

SCV/69-21-2-10/22

The Dependency between the Structure of Emulsifiers of the Type of Alkylaromatic Sulfoacids and the Polymerization Process of Unsaturated Compounds. 6. The Effect of Sodium Salts of Alkylarylsulfoacids on the Polymerization Process.

with -methylstyrene, grows with the increase of the length of the hydrocarbon chain of the alkyl groups of the alkylarylsulfo derivatives and of their number. The isomerism of the structure of the alkyl groups united to the aromatic nucleus of the emulsifier, affects the polymerization speed of unsaturated compounds: in the case of styrene polymerization in the series of isomeric dibutylbenzenesulfo derivatives the most effective emulsifier is an isomer with a tertiary structure of the butyl group, the least effective an isomer with a secondary structure. The structure of the emulsifiers affects the molecular weight of polystyrene. The authors have determined the molecular weight of styrene and also have calculated the chain transfer constants at the thermopolymerization of styrene in the presence of alkylaromatic hydrocarbons, on the basis of which the emulsifiers examined in the present work were obtained.

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SOV/69-21-2-10/22

The Dependency between the Structure of Emulsifiers of the Type of Alkylaromatic Sulfoacids and the Polymerization Process of Unsaturated Compounds. 6. The Effect of Sodium Salts of Alkylarylsulfoacids on the Polymerization Process.

The authors assume that the role of the emulsifier in the mechanism of emulsion polymerization is connected not only with colloid-chemical factors, but the emulsifier participates in the chemical transformations, particularly in the chain transfer. There are 3 sets of graphs, 4 tables and 12 references, 7 of which are Soviet, 4 English and 1 German.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva, Leningrad (Scientific Synthetic Rubber Research Institute imeni S.V. Lebedev, Leningrad)

SUBMITTED: May 22, 1957

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5(4)

SOV/69-21-1-7/21

AUTHORS: Zimina, M.G. and Apukhtina, N.P.

TITLE: The Relation Between the Structure of the Emulsifiers of the Alkylaromatic Sulfoacids Type and the Process of Polymerization of Unsaturated Compounds (Zavisimost' mezhdru stroyeniyem emul'gatorov tipa alkilaromaticheskikh sul'fokislot i protsessom polimerizatsii nepredel'nykh soyedineniy). 5. The Colloid-Chemical Properties of the Sodium Salts of the Alkylarylsulfoacids. (Kolloidno-khimicheskiye svoystva natriyevykh soley alkilarilsul'fokislot).

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 1, pp 50-57 (USSR)

ABSTRACT: A study has been made of the effect of the structure, the carbon chain length, and the number of alkyl groups bound to the aromatic nucleus of the sodium salts of the alkylarylsulfoacids of the benzene and naphtalene series on a number of colloid-chemical properties of aqueous solutions of these emulsifiers. It has been found that the surface activity, the colloidal solubility of α -methylstyrene, in this series of emulsifiers, and

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SOV/69-21-1-7/21

The Relation Between the Structure of the Emulsifiers of the Alkylaromatic Sulfoacids Type and the Process of Polymerization of Unsaturated Compounds. 5. The Colloid-Chemical Properties of the Sodium Salts of the Alkylarylsulfoacids.

also the micellar weight of the latter grow with the branching, with the length of the carbon chain and with the number of alkyl groups of the alkylarylsulfo-derivatives. The name of A.I. Yurzhenko is mentioned by the author. There are 13 graphs, 1 table and 21 references, 8 of which are Soviet, 8 English, 4 are American and 1 Japanese.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V. Lebedeva (The Scientific Research Institute of Synthetic Rubber imeni S.V. Lebedev).

SUBMITTED: May 23, 1957

Card 2/2

S/020/63/149/002/022/028
B117/B186

AUTHORS: Shlyakhter, R. A., Apukhtina, N. P., Nasonova, T. P.

