S/048/62/026/004/008/014
B104/B102

AUTHORS: Lushchik, Ch. B., Lushchik, N. Ye., and Yaek, I. V.

TITLE: Electron oscillation processes in luminescent centers of ionic crystals

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26, no. 4, 1962, 488-496

TEXT: On the basis of papers published from 1913 up to the present time, a review has been compiled on the rules governing the electron oscillation processes in ionic crystals. Special attention is devoted to effects involving excited states of impurity centers. Results obtained for alkali-halide crystals activated with Ga^+, Ge^{2+}, In^+, Sn^{2+}, Sb^{3+}, Tl^+, Pb^{2+}, and Bi^{3+}, and also for NaCl, KCl, KBr, and KI crystals activated with indium, gallium, antimony, germanium, and bismuth are discussed. This review article further deals with the steplike dependence of the quantum yield of photo-effects in ionic crystals on the frequency of the

Card 1/2

Electron oscillation processes ...

S/048/62/026/004/008/014
B104/B102

exciting light.   There are 5 figures and 1 table.

ASSOCIATION: Institut fiziki i astronomii Akademii nauk ESSR
(Institute of Physics and Astronomy of the Academy of
· Sciences Estonskaya SSR)

Card 2/2

S/613/62/000/018/001/013
E039/E120

AUTHORS: Zazubovich, S.G., Lushchik, N.Ye., and Lushchik, Ch.B.

TITLE: Polarised luminescence of the mercury-like centres
of cubic crystals.   I.

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i
astronomii. Trudy. no.18, 1962. Issledovaniya po
lyuminestsentsii.   3-22

TEXT: The polarisation characteristics of the Sn^{++} and Pb^{++}
centres in alkali halide phosphors are investigated in detail and
the relative literature is reviewed. Single crystals are grown
from solutions using "spectroscopically pure" NaCl and "specially
pure" KCl, KBr and KI. The concentrations of impurity centres,
estimated from the absolute value of the absorption coefficients,
are in the range 0.001 to 0.01 mole%. Phosphors activated by Sn
and Pb form unstable solid solutions, hence before measuring they
are quenched by rapidly cooling from a temperature of 650-700 °C
to 20 °C. Polarisation spectra of the crystals are measured at
293 and 100 °K. The exciting light is incident, normal to the
(100) plane along the x axis, the electric vector being orientated

Card 1/2

Polarised luminescence of the ...   S/613/62/000/018/001/013
                                       E039/E120

along the C_4 axis (z axis) of the crystal. Polarised luminescence
is observed along the y axis perpendicular to the exciting light.
Measurements are made on these phosphors using different filters
and the absorption and emission spectra are also obtained. The
azimuthal dependence of the degree of polarisation shows that the
oscillations of the Sn^{++} and Pb^{++} centres are orientated along the
C_4 axis. The polarisation spectra have complex structures and are
shown to be correlated with the activator absorption spectra.
The polarisation diagram of KBr-Sn, measured for the long-wave-
length absorption band corresponds to that of absorption and
emission by electric linear oscillators ($\pi_e - \pi_e$). An analysis
of the polarisation characteristics permits of a more accurate
interpretation of the electronic structure of the spectra of
mercury-like centres.
There are 8 figures and 1 table.
SUBMITTED: December 29, 1961

Card 2/2

S/613/62/000/018/004/013
E039/E120

AUTHORS: Muuga, I.A., and Lushchik, N.Ye.

TITLE: On the sensitized luminescence of $Ca_3(PO_4)_2$-Ga, Mn and $Ca_3(PO_4)_2$-In, Mn

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. no.18. 1962. Issledovaniya po lyuminestsentsii. 51-56

TEXT: This work forms part of a program for the development of phosphors for use in mercury discharge tubes. The method of preparation is as described in an earlier paper by the same authors. Mn is added as MnO_2 and fired in air, while Ga and In are activated by firing in an evacuated quartz ampoule. Concentrations are: Mn - 5 mole %; Ga and In - 1 mole %. Examination of the phosphors under an ultraviolet microscope showed that all the phosphor grains luminesced with the same spectral composition. Excitation and emission spectra of $Ca_3(PO_4)_2$-Ga; $Ca_3(PO_4)_2$-Ga, Mn; $Ca_3(PO_4)_2$-In and $Ca_3(PO_4)_2$-In, Mn were obtained. The excitation and emission

Card 1/2

On the sensitized luminescence of ...   S/613/62/000/018/004/013
                                          E039/E120

spectra due to In and Ga centres do not depend on the presence of
Mn, while the excitation spectra of Mn practically coincides with
the excitation spectra of the sensitizers. The quantum yield of
sensitized luminescence due to Mn^{2+} centres in $Ca_3(PO_4)_2$-In, Mn
and $Ca_3(PO_4)_2$-Ga, Mn depends on the frequency of the exciting light
in the region of the sensitizer excitation band and is related to
the electron transitions

$$^1S_0 \rightarrow {}^1P_1 \quad \text{and} \quad {}^1S_0 \rightarrow {}^3P.$$
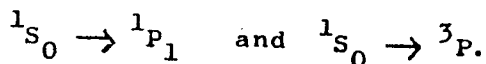
The migration of energy from In and Ga ions to Mn ions is
established and occurs more easily in $Ca_3(PO_4)_2$ than in the alkali
halide phosphors. Both $Ca_3(PO_4)_2$-Ga, Mn and $Ca_3(PO_4)_2$-In, Mn
are suitable as spectral converters in mercury lamps.
There are 2 figures.

SUBMITTED: December 16, 1961

Card 2/2

ZAZUBOVICH, S.G.; LUSHCHIK, N.Ye.; LUSHCHIK, Ch.B.

Optical structure of luminescence centers in ionic crystals
activated by mercurylike ions. Opt. i spektr. 15 no.3:381–
388 S '63.
(MIRA 16:10)

ACCESSION NR: AT4020793   S/2613/63/000/023/0022/0037

AUTHOR: Lushchik, Ch. B.; Lushchik, N. Ye.; Muuga, I. A.

TITLE: Band spectra of crystals activated with mercury-like ions. Part I.

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy*, no. 23, 1963, Issledovaniya po lyuminestsentsii (Research in luminescence), 22-37

TOPIC TAGS: luminescence, luminescence spectru, band spectrum, phosphor, phosphor luminescence, crystalline phosphor, mercury-like luminescence activator, crystal vibration

ABSTRACT: The method of luminescent probes may be successfully used for the study of physical phenomena in solid bodies. Rare-earth ions, which give off a linear emission of complex structure, are most frequently employed as the probes. The author also notes that the so-called mercury-like ions (Ga^+, Ge^{2+}, In^+, Sn^{2+}, Sb^{3+}, Tl^+, Pb^{2+}, Bi^{3+}) may be used in investigating the physical processes in alkali halide crystals. A detailed study of the spectral characteristics of alkali halide crystals, activated with mercury-like ions, has demonstrated that in these phosphors the absorption and emission spectra at 100K (for KCl–Tl even at 4.2K) are continuous bands without an oscillating structure. The sharp difference in spectra for mercury-like centers in crystals of the types AIIBVI and AIBVII,

Card   1/3

ACCESSION NR: AT4020793

which are structurely similar, deserves careful attention. The purpose of the present
work was to determine the conditions necessary for the observation of a vibrational struc-
ture in the spectra of mercury-like centers. The authors have attempted to utilize
luminescent ions for an experimental investigation of the vibrational processes in the
crystals. The shapes of the emission and excitation spectra of $KCl-Bi$, $Ca_3(PO_4)2-Bi$,
$CaO-Bi$ and $CaS-Bi$ phosphors were investigated at 295 and 100K. The phosphors with large
Stokes losses ($KCl-Bi$) have continuous emission and excitation spectra. In the case of
phosphors having relatively small Stokes losses ($CaO-Bi$), at 100K a series of clearly
marked equidistant bands were observed against the background of the continuous emission
and excitation spectra. The authors discuss the characteristic features of the continuous
and band spectra, and their electronic ($1_{S_0} \rightleftarrows 3_{P_1}$ and $3_{P_0} \rightarrow 1_{S_0}$ transitions in Bi^{3+}

centers) and vibrational structure. The hypothesis is advanced that the band spectra arise
as the result of the interaction of the electrons with the localized modes of vibration which,
in turn, interact with the crystal vibrations. The authors found, in conclusion, that mer-
cury-like centers with small Stokes losses may serve as convenient luminescent probes
for the investigation of vibrational processes in solid bodies. "We are grateful to N.
Kristofel', V. Khizhnyakov and G. Zavt for their discussion on the theoretical work in
electron-phonon interaction in crystals and to K. K. Rebane for critical remarks." Orig.
art. has: 1 table and 3 figures.

Card   2/3

ACCESSION NR: AT4020793

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and Astronomy, AN EstSSR)

SUBMITTED: 21Jan63   DATE ACQ: 07Apr64   ENCL: 00

SUB CODE: PH   NO REF SOV: 023   OTHER: 013

Card   3/3

ZAZUBOVICH, S.G.; LUSHCHIK, N.Ye.; LUSHCHIK, Ch.B.

Electronic vibrational processes and the polarized luminescence
of mercurylike centers in cubic crystals. Izv. AN SSSR Ser.
fiz. 27 no.5:656-660 My '63.   (MIRA 16:6)

1. Institut fiziki i astronomii AN Estonskoy SSR.
        (Phosphors—Spectra)   (Quantum theory)

L 2836-66   EWT(1)/EWT(m)/T/EWP(t)/EWP(b)   LJP(c)   JD/JG/GG

ACCESSION NR: AT5021772   UR/2613/64/000/028/C003/0019

AUTHORS: Lushchik, N. Ye.; Lushchik Ch. B.; Liyd'ya, G. G.; Meriloo, I. A.

