POLOSHCHUK, Yu.; KULIKOVA, A.; PISKOV, G.

Facts, events, people. Kryl.rod. 12 no.6:14-15 Je '61.

(MIRA 14:6)

1. Zamestitel'nachal'nika Upravleniya perevozok i
obsluzhivaniya passazhirov Glavnogo upravleniya
Grazhdanskogo vozdushnogo flota (for Piskov).
                (Aeronautics)

FISKOV, G. AND VASIL'CHENKO, I.

Bol'she vnimaniia ekon... ... ... znk. [To pay more attention to ...
of transportation]. (Grazhdanskaia aviatsiia, 194 , no. , p. ...,

DLC: T1 ...G7

SC: Soviet Transportation and Communications, A Bibliography, Library of Con...
      Reference Department, Washington, 1963, Unclassified.

PISKOV, G.

Give care and attention to passengers. Grazhd.av. 13 no.9:24-26
S '56.   (MLRA 9:11)

1. Nachal'nik otdela perevozok Upravleniya transportnoy aviatsii
Glavnogo upravleniya grazhdanskogo vozdushnogo flota.
            (Aeronautics, Commercial)

AID P - 5285

Subject   : USSR/Aeronautics - Civil Aviation

Card 1/1   Pub. 58 - 3/11

Author   : Piskov, G., Head, Transportation Dept., Central
                Administration of Civil Aviation, Council of Ministers,
                USSR.

Title   : Aerial highways of the Soviet Union

Periodical   : Kryl. rod., 9, 6-8, S 1956

Abstract   : The development of aerial communications in the USSR is
                sketchily described. Some indications are given as to
                the new airliner projected by the designer A. N. Tupolev,
                and a picture is drawn of what will be a flight Moscow-
                Khabarovsk in 1960. 6 photos (including one of a new
                liner designed by O. K. Antonov).

Institution : None

Submitted   : No date

PISKOV, G.

On the Soviet Union's air routes. Vnesh.torg. 10 no.3:33-35
(MIRA 13:3)
'60.
(Airlines)

PISKOV, G.; ALEKSANDROV, L.

Facts, events, people. Kryl.rod. 11 no.2:12-13 F '60.

(MIRA 13:6)

1. Zamestitel' nachal8nika Upravleniya perevozok i obsluzh!vaniya passazhirov Glavnogo upravleniya Grazhdanskogo vozdushnogo flota (for Piskov).

(Aeronautics)

PISKOV, G.

Entering into 1965... Kryl. rod. 16 no.1:21 Ja '65.

(MIRA 18.3)

1. Zamestitel' nachal'nika Upravleniya Ministerstva grazhdanskoy
aviatsii SSSR.

AUTHOR: Piskov, G.   84-12-39/49

TITLE: Organization of Passenger Services on the SAS Airlines (Organizatsiya
            obsluzhivaniya passazhirov v aviakompanii SAS)

PERIODICAL: Grazhdanskaya aviatsiya, 1957, Nr 12, pp 31-34 (U.JR)

ABSTRACT: The article reports on what a group of Soviet airline officials saw
            and learned on their visit to Swedish and Danish agencies of the
            Scandinavian Airlines System. Servicing passengers in the city agency
            and the airport terminal of Copenhagen, as well as in flight, is
            described in detail. Four photographs accompany the text.

AVAILABLE: Library of Congress

Card 1/1

PI: KOV, G...

    For air travelers Grazhd. av. 15 no.1:30-31 Ja '58.
                                              (MIRA 11:2)

    1.Nachal'nik otdela perevozok Upravleniya transportnoy aviatsii
    Glavnogo upravleniya Grazhdanskogo vozdushnogo flota.
                    (Aeronautics, Commercial--Passenger traffic)

PISAREV, I.M.

Dielectric amplifiers.

Dielectric amplifiers.

SOURCE: East European accessions List, Library of
Congress, Vol. 6, No. 1, January 1957

PISKOV, I.

Damages in the Urozhai-F type radio stations and their removal.   p. 56.

RADIO .   Vol. 5, no. 7, 1956

Sofiia, Bulgaria

SOURCE: East European Accessions List (EEAL)   Library of
Congress, Vol. 6, No. 1, January 1957

PLJKCV, I.

Reconstructing the frequency in radio receivers. p. 33.
(RADIO I TELEVIZIIA, Vol. 6, no. 6, 1957, Sofia, Bulgaria.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 12, December 1957 Uncl.

FISKOV, I.

Receiving nonmodulated telegraph signals by ear. p.19.
(RADIO I TELEVIZIIA, Vol. 6, no. 7, 1957, Sofia, Bulgaria.)

SO: Monthly List of East European Ac essions (EEAL) LC, Vol. 6, no. 12, December 1957 Uncl.

PISKOV, I.; KHINKOV, P.

Attachment for 11- and 13- meter radio waves. p.11.
(RALIO I TELEVIZIIA, Vol. 6, no. 7, 1957, Sofia, Bulgaria.)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 12, December 1957 Uncl.

PISKOV, Ivan, inzh.; ALEKSIEV, N.

Radiometers. Radio i televiziia 11 no.7:218-221 '62.

21.5300

SOV/12(-59-5-3-/45

AUTHORS: Piskov, M.P. and Usova, I.N.

TITLE: A Differential Ionisation Chamber as a Monitor for the Bremsstrahlung from a Synchrotron

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5.
pp 127 - 128 (USSR)

ABSTRACT: The Bremsstrahlung of a synchrotron is conveniently monitored using a thin-walled ionisation chamber placed in the photon beam in front of experimental apparatus. However, experience with the synchrotron at the Physics Institute of the Ac.Sc., USSR has shown that because of the presence of a considerable electron background which accompanies the photon beam, the monitor readings depend on the maximum energy in the spectrum of the Brems-strahlung (Figure 1, 1).   This fact, together with some instability in the maximum energy, leads to a reduction in the accuracy of such a monitor   In order to improve the accuracy of thin-walled ionisation chambers used as monitors, Veksler has suggested that a differential thin-walled chamber may be used since the sensitivity of such a chamber to the electron background can be made

Card1/3

66179

SOV/120-59-5-32/46

A Differential Ionisation Chamber as a Monitor for the Bremsstrahlung from a Synchrotron

sufficiently low. The differential monitor chamber is in the form of two ionisation chambers placed directly one after another and connected so that the currents subtract. The front wall of the first chamber is a copper foil, 12 µ thick. It also serves as the high-voltage electrode. The rear wall of the first chamber is a thick collecting electrode made of aluminium, which is also the collecting electrode and the front wall of the second chamber. The rear wall of the second chamber is also made of copper foil, 12 µ thick. A voltage of -1 kV is applied to the first chamber and +1 kV to the second. In this way, the charge received by the common collecting electrode is proportional to the difference in the currents through the two chambers. As a result of the fact that the front wall of the first chamber is very thin, the current in the first chamber is mainly due to the electron background. Conversely, the current through the second chamber is mainly due to secondary electrons produced by the photons

Card 2/3

SOV/120-59-5-32/4

A Differential Ionisation Chamber as a Monitor for the Bremsstrahlung
from a Synchrotron

in aluminium. The contribution of the electron background
to the ionisation in this chamber was determined by
studying the change in the ionisation current of an
identical subsidiary chamber by varying the thickness
of its front wall between 15μ and 1 mm of aluminium.
The contribution turns out to be about 30% of the total
ionisation produced in the second chamber. The dependence
of the readings of the relative monitor with the thin-
walled differential chamber on the maximum energy of the
Bremsstrahlung spectrum of the synchrotron mentioned
above is shown by Curve 2 in Figure 1. As can be seen,
the effect of the electron background is reduced.
There is 1 figure.

ASSOCIATION: Fizicheskiy institut AN SSSR   (Physics Institute
of the Ac.Sc., USSR)

SUBMITTED: August 21, 1958

Card 3/3

FILIPOV, I. I.

FA 175767

USSR/Nuclear Physics - Cosmic Rays   21 Apr 50
                                       Showers

"Relation Between Electron-Nuclear and Narrow Showers of Cosmic Rays," S. A. Dubrovina, M. P. Piskov, I. L. Rozental', Phys Inst imeni Lebedev, Acad Sci USSR

"Dok Ak Nauk SSSR" Vol LXXI, No 6, pp 1049-1052

Data used here was gathered in summer 1949 at alt of 3,860 m (vide "Zhur Eksper i Teoret Fiz" 19, 826, 1949). First study was of influence of "counterflow" of particles in electron-nuclear showers from lead upon frequency of "var" of

USSR/Nuclear Physics - Cosmic Rays   21 Apr 50
                        (Contd)

system of closely placed counters included in coincidence scheme. Second study was on compn of narrow showers for comparison of compn with that of electron-nuclear showers. Submitted 20 Feb 50 by Acad D. V. Skobel'tsyn.

