CIRC ACCESSION NO--AP0137170
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW. EXAMPLES ARE GIVEN OF
ANTIBIOTICS WITH IMPROVED PROPERTIES (BETTER SOLY., INCREASED STABILITY,
CHANGED ACTIVITY, DECREASED TOXICITY) AND THE NATURE OF THE PARTICULAR
CHEM. MODIFICATIONS.   FACILITY: INST. KHIM. PRIR. SOEDIN.,
MOSCOW, USSR.

UNCLASSIFIED

1/2   020   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--FORMATION OF BETA LYSINE IN THE COURSE OF BIOSYNTHESIS OF
   STREPTOTHRICINE ANTIBIOTICS -U-
AUTHOR-(03)-VORONINA, O.I., TOVAROVA, I.I., KHOKHLOV, A.S.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 3,
   PP 435-440
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTIBIOTIC, BIOSYNTHESIS, LYCINE,
   FERMENTATION/(U)STREPTOTHRICINE ANTIBIOTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0498   STEP NO--UR/0216/70/000/003/0435/0440

CIRC ACCESSION NO--AP0126246
                       UNCLASSIFIED

CIRC ACCESSION NO--AP0126246

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRESENT PAPER DEALS WITH THE
QUESTION OF FORMATION OF BETA LYSINE IN THE COURSE OF BIOSYNTHESIS OF
STREPTOTHRICIN ANTIBIOTICS. UTILIZATION OF C PRIME14 LABELLED
AMINOACIDS HAS SHOWN THAT BETA LYSINE CARBON IN CONTRAST TO OTHER
AMINOACIDS BECOMES PREFERABLY INCORPORATED INTO POLYMYCINE (A, B, C, D,
F TYPES OF STREPTOTHRICINS) AND STREPTOTHRICINE F. DETERMINATION OF C
PRIME14 IN DIFFERENT PARTS OF THE STREPTOTHRICINE F MOLECULE WHICH IS
FORMED IN THE PRESENCE OF 1,C PRIME14 DL,ALPHA,LYSINE HAS SHOWN THAT THE
INCORPORATED CARBON OF 1,C PRIME14 DL,ALPHA, LYSINE IS COMPLETELY
DETECTED IN BETA LYSINE, WHEREAS NO LABEL IS FOUND BOTH STREPTOLIDINE
AND GULOSAMINE, THIS SHOWING THE SPECIFICITY OF INCORPORATION. THUS IT
WAS CONCLUDED THAT ALPHA LYSINE LIES VERY CLOSE TO THE PATH OF BETA
LYSINE FERMENTATION IN THE COURSE OF STREPTOTHRICIN BIOSYNTHESIS.
 FACILITY: INSTITUTE OF CHEMISTRY OF NATURAL PRODUCTS, ACADEMY OF
SCIENCES, USSR.

UNCLASSIFIED

USSR   UDC: 621.397.62

KHOKHLOV, B. N.

"A Decoding Device for a SECAM System Color Television Receiver"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 4, Feb 71, Author's Certificate No 292252, Division H, filed 23 Oct 67,
published 6 Jan 71, p 152

Translation: This Author's Certificate introduces a decoding device for a
SECAM system color television receiver. The decoder contains a band filter
connected to one of the inputs of the color commutator through an amplifier,
and to the other input through a series circuit comprised of a delay line and
amplifier. The unit also contains stages for correcting high-frequency
predistortions. As a distinguishing feature of the patent, in order to
improve the quality of correction of high-frequency predistortions of the
television signal, the stages for correction of high-frequency predistortions
are connected separately in both the direct and delayed channels.

1/1

USSR   UDC: 621.397.62:535.67(088.8)

KHOKHLOV, B. N., SHABEL'NIKOV, I. I.

"A Chrominance Signal Recognition Device for Color Television Receivers"

USSR Author's Certificate No 250983, filed 23 May 68, published 2 Feb 70 (from
RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G221 P)

Translation: A patent has been granted on a chrominance signal recognition device
for a color television system in which the recognition signal is transmitted during
transmission of the field-quenching pulses. The device contains an integrating
circuit connected to the output of the color difference amplifiers, and a triggering
unit. To reduce the effect which the transmitted image subject has on the opera-
tion of the device, a switching stage controlled by the blanking field pulses is
connected between the output of the integrating circuit and the input of the
trigger unit.

1/1

- 336 -

AA0043318

Soviet Inventions Illustrated, Section II Electrical, Derwent,

UR 0482

2/70

242958 'SECAM' COLOUR EQUIPMENT IN TELEVISION RECEIVERS
containing correction cascade for HF distortion
(1) amplifier (2) associated with commutator (3) directly
and through delay line (5), symmetrical trigger (4) which
controls commutator (3), frequency discriminators (6),
(7), and chrominance cascades (8), (10). Simplification
of equipment for manual disconnection of colour output
of (8) and (10) is connected through integrator, gate
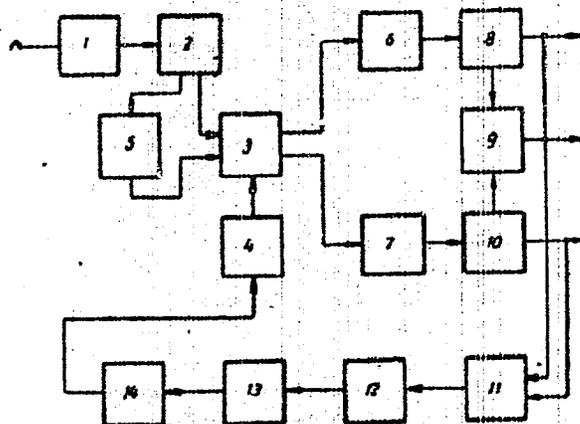and differentiating circuit to trigger (4).

30.8.67 as 1181114/26-9. R. N. KHOKHLOV (26.9.69) Bul 16/
5.5.69. Class 21a^1. Int.Cl.H 04n.

1/2

4

19761530

AA0043318

19761531

Radar

USSR

UDC 621.391.82

ANDREYEV, G. A., LEVENETS, B. P., MAGID, R. M., KHOKHLOV, G. I., Gor'kiy State University

"Effect of Additive and Multiplicative Noise on the Accuracy of Measuring the Angular Position of a Radiation Source by Systems with Pulse-Duration Modulation"

Abstract: Theoretical expressions were obtained for the mean square error in measuring the angular position of a radiation source by the pulse-time method under the effect of additive and multiplicative noise. The relative error caused by multiplicative noise significantly exceeds that caused by additive noise. This is explained by the fact that the multiplicative noise is not equivalent to additive noise with respect to the parameters of the spectrum. Multiplicative noise can be reduced by lowering the response threshold, increasing the integration time by comparison with the correlation time or attenuating the depth of the random modulation of the received signal. The implemented measuring system provides an accuracy which is $\sqrt{2}$ times less than the potential accuracy.
1/1

USSR

UDC 681.325.65:525

BARYKIN, N. A., ZAYGERMAKHER, D. M., KHOKHLOV, G. N., BALUSHKIN, K. S.,
KOZOBRODOV, V. A.

"Logic Circuits Based on Pneumatic Relay Elements"

Pnevmatich. Privody i Sistemy upr. [Pneumatic Drives and Control Systems
-- Collection of Works], Moscow, Nauka Press, 1971, pp 267-272, (Translated
from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya
Tekhnika, No 11, 1971, Abstract No 11 A74 from the Resume).

Translation: The basic characteristics and nomenclatures of pneumatic relay
automation elements (PERA) are presented, as well as typical logic device
circuits based on these elements. A modular-element method of planning of
devices based on PERA and the experience of the application of the standard
circuits are studied. 6 Figures; 1 Table; 1 Biblio. Ref.

1/1

1/2   023   UNCLASSIFIED   PROCESSING DATE--13NOV70
TITLE--ELECTRICAL CHARACTERISTICS OF THE SYSTEM ROCK ICE -U-

AUTHOR-(04)-BOGORODSKIY, V.V., KHOKHLOV, G.P., FEDOROV, B.A., TREPOV, G.V.

COUNTRY OF INFO--USSR

SOURCE--AKAD. NAUK SSSR DOKLADY, V. 190, NO. 1, PP. 88-90 ILLUS., TABLE,
  1970
DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--ROCK, ICE, PERMAFROST, RADIO WAVE ABSORPTION, RADIO SIGNAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/1998   STEP NO--UR/0020/70/190/001/0088/0090

CIRC ACCESSION NO--AT0133833
                    UNCLASSIFIED

CIRC ACCESSION NO--AT0133833
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF INVESTIGATIONS OF THE
  ABSORPTION OF A RADIO SIGNAL BY A SYSTEM CONSISTING OF ROCK AND ICE
  SUGGEST THAT IT MIGHT BE POSSIBLE TO DEVELOP METHODS OF INVESTIGATING
  PERMAFROST BY MEANS OF RADIO WAVES.

UNCLASSIFIED

USSR   UDC: 681.325.3

KHOLKIN, I. I., NOVICHKOV, V. S., KASHITSYN, Ye. M.

"On Improving the Dynamic Properties of Frequency-Code Converters Which
Measure Signals from Differential String Pickups"

Translation: An effective means for reducing dynamic errors of frequency-code
converters for string pickups of the differential type is multiplication of
the frequencies to be measured. A digital two-channel device for multipli-
cation of pulse-frequency signals is considered which is based on the prin-
ciple of filling the period of the frequency to be converted. The device was
used in a self-adaptive smoothing converter which measured frequency signals
from precision differential string accelerometers. Two illustrations, bibli-
ography of three titles. V. M.

1/1

USSR   UDC[621.362:538.4].001.24

POPYRIN, L. S., PSHENICHNOV, N. N., ROSHCHIN, A. M., KHOKHLOV, L. K.,
SHISHKOV, Ye. V.

"Calculated Studies of Open-Cycle Power Magnetohydrodynamic Generators"

Translation: The results are presented of calculations on an electronic
computer of the effect of finite (scalar) conductivity on the characteristics
of a magnetohydrodynamic (MHD) channel, its length and profile, and also the
results of a calculation of the cost of the MHD channel and the SP [?inherent
parameters] of the magnetic system as a function of the finite conductivity
and the temperature of heating up of the oxidant. The calculations were
made with the aid of a mathematical model, worked-out at the Siberian Power
Engineering Institute of the Siberian Department of the Academy of Sciences,
USSR, for thermodynamic and technical-economic studies of composite power
plants with open-cycle MHD. 3 ill. 2 tab. 2 ref.

1/1

USSR

UDC [621.362:538.4]-16:537.56.001.2

ZAGORODNIKH, A.V., KHOKHLOV, L.K., SHISHKOV, YE.V.

"Concerning Vaporization Of An Ionizable Additive With Various Methods Of Introducing It Into The Loop Of A Magnetohydrodynamic Generator Based On The Products Of Combustion Of Natural Gas"

V sb. Teplotekhn.probl.pryamogo preobrazov.energii (Heat-Engineering Problems Of Direct Energy Conversion--Collection Of Works), Issue 2, Kiev, "Nauk.dumka," 1971, pp 60-66 (from RZh--Elektrotekhnika i energetika, No 12, Dec 1971, Abstract No 12A180)

Translation: The following methods of introducing the additive (K_2CO_3) are considered: introduction of additive in an aqueous solution; introduction of powder-like additive; introduction of additive produced in the form of rods or slabs [plitka] into the combustion chamber through a packed window in the wall; introduction of additive through a plasmotron (e.g., using it in pressed form as one of the electrodes). Dependences are given by which it is possible to determine the effectiveness of the applicable method and also to choose a point of entry and the dispersion of the additive. 1 ill. 6 ref. [Osoboye konstruktorskoye byuro novogo oborudovaniya Ministerstva energetiki i elektostantsiy SSSR--Special Design Bureau For New Equipment, Ministry Of Power And Electric Power Plants Of The USSR] V.P. Bogatyrev.