TITLE: Localized electronic excitations of ionic crystals, activated by mercury-like ions

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 28, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 3-19

TOPIC TAGS: luminescence property, luminescence research, luminescence, luminescence spectrum, luminescence yield, luminescent crystal, phosphor, gallium, indium, tin, tellurium, lead

ABSTRACT: In order to determine the nature of the excitation and energy migration in activated alkali halide crystals, the excitation spectra of 13 alkali halide crystals activated by Ga, In, Sn, Tl, and Pb in the spectral region 3-10 ev were investigated. The study is an extension of the previously reported work in the spectral region 2-6 ev by N. Ye. Lushchik, (Materialy VII Soveshchaniya po lyuminestsentsii (Kristallofosfory), Tartu, 1959, str. 27). Four series of experiments were performed

I   KF-In,   KCl-In,   KBr-In,   KJ-In,
II   KF-Tl,   KCl-Tl,   KBr-Tl,   KJ-Tl,

Card   1/2

L 2836-66

ACCESSION NR: AT5021772

III. KCl-Ga,   KCl-In,   KCl-Sn,   KCl-Tl,   KCl-Pb,
IV. KBr-Ga,   KBr-In,   KBr-Sn,   KBr-Tl.

In series I and II, the activator was fixed (In or Tl), and the anion was varied.
In series III and IV, the activator was varied, but the anion remained fixed (KCl or
KBr). The experimental procedure followed was that of E. R. Il'mas, G. G. Liyd'ya,
and Ch. B. Lushchik, (Opt. i spektr., 1964). Excitation spectra for the systems
investigated are presented graphically, and the position of D absorption bands are
tabulated. It was found that the excitation bands at the long wavelength tails of
exciton absorption bands were almost independent of the activator, but depended
substantially on the nature of the host anion. A model for near activator centers
is proposed. It is concluded that the phosphors investigated exhibit activator as
well as near activator electronic excitations. The authors thank E. R. Il'mas for
the development of the ultraviolet vacuum experimental apparatus and R. A. Kink for
his help, as well as A. A. Maaroos for the Tl determination in the phosphors. Orig.
art. has: 2 tables and 6 graphs.

ASSOCIATION: Institut fiziki i astronomii, AN EstSSR (Institute for Physics and
Astronomy, AN EstSSR)

SUBMITTED: 14Feb64   ENCL: 00   SUB CODE: SS, OP

NO REF SOV: 038   OTHER: 011
Card 2/2

L 41323-65   EWT(1)   Pi-4   IJP(c)

ACCESSION NR: AP5001295   P/0045/64/026/03-/0711/0717

AUTHOR: Lushchik, Ch.; Lushchik, N.

TITLE: Regularities of fluorescence in activated ionic crystals

SOURCE: Acta physica polonica, v.26, no. 3-4, 1964, 711-717

TOPIC TAGS: fluorescence, luminescence, ionic crystal, emission spectrum, excitation frequency, quantum efficiency, excited state, polarization, thermostatic action, impurity center, luminescence center

ABSTRACT: Basic regularities in the luminescence of impurity centers of KCl crystals activated by Ga, Ge, In, Sn, Tl, Pb, and Bi cations have been investigated at 100 and 295K. The experimental results for conjugated electronic-vibrational transitions (absorption and emission) show that: 1) the emission spectra do not depend on excitation frequency ν_e; 2) the quantum efficiency of luminescence does not depend on ν_e nor on light emission frequency ν_I; 3) the lifetime of excitated states does not depend on ν_e or ν_I; and 4) the degree of polarization does not depend on either ν_e or ν_I. These regularities in luminescence result from the strong thermostatic action of the host lattice on luminescence centers. However, the reg-

Card 1/2

L 41323-65

ACCESSION NR: AP5001295

ularities are generally not observed in processes involving more than the lowest
and upper electronic states of the impurity centers, particularly at low tempera-
tures. In this case the emission spectra and the quantum efficiency of lumines-
cence depend on ν_e, the lifetime of excited states and degree of polarization de-
pend on ν_e and ν_I, and the dependence is of a complex "step-like" nature. These
peculiarities in the emission of ionic crystals are due to the absence of the equi-
librium distribution of centers in the different electronic states resulting from
the insufficient radiationless transition probabilities between the different ex-
cited states. "The authors thank S. Zazubovich, T. Soovik, and E. Realo for help-
ing in the investigation of polarization characteristics and photoscintillation of
KC1-Sn crystals." Orig. art. has: 3 figures.

ASSOCIATION: Institute of Physics and Astronomy, Academy of Sciences, Estonian
SSR, Tartu

SUBMITTED: 00   ENCL: 00   SUB CODE: OP

NO REF SOV: 020   OTHER: 004

Card 2/2

L 60345-65   EWT(l)   Pi-4   IJP(c)

ACCESSION NR: AT5013688   UR/2613/64/000/030/0027/0041
                                                                              32
AUTHOR: Zazubovich, S. G.; Lushchik, N. Ye.   30
                                                                              B+1
TITLE: Spectroscopy of luminescence centers of alkali-halide phosphors activated
with noble ions. II.   21

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 30, 1964. Issleio-
vaniya po lyuminestsentsii (Research on luminescence), 27-41

TOPIC TAGS: alkali halide phosphor, luminescence center, luminescence spectroscopy,
noble metal activator, polarization property

ABSTRACT: This is a direct continuation of an earlier investigation by the authors
(Trudy IFA AN ESSR no. 14, 141, 1961) and its purpose is to obtain additional mater-
ial for an unambiguous interpretation of the optical structure of luminescence cen-
ters in crystals activated with noble-metal ions. To this end, the absorption and
excitation of KCl and NaCl activated with copper and silver were studied in the far
ultraviolet (5--8 eV). The measurements were made at room temperature using an in-
stallation described by D. R. Il'mas et al. (Opt. i spektr. v. 18, 1965). The
crystals were excited by hydrogen discharge in a quartz tube, and the luminescence
was recorded with a photomultiplier feeding a potentiometer. The results showed
two new intense bands for each phosphor, with the shortest wavelength bands being

Card 1/2

L 60345-65

ACCESSION NR: AT5013688   2

due to an electronic excitation of the host ions around the activator centers. The
shorter wavelength band (6.65 and 7.15 for KCl-Ag and NaCl-Ag, respectively, and
also 7.00 and 6.65 eV for NaCl-Cu and KCl-Cu) are due to electronic excitation of
the host ions around the activator center. The corresponding longer-wave bands
were centered at 6.8, 6.35, 6.10, and 6.00 eV. New phosphors KCl-KI-Ag, KCl·KI-Cu,
and KCl·KI-Au were synthesized and their polarization and spectral characteristics
studied. The luminescence of the synthesized phosphors was found to be 20--30%
polarized. The spectral and polarization characteristics of KCl·KI-Ag were studied
in detail. The tests showed that both linear and circular electric dipoles parti-
cipated in the emission and absorption and the orientation of these dipoles rela-
tive to the crystal axis is determined to be that of the C_4 axis. Introduction of
iodine into an Ag-Cl crystal eliminates the temperature dependence of the absorp-
tion integral in the 5.4--4.7 eV region and reduces the duration of the photo-
scintillations by one order of magnitude compared with the KCl-Ag without iodine.
"We thank Ch. B. Lushchik for interest in the work and for valuable advice." Orig.
art. has: 5 figures.

ASSOCIATION: Institut fiziki i astronomii AN EstSSR (Institute of Physics and
Astronomy, AN EstSSR)

SUBMITTED: 01Oct64   ENCL: 00   SUB CODE: SS, OP
NR REF SOV: 015   OTHER: 008
Card 2/2 d0P

L 13905-65   EEC(b)-2/EPF(n)-2/EPA(s)-2/EWA(c)/EWT(1)/EWT(m)/EWP(b)/T/EWP(t)   Pi-4/
Pt-7/Pu-4   IJP(c)   GG/JD/JG

ACCESSION NR: AP5009507   S/0048/65/029/003/0373/0379

AUTHOR: Zazubovich,S.G.; Liyd'ya,G.G.; Lushchik,N.Ye.; Lushchik,Ch.B.

TITLE: Optical structure of luminescence centers in activated ionic crystals
        /Report, 12th Conference on luminescence held in L'vov, 30 Jan-Feb 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 3, 1965, 373-379

TOPIC TAGS: luminescence, luminescence polarization, luminescent crystal,
             luminescence center, alkali halide, single crystal

ABSTRACT: This paper is concerned with the luminescence of alkali halide
crystals activated by mercury-like ions.. Excitation spectra are presented for the
potassium halides activated with indium and tantalum (8 spectra); these spectra
cover the photon energy range from 2 to 10 eV. Three principal excitation regions
are distinguished: a group of long wavelength bands (the A, B, and C bands); an
excitation band adjacent to the fundamental absorption edge (the D band); and an
excitation band within the fundamental absorption region. Earlier experimental
data, both of the present authors and of others, are adduced, including polariza-

Card 1/2

L 43905-65

ACCESSION NR: AP5009507

tion spectra of the luminescence of KCl activated with Ga, In, Tl, Ge, Sn, and Bi. These data are discussed at some length, and it is concluded that the A, B, and C bands are due to activator excitation and are genetically related to transitions to the $^3P_1$, $^3P_2$, and $^1P_1$ states of the free activator ion, and that the D band is due to excitation of ions of the host, perturbed by neighboring activator ions. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: None

SUBMITTED: 00   ENCL: 00   SUB CODE: OP, SS

NR REF SOV: 017   OTHER: 007

Card 2/2 PVB

L 28320-66   EWT(1)/T   IJP(c)   GG/AT

ACC NR: AP6013084   SOURCE CODE: UR/0048/66/030/004/0695/0697

AUTHOR: Vale,G.K.; Zolotarev,G.K.; Kuketayev,T.A.; Lushchik,N.Ye; Lushchik,Ch.B.

