NAMETKIN, N.S.; VDOVIN, V.M.; ZAV'YALOV, V.I.

Silicocyclobutane polymerization catalysts. Izv.AN SSSR. Ser.khim. no.1:203 Ja '64. (MIRA 17:4)

1. Institut neftekhimicheskogo sinteza im. A.V.Topchiyeva AN SSSR.

VDOVIN, V.M.; NAMETKIN, N.S.; FINKEL'SHTEYN, Ye.Sh.; OPPENGEYM, V.D.

Conversion of vinylbenzyl derivatives of silicon in the presence of alkylation catalysts. Izv. AN SSSR. Ser.khim. no.3:458-464 Mr '64. (MIRA 17:4)

1. Institut neftekhimicheskogo sinteza im. A.V.Topchiyeva AN SSSR.

NAMETKIN, N.S.; VIOVIN, V.M.; GRINBERG, P.L.

Telomerization of silicacyclobutanes. Izv. AN SSSR. Ser. khim. no.6:1133-1134 Je '64. (MIRA 17:11)

1. Institut neftekhimicheskogo sinteza im. V.A. Topchiyeva AN SSSR.

ACCESSION NR: AP4024410 S/0204/64/004/001/0137/0141

AUTHORS: Nametkin, N.A.; Berezkin, V.G.; Vanyukova, N.Ya.; Vdovin, V.M.

TITLE: Gas-liquid chromatography of several silicohydrocarbons and paraffins.

SOURCE: Neftekhimiya, v. 4, no. 1, 1964, 137-141

TOPIC TAGS: gas liquid chromatography, paraffin, silicohydrocarbon, elution characteristic, retention time, chromatographic analysis

ABSTRACT: The elution characteristics of hydrocarbons and of silicohydrocarbons which are structurally similar analogs of the hydrocarbons were investigated in order to determine if mixtures of these materials can be identified chromatographically. The relative retention time of certain silicohydrocarbons and of paraffins on two stationary liquid phases of different polarity (polymethylphenylsiloxane (I) and polyethyleneglycol M.W. 154) (II)) was determined at different temperatures. The following homologous series of hydrocarbons and silicohydrocarbons were studied

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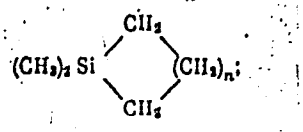
ACCESSION NR: AP4024410

$(CH_3)_3Si(CH_2)_nSi(CH_3)_3$;



$(CH_3)_3Si(CH_2)_nCH_3$;
$CH_3(CH_2)_nCH_3$.

Comparison of the retention time in phases I and II at 100 and 75C, respectively, is shown in fig. 1: The $(CH_3)_3Si(CH_2)_nSi(CH_3)_3$ type compounds can be identified in mixtures with paraffins and other silicohydrocarbons. By lowering the temperatures of the chromatographic columns the selected phases I and II can be used to identify the other series of compounds (fig. 2). It is recommended that the elution characteristic be determined on the different stationary phases at different temperatures and not at the same temperature. The logarithm of the relative retention time of the silicohydrocarbons can be represented as the sum of the partial values corresponding to the specific bonds: (V.G. Berezkin and V.S. Kruglikova, Neftekhimiya, No. 6, 845 (1962)):

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ACCESSION NR: AP4024410

$$\lg \alpha_i = \sum_{gj} n_{gj} \Gamma_{gj} - \sum_{gj} n_{gj} \Gamma_{gj},$$

where α_i = relative retention time; Γ_{gj} = value of $\lg \alpha_i$ corresponding to the determined combination of bonds or structural elements and n_{gj} = number of given structural elements in the molecule. The values for the CH_2 - CH_2 bond are practically the same for paraffins and for the silicohydrocarbons, and this is in agreement with the similarity of the physical and chemical properties of the tetraorganosilicon compounds and of the structurally similar hydrocarbons. Orig. art. has: 3 tables, 2 figures, 1 equation and 1 formula

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR im. A.V. Topchiyeva (Institute of Petrochemical Synthesis, AN SSSR)

SUBMITTED: 13May63 DATE ACQ: 17Apr64 ENCL: 02

SUB CODE: CH NR REF SOV: 009 OTHER: 003

Card 3/5

ACCESSION NR: AP4024410

ENCLOSURE: 01

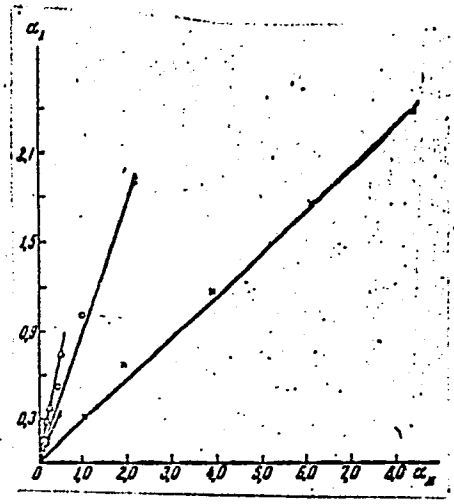
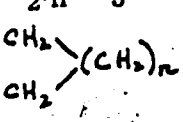


Fig. 1

Relationship between the relative retention capacity of silicohydrocarbons and paraffins on polymethylphenylsiloxane oil (α_I at 100C) and polyethyleneglycol (α_{II} at 75C).
x--compounds of the series $(CH_3)_3Si(CH_2)_nSi(CH_3)_3$;
O-- n-paraffins;
•--$(CH_3)_3Si(CH_2)_nCH_3$

Δ--$(CH_3)_2Si$ 

Card 4/5

ACCESSION NR: AP4024410 ENCLOSURE: 02

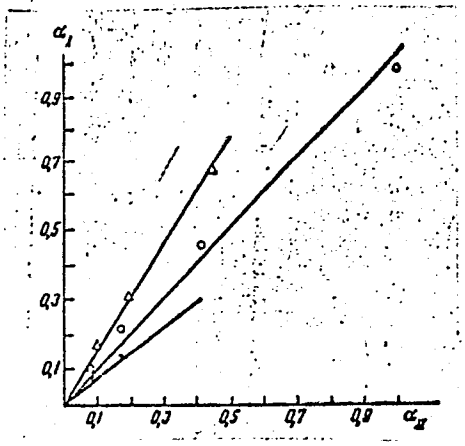


Fig. 2
Relationships between α_I at 75C and α_{II} at 50C. Designations the same as in fig. 1.

Card 5/5

ACCESSION NR: AP4012090 S/0020/64/154/002/0383/0386

AUTHORS: Nametkin, N.S. (Corresponding member); Vdovin, V.M.; Finkel'shteyn, Ye. Sh.; Arkhipova, T.N.; Oppengeym, V.D.

TITLE: Synthesis of 3,4-benzosilicocyclopentanes

SOURCE: AN SSSR. Doklady*, v. 154, no. 2, 1964, 383-386

TOPIC TAGS: 3,4-benzosilicocyclopentane, infra-red spectrum, ultraviolet spectrum, chloromethylbenzyldichlorsilane cyclization, 3,4-benzosilicocyclopentane synthesis, silicon containing indane

ABSTRACT: The silicon-containing analog of indane, 3,4-benzosilicocyclopentane and some of its derivatives were synthesized and characterized by their IR and u.v. spectra and physical properties. Chloromethylbenzyldichlorsilane was cyclized with $AlCl_3$ in benzene

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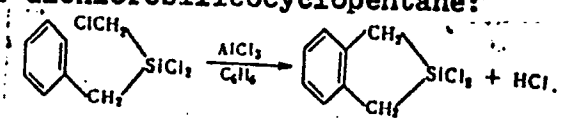
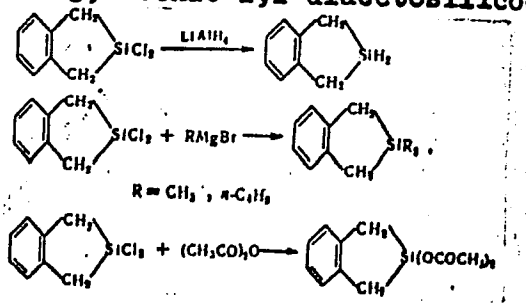
ACCESSION NR: AP4012090

to the 3,4-benzo-1,1-dichlorosilicocyclopentane:



The latter was reduced with $LiAlH_4$ to 3,4-benzo-1,1-dihydrosilicocyclopentane, alkylated with RMgBr to the corresponding 1,1-dimethyl- and 1,1-dibutyl-derivatives, and reacted with acetic anhydride to form the 3,4-benzo-1,1-diacetosilicocyclopentane.



Card 2/3

ACCESSION NR: AP4012090

Orig. art. has: 3 figures, 1 table, 2 equations and 2 formulas.

ASSOCIATION: Institut neftekhimicheskogo sinteza, Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences SSSR)

SUBMITTED: 28Sep63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 005 OTHER: 001

Card 3/3

ACCESSION NR: AP4030784 S/0020/64/155/004/0849/0852

AUTHOR: Nametkin, N. S. (Corresponding member); Vdovin, V. M.; Grinberg. P. L.

TITLE: Silicacyclobutanes. Strength of the Si-C bond of the silicacyclobutane ring and synthesis of new derivatives of silicacyclobutanes.

SOURCE: AN SSSR. Doklady*, v. 155, no. 4, 1964, 849-852

TOPIC TAGS: silicacyclobutane, silicacyclopentane, silicacyclohexane, silicon carbon bond strength, silicacyclobutane derivative, synthesis, alkoxysilicacyclobutane, acetoxysilicacylcobutane, aminosilicacyclobutane

ABSTRACT: The investigation included an examination of the strength of the Si-C bond of the silicacyclobutane ring, of the specificity of reactions for the silicacyclobutane ring, and of the synthesis of new silicacyclobutane derivatives. Reaction was attempted between 1,1-dimethylsilicacyclobutane and heptyl alcohol, acetic acid, acetic anhydride, hydrochloric acid, hydrogen chloride gas, water and diethylamine. Reactions with acids, alcohol, and water proceeded according to the equation

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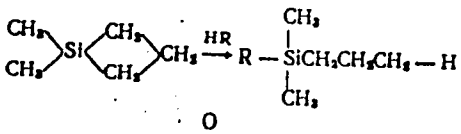
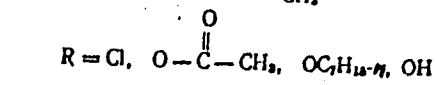
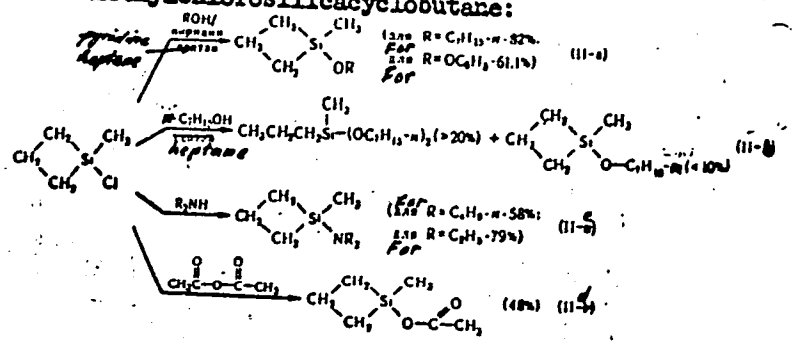
ACCESSION NR: AP4030784





These reactions are specific for the Si-C bond of the silicacyclobutane ring; they will not proceed with the 1,1-dimethylsilicacyclopentane or -hexane. Reactions were attempted with methylchlorosilicacyclobutane:



Card 2/3

ACCESSION NR: AP4030784

Reactions IIa, IIc, and IId are a means of synthesizing previously unknown alkoxy-, acetoxy-, and aminosilicacyclobutanes. Orig. art. has: 2 tables and 2 equations.

