"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YUZVUK, V.YE. DECEASED 1962/5
C' 1961

SEE ILC

ENGINEER

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

PAUSHKIN, Ya.M.; YUZVYAK, A.G.

Synthesis of vinylcyclohexane and styrene from butadiene. Neftekhimiia 1 no.1:60-64 Ja-F '61. (MIRA 15:2)

1. Institut neftekhimicheskoy i gazovoy promyshlennosti imeni M.I.Gubkina.
(Styrene) (Butadiene) (Hexane)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/152/61/000/002/002/005
B124/B203

AUTHORS: Paushkin, Ya. M., Yuzvyak, A. G.

TITLE: Cyclopolymerization of butadiene with production of vinyl cyclohexene

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Neft' i gaz, no. 2, 1961, 69-74

TEXT: The authors studied the cyclopolymerization of butadiene and the further chemical conversion of the dimer. In the thermal polymerization at 400-500°C, the reaction may proceed to the dimer or trimer. The dimer yield attained by S. V. Lebedev was 85-86% at 150°C after 5 days. A dimer yield of about 80% was attained in an experiment in an enameled bomb at 150°C after 120 hr (S. V. Lebedev and S. R. Sergeyenko (Ref. 4)). Vinyl cyclohexane is produced in the hydrogenation of vinyl cyclohexene, and vinyl decalin in the hydrogenation of vinyl decalene, whereas styrene and vinyl naphthalene are produced in the dehydrogenation of the compounds mentioned. The cyclopolymerization was conducted in a flow reactor made of quartz glass with a central canal for the thermocouple (Fig. 1). The reactor tube was filled

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Cyclopolymerization of ...

with the charge to be investigated or with the catalyst. The liquid polymer was collected in a receptacle, and the gas in a gasometer. The polymer was distilled in a laboratory column, the fraction obtained at 128-133°C, and its physicochemical constants were determined. The following catalysts were used: phosphoric acid on kieselguhr, and chromium oxide on aluminum oxide. Experiments without a catalyst were also made, first with glass packing, then with activated carbon. The effect of temperature on yield and properties of polydivinyl at constant volume velocity was studied. At constant volume velocity, the liquid-polymer yield as well as the specific gravity and the refractive index increase. The amount of unsaturated compounds in the liquid polymer drops with rising temperature, whereas in the presence of the fraction 128-133°C, which also contains the vinyl cyclohexene, it rises with temperature, and drops after reaching a certain maximum (Fig. 3). The polymer yield increases both with respect to the initial butadiene and to the polymer with the volume velocity of the supply of raw material at constant temperature (400°C) (Figs. 4, 5); a supplying rate of the raw material of 12 $h^{-1}$ is optimum. The dimerization was conducted under equal conditions (temperature, volume velocity) on activated carbon

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B124/B203

Cyclopolymerization of ...

and glass packing; the yield of the fraction 128-133°C was higher with activated carbon; the same applies to the polymer yield (Fig. 6). Butadiene polymerized in the presence of $H_3PO_4$ on kieselguhr only at 400°C, the polymer yield after one passage being 39.4% of the initial butadiene, and the dimer yield 8% of the liquid polymer. At 450°C, the polymer yield was 31.6%. The formation of all three xylenes can be assumed on the basis of the specific gravity, the refractive index at 20°C, and the aniline point. In the presence of a Ni-Cr catalyst, the degree of conversion was 13.2% at 400°C, and 17.7% at 490°C. The product mainly consisted of aromatic hydrocarbons (xylenes). The fraction 128-133°C distilled in a laboratory column delivered almost pure vinyl cyclohexene (up to 95% yield). The resulting cyclohexene was selectively hydrogenated (Ref. 6) on a catalyst (10% Pt on activated carbon); here, a product was obtained whose constants corresponded perfectly to those of vinyl cyclohexane. There are 6 figures, 2 tables, and 6 references: 4 Soviet-bloc and 2 non-Soviet-bloc.

ASSOCIATION: Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akad. I. M. Gubkina (Moscow Institute of the Petrochemical and Gas Industry imeni Academician I. M. Gubkin)

Card 3/7

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/152/61/000/002/002/005
B124/B203

Cyclopolymerization of ...

SUBMITTED: December 30, 1960

Legend to Fig. 1: Diagram of the laboratory apparatus: 1) gasometer, 2) rheometer, 3) $CaCl_2$ tube, 4) electric furnace, 5) transformer, 6) millivoltmeter, 7) cooler, 8) receptacle, 9) trap, 10) quartz tube, a) water, b) to the gasometer
Legend to Fig. 3: Effect of temperature on the yield of fraction 128-133°C at constant volume velocity: 1) yield of the fraction referred to the liquid polymer, 2) yield of the fraction referred to the initial butadiene; a) yield, %, b) temperature, °C
Legend to Fig. 4: Effect of the volume velocity on the yield of fraction 128-133°C at 400°C: 1) referred to divinyl, 2) referred to the polymer; a) yield, %, b) volume velocity, $2^{-1}$

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Cyclopolymerization of ...

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B124/B203

Fig.1

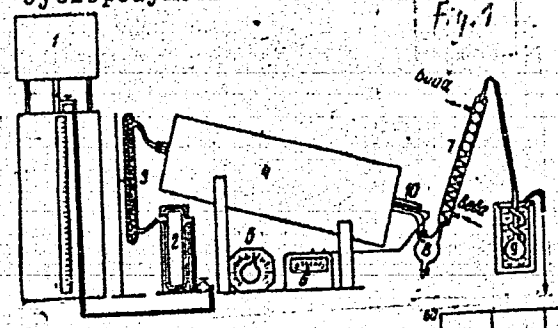
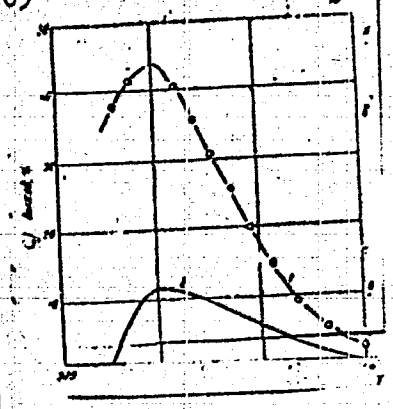
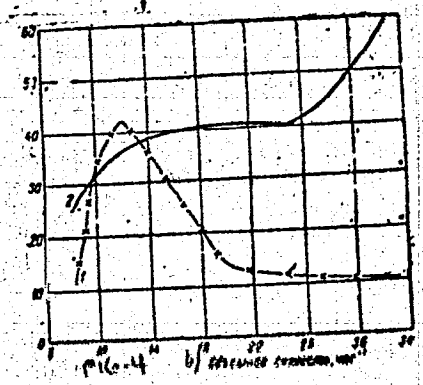


Fig.3





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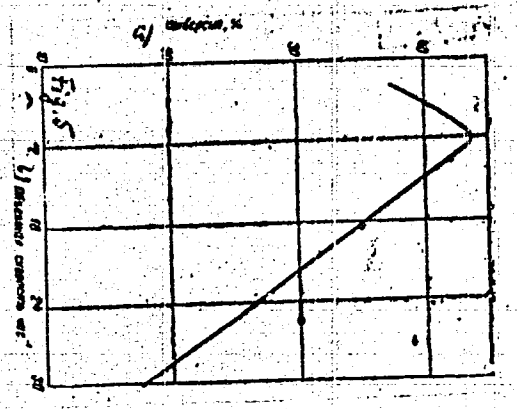
Cyclopolymerization of ...

Legend to Fig. 5: Effect of the volume velocity on the conversion at 400°C referred to the initial butadiene, a) conversion, %, b) volume velocity, $2^{-1}$



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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

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Cyclopolymerization of ...

Legend to Fig. 6: Effect of the packing on the yield of fraction 128-133°C referred to the reacted butadiene: 1) with activated carbon, 2) with glass packing referred to the initial butadiene, 3) with activated carbon, 4) with glass packing; a) yield, b) temperature

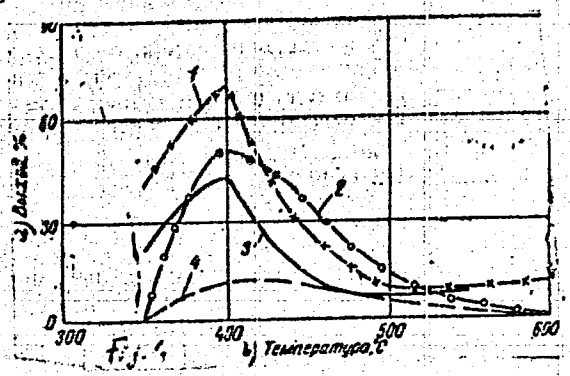


Fig. 6

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YUZVYAK, A.G.; PAUSHKIN, Ya.M.

