS DISSOLVE COMPLETELY AT ROOM TEMP. IN VI; THE CRIT. SOLN. TEMPS. IN VI ARE 36DEGREES AND 42DEGREES FOR I AND V, RESP. THE PARTITION COEFF. OF II BETWEEN I AND VI IS 1.4-1.5. THE SELECTIVITY OF VI IS SO LOW THAT VI IS NOT A SELECTIVE SOLVENT FOR THE EXTN. OF THE PARAFFINIC AND NAPHTHENIC HYDROCARBONS. HIGHER SELECTIVITY IS OBTAINED IN EXTRACTIVE DISTN. THE DEPENDENCE OF THE FUGACITY COEFFS. OF THE CONSTITUENTS OF A BINARY MIXT. CONTG. PARAFFINIC AND NAPHTHENIC OR AROMATIC HYDROCARBONS ON THE CONC. OF VI IS CLEAR. THE SELECTIVITY OF VI IS 2.0-2.5 AND 1.55-1.6 FOR MIXTS. CONTG. III-IV AND I-II, RESP. VI IS EFFECTIVE FOR THE SEPN. OF PARAFFINIC, NAPHTHENIC, AND AROMATIC HYDROCARBONS BY EXTRACTIVE DISTN.

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UNCLASSIFIED

UDO 621.374.32

USSR

KONONOV, S.P., SKREBNEY, B.A.

"Characteristics Of Quasi-Resonant Pulse System"

Izv. VUZ: Elektromekhanika, No 3, Mar 1972, pp 324-326

Abstract: In connection with the power supply of periodically discharged capacitance storage devices in pulse systems, quasi-resonant charging is investigated where the frequency of the source does not match the natural frequency of the oscillations of the charging circuit. An analysis shows that the parameters of the pseudo-steady state quasi-resonance: predischARGE voltage, effective power, and efficiency; and the equivalent power factors of the capacitance storage device and all circuits may not be worse and in many cases may be better than in a resonance regime. Using the dependences found, it is possible to select soundly the operating conditions of the system, to determine its parameters, and to establish the behavior of the system during departures from the normal regime. 3 fig. 2 ref. One reference is concerned with components and elements of radar stations. Received, 22 Dec 1970; after further improvement, 23 July 1971.

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USSR

UDC: 621.317.3:[621.315.61+621.315.592]

(3)

URYVSKIY, Yu. I., SYNOROV, V. F., CHURIKOV, A. A., POPOV, V. A., KONONOV, V. I., LAVRENT'YEV, K. A., MASLENNIKOV, P. N.

"Ellipsometric Method of Checking Dielectric and Semiconductor Films"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 2, pp 82-83 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12A393 by A. K.)

Translation: The ellipsometric inspection method is distinguished by high information capacity and resolution: It enables simultaneous measurement of the thickness and index of refraction of the film on a substrate during production with accuracy of up to 1 nm and 0.05 respectively. The method is based on determining the change in parameters of polarized light reflected from the surface being studied.

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USSR

UDC: 620.178.7

SEROV, V. I., KONONOV, V. M., Institute of Mining imeni A. A. Skochinskiy

"A Vertical Drop Hammer for Impact Testing Explosives"

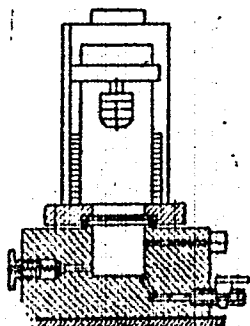
Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 36, Dec 72, Author's Certificate No 360587, filed 28 Sep 70, published 28 Nov 72, pp 110-111

Translation: This Author's Certificate introduces a vertical drop hammer for impact testing explosives. The device contains a stand which carries guides for the motion of the striker, a trigger mechanism, a mechanism for preventing rebound, and measurement equipment. As a distinguishing feature of the patent, provision is made for determining the shock sensitivity of explosive gases and for bringing the test conditions close to operational conditions. The installation is equipped with a hermetically sealed chamber filled with explosive gas which is built into the stand and has an anvil cover.

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USSR

SEROV, V. I., KONONOV, V. M., USSR Author's Certificate No 360587



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USSR

UDC 621.396.67:621.317.743

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KONONOV, V. M., KURYANOV, A. V., YELSAKOV, N. G.