175767

PISKOV, V., yurist

Old-age pensions with incomplete length of service. Okhr.
trud* i sots.strakn. 3 no.4:72-74 Ap '60.
(MIRA 13:6)

(Old-age pensions)

PIS OV, V.B.

General method of synthesizing paraconic acids. Zhur.ob.khim. 32 no.
2046 - 2050 Je '62.   (MIRA 1:6)

1. Institut biologicheskoy i meditsinskoy khimii Akademii meditsinskikh
nauk SSSR.

              (Paraconic acid)

CHERNOV, V. A.; PISKOV, V. B.; SORKINA, Yu. A.; LYTKINA, L. G.;
      LYTKINA, V. B.

      Antiblastic activity of compounds containing an ethylene bond
      joined to carbonyl. Vop. onk. 8 no.5:24-32 '62.
                                              (MIRA 1`:7)

      1. Iz laboratorii eksperimental'noy khimioterapii opukholey
      Vsesoyuznogo nauchno-issledovatel'skogo khimiko-farmatsevti-
      cheskogo instituta im. S. Ordzhonikidze i laboratorii radiologii
      instituta meditsinskoy i biologicheskoy khimii AMN SSSR.
      Adres avtorov:Moskva, G-21, ul. Zubovskaya, d. 7, Vsesoyuznyy
      nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut
      imeni S. Ordzhonikidze.

          (ETHYLENE)   (CARBONYL GROUP)   (CYTOTOXIC DRUGS)

PISKOV, V.B.

Derivatives of paraconic acid in the Hofmann and
Friedel-Crafts reactions. Zhur.ob.khim. 32 no.10-3407-3408
O '62.   (MIRA 15:11)

1. Institut meditsinskoy i biologicheskoy khimii AMN
SSSR.
                        (Paraconic acid)
                    (Friedel-Crafts reaction)
                      (Hofmann reaction)

PISKOV, V.B.

    Preparation of ethyl esters of β-methylene β-acylpropionic acids and related compounds. Zhur.ob.khim. 31 no.9:2939-2941 S '61.

                   (MIRA 14:9)

          (Propionic acid)

PISKOV, V.B.

3-Cyclohexenone-2 carboxylic acid esters. Zhur. ob. khim.
no.7:1242-1244 Jl '65.

1. Gosudarstvennyy nauchno kontrol'nyy institut veter.narn
preparatov Ministerstva sel'skogo khozyaystva SSSR.

PISKOV, V.S.

Cardiac aneurysm of rheumatic etiology. Vrach. delo no. 1:123-124
'61.   (MIRA 14:4)

1. Kafedra gospital'noy terapii (zav. - dotsent A.B. Zborovskiy)
Stalingradskogo meditsinskogo instituta.
        (ANEURYSMS)   (HEART)   (RHEUMATIC FEVER)

PISKOVATSKAYA, Z.M., aspirant

New fabrics manufactured by the Nukha Silk Combine. Tekst.prom.
23 no.5:48-50 My '63.   (MIRA 16:5)

1. Leningradskiy tekstil'nyy institut imeni S.M.Kirova (byvshiy
sotrudnik TSentral'noy nauchno-issledovatel'skoy laboratorii
Nukhinskogo shelkovogo kombinata).
                    (Nukha—Silk manufacture)

RUDENKO, I.F., inzh.; PISKOVITIN, M.I., inzh.

Some studies of the quality of molding by the vibration stamping
method. Trudy NIIZHB no.27:68-83 '62.   (MIRA 15:9)
                        (Vibrated concrete)

MIKHAYLOV, V.V., doktor tekhn.nauk, prof.; GITMAN, F.Ye., kand.tekhn.nauk;
    PISKOVITIN, M.I., inzh.

    Manufacture of prestressed concrete elements on the mechanized
    unit developed by the Concrete and Reinforced Concrete Research
    Institute. Trudy NIIZHB no.27:5-48 '62.   (MIRA 15:9)
                 (Prestressed concrete)

PISKOVITIN, M.I., inzh.

Test stand for the production of prestressed elements of
industrial buildings. Mekh. stroi. 19 no.4:12-14 Ap '62.
(MIRA 15:9)

(Prestressed concrete)

Piskovitino, G. A.

Changes in the structure of 3,4-dichloro-1,2,3,4-tetra-methylcyclobutene during its reduction. I. V. Smirnov-Zamkov, N. A. Kostromina, and O. A. Piskovitina. *Ukrain. Khim. Zhur.* 22, 07-9(1956)(in Russian).—After three months of shaking 3,4-dichloro-1,2,3,4-tetramethyl-cyclobutene (I) in abs. ether with freshly pptd. Cu and with Ag (obtained from the soln. of the corresponding salts with Zn dust) in the absence of air, the reactants remained unchanged. The reaction of I (1.0 g.) in 30 ml. abs. ether with Zn (3.5 g.) was exothermic, yielding a mixt. of products. After two distillations it was possible to isolate 40 mg. of the dimer, m. 161°, to which the structure MeC:CMe.CMe:-CMe.CMe.CMe.CMe:CMe was assigned. When 3 g. of I in 20 ml. abs. ether was treated with a small excess of LiAlH₄ in 10 ml. abs. ether, a very energetic reaction occurred which subsided after 20-30 min. The product was washed with dil. HCl, the dried ether layer (first with CaCl₂ and then Na) gave after distn. through a short column (about 4 plates) 1,2,3,4-tetramethylcyclobutene (II), b. 105-6° (5.5% yield), n²⁰ 1.4195, d₄ 0.7508, MR 37.11. This compd. is unstable and in air it gradually absorbs O. Hydrogenation of II at room temp. with PtO₂ catalyst gave an inert hydrocarbon, b. 114-20°, n²⁰ 1.4180, d₄ 0.7681, MR 36.82. These consts. correspond to the mixt. of stereoisomers of 1,2,3-trimethylpentane (cf. Smirnov-Zamkov, C.A. 47, 2711g). A. P. Kotkby

Inst. Organic Chem.
A S U S S R

SMIRNOV-ZAMKOV, I.V.; PISKOVITINA, G.A.

Stereochemistry and mechanism of addition of hydrobromic acid to cyclohexene. Ukr.khim.zhur. 28 no.4:531 '62. (MIRA 15:8)

1. Institut organicheskoy khimii AN USSR.
(Hydrobromic acid)   (Cyclohexene)

AUTHORS: Smirnov-Zamkov, I.V. and Piskovitina, G.A. 73-2-10/22

TITLE: The mechanism of bromine addition to the dimethylester of acetylenedicarboxylic acid. (O mekhanizme prisoyedineniya broma k dimetilovomu efiru atsetilendikarbonovoy kisloty).

ABSTRACT: E.A.Shilov and I.V.Smirnov-Zamkov (Ref.1: E.A.Shilov and I.V.Smirnov-Zamkov, Izv.AN SSSR,OKhN,1951,32) proved that the bromination of the ester of acetylene dicarb-oxylic acid in some organic solvents, under the absence of light, can proceed in 2 ways. In the absence of ad-mixtures of bromide salts complete addition of bromine occurs and approximately equal quantities of dibromofum-arate and dibromomaleate are formed. In the presence of bromide salts bromine is added according to the trans-mechanism of the acceptor-donor mechanism in accordance with the kinetic equation:

$$- \frac{d[Br_2]}{dt} = kM[Br_2][LiBr] ,$$

where M = the concentration of the ester of acetylene

Card 1/3

73-2-10/22

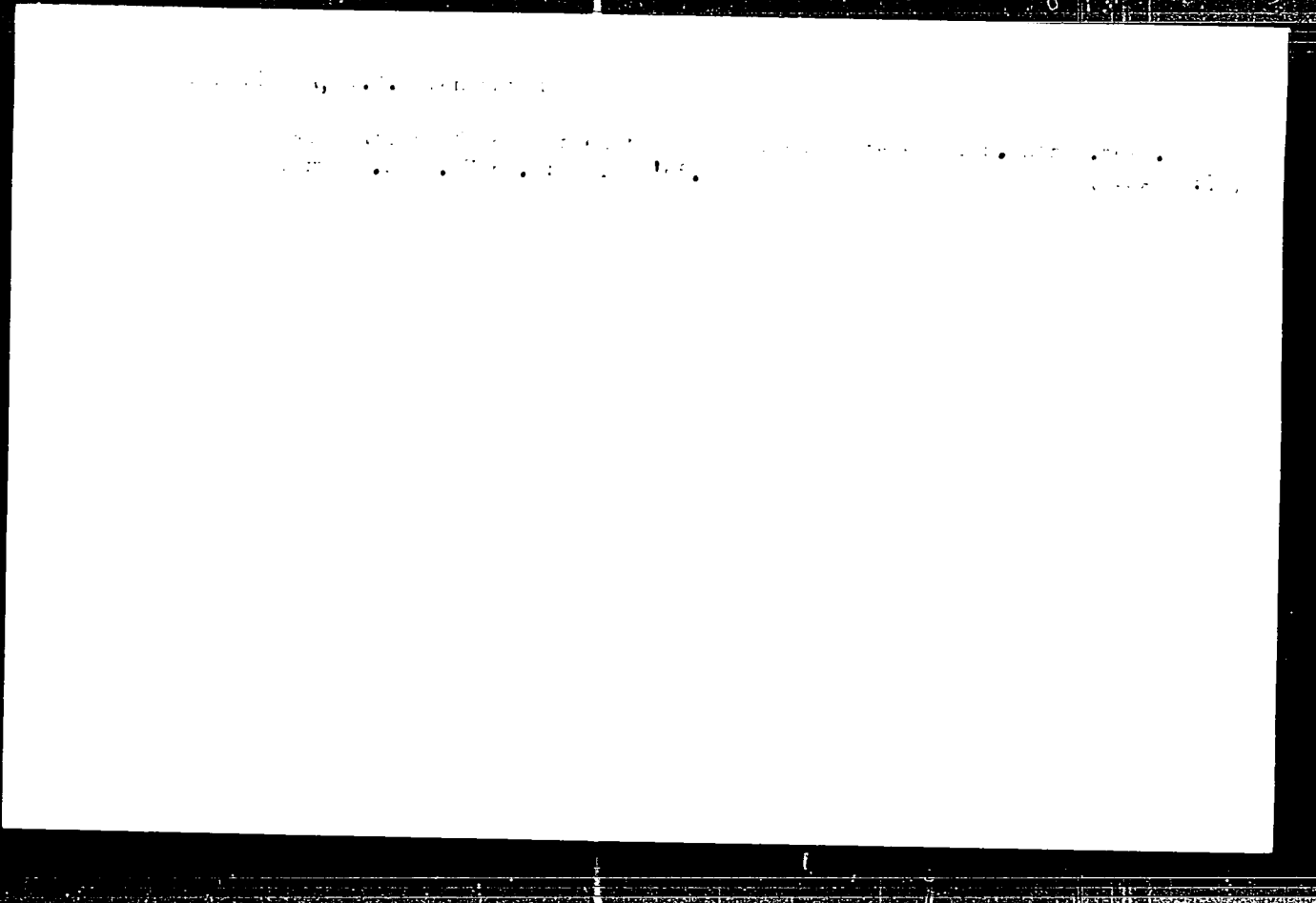The mechanism of bromine addition to the dimethylester of acetylenedicarboxylic acid. (Cont.)

dicarboxylic acid. The kinetics of bromine addition to the above compound under the absence of light and in presence of light (in acetic acid) were investigated. Bromination was found to proceed quickly in the beginning, but then to slow down without termination. I_2, NO and molecular oxygen were shown to act as reaction inhibitors. Diagrams 4 to 6 show the effect of various inhibitors, under various conditions. Salts of various acids inhibit also the reaction. Br^- has apparently the strongest and most specific inhibiting activity. Light accelerates the reaction. Lighting interrupts or lowers the inhibiting activity of the salts of various acids but does not affect the speed of bromination in the presence of lithium bromide.

Card 2/3

A special apparatus, designed for this investigation, is described.

5.3600
5.3200
~~5(3)~~

67894

AUTHORS: Smirnov-Zamkov, I.V..Piskovitina,   S/020/60/130/06/023/059
G.A.   B011/B015

TITLE: Stereochemistry and Mechanism of Hydrogen Bromide Addition
to the Dimethyl Ester of Acetylenedicarboxylic Acid in
Organic Acids

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 6, pp 1264-1266
(USSR)

ABSTRACT: For the reaction mentioned in the title the authors used
propionic acid, an equimolar mixture of monochloro- and tri-
chloroacetic acid as well as glacial acetic acid as a medium
at various temperatures. The equation of third order v =

$= k_3 [A] [HBr]^2$ (1) proved to hold for the reaction rate in all
these cases. Table 1 gives the velocity constants k_3. The
stereodirection of the reaction depends on solvent and tempera-
ture. The highest yield in cis-adduct forms in the mixture of
monochloro- and trichloroacetic acid, the smallest yield in
bromomaleic ester yield, in propionic acid. Temperature is
Card 1/4   effective in certain ranges only: 1) The cis-adduct yield

Stereochemistry and Mechanism of Hydrogen Bromide S/020/60/130/0/02/053
Addition to the Dimethyl Ester of Acetylene-   B011/B015
dicarboxylic Acid in Organic Acids

increases with the temperature decrease. 2) Outside this
range the stereodirection of the reaction at higher temperature
is practically independent of the latter. In propionic acid,
the second case holds between 0 and 60°. In acetic acid, both
cases hold: the first case between 10 and 40°, the second one
between 40 and 80°. In the mixture of monochloro- and tri-
chloroacetic acid, only the first case is valid between 25 and 4
40°. Equation (1) holds for each individual reaction type since
the common third reaction order holds for all temperatures and
all solvents. Value k_1 is therefore the sum of the reaction con-
stants of the cis- and trans-addition. The values of the
individual constants may be determined from the relation to the
stereoisomer yields. Thus, the authors obtained the constants
for each individual process, and calculated the activation
energies (Table 2). The activation energies of the trans-addition
proved to remain constant along the entire temperature range
investigated. The energies of the cis-additions are, however,
either very high or very low. The authors conclude therefrom
that the trans-addition follows in all cases the same mechanism.

Card 2/4

67894

Stereochemistry and Mechanism of Hydrogen Bromide S/020/60/130/06/023/059
Addition to the Dimethyl Ester of Acetylene-   B011/B015
dicarboxylic Acid in Organic Acids

There are two mechanisms for the cis-addition one of them
requires a high activation energy which is by 2 kcal higher
than that of the trans-addition. This mechanism occurs,
therefore, at higher temperatures; the other mechanism requires
a very low activation energy and is, therefore, prevailing at
low temperatures. The authors assume that both trans- and cis-
addition with a high activation energy are due to open tri-
molecular complexes (see Scheme). Cis-addition with a small
activation energy apparently proceeds over a ring complex
(see Scheme). The energy resulting from the process (taking
place in two stages) (Ref 1) is obviously determined by the
detachment energy of the proton in the final stage The sol-
vent may serve as a proton acceptor. The more basic the sol-
vent, the lower is the activation energy due to the energy
gain for the proton addition, e.g. to the carbonyl of the
solvent. The activation energy of the processes taking place
over open complexes therefore decreases in the following order:
mixture of monochloro- and trichloroacetic acid - acetic acid -
propionic acid. In a ring complex, the detachment of the proton.

Card 3/4

Stereochemistry and Mechanism of Hydrogen Bromide S/020/60/130/06/023/059
Addition to the Dimethyl Ester of Acetylene-
dicarboxylic Acid in Organic Acids   B011/B015

occurs with the formation of a new non-dissociated HBr-molecule.
An additional energy gain results therefrom. The difference
in the basicity of the solvents as compared to hydrogen
bromide is also the reason for the different reaction rates
in these acids the more loosely HBr is connected with the
solvent, the more quickly proceeds the reaction The authors
mention Ya.K. Syrkin. There are 1 figure, 2 tables, and 3
Soviet references.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk USSR (Institute
               of Organic Chemistry of the Academy of Sciences, UkrSSR)

PRESENTED: November 20, 1959, by B.A. Kazanskiy, Academician

SUBMITTED: July 20, 1959

Card 4/4

L 55038-65   EWT(m)/EPF(c)/EWP(j)/T/EWA(c)   Pc-4/Pr-4 RPL   JW/RM
ACCESSION NR: AP5013783

UR/0073/65/031/005/0517/0518
541.127+541.64+678.675

AUTHOR: Smirnov-Zamkov, I. V.; Piskovitina, G. A.