ASSOCIATION: Institut neftekhimicheskogo sinteza. Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences, SSSR)

SUBMITTED: 26Oct63 DATE ACQ: 30Apr64 ENCL: 00

SUB CODE: OC NO REF SOV: 001 OTHER: 005

Card: 3/3

L 18222-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4/Pa-4 RM
ACCESSION NR: AP4049139 S/0020/64/159/001/0146/0149

AUTHORS: Nametkin, N. S. (Corresponding member AN SSSR); Vdovin, V. M.; Arkhipova, T. N.

TITLE: Attaching methylhydride silicachloroalkanes and their open chain analogs to ethylene

SOURCE: AN SSSR. Doklady, v. 159, no. 1, 1964, 146-149

TOPIC TAGS: 1-silicachloroalkane, methylhydride, silicachloroalkane, chemical activity, organic synthesis, hydride derivative, siliconhydride

ABSTRACT: This work is a part of a study on the influence of different radicals (held together by C-Si-H-) on the reaction ability of siliconhydrides. The purpose of this experiment was to determine the possibilities of synthesizing 1,1-substituted 1-silicachloroalkanes on the basis of a reaction of hydride [illegible] alkanes with ethylene. The relative activity, in this reaction, of silicachloroalkanes [illegible] depending on ring size) and its comparison with the activity of the respective open chain analogs were also of interest. It was found that the [illegible] of hydride derivative silicachloroalkanes with the olefin took place at atmospheric pressure

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L 18222-65

ACCESSION NR: AP4049139

and 20-70C even in the presence of Pt charcoal (5% Pt), which is a weaker catalyst than platinum hydrochloric acid. It was determined that the activity of 1-hydride-1-methyl-1-silicachloroalkanes in the reaction with ethylene increases in the following way:

$$H(CH_3)Si(CH_2)_{3-}{}_1 < H(CH_3)Si(CH_2)_{n-}{}_1 < H(CH_3)Si(CH_2)_{n-}$$

This was concluded from a study of ethylene and methylhydride silicachloroalkane as a two-component system and also by investigation of 3-component competing reactions, as shown in Fig. 1 on the Enclosure. It was also found that the methylhydride silicachloroalkanes were more active than their open chain analogs. Orig. art. has: 3 tables and 3 figures.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences SSSR)

SUBMITTED: 17Jun64 ENCL: 01

SUB CODE: OC NO REF SOV: 004 OTHER: 002

Card 2/3

L 18222-65

ACCESSION NR: AP4049139

ENCLOSURE: 01

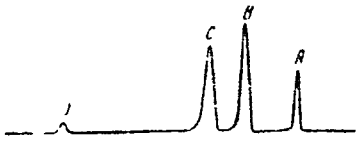

Fig. 1. Chromatogram of a sample (after 2 hours) from an experiment of competing reactions

$H(CH_3)Si(CH_2)_4$ (A), $H(CH_3)Si(CH_2)_5$ (B)

at 70°: $(C_2H_5)(CH_3)Si(CH_2)_4$ (C);

$(C_2H_5)(CH_3)Si(CH_2)_5$ (D)

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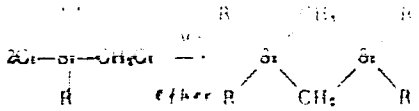
ACCESSION NR: AP5013[illegible]

AUTHOR: Nametkin, N. S. ; Vdovin, V. M.; Zav'yalov, V. I.; Grinberg, P. L.

TOPIC TAGS: organosilicon compound, silicon [illegible] butane

ABSTRACT: Up to the present time [illegible] butanes has been known [illegible]



(1)

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L 61648-65
ACCESSION NR: AP5015595

The structure of the products obtained was identified by infrared analysis. The presence of the four-membered ring was also confirmed by the polymerization of these compounds under the influence of [illegible] catalysts. [illegible] offers a new way of synthesizing [illegible] has [illegible] formula.

ASSOCIATION: [illegible] (Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences, SSSR)

SUBMITTED: 28Aug64 ENCL: 00 SUB CODE: OC

NO REF SOV: 003 [illegible]

Card 2/2

SOURCE: Byulleten' izobretenii i tovarnykh znakov, no. 7, 1965, 103

NO REF SOV: 000 OTHER: 000 AID PRESS: 3236

Card

L 02540-65 [illegible] RM/[illegible]

ACCESSION NR: [illegible]

AUTHOR: [illegible]lyakova, [illegible]

TITLE: New five-membered cyclic organosiloxane

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 7, 1965, 1267-1269

TOPIC TAGS: organosilicon compound, organosilicon polymer, cyclic compound

ABSTRACT: By directly reacting substituted acetylenes $XC \equiv CX'$ (where X = H or Ph, and X' = Ph) with dihydride disiloxanes of the general formula $HR'RSi-O-SiRR'H$ (where $R = CH_3$ and $R' = CH_3$ or C_2H_5), the authors prepared for the first time new five-membered organocyclosiloxanes with various substituents at the carbon,

$$R'RSi - CHX - CHX' - SiRR' - O$$

where (1) X = X' = Ph; (2) X = H; X' = Ph; (3) $R = R' = CH_3$; (4) $R = CH_3$; $R' = C_2H_5$. The reaction takes place in a solvent (toluene) at atmospheric pressure at 110-120° in the presence of $H_2PtCl_6 \cdot 6H_2O$ (0.1 M solution in the isopropyl alcohol) or Pt/C as

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ACCESSION NR: AP5019778

the catalyst according to the equation

$$XC{\equiv}CX' + HR'RSi{-}O{-}SiRR'H \xrightarrow{H_2PtCl_6 \cdot 6H_2O} XCH{-}CHX \; (RR'Si{-}O{-}SiRR')$$

In addition to the cyclic compounds, addition products of linear structure are formed. The yield of the cyclic fraction is affected by the nature of the substituents in [illegible] and of the [illegible] siloxanes. The structure of the cyclic compounds was identified by means of infrared absorption [illegible] ultimate analysis, and molecular [illegible]. The [illegible] compounds synthesized are [illegible]

[illegible]

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elementoorganic Compounds, [illegible] SSSR)

[illegible]

Card [illegible]

LEYTES, L.A.; FINKEL'SHTEYN, Ye.Sh.; VDOVIN, V.M.; NAMETKIN, N.S.

Raman spectra of some ortho-substituted benzene derivatives containing silicon. Izv. AN SSSR. Ser. khim. no.7:1305-1308 '65. (MIRA 18:7)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.

L 52181-65 EWT(m)/EPF(c)/EWP(j) Pc-4/Pr-4 JW/RM

ACCESSION NR: [illegible]

AUTH: Nametkin, N. [illegible]

TITLE: A method for producing tris-[silyl]-substituted amines. Class [illegible] No. 170057

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 8, 1965, 20

TOPIC TAGS: chlorosilane, amine, cyclic hydrocarbon, organosilicon compound

ABSTRACT: This Author's Certificate introduces a method for producing tris-(silyl)-substituted amines. Dialkylamines are interacted with chlorosilicoyl ethers

SUBMITTED: 17Mar64 ENCL: [illegible] SUB CODE: GC, OC

L 1700-66 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5022932 UR/0062/65/000/008/1448/1453
546.287.542.952

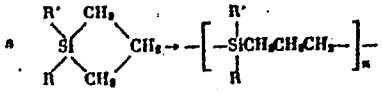
AUTHOR: Nametkin, N. S.; Vdovin, V. M.; Zav'yalov, V. I.

TITLE: Polymerization of 1,1-disubstituted silacyclobutanes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1965, 1448-1453

TOPIC TAGS: silane, polymerization

ABSTRACT: In an attempt to prepare heterochain silicohydrocarbon polymers, a study has been made of the polymerization of 1,1-disubstituted silacyclobutanes (see formula below). The polymerization was carried out without catalysts at 150—200C at atmospheric pressure or in sealed ampuls. On the basis of IR data, the reaction was assumed to proceed thus:



R'	CH_3	CH_3	CH_3	CH_3	CH_3	CH_3	CH_3	C_6H_5
R	CH_3	C_6H_5	n-C_4H_9	$CH{=}CH_2$	$CH_2CH{=}CH_2$	$CH_2C_6H_5$	C_6H_5	C_6H_5

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L 1700-66

ACCESSION NR: AP5022932 3

A regular structure was assigned to the polymers on the basis of the crystalline structure revealed by x-ray analysis, IR spectroscopic data, and substantial thermal-oxidative stability. The polymers were solid, slightly elastic or rubber-like materials, semitransparent or white in color, and, as a rule, soluble in the common organic solvents. Viscosity, molecular weight, melting point, and glass transition temperature data as well as x-ray patterns and DTA curves are given for some of the polymers. Orig. art. has: 3 formulas, 5 figures, and 1 table. [SM]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences, SSSR)

SUBMITTED: 28Jun63 ENCL: 00 SUB CODE:

NO REF SOV: 009 OTHER: 001 ATD PRESS: 4093

Card 2/2

L 1448-66 EWT(m)/EPF(c)/EWP(j)/T RM

ACCESSION NR: AP5022933 UR/0062/65/000/008/1453/1459
546.287+542.952

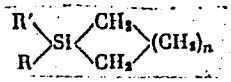
AUTHOR: Nametkin, N. S.; Vdovin, V. M.; Pushchevaya, K. S.; Zav'yalov, V. I.