Trends in the dehydrogenation reaction of vinylcyclohexene. Izv. vys.ucheb.zav.; neft' i gaz 5 no.8:85-89 '62. (MIRA 17:3)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti im. akademika I.M.Gubkina.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/020/62/144/003/023/030
B124/B101

AUTHORS: Paushkin, Ya. M., Yuzvyak, A. G., and Rubinshteyn, A. T.

TITLE: Synthesis of dimethyl cyclohexadiene and vinyl cyclohexene by dimerization of butadiene

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 3, 1962, 581-584

TEXT: Optimum conditions for the cyclopolymerization of butadiene to cyclic dimers of various compositions were studied in a stainless-steel reactor with activated-carbon packing. The polymer obtained was subjected to fractional distillation, and cuts with boiling-point intervals from 5 to 7°C were collected and examined. Maximum yields of dimeric fractions were obtained at 400-420°C, with a feeding velocity of 11 $hrs^{-1}$, and 3 atm pressure, corresponding to 10% 1,3-dimethyl cyclohexadiene and 45% vinyl cyclohexene. The yield of dimers decreases with increasing reaction temperature, and increases with increasing pressure. In addition to the dimethyl cyclohexadienes and vinyl cyclohexene, long-chain aromatic compounds and both cyclooctadiene- and cyclodecene-type hydrocarbons were shown to be present. The thermodynamics of the reactions:

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divinyl $\overset{K_p}{\rightleftharpoons}$ vinyl cyclohexene (I); divinyl $\overset{K'_p}{\rightleftharpoons}$ vinyl cyclohexene (I); $\overset{K''_p}{\rightleftharpoons}$ dimethyl cyclohexadiene (II) were calculated in the gas phase from the equations (1) $K_p = p_{vin}/p^2_{div}$ for reaction I, and both (2) $K_p^{(1)} = p_{vin}/p^2_{div}$ and (3) $K_p^{(2)} = p_{dimethyl}/p^2_{div}$ for reaction (II), where $K_p$, $K_p^{(1)}$ and $K_p^{(2)}$ are equilibrium constants of the two reactions at constant pressure, and $p_{vin}$, $p_{div}$, and $p_{dimethyl}$ are the equilibrium partial pressures of vinyl cyclohexene, divinyl, and dimethyl cyclohexadiene, respectively. If $z \cdot 100$ is the percentage of vinyl cyclohexadiene in reaction, I, $x \cdot 100$ that in reaction II, $y \cdot 100$ the percentage of dimethyl cyclohexadiene in reaction II, and if $P_o$ is the pressure required, we have

(1") $K_p = (1/2)z\left[1 - (1/2)z\right] / (1-z)^2 \cdot P_o$ for reaction I,

(2") $K_p^{(1)} = x\left[1 - (1/2)x - (1/2)y\right] / (1 - x - y)^2 \cdot P_o$ and

(3") $K_p^{(2)} = y\left[1 - (1/2)x - (1/2)y\right] / (1 - x - y)^2 \cdot P_o$ for reaction II. At



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the same time, $-RT \ln K_p = \Delta Z^o$; $\Delta Z^o = \Delta H^o_{298.16} - T\Delta S^o_{298.16}$; $\Delta H^o_{298.16} = \Delta H^o_{form.298.16C_8} - 2\Delta H^o_{form.298.16C_4}$; $\Delta S^o_{298.16} = S^o_{298.16C_8} - 2S^o_{298.16C_4}$, where $\Delta Z^o$ is the thermodynamic potential, $\Delta H^o_{298.16C_4}$ = heat of formation of divinyl, $S^o_{298.16C_4}$ the entropy of divinyl, and $S^o_{298.16C_8}$ = entropy of the corresponding dimer. There are 3 figures and 3 tables. The English-language reference is: E. Gil. Av. J. Shabtal. F. Steckel, Ind. Eng. Chem. 52, 31 (1960). [Abstracter's note: p.139 given in the original, is wrong.]

ASSOCIATION: Institut neftekhimicheskoy i gazovoy promyshlennosti im. I. M. Gubkina (Institute of Petrochemical and Gas Industry imeni I. M. Gubkin)

PRESENTED: December 30, 1961, by A. V. Topchiyev, Academician

SUBMITTED: December 30, 1961



APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ACCESSION NR: AT4008696 S/2982/63/000/044/0027/0032

AUTHOR: Paushkin, Ya. M.; Yurvyak, A. G.

TITLE: Synthesis of new monomers from (1,3) -butadiene

SOURCE: Moscow. Institut neftekhimicheskoy i gazovoy promy*shlennosti. Trudy*, no. 44, 1963. Neftekhimiya, pererabotka nefti i gaza, 27-32

TOPIC TAGS: 1.3-butadiene, 1.3-butadiene polymerization, 1.3-butadiene dimerization, cyclohexene. vinyl-, cyclohexane. vinyl-, 1.3-butadiene thermal dimerization, monomer

ABSTRACT: The authors first studied the thermal cyclodimerization of 1.3-butadiene to vinylcyclohexene and 1.3-dimethylcyclohexadiene over activated charcoal at 350-500C and 2-3 atmospheres. After dimerization, the liquid polymer was fractionated and the fractions boiling at 124-128 and 128-132C were collected. It was found that the yield of total polymer increases with the temperature, but that the yield of dimer decreases, so that the optimal temperature is 400C. At this temperature, the yield increases with a decrease in the rate of flow of the monomer. The authors then studied the selective catalytic hydrogenation of vinylcyclohexene over Pt at room temperature, yielding vinylcyclohexane, as well as its chlorination with $Cl_2$ in $CCl_4$ at -60C, yielding vinylchlorocyclohexane, and its

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ACCESSION NR: AT4008696

hydrochlorination with HCl in the presence of anhydrous $SnCl_4$ in $CCl_4$ at -65C, yielding vinylchlorcyclohexane, chlorethylcyclohexene and vinylcyclohexene dihydrochloride; the latter reaction did not take place in any solvent in the absence of a catalyst and was not catalyzed by $TiCl_4$, $ZnCl_2$ or $FeCl_3$. Orig. art. has: 3 figures, 5 tables and 2 structural formulas.

ASSOCIATION: Institut neftekhimicheskoy i gazovoy promy*shlennosti, Moscow (Institute of Petroleum Chemistry and the Gas Industry)

SUBMITTED: 00 DATE ACQ: 16Jan64 ENCL: 00

SUB CODE: OC,FP NO REF SOV: 007 OTHER: 007

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APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

PAUSHKIN, Ya.M.; YUZVYAK, A.G.

Obtaining new monomers on a base of butadiene. Trudy MINKHIGP no.44:27-33 '63. (MIRA 18:5)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYTAUTAS, K.

YYTAUTAS, K., inzh.; KREGZDAILE, D., red.; LIEGUS, S., tekhn. red.

[New techniques in the building materials industry of the Lithuanian S.S.R.] Naujoji technika Lietuvos TSR statyviniu medziagu pramoneje. Vilnius, Centrinis technines informacijos ir propagandos biuras, 1960. 126 p. [In Lithuanian] (MIRA 14:12)

(Lithuania--Building materials industry)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YODELITE

DEGUTIS, Yu.; YODELITE, A. [Jodelyte, A.]

Synthesis of β-{m-[bis(dichloroethyl)amino]phenyl}-dl-β-alanine. Zhur.obshchim. 32 no.2:567-570 F '62. (MIRA 15:2)

1. Vil'nyusskiy gosudarstvennyy universitet imeni V.Kapsukasa.
(Alanine)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGI, A. Yu. [Jõgi, A.J.]