TITLE: Interphase polycondensation of n-phenylene diamine with dichloroanhydride of isophthalic acid at the water-benzene interface

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 31, no. 5, 1965, 517-518

TOPIC TAGS: kinetics, polycondensation, polymer, polymer chain, polyamine

ABSTRACT: The rate of growth of a polymer chain was determined as a function of the time of contact of the reagents. The initial compounds used were n-phenylene diamine and the dichloroanhydride of isophthalic acid. The dichloroanhydride was purified by distillation in a vacuum and recrystallization. The jet method of polycondensation was used so that the time of contact of the two solutions could be varied from several hundredths to several tenths of a second. The reaction was carried out at the water-benzene interface with equal initial concentrations of the reagents. A predetermined amount of potassium hydroxide was added to the aqueous

Card 1/3

L 55038-65
ACCESSION NR: AP5013783

solution of the diamine salt in order to release the diamine and neutralize the
hydrogen chloride. The resulting polyamine was isolated by filtering, washed with
acetone and water until the chlorine ions disappeared, and dried until a constant
weight was attained, after which its viscosity was measured in a sulfuric acid
solution (0.5 grams per 100 ml) at 20°. The results of the test are shown in fig.
1 of the Enclosure. The growth of the polymer chain has two clearly expressed
periods. The first is characterized by rapid growth, at a rate which is practically
independent of the concentration of the initial reagents, varying within a range of
0.03-0.24 mol/ℓ. Upon reaching a certain value the viscosity of solutions of the
polymer drops to some minimum, after which slow growth begins (second period).
Orig. art. has: 1 figure.

ASSOCIATION: Institut khimii vysokomolekulyarnykh soyedineniy AN UkrSSR
(Institute of the Chemistry of High Molecular Compounds, AN UkrSSR)

SUBMITTED: 16Dec64   ENCL: 01
NO REF SOV: 003   SUB CODE: GC, OC
                                       OTHER: 001

Card 2/3

L 55038-65
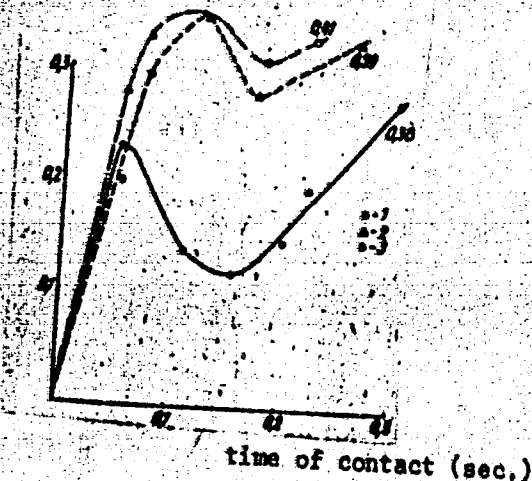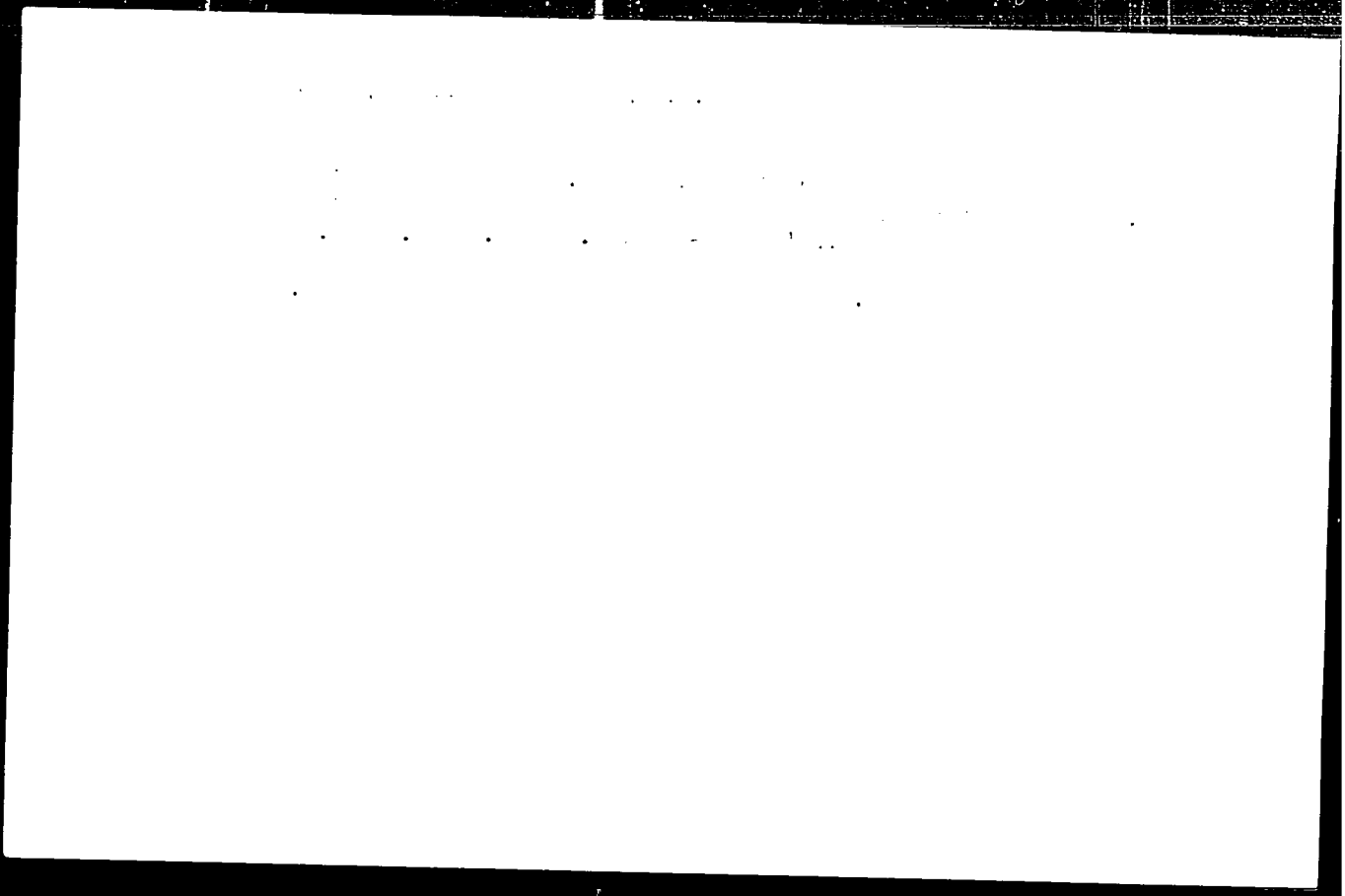ACCESSION NR: AP5013783

ENCLOSURE: 01   O

Fig. 1. Relation of the logarithmic
viscosity of poly-*n*-phenylene isophthal-
amide to the time of contact of the rea-
gents: 1--initial concentration of
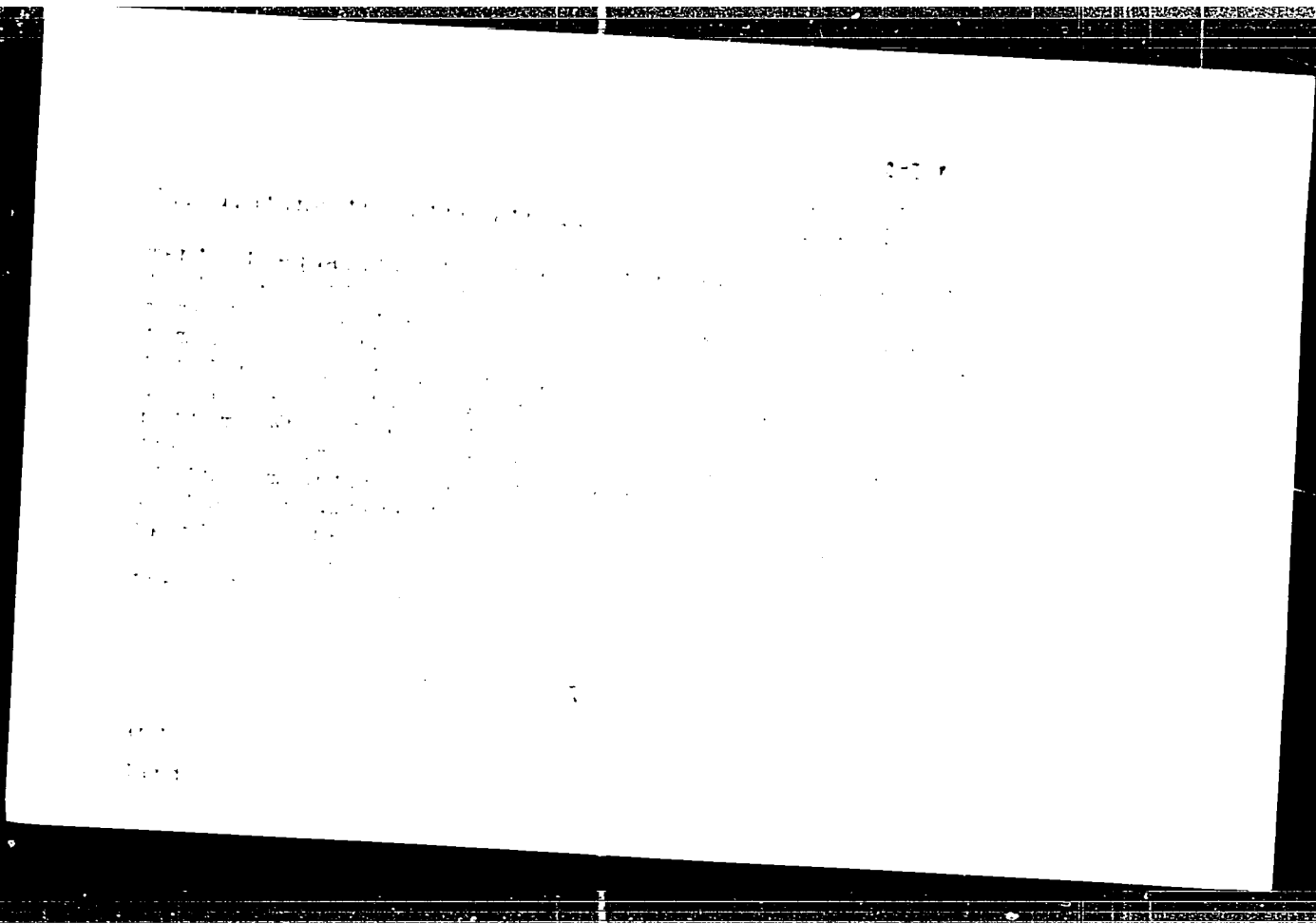0.03 mol/*l*; 2--0.06 mol/*l*; 3--0.24 mol/*l*.