ORG: none

TITLE: Activator traps for electrons and holes in ionic crystals /Report, Fourteenth Conference on Luminescence held in Riga 16-23 September 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 4, 1966, 695-697

TOPIC TAGS: crystal phosphor, alkali halide, recombination luminescence, ionic crystal, electron trap

ABSTRACT: The stated purpose of the paper is to summarize the results obtained at Tartu (Institute of Physics and Astronomy of the Estonian SSR Academy of Sciences) in studies aimed at elucidating the role of activator ions in formation of electron and hole traps. The basic experimental data were obtained in investigating different alkali halide crystals activated by Ga^+, In^+, Tl^+, Ge^{2+}, Pb^{2+}, Cu^+ and Ag^+ ions. A general discussion of the luminescence centers in such phosphors has been published elsewhere (N.E.Lushchik and Ch.B.Lushchik, Tr. In-ta fiz. i astron. AN EstSSR, No. 6, 5, 1957). It is noted that the character of traps formed by activators is determined primarily by the charge of the activator ion. For example, Bi^{3+} ions are readily reduced to Bi^{2+} and trap an electron in the process. Analogously Ge^{2+}, Sn^{2+} and Pb^{2+} ions in a KCl lattice act as effective electron traps. A number of other cases of

Card 1/2

L 28320-66

ACC NR: AP6013084   0

effective electron trapping are mentioned with references to the papers describing
the corresponding investigations. Mention is made of decomposition of atomic centers
in ionic crystals, and a table gives the values of the decomposition temperature for
atomic Ag, Tl and Cu in different alkali halides. The question is then raised
whether activator centers in the same systems are also capable of trapping holes.
Recent electron paramagnetic resonance studies and optical experiments indicate that
silver at any rate is capable of forming hole traps in alkali halide crystals. Refer-
ence is made to other studies and it is concluded that as a rule (and not as an
exception) activator luminescence centers in alkali halide crystals are capable of
trapping both electrons and holes, so that in many cases in alkali halide crystal
phosphors luminescence of activator centers is observed as a result of both recombina-
tion of electrons with trapped holes and as a result of recombination of holes with
trapped electrons. Orig. art. has: 1 table.

SUB CODE: 20/   SUBM DATE: 00/   ORIG REF: 017/   OTH REF: 003

Card 2/2 CC

ACC NR: AP7004990   SOURCE CODE: UR/0048/66/030/009/1517/1520

AUTHOR: Lushchik, N.Ye.; Meriloo, I.A.

ORG: none

TITLE: Crystal phosphors with mercury-like activators and the problem of predicting
the spectra of new phosphors /Report, Fourteenth All-Union Conference on Luminescence
(Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.9, 1966, 1517-1520

TOPIC TAGS: luminescence spectrum, excitation spectrum, luminescent crystal, acti-
vated crystal, crystal phosphor

ABSTRACT: On the basis of data in the literature (many of them from their own labor-
atory) the authors discuss the luminescence excitation spectra of a large number of
mercury-like ion activated phosphors. Excitation spectra of In activated KF, CaF_2,
CaO, $Ca_3(PO_4)_2$, $3Ca_3(PO_4)_2$, K_2SO_4, HBr, and CaS phosphors and Tl activated KF,
$Ca_3(PO_4)_2$, and K_2SO_4 phosphors are presented by way of examples and are discussed in
some detail, different excitation peaks being ascribed to definite electronic trans-
itions in the activator ion. For the prediction of the excitation spectrum of an
unknown phosphor, use is made of the equation $E_F/E_B = 1 + aE_F$ relating the energy E_F
of an electronic transition in the free activator ion with the energy E_B of the same
transition in the same ion when it is bound in the host lattice. The coefficient a

Card 1/2

ACC NR: AP7004990

is tabulated for 7 different activator ions in 10 different host lattices. The table shows that the value of a depends strongly on the charge of the activator ion but varies little for different activator ions of the same charge in a given host lattice. Regularities are also noted in the variations of a for a given activator ion in different host lattices. With the aid of these regularities and the tabulated values, one can obtain an approximate value of a for a new activator ion in a new host lattice, and thereby predict the positions of the peaks in the excitation spectrum of the proposed new phosphor. Orig. art. has: 1 formula, 2 figures, and 1 table.

SUB CODE: 20   SUBM DATE: none   ORIG. REF: 013   OTH REF: 003

Card 2/2

CHEKMAREVA, I.B.; ZHDANOVICH, Ye.S.; LUSHCHIK, T.A.; PREOBRAZHENSKIY, N.A.

Separation of nicotinamide by the ion-exchange method. Zhur.org.
khim. 1 no.2:375-379 F '65.   (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut.

VAL'TER, A.K.; ZALYUBOVSKIY, I.I.; KLYUCHAREV, A.P.; LUSHCHIK, V.A.

New method of the identification of γ-radiations in $(p, p'\gamma)$, (p, γ) and $(p, n\gamma)$ reactions. Zhur. eksp. i teor. fiz. 39 no.4:1159-1161 O '60.   (MIRA 13:11)

1. Fiziko-tekhnicheskiy institut Akademii nauk Ukrainskoy SSR.
(Gamma rays)

RUDOL'FI, T.A.; SHCHEDRINA, M.M.; LUSHCHIK, V.I.; LASKINA, Ye.D.

Gas-liquid chromatography and infrared spectra of isomeric
allyl guetols and allyl guaiacols. Zhur. anal. khim. 19 no.5:
619-621 '64.   (MIRA 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteti-
cheskikh i natural'nykh dushistykh veshchestv, Moskva.

RUDOL'FI, T.A.; SHARAPOVA, R.I.; LUSHCHIK, V.I.

Gas chromatography of cresol isomers. Zhur. anal. khim. 19 no.7:
903-905 '64.   (MIRA 17:11)

1. All-Union Scientific-Research Institute of Synthetic and Natural
Perfumes, Moscow.

S/062/61/000/005/007/009
B118/B220

AUTHORS: Ushakov, S. N., Davidenkova, V. V,, and Lushchik, V. V.

TITLE: Synthesis of vinyl pyrrolidone

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh
            nauk, no. 5, 1961, 901 - 905

TEXT: Starting from succinic acid, the authors synthetized in 1952 vinyl
pyrrolidone according to the equation
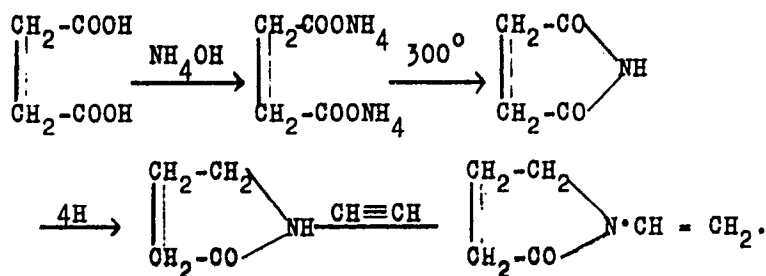
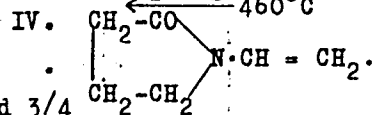Card 1/4

Synthesis of vinyl...
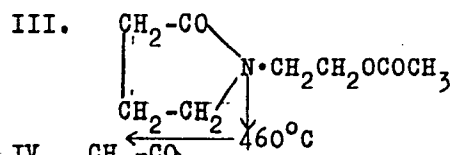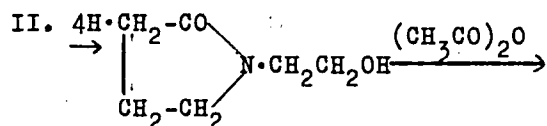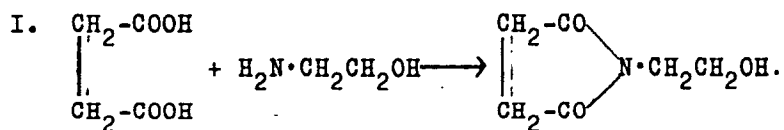
S/062/61/000/005/007/009
B118/B220

The succinimide was obtained from the ammonium salt of the succinic acid
at 300°C and, after purification, reduced electrolytically to pyrrolidone
on lead electrodes (80 to 90mA/cm²)in 50 % sulfuric acid. Vinylizing of
pyrrolidone was effected in dioxane solution in the presence of potassium
pyrrolidone in the autoclave under a pressure of 15 to 25 atm and at 125
to 132°C. This method is easier than that proposed by W. Reppe (Ref. 1,
Polyvinylpyrrolidon, 1954, Berlin). The vinyl pyrrolidone produced was
used for the synthesis of polymers which in the Leningradskiy institut
perelivaniya krovi (Leningrad Institute for Blood Transfusion) have proved
to be good blood substitutes. Independently of this paper and almost at
the same time, data were published concerning the synthesis of pyrrolidone
from succinic acid and ammonia via succinimide (C. 1953, 9185; Rev. Plastic,
2, 110, 132). But also for this modified synthesis, the last part of the
vinylizing, effected under pressure and using acetylene, is rather diffi-
cult. In a series of cases it was, therefore, of advantage to realize the
synthesis without acetylene and without increasing the pressure (e. g.
according to the equation by B. Puetzer et al., J. Amer. Chem. Soc. 74,
4956 (1952)). Unlike the USA Patent 2669570, the authors of the present
paper succeeded in synthetizing vinyl pyrrolidone from succinic acid by

Card 2/4

Synthesis of vinyl...

S/062/61/000/005/007/009
B118/B220

using neither pressure nor acetylene:

I. $\begin{array}{l} CH_2\text{-}COOH \\ | \\ CH_2\text{-}COOH \end{array}$ + $H_2N \cdot CH_2CH_2OH \longrightarrow$ $\begin{array}{l} CH_2\text{-}CO \\ || \\ CH_2\text{-}CO \end{array}$ $N \cdot CH_2CH_2OH.$

II. $4H \cdot$ $\begin{array}{l} CH_2\text{-}CO \\ | \\ CH_2\text{-}CH_2 \end{array}$ $N \cdot CH_2CH_2OH \xrightarrow{(CH_3CO)_2O}$

III. $\begin{array}{l} CH_2\text{-}CO \\ | \\ CH_2\text{-}CH_2 \end{array}$ $N \cdot CH_2CH_2OCOCH_3$

IV. $\begin{array}{l} CH_2\text{-}CO \\ | \\ CH_2\text{-}CH_2 \end{array}$ $N \cdot CH = CH_2.$ $\xleftarrow{460^\circ C}$

Card 3/4

Synthesis of vinyl...

S/062/61/000/005/007/009
B118/B220

Based on succinic acid and using easily obtainable reagents (monoethanol amine and acetic anhydride), they contained, thus, vinyl pyrrolidone by pyrolysis in 4 stages, without acetylene and increased pressure (yield: 52 % of the theoretical-one). There are 9 references: 5 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: Institut vysokomolekulyarnykh soyedineniy Akademii nauk SSSR
              (Institute of High Molecular Compounds of the Academy of
              Sciences USSR)

SUBMITTED: April 9, 1960

Card 4/4

Lushchik, Ye. B.

AUTHOR: Lushchik, Ye.B.   133-12-24/26

TITLE: Journal of Abstracts "Metallurgiya" (Referativnyy
        zhurnal "Metallurgiya")

PERIODICAL: Stal', 1957, No.12, p. 1142 (USSR)

ABSTRACT: The scope of the journal is outlined.