"Test Unit for Recording the Phase Characteristics of Antennas"

Obmen opytom v radioprom-sti (Exchange of Experience in Radio Industry),
vyp. 5, Moscow, 1970, pp 62-63 (from RZh-Radiotekhnika, No 9, Sep 70, Ab-
stract No 9B93)

Translation: This article contains a description of a laboratory test unit
for measuring and recording the amplitude and phase characteristics in the
near zone of antennas basically made of standard superhigh frequency devices
and elements. There is one illustration and a two-entry bibliography.

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USSR

UDC 542.65:546.431

ROKHLENKO, D. A., SOKOL, V. A., KONONOVA, L. I., and BRÖMBERG, A. V.

"Investigation of the Synthesis and Hot Pressing of BaF₂ Powders in Air"

Moscow, Neorganicheskiye Materialy, Vol 9, No 11, 1973, pp 1932-1935

Abstract: The relationship between synthesis conditions, hot pressing procedure in air, and quality of an optical ceramic of barium fluoride was investigated. BaF₂ particles smaller than 0.5 microns possess the maximum activity when they have been fired at about 500°C. Ceramic elements with a thickness of 3 mm, manufactured from these powders, have a 40% transparency in the visible portion of the spectrum and about 60-80% transparency in the infra-red region with a thickness of 2 to 7 microns. 4 figures, 2 tables, 5 bibliographic references.

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1/2 007 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SOME DEBATABLE QUESTIONS PERTAINING TO THE PROBLEM OF SOIL HUMUS
-U-
AUTHOR--KORONOVA, M.M. *R*
COUNTRY OF INFO--USSR
SOURCE--IZVESTIY AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3,
PP 364-373
DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE
TOPIC TAGS--SOIL CHEMISTRY, RADIOCARBON DATING, SOIL STRUCTURE, NITROGEN
FERTILIZER

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CIRC ACCESSION NO--AP0126250
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126250

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROCESS OF HUMUS FORMATION REPRESENTS A SYSTEM OF PHENOMENA OF DECOMPOSITION OF THE INITIAL PLANT MATERIAL DOWN TO THEIR STRUCTURAL UNITS, THEIR ULTIMATE CONDENSATION LEADING TO THE FORMATION OF HUMUS SUBSTANCES MOLECULES BY MEANS OF POLYMERIZATION (POLYCONDENSATION). COMPARISON OF THE ANNUAL LEAF SHEEDING WITH THE AMOUNT AND THE AGE OF THE HUMUS (DETERMINED BY MEANS OF THE RADIOCARBON METHOD) SPEAKS IN FAVOUR OF THE HIGH INTENSITY OF THE PROCESSES OF REFORMATION AND DECOMPOSITION OF HUMUS SUBSTANCES IN SOIL. IN SPITE OF THE STRIKING INCREASE OF THE PRODUCTION OF MINERAL (IN PARTICULAR NITROGEN) FERTILIZERS THE HUMUS NITROGEN RETAINS ITS SIGNIFICANCE IN PLANT NUTRITION. RELATIVE RESISTANCE OF THE HUMUS REGARDING THE DESTRUCTIVE ACTIVITY OF THE MICROORGANISMS GUARANTEES GRADUAL INVOLVEMENT OF HUMUS NITROGEN INTO BIOLOGICAL SUBSTANCE CIRCULATION. FACILITY: V. V. DOKUCHAEV INSTITUTE OF SOIL SCIENCE.

UNCLASSIFIED

Genetics

USSR

KONONOVA, S. D., KOROLEV, A. M., YEREMENKO, L. T., and GUMANOV, L. L.,
Institute of Chemical Physics, Academy of Sciences USSR

"Mutagenic Effects of Primary Alkyl Nitrates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 5, Sep/Oct
71, pp 762-763