TITLE: Thiol-disulfide exchange in polysulfide polymers

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 149, no. 2, 1963, 345-347

TEXT: The thiol-disulfide exchange during the mixing of polymers with different molecular weights, was studied by determining the molecular weight distribution (MWD) of polysulfides with mercaptane end groups $\text{HS} - \left[\text{R} - \text{S} - \text{S} \right]_n - \text{R} - \text{SH}$. MWD was determined by a method previously devised (A. N. Genkin, T. P. Nasonova, et. al., Vysokomolek. soved., 4, no. 7, 1088 (1962)). Polysulfides with molecular weights of 600 - 3000 were synthesized, and their MWD determined. They were then mixed at room temperature for 1 hr, and the MWD of the mixture was determined. The following was found: The number of fractions with mean molecular weights (1000-2000) increases during the thiol-disulfide exchange. The number of fractions with the lowest (<1000) molecular weights decreases rapidly and that with high ones (>3000) decreases considerably. Apart from this, chemical reactions take place during mixing and form polymers with a

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Thiol-disulfide exchange in ...

S/020/63/149/002/022/023
B117/B186

narrow MWD. In polymers of the same viscosity, obtained by mixing samples of different viscosities and different molecular weights, and in pure polymers, the fractions were found to show a practically equal composition. The thiol-disulfide exchange which takes place both during the synthesis of thiokols and during their mixing thus gives rise to a narrow MWD of these polymers. These results are in contradiction with the statement by E. R. Bertozzi, F. O. Davis, E. M. Fettes (J. Polym. Sci., 17 (1956)), saying that the thiol-disulfide exchange causes a wide MWD in liquid polymers. There are 1 figure and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva
(Scientific Research Institute of Synthetic Rubber imeni S. V. Lebedev)

PRESENTED: November 29, 1962, by B. A. Arbuzov, Academician

SUBMITTED: November 19, 1962

Card 2/2

ACCESSION NR: AP4017643

S/0190/64/006/002/0329/0334

AUTHORS: Myuller, B. Ye.; Apukhtina, N. P.; Klebanskiy, A. L.

TITLE: Chemical chain structure and properties of polyesterurethan elastomers. 1. Dependence of vitrification temperature upon the nature of the polymeric chain

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 2, 1964, 329-334

TOPIC TAGS: elastomer, urethan, alkyl carbamate, polyesterurethan, polymer, polymeric chain, vitrification, elasticity, methylene group, adipurethan

ABSTRACT: Polyurethans (average molecular weight of 20 000) with an increasing concentration of C-O-C links in the main chain, such as polydiethyleneadipurethan (PDAU), polytriethyleneadipurethan (PTAU), and polyhexaethyleneadipurethan (PHAU), were studied. Ether bonds were introduced into the polymeric chain to increase its flexibility, which in turn would enhance the frost resistance of the derived rubbers. The frost resistance of the polymers was evaluated by means of the KS elastometer of the 'pendulum rebound' type within a temperature range from -90 to 60C and by determinations of the vitrification temperature, using Marey's apparatus. It was found, that within the PDAU, PTAU, and PHAU series a lowering of the vitrification temperature occurs with a diminution in the concentration of ester groups

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ACCESSION NR: AP4017643

in the repeating unit of the corresponding polymers. It was also established that the magnitude of the difference between the vitrification temperatures of the linear polymers and of their corresponding minimums in the elasticity curves remains strictly constant, amounting to 25-26C. A certain periodicity in the shift of vitrification temperature in the investigated polyurethans could be related to an even or odd number of methylene groups in the glycol links of the chain. Orig. art. has: 1 table, 2 formulas, and 2 charts.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka (All-Union Scientific Research Institute of Synthetic Rubber)

SUBMITTED: 04Jan63

DATE ACQ: 23Mar64

ENCL: 00

SUB CODE: CH

NO REF SOV: 003

OTHER: 004

Card 2/2

ACCESSION NR: AP4042194

S/0190/64/006/007/1330/1334

AUTHOR: Myuller, B. Ye., Apukhtina, N. P., Klebanskiy, A. L.