1/1

TITLE--THE CONTENT OF SIALIC ACID IN THE BLOOD SERUM OF PATIENTS WITH
   ACUTE CHOLECYSTITIS -U-
AUTHOR-(03)-KHOKHLOV, N.F., NEYKOV, G.N., KAPARULINA, L.T.

COUNTRY OF INFO--USSR

SOURCE--KLINICHESKAYA MEDITSINA, 1970, VOL 48, NR 4, PP 79-82

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--LIVER DISEASE, BLOOD SERUM, ORGANIC SERUM, LEUKOCYTOSIS,
   GALLBLADDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0736   STEP NO--UR/0497/70/048/004/0079/0082

CIRC ACCESSION NO--AP0131331
                            UNCLASSIFIED

CIRC ACCESSION NO--AP0131331

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS CARRIED OUT DYNAMIC
STUDIES OF THE CONTENT OF SIALIC ACID IN THE BLOOD SERUM IN ACUTE
CHOLECYSTITIS: BEFORE THE OPERATION, IN THE POSTOPERATIVE PERIOD AND AT
DIFFERENT STAGES OF CONSERVATIVE THERAPY IN 47 PATIENTS. IT WAS FOUND
THAT THE BLOOD SERUM LEVEL OF SIALIC ACID MORE DISTINCTLY THAN
LEUKOCYTOSIS REFLECTS THE DYNAMICS OF THE INFLAMMATORY PROCESS AND THE
DEGREE OF DESTRUCTIVE CHANGES IN THE WALL OF THE GALLBLADDER. IN
POSTOPERATIVE COMPLICATION THE LEVEL OF SIALIC ACID RISES SHARPLY.
ANALOGOUS CHANGES WERE ALSO OBSERVED IN PATIENTS TREATED CONSERVATIVELY.
 THERE WAS ALSO ESTABLISHED A RELATIONSHIP BETWEEN THE LEVEL OF SIALIC
ACID, THE DURATION OF THE DISEASE AND FUNCTIONAL STATE OF THE LIVER.
THE AUTHORS RECOMMEND THE SIALIC ACID TEST AS AN ADDITIONAL ONE IN ACUTE
CHOLECYSTITIS.   FACILITY: KLINIKA GOSPITAL'NOY KHIRURGII
TSELINOGRADSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

Pesticides

USSR

SAVENKOV, N. P., and KHOKHLOV, P. S.

"Synthetic Method for β-Bromovinyl Ketones"

USSR Author's Certificate No 355148, filed 23 Feb 70, published 10 Nov 72
(from RZh-Khimiya, No 20, Oct 73, Abstract No 20N490P)

Translation: A patent is applied for for the synthesis of the compounds with
the general formula BrCH:CHC(O)R ($\underline{I}$) (R = alkyl, alkyl halide, Ph) based on
the reaction of carboxylic acid chlorides or bromides with CH=CH in presence of
$AlBr_3$ at a temperature ranging from -20° to 60°. Example. Into a solution of
0.05 mole AcBr and 0.055 mole $AlBr_3$ in 70 ml CH_2Cl_2, CH=Ch is passed with
stirring for 0.5 hr at 10-25°, the mixture is poured on ice, organic solvent
is evaporated, dried over Na_2SO_4, CH_2Cl_2 is evaporated, vacuum distilled to
yield $\underline{I}$ (R=Me), the yield 41.7%, b.p. 47-50°/20 mm, n_D^{2-} 1.4930, d_4^{20} 1.5960.
Analogously following $\underline{I}$ were obtained (R, yield in %, b.p. °C/mm, n_D^{20}, d_4^{20} being
reported: Et, 49, 68-9/20, 1.4910, 1.4865; Pr, 84.7, 55-8/6, 1.4925, 1.3934;
iso-Bu, 72, 54-7/3, 1.4720, 1.2680; MeCHBr, 49, 63-4/2, 1.5395, 1.8906; Ph,
79.5, 55-7/0,015, 1.5952, 1.5254. $\underline{I}$ are intermediate products for the
synthesis of pesticides.
1/1'

UDC 632.95

USSR

BLIZNYUK, N. K., KVASHA, Z. N., VARSHAVSKIY, S. L., BARANOV, Yu. I.,
LIBMAN, B. Ya., STREL'TSOV, R. V., PROTASOVA, L. D., MARKOVA, L. I.,
KHOKHLOV, P. S., MADZHARA, G. A., KIRILINA, L. E., All-Union Scientific
Research Institute of Phytopathology

"A Method of Making Thiophosphonyl Dihalides"

USSR Author's Certificate No 337384, filed 31 Oct 69, published 2 Jun 72
(from RZh-Khimiya, No 9, May 73, abstract No 9N500 by T. G. Chekareva)

Translation: Compounds of the general formula $RP(S)X_2$ (I) ($R = C_1-C_{12}$-alkyl,
cycloalkyl, aryl, unsubstituted alkyl or alkyl containing substituents, Cl
or Br; X = Cl, Br) are synthesized by reacting $(RS)_3P$ (II) with a 2-10-fold
excess of PX_3 with heating to 250-330°C in an autoclave. Example. A mixture
of 0.07 mole of II (R = Me) and 0.7 mole of PCl_3 is heated in an autoclave
test tube of stainless steel at 290-320°C for 5 hours. The excess PCl_3 is
driven off at atmospheric pressure and distillation of the residue in a
vacuum gives I (R=Me, X=Cl), boiling point 70-3°/80, $n^{20}D$ 1.5510, d_4^{20} 1.4421,
yield 52%. Similar methods are used to produce other compounds of type I
(given are R, X, boiling point in °C/mm, $n^{20}D$, d_4^{20}, yield in %): Et, Cl,
64-8/15, 1.5418, 1.3527, 58; Pr, Cl, 85-8/15, 1.5285, 1.2942, 40; iso-Pr,
Cl, 72-5/15, 1.5290, 1.3017, 47.5; Bu, Cl, 111-13/25, 1.5269, --, 65;

1/2

(7)

USSR

SUKHOMLINOV, B. P., Vopr. tekhnol. ulavlivaniya i pererab. produktov koksovaniya, Kharkov, 1972, pp 50-56

sulfur with a sufficient amount of powdered SL. A SN screw mixer is recommended for bringing the components into contact under pressure and pulverizing them at the same time.

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UDC 632.95 ·

USSR

BLIZNYUK, N. K., KHOKHLOV, P. S., KVASHA, Z. N., MARKOVA, L. I., LEVSKAYA, G. S., PROTASOVA, L. D., SCLNTSEVA, L. M., MATYUKHINA, Ye. N., VARSHAVSKIY, S. A., BARANOV,Yu. I., LIBMAN, B. Ya., ZHEMCHUZHIN, S. G.

"Method of Production of Dichlorides or Dibromides of Thiophosphonic Acids or Their Bis Analog"

USSR Author's Certificate No 332095, filed 19/08/69, published 17/04/72 (Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No 24N591, by T. A. Belyayeva)

Translation: Compounds of the formula $RP(X)X_2$ (I) (R=alkyl, aryl, aralkyl; X=Cl or Br) and $X_2P(S)A(S)PX_2$ (II) (A-bivalent hydrocarbon radical) were produced by the reaction of mono- or dihalo hydrocarbons with S, P and PX_3 with heating to 250-400° in an autoclave of stainless steel or nickel in the presence of catalytic quantities of I_2 or its compounds. Example. A mixture of 0.24 mole PhCl, 0.24 g-atom S, 0.16 g-atom white P, 35 ml PCl_3 and 0.05 g I_2 is heated at 290-330° for seven hours in an autoclave of stainless steel, the PCl_3 is distilled, then vacuum distillation is used to separate I (R=Ph, X=Cl), yield 60%, B. T. 109-112°/3, $n^{20}D$ 1.6241. Similarly, I were produced (given R, X, yield in %, B. P. in °C/mm, $n^{20}D$): $4-Clc_6H_4$,

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USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 332095, filed 10/08/69, published 17/04/72

Cl, 53.5; 124-3/1.5-2, 1.6229; p-MeC$_6$H$_4$, Cl, 54.5, 125-7/1, 1.6120; 4FC$_6$H$_4$, Cl, 72.2, 95-7/0.5, 1.6028; Ph, Br, 61, 127-130/2, 1.6850; 4-FC$_6$H$_4$, Br, 55, 135-8/1, 1.6758; PhCH$_2$, Cl, 76.4, 120-3/2, 1.6150; 3-FC$_6$H$_4$, Cl, 108-110/1.5, 1.5908; 4-MeC$_6$H$_4$CH$_2$, Cl, 53.3, 126-9/2, 1.6035; 4-ClC$_6$H$_4$CH$_2$, Cl, 61.6, 129-133.2, m. p. 74-6°, --; 2-FC$_6$H$_4$CH$_2$, Cl, 61.6, 129-133.2, m. p. 48-9°, --; 2.4-Me$_2$C$_6$H$_3$CH$_2$, Cl, 47.5, 140-1.6045; 2.4-Cl$_2$C$_6$H$_3$CH$_2$, Cl, 43.4, 147-9/2, m. p. 100-1", --. Also produced were II (X=Cl, A=CH$_2$CH$_2$), yield 61.5%, m. p. 92-3°. I and II are intermediate products for the production of insecticides, acarocides, fungicides and herbicides.

2/2

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USSR   UDC 632.95

KHOKHLOV, P. S., MARKOVA, L. I., ZHEMCHUZHIN, S. G.

"Preparation of Dithiophosphonates"

USSR Author's Certificate No 329184, filed 4/08/70, published 30/03/72
(Translated from Referativnyy Zhurnal Khimiya, No 24(II), 1972, Abstract No
24N592, by T. A. Belyayeva)

Translation: Dithiophosphonates of the formula RP(S)(SR")OC(Me)=CHCOOR' (I)
(R=alkyl or aryal; R' and R"= alkyl), which can be used as physiologically
active substances, are produced by the reaction of the anhydride of the cor-
responding dithiophosphonic acid with acetoacetic ester in an inert organic
solvent in the presence of a tertiary base with subsequent alkylation of
the salt formed with an alkyl halide. Example. Taking a mixture of 0.03
mole benzyldithiophosphonic acid and 0.03 mole Et_3N in 30 ml C_6H_6, add with
mixing at 20-25° a solution of 0.03 mole $AcCH_2COOEt$ in 10 ml C_6H_6, heat to
70-80° for 15 hours until the precipitate dissolves completely, cool, filter,
producing Et_3N-salt I (R=PhCH$_2$, R'=Et, R"=H) (II), yield 71.8%, m. p. 149-150°.
Take 0.02 mole II in 20 ml C_6H_6, add 0.02 mole EtI, heat 3 hours with agita-
tion at 60-70°, cool, filter, wash the filtrate with water, dry over $MgSO_4$,
evaporate, producing I (R=PhCH$_2$, R'=R"=Et), yield 81.2%, after chromatography
1/2

USSR

KHOKHLOV, P. S., et al., USSR Author's Certificate No. 329184, filed 4/08/70, published 30/03/72

on a column with silica gel d_4^{20} 1.1690, n^{20}_D 1.5739. Similarly, I is produced (R'=Et) (given R, R", yield in percent, d^{20}, n^{20}_D): PhCH$_2$, Me, 78.4, 1.722, 1.5940; PhCH$_2$, Bu, 69.9, 1.1287, 1.5700; PhCH$_2$, PhCH$_2$, 70.2, --, 1.6120; Me, Me, 68, 1.2049, 1.5600, b. p. 146-9°/1.5.