TITLE: Polymerization of 1,1-disubstituted silacyclopentanes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1965, 1453-1459

TOPIC TAGS: silane, polymerization

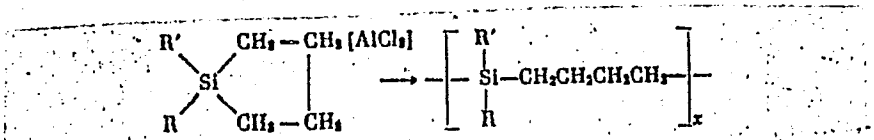
ABSTRACT: A study has been made of the catalytic polymerization of 1,1-disubstituted silacyclopentanes of the type



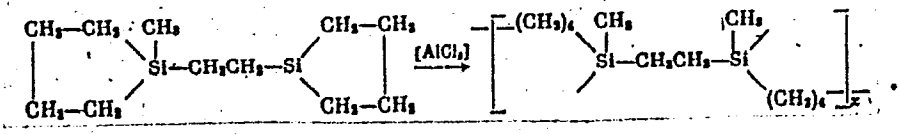
where n = 2, and R and R' are alkyl, aryl, substituted alkyl, chloro, or hydrogen radicals. The reaction was carried out at atmospheric pressure and 20—120C with $AlCl_3$ catalyst. It was found that silacyclopentanes with alkyl or hydrogen substituents polymerized to form heterochain silicohydrocarbon polymers. The polymers were colorless, highly viscous, soluble in the common organic solvents, and had molecular weights of 1 x 10^3 to 2.5 x 10^3. Bis(methyltetramethylenesilyl)ethane formed

Card 1/3

an insoluble tridimensional network product. Based on spectroscopic data the reactions were assumed to proceed as follows:



$R=CH_3$, $R'=CH_3$; $R=CH_3$, $R'=C_2H_5$; $R=C_2H_5$, $R'=C_2H_5$; $R=H$, $R'=CH_3$



On the other hand, silacyclopentanes with chlorine, phenyl, benzyl, or substituted alkyl radicals did not polymerize. This difference in polymerizability was interpreted in terms of differences in the interaction of the cyclopentanes with $AlCl_3$. Of all the polymers prepared, that of 1-hydro-1-methylsilacyclopentane was of spe-

L 1448-66

ACCESSION NR: AP5022933

cial interest in view of the reactivity of its Si-H group. This made possible its modification, e.g., by treatment with allylnitrile or by oxidation. Orig. art. has: 6 formulas, 2 figures, and 2 tables. [SM]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences, SSSR)

SUBMITTED: 28Jun63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 009 OTHER: 004 ATD PRESS: 4091

Card 3/3

L 5095-66 EWT(m)/EPF(c)/T/EWP(j) RM

ACCESSION NR: AP5025505 UR/0062/65/000/009/1547/1553
543.422+546.287

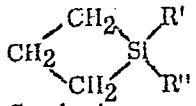
AUTHOR: Nametkin, N. S.; Oppengeym, V. D.; Zav'yalov, V. I.; Pushchevaya, K. S.; Vdovin, V. M.

TITLE: Infrared absorption spectra of 1, 1-substituted silicocyclobutanes, silicocyclopentanes, and corresponding polymers

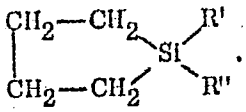
SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1965, 1547-1553

TOPIC TAGS: organosilicon compound, polymer structure, IR spectrum

ABSTRACT: The study aims at determining the frequencies of the absorption band maxima characterizing a 4- and 5-membered heterocyclic ring containing a silicon atom. The characteristic frequencies obtained were used to elucidate the structure of polymeric products obtained by thermal polymerization of 1, 1-substituted silicocyclobutanes



and 1, 1-substituted silicocyclopentanes

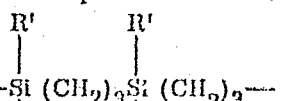


Card 1/3

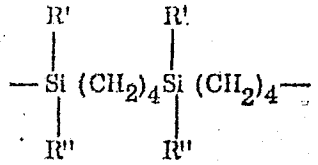
L 5095-66

ACCESSION NR: AP5025505

IR spectra of the polymers obtained from the silicocyclobutanes showed that the polymerization products are heterochain polymers with the structural fragment



as the link of the principal chain. Products obtained from 1, 1-substituted silicocyclopentanes are heterochain polymers with the structural fragment



as the link of the principal chain.

Orig. art. has: 5 tables and 5 formulas.

Card 2/3

L 5095-66

ACCESSION NR: AP5025505 3

ASSOCIATION: Institut neftekhimicheskoge sinteza im. A. V. Topchiyeva Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences, SSSR) 44,55

SUBMITTED: 28Jun63 ENCL: 00 SUB CODE: OC, GC

NO REF SOV: 008 OTHER: 003

Card 3/3

NAMETKIN, N.S.; VDOVIN, V.M.; ZAV'YALOV, V.I.

Silylethylene elastomers. Vysokom. soed. 7 no.4:757 Ap '65.
(MIRA 18:6)

AUTHOR: [illegible]

TITLE: Carbon-combining derivatives of silicon cyclobutanes

SOURCE: AN SSSR. Doklady, v. 161, no. 2, 1965, 358-361

TOPIC TAGS: cyclic compound, butane, organic synthesis, silicon organic polymer, organo metallic compound

ABSTRACT: A number of carbon-function silicon cyclobutanes were synthesized, including those with the functional group in one of the radicals R in the [illegible] [illegible]

[illegible]

ACCESSION Nr: [illegible]

[illegible]

$(CH_2)_3SiCl_2 + M(CH_2)_4M \rightarrow (CH_2)_3Si(CH_2)_4$, where M = Li, MgBr. With Mg the yield was 49%. With Li, only high-molecular condensation products were obtained. It is [illegible]

[illegible]

ASSOCIATION: [illegible]

[illegible]

Card 2/2

BIRYUKOV, I.P.; VORONKOV, M.G.; BABICH, E.D.; ARKHIPOVA, T.N.; VDOVIN, V.M.; NAMETKIN, N.S.

Nuclear quadrupole resonance of 1,1-dichloro and 1-methyl-1-chloro-1-silacycloalkanes. Dokl. AN SSSR 161 no.6:1336-1338 Ap '65. (MIRA 18:5)

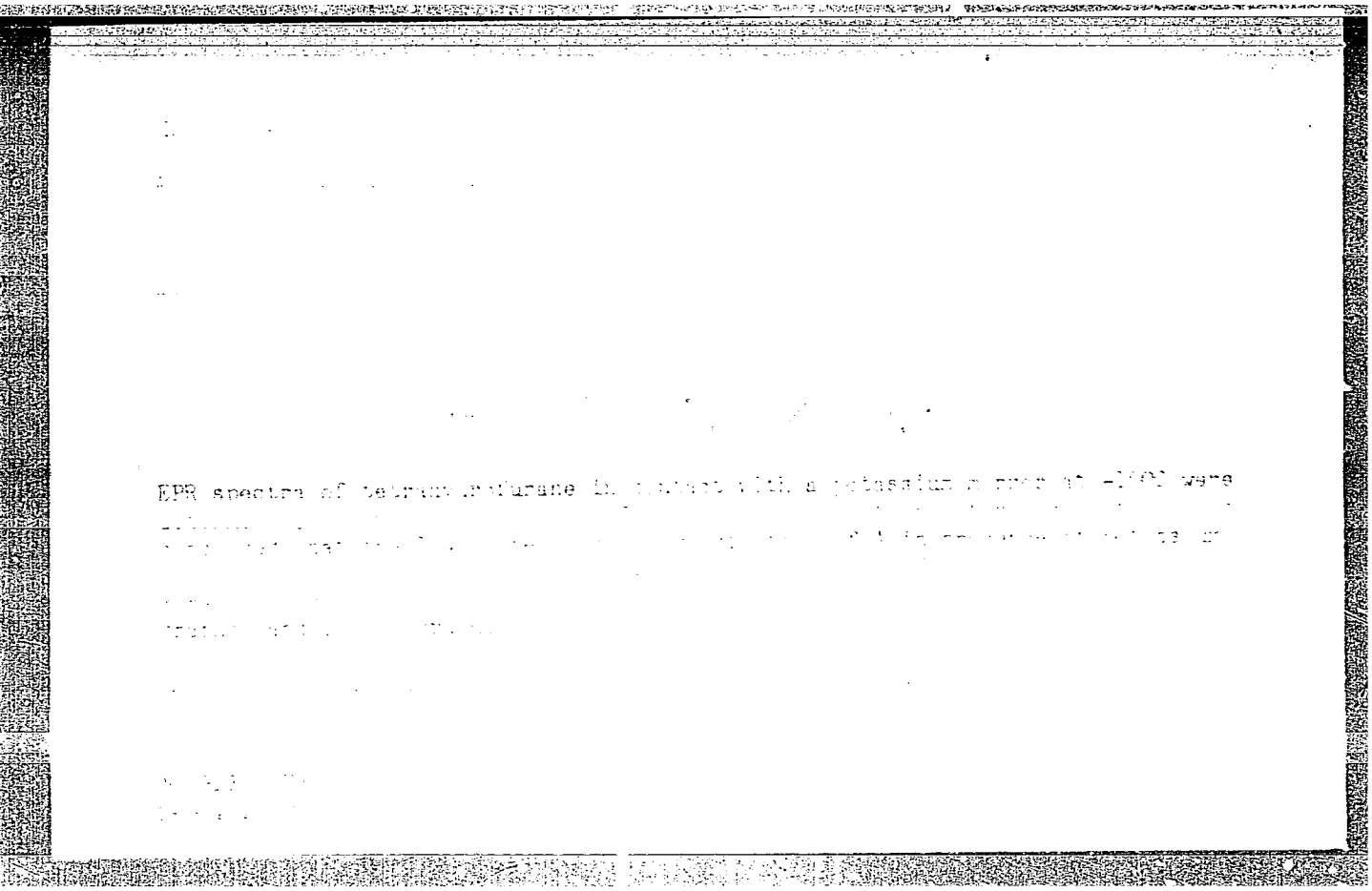
1. Institut organicheskogo sinteza AN LatvSSR i Institut neftekhimicheskogo sinteza im. A.V.Topchiyeva AN SSSR.
2. Chlen-korrespondent AN SSSR (for Nametkin).

SOURCE: AN SSSR, Izvestiya, v. [illegible], no. [illegible], [illegible]

TOPIC TAGS: polymer, polymerization, silicon organic, silicon organic polymer, resin / URS 60 x ray apparatus, UR 10 spectrophotometer

ABSTRACT: The investigation is a continuation of the work by V. M. Vdovin, M. S. Nametkin, et. al. (J. prakt. Chem., 281, 1964) on a polymer of the type

[illegible]



EPR spectra of [illegible] were

L 53805-65 EWT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM

SOURCE: AN SSSR, Doklady, v. 162, no. 4, 1965, 824-826, and insert facing p. [illegible]

TOPIC TAGS: silane, polymer, linear polymer, polysilane, disilacyclobutane

of soluble catalysts, siloxides of alkali metals. Orig. art. has: 3 figures, 2 tables, and 3 formulas.

Card 2

L 53809-65

A [illegible]

ASSOCIATION: Institut neftekhimicheskogo sinteza im. A. V. Topchiyeva
Akademii nauk SSSR (Institute of Petrochemical Synthesis, Academy of Sciences, SSSR)

[illegible] 4022

Card 2/2

L 31884-66 EWT(m)/EWP(j)/T RM/WW

ACC NR: AP6012538 SOURCE CODE: UR/0062/66/000/003/0584/0585

AUTHOR: Nametkin, N. S.; Vdovin, V. M.; Gusel'nikov, L. Ye.; Zav'yalov, V. I.

ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyeva, Academy of Sciences SSSR (Institut neftekhimicheskogo sinteza, Akademii nauk SSSR)

TITLE: Formation of 1,3-disilacyclobutanes in protolytic condensation reaction of 1-silacyclobutanes

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 3, 1966, 584-585

TOPIC TAGS: organic synthesis, silicon compound, condensation reaction

ABSTRACT: 1,1-dimethyl-1-silacyclobutane was passed in a stream of helium through a quartz tube, 14 mm in diameter and 200 mm in length, heated to 600°C at the rate of 3 g/hr. The reaction mixture consisted of gaseous and liquid products. Gas-liquid chromatography and IR spectroscopy showed the gaseous products to consist of ~95% ethylene and ~5% methane. As a result of separation by distillation, it was established that the condensate contains unreacted monosilacyclobutane and 1,1,3,3-tetramethyl-1,3-disilacyclobutane, produced with ~55% yield. The disilacyclobutane

Card 1/2

UDC: 546.287 + 542.954

L 31884-66

ACC NR: AP6012538

obtained has the following characteristics: b.p. 118-120°C, n_D^{20} 1,4411; d_4^{20} 0.7988, m. wt. 139. 1,1-dichloro-1-silacyclobutane was similarly converted to crystalline 1,1,3,3-tetrachloro-1,3-disilacyclobutane at 680°C with high yield. The gaseous product consisted of only ethylene.