AVAILABLE: Library of Congress

Card 1/1

Lushchik, Ye. B.

OKHRIMENKO, Ya.M.,(kand. tekhn. nauk,dots.: LUSHCHIK, Ya.B.

Improved forging of crankshafts. Vest. mash. 38 no.3:85-87 Mr '58.
            (Cranks and crankshafts)   (Forging)   (MIRA 11:2)

5(2)

AUTHOR: Lushchik, Yu. N.   SOV/32-25-7-11/50

TITLE: Accelerated Colorimetric Determination of Nickel in Cobalt-
              Arsenic Ores (Uskorennoye kolorimetricheskoye opredeleniye
              nikelya v kobal't-mysh'yakovykh rudakh)

PERIODICAL: Zavodskaya laboratoriya, 1959, Vol 25, Nr 7, pp 801-802 (USSR)

ABSTRACT: The application of the colorimetric determination of nickel in
              cobalt-arsenic ores (with a low content of Ni, 0.1 - 0.5%) is
              disturbed by larger amounts of magnesium (6 to 10% of MgO),
              since the latter precipitates as hydroxide and has to be
              filtered. A method of analyzing was developed in which
              magnesium is bound with trilon B and in which nickel can be
              determined in the presence of larger amounts of Mg. It is
              important, however, that the trilon B solution is only added
              after all the other reagents necessary for the development of
              the colored nickel complex, otherwise a nickel complex would
              develop with trilon B and no coloring would occur. Trilon B
              added last, does not interfere with the coloring of the nickel
              complex, as is shown in the test results obtained (Tables 1, 2).

Card 1/2

Accelerated Colorimetric Determination of Nickel in   SOV/32-25-7-11/50
Cobalt-Arsenic Ores

The magnitude of the mean determination error corresponds to
the standard, according to GKZ on the classification of cobalt
ore deposits. The course of the analysis is given. There are
2 tables and 2 Soviet references.

ASSOCIATION: Laboratoriya rudoupravleniya "Tuvakobal't"
(Laboratory of the Mining Administration "Tuvakobal't")

Card 2/2

LUSHCHIKHIN, A. M.

AUTHORS: Markelov, V. V., Lushchikhin, A. M., Nikiforov, V. I., 89-2-33/35

TITLE: A Pocket β-, γ- Radiometer (Karmannyy β-, γ-radiometr).

PERIODICAL: Atomnaya Energiya, 1958,   Nr 2, pp. 217-218 (USSR)

ABSTRACT.   With the pocket dosimeter constructed by the medical Academy
of Science it is possible to measure: γ-doses from 0 to 1, 0 to
10, 0 to 100 and 0 to 1000 mC/sec, with Eγ of from 0,25 to
2 MeV. For β - radiation the following ranges are adjustable: 0
to 50 and 0 to 5000 particles/cm^2.sec (Eβ 0,5 to 2 MeV).
For β -counting a window is to be opened which must be closed in
γ - counting. The accuracy of indication in all ranges amounts
to $\pm$ 15%. The amplifier is built on the basis of semiconductor
triodes. The feed element guarantees an uninterrupted operation
of 200 h. The device can also be used in dusty and humid rooms
in a temperature range of from -10°C to 50°C. There is
1 figure.

AVAILABLE: Library of Congress

              1. Radiometers-Design
Card 1/1

85339

9,6/50

S/120/60/000/005/007/051
E192/E382

AUTHORS: Keirim-Markus, I.B., Lushchikhin, A.M.,
Markelov, V.V. and Uspenskiy, L.N.

TITLE: Universal Scintillation Radiometer PYC-3 (RUS-3)
Note I. The Measuring Unit

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, No. 5,
pp. 35 - 40

TEXT: The following requirements were taken into account in
the design of the instrument: 1) small size, light weight
and portability; 2) the instrument should be supplied from
110 - 220 V mains as well as from batteries or accumulators;
3) the measuring meter and the electronic circuits should
produce an error of not more than $\pm$ 30%; 4) the measuring
range should extend from 1/2 to 100; 5) the instrument should
not be affected by atmospheric or climatic conditions. The
resulting instrument is illustrated in the detailed circuit
diagram of Fig. 1. The input device of the instrument is a
photomultiplier which is connected to the electronic unit by
means of a cable having a length of about 1 m. The multiplier
is followed by an emitter-follower pre-amplifier, based on a

Card 1/4

85339

S/120/60/000/005/007/051
E192/E382

Universal Scintillation Radiometer RUS-3. Note I, The
Measuring Unit

high-frequency transistor (cut-off frequency of 60 Mc/s).
The emitter-follower is followed by an amplifier-shaper circuit
based on transistors $\Pi\Pi_2$ and $\Pi\Pi_3$. The first transistor
acts as the pulse amplifier, while the second transistor
performs the shaping of the pulse. The presence of the resistor
in the emitter of $\Pi\Pi_2$ ensures that the amplifier is stable.

The output pulse obtained from the shaping stage has a duration
of about 10 μs and its amplitude is 7 V (when the supply voltage
is 8 V). The shaping stage is followed by an integrating
circuit which is preceded by an emitter-follower (transistor
$\Pi\Pi_4$). The integrating circuit has three different capacitances
which correspond to the ranges of 30, 300 and 3 000 pulses/sec.
The circuit is followed by another transistor stage which is
connected to a microammeter which indicates directly the number
of pulses per second. The upper portion of the diagram in
Fig. 1 illustrates the supply sources for the instrument. The
Card 2/4

85339

S/120/60/000/005/007/051
E192/E382

Universal Scintillation Radiometer RUS-3.   Note I.   The
Measuring Unit

photomultiplier requires a stable voltage of 1200 V. This
potential is obtained from an oscillator based on a transistor,
type ПЗ-В (P3-V), and a suitable transformer. This oscillator
operates satisfactorily even with input voltages as low as 3 V.
The current taken by it (at 3 V) is about 81 mA. The supply
voltage produced by the generator changes by about 3% when the
input voltage is changed from 3 to 10 V. It can be seen that
the instrument can be supplied with battery voltages from 3 to
12 V; as regards the mains voltage, this can vary from 80 to
250 V. In order to cover this range of AC voltages it is
advised that a ferroresonant stabiliser followed by a rectifier
be employed. In such a system it is possible to reduce the
voltage changes to about 8 V when the input varies from 80 to
250 V. Constructionally, the instrument is in the form of
small units which can easily be withdrawn and repaired or
replaced by new units. The overall weight of the instrument
with a set of batteries is about 3 kg. A photograph of the

Card 3/4

85339

S/120/60/000/005/007/051
E192/E382

Universal Scintillation Radiometer RUS-3. Note I. The
Measuring Unit

instrument is given in Fig. 2. The authors express their
gratitude to G.M. Skachov for taking part in the construction
of the instrument. There are 2 figures and 1 Soviet reference.

SUBMITTED: August 13, 1959

Card 4/4

20689

S/120/61/000/001/027/062

E032/E114

26.2246

AUTHORS: Keirim-Markus, I.B., Lushchikhin, A.M., Markelov, V.V., and Uspenskiy, L.N.

TITLE: The Universal Scintillation Radiometer РУС-3 (RUS-3). II. γ- and β-Probes

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.1, pp. 86-91

TEXT: The first part of this paper is given in Ref.5.   In accordance with the design specifications for the РУС -3 (RUS-3) radiometer, the dose-rate range of the instrument should be 1-250 μr/sec.   This corresponds to a γ-ray flux between 1.6×10^3 and 4×10^3 γ quanta/cm^2sec.   In order to achieve the required accuracy of $\pm$ 30% at the lower limit, it is necessary to record about 10 pulses over a time interval of τ = RC = 3 sec.   It follows that the minimum recorded counting rate should be about 3 pulses/sec and the efficiency of the probe with a 1 cm^2 screen should be about 0.2%.   Such a low efficiency can be achieved with an inorganic crystal of about 0.1 cm^3, or a larger organic crystal. For practical reasons a polycrystalline stilbene screen (phosphor), 25 mm in diameter and about 150 mg/cm^2 thick, was used.   The screen

Card 1/5

20689
S/120/61/000/001/027/062
E032/E114

The Universal Scintillation Radiometer РУС -3 (RUS-3).
II.   γ- and β-Probes

was produced by compressing stilbene powder under a pressure of
700-800 kg/cm^2 at 100 ^{o}C.   The design of the γ counter head is
shown in Fig.2.   The counter head consists of a cylindrical steel
envelope 10 which serves as a magnetic and electrostatic screen
for the ФЭУ -25 (FEU-25) photomultiplier 9 .   The lid 17 can be
rotated and carries a standard specimen of Tl^{204} which has a
half-life of about 4 years.   By rotating the lid the standard
specimen can be brought to face the phosphor 20 through a special
aperture in the plate 13 .   The standard source is used to check
the operation of the instrument.   The β-probe is illustrated in
Fig.5.   The phosphor 24 is again made of stilbene and has a
thickness of 40 mg/cm^2 and a total area of 100 cm^2.   It is mounted
on the conical light guide 20 which connects it to the ФЭУ-29
(FEU-29) photomultiplier 15 .   The stilbene screen (phosphor) is
covered by a synthetic film with an evaporated layer of aluminium
27, having a total thickness of 4.5 mg/cm^2.   The probe is
calibrated by means of a standard Tl^{204} specimen 17 which is
Card 2/5

20689

S/120/61/000/001/027/062
E032/E114

The Universal Scintillation Radiometer PУC -3 (RUS-3).
II. γ- and β-Probes

located in the ring 18 .   By rotating the ring the standard
specimen can be brought to face an aperture in the conical part
of the envelope 19 and irradiate a small auxiliary stilbene
screen deposited on the conical part of the light guide 20 .
With the screen 26 in position, the β-probe can be used to
monitor weak γ-ray fields from about 0.02 $\mu r/sec$.   When the screen
is removed, the device can be used to record β-ray fluxes between
0.15 and 80 $\beta/cm^2 sec$.   When used in conjunction with a suitable
specimen collector, it can be used to determine the concentration
of β- and γ-active gases in air in the range 10^{-10} to 5×10^{-8} C/ℓ
(L.M. Mikhaylov and A.D. Turkin, Ref.12).   The β-probe has a
β/γ ratio of 50-80.   An α-probe and a neutron probe will be
described in a subsequent paper.   Acknowledgements are made to
N.A. Sergeyev for help in the experiments and the preparation of
the paper, and to A.A. Vasil'yev who took part in the construction
of the probes.   There are 5 figures and 14 references: 9 Soviet,
4 English and 1 German.
Card 3/5

20689

The Universal Scintillation ....