2/2

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USSR

UDC 632.95

SPIRIDONOV, YU. A., SHCHEGLOV, YU. V., SPIRIDONOVA, G. S., MITESHEV, A. I., KHOKHLOV, P. S., BLIZNYUK, N. K., All-Union Scientific Research Institute of Phytopathology

"A Desiccant"

USSR Author's Certificate No 296545, filed 16 Oct 69, published 10 May 71 (from RZh-Khimiya, No 1(II), Jan 72, Abstract No 1N457 P)

Translation: Substances of the general formula $ROC(S)SCH_2COOSn(R')_3$ (I), where $R = C_2-C_4$-alkyl, $R' = C_3-C_4$-alkyl or aryl are proposed as desiccants. When introduced into the soil in a dose of 10 kg/ha before seeding, compounds I have no noticeable effect on plants, but when the same dose of the compounds is used for treatment in the vegetative stage, they case wilting or death. G. A. Belyayeva.

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USSR

UDC 547.341.26'118.07

KHOKHLOV, P. S., MARKOVA, L. I., and ZHEMCHUZHIN, S. G., All-Union
Scientific Research Institute of Phytopathology

"A Method of Making Dithiophosphonates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 7, Mar 72, Author's Certificate No 329184, Division C, filed 4 Aug 70,
published 9 Feb 72, p 101

Translation: This Author's Certificate introduces: 1. A method of making
dithiophosphonates with the general formula

$$RP(S)(SR'')OC(CH_3)=CHCOOR'$$
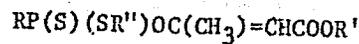
where R is an alkyl or aryl, and R' and R" are alkyls. As a distinguishing
feature of the patent, the anhydride of the appropriate dithiophosphonic
acid reacts with an acetoacetate ester in an inert organic solvent such as
benzene, in the presence of a tertiary base such as triethylamine, with
subsequent alkylation of the resultant salt with an alkyl halide and isola-
tion of the product by conventional methods. 2. A modification of this
method distinguished by the fact that the process is conducted at 0-100°C.

1/1

USSR   UDC 632.95

BLIZNYUK, N. K., STREL'TSOV, R. V., KHOKHLOV, P. S., and ZHEMCHUZHIN, S. G.,
All-Union Scientific Research Institute of Phytopathology

"A Method of Synthesizing Dithiophosphonic Acid Amide-Esters"

Translation: Dithiophosphonic acid amide-esters of the general formula
$RCONHCH_2CH_2SP(S),(R')NR''R'''$ (I) (R = aryloxyalkyl; R' = alkylaralkyl or
aryl; R'' and R''' = H, alkyl, or aralkyl), which have a wide spectrum of
physiological activity and may be used as pesticides, are synthesized by
the reaction of anhydrides of dithiophosphonic acids with primary or
secondary amines in the presence of tertiary amines, followed by treating
the resultant dithiophosphonic acid amide salt with RCOCl and ethylenimine.
Twenty five thousandths mole of Et_3N is added at approximately 20°C (cooling)
with agitation to a mixture of 0.025 mole of methyldithiophosphonic acid
anhydride, 0.025 mole of $BuNH_2$ and 30 ml of C_6H_6. The mass is stirred for
one hour at 20°C and for two hours at 50°C, after which a solution of
0.025 mole of $2,4-Cl_2C_6H_3OCH_2COCl$ in 15 ml of C_6H_6 is added slowly, stirred
1/2

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USSR

BLIZNYUK, N. K., et al., USSR Author's Certificate No 259879, filed 17 Jan 69, published 12 Apr 70 (from RZh-Khimiya, No 3, 10 Feb 71, Abstract No 3N557 P)

for two hours, and treated with a solution of 0.025 mole of ethylenimine in 5 ml of C_6H_6. The mixture is agitated for one hour at 20°C, 3 hours at 50°C, cooled and the Et_3N hydrochloride is removed by filtration. The filtrate is washed with water, dried, and after concentration by evaporation under vacuum, compound I is obtained in the residue (given are R, R', R'', R''', empirical formula, yield in %, and $n^{20}D$): $2,4-Cl_2C_6H_3OCH_2$, Me, H, Bu, $C_{15}H_{23}Cl_2N_2O_2PS_2$, 89.5, 1.5865; $2,4,5-Cl_3C_6H_2OCHMe$, Ph, H, Bu, $C_{21}H_{26}Cl_3N_2-O_2PS_2$, 87.5, 1.5975; $2,4-Cl_2C_6H_3OCH_2$, $PhCH_2$, H, Bu, $C_{21}H_{27}Cl_2N_2O_2PS_2$, 92, 1.6080; $2,4-Cl_2C_6H_3OCH_2$, $PhCH_2$, Et, Et, $C_{21}H_{27}Cl_2N_2O_2PS_2$, 92, 1.6050; $2,4-Cl_2C_6H_3OCH_2$, $PhCH_2$, H, $PhCH_2$, $C_{24}H_{25}Cl_2N_2O_2PS_2$, 93.8, 1.6285; $2,4-Cl_2-C_6H_3OCH_2$, $PhCH_2$, H, Ph, $C_{23}H_{23}Cl_2N_2O_2PS_2$, 96.1, 1.6235.

2/2

TITLE--THIOPHOSPHORYLATED ETHYLAMIDES OF ARYLOXYALKANE CARBOXYLIC ACIDS
-U-
AUTHOR-(05)-BLIZNYUK, N.K., STRELTSOV, R.V., KIRILINA, L.E., KHUKHLOV,
P.S., ZHEMCHUZHIN, S.G.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,769
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, AMIDE, PHOSPHORUS SULFIDE,
ALKANE, CARBOXYLIC ACID, ORGANIC SYNTHESIS, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1422   STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0128821
                        UNCLASSIFIED

CIRC ACCESSION NO--AA0128821
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT.   THIOPHOSPHORYLATED ETHYLAMIDES OF
   ARYLOXYALKANECARBOXYLIC ACIDS RP(Y)(XR PRIME1)SCH SUB2 CH SUB2 NHCOR
   PRIME2 (R EQUALS ALKYL, ARYL, ARALKYL, OXYALKYL(ARYL), THIOALKYL(ARYL);
   R PRIME1 EQUALS ALKYL, ARYL, ARALKYL; R PRIME2 EQUALS ARYLOXYALKYL; X
   AND Y EQUALS O, S); WERE PREPD. BY TREATING DERIVS. OF P THIO ACIDS WITH
   DERIVS. OF ARYLOXYALKANECARBOXYLIC ACID. SALTS RP(Y)(XR PRIME1) SH.M
   (R, R PRIME1, X, AND Y ARE SAME AS THE ABOVE AND M IS AN ORG. OR INORG.
   CATION), WERE USED FOR P THIOACID DERIVS.; ARYLOXYALKANECARBOXYLIC ACID
   CHLORIDE WAS USED FOR THE ARYLOXY, ALKANECARBOXYLIC ACID DERIV.; AND
   THEIR MIXT. WAS TREATED WITH ETHYLENIMINE. THE TITLE PROCESS TOOK PLACE
   IN AN ORG. SOLVENT, SUCH AS C SUB6 H SUB6, AT 15-20DEGREES.
   FACILITY: ALL UNION SCIENTIFIC RESEARCH INSTITUTE OF PHYTOPATHOLOGY,

UNCLASSIFIED

USSR   UDC 632.95

KHOKHLOV, P. S., SAVENKOV, N. F., BLIZNYUK, N. K., CHAYEVA, T. I.,
All-Union Scientific Research Institute of Phytopathology, Moscow,
Ministry of Agriculture USSR

"Method of Obtaining Amides of Dialkylphosphoric Acid"

Translation: Compounds of the formula $RC(O)CH=CHNHP(O)(OR')_2$ ($\underline{I}$),
where R = alkyl, aryl, R' = alkyl, are obtained by the interaction
of $RC(O)CH=CHNH_2$ ($\underline{II}$) with $ClP(O)(OR')_2$ ($\underline{III}$) in the presence of
Et_3N. To a solution of 0.02 mole II (R = $4-ClC_6H_4$) and 0.02 mole
Et_3N in 20 ml benzene, 0.02 mole $\underline{III}$ (R' = Et) in 5 ml benzene is
added, heated 4 hours at 75-80°, and filtered, the filtrate is
evaporated, and I (R = $4-ClC_6H_4$, R' = Et) is obtained, yield 85.2%,
melting point 172-4°. Analogously obtained are the following I
(shown are R, R', yield, melting point): $4-ClC_6H_4$, Bu, 86.3, 179-
80; $4-BrC_6H_4$, Bu, 55.7, 207-9 and $\underline{I}$ (R = H, R' = Et), yield 94,
n^{20}_D 1.4802, d_4^{20} 1.1562. I can be employed as pesticides.
1/1

- 17 -

USSR

UDC 547.569.1

KHOKHLOV, P. S., KALUTSKIY, L. A., NAZAROV, T. A., MOCHALKIN, A. I., and BLIZNYUK, N. K., All-Union Scientific Research Institute of Phytopathology, Moscow, Ministry of Agriculture USSR

"Anomalous Reaction of Arylthioethanols With Phosphorus Trichloride"

Abstract: The reaction of arylthioethanols with phosphorus trichloride in the presence of hydrogen chloride acceptors gives bis(arylthio)ethanes instead of the expected phosphorous acid esters. The same products are formed in the interaction of arylthioethanols with benzyldichlorophosphine, hexaethyl triamidophosphite and phosphorous acid. The structure of the resultant bis(arylthio)ethanes is confirmed by PMR spectra and counter synthesis.

1/1

1/2   008   UNCLASSIFIED   PROCESSING DATE--30OCT70
TITLE--SYNTHESIS AND SOME PROPERTIES OF ACYLVINYLETHYLENIMINES -U-

AUTHOR-(04)-SAVENKOV, N.F., KHOKHLOV, P.S., ZHEMCHUZHIN, S.G., LAPITSKIY,
   G.A.
COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(4), 707-10

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CONDENSATION REACTION, ETHYLENE, IMINE, ORGANIC SYNTHESIS,
   THIOL, CHLORINATED ORGANIC COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1960   STEP NO--UR/0366/70/006/004/0707/0710

CIRC ACCESSICN NO--AP0125549
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0125549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF RCOCH:CHCL
WITH R PRIME1 H GAVE RCOCH:CHR PRIME1 (I) (R IS ME, PH, OR 4,CLC SUB6 H
SUB4, R PRIME1 IS ETHYLENIMINO).   THE ACTION OF HCL ON I (R EQUALS ME)
GAVE ACCH:CHNHCH SUB2 CH SUB2 CL. SIMILARLY, I REACTED WITH R PRIME2 SH
OR R PRIME3 COSH TO GIVE, RESP., RCOCH:CHNHCH SUB2 CH SUB2 SR PRIME2
(II) OR RCOCH:CHNHCH SUB2 CH SUB2 SCOR PRIME3 (III) (COMPD. TYPE, R, AND
R PRIME2 OR R PRIME3 GIVEN):   II, ME, PH; II, ME, 4,CLC SUB6 H SUB4;
II, ME, C SUB6 CL SUB5; II, PH, 2,5,CL SUB2 C SUB6 H SUB3; II, PH, C
SUB6 CL SUB5; III, ME, ME; III, PH, PH; III, ME, 2,4,CL SUB2 C SUB6 H
SUB3 OCH SUB2; AND III, PH, 2,4,CL SUB2 C SUB6 H SUB3 OCH SUB2.
FACILITY: MOSK. INST. TONKOI KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW,
USSR.