time of contact (sec.)

Card 3/3

Bunic, L. M.; Palii, O. M.; and Piskovitina, I. A. Stability of a truncated conical shell under uniform external pressure. Inžen. Sb. 23 (1956), 89–93. (Russian)

The stability problem of a conical shell solved by the energy method was presented by E. I. Grigolyuk [Inžen. Sb. 19 (1954), 73–82]. The authors of this paper use a similar method to solve the stability problem of a truncated conical shell. The displacements which satisfy boundary conditions after the loss of stability are assumed and the total energy of the system is derived by using these assumed displacements. The expressions for displacements contain three undetermined parameters which are found by taking partial derivatives of the energy expression with respect to each parameter and setting them equal to zero. The formula for the critical pressure which the authors derive is valid for cylindrical and conical shells as well. Let r_0 and r_1 be the radii at the bases and 2α be the angle at the vertex. Setting $r_0 = r_1$ and $\alpha = 0$ the authors' formula becomes the von Mises formula for cylindrical shells; on setting $r_0 = 0$ the authors' formula does not become Grigolyuk's formula for conical shells (reference as above) but deviations from it turn out to be very small.   T. Leser (Aberdeen, Md.).

KUDHIN, A.I.,kand.tekhn.nauk; FISKOVITINA, I.A.,inzh.

Calculating the strength of torispherical shells. Sudostr enie 25
no.10:9-14 0'60.   (MIRA 1::1J)
                    (Pressure vessels)

Calculating the strength

$$\sigma = \frac{P_c}{\delta} \pm \mu \frac{6 M_1}{\lambda}$$

where M_1 is the moment in the meridian section, produced by the pressure from the convex side of the bottom; R ... radius of the corresponding shell; T is the ring pressure. The article quotes equations for calculating stresses in dished bottoms for various methods of fixing the supporting contour, which present the greatest practical interest. Equations are evolved for bottoms connected to conical shells abruptly, assuming that their thicknesses are different. The same solution provides equations for bottoms connected by a transfer line to a conical shell, as well as for the case when their thicknesses are equal. The same solution gives the equations for calculating the strength of the bottom joined to a shell of various thicknesses. The results of calculation are given.

Card 3, ''

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Calculating the strength

sufficient accuracy. They were ...
ses during the tests of ...
the t roid ...
the closed end ...
tude f r vari ...
cally. when ...

and it is im, ...
stress int ...
v lid. Cal ...
joined t ...

finite ...

$$\frac{r_0}{r} = 0$$ The rin ...

adjacent ...

Card 4 ...

Calculating the strength ...

S/122/61/000, 003 ...
5241/D505

In the case of a sphere are given by

$$T_2 = (A_3^0 \cos \gamma_1 + A_4^0 \sin \gamma_1)e^{\gamma_1} - \frac{pR}{3}$$

In the case of a cone,

$$T_2 = (C_1^0 \cos \gamma_3 - C_2^0 \sin \gamma_3)e^{-\gamma_3} - pr_k$$

is used. The total stresses in the bottom and the conical shell are obtained by

Card 5/11

Calculating the strength ...

$$a_1 = + 0.455 \frac{pr}{b} \left[K \sin(\tau_{1\circ} - \tau_{1}) e^{-\eta_{1\circ} \eta_{1}} \right.$$

$$\left. + \frac{C}{\sin^2 \theta_1} \sin \tau_{1} e^{-\eta_{1}} \right] \frac{pK_1}{2b}$$

$$a_2 = -0.25 \frac{pr}{b} \left[K \cos(\tau_{1\circ} - \tau_{1}) e^{-\eta_{1\circ} \eta_{1}} \right.$$

$$\left. + \frac{C}{\sin^2 \theta_1} \cos \tau_{1} e^{-\eta_{1}} \right] \frac{pK_1}{2b}$$

$$\cdot \left(\frac{R_1}{r_\circ} + 2 \right) + 0.137 \frac{pr}{b}$$

$$\cdot \left[K \sin(\tau_{1\circ} - \tau_{1}) e^{-\eta_{1\circ} \eta_{1}} \right.$$

$$\left. + \frac{C}{\sin^2 \theta_1} \sin \tau_{1} e^{-\eta_{1}} \right]$$

Card 6/11

28157

Calculating the strength ...

$$\eta_1 = 0.455 \frac{pr}{b} \left| \frac{t}{\sin^2 \theta_1} \right.$$

$$\times \sin(\eta_0 - \eta_1) e^{-(\eta_0 - \eta_1)} + K \sin \eta_1 e^{\eta_1} \right|$$

$$\frac{pR}{2b} \cdot$$

$$\eta_2 = 0.25 \frac{pr}{b} \left| \frac{t}{\sin^2 \theta} \right.$$

$$\cos(\eta_0 - \eta_1) e^{-(\eta_0 - \eta_1)} + K \cos \eta_1 e^{\eta_1} \right|$$

$$\frac{pR}{2b} = 0.1 t \frac{pr}{b} \left| \frac{t}{\sin^2 \theta} \right.$$

and

$$\sin(\eta_0 - \eta_1) e^{-(\eta_0 - \eta_1)} + K \sin \eta_1 e^{\eta_1} \right|$$

Card 7/ 11

Calculating the strength ...

Card 8/11

PISKOVOY, F. R.

Diseases and pests of bees Moskva, Gos. izd-vo selkhoz. lit-ry, 1950. 68 p. (Biblioteka kolkhoznika)

DA

1. Bees - Diseases.

PISKOVOY, F.B.

[Diseases and natural enemies of bees] Bolesni i vrediteli pchel. Moskva, Gos. izd-vo sel'skokhoziaistvennoi lit-ry, 1950. 68 p.
(MIRA 6:11)

(Bees)

PISKOVOY, F. R.

Bolezni i vrediteli pchel (diseases and Pests of Bees). Moscow.
Sel'khozgiz. 1950. 72 pages with illustrations.

U-5235

1. F. R. PISKOVOI

_. USSR (600)

4. Bees - Diseases

7. Protecting bees from poisoning. Pchelovodstvo 29 no. 12. 1952

9. Monthly List of Russian Accessions. Library of Congress, __April__ ___, 1953, Unc..

PISKOVOY, F.R.

Bees - Diseases

Using "sul'teimid" and sulfanthrol in treating bee colonies infected with foul brood.
Pchelovodstvo, 29, No. 7, 1952.

9. Monthly List of Russian Accessions, Library of Congress, _October 1952_ 1977. U...

Ref. Zur-Bl 1.,№ 2° 1,5, 6276.

Author : Piskovcy, F...
Inst   :
Title   : On the possibility of transmitting ... er .. Foul..r .l
          Through .r ... ... wax.