Abstract: The mutagenic effects of methyl nitrate, ethyl nitrate, propyl nitrate, and butyl nitrate on the bacteriophage T4B *E. coli* were investigated by keeping the bacteriophage in 0.084 M solutions of the alkyl nitrates with a 0.2 M carbonate buffer at 27°C for up to 48 hours under constant stirring. The results were expressed as the number of r-mutations observed per 1,000 plaques. After 24 hours of exposure, the number of mutations was 5.6 in methyl nitrate, 0.4 in ethyl nitrate, 0.06 in propyl nitrate, 0.1 in butyl nitrate, and 0.1 in control tests. After 48 hours of exposure, methyl nitrate induced 14.5 mutations, thus considerably exceeding the mutagenic effect of N-nitroso-N-methylurea. The relative rates with which methyl, ethyl, and propyl nitrates entered nucleophilic reactions were calculated to be 9.1:1:0.1. It is concluded that these substances induce mutations by alkylating DNA molecules. The mutagenic effect decreases with increasing size of the alkyl in the alkyl nitrates, because the induced

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KONONOVA, S. D., et al., Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya,
No 5, Sep/Oct 71, pp 762-763

negative charge on the alpha carbon atom increases, preventing the radical
from approaching the nucleophilic reagent.

Acc. Nr.

AP0036349

Abstracting Service:

CHEMICAL ABST. 4-70

Ref. Code

UR 0007

K

69301c Isotopic composition of sulfur in sulfides from carbonatites. Grinenko, L. N.; Kononova, V. A.; Grinenko, V. A. (Moscow State Univ., Moscow, USSR) *Doklady Akad. Nauk SSSR* 1970, (1), 88-75 (Russ). The isotopic compn. of S was detd. of sulfides from carbonatites including the formation of ultrabasic and alkaline rock massifs and from carbonatite-like rocks attending nepheline syenite massifs. The isotopic S compn. of sulfides from 92 rock samples of 8 studied massifs varies on the whole within 10‰, approaching meteoritic sulfur (from $\delta S^{34} = -6.4\%$ to $\delta S^{34} = +3.06\%$). Sep. alk. provinces have a narrower variation range and are somewhat different. A tendency to isotopic compn. change towards enrichment of the final stages of the carbonatite process in ^{34}S is noted. B.I.R.

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UDC 621.73.049.75:776

KAPELEVICH, I. I., KONONOVICH, A. Yu., SOSIDKO, V. V., ANISIMOV, B. K.

"A Device for Making Printed-Circuit Phototemplates"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 24, Soviet Patent No 277896, class 21, filed 24 Mar 69, published 5 Aug 70, p 53

Translation: This Author's Certificate introduces a device for making printed-circuit phototemplates. The device contains a movable table mounted on a stand. The table is equipped with a drive mechanism for shifting it along two mutually perpendicular coordinate axes, and a magazine for holding a glass plate covered with a layer of metal. The device also contains a stationary working head with a scriber which removes the layer of metal in accordance with a predetermined program, and a viewing device made in the form of a microscope. To improve the accuracy of inspection, the microscope takes the form of a periscope with the objective lens under the glass plate, the optical axis of this lens coinciding with the axis of the scriber.

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USSR

UDC 669.295.5.018.29:539.219.3

KONTOROVICH, I. YE., and KONOVA, V. F.

"Effect of Alloying Elements on the Nitration of Titanium Alloys"

Sb. tr. Mosk. vech. metallurg. in-ta (Moscow Evening Metallurgical Institute
-- Collection of Works), 1971, No 11, pp 301-304 (from Referativnyy Zhurnal
-- Metallurgiya, No 6, Jun 71, Abstract No 61662 by A. Babayeva)

Translation of Abstract: The effect of V, Cr, Si, and Zr was studied on the diffusion and properties of Ti-Al alloys. Data are given on the properties of Ti alloys after nitration at 950° for 30 hrs. Alloying of Ti by vanadium to 2.1% with an Al content of 3.3-4.1% leads to the production of an entire depth of layer of 0.2 mm and an effective depth with $H_{\mu} > 600$ on the order of 0.055-0.075 mm. In alloys with 3.0-4.0% Al, permissible amounts of Si were to 0.2%. During alloying of Ti-Al alloys with silicon an increase in the depth of the nitrated layer was observed in comparison with alloys containing only Al. Diffusion of N into the alloy with $\alpha + \beta$ structure occurred more rapidly than in α -alloys since diffusion of N into the β -phase is greater. The microstructure of nitrated $\alpha + \beta$ alloy has a nitride zone, the α -phase is enriched by nitrogen, and the transition zone consists of a mixture of α -phase with the phase obtained as a result of the conversion
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USSR

KONTOROVICH, I. YE., and KONKOVA, V. F. , Sb. tr. Mosk. vech. metallurg.
in-ta., 1971, No 11, pp 301-304

$\beta \rightarrow \alpha$ during the saturation of the β -phase by nitrogen. The
depth of the nitride zone in the $\alpha + \beta$ alloy is less than in the nitrated
 α -alloy.