SUB CODE: 07/ SUBM DATE: 28Dec65/ ORIG REF: 001/ OTH REF: 000

Card 2/2

ACC NR: AP7002937 SOURCE CODE: UR/0020/66/171/006/1345/1347

AUTHOR: Nametkin, N. S. (corresponding member AN SSSR); Vdovin, V. M.; Babich, E. D.; Arkhipova, T. N.

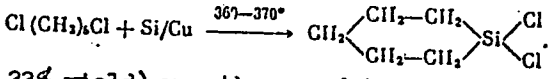
ORG: Institute of Petrochemical Synthesis im. A. V. Topchiyev, Academy of Sciences, SSSR (Institut neftekhimicheskogo sinteza Akademii nauk SSSR)

TITLE: Synthesis of certain 1,1-substituted derivatives of 1-silacyclohexane

SOURCE: AN SSSR. Doklady, v. 171, no. 6, 1966, 1345-1347

TOPIC TAGS: organosilicon compound, cyclohexane, polysiloxane

ABSTRACT: 1,1-Substituted 1-silacyclohexane was prepared by "direct synthesis" as follows:

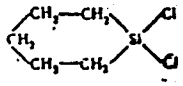
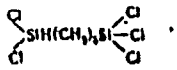
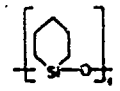
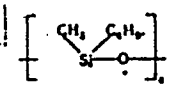


The product (obtained in 23% yield) was then used to prepare linear polysiloxanes. The compounds obtained are shown in Table 1. A greater thermal-oxidative stability of silacyclohexane derivatives as compared to that of dialkyl ones was observed. Orig. art. has: 1 figure and 1 table.

Card 1/2 UDC: 546.287

ACC NR: AP7002937

Table 1

Compound	B.P., °C/mm Hg	n_D^{20}	d_4^{20}	Cl, %		Mol. weight	
				calc.	found	calc.	found
	167—168	1,4670	1,1457	42,0	42,0	169	167
	112—115/5	—	—	58,2	57,10	303,5	309
4, 	225—230/6	MP 65°	—	—	—	456	451
	230—235/7	1,4295	—	—	—	—	—

SUB CODE: 07/ SUBM DATE: 16Mar66/ ORIG REF: 006/ OTH REF: 005

Card 2/2

VDOVIN, V.N.

Chronic hypertonic encephalopathy following a cerebral insultus. Vrach. delo no.8:114-115 Ag '63. (MIRA 16:9)

1. Kaluzhskaya oblastnaya vrachebno-trudovaya ekspertnaya komissiya.

(CEREBROVASCULAR DISEASE)

VDOVIN, V.N.

Arterial oscillographic study of vascular reaction in hypertension with the aftereffects of a stroke. Vrach. delo no. 1:110-112 '61. (MIRA 14:4)

1. Rostovskiy filial TSentral'nogo nauchno-issledovatel'skogo instituta ekspertizy trudosposobnosti i organizatsii truda invalidov Ministerstva sotsial'nogo obespecheniya RSFSR.
(HYPERTENSION) (APOPLEXY) (OSCILLOGRAPHY)

18(5) SOV/132-59-4-2/17

AUTHOR: Vdovin, V.V.

TITLE: The Findings of Bauxites in the North of the West-Siberian Lowland.

PERIODICAL: Razvedka i okhrana nedr, 1959, Nr 4, pp 4-6 (USSR)

ABSTRACT: The author describes the finding of bauxite in various parts of the Taymyr National District. Different types of bauxites were found mainly in the Symskaya suite of the Danian stage of the Upper-Cretaceous period. Usually bauxites form an ochreous rock, resembling a conglomerate. Other varieties are brown bauxites with oölitic structure. The third variety forms a greenish-grey sandstone in which fragments of bauxite and oölites were found. The chemical composition of various types of bauxites found in the Solenaya river region has been tabulated (table 1). As bauxites were also found in many other parts of the region, the author recommends the right bank of the Yenisey river as a

Card 1/2

The Findings of Bauxites in the North of the West-Siberian Lowland.

prospective place for primary bauxite deposits, while stratified layers of Mesozoic bauxites may be found on the left bank of the Yenisey river from the Turukhan river on up to almost 69° of north latitude. There are 1 map, 1 table and 2 Soviet references.

ASSOCIATION: Institut geologii i geofiziki Zapadno-Sibirskogo filiala AN SSSR. (The Institute of Geology and Geophysics of the West-Siberian Branch of the AS USSR.)

SAKS, V.N., glav. red.; [illegible], zam. glav. red.; [illegible] S.F., red.; [illegible] V.V., red.; VOLKOVA, V.S., red.; GROMOV, V.I., red.; IVANOVA, I.K., red.; LAVRENT'YEV, A.[illegible] red.; MARTYNOV, V.A., red.; NIKOLAYEV, N.I., red.; STRELKOV, S.A., red.; TROITSKIY, S.L., red.; CHOCHIA, N.G., red.; SHANTSER, Ye.V., red.; SHATSKIY, S.B., red.

[Basic problems in the study of the Quaternary period; for the 7th Congress of INQUA, U.S.A., 1965] Osnovnye problemy izucheniia chetvertichnogo perioda; k VII Kongressu INQUA (SSHA, [illegible]). Moskva, Nauka, [illegible] 495 p. (MIRA 18:9)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Chlen-korrespondent AN SSSR (for Saks).

VDOVIN, V.V.

Recent structures of the Meso-Cenozoic sheet in the arctic zone of the West Siberian Plain. Izv. Sib. otd. AN SSSR no.3: 20-30 '58. (MIRA 11:8)

1.Zapadno-Sibirskiy filial AN SSSR.
(Siberia, Western--Geology, Structural)

VDOVIN, V.V.

VDOVIN, V.V.

Cenozoic deposits in the Ob' Valley at Kamen' and Novosibirsk. Trudy Gor.-geol. inst. Zap.-Sib. fil. AN SSSR no.15:117-126 '56. (MIRA 11:1)
(Ob' Valley--Geology, Stratigraphic)

VDOVIN, V.V.

Geotectonics of the Kolyvan'-Tomsk arc. Trudy Gor.-geol. inst. Zap.-Sib. fil. AN SSSR no.15:65-76 '56. (MIRA 11:1)
(Ob' Valley--Geology, Structural)

VDOVIN, V.V.; PROVODNIKOV, L.Ya.; NIKOLAYEV, V.A., otv. red.; ALEKSANDROVSKIY, B.M., red.

[History of the formation of Mesozoic and Cenozoic sediments and the recent relief in the Vakh River basin] Istoriia formirovaniia mezozoisko-kainozoiskikh otlozhenii i sovremennogo rel'efa v basseine reki Vakh. Novosibirsk, Red.-izd. otdel Sibirskogo otd-niia AN SSSR, 1965. 93 p. (MIRA 19:1)

VDOVIN, V.V.

Geological geomorphological method of searching for anticlinal structures in the northeastern part of the Western Siberian Plain. Izv.vost.fil. AN SSSR no.7:29-30 '57. (MIRA 10:10)

1. Zapadno-Sibirskiy filial AN SSSR.
(Yenisey Valley--Prospecting)

BELOUS, N.Kh., st. nauchn. sotr.; KAZANSKIY, Yu.P.; VDOVIN, V.V.; KLYAROVSKIY, V.M.; KUZNETSOV, V.P.; NIKOLAYEVA, I.V.; NOVOZHILOV, V.I.; SENDERZON, E.M.; AKAYEV, M.S.; BABIN, A.A.; BERDNIKOV, A.P.; GORYUKHIN, Ye.Ya.; NAGORSKIY, M.P.; PIVEN', N.M.; BAKANOV, G.Ye.; GEBLER, I.V.; SMOLYANINOV, N.M.; SMOLYANINOVA, S.I.; YUSHIN, V.I.; D'YAKONOVA, N.D.; REZAPOV, N.M.; KASHTANOV, V.A.; GOL'BERT, A.V.; SIDOROV, A.P.; GARMASH, A.A.; BYKOV, M.S.; BORODIN, L.V.; RYCHKOV, L.F.; KUCHIN, M.I.; SHAKHOV, F.N., glav. red.; SHPAKOVSKAYA, L.I., red.

[West Siberian iron ore basin] Zapadno-Sibirskii zhelezorudnyi bassein. Novosibirsk, Red.-izd. otdel Sibirskogo otdniia AN SSSR, 1964. 447 p. (MIRA 17:12)

1. Akademiya nauk SSSR. Sibirskoye otdeleniye. Institut geologii i geofiziki. 2. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR (for Belous, Kazanskiy, Vdovin, Klyarovskiy, Kuznetsov, Nikolayeva, Novozhilov, Senderzon). 3. Institut gornogo dela (for Akayev). 4. Novosibirskoye geologicheskoye upravleniye Ministerstva geologii i okhrany nedr SSSR (for Babin, Berdnikov, Goryukhin, Nagorskiy, Piven').

(Continued on next card)

BELOUS, N.Kh.---(continued). Card 2.

Tomskiy politekhnicheskiy institut (for Bakeyev, Gribov, Smolyaninov, Smolyaninova). 5. Sibirskiy nauchno-issledovatel'skiy institut geologii, geofiziki i mineral'nogo syr'ya(for Yushin, D'yakonova, Rezapov, Kashtanov, Gol'bert). 6. Institut ekonomiki sel'skogo khozyaystva (for Garmash). 7. Sibirskiy metallurgicheskiy institut (for Bykov, Borodin, Ryshkov). 8. Tomskiy inzhenerno-stroitel'nyy institut (for Kuchin). 9. Chlen-korrespondent AN SSSR (for Shakhov).

L 2555-66 EWT(d)/EWT(l)/EWT(m)/EPF(c)/EWP(v)/EWP(j)/T/EWP(k)/EWP(h)/EWP(l) JD/JAJ/RM
ACCESSION NR: AP5024825 UR/0032/65/031/010/1262/1263
620.178.35:678.5.06:1.05

AUTHOR: Vdovin, Ye. D.; Kan, K. N.