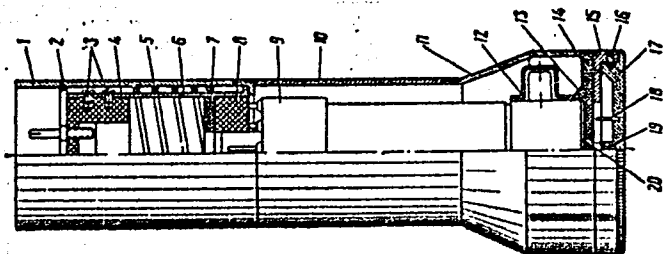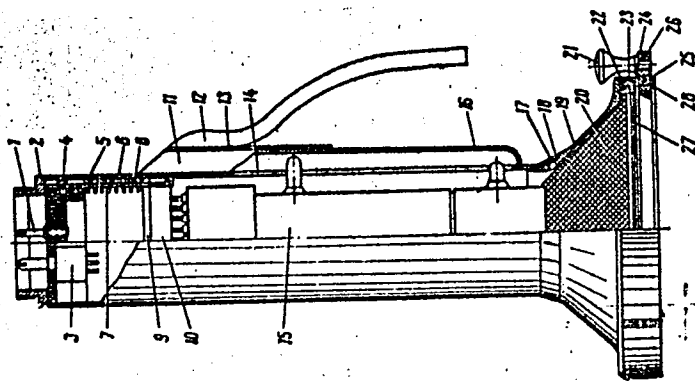S/120/61/000/001/027/062
E032/E114

SUBMITTED: December 10, 1959

Fig.2

Card 4/5

The Universal Scintillation .....

Fig.5

Card 5/5

LUSHCHIKHIN, G.M.

Petrographic types and conditions governing the formation
of coals in the Lower Tunguska basin. Geol. i geofiz. no.8;
17-27 '65.   (MIRA 18:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy geologicheskiy
institut, Leningrad.

VOLKOVA, I.B.; MALIVKIN, D.V.; SLATVINSKAYA; Ye.A.; BOGOMAZOV, V.M.;
GAVRILOVA, O.I.; GUREVICH, A.B.; MUDROV, A.M.; NIKOL'SKIY, V.M.;
OSHURKOVA, M.V.; PETRENKO, A.A.; POGREBITSKIY, Ye.O.; RITENBERG,
M.I.; BOCHKOVSKIY, F.A.; KIM, N.G.; LUSHCHIKHIN, G.M.; LYUBER,
A.A.; MAKEDONTSOV, A.V.; SENDERZON, E.M.; SINITSYN, V.M.; SHORIN,
V.P.; BELYANKIN, L.F.; VAL'TS, I.E.; VLASOV, V.M.; ISHINA, T.A.;
KONIVETS, V.I.; MARKOVICH, Ye.M.; MOKRINSKIY, V.V.; PROSVIRYAKOVA,
Z.P.; RADCHENKO, O.A.; SEMERIKOV, A.A.; FADDEYEVA, Z.I.; BUTOVA,
Ye.P.; VERBITSKAYA, Z.I.; DZENS-LITOVSKAYA, O.A.; DUBAR', G.P.;
IVANOV, N.V.; KARPOV, N.F.; KOLESNIKOV, Ch.M.; NEFED'YEV, L.P.;
POPOV, G.G.; SHTEMPEL', B.M.; KIRYUKOV, V.V.; LAVROV, V.V.;
SAL'NIKOV, B.A.; MONAKHOVA, L.P.[deceased]; MURATOV. M.V.;
GORSKIY, I.I., glav. red.; GUSEV, A.I., red.; MOLCHANOV, I.I.,
red.; TYZHNOV, A.V., red.; SHABAROV, N.V., red.; YAVORSKIY, V.I.,
red.; REYKHERT, L.A., red.izd-va; ZAMARAYEVA, R.A., tekhn. red

[Atlas of maps of coal deposits of the U.S.S.R.]Atlas kart ugle-
nakopleniia na territorii SSSR. Glav. red. I.I.Gorskii. Zam.
glav. red. V.V.Mokrinskii. Chleny red. kollegii: F.A.Bochkovskiy
i dr. Moskva, Izd-vo Akad. nauk SSSR, 1962. 17 p.
                                        (MIRA 16:3)

1. Akademiya nauk SSSR. Laboratoriya geologii uglya. 2. Chlen-
korrespondent Akademii nauk SSSR (for Muratov).
                   (Coal geology—Maps)

USSR/Farm Animals. General Problems   Q-1

Abs Jour : Ref Zhur - Biol., No 19, 1958, No 87997

Author   : Lushchikhin M.N.
Inst   : AS Kirgiz SSR
Title   : Development of Animal Husbandry in the Kolkhozes of Tien-Shan

Orig Pub : V sb.: Vopr. ekon. kilkhozov Tyan'-Shan'sk. obl. Frunze, AN
           KirgSSR, 1957, 5-43

Abstract : No abstract

Card   : 1/1

LUSHCHIKHIN, M. N., Doc Agr Sci -- (diss) "Fine-wooled sheep of Kir-
gizia." Moscow, 1960. 38 pp; with illustrations; (Moscow Order of
Lenin Agricultural Academy im K. A. Timiryazev); 200 copies; price
not given; list of author's works at end of text (12 entries); (KL,
26-60, 140)

LUSHCHIKHIN, M.N.; STESHENKO, V.M.

Formation of the fleece in fine-wool sheep of Kirghizistan.
Izv. AN Kir. SSR Ser. biol. nauk 2 no.5:69-79 '60.
(MIRA 14:6)

(KIRGHIZISTAN--SHEEP)   (WOOL)

LUSHCHIKHIN, M. N.

Specialization and the stockbreeding system in the Kirghiz
S.S.R. Izv. Kir. fil. Geog. ob-va SSSR no.3:67-72 '62.
(MIRA 15:10)

(Kirghizistan--Farm management)
(Kirghizistan--Stock and stockbreeding)

LUSHCHIKHIN, N.N.

3-3-17/40

AUTHORS:

Williams (Vil'yams), V.V., Professor, Candidate of Agricultural
Sciences
Lushchikhin, N.N., Candidate of Agricultural Sciences
Panov, N.P., Candidate of Agricultural Sciences

TITLE: Complex Soil-Agrochemical Training Practice (Kompleksnaya
pochvenno-agrokhimicheskaya uchebnaya praktika)

ABSTRACT: The experience of previous years has proved that the practi-
cal training of agronomists at the higher agricultural insti-
tutions has serious deficiencies. These specialists, for
instance the graduates of the Agricultural Academy imeni
Timiryazev had a poor knowledge of the methods of complex
territory inspections because they had not been instructed
on the method of examining quarternary deposits, were
lacking in knowledge of geomorphology and were not familiar
with methods of geobotanical examination. To eliminate
these deficiencies the Soil-Agrochemical Faculty of the
Academy introduced a complex practical training which was
carried out on training farms, in such subjects as soil

Card 1/2

Complex Soil-Agrochemical Training Practice   3-3-17/40

crust, vegetation, quarternary deposits, territorial geo-
morphological characteristics, ground water and local manure.
Started in 1956, this training had its deficiencies but will
be developed in the future. It lasted 3 months and started
with field and vegetation fertilizer tests. Then the method
and technic of carrying out field and laboratory research
was explained and the water and physical properties of the
soil were studied. Studies were also conducted in geobotany,
geology and the other abovementioned subjects. The know-
ledge acquired assisted the students to complete successful-
ly the soil-agrochemical research required in the course of
their production practice, and to obtain the necessary skill
for independent work.

ASSOCIATION: The Moscow Agricultural Academy imeni K.A.Timiryazev (Mos-
kovskaya sel'skokhozyaystvennaya akademiya imeni K.A.Timi-
ryazeva)

AVAILABLE: Library of Congress

Card 2/2

USSR / Soil Science.   Physical and Chemical Properties   J-2
        of Soils.

Abs Jour: Ref Zhur-Biol., No 8, 1958, 34332.

Author   : Lushchikhin, N. M.
Inst   : Moscow Agricultural Academy imeni K. A. Timiry-
          azov.
Title   : Peculiarities of the Regimen of Ground Waters
          in Argillaceous Deposits in the Territory of
          Forest Belts and Conditions of Their Underflow
          to Adjacent Fields.

Orig Pub: Dokl. Mosk. s.-kh. akad. im. K.A. Timiryazeva,
          1957, vyp. 29, 365 - 367.

Abstract: Control observations of the system of ground
          waters under tree belts in certain districts of
          wood-steppes have shown that the level of ground
          waters and the character of the rolling surface

Card 1/2

7

USSR / Soil Science. Physical and Chemical Properties   J-2
          of Soils.

Abs Jour: Ref Zhur-Biol., No 8, 1958, 34332.

Abstract: of their "mirror"-under afforestation territories-
          are determined, to a large extent, by the water
          penetrability of cover loams. Negligible amounts
          of moisture in argillaceous soils are particip-
          ating in the horizontal movement from the tree
          belts in the direction of the adjacent fields;
          those negligible amounts have no vital import-
          ance in the water supply of agricultural cul-
          tivations of adjoining zones. -- P. V. Shramko.

Card 2/2

LUSHCHIKHINA, I.M.

Use of Ingve's hypothesis on the structure of the phrase in
research on speech perception. Vop. psikhol. 11 no.2:57-66
Mr-Ap '65.   (MIRA 18:6)

1. Laboratoriya inzhenernoy psikhologii Leningradskogo gosu-
darstvennogo universiteta.

DUBROVIN, Ye.N., dots., kand. tekhn. nauk; LUSHCHIKINA, N., red.;
       STRAKHOVA, T., tekhn. red.