UNCLASSIFIED

1/2   011   UNCLASSIFIED   PROCESSING DATE--27NOV70
TITLE--ANOMALOUS REACTION OF ARYLTHIOETHANOLS WITH PHORPHORUS TRICHLORIDE
-U-
AUTHOR-(05)-KHOKHLOV, P.S., KALUTSKIY, L.A., NAZAROV, T.A., MOCHALKIN,
A.I., BLIZNYUK, N.K.
COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 795-7

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ETHANOL, PHOSPHORUS CHLORIDE, ORGANIC SULFUR COMPOUND, ARYL
RADICAL, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1502   STEP NO--UR/0079/70/040/004/0795/0797

CIRC ACCESSION NO--AP0135163
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0135163
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDING 0.01 MOLE PCL SUB3 TO 0.03
MOLE PHSCH SUB2 CH SUB2 OH AND 0.05 MOLE ETHYLENE OXIDE IN MEPH AT
0-5DEGREES, HOLDING AT 10-15DEGREES UNTIL REACTIVE CL HAD BEEN CONSUMED,
AND EVACUATING THE MIXT. SEVERAL HR AT 100DEGREES GAVE AFTER ADDN. OF
0.01 MOLE H SUB2 O AND HEATING TO 100DEGREES, A LITTLE PHSCH SUB2 CH
SUB2 OH, B SUB2 110-17DEGREES, AND 80.9PERCENT (PHSCH SUB2) SUB2, M.
61-2DEGREES. SIMILARLY WERE PREPD. THE ANALOGS WITH ARYL GROUPS SHOWN:
P-MEOC SUB6 H SUB4 (I) M. 102-3DEGREES; O,CLC SUB6 H SUB4, M.
75-6DEGREES; AND P,CLC SUB6 H SUB4, M. 87-8DEGREES. IF PCL SUB3 IS
REPLACED BY PHCH SUB2 PCL SUB2 THE 1ST REACTIONGAVE THE SAME PRODUCT BUT
IN 61PERCENT YIELD; REPLACING ETHYLENE OXIDE BY ET SUB3 N GAVE A
68PERCENT YIELD OF THE SAME PRODUCT; IF HCL ACCEPTOR IS OMITTED, THE
REACTION WITH PCL SUB3 GIVES MAINLY CLCH SUB2 CH SUB2 SPH. HEATING 3
MOLES PHSCH SUB2 CH SUB2 OH WITH 1 MOLE (ET SUB2 N) SUB3 P AT
120-30DEGREES WITH DISTN. OF ET SUB2 NH GAVE AFTER FINIAL TREATMENT WITH
1 MOLE H SUB2 O AT 90-100DEGREES 2 HR, 77PERCENT (PHSCH SUB2) SUB2.
HEATING 0.06 MOLE PHSCH SUB2 CH SUB2 OH WITH 0.03 MOLE H SUB3 PO SUB3
AND A TRACE H SUB2 SO SUB4 IN XYLENE 3 HR WITH SEPN. OF H SUB2 O GAVE
68PERCENT (PHSCH SUB2) SUB2.   REACTION OF P,MEOC SUB6 H SUB4 SK WITH
(BRCH SUB2) SUB2 IN ETOH GAVE 83PERCENT I; ANALOGS WERE PREPD. SIMILARLY
FOR STRUCTURE PROFF.   FACILITY: VSES. NAUCH.-ISSLED. INST.
FITOPATOL., USSR.

UNCLASSIFIED

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USSR   UDC 632.95

KRUZOVA, S. I., SVISTUNOVA, N. S., GUS'KOVA, L. A., FADEYEV, YU. N., SAVENKOV,
N. F., KHOKHLOV, P. S., and BLYUZNYUK, N. K.

A Nematocide

USSR Author's Certificate No 296546, filed 17 Nov 69, published 27 Sept 71
(from Referativnyy Zhurnal -- Khimiya, No 10(II), 1972, Abstract No 10I528
by T. A. Belyayeva)

Translation: The nematocidal activity is determined for substances of the
general formula $R(OCOH_2CHCl_2)_n$ (I) (R= phenyl or arylene n=1-2), which are
obtained by the reaction of halides of aromatic acids with vinyl chloride in
the presence of $AlCl_3$. I is used in concentration 0.1, 0.01 and 0.001%.

Some 30-50 mg I is dissolved in a 2-5-fold volume of acetone and mixed with
30-50 mg CP-7. The solution obtained is mixed with water. I ($R=C_6H_4$,
n=2) (Ia) and I (R= p -$C_6H_4NO_2$, n=1) (Ib) causes 100% distruction of gallic
nematode. I (R and n given): p -BrC_6H_4; 1 (Ic); m-C_6H_4-NO_2, 1; m-C_6H_4Cl,
1, Ia, b cause 100% destruction of Aphelenchoides besseyi, Aphelenchus avenae,
and Ia and Ic (concentration 0.1 and 0.01%) cause a 100% destruction of
Ditylenchus allii.
1/1

USSR

UDC: 547.495.1'26.118.07

BLIZNYUK, N. K., STREL'TSOV, R. V., KIRILINA, L. E., ZHEMCHUZHIN, S. G., KHOKHLOV, P. S., All-Union Scientific Research Institute of Phytopathology

"A Method of Producing Organophosphorus Compounds"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 260475, Class 12, filed 15 May 69, p 26

Abstract: This Author's Certificate introduces: 1. A method of producing organophosphorus compounds of the general formula

$$\begin{array}{cc} X & O \\ R \diagdown \| & \| \\ \diagup \text{PSCH}_2\text{CH}_2\text{NHCR''} \\ R' \end{array}$$
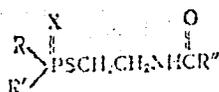
where X is oxygen or sulfur, R is an alkyl, aryl, aralkyl, alkoxyl, alkylthio, aryloxy or arylthio, R' is an alkoxy, alkylthio, aryloxy, or arylthio, benzyloxy, benzylthio or amino group, and R'' is an alkyl, alkoxyl or amino group. As a distinguishing feature of the patent, the yield of the goal products is increased by interacting amido- or ether salts of phosphorus acids of the general formula

$$\begin{array}{c} X \\ R \diagdown \| \\ \diagup \text{PSM} \\ R' \end{array}$$

1/2

USSR

BLIZNYUK, N. K., et al, Otkrytiya. Izobreteniya. Promyshlennye Obraztsy. Tovarnye Znaki, No 28, 1970, Soviet Patent No 28045, Class 12, Filed 15 May 69, p 26

where X, R and R' have the meanings listed above, and M is an alkali metal or substituted ammonium, with acid chlorides of the general formula

$$\overset{O}{\underset{\|}{R''CCl}}$$

where R" has the meanings listed above, in an inert organic solvent followed by ethylenimine treatment of the reaction mass and isolation of the goal product by conventional methods. 2. A modification of this method in which the process is carried out at a temperature of 20-80°C.

2/2

KHOKHLOV, R. V.

Physics

"ON INTERACTION BETWEEN RADIATION AND QUANTUM SYSTEM WITH
RELAXING SUBLEVELS"

T.M. I'linova, R.V. Khokhlov

/Department of Physics, Moscow State University, Moscow 117234,
Leninskie Gory, USSR/

The problem of interaction between radiation and quantum
systems with relaxing sublevels is of general interest with re-
spect of picosecond pulses generation in dye-lasers, Q-switch
operation in CO_2 lasers etc.

The paper is devoted to theoretical study of pulse propa-
gation in laser amplifying medium under relaxation between ex-
cited or ground state sublevels. We investigated the steady-
state pulse form and analysed the character of sublevels popu-
lations change. The parameters which describe the inertia of
system as regards the spectral hole burning were found.

The dynamics of dip formation and its disintegration in the
radiation spectrum are considered also. The redistribution of
the moving molecules energy because of collisions and relaxation
among sublevels are taken into account. The character of the ve-
locity distribution change of laser levels populations was ana-
lysed.

Some effects observed at the various experiments, such as
spectral hole burning, frequency tuning of generation pulses in
dye-lasers etc., are discussed.

USSR

DZHIDZHOYEV, M. S., KOROLEV, V. V., MARKOV, V. N., PLATONENKO, V. G., and
KHOKHLOV, R. V., Physics Department, Moscow State University imeni M. V.
Lomonosov

"Detonation Gas-Dynamic Laser"

Abstract: This article describes a new type of gas-dynamic laser in which the
solid material is detonated to obtain the initial high-temperature gas mixture.
Previously the high-temperature mixture was obtained in the gas-dynamic
lasers by the passage of shock waves in the gas media and by heating with an
electric arc or by igniting the initial gases. The use of detonation of the
solid material permits varying the initial pressure and temperature of the
gas mixture in a wide range and also substantially simplifying and reducing
the dimensions of the experimental set-up. Figure 1 shows a schematic of the
experimental set-up; Figure 2 is an oscillogram of the impulse of generation,
500 μsec/unit; and Figure 3 shows the output energy. The authors state that by
using liquid nitrogen in the described set-up, they can experimentally place
the initial material in the reaction volume. By the use of other materials
1/2

USSR

DZHIDZHOYEV, M. S., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoretiches-koy Fiziki, Vol 14, No 2, 20 Jul 71, pp 73-76

the experiments can be theoretically conducted at room temperatures. The article contains 3 figures and 10 bibliographic entries.

2/2

KHOKHLOV, R. V.

Physics

CO-CO2 fission

HTT 70 005-321/0357~.71
Do1 Dec 71. Feb 72

"DETONATION GASDYNAMIC LASER"

Jijoev M.S., Korolev V.V., Khokhlov R.V., Markov V.N.,

Pimenov M.I., Platonenko V.T.

/Department of Physics, Moscow State University, Moscow 117234,

Leninskie Gory, USSR/

The results obtained with a pulsed detonation-driven gas-
dynamic laser are presented here. In this laser the detonation
of condensed explosive is used to form a high-pressure heated
gas mixture. The mixture is then expanded rapidly through a
slit nozzle, thereby producing population inversion. Detonating
charges are created by freezing of initial gas mixtures under
the liquid nitrogen's temperature on the wall of high pressure
chamber.
The use of different initial mixtures composed of HN_3, CO_2, Cl_2,
N_2O, Xe and others for the production of pulsed laser power is
described. As the detonation takes place inside the exhausted
volume, the device is rather simple and compact.

Rpt 21 Apr 70

USSR, RSFSR

In the article "Heights of Creativity"
YELYUTIN, V. P., Dep Chmn, Committee on Lenin and State Prizes USSR in Fields
of Science and Engineering, discusses works which were awarded Lenin Prizes
in 1970, including in space research ("Venera-4-5-6," "Meteor" system, and
"Soyuz" spacecraft), physics (for activation of proton-synchrotron, physics of
elementary particles, and instrument for microworld studies), and research in
the field of optics of powerful radiations, with lasers used as the source, by
a group of physicists at Moscow University under the leadership of
KHOKHLOV, R.; and
AKHMANOV, S.,
  which have helped to revolutionize laser optics, prospects in measurement
  techniques, and spectroscopy.
DENISYUK, Yu., Leningrad Physicist,
  was awarded the Lenin Prize for a cycle of works on holography with recording
  in a three-dimensional medium, with the laser used as a light source, the
  results of which may be applied in scientific research, the cinema, and TV.
  There is also discussion of awards for works in pediatrics, discoveries of
  oil and gas deposits in W. Siberia, industrial development of Yakut diamond
  deposits, creation of a 17-volume dictionary of the Russian literary language,
  creation of the IL-62 intercontinental passenger plane, and designing and
  construction of the Ostankina TV tower.

(4)

Izvestiya, 21 Apr 70, p 3, cols 1-4

USSR

IL'INSKIY, Yu. A., KHOKHLOV, R. V.