History of bird banding in the Estonian S.S.R. Migr.zhiv. no.1:40-47 '59. (MIRA 13:6)

1. Institut zoologii i botaniki AN Estonskoy SSR.
(Estonia--Bird banding)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

L 01496-66 EWT(1)/EWP(e)/EWT(m)/EWP(i)/EWP(t)/EWP(b) IJP(c) JD/WH

ACCESSION NR: AT5013690 UR/2613/64/000/030/0057/0067

AUTHOR: Yygi, Kh. R. 44,55

TITLE: On a procedure and results of comparison of the values of adhesion and cohesion of certain sublimated layers

SOURCE: AN EstSSR. Institut fiziki i astronomii. Trudy, no. 30, 1964. Issledovaniya po lyuminestsentsii (Research on luminescence), 57-67

TOPIC TAGS: thin film, adhesion force, cohesion force, sublimated film, alkali halide film, sublimated luminor

ABSTRACT: The purpose of the investigation was a more detailed study of the physical properties arising during the preparation of sublimated phosphors, a procedure for the production of which was first developed by F. D. Klement (Opt. i spektr. v. 1, 571, 1956). The experiments were made on non-activated alkali-halide thin films deposited on substrates of fused quartz and LK-5 glass, sublimated from single-crystal KCl and NaCl. A study was made of the dependence of the adhesion and cohesion of these layers (thickness 1--4.5 nm) on the temperature of the substrates during the time of deposition of the layer, in the temperature interval 35--225C. The apparatus used for the sublimation and for the measurement of adhesion forces are described, and the instrument for the determination of adhesion is shown in

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L 01196-66

ACCESSION NR: AT5013690

Fig. 1 of the Enclosure. The results showed that the adhesion layer decreased by approximately 5% as the substrate temperature increased from 35 to 215C, while the cohesion in the layer remained unchanged. In NaCl the cohesion forces are approximately double those of KCl layers. "I am deeply grateful to F. D. Clement for [illegible] Malyshev for a discussion of the results." Orig. art. has: 4 figures.

ASSOCIATION: none

SUBMITTED: 13Oct64 ENCL: 01 SUB CODE: OP

NR REF SOV: 003 OTHER: 013

Card 2/3

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

L 01496-65

ACCESSION NR: AT5013690 ENCLOSURE: 01

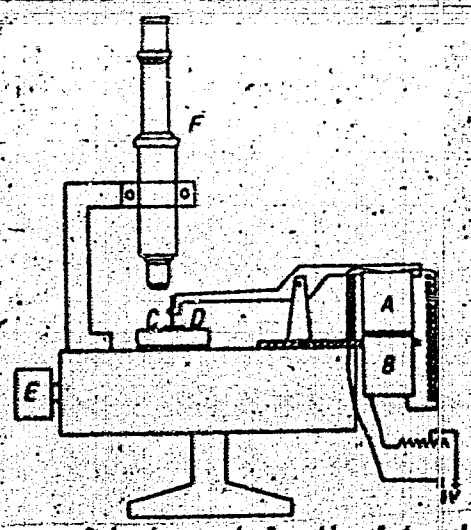


Fig. 1. Diagram of instrument for the determination of adhesion. A, B - dc magnets, C - needle, D - investigated object on stand, E - motor to move stand, F - microscope

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGI, Kh. R.

25390
S/613/61/000/017/008/011
D051/D113

24.3500 (1137,1138,1163)

AUTHORS: Malysheva, A.F. and Yõgi, H.R.

TITLE: Preparation and investigation of zinc sulfide sublimate phosphors

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy, no. 17, 1961. Issledovaniya po lyuminestsentsii, 105-119

TEXT: ZnS-Mn, ZnS-Cu and ZnS-Zn sublimate phosphors with intense emission upon cathode and photo excitation were prepared and their absorption, excitation, and irradiation spectra measured. The known methods of preparing phosphors by sublimation are summarized and the special procedures, used by the authors, described. By comparing the stationary luminescence and phosphorescence excitation spectra of these phosphors with their absorption spectra, and also by comparing luminescence intensity growth curves for excitation in different regions of the absorption spectrum, the possibility is discussed of regarding the $\lambda_{max}$=218 mμ band as an exciton band and

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the edge of absorption in the 325-330 mμ region as being due to band-to-band transition. For more reliably identifying the bands in the ZnS absorption spectrum, a study of the dependence of photoconductivity on the wavelength of the incident light and also investigations of infrared effects and other physical processes during excitation of luminescence in different absorption bands are recommended. F.D.Klement, Ch.B.Lushchik, and K.-S.K. Rebane are thanked for help rendered. There are 10 figures.

SUBMITTED: April 29, 1961



APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGIS, V.A.

New nematodes of birds from the Courland Lagoon. Trudy Zool. inst. 35:208-215 '65. (MIRA 19:1)

1. Zoologicheskiy institut AN SSSR.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGISTE, A.K. [Jogiste, A.]; GUSEV, V.M.

Toxoplasmosis in wild birds of the U.S.S.R. Dokl. AN SSSR 143 no.2:491-492 Mr '62. (MIRA 15:3)

1. Institut epidemiologii i mikrobiologii im. N.F.Gamaleya AMN SSSR i Nauchno-issledovatel'skiy protivochumnyy institut Kavkaza i Zakavkaz'ya. Predstavleno akademikom Ye.N.Pavlovskim.
(CAUCASUS—TOXOPLASMOSIS)
(PARASITES—BIRDS)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYOGISTE, A.K. [Jõgiste, A.]

Penetration of toxoplasma into the eggs of infected hens. Dokl. AN SSSR 148 no.4:989-990 F '63. (MIRA 16:4)

1. Institut epidemiologii i mikrobiologii im. N.F.Gamaleya AMN SSSR. Predstavleno akademikom Ye.N.Pavlovskim.
(Toxoplasmosis) (Eggs--Microbiology)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZASUKHIN, D.N.; YYGISTE, A.K.

Something new in the study of toxoplasmosis. Trudy Inst. zool. AN Azerb. SSR 23:125-133 '64. (MIRA 17:9)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

OIGLANE, H.

Integration in four-dimensional pseudo-Euclidean space.

P. 85, (Uurimused Trudy) No. 5, 1957, Tallinn, Estonia

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

OIGLANE, H.

A relativistically invariant treatment of the self-action of a free electron in quantum electrodynamics.

P. 93, (Uurimused Trudy) No. 5, 1957, Tallinn, Estonia

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

OIGLANE, H.

A treatment of the self-action of a bound electron in quantum electrodynamics.

P. 100, (Uurimused Trudy) No. 5, 1957, Tallinn, Estonia

SO: Monthly Index of East European Acessions (EEAI) Vol. 6, No. 11 November 1957

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

Yyglane, Kh.

56-6-32/47

AUTHOR: Yyglane, Kh.

TITLE: A Wave Equation for the Free Nucleon (Volnovoye uravneniye dlya svobodnogo nuklona)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33, Nr 6 (12), pp. 1511 - 1512 (USSR)

ABSTRACT: It has hitherto not been possible to set up a wave equation for the nucleon (not even for the free nucleon). This is partly due to the fact that the mass in proton states and neutron states differs. In this respect it is interesting that the linearization of the wave equation of second order in the general case leads to the equation $\left[\gamma^{\nu}\partial/\partial x - (m_0 c/\hbar) \exp (a \gamma^5)\right]\psi = 0$. Here $m_0$ and a denote certain constants. The author then generalizes the above equation as follows: $\left[\Gamma^{\nu}\partial/\partial x - (m_0 c/\hbar) I \exp (2a T_3)\right] \psi = 0$. Here the commutation relations for the operators $\Gamma^{\nu}$, I and $T_3$ are determined by the following conclusions: a) The Hamiltonian, the operator of the projection of the spin, and the third component of the isotopic spin, $T_3$, form a commutating system of operators. b) The relation between energy and momentum has the usual form. Herefrom

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56-6-32/47

A Wave Equation for the Free Nucleon

follows: $\left[\Gamma^{\nu}\Gamma^{\sigma}\right]_{+} = 2\delta_{\nu\sigma}$, $\left[\Gamma^{\nu}T_3\right]_{+} = 0$, $\left[T_3, I\right]_{+} = 0$, $\left[\Gamma^{\nu}I\right]_{-} = 0$, $T_3T_3 = 1$, $II = 1$. For the operators $\Gamma^{\nu}$, $T_k$ and $I$ there exists eight-rowed irreducible representation:

$$\Gamma^{\nu} = 1^{II} \times \gamma^{\nu}, \quad T_k = \sigma_k \times \gamma^5, \quad I = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \times 1^{IV}$$

A table contains those quantum numbers which, in the relativistic limit, characterize the components of the wave function. The eigenvalue $t_3 = -1/2$ corresponds to the particle mass $m_1 = m_0 e^{-a}$, and the eigenvalue $t_3 = 1/2$ corresponds to the mass $m_2 = m_0 e^{a}$. If one puts $m_0 = 1837{,}38\ m_e$ (average value of the masses of the protons and neutrons) and $a = 3\alpha/10\pi$, then $m_1$ and $m_2$ agree within the limits of error with the experimental masses of the proton and of the neutron. The second equation mentioned here is then the wave equation of the free nucleon. The expressions for the specific nucleon current, the electric current, and the operator of the electric charge of the nucleon, following from this equation, are also given. This wave equation of the nucleon is not invariant with respect to not real Lorentz transformations, but it is invariant with respect to simultaneous reflections of spatial and isotopic coordinates. By means of the wave equation given here it is possible

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A Wave Equation for the Free Nucleon 56-6-32/47

to describe also the doublet of $\Xi$ -hyperons. There are 1 table and 1 Slavic reference.