       [Designing the longitudinal section of city streets and roads]
       Proektirovanie prodol'nogo profilia gorodskikh ulits i dorog;
       lektsiia dlia studentov spetsial'nosti "Gorodskoe stroitel'-
       stvo i khoziaistvo." Moskva, Vses. zaochnyi inzhenerno-stroit.
       in-t, 1962. 17 p.   (MIRA 15:12)
                (Streets)   (Roads--Design)

ACC NR: AP7002963   (A)   SOURCE CODE: UR/0413/66/000/024/0042/0043

INVENTOR: Valayev, N. I.; Lushchikov, I. I.

ORG: None

TITLE: A timing relay. Class 21, No. 189488

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 24, 1966, 42-43

TOPIC TAGS: time relay, RC circuit

ABSTRACT: This Author's Certificate introduces: 1. A timing relay which contains two time-mark RC filters with a common resistor and capacitors connected in adjacent arms of a bridge circuit. The device also contains an additional feed circuit consisting of a voltage divider and a semiconductor diode, as well as a null indicator connected in the diagonal of the bridge circuit. Holding time is increased and holding stability is improved by connecting the common resistor for the time-mark RC circuits in parallel with one of the capacitors between one of the power supply terminals and the common point between the capacitors. 2. A modification of this timing relay with temperature and time stabilization of the capacitors in the time-mark RC filters by connecting the additional feed circuit to the common point between these capacitors.

Card 1/2   UDC: 621.318.57

ACC NR: AP7002963
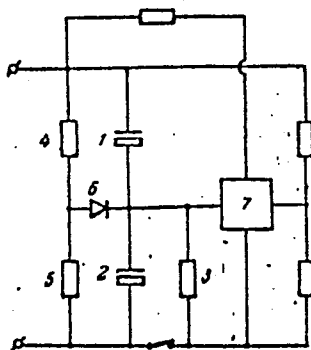
1 and 2—capacitors of the time-mark filters; 3—common resistor for the time-mark filters; 4-6—additional feed circuit; 7—null indicator

SUB CODE: 09/ SUBM DATE: 14Oct64

Card 2/2

LUSHCHIKOV, V.I.; MANENKOV, A.A.; TARAN, Yu.V.

[Dynamic polarization of protons in hydrogen peroxides and
tertiary butyl] Dinamicheskaia poliarizatsiia protonov v pe-
rekisiakh vodoroda i tretichnogo butila. Dubna, Ob"edinennyi
in-t iadernykh issl., 1961. 7 p.   (MIRA 15:1)
    (Protons) (Hydrogen peroxide)   (Butoxy group)

S/ 8 /61/003/011/037/056
B 08/B138

AUTHORS: Lushchikov, V. I., Manenkov, A A., and Taran, Yu. V.

TITLE: Dynamic polarization of protons in irradiated polyethylene

PERIODICAL: Fizika tverdogo tela, v. 3, no. 11, 1961, 3503-3508

TEXT: The authors investigated possibilities of producing targets with
aligned protons. Some experiments with polyethylene are described with
reference to work carried out by G. Hwang and T. M. Sanders (Ref. 3, see
below). Fig. 1 shows the experimental arrangement by means of which
simultaneous observations can be made of nuclear magnetic resonance and
electron paramagnetic resonance at helium temperatures. 1.9300-Mcps
vibrations (H_{102}-mode) were excited in the cavity. The amplitude of the
primary oscillations were kept at a low (~ 0.005 v) and constant level by
means of an automatic level trimmer. Various types of polyethylene were
studied: (1) ПЭВП1 (PEVP1) - viscosity 3.2 poise, (2) ПЭВП2 (PEVP2) - vis-
cosity 2.6 poise, (3) ПЭНП (PENP) - low viscosity. The specimens were
bombarded by fast neutrons for 20 hours at $65°C$. The rise in proton
polarization was determined in terms of the dynamic amplification factor η

Card 1/4 3

Dynamic polarization of protons...

which is the ratio of the nuclear magnetic resonance signal in the case of
saturation of the electron resonance of the F-centers to the signal without
saturation of the F-centers. This factor increased with the molecular
weight of the polymer chains. Between 1.6 and 77°K, τ_1 was practically
independent of temperature. Nuclear spinlattice relaxation time was
determined from the drop in the nuclear magnetic resonance signal. Both
build-up and decay of nuclear magnetic resonance are characterized by two
time components, a long one and a short one, which is some 30 % of the
long component. This is explained by the existence of two kinds of
protons. Protons near the F-centers have a short relaxation time, protons
far from the paramagnetic centers have a long relaxation time. The
polarization of the second kind is due to spin diffusion. F. L. Shapiro,
V. A. Milyayev, P. A. Krupchitskiy, and B. I. Kokcrev are thanked for
their interest and assistance. There are 5 figures, 1 table, and 5 non-
Soviet references. The two most recent references to English-language
publications read as follows: G. Hwang, T. M. Sanders. Proceedings of the
7-th International Conference on Low Temperature Physics, University of
Toronto, p. 98, 1960; O. S. Leifson, C. D. Deffries. Bull. Am. Phys. Soc.,
6, no. 3, 1961.

Card 2/4

Dynamic polarization of protons...

S/181/61/003/011/037/056
B108/B138

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

SUBMITTED: June 26, 1961

Legend to Fig. 1: Г1 - 900-kcps-generator, Г2 - nuclear magnetic resonance
generator, Г3 - ЗГ-12 (ZG-12) audio-frequency oscillator, У1 - hf-amplifier,
У2 - lf-amplifier, У3 - 860-cps resonance amplifier, У4 - automatic
frequency control amplifier, Д - detector, Сд - synchronous detector,
Кд - crystal detector, Пk - klystron supply, saturation clystron,
Am - attenuator, Сн - matched load, Фц - ferrite rotor, Гk - helium
cryostat, Aд - nitrogen Dewar, К - coaxial cable, р. - resonator cavity,
М.К. - modulator coils, М.б.о. - water-cooled magnet, О - oscilloscope,
Сп. - ЭПП-09 (EPP-09) recorder.

Card 3/4 3

AKSENCV, S.I.; ALFIMENKOV, V.F.; LUSHCHIKOV, V.I.; OSTANEVICH, Yu.M.
SHAPIRO, F.L.; YAN'U-GUAN [Yen Wu-kuang]

Observing the resonance absorption of γ-rays in Zn^{67}. Zhur. eksp.
i teor. fiz. 40 no.1:88-90 Ja '61.   (MIRA 14:6)

1. Fizicheskiy institut imeni P.N. Lebedeva AN SSSR i Ob"yedinennyy
institut yadernykh issledovaniy.
                    (Gamma rays) (Zinc--Isotopes)

44510
s/181/63/005/001/036/064
B108/B180

AUTHORS: Lushchikov, V. I., Manenkov, A. A., and Taran, Yu. V.

TITLE: Dynamic polarization of protons in lanthanum-magnesium binary
             nitrate

PERIODICAL: Fizika tverdogo tela, v. 5, no. 1, 1963, 233 - 236

TEXT: Earlier work on the dynamic polarization of protons (FTT, 3, 3503,
1961) is continued here. $(La,Ce)_2Mg_3(NO_3)_{12} \cdot 24H_2O$ single crystals were
grown from a saturated $La_2Mg_3(NO_3)_{12}$ solution with an appropriate addition
of $Ce_2Mg_3(NO_3)_{12}$. The sample was placed in a resonator so that the hexa-
gonal crystal axis was always perpendicular to H_0 the external magnetic
field. In this position, $g_\perp = 1.83$ for the Ce^{3+} ion. The increase in the
polarization of the protons in the crystal on saturation of the epr was
determined from the increased amplitude of the nmr signal from the proton.
With fixed epr frequency typical polarization peaks were observed at
$H_c \pm \frac{\Delta H}{2}$, which corresponds to the forbidden transition at the frequency

Card 1/2

Dynamic polarization of...   S/181/63/005/001/036/064
                                              B108/B180

$v_{exc} \mp v_{nucl}$. The greatest increase in polarization was found at $1.6°K$ in a field of 3700 oe for a crystal with 0.5% Ce. In this case, the proton polarization was 170 times greater than in thermal equilibrium. This decreases somewhat when the temperature falls to $1.5°K$. Measurements of the coefficient of dynamical increase in polarization in dependence on the power of epr saturation showed good agreement with the simple phenomenological theory of spin diffusion (O. S. Leifson, C. D. Jeffries. Bull. Am. Phys. Soc., 6, no. 3, 1960; Phys. Rev., 122, 1781, 1961). The same applies to the nuclear spin-lattice relaxation time in dependence on the Ce^{3+} concentration in the range 0.2 - 1% (at constant temperatures between 1.5 and $1.7°K$). Between 1.5 and $1.7°K$, the relaxation time is proportional $T^{-4\pm1}$ at any Ce^{3+} concentration. There are 3 figures and 1 table.

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

SUBMITTED: August 6, 1962

Card 2/2

S/181/63/005/002/009/051
B104/B186

AUTHORS: Kessenikh, A. V., Lushchikov, V. I., Manenkov, A. A., and
Taran, Yu. V.

TITLE: Proton polarization in irradiated polythene

PERIODICAL: Fizika tverdogo tela, v. 5, no. 2, 1963, 443 - 454

TEXT: The aim is to find materials suitable for polarized proton targets,
and to investigate the physical properties of irradiated polythene. To
this end the studies of dynamic polarization in high-density polythene
irradiated with fast protons (V. I. Lushchikov, A. A. Manenkov, Yu. V. Taran,
FFT, 3, 3503, 1961) were continued. The dynamic nuclear polarization was
measured at 77, 4.2 and 1.6°K in a magnetic field of ~ 3400 oe using a
device described in a previous paper. The 17,9.6 mm test pieces were placed
in the coil of an autodyne n.m.r pickup, with the axis of the coil per-
pendicular to the long side of the resonator. H_{102} oscillations with a
frequency of 9440 Mc/s were set up in the resonator. The dynamic polariza-
tion factor of the protons was determined from the amplification factor of
the n.m.r. signal at saturated e.p.r. of the free radicals formed when the

Card 1/3

Proton polarization in...