"Theory of Stimulated Raman Scattering in Rotational Transitions"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 64, No 4,
1973, pp 1216-1221

Abstract: A study was made of the theory of stimulated Raman scattering in
purely rotational transition considering intermediate oscillatory and purely
rotational transitions. The contribution to the amplification as a result
of these transitions can be primary when using pumping by a carbon dioxide
gas laser with a wave length of 10.6 microns. Under these conditions the
dependence on polarization will be different (for the $J_2 = J_1 + 1$ transition)
than in the case of purely electron polarizability.

First, an approach to describing the rotational transition, stimulated Raman
scattering is discussed which is based on the classical ideas, and then the
consistent quantum theory is constructed considering the intermediate purely
rotational levels and the possibilities of resonance in the oscillatory-
rotational transitions. These cases can be realized when the stimulated
Raman scattering is excited by radiation in the middle and far infrared bands.
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USSR

YANAYT, Yu. A., ABAKUMOV, G. A., KROMSKIY, G. I., SIMONOV, A. P., FADEYEV, V. V., and KHOKHLOV, R. V., Moscow State University imeni M. V. Lomonosov and The Physico-Chemical Institute imeni L. Ya. Karpov

"Generation in the Ultraviolet Band With Frequency Tuning in a Paraterphenyl Solution Excited by a Flash Bulb"

Abstract: This article discusses generation with fine tuning in the wavelength of 330-350 nm in a paraterphenyl solution excited by a flash bulb. One of the real problems in quantum electronics is the design of a frequency-tunable laser in the ultraviolet band of the spectrum. The authors show the broad possibilities here of using organic compounds as the active media especially paraterphenyl, which is found to be the best compound for producing tunable lasers in the ultraviolet band pumped by flash bulbs. The experimental procedures are discussed and the results are given in the form of an oscillogram and a table, which gives the threshold values and the limits of frequency tuning. The low values of the threshold energies for exciting the solutions shown in this table indicate that this pumping system is also effective for exciting a large number of other organic compounds. 1 figure, 1 table, bibliography of 3 titles.
1/1

USSR   UDC: 534.22.0942

PUSHKINA, N. I., and Corresponding Member USSR Academy of Sciences
KHOKHLOV, R. V.

"Forced Combination of Sonic Dispersion in Piezoelectrics"

Abstract: The possibility of experimentally investigating the forced dispersion of sound in electric field oscillations in piezoelectrics is theoretically investigated. This type of dispersion is of the class of so-called acoustic combined phenomena, nonlinear interactions of acoustical and other types of wave. Examples of such interactions are sound dispersion in temperature waves, in ferromagnetics, and in eddy waves. The type of dispersion considered in this paper is connected with the term $f_{ijklm} E_i S_{jk} S_{lm}$ in the following expansion of free piezoelectric energy:

$$F = C_{ijkl} S_{ij} S_{kl} + C_{ijklmn} S_{ij} S_{kl} S_{mn} + \varepsilon_{ij} E_i E_j + \varepsilon_{ijk} E_i E_j E_k +$$
$$e_{ijk} E_i S_{jk} + d_{ijkl} E_i E_j S_{kl} + f_{ijklm} E_i S_{ij} S_{lm} + \cdots$$

1/2

USSR

PUSHKINA, N. I. et al, Doklady Akademii Nauk SSSR, vol 203, 1972, pp 318-319

Here, S_{ij} are deformation tensors, the E_i are electric field components, the f_{ijklm} are material constants connected with the electroacoustical effect -- the change in the speed of sound as a function of the applied electric field.

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- 44 -

USSR

KLYSHKO, D. N., NAZAROVA, N. I., and KHOKHLOV, R. V.

"Parametric Light Scattering in the Field of an Ultrasonic Wave"

Abstract: This article considers another possible method for compensating the dispersion of light in cubic crystals without inversion centers by using auxiliary ultrasonic pumping of a particular frequency and wave vector satisfying the condition of quadruple wave synchronism. Besides the pumping wave, the other three waves are those involved in the reaction $\omega_3 \to \omega_1 + \omega_2$, where ω_3 is the frequency of the incident light on a crystal, and ω_2 and ω_1 are the frequencies of the scattered waves. Experiments involving these waves provide useful information concerning the character-istics of crystals asymmetrical with respect to their center, par-ticularly the dispersion of the refractive indices in the infrared region of the spectrum. From their computations, the authors con-clude that it is possible to observe parametric light scattering in cubic piezoelectric crystals through the use of the auxiliary ultrasonic pumping. They are connected with the M. V. Lomonosov Moscow State University.
1/1

- 41 -

PUSHKINA, N. I., and KHOKHLOV, R. V., Physics Faculty, Moscow State University

"Scattering of Hypersound by Spin Waves in Ferromagnets"

Abstract: The article deals with a theoretical consideration of sound scattering by coherent spin waves in ferromagnets. The scattering is mainly due to the phenomenon of magnetostriction and the so-called internal effect. The case of a cubic ferromagnet (which is of practical interest) is considered. An expression is obtained for a scattered sound field in a wave zone in the form of the vector sum of longitudinal and transverse waves.

1/1

1/2   024   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--DISPERSION OF SOUND ON SPIN WAVES -U-

AUTHOR-(02)-PUSHKINA, N.I., KHOKHLOV, R.V.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(5), 1078-9

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SOUND, SPIN WAVE, MAGNETOSTRICTION, GARNET

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0713   STEP NO--UR/0020/70/190/005/1078/1079

CIRC ACCESSION NO--AT0121372
                         UNCLASSIFIED

CIRC ACCESSION NO--AT0121372
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MATH. THE COMBINED DISPERSION OF
   SOUND ON SPIN WAVES WAS STUDIED, THE MAGNETOSTRICTION AND INTERNAL
   EFFECTS BEING TAKEN INTO ACCOUNT FOR THE CASE OF A CUBIC FERROMAGNET AND
   AN EXPRESSION WAS GIVEN FOR THE RATIO, GAMMA, OF THE SOUND OUTPUT,
   DISPERSED IN THE SOLID ANGLE D THETA FOR THE FREQUENCY RANGE D OMEGA TO
   THE INTENSITY OF THE INCIDENT SOUND. THE CONTRIBUTION OF THE INTERNAL
   EFFECT TO GAMMA WAS EVALUATED FOR A Y FERRITE GARNET. THE INTENSITY OF
   THE DISPERSED SOUND IS DETD. BY THE INTERNAL EFFECT CONSTS.
   FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

TITLE--ON STIMULATED RAMAN SCATTERING OF SOUND IN FERROMAGNETIC SUBSTANCES
-U-

AUTHOR-(02)-PUSHKINA, N.L., KHOKHLOV, R.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
  NR 4, PP 1475-1477
DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ACOUSTIC SCATTERING, FERROMAGNETIC MATERIAL, RAMAN SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1500   STEP NO--UR/0056/70/058/004/1475/1477

CIRC ACCESSION NO--AP0106256
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0106256
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STIMULATED COMBINATIONAL
  SCATTERING OF SOUND IN FERROMAGNETIC SUBSTANCES IS CONSIDERED.   AN
  EXPRESSION IS OBTAINED FOR THE STIMULATED SCATTERING THRESHOLD AND THE
  POSSIBILITY OF OBSERVING THE SCATTERING IS DISCUSSED.   FACILITY:
  MOSKOVSKIY GOSUDARSTVENNYY UNIVERSITET IM. M. V. LOMONOSOVA.

UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--20NOV70

TITLE--ON CONTROL OF CHEMICAL REACTIONS BY RESONANCE PHOTO ACTION ON THE MOLECULES -U-

AUTHOR (03)-ISAKOV-ARTAMONOVA, N.D., PLATONENKO, V., KHOKHLOV, R.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 6, PP 2195-2201

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CHEMICAL REACTION, CHEMICAL REACTION KINETICS, CHEMICAL REACTION RATE, CHEMICAL REACTION MECHANISM, IR LASER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/1694   STEP NO--UR/0056/70/058/006/2195/2201

CIRC ACCESSION NO--AP0120406
                    UNCLASSIFIED

CIRC ACCESSION NO--AP0120406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY IS CONSIDERED OF
  CARRYING OUT CHEMICAL REACTIONS IN A GIVEN DIRECTION BY RESONANCE
  APPLICATION OF INFRARED LASER RADIATION TO A CHOSEN VIBRATIONAL DEGREE
  OF FREEDOM OF THE MOLECULAR SYSTEM. SUCH AN ACTION LEADS TO WEAKENING
  OF THE CHOSEN BOND AND TO A SHARP GROWTH OF THE RATE OF REACTIONS
  INVOLVING BREAKING OF THE BOND. IT IS SHOWN THAT IN ORDER TO REALIZE
  THIS POSSIBILITY RADIATION SOURCES WITH REAL PARAMETERS ARE REQUIRED.
    FACILITY: MOSKOVSKIY GOS. UNIV. IM. M. V. LOMONOSOVA.

UNCLASSIFIED

USSR

KHOKHLOV, V. A., Izv. SO AN SSSR, Ser. Tekhn. Nauk, vyp. 3, Oct 71, pp 42-48

units, various types of terrain and forest zones, as well as for investigating the interaction between wind flow and industrial and power plants where pollutants may be thrown into the atmosphere.

2/2

USSR

UDC: 518.5:681.3.06

KHOKHLOV, V. A., LAVROV, V. A.

"Approximating a Function of Two Variables by a Power Polynomial"

V sb. Mashiny dlya inzh. raschetov (Machines for Engineering Calculations--
collection of works), vyp. 4, Kiev, 1971, pp 40-46 (from RZh-Kibernetika,
No 12, Dec 71, Abstract No 12V972)

Translation: A program is compiled for determining the coefficients of ·
a polynomial of n-th degree

$$F_n(XY) = \sum_{j=0}^{n} \sum_{i=0}^{j} X^{j-i} Y^i B_{j-i,i}.$$

which approximates a function of two variables $f(x,y)$ given by a table
of values. In the case of analytical representation of the function,
the program must be supplemented in the initial part by a subprogram for
determining the necessary group of values of the function.

1/1

1/2   009   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--ELECTRICAL CONDUCTIVITY OF FUSED SALT SYSTEMS OF CESIUM CHLORIDE
   AND LANTHANUM CHLORIDE AND LITHIUM CHLORIDE AND LANTHANUM CHLORIDE -U-
AUTHOR-(02)-SMIRNOV, M.V., KHOKHLOV, V.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 302-5

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MOLTEN CHLORIDE, ELECTRICAL CONDUCTIVITY MEASUREMENT, CHEMICAL
   COMPOSITION, LITHIUM CHLORIDE, LANTHANUM CHLORIDE, CESIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0847   STEP NO--UR/0080/70/043/002/0302/0305

CIRC ACCESSION NO--AP0104283
                    UNCLASSIFIED

UNCLASSIFIED   PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0104283

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELEC. CONDS. OF THESE FUSED SALT SYSTEMS WERE STUDIED AT 800-950DEGREES OVER A WIDE CONCN. RANGE. THE FUSED LACL SUB3 WAS ALSO MEASURED AT 890-1005DEGREES. THE COND. IS A LINEAR FUNCTION OF CONCN. THE MOLAR COND. SHOWS NEG. DEVIATIONS FROM ADDITIVITY; THERE IS A DEEP MIN. IN THE CSCL-LACL SUB3 SYSTEM, WHILE THIS EFFECT IS ABSENT IN THE LICL-LACL SUB3 SYSTEM. THE MAX. DEVIATIONS ARE OBSERVED FOR 30-40 MOLE PERCENT LACL SUB3. THE DEVIATIONS ARE LARGER IN THE SYSTEM CONTG. LESS MOBILE CS PRIME POSITIVE ION. THE CONCN. DEPENDENCE OF THE ACTIVATION ENERGIES HAS THE SAME CHARACTER IN BOTH SYSTEMS. THE MECHANISMS OF THE PROCESSES INVOLVED ARE DISCUSSED IN DETAIL.