ASSOCIATION: Institute for Physics and Astronomy AN Estonian SSR (Institut fiziki i astronomii Akademii nauk Estonskoy SSR)

SUBMITTED: July 15, 1957

AVAILABLE: Library of Congress

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APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

Lyglane, Kh.

56-6-47/47

AUTHOR: Lyglane, Kh.

TITLE: A Possibility for the Classification of Barions (Odna vozmozhnost' dlya klassifikatsii barionov)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1957, Vol. 33, Nr 6, pp. 1537-1538 (USSR)

ABSTRACT: From the wave equation for barions the general form holds good for the electric charge of the barions: $q = -\varepsilon (t_3 + v_3)$. $t_3$ is the eigenvalue of the operator $T_3$. $v_3$ is a number which changes in transition from one multiplet to another. In the investigation carried out it replaces the Gell-Mann number and can be understood to be the eigenvalue of the third component of the operator for the isotopic moment $V_3$. The postulate that a half-integer or a multiple of a half-integer charge must be lacking in elementary particles results in the rule:

a) $t_3$ and $v_3$ are at the same time half-integer and integer,

b) $|t_3 + v_3|$ can never exceed 1.

Herefrom follows the quantum number which determines the nature of the barions:

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A Possibility for the Classification of Barions 56-6-47/47

| Nature of barions | $t_3$ | $v_3$ |
|---|---|---|
| P | - 1/2 | - 1/2 |
| n | + 1/2 | |
| $\Lambda^0$ | 0 | 0 |
| $\Xi^-$ | - 1/2 | + 1/2 |
| $\Sigma^-$ | + 1/2 | |
| $\Sigma^0$ | 1 | 0 |
| $\Sigma^+$ | 0 | |
| | - 1 | |

It may be seen herefrom that the nucleons, $\Xi$ -hyperons, and $\Lambda^0$ -particles may in reality be assumed to be "similar" particles, whereas the $\Sigma$ hyperons form a group of their own. There are 1 table and 3 references, 1 of which is Slavic.

ASSOCIATION: Institute of Physics and Astronomy AN Estonian SSR (Institut fiziki i astronomii Akademii nauk Estonskoy SSR)

SUBMITTED: July 15, 1957

AVAILABLE: Library of Congress

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APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

AUTHOR: Yyglane, Kh. SOV/56-34-5-49/61

TITLE: On a Systematic Classification of Mesons and Baryons (K sistematike mezonov i barionov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 5, pp. 1337 - 1338 (USSR)

ABSTRACT: In a previous paper (Ref 1) the author gave a classification of the baryons on the basis of two quantum numbers, namely of the third component of the isotope spin $t_3$ and of the third component of the so-called isotope moment $v_3$. These results from this paper are compiled in a table. To obtain an analytical scheme for the mesons the irreducible equations for the multiplets of the free bosons must be determined. Besides, an ordinary wave equation of second order results from the equation $[\beta_\mu \partial/\partial x_\mu + k_0 \exp(a\gamma_5)]\psi = 0$. $\beta$ and denote the matrices by Kemmer-Duffin (Deffin), a denotes a certain constant

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On a Systematic Classification of Mesons and Baryons SOV/56-34-5-49/61

$_5 = {}_1\ {}_2\ {}_3\ {}_4$ holds. The initially given equation is a generalisation of the equation by Proca-Kemmer-Duffin (Deffin). This equation, written down at the beginning, however, is not appropriate for the description of the multiplets of the particles. The author generalizes the above equation by

$B\ \partial/\partial x_\mu + k_0 I \exp(aT_3)\ \psi = 0$. Here the operators $B_\mu$, $I_\mu$ and $I_3$ satisfy the exchange relations $B_\mu B_\varrho B_\sigma + B_\sigma B_\varrho B_\mu = \delta_{\mu\varrho} B_\sigma + \delta_{\sigma\varrho} B_\mu$, $B_\mu T_3 + T_3 B_\mu = 0$, $IT_3 + T_3 I = 0$, $IB_\mu - B_\mu I = 0$. The irreducible representation

$B_\mu = 1^{II} \times \beta_\mu$, $T_3 = \sigma_3 \times {}_5$, $I = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \times 1^{V}$ can be chosen for the operators. In the case of such a choice the aforementioned equation describes the multiplets of the free mesons with regard to the isotopic spin. The operator of the isotope moment $v_3$ can be introduced in a perfectly analogous way as in the case of the fermions. The corresponding quantum number for the characterisation of the mesons is given in a table. The system of the

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On a Systematic Classification of Mesons and Baryons SOV/56-34-5-49/61

mesons agrees with the system of the baryons. The electrical charge of the baryon and of the meson is expressed by the common formula $q = -e(t_3 + v_3)$. The study of the experimental material delivers the following rules: a) In the case of strong and of electromagnetic interaction the third component of the isotope spin as well as the third component of the isotope moment of the system are maintained. The electrical charge, of course, is maintained as well. b) In the case of weak interaction only the charge of the system is maintained because then the third component of the isotope spin and the third component of the isotope moment change by $\pm 1/2$. All processes which do not satisfy these rules are forbidden. There are 2 tables and 4 references which are Soviet.

ASSOCIATION: Institut fiziki i astronomii Akademii nauk Estonskoy SSR (Institute of Physics and Astronomy of the Estonian SSR)

SUBMITTED: January 31, 1958

Card 3/4

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

On a Systematic Classification of Mesons and Baryons SOV/56-34-5-49/61

1. Mesons--Classifications 2. Mesons--Analysis

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

Kyglane, Kh.

21(1,8); 24(5) PHASE I BOOK EXPLOITATION SOV/3369

Vsesoyuznaya mezhvuzovskaya konferentsiya po kvantovoy teorii poley i teorii elementarnykh chastits. Uzhgorod, 1958

Problemy sovremennoy teorii elementarnykh chastits. No. 2: Trudy konferentsii... (Problems in the Modern Theory of Elementary Particles. Nr. 2: Transactions of the All-Union Inter-Vuz Conference on the Quantum Field Theory and the Theory of Elementary Particles) Uzhgorod, Zakarpatskoye oblastnoye izd-vo, 1959. 214 p. 5,000 copies printed.

Ed.: Yu. Lomsadze, Docent; Tech. Ed.: M. Belous.

PURPOSE: This book is intended for physicists, particularly those concerned with problems in the field of elementary particles and the quantum theory.

COVERAGE: This book contains articles on elementary particles originally read at the All-Union Inter-Vuz Conference held at Uzhgorod State University on October 26, 1958. Among the topics discussed are: the spinor field theory, the fusion theory, Lorentz contractions, parity studies, nucleon-nucleon scattering, etc. English abstracts accompany each article. References follow each article.


Sokolik, G.A. New Formulation of Fusion Theory 26

Lomsadze Yu.M., and B.I. Maksimov. Application of Schwinger's Variation Method to the Pair Theory 30

Sokolik, G.A. Generalization of the Lorentz Group 37

Ivanitskaya, O.S. Generalized Equivalent Potential and the Sequence of Infinitesimal Lorentz Contractions Under Rotary Motion 44

Sokolik, G.A. Representation of the Complete Lorentz Group 52

Sokolik, G.A. Connection Between the "Anomal" Representation of the Space-Time Inversion Group and the Pauli Transformations 56

Geshkenbeyn, B.V., S.A. Nemirovskaya, and A.P. Rudik Non-Conservation of Parity in RaE 58

Bilen'kiy, S.M., and R.M. Ryndin. Determination of Parity of Strange Particles 63

Lomsadze, Yu.M. The Possible Versions of the $\beta$ -- Decay Theory 69

Vanyushin, V.S. Equations of the Second Order for Spinor Wave Functions 80

Solov'yev, V.G. Conservation of the Combined Parity, as a Fundamental Law of the Symmetry in Nature 83

Geshkenbeyn, B.V. Polarization of Electrons of the Inner Conversion Subsequent to $\beta$ -- Decay, Taking Into Account the Electric Field of the Nucleus 89

Sitenko, A.G. Polarization of the Nucleons Under the Stripping Reaction in the High Energy Region 99

Kyglane, Kh. Wave Equations for Elementary Particles 109

Barashenkov, V.S., and B.M. Barbashov. Some Remarks on the Inner Structure of the Nucleon 117

Solov'yev, V.G. On the Superfluid State of an Atom Nucleus 126


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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

21(1) SOV/56-37-2-38/56

AUTHOR: Yyglone, Kh. (Öiglane, H.)