Orig. Nul: S. Kl.. Kutuni. inf r... yul., 1.7, .. l, 67-6..

Abstract: In experiments conducted for four years in about
          10c families artificial beeswax was prepared by
          tw methods. ... e ... were taken from ... each,
          each of which ... s larvae, 25-75 ... w...
          perished from American foulbrode. ... ...
          were then rendered. ... usual apiary ... r, ...
          artificial wax was prepared from the residue without
          being sterilized. In the second method the wax was

...   : 1/2

101

PISKOVOY, I.R., kand.vet.nauk

Terramycin as an effective treatment for pasteurellosis in birds.
Ptitsevodstvo 8 no.12:37-39 D '58.   (MIRA 11:12)

1. Krasnodarskaya nauchno-issledovatel'skaya veterinarnaya stantsiya.
              (Terramycin) (Chicken cholera)

PISKOVOY, F.R., kand.vet.nauk

Terramycin as an effective treatment for pasteurellosis in birds.
Ptitsevodstvo 8 no.12:37-39 D '58.   (MIRA 11:12)

1. Krasnodarskaya nauchno-issledovatel'skaya veterinarnaya stantsiya.
(Terramycin) (Chicken cholera)

PISKOVOY, F. R.

Sulfanilamides

Using "sul'tsidid" and sulfentirol in treating bee colonies infected with foul brood. Pchelovodstv[...], 195[...].

9. **Monthly List of Russian Accessions**, Library of Congress, October   195**. Unclassified.
                                                                  2

PISKOVOY, Filipp Romanovich, kand. veter. nauk; ZELEPUKIN, V.S., red.; BALIOD, I.I., tekhn. red.

[Bee diseases and pests] Bolezni i vrediteli pchel. Izd.2., perer. i dop. Moskva, Selkhozizdat, 1963. 83 p.
(MIRA 16:8)

(Bees--Diseases and pests)

Filin, V.V., Darowski, V.V.   Turak, V.V., n.Ya., Tarnova, V.D.

construction of a n??? preparation operator ???? of a longitudinal field).   Tr. Fiz. zhur. 10 no.5:512-510 My '65.
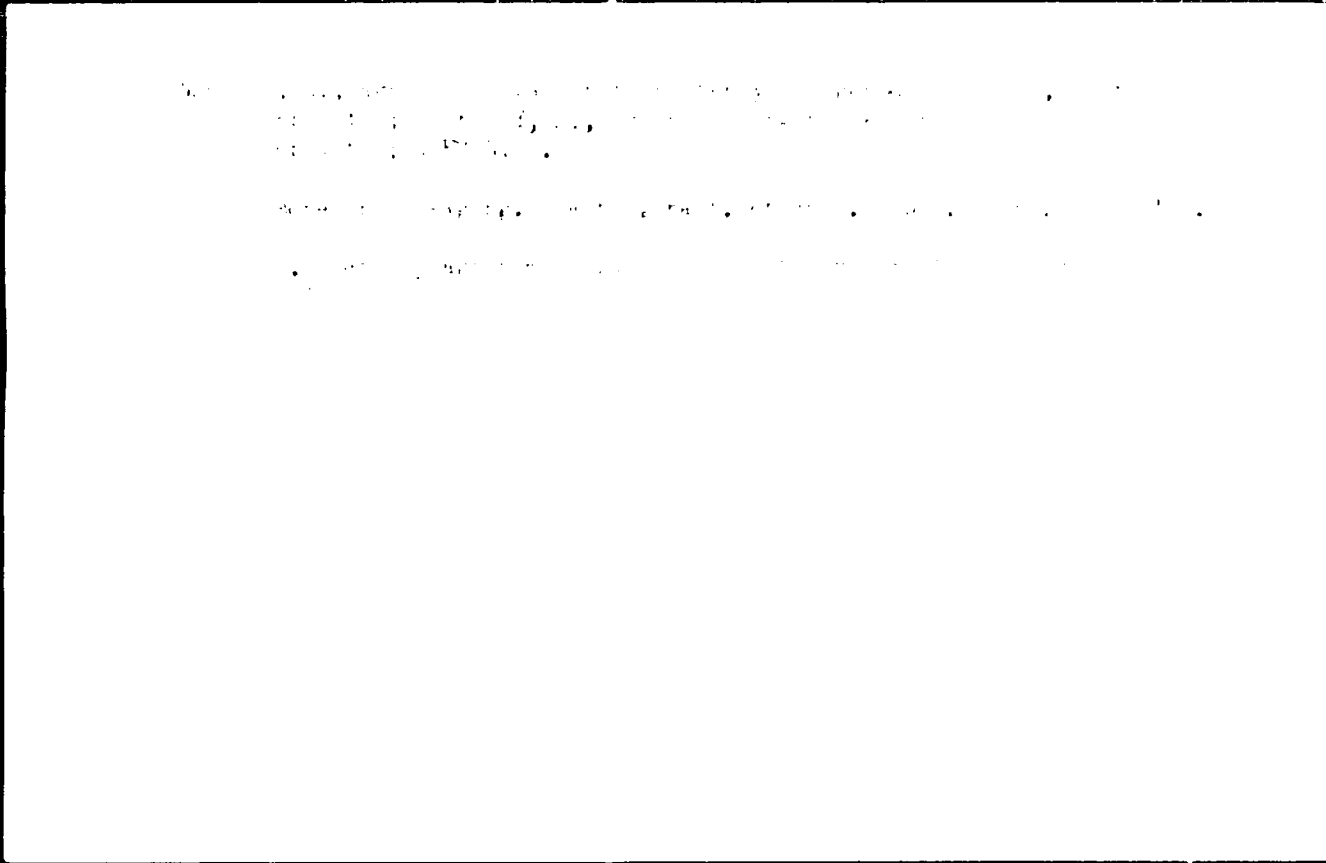
(MIRA ??? ?

E. Institute ??? ??? ??? ??? ???.

PISKOVOY, V.N.

Dependence of the dispersion frequencies of crystals on
the direction of light propagation. Fiz. tver. tela 5 no.6:
1747-1749 Je '63.   (MIRA 16:7)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

L 51537-65   EWT(1)

ACCESSION NR: AP5010724   UR/0181/65/007/004/1132/1141

                                                                        19
AUTHOR: Piskovoy, V. N.; Tsekvava, B. Ye.   18

TITLE: Contribution to the theory of the polarization operator   13

SOURCE: Fizika tverdogo tela, v. 7, no. 4, 1965, 1132-1141

TOPIC TAGS: polarization, Green's function, Maxwell's equation, polarizability
tensor, field intensity, electrodynamics   21

ABSTRACT: It is shown that for powerful light sources such as in lasers the rela-
tion between the dielectric polarization vector P and the field intensity E can no
longer be regarded as linear, and consequently the authors construct the polariza-
tion operator of the first, second, and third order with the aid of a diagram tech-
nique for many-time Green's functions. Particular attention is paid to the intro-
duction of the total field into the Maxwell's material equations, and to a deter-
mination of polarizability tensors of different order. The connection between
these tensors and the many-time Green's functions is derived. The relation estab-
lished between the polarization operators and the corresponding polarizability
makes it possible in principle to calculate the polarizabilities by using quantum

Card 1/2

L 51537-65
ACCESSION NR: AP5010724

field theory methods. Orig. art. 2 figures and 31 formulas.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR, Kiev (Institute of Semiconduc-
tors, AN UkrSSR)

SUBMITTED: 24Oct64   ENCL: 00   SUB CODE: SS, EM

NR REF SOV: 007   OTHER: 011

Card 2/2

RUBIN, B.Ya.; [illegible], Ye.

Nonlinear [illegible] of [illegible] rse [illegible] with, Fiz. Tver.

[illegible].34 [illegible] 4.

1. [illegible] [illegible] vounikov AN Ukr SS , Kiyev.

FISKOV...

L 41517-65   E.T(1)/E.T(m)/E.A(d)/T/E.P(t)/EEC(b)-2/E.P(k)/E.P(b)/E.A(o)
ACCESSION NR: AP4044167 Pf-4/Pi-4   S/0185/64/009/008/0846/0850
                       IJP(o)   JD/H./GG

AUTHOR: Piskovy*y, V. M.; Piskovoy, V. N.