S/181/63/005/002/009/051
B104/B186

polythene was irradiated. Results: In the He temperature range, the cross-relaxation under conditions of non-uniform e.p.r. line broadening plays an important part in the dynamic polarization of the nuclei. This can be used to explain the increase in the broadening of the dynamic nuclear polariza- tion maxima as the temperature decreases, and the fact that the dynamic polarization factor does not depend on temperature. The time dependence of the n.m.r. lines is described as the sum of two exponents with relaxation times of T_1 and T_2. The nuclear relaxation depends linearly on T_1 and T_2, this result being contrary to theoretical predictions (O. S. Leifson, C. D. Jeffries, Phys. Rev., 122, 1781, 1961). It is explained on the assumption that the action zone of the paramagnetic centers is equalized at the expense of fast spin diffusion. The dynamic polarization coefficient depends linearly on the molecular weight of the initial material. There are 6 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics
            Institute imeni P. N. Lebedev AS USSR); Nauchno-issledovatel'skiy
            fiziko-khimicheskiy institut im. L. Ya. Karpova, Moskva
            (Scientific Physicochemical Research Institute imeni
            L. Ya. Karpov, Moscow)

Card 2/3

Proton polarisation in...

SUBMITTED: August 6, 1962

8/181/63/005/002/009/051
B104/B186

Card 3/3

L 17999-63   EWP(j)/EPF(c)/EWT(m)/BDS   AFFTC/ASD   Pc-4/Pr-4
RM/WW/MAY

ACCESSION NR: AP3001284   S/0181/63/005/006/1640/1642 74

AUTHORS: Kessenikh, A. V.; Lushchikov, V. I.; Manenkov, A. A.; Taran, Yu. V. 68

TITLE: Relaxation and dynamic polarization of protons in polyethylenes

SOURCE: Fizika tverdogo tela, v. 5, no. 6, 1963, 1640-1642

TOPIC TAGS: proton, dynamic polarization, spin diffusion, nuclear magnetic
resonance, polyethylene, molecular weight, ultra-high frequency

ABSTRACT: The authors started with data from V. I. Lushchikov, A. A. Manenkov,
and Yu. V. Taran (FTT, 3, 3503, 1961) and A. V. Kessenikh, V. I. Lushchikov, A. A.
Manenkov, and Yu. V. Taran (FTT, 4, 433, 1963) concerning the dependence of
dynamic polarization in polyethylenes on the average molecular weight. They ex-
pected the coefficient of dynamic polarization to be about 60 when the molecular
weight was 2.3 x 10^6. To test this view and to refine the results of the cited
papers, they made this study on several samples of polyethylene bombarded by fast
neutrons. Measurements were made on a setup described in the first of the above
papers, at 77, 4.2, and 1.6K. These experiments have shown that within the limits
of experimental accuracy the resolution of dynamic polarization at ultra-high-
frequency output and restoration of nuclear polarization after removal of nuclear-

Card 1/2

L 17999-63

ACCESSION NR: AP3001284   6

magnetic-resonance saturation are described by exponents with identical value of
the time of nuclear relaxation. This indicates that the theory of spin diffusion
(G. R. Khutsishvili (ZhETF, 42, 1311, 1962)) is equally applicable to dynamic
polarization. The measured values of dynamic polarization proved to be smaller
than expected and the authors ascribe the difficulty of demonstrating dependence
of this property on molecular weight to peculiarities in the technology of pre-
paring the samples. "In conclusion the authors thank B. I. Kokorev for his aid in
the work and they thank V. L. Karpov, Doctor of Chemical Sciences, for a number
of interesting discussions. They also take this opportunity to express their
thanks to T. I. Terekhov and Yu. P. Vyrtskiy for determining the molecular weight
of one sample and N. A. Slovokhotov for studying the infrared spectrum of the
same sample." Orig. art. has: 1 table.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova, Moscow (Physical
and Chemical Institute)

SUBMITTED: 21Jan63   DATE ACQ: 01Jul63   ENCL: 00

SUB CODE: PH, MA   NO REF SOV: 003   OTHER: 001

Card 2/2

L 16907-63   EPR/EWT(1)/EWP(q)/EWT(m)/BDS/EPF(n)-2   AFFTC/ASD/IJP(C)/SSD
Pu-4/Ps-4   WW/JD/JG

ACCESSION NR: AP3005305   S/0056/63/045/002/0394/0396

AUTHOR: Neganov, B. S.; Parfenov, L. B.; Lushchikov, V. I.; Taran, Yu. V.

TITLE: Dynamic proton polarization at 0.5°K

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 394-396

TOPIC TAGS: dynamic proton polarization, proton spin lattice relaxation, electron proton resonance, lanthanum double nitrate, cerium impurity

ABSTRACT: Results are reported of preliminary experiments on dynamic proton polarization (DPP) in crystals of $La_2Mg_3(NO_3)_{12} \cdot 24H_2O$ with paramagnetic cerium concentration of 0.8% (relative to the lanthanum) at approximately 0.5°K; the experiments were intended to increase the polarization and check the dependence of the proton polarization amplification coefficient on the external magnetic field at fixed electron proton resonance (EPR) frequency, the dependence of the amplification coefficient on the microwave power used to saturate the EPR, and the temperature dependence of the proton spin-lattice relaxation time. The maximum positive value of the amplification coefficient was 129 ± 10, corresponding in a field of 3500 Oe to a proton polarization 8 $\pm$ 0.5%. It was found that 1mW of microwave power

Card 1/2

L 16907-63

ACCESSION NR: AP3005305

2

was sufficient to obtain the maximum amplification coefficient (with resonator Q of approximately 1000). The proton spin-lattice relaxation has a time dependence in the form $T_{ln}^{-1} \sim T^{1.65 \pm 0.15}$ with $T_{ln} = 920 \pm 80$ sec at $T = 0.32 \pm 0.03°K$.

It is therefore concluded that at temperatures below $1°K$ no reduction occurs in the amplification coefficient when the temperature of the sample is substantially decreased. The use of higher magnetic fields should yield proton polarizations near 100%. "In conclusion, the authors take this opportunity to thank Prof. F. L. Shapiro for his great interest and attention to this work."

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 01 Jun 63   DATE ACQ: 06Sep63.   ENCL: 00

SUB CODE: PH   NO REF SOV: 002   OTHER: 003

Card 2/2

LUSHCHIKOV, V.I.; TARAN, Yu.V.; FRANK, A.I.

> Dynamic polarization of deuterons in crystals of lanthanum
> magnesium nitrate. Pis'. v red. Zhur. eksper. i teoret. fiz.
> 1 no.2:21-27 Ap '65.   (MIRA 18:10)

1. Ob"yedinennyy institut yadernykh issledovaniy.

L 5331-66   EWT(1)/EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(b)/EWA(m)-2   IJP(c)
             RDW/JD/GG
ACCESSION NR: AP5021099   UR/0056/65/049/002/0406/0409

AUTHOR: Lushchikov, V. I.; Neganov, B. S.; Parfenov, L. B.; Taran, Yu. V.

TITLE: Dynamic polarization of protons in a rotating lanthanum-magnesium nitrate crystal

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 49, no. 2, 1965, 406-409

TOPIC TAGS: proton polarization, lanthanum compound, spin relaxation

ABSTRACT: A new method of polarizing nuclei in anisotropic crystals is proposed, consisting of rotating the crystals in a stationary magnetic field and a weak radio frequency field. The method is based on the theoretical predictions of A. Abragam (Cryogenics v. 3, 42, 1963) and C. D. Jeffries (Cryogenics v. 3, 41, 1963), wherein the spin temperature is rapidly decreased via spin-spin relaxation accompanied by rapid cooling of the system. The authors verified this method with single crystal $(La, Ce)_2Mg_3(NO_3)_{12} \cdot 24H_2O$, and obtained an appreciable increase in polarization. The experiments were made in fields from 2 to 6 kOe at saturation frequencies from 60 to 170 Mc with the crystal rotating uniformly at 30--600 rpm. The experiments were made at 1.3K. Amplification coefficients up to ~70 were obtained. The ampli-

Card 1/2

L 5331-66

ACCESSION NR: AP5021099   4

fication coefficient increased with decreasing cerium concentration and with in-
creasing speed. Only positive polarization was obtained. Advantages of the method
are much less stringent magnetic-field uniformity and stability tolerances, and the
use of radio frequencies in the meter range instead of ultrahigh frequencies. Orig.
art. has: 3 figures and 2 formulas.

ASSOCIATION: Ob"yedinnennyy institut yadernykh issledovaniy (Joint Institute of
Nuclear Research)

SUBMITTED: 03Mar65   ENCL: 00   SUB CODE: NP, SS

NR REF SOV: 000   OTHER: 004

Card 2/2

L 00757-66   EWT(1)/EWT(m)/T/EWP(t)/EWP(b)   IJP(c)   JD/JG/GG

ACCESSION NR: AP5014197   UR/0386/65/001/002/0021/0027

AUTHOR: Lushchikov, V. I.; Taran, Yu. V.; Frank, A. I.

TITLE: Dynamic polarization of deutrons in a lanthanum-magnesium nitrate crystal

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu. Prilozheniye, v. 1, no. 2, 1965, 21-27

TOPIC TAGS: deutron polarization, single crystal, deuterium, heavy water, lanthanum, magnesium compound, nitrate

ABSTRACT: An attempt was made to polarize deuterium nuclei by the dynamic method. The specimen was a single crystal of binary lanthanum-magnesium nitrate $La_2Mg_3(NO_3)_{12} \cdot 24(H_2O + D_2O)$ with a 1% Nd^{142} impurity. Part of the ordinary water of crystallization in this crystal has been replaced by heavy water. Mass spectroscopic analysis showed a deuterium content in the crystal of 42%. It was found that polarization in excess of 10% is possible in a magnetic field of 20,000 oersteds at a temperature of $1°K$, which is much greater than the 1.2% polarization attainable in solid deuterium. Orig. art. has: 2 figures, 1 formula.

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: 03Mar65   ENCL: 00   SUB CODE: NP
Card 1/1   NO REF SOV: 002   OTHER: 010

1. LUSHCHIKOVA, A. V.

2. USSR (600)

4. UL'YANOVSK PROVINCE – SUNFLOWERS

7. Sunflower for silage Ul'yanovsk Province.   Korm.baza 3 no 10, 1952

9. <u>Monthly</u> <u>List</u> <u>of</u> <u>Russian</u> <u>Accessions</u>, Library of Congress, January 1953. Unclassified.

LUSHCHIN, Yu.K.