UNCLASSIFIED

USSR

KOSEVICH, A. M., and KHOKHLOV, V. I., Khar'kov State University imeni A. M. Gor'kiy

"Rayleigh Waves as the Limiting Case of Oscillations of a Crystal With a Plane Defect"

Abstract: The work of I. M. Lifshits and L. N. Rozentsveyg, who showed that in study-ing the dynamics of a crystal lattice the free surface of a crystal can be considered as a certain local perturbation in an ideal unbounded crystal, is extended. The authors study an analogous situation in the dynamics of a continuous elastic medium: namely, the possibility of a quantitative description of the free surface of an elas-tic half-space as a specific local perturbation of simple form in an unbounded elastic medium. The authors previously studied long-wave oscillations of an elastic medium localized close to a plane defect. An isotropic medium with Lamé coefficients λ and μ was considered in which there was a plane-parallel layer of elastic material with different elastic moduli. If the z-axis is perpendicular to the plane of the defect, it was shown that the elastic moduli of this layer of the medium λ' and μ' can be written in the form

$$\lambda' = \lambda + Lh\delta(z); \qquad \mu' = \mu + Mh\delta(z), \qquad (1)$$

1/2

where $\delta(z)$ is the delta-function, h is the thickness of the plane defect, and L and M are the characteristics of its elastic properties. If κ is the component of the wave vector of the surface wave along the plane of the defect, (1) has meaning for $h\kappa < 1$. The relationships (1) putting the local perturbations into the theory of elasticity can be used to study the long-wave oscillations at a free surface of an elastic half-space if the following substitutions are made:

$$L = -\lambda, \qquad M = -\mu,$$

and if one restricts the possible values of k_z to the limiting value k_0 in the Fourier transformation with respect to the z-axis to ensure convergence of all integrals this will ensure the condition

$$hk_0 = \pi;$$

i.e., introduce a minimum length for the elastic wave equal to $2h$. The validity of this is illustrated by deriving a law for the dispersion of Rayleigh waves from the law for the dispersion of elastic oscillations localized in the plane of the defect.

2/2

Coatings

3

USSR   UDC 669.14:621.746.328

BUDNIK, N. M., LYAKH, Yu. A., MESHCHERYAKOV, V. M., TROITSKIY, V. K., BOGATIKOV,
Ye. N., URINSON, A. I., and KHOKHLOV, V. M., Taganrog Metallurgical Plant;
Rostov-on-Don Institute of Agricultural Machinery

"Increasing the Resistance of the Lining of Steel-Teeming Ladles"

Moscow, Metallurg, No 8, Aug 70, pp 31-33

Abstract: The resistance of the lining of steel-teeming ladles may be increased
by heat-resistant protective coatings applied by the plasma method. The powder
to be sprayed passes through a high-temperature zone (10,000-20,000°C) and
strikes the surface in a plastic state. The powder particles, possessing high
kinetic energy, sinter and form a homogeneous high-quality dense coating of
adequate thickness. In most cases it is necessary to heat the surface.
Aluminum oxide with a particle size of 80-100 microns was used as the pro-
tective coating. The technology of the plasma spraying of Al_2O_3 on chamotte
brick is described and the technological parameters were determined. Maximum
cohesive strength with the brick was obtained at a 0.4-0.6 mm coating thickness.
The aluminum oxide coating applied by the plasma method appears to be double
the lining's resistance of steel-teeming ladles under service conditions. The
yearly savings per 50-ton ladle at the Taganrog Metallurgical Plant amount to
2,650 rubles.
1/1

USSR

UDC: 621.391.8

GORYAINOV, V. T., SMIRNOV, V. A., and KHOKHLOV, V. N.

"Immunity to Correlated Noise in Binary Signal Reception"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1077-1087

Abstract: The assumption is made that a combination of useful signal and noise is input to a receiver, the noise being stationary, normal, and quasiharmonic, with an average value of zero and specified dispersion and correlation function. A simple algorithm for optimizing the processing of the input signal is obtained, and the structure of the optimal receiver for this signal is defined. The block diagram corresponding to this structure is reproduced. Formulas are developed for calculating the probability of erratic reception of binary signals, and some particular cases are examined. A comparison is made between an optimal receiver for signals in a background of correlated noise and an optimal receiver for white noise when the signal is in a correlated noise background.

1/1

USSR

BRIZHENYUK, N. I., POZNANSKIY, V. I., RYBAKOV, V. S., SELEZNEV, Yu. V.,
KHOKHLOV, Yu. G.

"On the Problem of Determining the Rate of Combustion of Fuel in Diesels"

Translation: A formula for determining the rate of combustion of fuel in
diesels that was proposed by one of the authors of the article is analyzed.
It is shown that one of the factors determining the rate of combustion is the
rate of evaporation of the fuel, which depends in turn on the thermodynamic
parameters of the medium, the surface and the volume of the fuel jet. The rate
of heat release was investigated as a function of the basic physicochemical
parameters. Yu. F. Dityakin.

1/1

1/2   026   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--THE MENINGEAL SYNDROME IN DISORDERS OF CEREBRAL CIRCULATION -U-

AUTHOR-(03)-MARTYNOV, YU.S., YESIPOVA, I.K., KHOKLOV, YU.K.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
VOL 70, NR 5, PP 702-708
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBRUM, PAIN, BLOOD CIRCULATION, HEMORRHAGE, THROMBOSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0227   STEP NO--UR/0246/70/070/005/0702/0708

CIRC ACCESSION NO--AP0117481
                           UNCLASSIFIED

CIRC ACCESSION NO--AP0117481
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS STUDIED CLINICALLY THE
FEATURES OF 22 MENINGEAL SYMPTOMS (PAIN AND TONIC) IN 513 CASES WITH
DISORDERS OF CEREBRAL CIRCTHE AGE GROUP FROM 16-89 YEARS. AMONG THESE
CASES 317 HAD ISCHEMIC SOFTENINGS, 189, HEMORRHAGES AND 7, STROKES OF A
COMBINED CHARACTER. THE CHARACTER OF THE PROCESS IN 96 CASES WAS
CONFIRMED ANATOMICALLY IN THE REMAINING CASES BY A CLINICAL DEVELOPMENT
AND LUMBAR PUNCTURE. THE MENINGEAL SYNDROME IN HERORRHAGIC STROKES WAS
SEEN APPROXIMATELY IN 70PERCENT OF THE PATIENTS, IN THROMBOEMBOLIZATION,
IN 50PERCENT, IN NONTHROMBOTIC SOFTENINGS, 30PERCENT, IN THROMBOSIS, IN
15PERCENT. IN ALL FORMS OF STROKES THE MOST FREQUENT SIGNS WERE KERNIGS
SYMPTOM, OCCIPITAL RIGIDITY, THE LOWER SYMPTON OF BRUDZINSKI, THE
MANDIBULAR SYSMPTOM OF BEKHTEREV, PAINFUL POINTS OF KEHRER, MENDELS
SYMPTOM, PHOTOPHOBIA. THE ORDER OF APPEARANCE OF MENINGEAL SYMPTOMS IS
THE SAME FOR THROMBOEMBOLIZATION, NONTHROMBOTIC SOFTENINGS AND
THROMBOSIS, AS WELL AS FOR HEMORRHAGES. THE FIRST TO APPEAR WAS THE
OCCIPITAL MUSCLE RIGIDURY, THE MANDIBULAR BEKHTEREV SYMPTOM, KERNIGS
SYMPTOM AND THE LOWER BRUDZINSKI'S SYMPTOM. IN HEMORRHAGES, ESPECIALLY
SUBARACHNOIDAL AND SUBARACHNOIDAL, PARENCHYMATOUS, THE MENINGEAL
SYMPTOMS APPEAR EARLIER AND ARE MORE EXPRESSED.   FACILITY:
KAFEDRY NERVNYKH BOLEZNEY I PATOLOGICHESKOY MORFOLOGII UNIVERSITETA
DRUZHBY NARODOV IM. PATRISA LUMUMBY, MOSCOW.

UNCLASSIFIED

Acc. Nr: AP0043935   KHOKHLOVA Ref. Code: A. I. UR 0016

MORPHOLOGICAL CHANGES IN GUINEA PIGS
IN ENTERAL IMMUNIZATION WITH PLAGUE EV VACCINE

V. I. Ternovoy, S. I. Zaplatina, A. I. Khokhlova, G. F. Rozhkova

The authors studied the structural changes in the organism of guinea pigs enterally im-
munized with plague EV vaccine in a dose of 250 million and 20 milliard microbial cells.
Immunomorphological changes in the form of proliferation of lymphoidal and reticular tis-
sues with formation of epithelioido-cellular granulomas, macrophagic reaction and hyper-
plasia of pyroninophilic elements developed in the mesenteric lymph nodes. Changes in the
spleen and remote lymph nodes were insignificant. Productive mesenterial lymphadenitis
with granulomatosis resolved by the 18th day from the time of immunization of guinea pigs,
even when massive doses were used.

1/1

REEL/FRAME
19770361

6 PI

USSR   UDC: 616.981.452-092.9-085.371-091

TERNOVOY, V.I., ZAPLATINA, S.I., KHOKHLOVA, A.I., and ROZHKOVA, G.F., Rostov-na-Donu Scientific Research Antiplague Institute

"Morphological Shifts in Guinea Pigs Following Enteral Immunization With EV Plague Vaccine"

Abstract: Enteral inoculation of guinea pigs with EV plague vaccine (250 million and 20 billion microbial cells) stimulated the proliferation of reticuloendothelial elements in the mesenteric lymph nodes, with the formation of epithelial cell granulomas, a distinct macrophage reaction, and the appearance of numerous pyroninophilic cells. These shifts were less pronounced in the spleen and absent in the remote lymph nodes. Productive lymphadenitis and formation of microscopic granulomas (with central necrosis) developed in the acute stage of the vaccinal process, especially after the 20 billion cell dose was used, but disappeared within 18 days of immunization.

1/1

KHOKHLOVA, G.K.

biophysics

UNCLASSIFIED

Name: Institute of Biophysics, Pushchino

SECTION III   SO: Selected Abstract ...
Faculties
PCS-59
SEPT 71

Description:

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 32 new personalities with the institute. These personalities, the subjects of the articles, and the dates are given below:

All- biophysics/physiology
phosphorylation

Aliyev, S. A.	phosphorylation	1972 (34)
Apikayeva, G. F.	radiation effect	1970 (35)
Aripova, D. F.	radiation effect	1971 (36)
Azhipa, Ya. I.	hypoxia	1969 (37)
Bregadze, I. F.	radiation effect	1970 (38)
Busel, Ye. P.	luminescence	1970 (39)
Dmitriyeva, T. I.	radiation effect	1970 (39)
...triyeva, V. A.	blood plasma	1969 (40)
Donareva, O. P.	radiation effect	1970 (39)
Dubrov, A. P.	biochemical analysis	1971 (41)
Gabelova, N. A.	muscle physiology	1971 (42)
Ganausi, Ye. E.	radiation effect	1970 (35)
Ivkova, M. N.	serum albumin	1971 (43)
Kasatkin, V. S.	phosphorylation	1971 (34)
Khokhlova, G. K.	muscle physiology	1971 (44)
Kislov, A. N.	salivary gland	1970 (45)
Klyagina, V. P.	oligonucleotide	1970 (46)
Korol, B. A.	radiation effect	1971 (44)
Kosheleva, G. N.	biochemical analysis	1971 (41)

UNCLASSIFIED

6

UNCLASSIFIED

Kuzmina, S. V.	tissue culture	1970 (47)
Markovich, D. S.	lactate dehydrogenase	1971 (48)
Medvedeva, I. F.	radiation effect	1971 (44)
Peshkova, L. V.	phosphorylation	1971 (49)
Pronevich, L. A.	antibiotic	1970 (50)
Rodionova, M. A.	mitochondrion	1971 (51)
Shchipakin, V. N.	phosphorylation	1971 (49)
Skobeyev, Ye. M.	radiation/vibration	1970 (52)
Buyvolova...?	radiation effect	1970 (35)
Tsvetkov, V. D.	blood plasma	1969 (40)
Usrikhina, M. V.	lactate dehydrogenase	1971 (48)
Vilenchik, M. M.	radiation effect	1970 (53)
Zamyatnin, A. A.	muscle physiology	1971 (42)

Dubrov and Kosheleva (41) are associated with the Laboratory of Cell Biophysics at the Institute. Reference 52 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (54-58) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 55 associates the authors of the article, L. V. Slozhenikina, V. L. Migushina, and A. N. Kuzin, with the Department of Radiobiology at the institute.

