EQUAL TO U.I MONOMER
CONVERSIONS THERE IS NO AGREEMENT BETWEEN THE EXPTL. RESULTS, OBTAINED
BY ULTRACENTRIFUGING, AND THE THEORY.   THE DISAGREEMENT IS PARTIALLY
DUE TO THE INSOLY. OF I AND THE GROWTH OF THE LIVING POLYMER CHAINS,
WHICH WERE NOT TAKEN INTO ACCOUNT IN THE ORIGINAL THEORY.
FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

2/2   024   UNCLASSIFIED   PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0135157
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE MOL. WT. DISTRIBUTION OF

USSR

UDC: 547.944/945

BAN'KOVSKAYA, A. N., SHEYCHENKO, V. I., BAN'KOVSKIY, A. I., VECHKANOVA, L. D., KABANOV, V. S., All Union Scientific Research Institute of Medicinal Plants

"Ergovalide -- a New Alkaloid From Ergot Spurs"

Tashkent, Khimiya Prirodnykh Soyedineniy, No 1, 1973, p 134

Abstract: Paper chromatography was used to isolate a new alkaloid from ergot spurs. The base has empirical formula $C_{21}H_{26}O_2N_4$, a melting point of 152.2-154°C (from methanol), $[\alpha]_D^{20}$ 80.8°C (c 0.47, chloroform), M 366 (mass-spectrometrically determined), and has been named "ergovalide". Chemical, UV, NMR and mass spectral analysis suggest that the base has the structure of N lysergylvalylamide.

1/1

UDC: 8.74

USSR

MATUSOV, Yu. A., KABANOV, V. S., YANKOVA, M. P.

"Forming a Plan for Prospective Developments"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Engineering Economics Institute), 1972, vyp. 94, pp 99-102 (from RZh-Kibernetika, No 5, May 73, abstract No 5V792 by V. Mikheyev)

Translation: The paper describes a procedure for forming the plan for prospective developments, which consists in compiling plans in separate scientific and technical areas. Compilation of a plan for a scientific and technical area is preceded by a comparative analysis of correspondence of the expected consumer demand to the possibilities of the sector within the framework of the given scientific and technical area.

   The prospective plan of developments is modeled by a "goal-decision" graph whose initial vertices correspond to possible scientific decisions (physical principles, design and technological decisions), while the terminal vertices correspond to the specific goals of the developments (new ele-

1/2 .

USSR

MATUSOV, Yu. A. et al., Tr. Leningr. inzh.-ekon. in-ta, 1972, vyp. 94, pp 99-102

ments, blocks, assemblies, devices), while the arcs corre- spond to possible ways of realizing the formulated tasks. A consolidated flowchart is presented for an algorithm for forming a plan of prospective developments, and its individual blocks are described.

2/2

TITLE—STRUCTURAL CHANGES IN MACROMOLECULES OF
   POLY(4-VINYL-N-ISOAMYLPYRIDINIUM BROMIDES —U—
AUTHOR-(05)-KIRSH, YU.E., BESSMERTNAYA, L.YA., TORCHILIN, V.P., PAPISOV,
   I.M., KABANOV, V.A.
COUNTRY OF INFO—USSR

SOURCE—DOKL. AKAD. NAUK SSSR 1970, 191(3), 603-6 (CHEM)

DATE PUBLISHED————70

2/2   021   UNCLASSIFIED   PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AT0125367
ABSTRACT/EXTRACT--(U) GP-0-   ABSTRACT.   THE ALKYLATION OF
  POLY(4,VINYLPYRIDINE) WITH ISOAMYL BROMIDE GAVE
  POLY,(4,VINYL,N,ISOAMYLPRIDINIUM BROMIDE) (I) CONTG. VARIOUS AMTS.
  (ALPHA) OF THE TERTIARY N ATOMS.   THE CHANGES OF THE INTRINSIC VISCOSITY
  OF I IN WATER (OBTAINED BY EXTRAPOLATION OF THE REDUCED VISCOSITY (ETA)
  AT I CONCN. LESS THAN 0.01 G-DL. ONLY, SINCE ABOVE THAT CONCN. ETA
  BEGINS TO DECREASE) INDICATE THAT I MOLS. COIL UP AT THE LOW ALPHA
  VALUES, BECOMING SMALLEST AT ALPHA 12.2PERCENT. AND THEN BEGIN TO UNCOIL

  CONFIRMED ALSO BY THE CHANGES OF I ELECTROPHORESIS RATE WITH ALPHA.
    FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

TITLE--REACTION OF MONOMERS WITH CARBONYL OR NITRILE GROUPS WITH METALS
   AND SOME REACTIONS OF THE RESULTING ANIONRADICALS -U-
AUTHOR-(05)-PANASENKO, A.A., GOLUBEV, V.B., ZUBOV, V.P., KABANOV, V.A.,
   KARGIN, V.A.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 1294), 865-72

DATE PUBLISHED------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MONOMER, CARBONYL RADICAL, NITRILE, SODIUM, MAGNESIUM,
   ACRYLATE, ACETONE, BENZOIC ACID, FREE RADICAL, OLIGOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0683   STEP NO--UR/0459/70/012.004/0865/0372

CIRC ACCESSION NO--AP0124355
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0124355
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VAPORS OF NA OR MG WERE
   CONDENSED ON A SURFACE, COOLED WITH LIQ. N, TOGETHER WITH THE VAPORS OF
   ME METHACRYLATE, ME ACRYLATE, ME BUTYRATE, ET BENZOATE, ACH, ETCHO, ISO
   PRCHO, TERT BUCHO, ACROLEIN, ACETONE, $H_2C:CHCN$, $H_2C:CMECN$, OR
   ETCN. THE CONDENSATE CONTAINED FREE RADICALS. THE REACTIONS OF THESE
   MONOMERS WITH NA OR MG GAVE ANION RADICALS, SUCH AS (ME$_2$ CO), WHICH
   INTIATED THE OLIGOMERIZATION BY ANIONIC MECHANISM.   FACILITY:
   MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.,

UNCLASSIFIED

Acc. Nr.
AP0055621

Abstracting Service:
CHEMICAL ABST.

Ref. Code
UR 0460

111879z Elementary constants of chain growth and termination during the radical polymerization of methyl methacrylate in the presence of aluminum bromide. Lachinov, M. B.; Zubov, V. P.; Kabanov, V. A. (USSR). Vysokomol. Soedin., Ser. B 1970, 12(1), 4-5 (Russ). In the polymn. of Me methacrylate (I) in the presence of AlBr$_3$ with uv irradn., it was found that the initiation rate const. (k_i) increases and the chain-transfer const. (k_s) decreases in the $0 < $ AlBr$_3$/I < 0.35 mole ratio range. This supports the view that AlBr$_3$ participates in the polymer chain-growth mechanism (V. I. Zubov, et al., 1967) and explains the decrease in the polymer mol. wt. with increase in AlBr$_3$ concn.
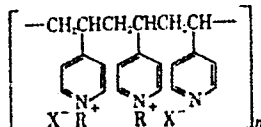
(PJR)

86675v Synthetic polymeric analogs of enzymes with ester-
ase activity. Kirsh, Yu. E.; Pluzhnov, S. K.; Shomina, T. S.;
Kabanov, V. A.; Kargin, V. A. (Mosk. Gos. Univ. im. Lomonoso-
va, Moscow, USSR). Vysokomol. Soedin., Ser. A 1970, 12(1),
186-204 (Russ). Polymeric catalysts (I, R = Me, Et, Pr, iso-Pr,
Bu, iso-Bu, isoamyl, PhCH$_2$ and X = Cl, Br, I) were prepd. by
partial N-alkylation of poly(4-vinylpyridine) with the correspond-
ing alkyl halide at 60–70° in 10:1 MeNO$_2$–MeOH. I had high

$$\left[\begin{array}{c} -CH_2CHCH_2CHCH_2CH- \\ \end{array} \right]_n \quad (I)$$

catalytic activity and selectivity in the hydrolysis of esters such
as p-NO$_2$C$_6$H$_4$OAc. The active centers for the catalysis were the
unsubstituted pyridine rings. The catalytic activity of an unal-
kylated link was 10$^{4.5}$–10$^{4.6}$ times greater than that of the simplest
analog, 4-ethylpyridine. The kinetic behavior of I was similar to
that of α-chymotrypsin. The kinetic parameters for each step of
the hydrolysis were calcd., and their dependence on the nature of

AP0042509

the substituents and macromol. dimensions were detd. The cat-
alytic activity of I was a function of their shape in soln. and the
type of solvent. The high catalytic activity of I was explained by
the development of local hydrophobic cavities, each of which con-
tains a nucleophilic group (pyridine ring) and is surrounded by
hydrophobic substituents.   DBJR

LD

19760475

Acc. Nr: Abstracting Service: Ref. Code:

AP0052504_   CHEMICAL ABST. 5-70

101153u Polymerization of methyl methacrylate in the presence of sulfuric and phosphoric acids. Venzorova, N. A.; Georgieva, V. R.; Zubov, V. P.; Kabanov, V. A.; Kargin, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). Vysokomol. Soedin., Ser. B 1970, 12(1), 46-50 (Russ). The photopolymn. of Me methacrylate (I) in the presence of H_2SO_4 or H_3PO_4 was studied at -10 to $+100°$. Polymn. in the I-H_2SO_4 system was initiated by uv light ($\lambda = 313$ mμ) without a sensitizer, whereas polymn. in the I-H_3PO_4 system was initiated by uv light without a sensitizer, as well as in the presence of benzil at $\lambda = 365$ mμ. The polymn. rates and the mol. wts. of poly(Me methacrylate) (II) increased with increasing I-acid ratio, presumably due to a chem. activation of the monomer or the propagating macroradical by the acids. Max. polymn. rate and mol. wt. of II were obtained in the presence of 80% H_2SO_4, suggesting that the chain termination rate const. varied in the presence of H_2SO_4. The polymn. rate of I in the presence of either acid obeyed the Arrhenius equation; the activation energy was 4.9 kcal/mole (in the presence of H_2SO_4) and 5.0 kcal/mole (in the presence of H_3PO_4). The microtacticity of II was essentially independent of the polymn. temp., indicating that the acid bound to the reactive center participated in chain propagation.   CKJR