TITLE: Dependence of the dispersion frequencies of cubic symmetry crystals
on deformation

SOURCE: Ukrayina'ky*y fizy*chny*y zhurnal, v. 9, no. 8, 1964, 846-850

TOPIC TAGS: crystal dispersion frequency, deformation effect, dispersion fre-
quency, exciton theory, Maxwell equations

ABSTRACT: The dependence of the dispersion frequencies of cubic symmetry
crystals on external deformations is investigated by the transition in the limit to
infinity of the velocity of light in the Maxwell equations. The dispersion frequen-
cies are considered which correspond to dipole-permitted exciton states. For
small deformations, general relationships are obtained which do not depend on
the exciton model. It is shown that the splitting and line shift depend essentially
on the direction of excitation propagation. A direct connection was found between
the phenomenon studied and the properties of the long range Coulomb field in the

Card 1/2

L 41517-65
ACCESSION NR: AP4044167

theory of exciton. Orig. art. has: 11 equations

ASSOCIATION: Institut napivprovidnykiv AN UkrSSR Kiev (Institute of Semicon-
ductors, AN UkrSSR)

SUBMITTED: 29Nov63   ENCL: 00

SUB CODE: GP   NO REF SOV: 004   OTHER: 000

Card 2/2

L 22128-66   EWT(1)/T/EWA(h)   IJP(o)   AT
ACC NR: AP6004929   SOURCE CODE: UR/0056/66/050/001/0124/0130

AUTHOR: Demidenko, A. A.; Pekar, S. I.; Piskovoy, V. N.; Tsekvava, B. Ye.   72/13

ORG: Institute of Semiconductors, Academy of Sciences, Ukrainian SSR (Institut poluprovodnikov Akademii nauk Ukrainskoy SSR)

TITLE: Current-voltage characteristic of a semiconductor with an electron-phonon coupling proportional to the applied field

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 1, 1966, 124-130

TOPIC TAGS: volt ampere characteristic, phonon interaction, electron interaction, semiconductor conductivity, dielectric constant, ultrasonic wave, kinetic equation, current carrier, electric field

ABSTRACT: This is a continuation of earlier work by one of the authors (Pekar, ZhETF v. 49, 621, 1965), where an electron-phonon coupling was introduced, arising in an applied electric field as a result of the dependence of the dielectric constant on the deformation of the medium. In the earlier article this interaction was treated in connection with the amplification and generation of ultrasonic waves in a crystal. In the present paper it is treated as a carrier-scattering mechanism, and is used together with the deformation potential and other scattering mechanisms

2

Card 1/2

L 22128-66

ACC NR: AP6004929   0

to calculate the carrier mobility. This new interaction is also used to solve the
kinetic equation. It is shown that the conventional scattering mechanisms pre-
dominate in external fields, and give rise to Ohm's law, but in crystals with a
very large dielectric constant the electron-phonon coupling becomes predominant
and this explains why the current in the semiconductor passes through a maximum
with increasing field and then decreases. Numerical calculations are presented
for the case when the dielectric constant is of the order of 2500 and 20,000,
where the maximum of the field occurs at approximately 10^5 v/cm. The limitations
inherent in this method are briefly discussed. Orig. art. has: 1 figure and 24
formulas.

SUB CODE: 20/   SUBM DATE: 12Jun65/   ORIG REF: 004/   OTH REF: 002

Card 2/2 BK

BUYMISTROV, V.M.; PISKOVOY, V.M.

Investigating the accuracy of the variational method in the problem on absorbtion of light by impurities in silicon. Fiz. tver. tela 2 no.4:608-610 Ap '60. (MIRA 13:10)

1. Institut fiziki AN USSR, Kiyev.
   (Silicon--Optical properties)   (Quantum theory)

.'

PISKOVOY, V.N.

Frenkel' excitons in crystals of different symmetry. Fiz. tver.
tela 4 no.6:1393-1399 Je '62.
(MIRA 16:5)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.
(Excitons)

PISKOVOY, V.N.

Light dispersion in the exciton absorption region. Fiz. tver. tela 5 no.3: 701-708 Mr '63.
(MIRA 16:4)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.
(Light—Scattering)   (Excitons)   (Crystals—Absorption spe tra)

PISKOVOY, V. N.

On the dielectric constant theory. Fiz. tver. tela 5 no.1:3-14
Ja '63.   (MIRA 16:1)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

(Dielectric constant)

PISKOVOY, V. N.

Crystal optics and the exciton theory. Fiz. tver. tela 5 no.1:
158-169 Ja '63.   (MIRA 16:1)

1. Institut poluprovodnikov AN UkrSSR, Kiyev.

(Excitons)   (Crystal optics)

S/181/6? 005/
B10? 5105

...of dielectric constants

...tela. v. ... no. 1, ...

...constructed in the...
...in that theory, Schrodinger's...
...external-field perturbation, which is...
...of a system containing currents and...
...rises the kinetic energy of the...
...interaction with the lattice and with...
...perturbation term describing the...
...the external field E_0. E_0 is assumed to be weak...
...problem can be limited to first perturbation-theoretical approximation...
...the crystal is considered to be ideal. The spatial dispersion...

... reveals their ... with ... excitons. The relat...

... are applied to crystal ...

reveals their ... with ... in crystals (light exc...

... are scattered with special atten...

... waves exist near the ...

... waves (birefringence) and ... additional ...

... observation of the latter is reported in ...

... part of the accomplishment of this work.

... Institute ... AN USSR, Kiev (Institute of ... conductors AN UkrSSR, Kiyev)

Card 2/4

S/181/63/005/001/026/064
B102/B186

AUTHOR   Plinkovoy, V. N.

TITLE   Crystal optics and exciton theory

PERIODICAL   Fizika tverdogo tela, v. 5, no. 1, 1963, 158-169

TEXT   The connection between exciton theory and crystal optics is in-
vestigated for the case where the latter takes account of spatial
dispersion. By introducing Pekar's conception of the light exciton -
defined as a mixed electromagnetic-mechanical wave in a crystal (ZhETF, 38,
1786, 1960) - one can derive this connection on the basis of the
interrelation between the light exciton and the usual mechanical exciton.
The transition from the light exciton to the mechanical exciton is carried
out by the limiting process $c \to \infty$. This is done for a uniform plane
electromagnetic wave in a crystal not below rhombic symmetry, whereby the
results obtained previously (V. N. Plinkovoy, FTT, 5, 4, 1963) are taken
as a base. $\varepsilon(\omega, \vec{k})$ or $\eta(\omega, \vec{k})$ are assumed to be expandable in series of the
components of the wave vector, and $Sp(\eta) = 0$; ξ denotes the $\vec{s}\vec{s}$ dyad.
$\vec{k} = \frac{\omega}{c}\vec{s}n; \quad \vec{D} = \varepsilon(\omega, \vec{k})\vec{E}; \vec{E} = \eta(\omega, \vec{k})\vec{D}. \quad Sp^2((1-\xi)\eta) - Sp((1-\xi)\eta)^2 = 0.$ Therefrom

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Crystal optics and exciton theory

3/181/63/005/001/026/064
B102/B186

and from the series expansions of   and , the relation $L_0(\cdot, \dot{s}$

$L_1(\cdot, \dot{s})$ k^2 + $L_2(\cdot, \dot{s})$ k^4 = 0 is obtained that determines $(k, \ldots$

the mechanical exciton energy. The solution of this equation is sought

in the form $\cdot_0(\dot{s})$ + $'(\dot{s})$ $\dot{k}$ + $\frac{1}{2M(\cdot)}$ $|\dot{k}|^2$ for 1) the cubic system,

2) the tetragonal, rhombohedral and hexagonal systems, and 3) for the rhombic system. For the same systems the effect due to taking account of spatial dispersion is studied. In all cases expressions for the refractive index are derived. For crystals allowing for natural optical activity n and $(\dot{s})$ are determined. For rhombic crystals $\Lambda(\dot{s})$ = 0.   Finally the effect of applied fields is studied neglecting spatial dispersion. Expressions for the field-induced line shift and splitting are derived.

ASSOCIATION: Institut poluprovodnikov AN USSR, Kiyev (Institute of Semi-
conductors AS UkrSSR, Kiyev)

SUBMITTED: July 23, 1962

Card 2/2

S/181/63/005/003/001/046
B102/B180

AUTHOR: Piskovoy, V. N.