TITLE: Effect of the chemical structure of polyester urethans on their crystallizability

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1330-1334

TOPIC TAGS: urethan, polymer crystallizability, KS pendulum-type elastometer, elasticity modulus, alkyladipinate urethan, polyester, polyester urethan, polymer structure, dilatometer, glycol ester

ABSTRACT: In order to clarify the relationship between the chemical structure of urethan polymers and their crystallizability, the crystallization process was studied dilatometrically and by the pendulum-type KS elastometer on the basis of the variation in the modulus of dynamic elasticity with temperature (see Fig. 1 in the Enclosure). The experimental curves show that polymers synthesized from glycolesters of di-, tri- and hexaethylene adipinate urethans, as well as polymers with methoxymethyl and propylethylene adipinate urethans, are amorphous polymers. The amorphous nature of di-, tri- and hexaethylene adipinate urethan is due largely to the disorienting effect of flexible C-O-C bonds, preventing the formation of nuclei. The oxygen atoms of the ether bond destroy the regular chain structure. In polymethoxymethyl and propylethylene adipinates, the large side chains prevent

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ACCESSION NR: AP4042194

crystallization. Polymers obtained from glycols of the polymethylene series (ethylene, trimethylene, tetramethylene and pentamethylene adipate urethans) are crystalline polymers. The highest rate of crystallization is shown by tetramethyleneadipate urethan and pentamethyleneadipate urethan (2.2% per hour), followed by trimethylene and ethylene-adipate urethans (0.11 and 0.06% per hour, respectively). The half time of crystallization for the last three polymers were 40, 1120 and 1060 minutes, and the degree of crystallization was 2.1, 1.7 and 1.0%, respectively. The fact that tetramethyleneadipate urethan shows the highest crystallizability among the crystalline polymers is due to the very regular and symmetrical structure of its macromolecules. It is characteristic that tetramethyleneadipate urethan has the highest molecular weight. This indicates a denser packing of its macromolecules. Lower crystallizability is due to the fact that intramolecular forces increase the chaotic arrangement of the macromolecules, render them less mobile, and thus interfere with the orientation process. Orig. art. has: 4 figures.

ASSOCIATION: Vsesoyuzn*¹ nauchno-issledovatel'skiy institut sinteticheskogo kauchuka
(All-Union Scientific Research Institute for Synthetic Rubber)

SUBMITTED: 13Sep63

ENCL: 01

SUB CODE: OC
2/3

NO REF SOV: 003

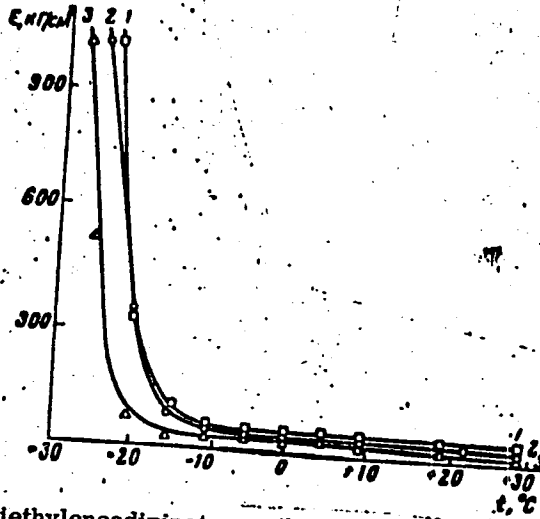
OTHER: 000

Card

ACCESSION NR: AP4042194

ENCLOSURE: 01

Fig. 1 - Temperature dependence of the modulus of dynamic elasticity of urethan polymers based on glycol esters:



1 - diethyleneadipinate-urethan; 2 - triethyleneadipinate-urethan;
3 - hexaethyleneadipinate-urethan.

Card 3/3

BOYAROVA, Ye.A.; RAPPOPORT, I.Ya.; NIKITIN, V.N.; AFUKHTINA, N.P.

Study of **hydrogen** bonding in urethane elastomers by infrared spectroscopy. Vysokom. soob. 7 no.5:778-785 My '65.