REEL/FRAME
19821145

1   7

1/2   013   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--ASCORBATE OXIDASE ACTIVITY OF A COMPLEX OF CU PRIME2 POSITIVE AND
   POLY(4,VINYLPYRIDINE) PARTIALLY ALKYLATED BY BROMOACETIC ACID -U-
AUTHOR-(04)-VENGEROVA, N.A., KIRSH, YU.E., KABANOV, V.A., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSR 1970, 190(1), 131-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST ACTIVITY, COMPLEX COMPOUND, BROMINATED ORGANIC
   COMPOUND, OXIDATION, COPPER COMPLEX, PYRIDINE, ALKYLATION, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1985/1902   STEP NO--UR/0020/70/190/001/0131/0134

CIRC ACCESSION NO--AT0101946
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0101946
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATALYTIC ACTIVITY OF THE
  TITLE COMPLEX (I) IN THE OXIDN. OF ASCORBIC ACID (II) BY O WAS COMPARED
  WITH THAT OF CU PRIME2 POSITIVE ALONE AND ITS LOW MOL. WT. ANALOG,
  PYRIDINIUM BROMOACETATE (III). THE OXIDN. WAS STUDIED IN 0.02M ACETATE
  BUFFER AT PH 4.3 AND 25 PLUS OR MINUS 0.1DEGREE. IN THE PRESENCE OF I,
  THE OXIDN. RATE INCREASED, AND THE RATE WAS LESS EFFECTIVELY ACCELERATED
  BY THE INCREASING II CONCN. THIS SUGGESTED THE FORMATION OF A MICHAELIS
  COMPLEX AS OBSD. IN ENZYME REACTIONS. COMPARISON OF THE I DISSOCN.
  CONCT. ((2.5 PLUS OR MINUS 0.5) TIMES 10 PRIME NEGATIVE3) WITH THAT OF
  THE CU PRIME2 POSITIVE PYRIDINE COMPLEX INDICATED THAT CU PRIME2
  POSITIVE IN I WAS ASSOCD. WITH THE UNALKYLATED PYRIDINE RINGS. III HAD
  NO EFFECT ON THE OXIDN. OF II IN THE PRESENCE OF CU PRIME2 POSITIVE. I
  WAS GREATER THAN 10 PRIME3 MORE ACTIVE THAN CU PRIME2 POSITIVE ALONE.
  SINCE IODOMETHYLATED POLY(4,VINYLPYRIDINE) (DEGREE OF SUBSTITUTION
  70PERCENT) DID NOT CHANGE THE ACTIVITY OF CU PRIME2 POSITIVE, THE HO
  SUB2 CCH SUB2 GROUPS OF I WERE ALSO RESPONSIBLE FOR INCREASING THE
  CATALYTIC ACTIVITY. THE INCREASED ACTIVITY WAS THUS ASSUMED TO BE DUE
  TO THE FORMATION OF ACTIVE CAVITIES CONTG. PYRIDINE RINGS SURROUNDED BY
  HO SUB2 CCH SUB2 GROUPS IN THE MACROMOL. COILS OF I.

UNCLASSIFIED

1/2   034   UNCLASSIFIED   PROCESSING DATE--02OCT70
TITLE--ALDEHYDE AND KETONE POLYMERIZATION -U-

AUTHOR-(03)-KABANOV, V.A., KARGIN, V.A., ZUBOV, V.P.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 134,862
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, ALDEHYDE, KETONE,
   CONDENSATION REACTION, MOLECULAR WEIGHT, SEMICONDUCTOR MATERIAL, ZINC
   CHLORIDE, ALUMINUM CHLORIDE, ORGANIC SEMICONDUCTOR, HEAT RESISTANT
   PLASTIC, CATALYTIC POLYMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0128   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0111322
                         UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AA0111322
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYMERS WERE PREPD. BY THE
  POLYCONDENSATION OF ALIPHATIC ALDEHYDES OR KETONES HAVING ALPHA H ATOMS,
  SUCH AS ACETONE OR ACH, AT 100-300DEGREES. TO OBTAIN HIGH MOL. WT.,
  HEAT RESISTANT POLYMERS WITH SEMICONDUCTOR PROPERTIES, GROUP II, III,
  IV, V, AND VIII METAL HALIDES, SUCH AS ZNCL SUB2 OR ALCL SUB3, WERE USED
  AS CATALYSTS AND WERE ADDED TO THE REACTION AS SOLNS. IN THE
  CORRESPONDING MONOMERS.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--09OCT70
TITLE--EFFECT OF THE FORMATION OF ION PAIRS ON RADICAL HOMO AND
   COPOLYMERIZATION OF 2,METHYL,5,VINYLPYRIDINE AND
AUTHOR-(04)-GEORGYEVA, V.R., ZUBOV, V.P., KABANOV, V.A., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1128-31

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POLYMERIZATION, PYRIDINE, VINYL COMPOUND, SULFATE,
   HETEROCYCLIC NITROGEN COMPOUND, METHANOL, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/2013   STEP NO--UR/0020/70/190/005/1128/1131

CIRC ACCESSION NO--AT0112968
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0112968
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HOMOPOLYMN. RATE (UPSILON) OF
   1,2,DIMETHYL,5,VINYLPYRIDINIUM METHYL SULFATE (I) AT 50DEGREES IN H SUB2
   0,MEOH MIXTS. CONTG. (ME SUB2 CCN) SUB2 N SUB2 IS FASTER THAN THAT OF
   THE HOMOPOLYMN. OF ITS FREE BASE (II) UNDER THE SAME CONDITIONS. THE
   INCREASE IN MEOH CONCN. ABOVE 70PERCENT INCREASES THE UPSILON OF I
   SHARPLY.   THE UPSILON OF II DECREASES LINEARLY WITH MEOH CONCN. THE
   COPOLYMN. REACTIVITY RATIOS (R SUB1 FOR II AND R SUB2 FOR I) ALSO CHANGE
   WITH THE SOLVENT COMPN. (SOLVENT, R SUB1, AND R SUB2 GIVEN): MEOH,
   0.58, 0.98; 4:1 MEOH,H SUB2 0, 0.54, 0.42; 1:1 MEOH,H SUB2 0 0.30, 0.01.
    IN MEOH (OR MEOH RICH SOLNS.), A LARGE NO. OF THE GROWING MACRORADICALS
   FORMS IONIC PAIRS WITH MESO SUB4 PRIME NEGATIVE, WHICH DECREASES THE
   ELECTROSTATIC REPULSION BETWEEN THE PYRIDINE GROUPS IN THE TRANSITION
   COMPLEX III, I.E., INCREASES OF UPSILON OF I.   FACILITY: MOSK.
   GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

1/2   019   UNCLASSIFIED   PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF THE SOLVATION OF GROWING CHAINS ON THE MICROTACTICITY
  OF THE RESULTING POLYMER -U-
AUTHOR-(04)-OSADA, YE., NEKRASOVA, N.A., PAPISOV, I.M., KABANOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 324-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLVENT ACTION, NMR SPECTRUM, POLYMERIZATION, METHACRYLIC
  ACID, METHYL ETHER, ETHYLENE GLYCOL, METHOXY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/0724   STEP NO--UR/0460/70/012/005/0324/0325

CIRC ACCESSION NO--AP0136163
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0136163

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA SHOWED THAT POLYMN. OF
  METHACRYLIC ACID (I) IN C SUB6 H SUB6 IN THE PRESENCE OF MEOCH SUB2 CH
  SUB2 OME (II) AND POLYETHYLENE GLYCOL (III) CAUSED A DISCONTINUITY IN
  THE MICROTACTICITY OF THE POLY(METHACRYLIC ACID) FORMED, PRESUMABLY DUE
  TO A SOLVATION OF I MACRORADICALS WITH II OR III.

UNCLASSIFIED

1/2   024   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--MOLECULAR WEIGHTS AND MOLECULAR WEIGHT DISTRIBUTION OF THE PRODUCTS
   OF SPONTANEOUS POLYMERIZATION OF QUATERNARY SALTS OF 4,VINYLPYRIDINE AND
AUTHOR-(03)-MUSTAFAYEV, M.I., ALIYEV, K.V., KABANOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(4), 855-64

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLECULAR WEIGHT, VINYL COMPOUND, PYRIDINE, BROMINATED ORGANIC
   COMPOUND, KINETIC THEORY, MONOMER, POLYMERIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1496   STEP NO--UR/0459/70/012/004/0855/0864

CIRC ACCESSION NO--AP0135157
                   UNCLASSIFIED

CIRC ACCESSION NO--AP0135157
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. WT. DISTRIBUTION OF
  POLY(VINYLPYRIDINIUM ETHYL BROMIDE) (I) OBEYS THE KINETIC THEORY
  PROPOSED EARLIER (V. A. KARGIN ET AL. 1965, 1966, 1968) AT LESS THAN OR
  EQUAL TO 0.1 MONOMER FRACTION CONVERSION. HOWEVER, AT HIGHER
  CONVERSIONS THERE IS NO AGREEMENT BETWEEN THE EXPTL. RESULTS, OBTAINED
  BY ULTRACENTRIFUGING, AND THE THEORY.   THE DISAGREEMENT IS PARTIALLY
  DUE TO THE INSOLY. OF I AND THE GROWTH OF THE LIVING POLYMER CHAINS,
  WHICH WERE NOT TAKEN INTO ACCOUNT IN THE ORIGINAL THEORY.
  FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

BAN'KOVSKAYA, A. N., SHEYCHENKO, V. I., BAN'KOVSKIY, A. I., VECHKANOVA, L. D., KABANOV, V. S., All Union Scientific Research Institute of Medicinal Plants

"Ergovalide -- a New Alkaloid From Ergot Spurs"

Abstract: Paper chromatography was used to isolate a new alkaloid from ergot spurs. The base has empirical formula $C_{21}H_{26}O_2N_4$, a melting point of 152.2-154°C (from methanol), $[\alpha]/^{20}$ ±0.8°C (c 0.47, chloroform), M 366 (mass-spectrometrically determined), and has been named "ergovalide". Chemical, UV, NMR and mass spectral analysis suggest that the base has the structure of N lysergylvalylamide.