USSR

ZHARKOV, S. A., VASIL'YEV, I. M., PEREPECHAYEV, V. V., SIDORENKO, A. V., and KHOKHLOVA, M. M., Leningrad Institute of Aircraft Instrument Building

"A Wide-Band Instrument for Converting the Current of Semiconductor Nuclear Emission Detectors to a Pulse Train"

Abstract: The authors describe a wide-band circuit for converting the current of semiconductor detectors of nuclear emission to a pulse train. The circuit is based on the equivalent of a four-layer diode. Stabilization of the bias on the control electrode made it possible to extend the dynamic range of data conversion by a factor of approximately 20, as well as to reduce the number of circuit elements and the required electrical energy. The device is simple, low in cost, has small overall dimensions and low weight (volume of no more than 100 cc, weight less than 50 g), and is highly shock resistant. The small number of elements ensures high circuit reliability, and enables ac-commodation in a hermetically sealed casing along with the power supply. The power for the entire converter can be supplied by low-voltage batteries (12-16 V). A distinguishing feature of the device is that the electrical energy requirement is proportional to the emission dose rate. In the absence
1/2

USSR

ZHARKOV, S. A., et al., Pribory i Tekhnika Eksperimenta, No 4, Jul/Aug 71,
pp 101-103

of radiation, the circuit takes practically no electrical energy. At a dose
rate of 10^4 r/hr, the power consumption is 0.08 W, while the corresponding
figure for 1 r/hr is 0.005 W -- 1.5-2 orders of magnitude less than the most
economic conventional pickups. The prf is a nearly linear function of dose
rate in the range from 10 to 10^4 r/hr. The circuit has excellent operational
stability. Drift of the frequency emitted by the circuit when the detector
was replaced by an equivalent resistor at constant temperature was no more
than +0.02% in five days of operation.

2/2

- 39 -

1/2   017   UNCLASSIFIED   PROCESSING DATE--23OCT70
TITLE--CHANGES IN CATALYTIC AND ADSORPTION PROPERTIES OF A RHODIUM
   CATALYST UPON THERMAL TREATMENT IN AN OXYGEN ATMOSPHERE -U-
AUTHOR-(04)-KAZLAUSKIYENE, L., PLETYUSHKINA, A.I., KHOKHLOVA, M.N.,
   VOVCHENKO, G.O.
COUNTRY OF INFO--USSR

SOURCE--VESTN. MOSK. UNIV., KHIM, 1970, 11(1), 67-9

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RHODIUM, CATALYST ACTIVITY, OXYGEN, CATALYTIC REDUCTION,
   MALEIC ACID, ADSORPTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1997/0599   STEP NO--UR/0189/70/011/001/0067/0069

CIRC ACCESSION NO--AP0119517
                         UNCLASSIFIED

CIRC ACCESSION NO--AP0119517
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADSORPTION CAPACITY WITH
 RESPECT TO H WAS DETD. FOR A RH CATALYST AFTER THERMAL TREATMENT IN AN O
 ATM. AT 25, 80, 150, AND 200DEGREES. THE ACTIVITY WAS DETD. FOR THE
 REDN. OF MALEIC ACID IN AN EXCESS OF H. THE LENGTH OF THE H REGION FOR
 THE CHARGE CURVES BECOMES SHORTER AS THE TEMP. OF THE TREATMENT IS
 INCREASED. AT 80DEGREES, THE ADSORPTION CAPACITY DECREASES BY
 27PERCENT, AT 150DEGREES BY 30PERCENT, AND AT 200DEGREES BY 32PERCENT OF
 THAT FOR THE STARTING SAMPLE. THE BOND ENERGY OF THE H WITH THE RH
 SURFACE DOES NOT CHANGE AND IS EQUAL TO 54.4 KCAL-MOLE. THE SP.
 ACTIVITY DECREASES SHARPLY AT 150DEGREES WHICH IS EXPLAINED BY THE
 RECRYSTN. OF THE SURFACE DUE TO THE ORDERING OF THE STRUCTURE. THE
 ACTIVATION OF THE SAMPLE WHICH WAS OBSD. AT 200DEGREES IS ATTRIBUTED TO
 TEH POSSIBLE ORIGIN OF NEW DEFECT STRUCTURES.

UNCLASSIFIED

1/2   028   UNCLASSIFIED   PROCESSING DATE--18SEP70
TITLE--PROPERTIES OF FIBERS BASED ON COPOLYMERS OF ETHYLENE TEREPHTHALATE
  WITH ETHYLENE HYDROXYISOPHTHALATE -U-
AUTHOR-(04)-GORBACHEVA, V.O., DYURNBAUM, V.S., IYEVLEVA, N.K., KHOKHLOVA,
  N.S.
COUNTRY OF INFO--USSR

SOURCE--KHIM. VOLOKNA 1970, (1), 9-11

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--COPOLYMER, POLYETHYLENE TEREPHTHALATE, HYDROXYL RADICAL,
  SYNTHETIC FIBER, THERMAL ANALYSIS, DILATOMETRY, MICROSCOPY, THERMAL
  EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/1826   STEP NO--UR/0183/70/000/001/0009/0011

CIRC ACCESSION NO--AP0100400
                        UNCLASSIFIED

2/2   028   UNCLASSIFIED   PROCESSING DATE--18SEP70
CIRC ACCESSION NO--AP0100400
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE AND PHYSICOMECH.
PROPERTIES OF ETHYLENE TEREPHTHALATE, (1

89

UNCLASSIFIED

Khokhlova, O.S.

SOME INDICES OF PROTEIN AND LIPID METABOLISM IN HUMAN BEINGS WHEN CONSUMING A RATION DEVELOPED FOR SPACESHIP CREWS DURING FLIGHT WITH A DURATION UP TO A MONTH

This paper constitutes part of investigations for evaluating the ration developed for crews of spaceships with a flight duration up to a month (v. P. Bychkov and P. P. Ivanov, 1969).

The investigations were made in a 65-day experiment with the participation of six volunteers, healthy males in the age group 19-34 years. The studied ration was one of the variants of the ration described in an article by V. P. Bychkov and P. P. Ivanov (1969). It included canned meats, dehydrated meat and dairy products, meat pies and chocolate in tubes, confectionery items and other foods. The caloric content of this ration was 2,708 Cal. It contained (according to analytical data): 144 g of protein, 106 g of fats and 276 g of carbohydrates.

According to computed data the ration contained: ~23 g of vegetable fats, ~1.3 g of cholesterol and ~7 g of phospholipides. The experiment was conducted under ordinary work and rest conditions, but the subjects remained at the Institute around-the-clock. They consumed the studied ration for 35 days (second period). During the first and third periods (each 15 days in length) the subjects consumed a ration in which dehydrated foods were replaced by freshly prepared foods in equivalent quantities. On the 12th-13th days of the first period, the 11th-12th and 29th-30th days of the second period and the 13th-14th days of

TITLE--IMPORTANCE OF LOCAL AND COLLECTIVE ELECTRONIC PROPERTIES AND
   MODIFIED TITANIUM DIOXIDE IN CARBON MONOXIDE OXIDATION AND IN ISOPROPYL
AUTHOR-(04)-KEIYER, N.P., SAZONOVA, I.S., KHOKHLOVA, T.P., MIKHAYLOVA,
   I.L.
COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, 11(2), 447-54

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--TITANIUM DIOXIDE, CARBON MONOXIDE, OXIDATION, PROPANOL, FORMIC
   ACID, DEHYDRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3005/0093   STEP NO--UR/0195/70/011/002/0447/0454

CIRC ACCESSION NO--AP0132386
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0132386
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SELECTIVITY IN THE DEHYDRATION
OF SIC PROH AND HCO SUB2 H ON A TIO SUB2 CATALYST DEPENDS ON THE
POSITION OF FERMI SURFACE, IN OTHER WORDS, ON THE COLLECTIVE ELECTRONIC
PROPERTIES OF THE CATALYST. THE DEGREE OF DEHYDROGENATION SIDE REACTION
INCREASES WITH ELEVATION OF THE FERMI SURFACE. IN A CASE OF THE
PROMOTION OF THE CATALYTIC ACTIVITIES OF TIO SUB2 (E.G. WITH WO SUB3
ADDITIVES), LOCAL ELECTRONIC CHARACTERISTICS BECOME STRONGER THAN THE
COLLECTIVE ELECTRONIC PROPERTIES. ADDN. OF WO SUB3 TO TIO SUB2
DECREASES E SUBA TO HCO SUB2 H AND ISO PROH DEHYDRATION FROM 28 TO 25
AND FROM 21 TO 19 KCAL-MOLE, RESP.   FACILITY: INST. KATAL.,
NOVOSIBIRSK, USSR.

UNCLASSIFIED

PLOTKINA, N. S., KHOKLOVA, V. A., and VITUL'SKAYA, N. V., Institute of Clinical
and Experimental Surgery, Leningrad Institute of Textiles and Light Industry
imeni S. M. Kirov

"Some Characteristics of the Antimicrobial Effect of Modified Chemical Fibers"

Abstract: Polyvinyl alcohol fibers impregnated with letilan (nitrofurylacrolein)
possessed an antibacterial effect toward Staphylococci which sharply increased
after autoclaving the fibers at 1.2 atm for 20 min. The letilan in these fibers
suppressed the growth of all pathogenic strains of Staphylococci and of fungi
from the Candida genus in concentrations of 10 million microbial cells/ml.
Letilan was also active against Escherichia coli in a concentration of 1 mil-
lion cells/ml, and against Proteus in concentration of 100,000 cells/ml.
However, it was inactive against Bacillus pyocyaneus. The antibacterial
properties of these fibers impregnated with letilan were not altered after 24
hr exposure to physiological solution, alcohol, pus, bile, urine, and dry heat
at 160°C for 3 hr. Their antibacterial activity sharply decreased after con-
tact with blood. Similar effects on microbes was observed in the case of
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PLOTKINA, N. S., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972, pp 96-97

polyvinyl alcohol fibers impregnated with polyacrylic acid containing neomycin (14%) or streptomycin (12%). The fibers with neomycin suppressed the growth of a larger number of strains than streptomycin, although their effect in liquid media was identical. The antibacterial effect of these fibers did not change after exposure to physiological solution, alcohol, urine, bile, blood, autoclaving, and boiling. The polypropylene fibers containing 0.5% furagine suppressed the growth of Staphylococcus in a concentration of 10-100 millions cells/ml and to a lesser extent of Escherichia coli (1-10 millions cells/ml). These fibers did not lose their antibacterial properties after contact with blood, pus exudate, urine, bile, physiological solution, autoclaving, and dry heat. However, boiling and alcohol killed their antibacterial properties. The use of the above fibers as surgical material is recommended.