TITLE: A Comment on the Scheme of Baryons

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 2(8), pp 558-559 (USSR)

ABSTRACT: The author assumes that each of the eight baryons can be described by a four-component wave function. The common equation for all baryons is in this case an equation for a 32-component spinor. The 32-component spinor space can be treated as a mapping of a 10-component vector space. The unit vectors of this space correspond to 32-row matrices $\Gamma^a$, where $\Gamma^a \Gamma^b + \Gamma^b \Gamma^a = 2\delta_{ab}$. The following transformation of the matrices $\Gamma^a$ : $\Gamma^{a'} = -\Gamma^b \Gamma^a \Gamma^b$, $a = 1, 2, \ldots, 10$ (no summation over b) corresponds to the reflection of the unit vectors $e^b$ in the vector space. The author subdivides the 10-dimensional vector space into a fourdimensional Minkowski-space (the matrices corresponding to the unit vectors are $\Gamma^\nu$, $\nu = 1,2,3,4$) and into a fourdimen-

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sional isotopic space (matrices $\Gamma^a$, $a = 5,6,\ldots,10$). By means of transformations of the isotopic space the following three-component isotopic vectors can be defined (their components corresponding to the same relationships as the components of ordinary spin: $2\vec{J}^1 = (\Gamma^6, \Gamma^5, i\Gamma^5\Gamma^6)$, $2\vec{J}^2 = (\Gamma^8, \Gamma^7, i\Gamma^7\Gamma^8)$, $2\vec{J}^3 = (\Gamma^{10}, \Gamma^9, i\Gamma^9\Gamma^{10})$, $2\vec{J}^4 = (i\Gamma^6\Gamma^7, i\Gamma^7, \Gamma^5, i\Gamma^5, \Gamma^6)$, $2\vec{J}^5 = (i\Gamma^{10}\Gamma^8, i\Gamma^8\Gamma^9, i\Gamma^9\Gamma^{10})$). The common equation for all components should, say, have the form: $\left\{\Gamma^\nu \partial/\partial x_\nu - k_0 I \exp\left[\Gamma^0 \sum_{k=1}^{5} \vec{a}_k \vec{J}^k\right]\right\}\psi = 0$, where $\Gamma^0 = \Gamma^1\Gamma^2\Gamma^3\Gamma^4$, $I = i\Gamma^0\Gamma^6\Gamma^7\Gamma^{10}$, the $a_k$ denoting certain small isotopic vectors, the components of which depend upon the potentials of the fields of the pions and leptons. The last equation is solved by perturbational methods, the Hamiltonian of the undisturbed problem being chosen as $H = \hbar c \left\{\Gamma^4\Gamma^k \partial/\partial x_k - \right.$



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A Comment on the Scheme of Baryons

SOV/56-37-2-38/56

$- k_0 \Gamma^4 I \exp \left[ \Gamma^0 \sum_{k=1}^{5} a_k^3 J_3^k \right] \Bigg\}$. The form of the baryon is characterized by three quantum numbers $\tau_3$, $\omega_3$, $\xi_3$, which are the eigenvalues of the operators $(1/2)\, \Gamma^0 \Gamma^7 \Gamma^8$, $(1/2)\, \Gamma^0 \Gamma^9 \Gamma^{10}$, and $(1/2)\, \Gamma^0 \Gamma^5 \Gamma^6$. The scheme of the baryons can be described by a unit cube, the center of which is at the origin of the coordinate axes $\tau_3$, $\omega_3$, $\xi_3$. Proceeding from the two above equations it is possible to determine the perturbational Hamiltonian which describes the weak interaction between the baryons. All processes outlined herein are in principle possible, although some of them (e.g. $\Xi^- \rightarrow \Sigma^- + \pi^0$) cannot be realized owing to the conservation theorems. Other processes (e.g. $\Sigma^+ \rightarrow \Lambda^0 + \beta^+ + \nu$) are obviously realizable, but are nevertheless very rare. The scheme advanced herein gives all possible baryon transformations and not even one forbidden transition. The weak interaction transitions which may be expected can proceed from a state with a positive to a state with negative energy and

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A Comment on the Scheme of Baryons SOV/56-37-2-38/56

vice versa. Hence processes of the type $N + \overline{P} \rightarrow \beta^- + \nu$ may exist, the probability of which is small as compared to that of strong interaction processes. There are 1 figure and 4 references, 2 of which are Soviet.

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

SUBMITTED: April 16, 1959

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

33658

S/058/61/000/012/011/083
A058/A101

24.6610

AUTHOR: Yyglane, Kh.Kh.

TITLE: Baryon decay incident to weak interaction

PERIODICAL: Referativnyy zhurnal. Fizika, no. 12, 1961, 34, abstract 12A443 (Tr. In-ta fiz. i astron. AN EstSSR, 1961, no. 13, 87 - 111, English summary)

TEXT: With the aid of mirror transformations of a six-dimensional isotopic space there are plotted isotopic vectors and set up a general wave equation for baryon systems. The "unperturbed" part of this equation describes the stationary states of the baryons, while the "perturbation" Hamiltonian yields the interbaryonic transitions that are due to weak interaction. The "primary" mechanical masses of the baryons differ from each other, this difference in mass being due to the same cause as baryon decay. There is set up an equation for a baryon in an external electromagnetic field. Baryon charge parity is determined, but it is not conserved in decays: only the so-called generalized parities are conserved.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGLANE, Kh. [Üiglane, H.]; KUTUZOVA, G.

Equation for a boson doublet. Zhur.eksp.i teor.fiz. 40 no.3:780-781 Mr '61. (MIRA 14:8)

1. Institut fiziki i astronomii Akademii nauk Estonskoy SSR.
(Particles (Nuclear physics)) (Differential equations)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGLANE, Kh. [Õiglane, H.]

Marshak invariance and four-fermion interaction. Zhur.eksp.i teor.fiz. 40 no.3:782-783 Mr '61. (MIRA 14:8)

1. Institut fiziki i astronomii Akademii nauk Estonskoy SSR.
(Atomic nuclei) (Nuclear reactions)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

24.6610

S/058/62/000/007/012/068
A061/A101

AUTHORS: Kutuzova, G. B., Yyglane, Kh. Kh.

TITLE: A unified equation for bosons and fermions

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 36, abstract 7A318 ("Tr. In-ta fiz. i astron. AN EstSSR", 1961, no. 16, 81 - 89; English summary)

TEXT: A first-order equation is presented which, depending on the characteristics of wave function transformation, may describe both bosons and fermions. In the case of fermions, the equation obtained decomposes into four Dirac equations, while in the case of bosons it decomposes into two eight-component equations. In the case where the boson momentum differs from zero, it is found impossible simultaneously to determine accurately the boson energy, the spin projection, and the absolute spin value. It is solely possible to determine either the spin projection and the absolute spin value, or the spin projection and the energy. The boson energy operator is found to have also negative eigenvalues. With the operation of charge conjugation it is possible to pass from states with

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A unified equation for bosons and fermions

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A061/A101

negative energy to such with positive energy, but having an opposite sign of charge.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/058/62/000/007/013/068
A061/A101

AUTHOR: Yyglane, Kh. Kh.

TITLE: On some possible generalizations of the group representation concept

PERIODICAL: Referativnyy zhurnal, Fizika, no. 7, 1962, 36, abstract 7A319 ("Tr. In-ta fiz. i astron. AN EstSSR", 1961, no. 16, 90 - 105; English summary)

TEXT: A generalized group representation is determined which, in the case of transposed nonsingular matrices of representation, can be reduced to a projective representation. It is shown that the generalized representation of a group of reflections of two-dimensional (or three-dimensional) space yields three-row spin matrices. The projective representation of this group yields two-row spin matrices. Analogously, the generalized representation of a group of reflections of four-dimensional space is described by five or ten-row Kemmer-Daffin $\beta_\nu$ matrices. The projective representation of this group is determined by Dirac $\gamma_\nu$ matrices. It is shown that generalized and projective representations of a group of space-time reflections do not describe spins greater than unity. It is shown in con-

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

On some possible generalizations... S/058/62/000/007/013/068
A061/A101

clusion that Cailey's non-associative algebra can be considered as a non-associative representation of a group of reflections of three-dimensional space.

[Abstracter's note: Complete translation]

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/613/62/000/019/005/006
B108/B186

AUTHORS: Lykhmus, Ya., Yyglane, Kh.