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USSR

UDC: 8.74

MATUSOV, Yu. A., KABANOV, V. S., YANKOVA, M. P.

"Forming a Plan for Prospective Developments"

Tr. Leningr. inzh.-ekon. in-ta (Works of Leningrad Engineering Economics Institute), 1972, vyp. 94, pp 99-102 (from RZh-Kibernetika, No 5, May 73, abstract No 5V792 by V. Mikheyev)

Translation: The paper describes a procedure for forming the plan for prospective developments, which consists in compiling plans in separate scientific and technical areas. Compilation of a plan for a scientific and technical area is preceded by a comparative analysis of correspondence of the expected con-sumer demand to the possibilities of the sector within the framework of the given scientific and technical area.

The prospective plan of developments is modeled by a "goal-decision" graph whose initial vertices correspond to possible scientific decisions (physical principles, design and technological decisions), while the terminal vertices corre-spond to the specific goals of the developments (new ele-

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USSR

ments, blocks, assemblies, devices), while the arcs corre-
spond to possible ways of realizing the formulated tasks.
A consolidated flowchart is presented for an algorithm for
forming a plan of prospective developments, and its individual
blocks are described.

2/2

Antennas

KABANOV, V. S., YUR'YEV, B. V., KVITKO, Ya. A., Central Scientific Research and Design Institute fo Metal Construction Elements

"A Portable Support"

Translation: The proposed portable support for antenna structures includes a collapsible tube with hinged telescoping struts, flexible guys and a hydraulic drive. To accelerate the process of setting up the support and increase rigidity, the device is made with rigid rods which interact with the rods of the hydraulic drive. Each of these rigid rods is hinged at one end to the stationary section of the collapsible tube.

1/1

USSR   UDC: 621.396.677

KABANOV, V. S.

"Some Problems in Calculating the Effects of Temperature on the Structural
Elements of Antennas"

Translation: The author considers a structural unit which comprises a
three-dimensional rod system whose junctions support the plates of a re-
flecting surface. The temperature field of the structure is determined,
assuming that this field is stationary since it changes very slowly with
time. Thermoelastic displacements are calculated. Both problems are solved
on a computer. N. S.

1/1

USSR

UDC: 539.3:534.1

KABANOV, V. V., MIKHAYLOV, V. D.

"Stability of Eccentrically Fastened Cylindrical Shell with Elastic Edge Rings in Axial Compression"

4-Ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl. [Fourth All-Union Conference on Problems of Stability and Structural Mechanics, Abstracts of Reports -- Collection of Works], Moscow, 1972, pp 127-128 (Translated from Referativnyy Zhurnal Mekhanika, No 12, 1972, Abstract No 12V279)

Translation: The stability of a circular cylindrical shell with longitudinal and transverse supports located eccentrically relative to the mid surface in the longitudinal direction is studied. The shell has elastic rings at its edges. The initial moment state of the shell is determined from the non-linear theory of the edge effect. The equations for stability and boundary conditions, which act as the equations of stability of the rings, are represented in vector-matrix form after separation of variables and reduced, by

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USSR

KABANOV, V. V., MIKHAYLOV, V. D., 4-Ya Vses. Konf. po Probl. Ustoychivosti v Stroit. Mekh., Tezisy Dokl., 1972, pp 127-128

means of the method of finite differences, to a recurrent system of three-member algebraic equations. The determinant of the system is calculated by the method of exclusion of Gauss in matrix form. Recurrent formulas are produced allowing the determinant to be calculated with any number of points of division of the generatrix. Numerical studies were performed on the M-20 computer. The influence of eccentricity of placement of supports, moment of the initial state and rigidity of the rings is estimated.

2/2

TITLE--STABILITY OF ECCENTRICALLY STIFFENED CIRCULAR CYLINDRICAL SHELLS
   UNDER TORSION -U-

AUTHOR-(02)-KABANOV, V.V., NIKOLAYENKOVA, M.I.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA MEKHANIKA TVERDOGO TELA JAN-FEB
   1970, P 91-96

DATE PUBLISHED-------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CYLINDRIC SHELL STRUCTURE, REINFORCED SHELL STRUCTURE, TORQUE,
   SHELL STRUCTURE STABILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0178   STEP NO--UR/0484/70/000/000/0091/0096

CIRC ACCESSION NO--AP0054974
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0054974
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   INVESTIGATION OF THE STABILITY OF
   AN ECCENTRICALLY STIFFENED THIN SHELL WITH A CLOSELY SPACED NETWORK OF
   STRINGERS AND RIBS UNDER TORSION.   IN CONTRAST TO PREVIOUS WORKS ON
   THIS SUBJECT, GREATER ATTENTION IS GIVEN TO THE DERIVATION OF MORE EXACT
   FINITE FORMULAS, TO AN EVALUATION OF THE ORDINARY METHOD OF CALCULATING
   THE CRITICAL TORQUE WITHOUT TAKING THE EFFECT OF THE SIGN OF THE
   ECCENTRICITY INTO ACCOUNT, AND TO A COMPARISON OF THE SOLUTION OBTAINED
   WITH EXPERIMENTAL FINDINGS.

UNCLASSIFIED

Polymers and Polymerization

USSR   UDC 541.15

KABANOV, V. YA., CHALYKH, A. YE., ALIYEV, R. E., LUK'YANOVICH, V. M., and SPITSYN, V. I., Institute of Physical Chemistry, Academy of Sciences USSR, Moscow

"Electron Microscope Study of Charge Centers in γ-Irradiated Polymers"

Abstract: Investigation of the charge on polymers as a function of radiation was performed. The IR spectra of the unirradiated polyethlene films show no evidence of polarized acid groups. Samples were irradiated for about 0.5 minutes at 30 rads/sec from a Co^{60} source. The irradiation produced surface patterns on the films which were then studied under the electron microscope. Fourteen of the electron micrographs are reproduced in the article. Surface patterns were not obtained on the surfaces when the plastics were treated in the form of metal organosols. The charged centers retain their charge when the films are submerged in a medium with a high dielectric constant, such as water. Thus the charged centers are fixed and the topography of particular distributions which is significant in studying the effects of radiation is preserved.
1/1

Radiation Chemistry

KABANOV, V. YA., and SIDOROVA, L. P., Institute of Physical Chemistry, Academy of Sciences USSR

"The Kinetics of Radiation-Induced Ionic Graft Polymerization"

Abstract: The kinetics of radiation-induced ionic grafting were studied on the example of the system polyethylene -- vinyl-n-butyl ether. The initial velocity of grafting was a function of the dosage rate in the first power, while the radiation-chemical yields of the graft polymer and of the initiating centers were independent of the dosage rate. The kinetic curves exhibited a period of inhibition that was associated with the presence of traces of H_2O. The activation energy of the reaction was -2.5 and -3.4 kcal/mole for low- and high-pressure polyethylene, respectively. The ionic mechanism of grafting was confirmed by kinetics corresponding to monomolecular chain termination, the negative activation energy values, and the highly effective

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USSR

KABANOV, V. YA., et al, Vysokomolekulyarnyye Soyedineniya, Vol 15,
No 6, Jun 73, pp 1373-1377

inhibition of grafting by H_2O. The extent of grafting and the
radiation-chemical yield were very low when the method of pre-
irradiation of polyethylene in vacuo was applied. This also con-
firmed that grafting proceeded by an ionic mechanism. In the
experiments conducted, irradiation was carried out with gamma-rays.

- END -

CSO: 1841-W

2/2

Radiation Chemistry

KABANOV, V. YA., VORONKOV, V. A., KOCHKIN, D. A., and Academician Vict. I. SPITSYN, Institute of Physical Chemistry, Academy of Sciences USSR, Moscow

"Radiation-Chemical Synthesis of Grafted Polymer Materials With Fungicidal Properties"

Abstract: Triethylmethacryloxystannane was grafted onto polyethylene, polypropylene, polyamides, polyethyleneterephthalate, and polyvinyl chloride from solutions in suitable organic solvents. The direct radiation-chemical method of grafting from the liquid phase of pre-irradiation of the polymer was applied. Irradiation was carried out with gamma-rays at dosage rates of 0.3-5 rad/sec. Total doses of 0.1-15 mrad were applied. The solutions of the monomeric Sn compound were deaerated by passing Ar through them. Wood slabs (spruce, pine, birch, and oak) were grafted with the Sn compound by direct irradiation after wood that had been dried in vacuo was treated with a 10% benzene solution of this compound. The fungicidal properties of the treated materials were tested by applying seven species of fungi and using the method recommended by the International Electrotechnical Association. The materials exhibited fungicidal characteristics which, at a degree of grafting amounting to 0.5-1%, were
1/2

USSR

KABANOV, V. YA., et al., Doklady Akademii Nauk SSSR, Vol 200, No 3, 1971,
pp 628-629

retained for 1 yr notwithstanding repeated treatment of the samples with sol-
vents, exposure of the samples to the action of sunlight and water, and other
procedures applied in connection with the tests. One may assume that at a
higher degree of grafting the physiological action towards fungi will persist
for several years. Materials that had been treated by simple impregnation with
solutionsof tin-organic compounds had a higher antifungal activity than those
which had compounds of this type such as triethylmethacryloxystannane grafted
onto them, but this activity persisted for a considerably shorter period of
time. The fungicidal action of the polytriethylmethacryloxystannane chains
grafted onto the materials was based on gradual decomposition of the bound
Sn-organic groups resulting in formation of tin-organic radicals that diffused
into various parts of the materials modified by grafting.