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- 80 -

KONOPATKIN, A. A.

Complex Immunization of Pigs
Against Aujeszky's Disease, Plague and Erysipelas

TECHNICAL TRANSLATION

FTIC-HT-23-1371 - 71

ENGLISH TITLE: Complex Immunization of Pigs Against Aujeszky's Disease, Plague and Erysipelas

FOREIGN TITLE: Kompleksnaya Immunizatsiya Porosyat protiv holczni Aueszki, Chumy i Rozni

AUTHOR: Professor P. I. Priludin, A. A. Konopatkin and G. D. Suvor

SOURCE: Veterinariya, No. 3, 1971.

Translated for FTIC by Leo Kanner Associates, Redwood City, Ca.

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Veterinary Medicine

USSR UDC 616:616.988.23:616.831.8+616.981.452+616.982.17:636.4

PRITULIN, P. I., Professor, KONOPATKIN, A. A., Senior Scientific Associate, All-Union Institute of Experimental Veterinary Medicine, and SUYER, G. D., Chief Veterinary Physician Safonovskiy Sovkhoz

"Complex Immunization of Young Pigs Against Aujeszky's Disease, Plague, and Erysipelas"

Moscow, Veterinariya, No 3, Mar 71, pp 59-61

Abstract: Live virus monovaccines against Aujeszky's disease, plague, and erysipelas are very effective. However, when the danger of two or all three diseases arises simultaneously, successive vaccination with monovaccines is too slow to ensure immunity on time. In view of this, a dry virus polyvaccine against Aujeszky's disease, plague, and erysipelas was developed and tested on 80 suckling pigs under laboratory conditions and on 1,215 suckling and weaned pigs on a farm. The results have shown that the new polyvaccine induces a simultaneous formation of an effective immunity against all three diseases without producing harmful side effects.

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USSR

K UDC: 612.441.018:(612.126.41+612.126.18)

STEKOL'NIKOV, L.I., TEPELINA, O.M., ABDUKARIMOV, A., and KONOPEVSKAYA, V.M.,
All Union Scientific Research Institute of Antibiotics, and Institute of
Higher Nervous Activity and Neurophysiology, Academy of Sciences, USSR.

"The Physical Chemical and Biological Properties of Separate Fragments of
Thyrocalcitonin Molecules"

Moscow, Doklady Akademii Nauk SSSR, Vol 191, No 2, Mar 70, pp 476-479

Abstract: Because the hypocalcemic function of the recently discovered thyroid hormone, thyrocalcitonin (TCT), is disputed by some scientists, the authors obtained bovine TCT, which has a hypocalcemic effect in rats. Electrophoresis of hydrolyzed TCT produced one cathode and three anode fractions. The fractions were eluted and studied. A solution of fraction two was definitely hypocalcemic in rats, fractions one and three only slightly so, and fraction four negative. This proves that in order to obtain a specific biological function, it is not necessary to use the entire molecule of the hormone. Further chromatographic studies of hydrolyzed fractions showed the amino-acids composition in each: fraction one contained histidine, glutamic acid, cystine, tryptophan, phenylalanine, and leucine; fraction two threonine, glutamic acid, alanine, tryptophan, phenylalanine, tyrosine, leucine, and valine; fraction three, histidine, aspartic acid, serine, arginine, and alanine; and fraction four, methionine, lysine, histidine, aspartic and glutamic

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STEKOL'NIKOV, L.I., et al, Doklady Akademii Nauk SSSR, Vol. 191, No 2, Mar 70,
pp 476-479

acids, and leucine. It is noteworthy that alanine and tryptophan of fragment
two occupy positions 11 and 13 in the polypeptide chain of the TCT molecule.

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