TITLE: Spring device for long-time tests of rigid plastics

SOURCE: Zavodskaya laboratoriya, v. 31, no. 10, 1965, 1262-1263

TOPIC TAGS: polymer, tensile test, static load test

ABSTRACT: A portable spring-loading device has been developed to simplify determination of the rupture strength of rigid plastics. The device is intended for loading specimens on any testing machine (e.g., the TsDM-10 machine, for 10 to 15 min, with subsequent holding under load outside the machine. The device is described in the source; its diagram is given in Fig. 1 of the Enclosure. The new device is being used for testing such plastics as K-18-2, FKPM-15I, AG-4V, and Voloknit. Orig. art. has: 1 figure. [BO]

ASSOCIATION: Leningradskiy institut aviatsionnogo priborostroyeniya (Leningrad Institute of Aircraft Instrument Building)

SUBMITTED: 00 ENCL: 01 SUB CODE: MT,AS
NO REF SOV: 000 OTHER: 000 ATD PRESS: 4108

Card 1/2

L 2555-66

ACCESSION NR: AP5024825

ENCLOSURE: 01

0

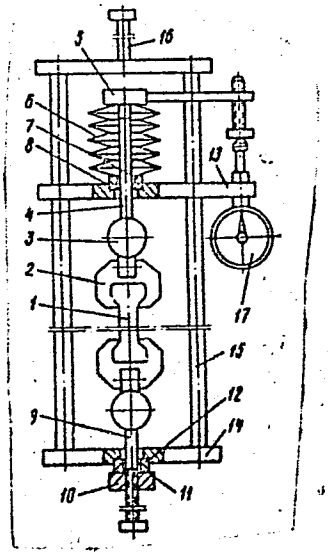


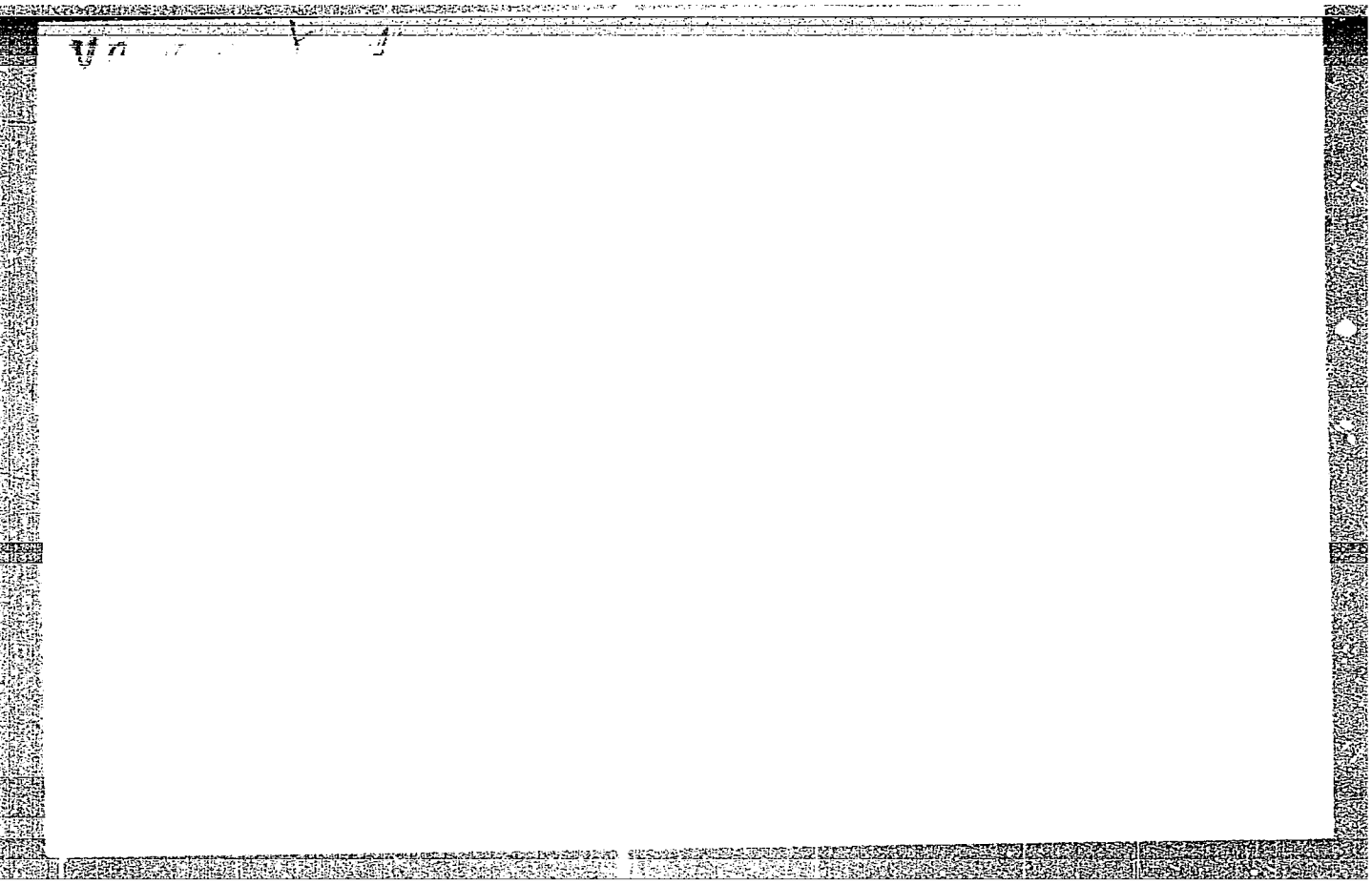
Fig. 1. Diagram of the spring device

Card 2/2

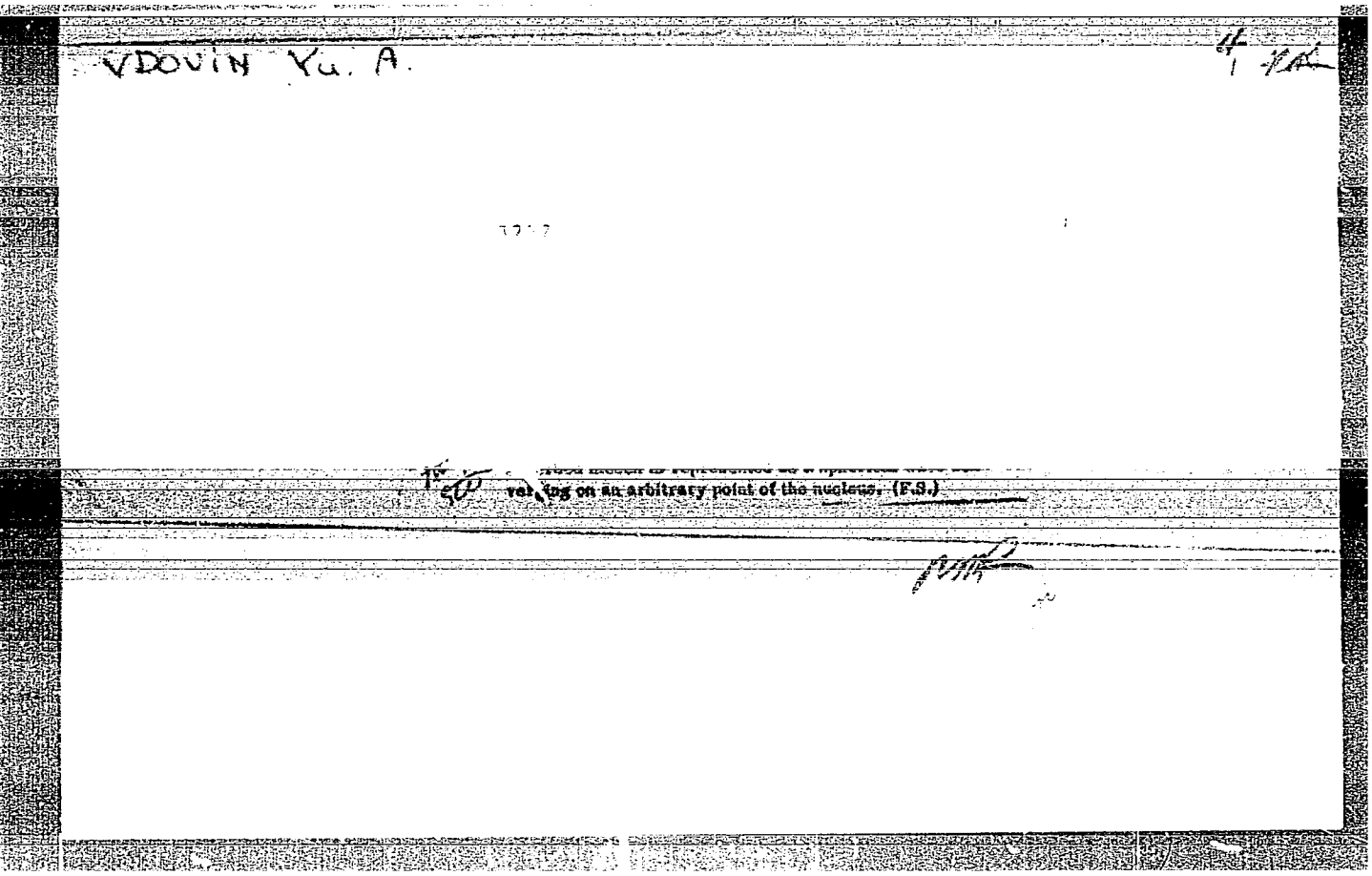
VDOVIN, YU. A.

Vdovin, Yu. A. — "Certain Processes of the Interaction of High Energy γ- Quanta with π Mesons and Nucleons." Min Higher Education USSR, Moscow Engineering-Physical Inst, Moscow, 1955. (Dissertation for the Degree of Candidate in Physicomathematical Sciences.)