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USSR

KABANOV, YU. M.

"Representation of Functionals of Wiener and Poisson Processes in the Form of Stochastic Integrals"

Teoriya Veroyatnostey i yeye Primeneniya [The Theory of Probabilities and Its Applications], 1973, Vol 18, No 2, pp 376-380 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10VS9)

Translation: Suppose (Ω, F, P) is a certain probability space, $X = \{x_t, 0 \leq t \leq 1\}$ is a random process in the space. We assume $F_t^X = \sigma\{\omega : x_s, s \leq t, F^X = F_1^X$. In a F^X-dimensional random quantity $\eta = \eta(\omega)$ will be called a functional of process X. This article establishes a theorem of the structure of functionals of a Poisson process and presents a simple proof of a similar result for a Wiener process.

Theorem. Suppose $\Pi = \{\pi_t, 0 \leq t \leq 1\}$ is a Poisson process with parameter $\lambda > 0$. Suppose $x_t = \pi_t - \lambda t$ or $x_t = w_t$, where $W = \{w_t, 0 \leq t \leq 1\}$ is a Wiener process. Then any F^X-measurable random quantity $\eta = \eta(\omega)$ with $M = 0$, $M\eta^2 < \infty$ is represented as a stochastic integral (with respect to the matingale (x_t, F_t^1, P))

1/2

USSR

KABANOV, YU. M., Teoriya Veroyatnostey i yeye Primeneniya, 1973, Vol 18, No 2, pp 376-380

$$\eta = \int_0^1 \phi(t, \omega) dx_t,$$

where the function $\phi(t, \omega)$ is measurable with respect to the set of variables with each $t \in [0, 1]$ is F_t^X-measurable and

$$\int_0^1 M\phi^2(t, \omega) dt < \infty.$$

Author's view

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USSR

UDC: 621.396.677

IVANOV, 1. I., ANDRLYEV, V. A., and KABANOV, Yu. P.

"Dispersion Field of a Plane Wave in the Near Zone From a Small Sphere"

Tr. Leningr. in-ta tekhnoy mekh. i optiki (Transactions of the Leningrad Institute of Precision Mechanics and Optics) 1970, No. 69, pp 34-37 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 355)

Translation: A determination is made of the secondary (diffracted) field in the incidence of a plane electromagnetic wave on a sphere of given radius and with given parameters. The secondary field in the near zone is computed. The optimal radius of the sphere from the point of view of the permissible distortions of the primary field is determined. One illustration, bibliography of five. V. S.

1/1

USSR

KABANOV, Yu. P.

UDC: 621.396.67.001.5

"Choosing a Passive Sensor for Measuring the Amplitude Distribution of an Electromagnetic Field in the Aperture of a UHF Antenna"

Tr. Leningr. in-ta tochnoy mekh. i optiki (Transactions of the Leningrad Institute of Precision Mechanics and Optics) 1970, No. 69, pp 38-42 (from Ref-Radiotekhnika, No. 3, March 71. Abstract No. 35101)

Translation: The results are given of a measurement of the field intensity in the aperture of an H-plane sectorial horn. The block diagram of a measuring device using a passive sensor is examined. Computed and experimental curves of the amplitude distribution of the electromagnetic field in such a horn are given. Four illustrations, bibliography of three. V. S.

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USSR

UDC 547.426.2

KAPLUN, A. P., KABANOVA, M. A., SHVETS, V. I., and YEVSTIGNEYEVA, R. P.,
Moscow Institute of Fine Chemical Technology imeni M. V. Lomonosov

"Studies in the Area of Complex Lipids. Synthesis of the Phosphatide Acid
on the Basis of 1,2-Diglyceride and o-Phenylene Chlorophosphate"

Abstract: A synthetic method was developed for the phosphatide acids utiliz-
ing phosphorylation of 1,2-diglycerides with o-phenylenechlorophosphate
followed by removal of the protective groups. The phosphorylation was
carried out at 18-20° using equimolar quantities of 1,2-di-O-palmitoyl-
sn-glycerine and o-phenylenechlorophosphate in presence of triethylamine.
1,2-Di-O-palmitoyl-3-O-(o-phenylene)-phosphoryl-sn-glycerine can be
hydrolyzed to the ester.

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USSR

KAPLUN, A. P., KABANOVA, M. A., LYUTIK, A. I., SHVETS, V. I., and YEVSTIGNEYEVA, R. P., Moscow Institute of Fine Chemical Technology Imeni M. V. Lomonosov

"Study in the Area of Complex Lipids. Synthesis of Phospholidylethanolamines Based on 1,2-di-0-Acyl-sn-Glycerines"

Abstract: The synthesis of 0-(1,2-di-0-palmitoyl-sn-glyceryl-3-0-phosphoryl)-ethanolamine was carried out starting with a 1,2-diglyceride and using 2-phtalimidoethyldichlorophosphate and 2-chloromethyl-4-nitrophenyldichloro-phosphate as the phosphorylation agent. An effective method was developed for the formation of phosphodiester structure based on the model of phospha-tidylethanolamine obtained from phosphatidylaacids and substituted ethanola-mines or from ethanolamine phosphates and 1,2-diglycerides in presence of mesitylenesulfohylchloride.

1/1

USSR

UDC: 543.42.062

GANOVICH, M. V., KABANOVA, M. A., KRICHEVER, M. Ya., MAKOVOZ, B. B., SOKOLOV, B. A.

"One-Channel, One-Beam Atomic Absorption Spectrophotometer Model AAS-1K"

Optich. i Titrometrich. Analizatory Zhidk. Sred [Optical and Titrometric Analyzers for Liquid Media], Reports of All Union Conference, 1971, Part 1, Tbilisi, 1971, pp 81-86 (translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 2, 1972, Abstract No 2.32.1097 by V. S. Krasnova)

Translation: A report is presented on the development of various types of atomic absorption spectrophotometers at the All Union Scientific Research Institute for Scientific Instruments (Leningrad). A description is presented of the basic circuits and designs used in creation of the model AAS-1K general laboratory device. The AAS-1K is a single structure, built into a common case, consisting of functionally independent blocks (B): the pulse power supply B for the hollow-cathode tube, the type BV-2 high-voltage power supply B, the specimen feed B, the gas feed and distribution B, the tube holder, heater, monochromator, measurement B and type KSP-4 recording potentiometer. 2 figures; 2 biblio refs.

1/1

1/2   033   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--TECHNOLOGICAL TREATMENT OF A MOLTEN METAL BY POWDERED MATERIAL -U-

AUTHOR-(05)-SIMONOV, V.I., KOSYREV, L.K., FILIPPOV, A.F., PRYANISHIKOV,
   I.S., KABANOVA, N.E.
COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UNCHEB. ZAVED., CHERN. METAL. 1970, 13(1) 52-5

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--LIQUID METAL, CALCIUM FLUORIDE, CALCIUM OXIDE, PHOSPHORUS
   CONTAINING ALLOY, STEEL, POWDER METAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0962   STEP NO--UR/0148/70/013/001/0052/0055

CIRC ACCESSION NO--AT0105831
                        UNCLASSIFIED

CIRC ACCESSION NO--AT0105831
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPHOSPHORIZATION OF STEEL
  CONTG. P 0.03-0.1, C 0.12-1.09, AND MN 0.07-0.15 WT. PERCENT WAS CARRIED
  OUT IN A 40 KG INDUCTION FURNACE WITH BASIC CRUCIBLE BY MEANS OF A
  POWDER OF CAO AND CAF SUB2 (RATIOS 9:1, 4:1, AND 3:1) BLOWN THROUGH THE
  MOLTEN METAL IN A GAS SUSPENSION. NO INCREASE IN N OR O CONTENT WAS
  OBSD.; ON THE CONTRARY, THE GAS CONTENT OF THE METAL DECREASED DURING
  THE BLOWING WITH THE POWDERS. THE BEST DEPHOSPHORIZATION CONDITIONS
  WITH CAO-CAF SUB2 MIXTS. OCCURRED WITH THE MIXT. CAO:CAF SUB2 EQUALS 4:1
  AND THE WORST AT A RATIO 3:1. THE ADDN. OF FEO TO THESE MIXTS. DID NOT
  INCREASE THE DEPHOSPHORIZATION DEGREE; HOWEVER, THE REPLACEMENT OF A
  PART OF THE CAO BY BAO IMPROVED THE DEPHOSPHORIZATION, SO THAT WITH
  CAO-BAO-CAF SUB2 EQUALS 3:1:1 THE FINAL P CONCN. WAS 0.008-0.005 WT.
  PERCENT.

1/2   012   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--REDUCTION OF HYDROGEN ION AN THALLIUM -U-

AUTHOR-(02)-KABANOVA, O.L., DORONIN, A.N.

COUNTRY OF INFO--USSR

SOURCE--ELEKTROKHIMIYA 1970, 6(2), 222-4

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGEN ION, THALLIUM, REDOX REACTION, OVERVOLTAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0692   STEP NO--UR/0364/70/006/002/0222/0224

CIRC ACCESSION NO--AP0105668
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0105668

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CURVES OF H CVERVOLTAGE VS. LOG
    C.D. ON A TL CATHODE IN (1) 0.1 NU HCLO SUB4, (2) 0.01 NU HCLO SUB4, AND
    (3) 0.01 NU HCLO SUB4 PLUS 0.1 NU NACLO SUB4 WERE OBTAINED. THE (1)
    CURVE HAS AN INFLECTION AT APPROX. NEGATIVE0.8 V (VS. STD. H ELECTRODE),
    NEAR THE TL ZERO CHARGE POINT (NEGATIVE0.82 V). THE LOWER BRANCH OF THE
    (2) CURVE IS ABOVE THAT OF THE (1) CURVE, WHILE THE UPPER BRANCHES OF
    THESE CURVES PRACTICALLY COINCIDE. THE (3) CURVE SHOWS A GENERAL
    LOWERING OF THE H OVER VOLTAGE WITH RESPECT TO THE OTHER 2.