TITLE: Classification of elementary particles according to their interaction

SOURCE: Akademiya nauk Estonskoy SSR. Institut fiziki i astronomii. Trudy. no. 19. 1962. Issledovaniya po teoreticheskoy fizike. 113-123

TEXT: On the basis of six-dimensional "internal" space, which for each interaction is split up into the sum of two invariant subspaces, one mathematical formulation of the classification of the elementary particles according to their interactions is given. Classifications according to weak four-fermion, electromagnetic, and strong interactions are established. Each of these excludes the remaining two from exact determination. The interaction Lagrangian is invariant with respect to transformations in the "internal" space. This means that the quantum numbers are conserved in interactions according to which the classification was made. There are 4 tables. The English-language references are:

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

Classification of elementary ... S/613/62/000/019/005/006
B108/B186

M. Gell-Mann. Phys. Rev., 92, 833, 1953; T. Nakano, K. Nishijima, Progr. Theor. Phys., 10, 581, 1953; A. Salam, Nucl. Phys., 2, 173, 1956.

SUBMITTED: December 15, 1961

Card 2/2

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYGLANE, Kh.

ÕIGLANE, Harri; HEINOJA, H., red.

[Into the depths of the microworld] Mikromaailma sügavusse. Tallinn, Eesti Riiklik Kirjastus, 1963. 336 p. (MIRA 17:6)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

YYKS, S.R. [Jõks, S.R.]

Laryngoscopic and stroboscopic observations on laryngeal conditions in singers of amateur choirs. Ves. otorin. 21 no.2:83-87 Mr-Ap '59. (MIRA 12:4)

1. Iz kafedry bolezney ykha, gorla i nosa (zav. - dots. N.K. Siyrds) Tarkuskogo gosudarstvennogo universiteta.

(LARYNX, physiol.
in singers, laryngoscopy & roboscopy (Rus))
(VOICE,
laryngoscopy & stroboscopy in singers (Rus))

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YYUDU

JÕUDU, Kusta; SILLAMAA, H., kand. tekhn. nauk, retsenzent; ÄÄO, L., red.; LAUL, U., tekhn. red.

[Automation] Automaatika. Tallinn, Eesti Riiklik Kirjastus, 1962. 355 p. (MIRA 16:12)
(Automation)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

EXCERPTA MEDICA Sec 8 Vol 9/10 Neurology Oct 56

4410. YZYNOV I. Pavlov Med. Acad., Plovdiv. *Actiopathogenesis of toxic polyneuritis in the light of Pavlov's reflexogenic theory (Russian text) AN. ACAD. MED. PAVLOV (Mosc.) 1951-1952, 6 (283-292)

Toxic agents and vit. $B_1$ deficiency do not act on the peripheral nerves, but influence the whole nervous system as such. As Speransky thought, the 'nervous dystrophy' takes place in a reflex manner in which the pathogenic agent acts merely

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4410

as a pacemaker in a range of reflex events. An attempt is made to explain dialectically the fact of the selectiveness of the receptive part of the nervous system for toxic agents. (Actually nobody explains the facts from a unitary point of view. Does the submission of all events to one mechanism of reflex function represent a real grasping of the whole from all points of view? Ref.) Kistić - Belgrade

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, A.A.

Hygienic characteristics of the nutrition of students of the Tbilisi printing school. Trudy Tbil. GIDUV 6:295-299 '62. (MIRA 16:2)

(THILISI--NUTRITION)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, A. A., KAPANADZE, P. I., KARTOZIYA, P. T., ROSTOMBEKOVA, N. V., TAKTAKISHVILI, S. D., KEMALADZE, A. G., MCALOBLISHVILI, Y. T., KOLTYA, P. I.

"On the study of organized nutrition of various age-related and industrial groups of population of the Georgian SSR."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists and Infectionists, 1959.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

KHMALADZE, A.G.; ZAALISHVILI, A.A.

Method for the determination of fats in milk and milk products. Vop. pit. 19 no. 6:85-86 N-D '60. (MIRA 13:12)

1. Iz kafedry gigiyeny (zav. - prof. A.G. Khmaladze) Tbilisskogo gosudarstvennogo instituta usovershenstvovaniya vrachey.
(MILK—ANALYSIS AND EXAMINATION) (BUTTERFAT)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, I. I.:

ZAALISHVILI, I. I.: "Some problems of the dynamics of bushing-roller chain drive." Min Higher Education USSR. Order of Labor Red Banner Georgian Polytechnic Inst imeni S. M. Kirov. Tbilisi, 1956. (Dissertation for the Degree of Candidate in Technical Science.)

Knizhnaya Letopis'
No 32, 1956. Moscow.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, I. I.

SOV/124-58-7-7402

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 7, p 12 (USSR)

AUTHOR: Zaalishvili, I.I.

TITLE: Determining the Pressures in the Hinges of a Roller-chain-drive Chain With Allowance for the Inertia Forces (Opredeleniye davlenii v sharnirakh tsepi vtulochnorolikovogo privoda s uchetom inertsionnykh sil)

PERIODICAL: Tr. Gruz. politekhn. in-ta, 1957, Nr 2(50), pp 149-153

ABSTRACT: Allowance being made for the inertia forces, formulae are evolved for the calculation of the pressures exerted by a pin and sprocket tooth on the bushing, and the results of calculations made with these formulae are compared with results obtained from formulae not allowing for the influence of the inertia forces.

S.G. Kislitsyn

1. Drive sprockets--Analysis

Card 1/1

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, Irina Mikhaylovna,

Academic degree of Doctor of Med Sci based on her defense, 27 January 1953, in the Council of the Tblisi State Med Inst, of her dissertation entitled: "Research on peripheric blood circulation in hypertonic disease".

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no 7, 26, Mar 55, Byulleten' MVO SSSR, No. 14, July Moscow pp 4-22, Uncl. JPRS/NY-429

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, I.M. (Tbilisi)

Vencus pressure in experimental inflammation. Pat. fizial. i eksp. terap. 5 no.2:32-35 Mr-Ap '61. (MIRA 14:5)

1. Iz kafedry patologicheskoy fiziologii (zav. - I.M.Zaalishvili) Tbilisskogo meditsinskogo instituta.
(INFLAMMATION) (BLOOD PRESSURE)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, I. M.

USSR / Human and Animal Physiology. Blood Circulation. T

Abs Jour: Ref Zhur-Biol., No 9, 1958, 41326.

Author : Zaalishvili, I. M.
Inst : Institute of Cardiology AS. GSSR. Tbilisi.
Title : Data of Studies of the Peripheral Circulation in Hypertension.

Orig Pub: V sb.: Stenogr. otchet nauchn. sessil in-ta, Kardiol. AN GruzSSR s uchastyem in-ta fiziol. AN USSR Tbilisi, AN GruzSSR, 1956, 110-118 (Stenographic transscript of the Scientific Session of the Institute of Cardiology AS. GSSR with the participation of the Institute of Physiology AN USSR)

Abstract: A spastic-vagotonic syndrome was noted in patients

Card 1/3

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

USSR / Human and Animal Physiology. Blood Circulation. T

Abs Jour: Ref Zhur-Biol., No 9, 1958, 41326.

Abstract: with hypertension (H) with the aid of capillaroscopic investigations. During the early stages of H capillary anastomoses were observed in 20-30% of cases. The length of the capillary loop is increased (at first in its venous portion) and the distance between the crests of the loops is greater. Capillary hemorrhages were noted. The pressure (P) in the arteries of the fingers was at the upper limit of normal during the initial stages of H, in the later stages it reached from 150-230mm of mercury. The author thinks that the increased tonus of medium caliber arteries decreases in the later stages of H. The effect of emotion on P in the arteries of the fingers was noted. P in the finger arteries increased or decreased as the patients' position was passively changed from the

Card 2/3



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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, I.M.

Importance of blood vessels of the muscular type in regulating blood pressure in health and in pathology. Trudy Inst. klin. i eksper. kard. AN Gruz. SSR 8:349-352 '63. (MERA 17:7)

1. Kafedra patofiziologii Meditsinskogo instituta, Tbilisi.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; SHRAYBMAN, F.O.

A device for automatic application of test solution to the chromatographic paper. Biokhimiia 28 no.1:9-12 Ja-F '63. (MIRA 16:4)

1. Institut fiziologii Akademii nauk Gruzinskoy SSR, Tbilisi.
(PAPER CHROMATOGRAPHY)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; KLEYN, Ye.E.

Microcolorimetric determination of histamine. Soob.AN Gruz.SSR 9 no.3:167-171 '48. (MLRA 9:7)

1.Akademiya nauk Gruzinskoy SSR, Institut fiziologii imeni I.S.Beritashvili, Tbilisi. Predstavlene chlenom-korrespondentom Akademii P.A.Kometiani.
(Histamine)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

CA ZAALISHVILI, M.M.