SO: Knizhnaya Letopis', No. 23, Moscow, June 1955, pp. 87-104

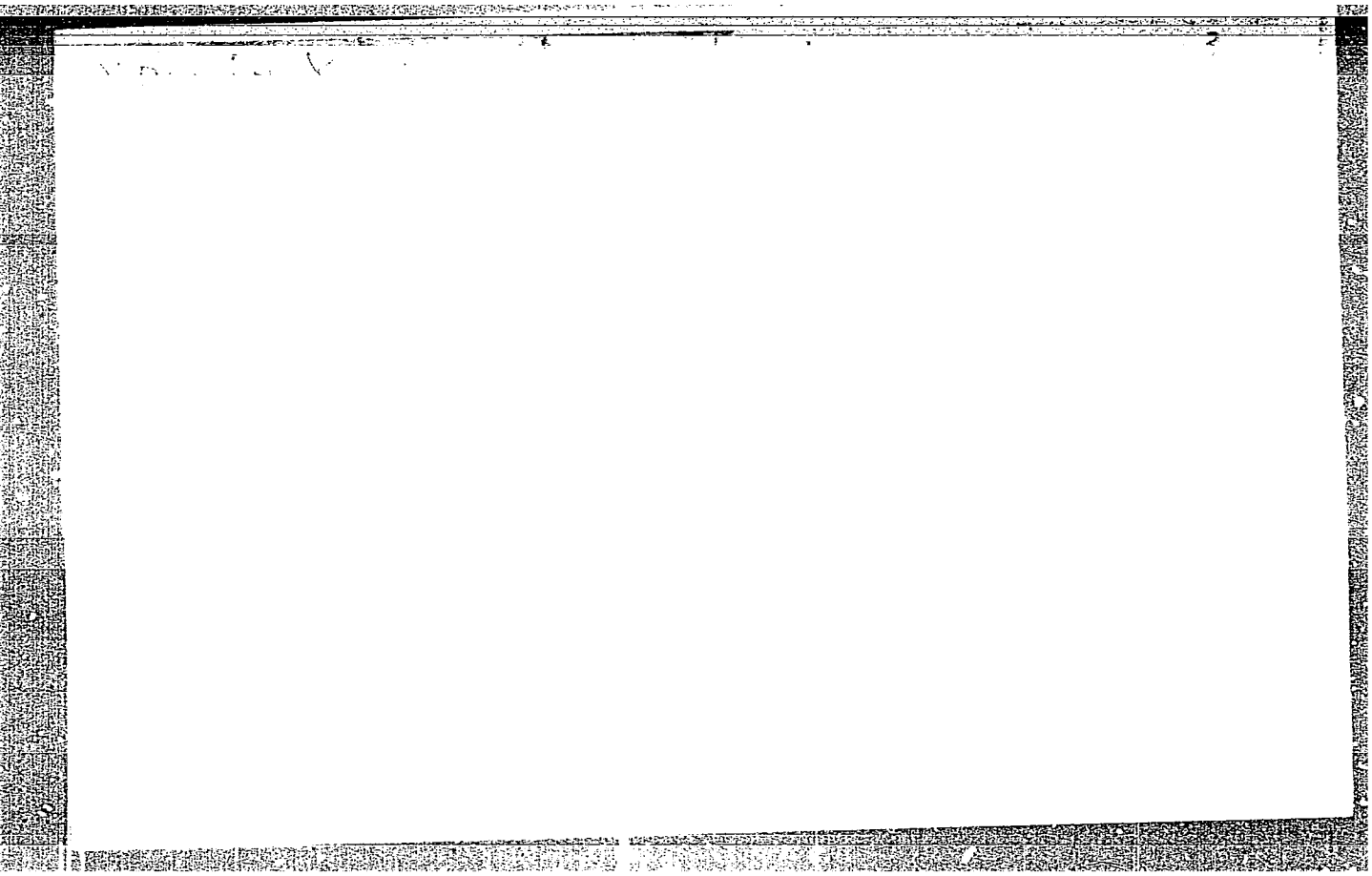


APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859210019-5"



VDOVIN Yu. A.

relating on an arbitrary point of the nucleus. (F.S.)



APPROVED FOR RELEASE: 08/31/2001 CIA-RDP86-00513R001859210019-5"

Vdovin Yu. A.

USSR/Nuclear Physics - Elementary Particles C-3

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33930

Author : Vdovin, Yu. A.

Institution : Moscow Engineering Physics Institute, Moscow, USSR

Title : Formation of Nuclear Star and π-Mesons by a γ-Quantum

Original Periodical : Zh. eksperim. i. teoret. fiziki, 1956, 30, No 4, 782-783

Abstract : The process of formation of a nuclear star and π-meson by a high-energy γ-quantum is investigated. Consideration is given to the case when one of the π-mesons of the pair, created by the γ-quantum from the nucleons, is absorbed by the same nucleus and a nuclear star is formed. The remaining π-meson carries away an energy on the order of the total energy of the star. The investigation is semiphenomenological. The strong interaction of the π-mesons with the nucleon is accounted for with the aid of an optical model of

Card 1/2

Abst Journal : Referat Zhur - Fizika, No 12, 1956, 33930

the nucleus, which is considered to be an "absolutely black" sphere of radius R . Here a description of the escaping π-mesons can be adequately obtained, as in the case of the formation of the free π-meson pair (Referat Zhur - Fizika, 1955, 8565, 8566) it is enough to know the asymptotic expression of the ψ-function in the form of a superposition of a plane and converging wave diffracted by the "absolutely black" nucleus. The entire process is dependent on the penumbral region, i.e., only the periphery of the nucleus makes an actual contribution in the case of heavy nuclei. The differential cross section of the process is found. It is large for small values of $\vartheta \sim \mu/E$, where μ and E are the rest mass and the energy of the escaping meson respectively $(E \gg \mu)$ and ϑ the angle between the momenta of the γ-quanta and the escaping meson. The total cross section for a heavy nucleus is $\sigma = (\pi/32)e^2R/\mu \sim \sim 10^{-28}$ cm^2 $(\hbar = c = 1)$.

Vdovin, Yu. A.

C-5

Category : USSR/Nuclear Physics - Nuclear Reactions

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6008

Author : Vdovin, Yu.A.
Title : Excitation of Nuclear Stars by γ-Quanta

Orig Pub : Zh. eksperim. i teor. fiziki, 1956, 30, No 5, 955-957

Abstract : The formation of a nuclear ster by a γ-quantum through an intermediate, virtual π-meson pair, is considered. The γ-quantum produces on the nucleus a π- meson pair, which is absorbed by the same nucleus, and a star is excited. The cross section of the process is calculated with the aid of the corresponding matrix element, with the π-mesons being described by converging spherical waves. The calculation method is analogous to that employed in another work by the author (Referat Zhur, 1956, 33930), in which he considers the absorption of only a single π-meson of the pair. The entire investigation is carried out in the region of high energies $\omega \gg \mu$, where ω is the frequency of the γ-quantum, and μ is the rest mass of the π-meson ($\hbar=c=1$). For a nucleus that is "absolutely black" with respect to the

Card : 1/2

Category : USSR/Nuclear Physics - Nuclear Reactions

C-5

Abs Jour : Ref Zhur - Fizika, No 3, 1957, No 6008

π-mesons, and which has a radius R, the cross section of the process is

$$\sigma = \frac{1}{4} e^2 R^2 / n(\omega/\mu) / \bar{F} /^2$$

where $\bar{F}$ is the "form factor" of the π-meson, averaged over the angles and over the energy. If we restrict ourselves to the region of small angles between the moments of the π-mesons, we can put $\bar{F} = 1$, and then, assuming $R \gg 1/\mu$, we have

$$\sigma = \frac{1}{12} e^2 k^2 \left[\ln(1+\eta) - (1+\eta)^{-1} \right]$$

where $\eta = g^2_{max}/\mu^2 \sim 1$, i.e., the cross section depends in this case on the frequency of the γ-quantum.

Also considered is the case of the semi-transparent nucleus. A simple result is obtained under the assumption that the absorption coefficient $\varkappa$ is independent of the energy of the π-meson. Then πR^2 in the formula for the cross section is replaced by the expression $(2\sigma_\varkappa - \sigma_{2\varkappa})$, where $\sigma_\varkappa$ is the cross section for the capture of a meson with an absorption coefficient $\varkappa$ by a nucleus of radius R. It is expected that the above mechanism is basic at high energies.

Card : 2/2

PA - 2968

The Production of Proton-Antiproton Pairs by γ-Quanta of High Energies.

everywhere $\hbar = c = 1$ is put. For the cross section of the process examined here $d\sigma_j = 2\pi\Sigma|M|^2(2\pi)^{-6}dp_{1z}dk_1dk_2|F_{+-}|^2$ applies. This expression contains yet another additional formfactor F_{+-}, which is due to the possible non-punctiformity of the nucleons and depends upon the invariant frequency of the γ-quantum in the system of rest of each nucleon. The interaction of nucleons among one another is also contained in this form factor. In the case of small angles between the momenta of the produced particle and the momenta of the γ- quantum the differential cross section attains high nuclear values. The results obtained for the "absolutely black nucleus" can be generalized for any laws of interaction of nucleons with the nucleus. (no ill.).

ASSOCIATION Moscow Engineering-Physical Institute.
PRESENTED BY
SUBMITTED 19.12.1955.
AVAILABLE Library of Congress.
Card 2/2

VDOVIN, Yu.A.; VLASOV, V.V.; ZATSEPIN, N.N.; KOROBEYNIKOVA, I.Ye.; MIKHEYEV, M.N.; RODIGIN, N.M.; TOMILOV, G.S.; SHTURKIN, D.A.; YANUS, R.I.

Discussion on nondestructive testing methods. Defektoskopiia no.1:90 '65. (MIRA 18:6)

VDOVIN, Yu.A.; GALITSKIY, V.M.

Photon propagation in a medium of resonance molecules. Zhur. eksp. i teor. fiz. 48 no.5:1352-1365 My '65. (MIRA 18:7)

1. Moskovskiy inzhenerno-fizicheskiy institut.

L 2673-66 EWT(1) IJP(c)

ACCESSION NR: AP5021884 UR/0020/65/163/006/1344/1347

AUTHOR: Vdovin, Yu. A. 44,55 24,44,55

TITLE: Radiation from an excited molecule in a resonant medium

SOURCE: AN SSSR. Doklady, v. 163, no. 6, 1965, 1344-1347

TOPIC TAGS: Hamilton equation, wave function, molecular spectrum, Fourier analysis

ABSTRACT: The study deals with radiation from initially excited molecules distributed in identical but unexcited groups of molecules. In the analysis, resonance is assumed to be very sharp, with only two molecular levels having the same transition frequency ω_0 for the molecules. For a low density system, the Hamiltonian for a system of N two-level molecules in a radiation field is given with the wave function

$$\psi(t) = \sum_{k\lambda} f_\lambda(k, t) c_{k\lambda}^+ |0\rangle e^{i\omega_0 Nt/2} + \sum_j \varphi_j(t) \sigma_+^j |0\rangle e^{i\omega_0 Nt/2}.$$

By using the Shroedinger equation and appropriate Fourier transformations, the distribution function $n(\omega,t)$ for the photons at the moment t is calculated.

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L 2673-66

ACCESSION NR: AP5021884

The solution is then simplified for the two limiting cases $W\tau \ll 1$ and $W\tau \gg 1$. For the former case, when $t \gg \tau$ n becomes

$$n(\omega_k, t)\,d\omega_k = \frac{W\,d\omega_k}{\pi}\frac{1}{\Delta^2 + 1/\tau^2}\left(1 - \exp\left[-Wt + \frac{W|\dot{\Delta}|}{2\Omega}t\right]\cos\Omega t\right),$$

$$\Omega = \sqrt{\Delta^2 + 1/\tau^2}.$$

The total probability of detecting excited molecules in the system is defined by $R(t) = 1 - \sum_{k\lambda} n_{k\lambda}$ and for the case $W\tau \ll 1$ it is calculated to be

$$R(t) = 1 - W\tau + \sqrt{\frac{2\tau}{\pi t}}\,e^{-Wt}\cos\left(\frac{t}{\tau} + \frac{\pi}{4}\right).$$

"The author expresses his gratitude to V. M. Galitskiy for his helpful comments on this work." Orig. art. has: 20 equations.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Institute of Engineering Physics)

SUBMITTED: 17Jan65 ENCL: 00 SUB CODE: GP

NO REF SOV: 005 OTHER: 002

Card 2/2

L 58452-65 EWT(1)
ACCESSION NR: AP5013[illegible] UR/0056/65/048/005/1352/1365

AUTHOR: [illegible]

TITLE: Propagation of photons in a medium of resonant molecules

[illegible]

TOPIC TAGS: photon propagation, resonant molecule, two level molecule, [illegible], diagram techniques, Green function

ABSTRACT: The authors investigate the interaction between an [illegible] strictly [illegible]

lected. [illegible]

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the medium) are introduced. [illegible] with which

propagation of the photons is studied under the condition when

either a specific photon [illegible] of the medium is present at

ACCESSION NR: AP4012560 S/0056/64/046/001/0320/0330

AUTHORS: Alekseyev, A. I.; Vdovin, Yu. A.; Galitskiy, V. M.