UNCLASSIFIED

KABANOVA, T.I.

"On The Amplification Of High-Frequency Surface Waves In A Laminated Structure"

Abstract: The problem is considered of the amplification of high-frequency
surface waves in a laminated structure when the length of the free path of the
carriers is greater than the length of the wave. The mathematically simplest
case is considered when a thin layer of piezodielectric is located above a
semi-infinite plasma medium (semiconductor). With the aid of the kinetic
equation for a mirror model, the boundaries are found of the complex penetration
of a slow longitudinal electrical wave into a drifting electron nondegenerate
plasma. It is shown that the increment of amplification of a high-frequency
surface wave, which is determined by the imaginary part of this complex penetra-
tion, changes sign with fulfillment of the Cherenkov condition, i.e., when the
drift speed of the carriers exceeds the phase speed of the wave. The dependence
is analyzed of the amplification of the high-frequency surface waves on the
carrier concentration, the wave speed , and on the drift speed of the carriers
in the system. The author thanks V.I. Pustovoyt for his assistance. Computation
Center, AS, USSR, Moscow. Received by editors 18 May 1971. 15 ref.

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USSR   UDC:620.193.01

TIMONOVA, M. A., KUTAYTSEVA, A. I., ORZHEKHOVSKAYA, L. B. and
KABANOVA, T. S.

"The Problem of the Contact Corrosion of Magnesium Alloys"

Abstract: Magnesium alloy specimens consisting of discs 70 mm in diameter
with a central aperture were tested by full immersion in a 3% solution of
sodium chloride and in a tropical climate chamber. The specimens were
tested in contact with several types of steel, aluminum and copper alloys.
The strongest contact corrosion was observed with steel. The chemical
composition of the steels tested had practically no influence on the
depth and radius of corrosion. Bronze causes stronger corrosion than
brass. Contact corrosion depends on the chemical composition of the
magnesium alloys, which can be explained by the different degree of dif-
ference effect. The use of stannate, zinc, cadmium and chrome coatings
helped to reduce corrosion for type-20 steel, while anodizing in chromic
acid was most effective for D16 alloy. Under the tropical climate con-
ditions, the contact corrosion caused by type-20 steel is significantly
reduced by cadmium and zinc coatings, while that caused by D16 alloy is
reduced by an anodic oxide coating.

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Phytology

USSR

KABANOVA, YU. G., and OCHAKOVSKIY, YU. YE., Institute of Oceanology imeni P. P. Shirshov, Academy of Sciences USSR, Moscow

"Dependence of Primary Phytoplankton Production on Biogenic Elements and Light"

Abstract: The effects of nutrients (P, N, Si, Fe, Mn, and Co) and light on the growth of plankton were investigated in the southeast part of the Caribbean Sea. The results indicate that in small samples, the most important factor determining the growth rate is the initial quantity of the phytoplankton, while light is of secondary and nutrients of tertiary importance. In a population of natural density, photosynthesis is promoted by additional nutrients more than by additional light. In a population of markedly increased density, light exerts a greater effect. However, for any given quantity of light energy delivered, plankton production and photosynthesis increase with increasing supply of nutrients. It is concluded that in the area investigated, there is a deficit of nutrient elements which inhibits plankton growth and photosynthesis.

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TITLE--POSSIBLE USE OF REINFORCED THREADS AS WARPS -U-

AUTHOR-(03)-ROMANOVSKIY, V.I., SMELSKAYA, I.F., KABANOVA, Z.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. TEKST. PROM. 1970, (1), 55-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ADHESION STRENGTH, SYNTHETIC FIBER, NATURAL FIBER, WEAR
   RESISTANCE, COMPOSITE MATERIAL, FABRIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0792   STEP NO--UR/0324/70/000/001/0055/0057

CIRC ACCESSION NO--AP0124461
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0124461

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADHESION STRENGTH (SIGMA)
   BETWEEN THE INNER THREAD CORE OF SYNTHETIC FIBERS AND THE OUTER FLAX
   FIBER COVERING INCREASES WITH THE TWIST CONST. (ALPHA) OF THE COVERING.
   THE OPTIMUM ALPHA IS 2.2. SIZING THE COMPOSITE THREADS WITH A SOLN. OF
   STARCH, CHLORAMINE, BORAX, OP-10, AND GLYCEROL IN WATER INCREASED SIGMA
   BY 18-24PERCENT. SUCH COMPOSITE THREADS CAN BE USED AS WARP IN WEAVING
   CANVAS FOR BAGS OR TARPAULINS ON STD. LOOMS. THE WEAR RESISTANCE OF
   THESE FABRICS DEPENDS LARGELY ON SIGMA.   FACILITY: KOSTROM.
   TEKHNOL. INST., KOSTROMA, USSR.

UNCLASSIFIED

USSR

UDC 615.47:616.092.9

KABATOV, Yu. F., and SLAVIN, M. B.

Veroyatnostno-Statisticheskiye Metody v Meditsinskikh Issledovaniyakh i
Nadezhnost' Meditsinskoy Apparatury (Probability-Statistical Methods in
Medical Research and the Reliability of Medical Equipment), Moscow,
"Meditsina," 1971, 296 pp

Translation: Annotation: The book presents mathematical methods of the theory
of reliability applicable to problems of medical and medical-technical experi-
ment. The book reviews methods of planning the experiment, processing its
results, confidence evaluation of statistical data, checking hypotheses,
increasing the reliability of medical equipment, and economic evaluation of
the efficiency of increasing reliability.

Using a large number of examples, the efficiency of employing methods of re-
liability theory in clinical and experimental medicine is demonstrated.

The book is intended for doctors who use mathematical methods in their practice,
as well as for engineers engaged in designing and operating medical equipment.

Table of Contents: Page

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USSR

KABATOV, Yu. F., and SLAVIN, M. B., Veroyatnostno-Statisticheskiye Metody v Meditsinskikh Issledovaniyakh i Nadezhnost' Meditsinskoy Apparatury, Moscow, "Meditsina," 1971, 296 pp

USSR

KABATOV, Yu. F., and SLAVIN, M. B., Veroyatnostno-Statisticheskiye Metody v
Meditsinskikh Issledovaniyakh i Nadezhnost' Meditsinskoy Apparatury, Moscow,
"Meditsina," 1971, 296 pp

USSR

KABATOV, Yu. F., and SLAVIN, M. B., Veroyatnostno-Statisticheskiye Metody v Meditsinskikh Issledovaniyakh i Nadezhnost' Meditsinskoy Apparatury, Moscow, "Meditsina," 1971, 296 pp

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USSR

KABATOV, Yu. F., and SLAVIN, M. B., Veroyatnostno-Statisticheskiye Metody v Meditsinskikh Issledovaniyakh i Nadezhnost' Meditsinskoy Apparatury, Moscow, "Meditsina," 1971, 296 pp

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USSR

KABATOV, Yu. F., and SLAVIN, M. B., Veroyatnostno-Statisticheskiye Metody v Meditsinskikh Issledovaniyakh i Nadezhnost' Meditsinskoy Apparatury, Moscow, "Meditsina," 1971, 296 pp

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USSR

KABATOV, Yu. F., and SLAVIN, M. B., Veroyatnostno-Statisticheskiye Metody v
Meditsinskikh Issledovaniyakh i Nadezhnost' Meditsinskoy Apparatury, Moscow,
"Meditsina," 1971, 296 pp

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Lasers & Masers

USSR

UDC 621.375.82

IGNATAVICHUS, M., KABELKA, V., PISKARSKAS, A., and YUOZAPAVICHUV, A.

"Use of Thin Phototropic Films for the Synchronization of a Neodymium Laser"

V sb. Nelinevn. protsessy v optike (Nonlinear Processes in Optics -- Collection of Works), No 2, Novosibirsk, 1972, pp 61-66 (from RZh-Fizika, No 11, Nov 72, Abstract No 11D891)

Translation: The oscillation of a Nd glass laser with a synchronization of modes produced by a thin phototropic film of polystyrene with polymethenyl dye introduced into it was investigated. With an initial film transmission of 60% the pulses generated with a total energy of $\sim$0.1 joule consisted of 12-15 subpulses, the duration of which as determined from two-photon luminescence was $\sim$4 psec. Total radiation modulation was observed in 7-8 out of 10 oscillation pulses. The smoothness of the spectrum (the spectral width of the radiation close to threshold was $\sim$6 Å), the stability of the average wavelength of the radiation, and the ease of achieving oscillation in single-mode operation were noted; this is explained by the high degree of homogeneity of the polystyrene films. 3 ref. S. F. Sharlay.

1/1

USSR   UDC 621.762.002.5(088.8)

KABEL'SKIY, I. M., LOGINOV, P. I., SOKOLOVSKIY, A. B.