(MIRA 18:9)

1. Institut vysokomolyarnykh i kulyarnykh soedineniy AN SSSR i Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni S.V.Lobudeva.

MYULLER, B. Ye.; AFUKHTINA, N.P.; KLEBANSKIY, A.L.

Effect of the chemical structure of polyester urethanes on their
crystallization ability. Vysokom. soed. 6 no.7:1330-1334 JI '64
(MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo
kauchuka.

RAPPOPORT, L.Ya.; APUKHTINA, N.P.; MOZZHUKHINA, L.V.

Relation between the degree of cross-linking of urethane
polymers and carboxyl group content of the initial polyesters.
Kauch. i rez. 24 no.8:2-5 '65. (MIRA 18:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo
kauchuka imeni Lebedeva.

L 22286-66 EWP(j)/EWT(m) IJP(c) RM/WW

ACCESSION NR: AP6006491

SOURCE CODE: UR/0138/65/000/010/0008/0011

AUTHOR: Apukhtina, N. P.; Boyarchuk, Yu. M.; Rappoport, L. Ya.; Mazur, L. Yu. ;
Mozzhukhina, L. V.

ORG: All-Union Scientific-Research Institute of Synthetic Rubber im. S. V.
Lebedev (Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka)

TITLE: Study of the process of cross-linking of urethan polymers¹⁵ under the
influence of atmospheric moisture

SOURCE: Kauchuk i rezina, no. 10, 1965, 8-11

TOPIC TAGS: polymer, vulcanization, reaction rate, chemical reaction, elastomer,
moisture measurement

ABSTRACT: The authors made an attempt to study in more detail the process of
cross-linking of urethan elastomers during storage in contact with atmospheric
moisture. The results obtained show that polymer moisture absorption proceeds
nonuniformly, but in relation to the variations in the moisture content of the
medium. The nature of the cross-linking process of the polymer is independent of
both the moisture content of the medium and of the polymer. The temperature-
dependence of the reaction rate of the NCO-group with atmospheric moisture is
established and an approximate value of the activation energy of the reaction
is calculated. It is found that the interaction of the isocyanate groups of the
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UDC: 678.664:678.028:28:678.019.32

L 22286-66

ACCESSION NR: AP6006491

polymer with atmospheric moisture proceeds considerably faster than the process of cross-linking. Orig. art. has: 7 figures, 1 table, and 7 formulas. 0

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 004

Card 2/2 net

I 62997-65

ACCESSION NR: AP5016514

3

volume change during the crystallization process: maximum rate, half-life, and depth of crystallization. It has been established that by decreasing the length of the polyester segment of the chain, by increasing the degree of cross-linking, and by disturbing the orientation in the polymer by using one-step synthesis, it is possible to lower considerably the resins' crystallizability. Orig. art. has: 3 graphs and 4 tables.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka (All-Union Scientific Research Institute of Synthetic Rubber) 55

SUBMITTED: 10Aug64

ENCL: 00

SUB CODE: MI, GC

NO REF SOV: 003

OTHER: 000

brsk

Card 2/2

SOKOLOV, V.N.; RAPPOPORT, L.Ya.; PODDUBNYI, I.Ya.; APUKHTINA, N.P.

Role of water in the synthesis of urethane polymers on the basis of polyesters. Vysokom.soed. 7 no.7:1258-1263 JI '65.

(MIRA 18:8)

1. Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka imeni Lebedeva.