      Characteristics and dynamics of sleep in hypertension patients
      treated in the biotron. Vrach. delo no.6:36-40 Je'63.
                                             (MIRA 16:9)

    1. Kiyevskaya oblastnaya klinicheskaya bol'nitsa.
        (HYPERTENSION)   (SLEEP) (CLIMATOLOGY,MEDICAL)

LUSHCHINA, L.I. (Moskva)

Large-focus gamma-therapy of malignant tumors of the thyroid
gland. Trudy TSentr. nauch.-issl. inst. rentg. i rad. 11
no.1:224-230 '64.   (MIRA 18:11)

SOROCHAN, O.G.; LUSHCHINSKAYA, M.I.

Conditions for the transfer and transformation of masses producing
precipitations over the Asiatic part of the U.S.S.R. in the spring.
Trudy GGO no.133:55-72 '62.   (MIRA 16:2)
        (Russia, Asiatic--Precipitation (Meteorology))

LUSHCHITSKAYA, R.N.

Change in the hemodynamic indices in nitranol treatment of stenocardia. Zdrav.Bel. 7 no.8:11-13 Ag '61. (MIRA 15:2)

1. Iz kafedry propedevtiki vnutrennikh bolezney (zav. - prof. I.D. Mishenin) Minskogo meditsinskogo instituta.
        (NITRILOTRIETHANOL)   (ANGINA PECTORIS)

LUSHCHITSKIY, A.O.

Transportation and dispatching service for Moscow residents.
Gor.khoz.Mosk. 36 no.2:23-25 F '62.   (MIRA 16:2)
            (Moscow—Storage and moving trade)
                (Moscow—Delivery of goods)

LUSHCHITSKIY, M.A.,podpolkovnik meditsinskoy sluzhby.

Transplantation of sieve graft of the skin. Voen-med. zhur.
no.1:67-69 Ja '56   (MLRX 10:5)
        (SKIN TRANSPLANTATION,
            sieve graft) (Rus)

LUSHCHITSKIY, M.A., polkovnik meditsinskoy sluzhby

Fluorescent method for early determination of necrosis of tissue
in frostbite. Voen.-med.zhur. no.1:41-43 Ja '61.   (MIRA 14:1)
          (FROSTBITE)   (FLUORESCENCE)

LUSHCHITSKIY, M.A., polkovnik meditsinskoy sluzhby; BORSHCHAGOVSKIY, M.L.

Traumatic shock and cerebrocranial lesions. Voen.-med. zhur. no.7:
31-34 Jl '61.   (MIRA 15:1)
         (BRAIN--WOUNDS AND INJURIES)   (SHOCK)

LUSHCHITSKIY, M.A.; BORSHCHAGOVSKIY, M.L.

Spinal punctures in the diagnosis and treatment of closed craniocerebral injuries. Vop. psikh. i nevr. no.9:353-357 '62.   (MIRA 17:1)

1. Kafedra gospital'noy khirurgii Voyenno-meditsinskoy ordena Lenina akademii imeni S.M. Kirova.

PANOV, A.G.; KOLGIN, V.S.; LUSHCHITSKIY, M.A.; MZHEL'SKIY, V.S.

Sinocarotid novocaine blocks in the treatment of myasthenia.
Zhur.nevr. i psikh. 66 no.1:77-82 '66.

(MIRA 19:1)

1. Kafedra nervnykh bolezney (nachal'nik - prof. A.G.Panov)
kafedra voyenno-morskoy i gospital'noy khirurgii (nachal'nik -
prof. Ye.V.Smirnov) Voyenno-meditsinskoy ordena Lenina akademii
im. Kirova, Leningrad. Submitted May 20, 1965.

LJSHCHITSKIY, S.N.

Centralize the production of road signs. Avt.dor.17 no.2:27 S-O '54.
        (Street signs)   (MIRA 8:4)

USSR/General Problems of Pathology - Tumors. Human Tumors.   U.

Abs Jour   : Ref Zhur - Biol., No 2, 1959, 8896

Author   : Lushchitskiy, V.O.

Inst   : Kar'kov Scientific Medical Society

Title   : Diagnostic Errors and Therapy of Skin Cancer

Orig Pub   : Tr. Khar'kovsk. nauchn. med. o-va, 1957, No 9, 157-161

Abstract   : No abstract.

Card 1/1

- 52 -

USSR/General Problems of Pathology - Tumors. Human Tumors.   U.

Abs Jour   : Ref Zhur - Biol., No 2, 1959, 8884

Author   : Lushchitskiy, V.O.

Inst   : Electrosurgical Methods of Treating Cancer of the Skin
          and Mucosae

Orig Pub   : Tr. Khar'kovsk. nauchn. med. o-va, 1957, No 9, 162-166

Abstract   : No abstract.

Card 1/1

- 50 -

LUSHCHITSKIY, V.O. (Khar'kov, ulitsa Danilevskogo dom 8, kvartira44);
    PROSKURINA, V.S. (Khar'kov, ulitsa Danilevskogo, dom 8, kv. 44);
SHAKHOVA, F.B. (Khar'kov, ulitsa Danilevskogo, dom.8, kvartira
44)

Ten years of experience with electrosurgical treatment of pre-
tumorous skin diseases. Vop. onk. 9 no.8:94-98 '63
                                                    (MIRA 17:4)

1. Iz Ukrainskogo instituta usovershenstvovaniya vrachey
(rektor I.I. Ovsiyenko) i Ukrainskogo nauchno-issledovatel'-
skogo kozhno-venerologicheskogo instituta (direktor - dotsent
A.I.Pyatikop).

LUSHCHITSKIY, V.O., dotsent; SHAKHOVA, F.B., kand.med.nauk

Clinical aspects and early diagnosis of Paget's disease of the
breast. Vest. derm. i ven. no.5:16-20   '65.

(MIRA 18:11)

1. Ukrainskiy institut usovershenstvovaniya vrachey i Ukrainskiy
nauchno-issledovatel'skiy kozhno-venerologicheskiy institut
(direktor - dotsent A.I.Pyatikop), Khar'kov. Submitted February
17, 1964.

LUSHCHITSKIY, Yu.V., inzh.

Method for measuring the temperature of the surface of an injector atomizer. Trakt. i sel'khozmash. no.3:6-7 Mr '65.

(MIRA 18:5)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po dizelyam.

LUSHCHITSKIY, Yu.V., inzh.

Flame-type heater of new design. Trakt. i sel'khozmash. no.11:11-12
N '58.   (MIRA 11:11)
            (Diesel engines--Cold weather operation)

LUSHCHITSKIY, Yu.V., inzh.; DIDENKO, A.M., inzh.

Improvement of the temperature conditions in the operation of
the jets of a diesel tractor engine. Trakt. i sel'khozmash.
32 no.10:10-11 O '62.
(MIRA 15:9)

1. Gosudarstvennoye spetsial'noye konstruktorskoye byuro po
dvigatelyam.
(Diesel engines)

DOLGOV, N., kapitan 1 ranga; LUSHEN'KIN, V., kapitan 1 ranga;
MEDVEDEV, K., red.; NIKOMAREVA, T., tekhn.red.

[Visits of friendship: studies on friendship cruises of
ships of the Baltic Fleet] Vizity druzhby; sbornik ocherkov
o pokhodakh s vizitami druzhby korablei Krasnoznamennogo
Baltiiskogo Flota. Kaliningrad, Kaliningradskoe knizhnoe
izd-vo, 1958. 78 p.   (MIRA 12:9)
          (Warships--Visits to foreign ports)

L 14469-66   EWT(1)/FCC   GW

ACC NR: AP6003443   (N)   SOURCE CODE: UR/0362/66/002/001/0003/0013

AUTHOR: Lunhev, Yu. G.; Matveyev, L. T.

ORG: none

TITLE: A dynamical model of layer cloudiness forecast

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 2, no. 1, 1966, 3-13

TOPIC TAGS: meteorology, meteorological structure, cloud formation, parameter effect, weather forecasting, atmospheric turbulence, atmospheric current, atmospheric model

ABSTRACT: The effect of turbulent exchange on the processes of cloud formation is estimated by analyzing the system of equations of heat and humidity transfer. It is shown that turbulent exchange plays the same role as vertical air currents. A numerical chart for the forecast of layer cloud systems is constructed. The accuracy of the weather forecasts is briefly analyzed. Orig. art. has: 32 formulas, 4 figures, and 3 tables. [Based on author's abstract].

SUB CODE: 04/ SUBM DATE: 12Aug65/ ORIG REF: 019/ OTH REF: 001/ ATD PRESS:

Card 1/1   UDC: 551.509.324

ACC NR: AP6012919   SOURCE CODE: UR/0020/66/167/005/1042/1045

AUTHOR: Lushev, Yu. G.; Matveyev, L. T.

ORG: None

TITLE: Numerical plan for a short-term weather forecast of stratified cloudiness

SOURCE: AN SSSR. Doklady, v. 167, no. 5, 1966, 1042-1045

TOPIC TAGS: weather forecasting, cloud forecasting, stratified clouds forecasting, atmospheric model, atmospheric cloud model, computer calculation

ABSTRACT: The authors present an atmospheric and a specific cloud model for strati-fied cloud layers forecasts. The topic's importance is due to the influence of clouds upon the important heat transfer and radiation balance of the atmosphere and the earth's surface. The basis of the theory is the concept of a sufficiently complete augmentation of the cloud elements by particles participating in the turbulent excha-nge. The theory does not, but can be extended to account for the fallout of precipita-tion from the cloud and for its radiative heat exchange. The basic system of cloud equations, which for the forecasting is combined with the atmospheric equations of motion and continuity, accounts for turbulence, humidity and the specific water con-tent of the cloud and considers the transfer of heat and water vapor in the turbulent cloud atmosphere. Ground boundary conditions for humidity are approximated by the use of a statistically well correlated linear relationship between the dew point and the

Card 1/2   UDC: 551.511

ACC NR: AP6012919

air temperature near the ground surface. Plans, aids and short-cuts for the solution
of the equations with the aid of a digital computer are discussed. Computations were
compared with the factual presence (or absence) of cloudiness on isobaric surfaces
with their associated weather data, for 1540 points. The verification factor of the
method was found to be about .79 abd the reliability criterion was over .57. This
recommends the method for practical utilization. Orig. art. has 11 formulas, 2 tables.

SUB CODE: 04, 09/   SUBM DATE: 30Jun65/   ORIG REF: 014

Card 2/2