"Metal Die Pressure Cast Mold for Molding Annular Products"

USSR Author's Certificate No 268880, filed 20 Oct 66, published 4 Aug 70 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G479P)

Translation: A metal die pressure cast mold for molding annular products from powders using electric discharge in a liquid medium with coaxially arranged electrodes, a tubular elastic molding shell,and a die attached to the crossbar which moves relative to the pressure die casting mold and interacting with the casting nozzle is proposed. In order to insure free removal of the molded product and the required seal of the cavity filled with the liquid, a moving nozzle with a beveled inside surface is placed in the annular cavity of the die so as to block it. This nozzle is equipped with stepped spring-loaded pins passing through the holes in the crossbar and the housing of the mold. In order to insure automatic simultaneous movement of the die and the beveled electrode and subsequent advance of the blocking nozzle after removal of the die from the molded part, a beveled electrode is attached to the moving crossbar, and slides designed to hold the step pins and controlled by means of wedges attached to the moving crossbar are placed on the housing of the pressure die casting mold.
1/1

SKVORTSOV, A. A., Candidate of Technical Sciences, LATILL, N. G., Candidate of Technical Sciences, KOLESNA, A. M., Engineer, ARENTS, R. A., Candidate of Technical Sciences, CHERNYAVSKIY, Z. M., Engineer

"Failure Rate of the Collectors of Traction Motors with a Plastic Case in Operation"

Abstract: A study was made of the nature of operating failures of electric traction motors with a plastic case and causes for other occurrence. A sample of 16 collectors from motors which had been turned in for plant repair was used for the study. The largest number of failures occur at the overlap of the collector plates on the winding side. Problems with the armature rings were also very common. The nature of the damage was studied on collectors from 81,000 to 750,000 km of use. No correlation was discovered between the amount of use and the type of failure.

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1/2   015   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--HOMOLYTIC REARRANGEMENT OF BETA,BETA,BETA,TRICHLOROETHYL AND
   ALPHA,BETA,BETA,BETA,TETRACHLOROETHYL INTO
AUTHOR-(02)-OLDEKOP, YU.A., KABERDIN, R.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1114-15

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIMERIZATION, THERMAL DECOMPOSITION, CHLORINATED ORGANIC
   COMPOUND, GAS CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1285   STEP NO--UR/0366/70/006/005/1114/1115

CIRC ACCESSION NO--AP0134959
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0134959
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DECOMPN. OF AC SUB2 O
 SUB2 GIVES ME. WHICH ABSTRACTS H. FROM MECCL SUB3 OR CH SUB2 CLCCL SUB3
 GIVING .CH SUB2 CCL SUB3 OR .CHCLCCL SUB3. THESE RADICALS REARRANGE TO
 CH SUB2 CLC.CL SUB2 AND CHCL SUB2 C.CL SUB2, RESP., WHICH DIMERIZE TO CH
 SUB2 CLCCL SUB2 CCL SUB2 CH SUB2 CL (I) AND CHCL SUB2 CCL SUB2 CCL SUB2
 CHCL SUB2 (II), RESP. BESIDES I, GAS CHROMATOG. SHOWED ALSO THE
 PRESENCE OF CCL SUB3 CH SUB2 CL AND MECCL SUB2 CCL SUB2 ME. IN THE CASE
 OF II H SUB2 C:CCL SUB2 AND CL SUB2 C:CHCL WERE FORMED.
 FACILITY: INST. FIZ.-ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

USSR

RYBAL'CHENKO, M. K., ZOLOTAREVSKIY, YU. S., KABICHEV, B. I., USTINOV, L. M.,
IVANOV, V. V., and ZHAMNOVA, V. I., Moscow

"Some Mechanical Properties of a Fibrous Composite Material Based on an Aluminum
Alloy"

Abstract: The authors produce a series of fibrous composites made from alumi-
num alloy and wire made from the EP322 grade steel. This was done by the hot
rolling method using the scheme for bonding packs. Reinforcing the aluminum
alloy with 12.4 volumetric percent wire increases the specific strength of the
material from 15.2 to 19.7 km. The best properties are ensured by a bonding
scheme which incorporates the simple multi-layer (two-layer) winding of the
fibers onto the sheets of the matrix.

1/1

KABILDZHANOV, A. F.

Chairman, Departmental Surgery

USSR

KABILDZHANOV, A. F., Assistant, Chairman of Departmental Surgery, Therapy Faculty, Tashkent Medical Institute

"The Methods of Collecting and Processing Information for Diagnosis with the Use of Electronic Computers"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1970, pp 19-21

USSR   UDC 541.64.536.4:547.538.141

ADKHAMOV, A. A., Academician of the Academy of Sciences of the Tadzhik SSR,
MUNIOV, T. M., KABILOV, Z. A.

"Variation of the Polymer Durability in an Ultrasonic Field"

Abstract: A study was made of the effect of ultrasonic fields on the deterior-
ation kinetics of solids in the loaded state: in particular, polymers.
The deterioration of polymers is considered as a kinetic process the basis for
which is the thermofluctuation rupture of chemical bonds [V. R. Regel', et al.,
Uspekhi fizicheskikh nauk, Vol 106, No 2, 193, 1972]. The basic variable
characterizing the deterioration process is the durability (τ) of the sample
from the loading time to the rupture time. The results from an experimental
determination of the effect of an ultrasonic field on this characteristic are
depicted graphically as the logarithm of the durability as a function of the
applied load with and without the ultrasonic field. Curves are included for
the durability of the copolymer SAM in distilled water. All of the experimen-
tal points obtained in the presence of the sonic field are below the ones
obtained without it. No explanation for this complex phenomenon is offered.

1/1

USSR

RAZIN, K. A., Candidate of Technical Sciences, METLITSKIY, R. S., KABIN, Yu. Ya., LYUBESHKIN, V. P., AND MARTYNOVA, Ye. Ye., Engineers

"The Densimeter of the "Venera-5" and "Venera-6" Space Stations"

Abstract: A description, drawing, block diagram, schematic diagram and photograph are presented of the densimeter used on the "Venera-5" and "Venera-6" spacecraft. The device is based on the method of measurement of gas density consisting in that a body is placed in motion in the medium whose density is to be measured and the aerodynamic resistance or drag of the gas, which is a function of density, is determined. In the vibration densimeter described, the moving bodies consisted of the arms of a continually excited tuning fork. The oscillating amplitude of the arms was inversely proportional to the aerodynamic drag, and the high Q of the tuning fork allowed good sensitivity of the device to be achieved. The device can measure densities from 0.5 to 45 kg/m^3 in the 0-350°C temperature interval with an error of not over $\pm10\%$. Its indications are independent of gas composition. Calibration of the densimeter is described. As the example of the operation of the densimeter, tables are presented of the measurement data produced from the "Venera-5" spacecraft as it descended on Venus.

1/1

USSR   UDC: 621.372.832

MESHCHANOV, V. P., KABIRSKIY, Yu. V.

"A Method of Increasing the Front-to-Back Ratio of Waveguide Couplers With TEM-Wave"

Elektron. tekhnika. Nauchno-tekhn. sb. Kontrol'no-izmerit. apparatura (Electronic Technology. Scientific and Technical Collection. Monitoring and Measuring Equipment), 1970, vyp. 2(20), pp 9-20 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1B146)

Translation: The authors consider causes of reduction and methods of increasing the front-to-back ratio of directional couplers with TEM wave. Ten illustrations, two tables, bibliography of seventeen titles.

1/1

TITLE--ANTITUMOR, RADIOSENSITIZING AND RADIOPROTECTIVE PROPERTIES OF SOME
    FLAVONOIDS IN RELATION TO THEIR STRUCTURE -U-
AUTHOR-(03)-KABIYEV, O.K., VERMENICHEV, S.M., AYAPBERGENOV, YE.K.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA. INFORM. BYUL. (RADIOBIOLOGY. INFORMATION
REFERENCE--RZH, BIOLOGICHESKAYA KHIMIYA, NO 6, MAR 70, ABSTRACT NO 6 F2570
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTITUMOR DRUG EFFECT, RADIATION SENSITIVITY, RADIOPROTECTIVE
    AGENT, FLAVONOID COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/1218   STEP NO--UR/0673/70/000/012/0033/0035

CIRC ACCESSION NO--AR0120062
                        UNCLASSIFIED

CIRC ACCESSION NO--AR0120062
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEUKODELPHINIDIN, ONE OF THE
LEUKOANTOCYANIDINS, WAS FOUND TO POSSES THE GREATEST ANTITUMOR ACTIVITY.
THE CATECHINS MANIFESTED RADIOSENSITIZING PROPERTIES. QUERCETIN
EXHIBITED MODERATE ANTITUMOR BUT PRONOUNCED RADIOPROTECTIVE ACTION. THE
DIFFERENCES IN THE ACTIVITY OF THE FLAVONOIDS SEEMS TO BE DUE TO THE
PRESENCE OF DOUBLE BONDS AND TO THE NUMBER OF HYDROXY GROUPS WHICH
BECOME MORE ACTIVE AS THEY INCREASE IN NUMBER. THE INDIVIDUAL HYDROXY
GROUPS OCCUPY THE SAME POSITION IN THE COMPOUNDS STUDIED. THE LOW
ACTIVITY OF RUTIN IS ATTRIBUTED BY THE AUTHORS TO THE SPECIFICITY OF THE
SUGAR COMPONENT.

UNCLASSIFIED

USSR

KABLIS, E. P., SATKYAVICHUS, E. B., MAKAVYATSKAS, R. A., SHAULIS, V. I.,
Kaunas Polytechnical Institute

"An Impact-Modeling Device"

Translation: This Author's Certificate introduces an impact-modeling de-
vice which contains an operational amplifier with a diode at the output.
As a distinguishing feature of the patent, the functional possibilities of
the device are extended by connecting a special circuit in parallel with
the amplifier feedback. The circuit is comprised of a star-connected first
resistor and diode with its anode connected through a second resistor to
the output of the amplifier, while the second plate of the capacitor is
connected to the zero bus.

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Oscillators and Modulators

KABLOV, G. P., KOCHERGIN, O. K., SHCHERBINA, V. P.

"Blocking Generator"

Translation: A transistorized blocking generator is proposed, which contains a pulse bridge element to one arm of which the transformer winding of the blocking generator is connected. In order to regulate the pulse repetition period within broad limits, the bridge element is connected via a separating capacitor to the collector of the transistor and via a resistor, to the control voltage source.

1/1

USSR

UDC 621.373.531(088.8)

KOCHERGIN, O. K., KABLOV, G. P.