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1/2   012   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--INHOMOGENEITIES OF CHEMICAL COMPOSITION AND PHYSICAL CONDITIONS ON
    THE SURFACE OF THE SILICON AP STARS CU VIR AND 56 ARI -U-

AUTHOR--KHOKHLOVA, V.L.

COUNTRY OF INFO--USSR

SOURCE--ASTRON. ZH. 1970, 47(1), 132-8

DATE PUBLISHED--------70

SUBJECT AREAS--ASTRONOMY,ASTROPHYSICS

TOPIC TAGS--STAR, SPECTRUM, SPECTRAL LINE, CHEMICAL COMPOSITION, SILICON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1749   STEP NO--UR/0033/70/047/001/0132/0138

CIRC ACCESSION NO--AP0115578
                          UNCLASSIFIED

CIRC ACCESSION NO--AP0115578

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VARIATION OF THE INTENSITY OF
THE SI II LINES IN THE SPECTRUM OF CU VIR AND 56 ARI ARE EXAMD. FROM
THE VIEWPOINT OF AN OBLIQUE ROTATOR MODEL. THE INTENSITY VARIATION
CURVES HAVE 2 MAX CORRESPONDING TO 2 SPOTS ON THE SURFACE OF THE STAR.
THE RELATIVE INTENSITY OF THE MAX. DEPEND ON THE EXCITATION POTENTIAL OF
THE LINE. THIS PHENOMEN IS ASCRIBED TO A TEMP. DIFFERENCE IN THE SPOTS,
SIMILAR TO 1000DEGREES K FOR CU VIA AND SIMILAR TO 8000DEGREES K FOR 56
ARI. THE SPOTS MAY BE RELATED TO THE PRESENCE OF A MAGNETIC FIELD.

UNCLASSIFIED

USSR

UDC 621.382.95:535.371

RYZHIKOV, I.V., BUNYAYEV, V.A., FOMENKO, G.P., VORONIN, V.G., KMITA, T.G., PRONIN, B.V., KHOKHLACHEV, K.I., KRUGLOV, I.I., MIKHAYLOV, V.V., TENYAKOV,YE.I

"Voltampere And Lumenampere Characteristics Of Silicon Carbide Light Diodes With High Current Density"

V sb. III Vses. konferentsiya po poluprovodnikov. karbidy kremniya (III All-Union Conference On Semiconductors Of Silicon Carbide), 1968, Moscow, 1970, pp 116-126 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B301)

Translation: Light diodes were investigated, obtained by diffusion of Al and B into n-SiC (6H) at 2000° C (for 40 minutes) and by diffusion of B alone for 10 minutes. The resistivity of the source material is 0.01--0.3 ohm.cm. The circuit for measurements, the experimental results and their consideration are presented. It is established that the voltampere characteristics with a current density 1-5000 a/cm^2 are described by the expression $I = AV^n$ ($n = 1.6$--1.2), and the lumenampere by $L = I^n$ ($n = 0.55$--0.7). Such dependences are the consequence of a radiative and nonradiative recombination of the carriers in all the regions of the p-n-n$^+$ diode. A deviation is observed from the theory connected with the capture of majority carriers by fine centers of attachment. 7 ill. 10 ref. N.S.

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1/2   024   UNCLASSIFIED   PROCESSING DATE--16OCT70
TITLE--THE CLINICAL PICTURE AND TREATMENT OF CEREBELLAR MEDULLOBLASTOMAS
  IN EARLY CHILDHOOD -U-
AUTHOR--KHOKHLOVA, V.V.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL NEVROPATOLOGII I PSIKHIATRII IMENI S. S. KORSAKOVA, 1970,
  VOL 70, NR 5, PP 670-673
DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CEREBELLUM, PEDIATRICS, TUMOR, RADIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0233   STEP NO--UR/0246/70/070/005/0670/0673

CIRC ACCESSION NO--AP0117485
                        UNCLASSIFIED

CIRC ACCESSION NO--AP0117485

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CEREBELLAR MEDULLOBLASTOMA IN
 CHILDREN UP TO 3 YEARS IS EQUAL TO 15PERCENT OF THE TOTAL AMOUNT OF
 MEDULLOBLASTOMAS SEEN IN CHILDHOOD. IN HALF OF THE CASES OF SUCH STATES
 IN EARLY CHILDHOOD, THE DISEASE HAS AN INFLAMMATORY TYPE OF DEVELOPMENT
 WHICH IS A RESULT OF AN EARLY METASTASING OF THE TUMOR. THE CLINICAL
 PICTURE IS CHARACTERIZED BY AN EXPRESSED HYDROCEPHALO HYPERTENSIVE
 SYNDROME ON THE BACKGROUND OF WHICH TRUNK ATAXIA AND STEM DISORDERS
 ARISE. IN EARLY CHILOHOOD IF MEDULLOBLASTS ARE DEPICTED IN THE CSF, A
 RADIOLOGICAL TREATMENT OF THE TUMOR MAY BE GIVEN WITHOUT A PRELIMINARY
 SURGICAL THERAPY.   FACILITY: LENINGRADSKIY N-I
 NEYROKHIRURGICHESKIY INSTITUT IM. POLENOVA.

UNCLASSIFIED

USSR

KOLOKOLOV, A. A., KHOKHLYUK, V. I.

"On Two Direct Algorithms of Linear Whole-Number Programming"

V sb. Optimal'n. planirovaniye (Optimum Planning--collection of works),
Vyp. 16, Novosibirsk, 1970, pp 33-46 (from RZh-Kibernetika, No 7, Jul
71, Abstract No 7V622)

Translation: Construction of finite direct algorithms of the cut-off
method has been a more complex problem than the construction of finite
two-way algorithms originating directly from the work of Gomori (RZh-Mat
1959, 7256). It wasn't until 1965 that Young first proposed such an
algorithm, but with a very complex rule for selecting the generating
row and a no less complicated justification of finiteness (RZhMat, 1966,
9V190). Simplified versions of the algorithm were given by Young (RZh-
-Mat, 1969, 6V356) and Glover (RZh-Mat, 1969, 6V357). This paper takes
up the consideration of two direct algorithms for whole-number linear
programming. To simplify the direct algorithm, finiteness is proved

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KOLOKOLOV, A. A., KHOKHLYUK, V. I., Optimal'n. planirovaniye, Vyp. 16,
Novosibirsk, 1970, pp 33-46

under a simpler rule for selecting the generating line than in the above
mentioned papers. Two numerical examples are given. The results of a
computer experiment on solution of small problems are presented. Yu.
Finkel'shteyn.

USSR   UDC 66.046.51+541.121:536.7+532.72+532.529.6

KUNIN, L. L., GOLOVIN, A. M., SUROVOY, Yu. N., and KHOKHRIN, V. M.

Problemy degazatsii metallov. Fenomenologicheskaya teoriya (Problems of Metals Degassing. Phenomenological Theory), Moscow, "Nauka" Press, 1972, 327 pp., illustrations, graphs, tables, bibliographic references, 1600 copies printed.

Translation of Annotation: The book discusses the thermodynamic theory of solutions of gas impurities in metals, the phenomenological theory of their diffusion in solids and melts, principles of measuring thermodynamic and kinetic parameters in gas-metal systems, and mathematical description of degassing solids and melts. The monograph also covers problems comprising the theoretical basis for studying and determining gas contents in metals. The book is intended for scientists, engineers, and graduate students and students of senior courses specializing in physical chemistry, as well as for specialists of other areas of science and technology in which the problems of mass transfer of gas contaminants are of fundamental importance.

Translation of Table of Contents:

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KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya teoriya, Moscow, "Nauka" Press, 1972.

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KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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KUNIN, L. L. et al., Problemy degazatsii metallov. Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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KUNIN, L. L. et al., Problemy degazatsii metallov, Fenomenologicheskaya
teoriya, Moscow, "Nauka" Press, 1972.

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USSR   531.787

ALEKSEYEV, K. A., KHOKHULYA, YU. P.

"Manganin Manometer for Measurement of Static Pressures up to 20,000 kg/cm^2"

Tr. Metrol. In-Tov SSSR, Vyp. 104(164), [Works of Metrological Institutes of USSR, No. 104(164)], pp 40-43 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.716 by M. I. M.)

Translation: The first laboratory device based on the measurement of the resistance of manganin transducers as a function of pressure with direct reading of pressure from the scale of the electrical measuring device is described. The manganin manometer has four measurement limits: 0-5,000; 5,000-10,000; 10,000-15,000 and 0-20,000 kg/cm^2. The first three scales are designed for precise measurement of pressures (measurement error not over $\pm$50 kg/cm^2), while the fourth scale is designed for coarser measurement of pressure (measurement error not over $\pm$200 kg/cm^2). The electrical resistance of the manganin manometer coil as a function of pressure is determined in advance using a standard piston manometer. The dimensions of the device are 400 x 300 x 250 mm, weight 9 kg. Three illustrations, one biblio. ref.

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1/2   016   UNCLASSIFIED   PROCESSING DATE--20NOV70
TITLE--REACTION OF SODIUM AND POTASSIUM NITRITES, NITRATES MOLYBDATES, AND
     TUNGSTATES IN MELTS AND IN THE SOLID STATE -U-
AUTHOR-(02)-SHURDUMOV, G.K., KHOKONOVA, T.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 843-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--EUTECTIC, CHEMICAL REACTION, SODIUM COMPOUND, NITRATE,
     TUNGSTATE, MOLYBDATE, FUSED SALT, POTASSIUM COMPOUND, NITRITE, PHASE
     DIAGRAM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0368   STEP NO--UR/0078/70/015/003/0843/0845

CIRC ACCESSION NO--AP0126123
                              UNCLASSIFIED

CIRC ACCESSION NO--AP0126123
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHASE DIAGRAMS OF BINARY SYSTEMS
MNO SUB3 M SUB2 MOO SUB4 (M EQUALS NA, K), MNO SUB2 M SUB2 WO SUB4, MNO
SUB3 M SUB2 MOO SUB4, AND MNO SUB3 M SUB2 WO SUB4 ARE PRESENTED. AT
15-25 MOLE PERCENT MOLYBDATE (OR TUNGSTATE) AND 600-650DEGREES,
SIGNIFICANT DECOMPN. AND VOLATILITY OF THE LOW MELTING COMPONENTS OF THE
SYSTEM ARE OBSD. ALL OF THE SYSTEMS FORM EUTECTICS AT LOW (SMALLER THAN
10 MOLE PERCENT) CONCNS. OF MNO SUB2 OR MNO SUB3.   FACILITY:
KABARDINO-BALKAR. GOS. UNIV., NALCHIK, USSR.

UNCLASSIFIED

USSR   UDC 632.4:633.1(47+57)

VETROV, YU. F., KORSHUNOVA, A. F., MORSHCHATSKIY, A. A., KHOKHRYAKOV, M. K.,
and CHULKINA, V. A., All-Union Institute of Plant Protection, Leningrad,
Irkutsk Agricultural Institute, All-Union Scientific Research Institute of
Corn, Dnepropetrovsk, Altai Mountain Agricultural Experimental Station

"Root Rot of Grain in the USSR"

Abstract: This is a comprehensive literature review of Soviet work in the
field of grain root rot. During the last ten years, knowledge about root
rot in wheat and other cereals has gradually increased. More than 55 works
on this subject were published or submitted for publication in the USSR. Root
rot occurs in zones of insufficient or unstable humidity. In the Irkutsk
region 12.2-42.3%, and in some cases as much as 61.3-67.3% of the spring wheat
is annually infected with root rot, whereas in the Saratov region, the losses
are 0.5-4.0% and, in extreme cases, 7.0-10.0%. Losses in other areas of the
Soviet Union are enumerated, together with the appropriate references.
Helminthosporium sativum and Fusarium avenaceum were isolated in Eastern

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