Physico-chemical and biochemical characteristics of myogen A. M. M. Zaalishvili (Georgian Acad. Sci., Tiflis, U.S.S.R.). *Biokhimiya* 16, 229-38(1951).—The aldolase activity of myogen A (I) was higher than the activity of the initial muscle ext. After recrystn., the aldolase activity of I increased. I contained 0.9% free amino groups, 1.85% carboxyl groups, no free sulfhydryl groups, 1.66% tryptophan, and 7.77% lysine. The ultraviolet absorption max. was at 2780 A. Numb rabbit muscle, produced by a faradic current nerve stimulation, yielded cryst. I possessing the identical properties of I obtained from normal rabbit muscle. H. Priestley

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

COMPLETE

ZAALISHVILI, M.M.

Monomolecular layer of myogen A. Biokhimiia, Moskva 16 no.4:321-327 July-Aug 51 (CLML 21:1)

G

1. Institute of Physiology, Academy of Sciences USSR, Tbilisi.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; MIKADZE, G.V.

Role of actin in muscle tissues and some problems in the theory of muscle contraction. Biokhimiia 24 no.4:612-624 Jl-Ag '59. (MIRA 12:11)

1. Institut fiziologii Akademii nauk Gruzinskoy SSR, Tbilisi.
(MUSCLE PROTEINS metab)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; SHRAYBMAN, F.O.; YEGYAZAROVA, A.R.

Apparatus with automatic control for the determination of the diffusion coefficient. Biofizika 5 no.1:69-75 '60. (MIRA 13:6)

1. Institut fiziologii AN Gruzinskoy SSR, Tbilisi.
(TECHNOLOGY RADIOLOGIC equip. & supply)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; SHRAYBMAN, F.O.

Apparatus for automatic application of spots to the chromafographic paper. Biokhimiia 25 no. 3:570-572 My-Je '60. (MIRA 14:4)

1. Institute of Physiology, Academy of Sciences of Georgian S.S.R., Tbilisi.

(PAPER CHROMATOGRAPHY)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.

Interaction of myosin and actomyosin with adenosinetriphosphoric acid. Biokhimiia 25 no.5:912-919 S-O '60. (MIRA 14:1)

1. Institute of Physiology, Academy of Sciences of the Georgian S.S.R., Tbilisi.
(ADENOSINETRIPHOSPHORIC ACID) (MYOSIN)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M. M., and DZHIBLADZE, S. V. (USSR)

"Some Data of Contractile Proteins of Tonic and Tetanic Muscles."

Report presented at the 5th International Biochemistry Congress, Moscow, 10-16 Aug 1961

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.

Interaction of myosins A and B with adenosine triphosphate and some problems in the theory of muscular contraction. Trudy Inst. fiziol. AN Gruz. SSR 12:175-192 '61. (MIRA 15:2)
(MYOSIN) (ADENOSINE TRIPHOSPHATE)
(MUSCLE MOTILITY)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZHALISHVILI, M.M.; SHRAYBMAN, F.O.

Device for the measurement of the initial rate of an enzymatic reaction. Biokhimiia 27 no.1:72-76 Ja-F '62. (MIRA 15:5)

1. Institute of Physiology, Academy of Sciences of Georgian S.S.R., Tbilisi.

(ENZYMES)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; SURGULADZE, T.T.; YEGIAZAROVA, A.R.; GOGORISHVILI, Dzh.A.

Studying the interrelation of myosin A and myosin B with adenosine triphosphate by the method of electrophoresis. Soob. AN Gruz. SSR. 30 no.1:29-36 Ja '63. (MIRA 17:1)

1. Institut fiziologii AN Gruzinskoy SSR, Tbilisi. Predstavleno akademikom P.A. Kometiani.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; DZHIBLADZE, S.V.

Nature of the contractile proteins of tonic and tetanic skeletal muscles. Soob. AN Gruz. SSR 31 no.1:53-60 Jl '63. (MIRA 17:7)

1. Predstavleno akademikom P.A. Kometiani.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, M.M.; MIKADZE, G.V.

Some problems of mechanical chemistry of the smooth muscle.
Biokhimiia 29 no.5:801-811 Jl-Ag '64. (MIRA 18:11)

1. Institut fiziologii AN GruzSSR, Tbilisi.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

L 08289-67 EWT(1) RO

ACC NR: AP7000434 SOURCE CODE: UR/0251/66/044/002/0311/0316

AUTHOR: Zaalishvili, M. M.; Dzhibladze, S. V.

23
B

ORG: Institute of Physiology, AN Georgian SSR (Institut fiziologii Akademii nauk Gruzinskoy SSR)

TITLE: Cholinesterase activity in myosin

SOURCE: AN GruzSSR. Soobshcheniya, v. 44, no. 2, 1966, 311-316

TOPIC TAGS: cholinesterase, enzyme, adsorption, myosin

ABSTRACT: Rabbit-muscle myosin A was obtained according to a standard method, while the frog muscle myosin was prepared as follows: frog sartorius muscles were frozen and then ground and the homogenate extracted with Straub's solution at pH 6.5. The extract was further separated by centrifugation and myosin precipitated with 15 volumes of water cooled to OC. Thereafter myosin was again precipitated and finally suspended in the equivalent of a 1.2-M KCL solution. Total nitrogen was determined by the Kjeldahl method and ATP by Lyubimova's method, while cholinesterase activity was assayed according to Varga's method. To evaluate the effect of temperature on the cholinesterase activity of myosin, the

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L 08289-67

ACC NR: AP7000434

myosin suspensions were exposed to varying temperatures for periods of 5, 10, 15, and 20 min. To separate the cholinesterase fraction from myosin, the 0.6-M KCL myosin suspension was heated to 50C for 10 min, cooled to OC for several hours, and the precipitated fraction removed by centrifugation. At this stage, cholinesterase activity was determined for the stock suspension and the supernatant fraction. Myosin heated to 50C losses ATP-ase activity, but cholinesterase activity remains unaltered. Due to thermal denaturation of proteins, cholinesterase myosin activity is shifted to the supernatant fraction. It is therefore concluded that the "false" cholinesterase activity is due to enzyme adsorption by myosin. Orig. art. has: 2 figures and 1 table.

SUB CODE: 06/ SUBM DATE: 24Nov65/ ORIG REF: 008/ OTH REF: 014/

Card 2/2 LS

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, Sh. D.

Moscow

Laboratory of the Technology of Inorganic Substances, Chemico-Technological Institute imeni D.I. Mendeleyev, (-1939-).

"The Solubility of Carbon Dioxide from Mixtures with Hydrogen and Nitrogen in Water under Pressure."

Zhur. Fiz. Khim., Vol. 14, No. 3, 1940.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, SH. D.

Hydrocarbons

Modified theory of corresponding states and its application to pure hydrocarbons. Part I. Zhur.fiz.khim., 16, No. 6, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, Sh. D.

USSR/Chemistry - Hydrocarbons Jun 52

"Modified Theorem of Corresponding States and Its Verification on the Example of Pure Hydrocarbons. Part I," Sh. D Zaalishvili, Gor'kiy Polytech Inst imeni A.A. Zhdanov

Zhur Fiz Khim Vol XXVI, No 6, pp 882-891

The new method of computing the dependence p - V - T proposed by the author has been found applicable from methane to pentane inclusively. There are reasons to believe that it will be valid for higher hydrocarbons as well. Under the circumstances it will be possible to predict for every

220T33

gas of the paraffin series the vol changes within a wide range of pressures and temps with a precision sufficient for engineering calcns. By introducing 3 new consts which by definition make the value of the crit coeff unchangeable, coincidence of hydrocarbon curves (cf. Brown, Sounders, and Smith, Ind Eng Chem, Vol XXIV, 513, 1932) up to 700 atm was achieved.

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APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, SH. D.

USSR/Chemistry - Gas Mixture Jul 52

"Modified Theorem of Corresponding States for Gas Compounds and Its Verification for Hydrocarbons, II.," Sh. D. Zaalishvili, Gor'kiy Polytech Inst imeni A. A. Zhdanov

"Zhur Fiz Khim, Vol 26, No 7, pp 970-976

Most previous works on the theorem of corresponding states has been confined to pure substances. Kay's empirical method may be applied to gas mixts with the use of exptl data for p-V-T and within wide ranges of temp and pressure. Author applied his own method to gas solns. The principle of corresponding states and the values of pseudocritical consts of gas compds are utilized by him in the same manner as for pure gases. Sage's and Lacey's exptl data are called on to verify the author's work with these mixts: methane-n.-butane, methane-n.-pentane. Verification of the method on 15 gas mixts permitted these conclusions: the system methane-ethane gives unsatisfactory results; the system ethane-carbon dioxide gives excellent results for all compns; the system methane-n.-pentane, with large concns of methane, behaves in accordance with the principle. The author states that the method of calcg p-V-T data for pure gases can be applied to the gas mixts, methane-hydrocarbon with large

(2) 248T8

PA 248T8

dilutions of methane and at sufficiently high temps (300°-500° K), to these mixtures under high pressures.