"Kipp Relay"

USSR Author's Certificate No 262159, Filed 5 Aug 68, Published 3 Jun 70 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4G214P)

Translation: A kipp relay is proposed in which a pulse transformer is installed to decrease the recovery time. The primary winding of the transformer is included between the timing capacitor and the collector of the normally closed semiconductor triode, and the secondary winding shunted by the semiconductor diode is connected to the base-emitter junction of the auxiliary semiconductor triode.

1/1

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USSR

UDC   621.391.833

KOZLENKO, N. I., PETROVICH, N. T., KABLUKOVA, M. V., Members of the Scientific and Technical Society of Radio Engineering, Electronics and Communications imeni A. S. Popov

"Determination of the Correlation Functions of Signal and Interference at the Output of a Discrete Communications Channel"

Moscow, Radiotekhnika, Vol 26, No 9, Sep 71, pp 7-11

Abstract: A Fourier transform method is used to separate the useful signal from masking noises in a quantized speech message transmitted through a communications channel with interference. Formulas are derived for calculating the correlation functions of the useful part of the message and the masking noises at the output of a discrete communications channel with respect to known correlation functions for the undistorted and distorted messages and a function which accounts for the action of interference in the channel. Expressions are also given for determining the spectral densities of the corresponding components of the received message and for calculating the intelligibility in conformity with the general theory of formant perceptibility when speech messages are transmitted by discrete methods over a communications channel with interference.

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USSR   UDC 669.15'24'25-192:669.017.3

YEDNERAL, A. F., ZHUKOV, O. P., KABLUKOVSKAYA, M. A., MOGUTNOV, B. M., and
PERKAS, M. D., Institute of Metal Science and Physics of Metals; Central
Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Investigation of the Ordering Process in Ion-Nickel-Cobalt Alloys with
Martensite Structure"

Abstract: In the martensite of Fe-Ni-Co ternary alloys an exothermal process
accompanied by increased strength and modulus of elasticity takes place at
300-500°C. The process depends on the formation of a short-range order. In
the alloy with high Ni and Co contents, zones with a long-range order of the
FeCo-type were disclosed by the electron-microscopy method. The maximum change
in properties on isochronal heating for 1 hr is observed at 450-500°. The
plastic deformation of specimens processed for maximum hardness leads to a loss
in strength. A change of Co and Ni contents has an influence on hardening
in the heating of Fe-Ni-Co alloys. In the Fe+15%Co and Fe+20%Co binary alloys
hardening on heating was not observed. The increase in hardening of Fe-Ni-Mo

1/2

- 70 -

USSR

YEDNERAL, A. F., et al., Fizika. Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 727-734

alloys in aging and when introducing Co is explained by the formation of a short-range order of Fe-Co-type and the decreased solubility of Mo in the α-phase. The latter makes the principal contribution to hardening. Eight difures, two tables, 15 bibliographic references.

2/2

KABLUKOVSKIY, A. F., BAKANOV, K. P., TULIN, N. A., GERASIMOV, YU. V., and
KOSYREV, L. K.

"Increasing the Quality of Steels and Alloys by Refining Them with Argon
Outside Furnace"

Abstract: The suggested method for th refining of metals uses a 100-ton
capacity pouring ladle with a minimum of three built-in (ladle bottom) refrac-
tory plugs with passages for argon. The argon in supplied under pressure in
the amount of 0.4-1.0 m^3/ton of metal for removal of non-metallic inclusions,
and in the amount of 1.5-3.0 m^3/ton, for elimination of hydrogen. Preliminary
tests at many plants and in laboratories indicated that the method is inexpensive
and does not require a heavy capital investment. The method allows production
of low-carbon heat-resistant steels in open arc furnaces. In addition to
refining, the argon facilitates the deoxidation of steel by carbon. Concentra-
tion of gases in 1-2Kh13 stainless steel after refining with argon decreased
by 45% (concentration of oxygen, hydrogen, and nitrogen decreased by 43, 40
and 12%, respectively). All refined steel and alloys studied after refining
were characterized by high density and better microstructure. The density
1/2

USSR

KABLUKOVSKIY, A. F., et al., Stal', No 12, 1972, pp 1087-1091

of 38KhMYuA steel and EI602 alloy increased from 7.7353 to 7.7506 and from 8.3275 to 8. 3403 g/cm^3, respectively, after 7-10 minutes refining with argon. Good results were obtained in the production of bearing steel. The schematic diagram of the ladle with refractory plugs (including their sizes and manu-facturing steps) is presented.

2/2

USSR

UDC 669.181

KNYAZEV, V. F., KABLUKOVSKIY, A. F., and TRAKHIMOVICH, V. I.

"Production and Use of Sponge Iron"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -
Collection of Works), No 75, Metallurgiya Press, 1970, pp 40-47

Translation: A general characterization is presented of the pro-
cess of production and application of sponge iron. A review is
made of the processes which have been most widely developed, the
raw material, and the reducing agents. The chemical composition
of sponge iron produced by the Sulinskiy Metallurgical Plant
is presented. Brief results of experimental melts of this iron
in a 5 T electric arc furnace are presented. The technology
if the melts was normal, the melt indicators were somewhat
reduced, but the metal produced contained fewer monferrous metal
impurities. Data are presented on melts with continuous charg-
ing of sponge iron, which yielded good results. 2 figures; 8
biblio. refs.

1/1

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USSR   UDC 669.181

KNYAZEV, V. F., KABLUKOVSKIY, A. F., and TRAKHIMOVICH, V. I.

"Production and Use of Sponge Iron"

Proizvodstvo Chernykh Metallov (Production of Ferrous Metals -
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reduced, but the metal produced contained fewer monferrous metal
impurities. Data are presented on melts with continuous charg-
ing of sponge iron, which yielded good results. 2 figures; 8
biblio. refs.

1/1

USSR   UDC:621.365.2+669.046.54/55

BORZENKOV, D. V., TRAKHIMOVICH, V. I., SHENDYAPIN, V. D., and KABLUKOVSKIY, A. F.
"Refining of Iron-Nickel Lump in Electric Furnaces"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 143-148

Translation: Data are presented on melting of a charge pig based on iron-nickel lump containing 2% nickel, up to 0.2% each phosphorous and sulfur in 5 T electric arc furnaces. The influence of the lump composition and technology of melting on the technical and economic indicators of melting is studied. The use of lump in melting high quality steel with preliminary refining allows steel with low content of nonferrous impurities to be produced. 4 figures; 2 tables; 3 biblio. refs.

1/1

UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--GAS TREATMENT OF NON DEOXIDIZED, LOW CARBON STEAL IN THE LADLE -U-

AUTHOR--KABLUKOVSKY, A.F.

COUNTRY OF INFO--USSR

SOURCE--METALLURG. MAR. 1970, (3), 18-21

DATE PUBLISHED----MAR70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--LOW CARBON STEEL, INERT GAS, ARGON, OXYGEN, CARBON DIOXIDE,
STEEL DEOXIDATION, STEEL MANUFACTURE PROCESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0863   STEP NO--UR/0130/70/000/003/0018/0021

CIRC ACCESSION NO--AP0124526
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0124526
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY OF DECARBURIZING
AND REFINING LOW C STEEL, NOT ALREADY SUBJECTED TO DEOXIDATION, BY
BLOWING WITH INERT GASES (E.G. AR, AR, O MIXTURE, OR CO SUB2) IN THE
LADLE IS CONSIDERED. THE GASES MAY BE INTRODUCED BY WAS OF POROUS
REFRACTORY INLETS AND REMOVED IN AN ANALOGOUS MANNER. INITIAL TRIALS
INDICATE THAT THIS PROCEDURE IS VERY PROMISING AND MAY ENJOY A WIDE
APPLICATION.

UNCLASSIFIED

TITLE--TREATMENT OF NONDEOXIDIZED STEELS WITH GASES IN LADLES -U-

AUTHOR-(05)-KABLUKOVSKIY, A.F., KLIMOV, S.V., SALAUTIN, V.A., YEFIMOV,
   I.A., STURMAN, V.K.
COUNTRY OF INFO--USSR

SOURCE--METALLURG (MOSCOW) 1970, 15(3), 18-21

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--GAS CONTAINING METAL, METAL CONTAINING GAS, ARGON, METAL
   REFINING, CARBON MONOXIDE, METAL MELTING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0941   STEP NO--UR/0130/70/015/003/0018/0021

CIRC ACCESSION NO--AP0133027
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0133027

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. MELTINGS WERE MADE WITH THE
BLOWING OF AR, AR-O MIXTS., AND CO GAS INTO THE LADLE TO DET. WHETHER IT
IS POSSIBLE TO DECARBURIZE AND REFINE THE MELT. REJECTED ELEC. FURNACE
STEEL WAS MELTED IN A 5-TON LADLE. GRAPHS SHOW THE DEPENDENCE OF GAS
CONSUMPTION ON PRESSURE FOR VARIOUS POROUS REFRACTORIES; DEPENDENCE OF
SP. SURFACE OF GAS AND METAL ON THE BUBBLE DIAM.; IN ADDN., SOME
PROPERTIES OF THE REFRACTORY PLUGS ARE TABULATED. SIO SUB2 AND AL SUB2
O SUB3 CONTENTS IN THE SLAG ARE INCREASED AND CAO FALLS. THE EFFECT OF
THE METAL BLOW CYCLE WITH GASES ON THE LIFE OF THE REFRACTORY LINING IN
THE LADLE NEEDS TO BE DETD. THE C CONTENT OF THE METAL FALLS UNDER
THESE CONDITIONS. THE RESULTS SUGGEST WIDE POSSIBILITIES FOR VARIOUS
GASES FOR EXTRA FURNACE REFINING OF METAL.   FACILITY: ISENT.
NAUCH.-ISSLED. INST. CHERN. MET., MOSCOW, USSR.