TITLE: Oscillations of photon density in a resonant medium

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 320-330

TOPIC TAGS: photon density, photon density oscillation, resonant medium, two level molecule, resonant emission, resonant absorption, stimulated collective emission, laser, ruby laser

ABSTRACT: Quantum electrodynamics is used to investigate the evolution of resonant emission and absorption and the oscillations of photon density in a resonant medium (an aggregate of identical two-level molecules) for the case when there are no quanta at the initial instant of time, and the distribution of the molecules by levels is fixed. Photon losses are neglected. It is found that at the start of the process the molecules radiate independently, in agree-

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ACCESSION NR: AP4012560

ment with perturbation theory, but after some time the stimulated collective emission causes the process to develop in a fashion other than called for by perturbation theory or the balance equation. Eventually all molecules begin to vibrate collectively, with the time during which the emission occurs is several orders of magnitude smaller than the lifetime of the isolated molecule. The period of the oscillations and the maximum photon density are determined, and the reduction in the width of the spectral line with increasing photon density is explained. The equations derived are applied to a ruby laser and the results compared with experiment. "The authors are grateful to N. G. Basov for a discussion of the results." Orig. art. has: 25 formulas.

ASSOCIATION: Moskovskiy inzhenerno-fizicheskiy institut (Moscow Engineering-Physics Institute)

Card 2/3

ACCESSION NR: AT3012802 S/2964/63/000/000/0094/0109

AUTHOR: Vdovin, Yu. A.

TITLE: Pairing effects in a Fermi system in the P-state

SOURCE: Primeneniye metodov kvantovoy teorii polya k zadacham mnogikh tel. Moscow, 1963, 94-109

TOPIC TAGS: Fermi system, pairing effect, P state, single particle spectrum, collective excitation spectrum, weak coupling approximation, plasma oscillation, high frequency plasma oscillation

ABSTRACT: Departing from the customary assumption that the particle pairs are produced in the S-state, the author considers a system of Fermi particles, in which the interaction has the character of weak attraction in the P-state. The spectrum of single-particle and collective excitations of such a system is calculated by the Green's function method, assuming zero absolute temperature and weak-coupling

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ACCESSION NR: AT3012802

approximation. It is found that the gap in the spectrum of single-particle excitation does not depend on the total momenta of the pairs forming the condensate. The different branches of the collective excitation spectrum, corresponding to the motion of bound pairs with different angular momenta j = 0, 1, and 2, are obtained under the assumption that the condensate is formed by pairs in the $^3P_0$ state. If the system consists of charged particles, then one of the branches of the spectrum of collective excitations (momentum j = = 0) goes over into ordinary high frequency plasma oscillations. "In conclusion I take the opportunity to thank V. M. Galitskiy, who called my attention to this question and for much valuable advice." Orig. art. has: 1 figure and 52 formulas.

ASSOCIATION: None

SUBMITTED: 00	DATE ACQ: 07Oct63	ENCL: 00
SUB CODE: PH	NO REF SOV: 006	OTHER: 004

Card 2/2

VDOVIN, Yuriy Aleksandrovich, nauchnyy sotrudnik; SULTANOV, Al'bert Shakurovich, student; SIVENTSEVA, Nadezhda Dmitriyevna, studentka-diplomnitsa

Stabilizer of average voltage value. Izv.vys.ucheb.zav.; elektromekh. 7 no.12:1499-1500 '64. (MIRA 18:2)

1. Institut fiziki metallov AN SSSR (for Vdovin). 2. Sverdlovskiy gosudarstvennyy institut (for Sultanov, Siventseva).

VDOVIN, YU. A.

A. I. Alekseyev, Yu. A. Vdovin, and V. M. Galitskiy, "Collective Radiation of Impurity Atoms in Crystals."

raport submitted for the Conference on Solid State Theory, held in Moscow, December 2-12, 1963, sponsored by the Soviet Academy of Sciences.

VDOVIN, Yu.A.; YANUS, R.I.

Automatic control of the magnetic properties of electrical sheet iron in the production line. Trudy inst. Kom.stand.mer i izm. prib no.64:70-74 '62. (MIRA 16:5)
(Sheet iron--Magnetic properties) (Automatic control)

LEVICH, Veniamin Grigor'yevich; VDOVIN, Yuriy Aleksandrovich; MYAMLIN, Viktor Alekseyevich; LIVSHITS, B.L., red.; ALEKSEYEV, A.I., red.; BRUDNO, K.F., tekhn. red.

[Course in theoretical physics]Kurs teoreticheskoi fiziki. Moskva, Fizmatgiz. Vol.2.[Electromagnetic processes in matter]Elektromagnitnye protsessy v veshchestve. Kvantovaia mekhanika. Pod red. V.G.Levicha. 1962. 819 p. (MIRA 16:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Levich).
(Electromagnetism) (Quantum theory)

VDOVIN, Yuriy Aleksandrovich, nauchnyy sotrudnik; KADOCHNIKOV, Anatoliy Ivanovich, assistent

Rectangular voltage wave generator. Izv. vys. ucheb. zav.; elektromekh. 5 no.5:557-559 '62. (MIRA 15:5)

1. Institut fiziki metallov AN SSSR (for Vdovin). 2. Kafedra eksperimental'noy fiziki Ural'skogo gosudarstvennogo universiteta (for Kadochnikov).

(Electric generators)
(Pulse techniques (Electronics))

YANUS, R.I.; VDOVIN, Yu.A.

Methods and equipment for nondamaging testing of electrical steel. Izm.tekh. no.12:37-40 D '61. (MIRA 15:1)
(Steel--Testing)

YANUS, R.I., kand.fiziko-matematicheskikh nauk; VDOVIN, Yu.A., inzh.; BLINKOV, V.Ya., inzh.; POLOVNIKOVA, L.A., inzh.

Properties of cold-rolled steel in reels for use in electric transformers. Vest. elektroprom. 32 no.9:62-63 S '61. (MIRA 14:8)

(Electric transformers) (Steel--Magnetic properties)

13,2940
9,2120

S/520/59/000/022/019/021
E073/E535

AUTHORS: Vdovin, Yu. A and Yaroshenko, Yu.N.

TITLE: On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

PERIODICAL: Akademiya nauk SSSR. Ural'skiy filial, Sverdlovsk. Institut fiziki metallov. Trudy, no.22, 1959, pp.137-142

TEXT: Experimental results are available on the sheet by sheet nonuniformities of the magnetic properties of hot rolled dynamo and transformer sheet. However, such data are not available on cold rolled sheet. This paper contains some data on the variation of these properties in cold rolled 0.35 mm thick and 0.50 mm thick transformer sheets. The data were obtained by means of Epstein apparatus. For detailed study of the nonuniformity of the induction of cold rolled transformer steel sheets 1500 x 240 x 0.35 mm were investigated by means of simple apparatus, the basic circuit of which is shown in Fig.1. It consists of plywood frames placed on top of each other, 1400 mm long with windows of 20 x 260 mm. A metering coil of 600 turns is mounted on the central part (3/5ths of the length) of each frame. The magnetization winding surrounds both frames and has 522 turns, which are

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On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

distributed longitudinally as follows:

Table 3

Number of turns	89	44	45	41	42	42	41	45	44	89	Total 522
Length of the section (cm)	14	14	14	14	14	14	14	14	14	14	Total 140

The resulting longitudinal distribution of the induction in a pair of equal sheets placed into the solenoid is plotted in Fig.2. The indicating instrument is a magnetoelectric one, which is series connected with a half-wave controlled bridge rectifier made up of equal cuprous-oxide elements. The instrument is shunted with a smoothing condenser and with a resistance for the purpose of adjusting the sensitivity. The indicator coils are connected in a differential circuit. The control voltage is obtained from a supplementary winding with 80 turns, which are wound on a central

On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

part of the solenoid; the control voltage is several times the value of the e.m.f. difference in the metering windings, as a result of which the rectifier circuit is practically blocked for a half-cycle of the control voltage, whilst during the other half-cycle it shows only a low resistance to the current flow in the metering coils, regardless of the direction of the current (this is necessary for ensuring an unequivocal relation between the readings of the measuring instrument and the difference in the amplitudes of the induction in the "standard" and the tested sheet. The instrument is fed from a.c. mains via an autotransformer. The magnetization winding is fed with a voltage of 45 V, thus obtaining a field amplitude of 15 Oe, which corresponds to a point on the magnetization curve beyond the bend, on a relatively "flat" section so that fluctuations in the mains supply voltage will not seriously influence the relation between the induction amplitudes in the tested sheet and in the sheet used as a standard. By means of this instrument two batches of cold rolled steel were sorted out

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On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

which, as regards induction, were rejects from ordinary tests. The results obtained by the Epstein method for 0.35 mm sheet before and after sorting on the basis of induction values were as follows:

Table 4.

Batch	Type of specimen	P_{10}	P_{15}	B_{25}	B_{30}
1	Shop specimen	0.81	2.07	16620	17600
	Specimen after scrapping	0.74	1.76	17210	18130
2	Shop specimen	0.82	1.84	16940	17850
	Specimen after scrapping	0.83	1.95	17180	18010
	Specimen from the better sheets	0.7	1.52	18920	19500

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89656

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On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

The distribution of the 0.35 mm sheets of individual batches sorted on the basis of the B_{25} values was as follows:

Table 5

Batch	Grade, % ≥330 (E330)	≥320 (E320)	≥310 (E310)	Satisfactory, %	Rejects, %
1	12	14	35	61	39
2	39	35	15	89	11

Thus, it was found that the nonuniformity within individual batches of cold rolled transformer sheet is very considerable and, therefore, the properties of standard specimens chosen arbitrarily may deviate considerably from the average properties of the batch. A real increase in the testing accuracy can be achieved only by increasing

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On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

very considerably the number of sheets tested within each batch. It is recommended that this can be done by means of the instrument described in this paper, using as a criterion the induction B_{10} or B_{25} since the quantity of sheets scrapped due to unsatisfactory loss values is only a fraction of that scrapped due to unsatisfactory induction. It would be advisable to combine the system of preliminary sorting of sheets on the basis of induction with subsequent more accurate evaluation of each batch by means of apparatus which permits obtaining absolute values. The work described in the paper was directed by R. I. Yanus. There are 3 figures, 5 tables and 4 references: 2 Soviet and 2 non-Soviet.