(3) 248T8

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, SH. D.

AID P - 1275

Subject : USSR/Chemistry

Card 1/1 Pub. 119 - 4/5

Author : Zaalishvili, Sh. D. (Gor"kiy)

Title : Corresponding states

Periodical : Usp. khim., 23, no. 7, 867-875, 1954

Abstract : Review of literature based principally on non-Russian sources. Discussion of the application of the theorem of corresponding states for determining the properties of gases at high pressures. 45 references (6 Russian: 1882-1952).

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, SH. D.

AID P - 3163

Subject : USSR/Chemistry

Card 1/1 Pub. 119 - 5/7

Author : Zaalishvili, Sh. D. (Gor'kiy)

Title : The second virial coefficient for pure gases

Periodical : Usp. khim., 6, 759-778, 1955

Abstract : The literature dealing with second virial coefficients for individual gases is reviewed. Attention is drawn to the need for precise low-pressure V data for gases. This information is of use in establishing laws of molecular interaction in gases. Fifty tables, 80 references, 2 Russian (1952).

Institution : None

Submitted : No date

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

Zealishvili, Sh.D.

Category : USSR/Atomic and Molecular Physics - Gases D-7

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6378

Author : Zealishvili, Sh.D.
Title : Second Virial Coefficients for Gas Solutions

Orig Pub : Zh. fiz. khimii, 1956, 30, No 8, 1891-1895

Abstract : Data on the second virial coefficient for gas solutions, scattered in various sources, are collected together.

Card : 1/1

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/076/60/034/01/016/044
B008/B014

5 (4)

AUTHOR: Zaalishvili, Sh. D.

TITLE: Application of Hermite's Interpolation Polynomial for the Description of Physicochemical Data

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol 34, Nr 1, pp 102-104 (USSR)

ABSTRACT: In this paper the author attempted to use the Hermitian polynomial for calculating the critical coefficient $P_cV_c/RT_c$ of a pure substance. A polynomial was set up by the methods described in reference 4. Equation (5) was derived for the critical isotherm. Herefrom it was possible to derive a straightforward formula for the critical coefficient (6). In order to verify equation (6), table 1 was compiled in accordance with experimental data on the critical parameters (Ref 6) and the second virial coefficients of gases (Ref 7). The same problem was solved in consideration of the third virial coefficient: formula (7). The values required for the verification of this formula were calculated from the equation of state derived by Meyers (Ref 5). The experimental and calculated values of the critical coefficient were in close agreement in all cases.

Card 1/2

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"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

S/076/60/034/01/016/044
B008/B014

Application of Hermite's Interpolation Polynomial for the Description of Physico-chemical Data

The author thanks I. R. Krichevskiy for his suggestion to solve the afore-mentioned problem with the help of the Hermitian polynomials. There are 2 tables and 7 references, 5 of which are Soviet.

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut im. A. A. Zhdanova (Gor'kiy Polytechnic Institute imeni A. A. Zhdanov)

SUBMITTED: April 13, 1960

Card 2/2

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

"APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2

ZAALISHVILI, Sh.D.; KOLYSKO, L.E.

Second virial coefficient for vapors and their mixutres. Part 1: System diethyl ether - acetone. Zhur. fiz. khim. 34 no. 11:2596-2600 N '60. (MIRA 14:1)

1. Gor'kovskiy politekhnicheskiy institut im. A.A. Zhdanova.
(Ether) (Acetone) (Equation of state)

APPROVED FOR RELEASE: 03/15/2001 CIA-RDP86-00513R001963310015-2"

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B101/B110

AUTHORS: Zaalishvili, Sh. D., and Kolysko, L. E.

TITLE: The second virial coefficient of vapors and their mixtures. II. The system acetone - chloroform

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 11, 1961, 2613 - 2615

TEXT: Since knowledge of the second virial coefficient is necessary for the exact determination of data for the equilibrium between liquid and vapor, the authors investigated the system acetone - chloroform which is typical of systems with maximum boiling point. Purified $CHCl_3$ and $(CH_3)_2CO$ were vaporized in a chamber through which dry nitrogen was blown. The chamber was designed by the Laboratoriya vysokikh davleniy GIAP (Laboratory of High Pressures of the GIAP) (I. R. Krichevskiy, Yu. V. Tsekhanskaya, Zh. fiz. khimii, 10, 2315, 1956). The compressibility of mixtures containing 14.13; 32.40; 44.50; and 74.59 mole% of acetone was measured, and the second virial coefficient $B_m$ determined. Experimental data follow the equation $B_m = B_{11}N_1^2 + 2B_{12}N_1N_2 + B_{22}N_2^2$ (1), where $B_{11}$ and $N_1$

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The second virial coefficient...

are the second virial coefficient and the molar part of acetone, respectively. $B_{22}$ and $N_2$ are the second virial coefficient and the molar part of chloroform, respectively. $B_{12}$ is the second virial coefficient of the mixture. The maximum deviation of experimental data from those calculated according to this equation is 3%. The $B_m$ values were tabulated:

| t, °C | $-B_m$, $cm^3$/mole | | | | | | $-B_{12}$ |
|---|---|---|---|---|---|---|---|
| | Acetone content, mole% | | | | | | |
| | 0 | 20 | 40 | 60 | 80 | 100 | |
| 60 | 910 | 1275 | 1500 | 1585 | 1530 | 1330 | 2005 |
| 70 | 855 | 1010 | 1115 | 1170 | 1180 | 1140 | 1300 |
| 80 | 775 | 855 | 920 | 965 | 995 | 1010 | 995 |
| 90 | 710 | 785 | 840 | 865 | 865 | 845 | 930 |

The volatility $f_1$, $f_2$ of acetone and chloroform, respectively, at 55°C was calculated by means of the equations:

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The second virial coefficient...

$$RT \ln f_1 = RT \ln PN_1 + [B_{11} - (B_{11} - 2B_{12} + B_{22})N_2^2]P;$$
$$RT \ln f_2 = RT \ln PN_2 + [B_{22} - (B_{11} - 2B_{12} + B_{22})N_2^2]P \quad (3),$$

and compared with the partial pressure (data by H. Röck, W. Schröder, Z. phys. Chem., 11, 41, 1957) (Table 3). Considerable deviations between partial pressure P and volatility f show that the second virial coefficients should be considered when investigating the equilibrium vapor - liquid. The authors thank I. R. Krichevskiy for advice. M. I. Shumilkina and O. S. D'yachkovskaya assisted in the experiments. There are 1 figure, 3 tables, and 7 references: 3 Soviet and 4 non-Soviet. The reference to the English-language publication reads as follows: J. Timmermans, Physico-chemical constants of pure organic compounds, 1950.

ASSOCIATION: Gor'kovskiy politekhnicheskiy institut im. A. A. Zhdanova (Gor'kiy Polytechnic Institute imeni A. A. Zhdanov)

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MADYANOV, A.M., kand. tekhn. nauk, dots.; TIKHONOV, G.F., kand. tekhn. nauk, dots., otv. red.; ZAALISHVILI, Sh.D., doktor khim. nauk, prof., retsenzent; ASTROV, Ye.I., kand. tekhn. nauk, dots., retsenzent; KOZYULINA, R.M., red.

[Principles of the theory of metallurgical processes; manual for students of the department of metallurgy] Osnovy teorii metallurgicheskikh protsessov; uchebnoe posobie dlia studentov metallurgicheskogo fakul'teta. Gor'kii. Pt.2. 1962. 112 p. (MIRA 17:3)

1. Gorkyi. Politekhnicheskiy institut. Kafedra liteynogo proizvodstva.

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ZAALISHVILI, Sh.D.; KOLYSKO, L.E.; Prinimala uchastiye: SHUMILKINA, M.I.

Second virial coefficient of vapors and their mixtures. Part 3. The system diethyl ether - methyl iodide. Zhur. fiz. khim. 36 no.4:846-848 Ap '62. (MIRA 15:6)

1. Gor'kovskiy politekhnicheskiy institut imeni A.A.Zhdanova. (Ethyl ether) (Methane) (Virial coefficients)

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