UNCLASSIFIED

· Radar

"On Using Digital Computers to Synthesize Holograms of Moving Objects"

Abstract: An algorithm is described for machine synthesis of holograms
of objects moving in a plane parallel to the plane of the hologram. The
process reduces to shifting the initial calculated hologram along the co-
ordinate axes in accordance with changes in the position of the object.
Consideration is also given to synthesis of holograms of objects moving
arbitrarily in three dimensions. The proposed algorithm is based on the
method of hologram synthesis described by L. B. Lesem et al. (*Communi-
cations ACM*, 1968, v. 11, p 661). In this method the object is repre-
sented as a three-dimensional lattice of point apertures of variable
intensity, each radiating a spherical wave. The procedure is based on
parabolic approximation of the Fresnel-Kirchhoff integral. For some cases,
as in radar, the coordinates of the moving objects can be obtained by pri-
mary data processing. Five figures, bibliography of one title.

1/1

USSR   UDC 669.71.053.4.094

FATEYEVA, Z. T., KABUL'NIKOVA, S. L., ZADNEYEVA, V. M.

"Solubility of Iron Sulfate in Acid Solutions of Aluminum Sulfate with Acidity 200-550 g/l"

Nauch. Tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Poly-technical Institute], Alma-Ata, 1971, pp 560-565, (Translated from Refera-tivnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G215 by G. Svodtseva).

Translation: When the sulfates of Al and Fe are simultaneously present in sulfuric acid solutions produced in the sulfuric acid method of processing of alumina-containing materials to Al_2O_3, their behavior in the solutions must be studied as a function of various factors. The solubility of $Fe_2(SO_4)_3$ in acid solutions of $Al_2(SO_4)_3$ is studied with acidity 200-550 g/l at 18-20°. The solubility of $Fe_2(SO_4)_3$ in the quaternary system $Al_2O_3-Fe_2O_3-H_2SO_4-H_2O$ depends on the quantity of solid phase taken for solution. The acidity of the final solutions of Fe and Al sulfates has a significant influence on their mutual solubility. The maximum solubility of $Al_2(SO_4)_3$ with an acidity of the solution of 200 g/l is between 40-50 g/l as Al_2O_3, that of Fe sulfates reaches 1/2

USSR   UDC 669.71.053.4.094

FATEYEVA, Z. T., KABUL'NIKOVA, S. L., ZADNEYEVA, V. M., Nauch. tr. Kazakhsk. Politech. In-t., Alma-Ata, 1971, pp 560-565.

130-138 g/l as Fe_2O_3. With an acidity of 300 g/l H_2SO_4, the content of Al_2O_3 drops to 25-30 g/l, that of Fe_2O_3 to 100 g/l. Increasing the acidity to 400-430 g/l practically does not change the solubility of $Al_2(SO_4)_3$, while it sharply decreases the solubility of Fe to 30-50 g/l as Fe_2O_3. The solubility of $Al_2(SO_4)_3$ drops with acidity 450-550 g/l to 17-20 g/l Al_2O_3, that of $Fe_2(SO_4)_3$ to 25-29 g/l with an acidity of 500 g/l and 10-11 g/l with an acidity of 550 g/l. 6 Figures.

2/2

USSR

UDC 669.71.053:4.094

ZADNEYEVA, V. M., FATEYEVA, Z. T., KABUL'NIKOVA, S. I.

"Solubility of Ferrous Sulfate in Sulfate Solutions of Aluminum Sulfate with Acidity 200-500 g/l"

Nauch. tr. Kazakhsk. Politekhn. In-t. [Scientific Writings of Kazakh Polytechnical Institute], Alma-Ata, 1971, pp 570-573, (Translated from Referativnyy Zhurnal, Metallurgiya, No 5, 1972, Abstract No 5 G216 by G. Svodtseva).

Translation: The solubility of $FeSO_4$ in sulfate solutions of $Al_2(SO_4)_3$ is studied with acidity 200-500 g/l, temperature 18-20°. The dissolution of $FeSO_4$ in $Al_2(SO_4)_3$ solutions depends on the quantity of solid phase taken for solution, i.e., occurs by the colloid path. However, dissolution is possible, particularly in solutions with acidity 200-300 g/l, with relatively small quantities of $FeSO_4$ in the solid phase; further increases lead to cementation of the entire mass of the solution and make separation of the solid from the liquid impossible. As the concentration of H_2SO_4 in the solution increases to 400-470 g/l, the influence of the quantity of solid phase is significantly

1/2

USSR   UDC 669.71.053:4.094

ZADNEYEVA, V. M., FATEYEVA, Z. T., KABUL'NIKOVA, S. L., Nauch. tr. Kazakhsk.
Politekhn. In-t., Alma-Ata, 1971, pp 570-573.

less and at concentrations of 500 g/l, it has practically no influence on the
quantity of $FeSO_4$ which goes over into solution.   4 Tables.

2/2

- 3 -

USSR   UDC: 517.925.32

BYKOV, Ya. V., KABULOV, E., Cheboksary State University imeni I. N.
Ul'yanov, Samarkand State University imeni S. Ayni

"On Periodic, Large-Amplitude Oscillations of Certain Classes of Nonlinear
Systems"

Minsk, Differentsial'nyye Uravneniya, Vol 8, No 2, Feb 72, pp 223-229

Abstract: Sufficient conditions are established for the existence of
periodic solutions of certain classes of differential equations with
amplitudes approaching infinity as $\mu \to 0$:

$$L(u) = \sum_{p,q=0} A_{p,q} u^p \mu^q.$$

Proofs are given for a number of theorems which guarantee sufficient con-
ditions for the existence of a solution of the form

$$u(\mu) = \sum_{k=0}^{r} u_k \mu^{k-r}.$$

1/2

USSR

BYKOV, Ya. V., KABULOV, R., Differentsial'nyye Uravneniya, Vol 8, No 2,
Feb 72, pp 223-229

In particular, sufficient conditions are derived for the existence of
periodic solutions with large amplitude for nonlinear systems (with and
without delay, boundary-value problems, partial differential equations,
etc.). Bibliography of four titles.

2/2

- 2 -

USSR

KABULOV, V. K.

"Models of Prediction of the Development of the National Economy"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 50,
Tashkent, 1972, pp 3-29 (Translated from Referativnyy Zhurnal, Kibernetika,
No 1, 1973, Abstract No 1 V728).

Translation: An analysis based on balance models.

1/1

USSR

KABULOV, V. K.

"Concerning Principles of Algorithmization"

[No abstract]

1/1

USSR

KABULOV, V. K., and BABAMURADOV, K. Sh.

"Computer Calculation of Three-Layer Shells"

Translation of Annotation: This monograph presents the development of a system for automation of the calculation of flexible plates and shells composed of heterogeneous layers. The problem is solved by a variation method. Using a program written for the M-20 digital computer, the solution of the problem, beginning with the construction of the initial equations and continuing to production of the final result, is performed entirely by machine.

The work presents examples of numerical analysis of the solutions for smooth, 3-layer shells undergoing finite bending under the influence of external forces.

The book is designed for engineers and scientific workers specializing in the area of computer mathematics and the theory of elasticity.
1/1

USSR   UDC: 681.3.06:51

KABULOV, V. K., TOLOK, V. A.

"An Arithmetic System for Computer Solution of Problems in the Theory of
Elasticity and Plasticity"

V sb. Vopr. vychisl. i prikl. mat. (Problems of Computational and Applied
Mathematics--collection of works), vyp. 4, Tashkent, 1971, pp 3-102 (from
RZh-Kibernetika, No 12, Dec 71, Abstract No 12V950)

Translation: A method is proposed for automating solution of problems
in the theory of elasticity and plasticity. The procedure is based on a
special input language developed by the authors (FORTU) for describing
formulas of elasticity theory. The language is designed for exchange of
information between a standard set of operators.
    The article consists of four chapters. The FORTU language is pre-
sented in the first chapter. An interpreting system is described in the
second chapter. The interpreting system is separate from the general system
of automation, and its basic purpose is to derive all necessary mathe-
matical relations; the information for these relations is the mathematical
expression of the computational model and the plan of derivation. The plan
1/2

USSR

KABULOV, V. K., TOLOK, V. A., <u>Vopr. vychisl. i prikl. mat.</u>, vyp. 4, Tash-kent, 1971, pp 3-102

is a set of pseudocurves corresponding to the given analytical operation
which must be carried out at a given moment on a given group of formulas
(substitution, integration by parts, differentiation, etc.). The third
chapter presents the basic tools of the method of automation, which are
the standard procedures for calculating the formulas in the FORTU language.
Each formula is computed strictly according to definite rules by a single
generalized operator which combines automatic programming methods of both
the compiling and interpreting type. This operator itself is adjusted
according to information which is given in a definite way to conform to
the necessary coordinate functions by which the solution is approximated.
The fourth chapter is devoted to the sense of the proposed method of auto-
mation. The effectiveness of the proposed method is demonstrated by a
number of examples realized in the Institute of Cybernetics with Computing
Center, Academy of Sciences of the Uzbek SSR on the M-220A computer. Bibli-
ography of 39 titles. V. Mikheyev.

2/2

USSR   UDC 632.95

AAVIK, KH. E., KABUR, A. V., KALLASORG, R. A., REVEL'SKIY, I. A.

"Study and Development of the Method of Microcoulometric Detection of Halogen
and Sulfur Containing Compounds"

Tr. 2-go Vses. soveshch. po issled. ostatkov pestitsidov profilakt. zagryaz-
neniya ini produktov pitaniya, kormov i vnesh. sredy (Works of the Second All-
Union Conference on the Investigation of Pesticide Residues and Preventive
Contamination of Food Products, Feeds and Environment), Tallin, 1971, pp
16-22 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N421)

Translation: The conditions of 100% conversion of Cl and S-containing com-
pounds in a gas flow into HCl and H_2S are found, and a titration cell is de-
veloped which permits detection (by chlorine) of $\sim 10^{-9}$ grams of substance.
The selectivity coefficient with respect to hydrocarbons is $\sim 10^5$.

1/1

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