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On the Sheet by Sheet Nonuniformity of the Magnetic Properties of Cold Rolled Electrical Steel

Fig.1

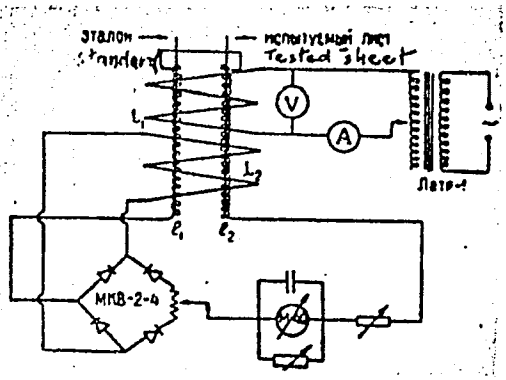
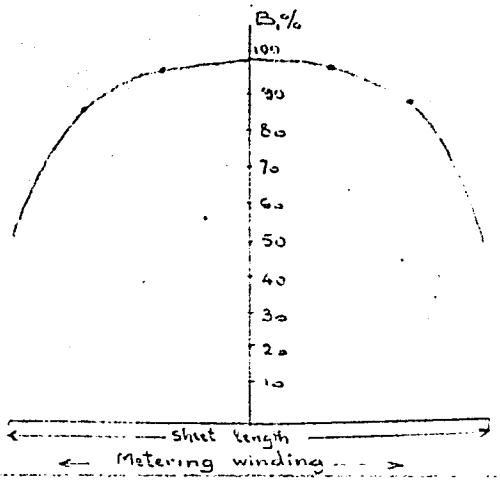


Fig.2



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S/110/61/000/001/012/023
E073/E455

AUTHORS: Vdovin, Yu.A., Engineer and Yaroshenko, Yu.N., Engineer

TITLE: Experience Gained in Sorting Cold-Rolled Electrical Steels According to Their Magnetic Properties

PERIODICAL: Vestnik elektropromyshlennosti, 1961, No.1, pp.38-41

TEXT: For a detailed study of the nonuniformities of magnetic induction in cold-rolled transformer sheets of 1500 x 240 x 0.35 mm, the authors used the circuit shown in Fig.1. Two 1400 mm frames with windows of 20 x 260 mm are placed on top of each other. 600-turn metering coils l_1 and l_2 are differentially series-connected and feed into the indicator loop consisting of a capacitance-shunted microammeter and a phase-controlled half-wave rectifier system. The driving voltage for the loop is fed to the rectifiers from an 80-turn winding L_2 which surrounds both frames. The magnetization winding L_1 has 522 turns and is distributed nonuniformly along the length of the solenoid for the purpose of obtaining a more uniform magnetization (variance below 10%). One of the frames carries a standard specimen and the other carries the sheets to be tested. The system is fed from the mains

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S/110/61/000/001/012/023
E073/E455

Experience Gained in Sorting Cold-Rolled Electrical Steels According to Their Magnetic Properties

through an autotransformer giving 45V on the magnetization winding. The maximum field strength is about 15 oersteds. Thus it is beyond the bend point and on the flat section of the magnetization curve, where even the highest voltage fluctuations cannot change greatly the maximum induction. The indications of the metering instruments are proportional to the differences in the maximum inductions of the reference specimen and the tested sheets. By means of this apparatus, several batches of cold-rolled steel were tested. The average B values corresponding to the B_{25} and the mean square of the variance σ^2 as well as the integral distribution function $W_B = N_B/N$ were determined for each batch (N = total number of sheets and N_B = number of sheets for which B_{25} is lower than B). The distribution function W_B proved near to the Gauss distribution law. Sorting results are given for a number of batches. Fig.3 gives the normal distribution of the B_{25} values for batches of cold rolled steel; the circles denote measured values, the curve is the calculated Gauss distribution

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E073/E455

Experience Gained in Sorting Cold-Rolled Electrical Steels According to Their Magnetic Properties

curve. It was found that the properties varied considerably inside the individual cold-rolled batches. It was also apparent that tests by the Epstein square give only very approximate indications of the properties of the batch. Even in scrapped batches, the number of sheets that eventually proved satisfactory was over 50%. It is necessary to increase very appreciably the number of sheets tested. However, it is sufficient to limit a test to measuring a single quantity, for instance B_{25}. The following conclusions are arrived at: 1) Individual sheets of cold-rolled electrical steel differ considerably in their magnetic properties.
2) The induction B_{25} is one of the most reliable guides of the quality of cold-rolled electrical steel. Therefore, it should be used as a basis for quality control in mass production.
3) Before testing on the Epstein square, there should be a preliminary sorting into several groups on the basis of results obtained on whole sheets with the author's instrument. The proportion to be tested on the Epstein square is thereby reduced,

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so that more generous samples may be taken, thus giving closer supervision of the magnetic properties inside each batch. There are 3 figures and 4 tables.

SUBMITTED: June 21, 1960

Card 4/5

S/110/61/000/001/012/023
E073/E455

Experience Gained in Sorting Cold-Rolled Electrical Steels According to Their Magnetic Properties

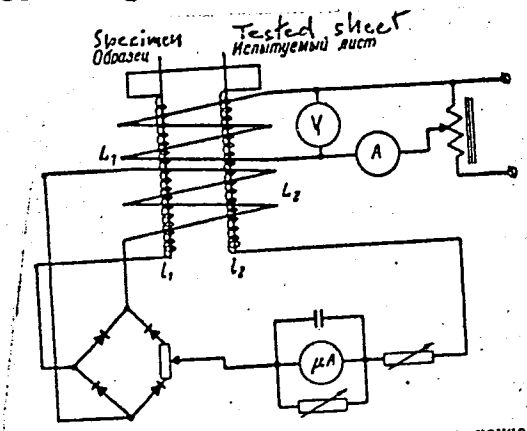

Рис. 1. Принципиальная схема аппарата для изучени неоднородности магнитной индукции в листах.

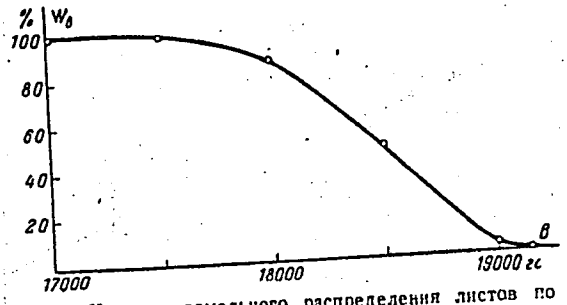

Рис. 3. Кривая нормального распределения листов по B_{25} в партиях холоднокатаной стали.

Fig.3.

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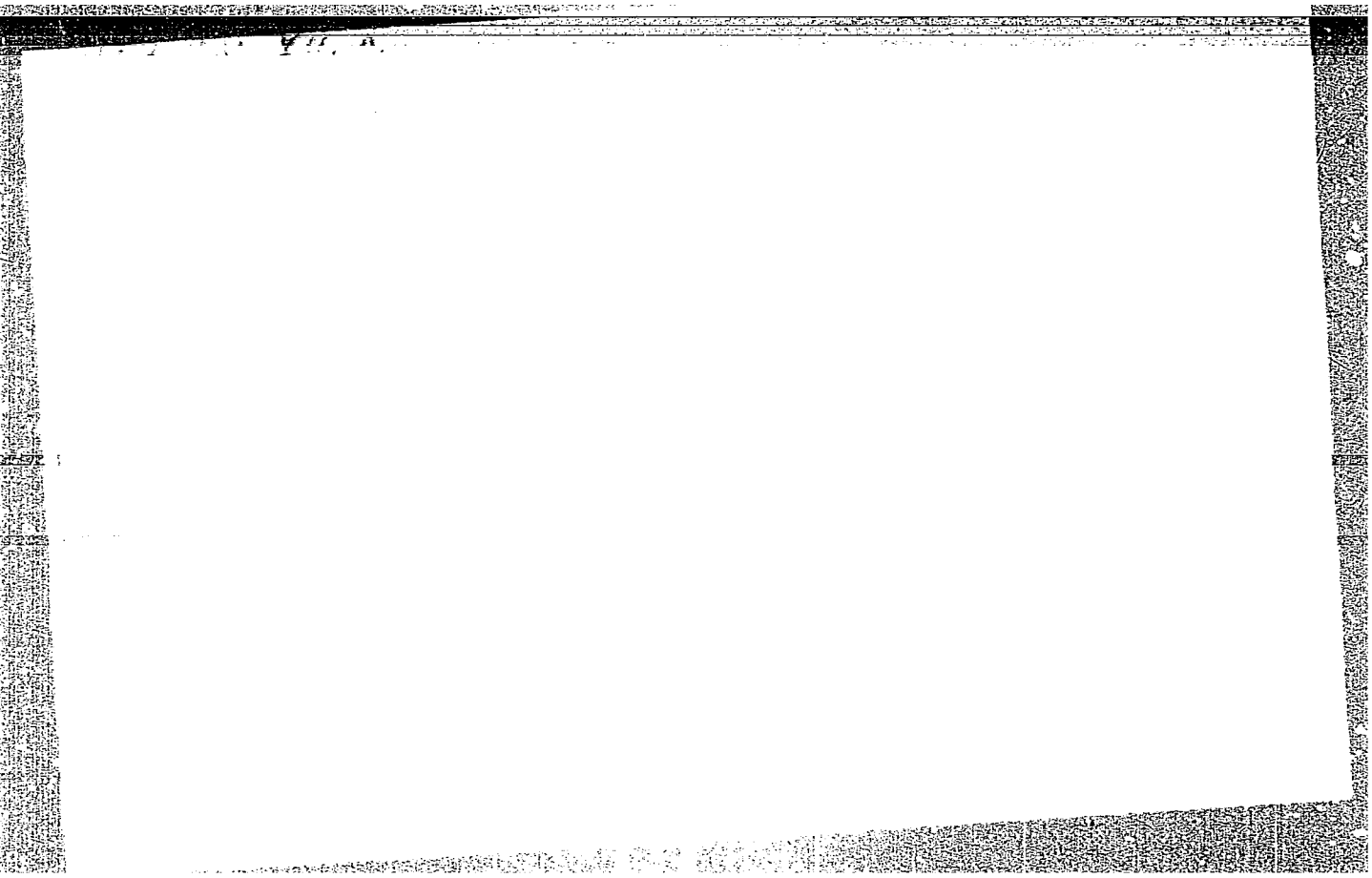

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67267
SOV/20-129-4-31/68

AUTHORS: Vdovin, Yu. A., Grafov, B. M., Myamlin, V. A.

TITLE: The Rectifying Action of Electrolyte - Electronic Semiconductor Contact

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 4, pp 827-830 (USSR)

ABSTRACT: The authors investigate the processes on the phase boundary between an electronic germanium semiconductor and an electrolyte in consideration of holes on the assumption that donor levels are fully ionized, acceptor levels are fully occupied, and impurity levels are uniformly distributed in the semiconductor volume. In this case, different electronic conditions prevail than in the anodic dissolution of n-Ge (Ref 2). If, in the system investigated by the authors, the contact layer was poor both in electrons and in holes, a special rectifying effect occurred, which was not due to p-n transition. The system of equations for the semiconductor is written down and the voltage drop ψ_a is calculated. The volt-ampere characteristic corresponding to the equations (12) - (15) is shown in

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The Rectifying Action of Electrolyte - Electronic Semiconductor Contact

figure 1. It shows a characteristic stage in which the curve nearly takes a perpendicular course as well as a very low barrier current. There is a peculiar breakdown voltage ψ^*, which, as to order of magnitude, corresponds to the width of the forbidden zone. The results obtained hold in the same manner also for the contact electrolyte - holes semiconductor. It is finally said that the authors thank V. G. Levich, Corresponding Member, AS USSR, for his valuable advice. Mention is made in the text of Yu. V. Pleskov and B. N. Kabanov. There are 1 figure and 3 Soviet references.

ASSOCIATION: Institut elektrokhimii Akademii nauk SSSR (Institute of Electrochemistry of the Academy of Sciences, USSR)

PRESENTED: July 6, 1959, by A. N. Frumkin, Academician

SUBMITTED: July 6, 1959

VDOVIN, Yu.A.; YAROSHENKO, Yu.N.

Nonuniformity of magnetic properties from sheet to sheet in cold-rolled electrical-grade iron. Trudy Inst. fiz. met. no.22:137-141 '59. (MIRA 13:3)

(Sheet iron--Magnetic properties)