TITLE: Light dispersion in the exciton absorption range

PERIODICAL: Fizika tverdogo tela, v. 5, no. 3, 1963, 701-708

TEXT: The dependence of the ε-tensor on frequency and wave vector is investigated for crystals of the O_h and C_{6v} symmetry groups. The author continues his previous investigations (FTT, 4, 6, 1962; 5, 3, 1963) using the main theoretical results there obtained. The $\beta_{\mu\nu}$ tensor is again applied to describe the relation between the external field and induced current

$$\beta_{\mu\nu} = \frac{e^2}{\omega^2 V} \sum_{n \neq 0} \left(\frac{f_{0n}^\mu(-k) f_{0n}^\nu(k)}{E_n(k) - \hbar\omega - i\Gamma} + \frac{f_{0n}^\nu(k) f_{0n}^\mu(-k)}{E_n(k) + \hbar\omega + i\Gamma} \right) - \frac{e^2 N}{m\omega^2 V} \delta_{\mu\nu}, \qquad (1)$$

which is connected with ε by

Card 1/4

Light dispersion in the exciton ...

S/181/63/005/003/001/046
B102/B180

$$\epsilon = 1 + 4\pi a = 1 + \beta \left[1 + \frac{4\pi\xi\beta}{1 - 4\pi \, S_P(\xi\beta)} \right],$$ (2)

where ' is the $\hat{s}\hat{s}$-dyad and $s = k/k$. For conditions near resonances of allowed dipole transitions the η tensor (inverse of the ϵ-tensor) is introduced. For the F_{1u} band and the O_h symmetry

$$\eta_{ss} \equiv \sum a_{ss'} a_{sy'} \eta_{s'y'} = -\frac{\Delta}{4\pi a^2} \left(\hbar\Delta\omega + k^2 \left[a_1 + (a_1 + a_1) s_s^2 \right] \right)$$ (10)

$$\eta_{sy} = \frac{\Delta}{4\pi d^2} k_s k_y (a_3 + a_s)$$ (10a)

η_{xz} and η_{yz} are obtained by cyclic substitution in (10a). These relations, together with the Maxwell equations, show that four types of electro-magnetic wave may exist in the crystal near frequencies at which $\eta \sim 0$ and with given $\hat{s}$. For the phototransitions allowed in quadrupole approximation (F_2 band, O_h symmetry) when

Card 2/4

Light dispersion in the exciton ...

S/181/63/005/003/001/046
B102/B180

$$m = -\frac{q}{2\Delta^{1/2}} \quad \text{and } s_z = 0.$$

$$\beta_{xz} = \beta_{yz} = 0; \quad \beta_{zz} = m^2 k^2 \left\{ \frac{[s_x C_2'(0) + s_y C_3'(0)]^2}{E_1 - \hbar\omega} + \right.$$

$$\left. + \frac{[s_x C_2^1(0) + s_y C_3^1(0)]^2}{E_2 - \hbar\omega} \right\}. \tag{11}$$

$$s_{\mu\nu} = \vartheta \delta_{\mu\nu} + 4\pi\alpha_{\mu\nu}, \quad \mathbf{D} = n^2[\mathbf{E} - \mathbf{s}(\mathbf{s}\mathbf{E})].$$

For any direction of light in the z=0-plane there may be five waves, two for which $\vec{E}$ lies in the z=0-plane and three with $\vec{E} \parallel \vec{z}$. For this case and for hexagonal symmetry in the C_{6v} group formulas for the refractive index and the polarization tensor are also derived.

Card 3/4

Light dispersion in the excition . .   S/181/63/005/005/001/046
B102/B180

ASSOCIATION: Institut poluprovodnikov AN USSR, Kiyev (Institute of Semi-
conductors AS UkrSSR, Kiyev)

SUBMITTED: July 6, 1962

Card 4/4

S/181/6./004/006/001/091

AUTHOR: Dzialoshinskiy, I. Ye.

TITLE: The Frenkel exciton in crystals of different symmetries

PERIODICAL: Fizika tverdogo tela, v. 4, ..., ... , 131-13..

TEXT: The energy of the Frenkel exciton ... at low
temperatures ... the dipole-dipole, dipole-
quadrupole and quadrupole-
quadrupole-quadrupole interaction terms are taken into account in the
expressions for the exciton energy. These terms are given for various crys-
tal systems: rhombic, rhombohedral, hexagonal, tetragonal, and cubic.
Only those paraexciton bands are ... into which the transitions
are allowed in dipole approximation ... respective wave functions are
stated for crystals with ... symmetry, in the excited state is considered

into which in dipole approximation ... transitions are forbidden. The
most important English-language reference is: R. S. Knox, J. Phys. Chem.
Sol., 9, 238, 1959.

Card 1/2

\ The Frenkel exciton in crystals ...

ASSOCIATION: Institut poluprovodn... AS USSR Kiyev (Institute of
              Semiconductors AS UkrSSR Kiyev)

SUBMITTED: November 16, 1961

Card 2/2

ACCESSION NR: AP404$1$3r5   S/0181/64/006/008/2428/2434

AUTHORS: Piskovoy, V. N.; Tsekvava, B. Ye.

TITLE: Nonlinear polarizability of condensed media

SOURCE: Fizika tverdogo tela, v. 6, no. 8, 1964, 2428-2434

TOPIC TAGS: polarization, polarized radiation, tensor analysis, quantum equation, Maxwell equation, condensed phase

ABSTRACT: The polarizability of condensed media is investigated on the basis of a semiclassical theory, with an aim of describing the nonlinear interaction between monochromatic waves. The nonlinear polarizability tensors of higher orders are introduced and perturbation theory is employed for a quantum-mechanical calculation of the polarizability current in an approximation that is linear and quadratic in the electric field amplitude. Particular attention is paid to the introduction of the total field in the Maxwell material

Card   1/2

ACCESSION NR: AP4043365

equations and to the associated separation of the macroscopic po-
larizability. A connection is established between the micro-polar-
izability and the macro-polarizability for an infinite homogeneous
dielectric. It is pointed out in the conclusions that concrete
calculations of the tensors involve particular models of the excited
states in the crystal, so that further research in this direction
is still necessary. "The authors thank Academician S. I. Pekar and
E. I. Rashba for a discussion of the work." Orig. art. has: 26
formulas.

ASSOCIATION: Institut poluprovodnikov AN UkrSSR, Kiev (Institut
of Semiconductors, AN UkrSSR)

SUBMITTED: 29Feb64

SUB CODE: SS

Card 2/2

L 12929-65   EWT(1)/T/EEC(b)-2   IJP(c)/AFWL/ASD(a)-5/BSD/SSD/LS(mp)-2/RAEM(a)/
ESD(gs)/ESD(t)
ACCESSION NR: AP4046594   S/0181/64/006/010/2889/2896

AUTHOR: Piskovoy, V. N.

TITLE: Dependence of the dispersion frequencies on the external
fields (dipole-allowed exciton bands in cubic-symmetry crystals)

SOURCE: Fizika tverdogo tela, v. 6, no. 10, 1964, 2889-2896

TOPIC TAGS: cubic symmetry, dispersion frequency, exciton band,
Zeeman effect, Stark effect, refractive index, light polarization

ABSTRACT: The dependence of the Stark and Zeeman effect on the
relative orientation of the external field and the direction of light
propagation in a crystal is investigated. An electrodynamics approach
is used in which all the singularities connected with the long-range
Coulomb field are taken into account automatically. Mathematically
this involves taking the limit of infinite light velocity in the in-
vestigation of the dependence of the dispersion frequencies of cubic-

Card   1/3

L 12929-65
ACCESSION NR: AP4046594   ◯

symmetry crystals on the external (static fields). The fundamental
relations employed in the paper were derived by the author earlier
(FTT v. 5, 158, 1963). For weak electric and magnetic fields,
general relations are obtained which are independent of the model
of the exciton states. The Zeeman and Stark splittings and the shift
in the dipole-allowed exciton lines are found to depend essentially
on the direction of propagation of the excitation. Two cases are
considered, one with a phenomenologically chosen dielectric tensor,
and the other with a microscopic determination of the dielectric
tensor. A direct connection is established between the Zeeman and
Stark effects and the singularities of the long-range Coulomb field
in the theory of mechanical excitons. The advantage of the procedure
employed here over a procedure involving the solution of the Schro-
dinger equation is that an expression is obtained not only for the
dispersion frequencies but also for the corresponding refractive in-
dices and polarization of light, which are important for a compari-
son of theory with experiment. Orig. art. has: 24 formulas.

Card   2/3

L 12929-65)
ACCESSION NR: AP4046594

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ASSOCIATION: Institut poluprovodnikov AN UkrSSR, Kiev (Institute
of Semiconductors, AN UkrSSR)

SUBMITTED: 28Nov63   ENCL: 00

SUB CODE: SS, OP   NR REF SOV: 007   OTHER: 001

Card 3/3

PISKOVSKAYA, N.I.; ROMENSKAYA, L.I.

Case of pulseless disease. Klin. med. 38 no. 2:148 F '60.

(MIRA 14:1,

(ARTERIES—DISEASES)