L 64480-51 EWI(m)/EPF(c)/EWI(j)/T/EWA(c) RPL WW/RM

ACCESSION NR: AP5021281

UR/0020/65/163/005/1151/1154 42

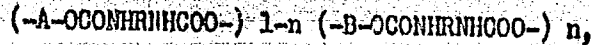
AUTHORS: Gubanov, E. P.; ^{44.55} Simyyskiy, A. G.; ^{44.55} Apukhtina, N. P.; ^{44.55} Teytel'baum, B. Ya. ³⁶

TITLE: On the crystallization and glass transition of polyesterurethane ^{41.55} block-copolymers ^{44.55}

SOURCE: AN SSSR. Doklady, v. 163, no. 5, 1965, 1151-1154, and insert facing p. 1152

TOPIC TAGS: polyester, polyurethane, polymer, resin, crystallization, glass transition, block copolymer

ABSTRACT: The glass transition temperature, Tg, and the effect of crystallization on the latter were determined for block-copolymers



where A is polyethyleneglycol adipate (I) or polydiethyleneglycoladipate (II), and B is



Three different isomers of B were studied: para, meta, and ortho, designated in what follows as p-B, m-B, and o-B respectively. The glass transition

Card 1/5

1-64480-65

ACCESSION NR: AP5021281

6

temperature was determined after B. Ya. Teytel'baum and M. P. Dianov (Vysokomolek. soyed., 3, 594, 1961). The experimental results are shown graphically in Figs. 1, 2, and 3. It is concluded that crystallization processes influence the glass transition temperature of block-copolymers. Crystallization of component with lowest Tg lowers the Tg of the block-copolymer. The latter component acts as an internal plasticizer in the crystallization of the higher melting component of the block-copolymer. Orig. art. has: 3 graphs, 4 microphotographs, and 2 equations.

ASSOCIATION: Institut organicheskoy khimii, Akademii nauk SSSR Kazan' (Institute for Organic Chemistry, Academy of Sciences SSSR); Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva, Leningrad (All-Union Research Institute for Synthetic Rubber)

44,55

44,55

SUBMITTED: 12Jan65

ENCL: 03

SUB CODE: OC

NO REF SOV: 005

OTHER: 001

MT

Card 2/5

L 64480-35

ACCESSION NR: AP5021281

ENCLOSURE: 01

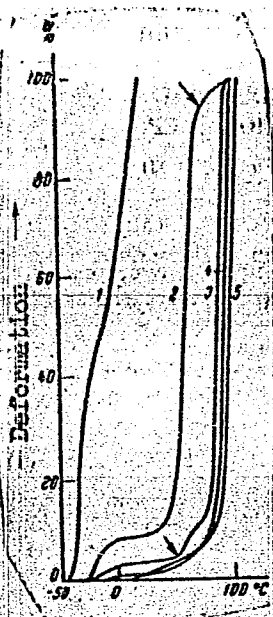


Fig. 1. Thermomechanical curves for the copolymer series II - m - B. Steady load 16 kg/cm². 1- 0; 2- 30; 3- 60; 4- 80; 5- 100 mole% m - B. Arrows indicate the onset of crystallization during heating.

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I. 64480-65

ACCESSION NR: AP5021281

ENCLOSURE: 02

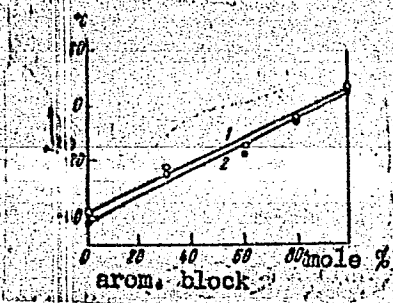


Fig. 2.

Dependence of T_g on the copolymer composition in the series II - z-B.
1- amorphous specimens; 2- specimens kept at room temperature for 6 months

Card 4/5

L 64480-65

ACCESSION NR: AP5021281

ENCLOSURE: 03

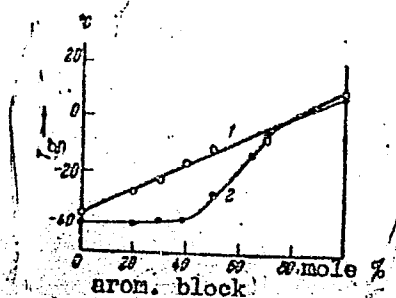


Fig. 3.
Dependence of Tg on the copolymer composition in the series I - m-B.
1- amorphous specimens; 2- specimens kept at room temperature for 6 months

Card 5/5 *llc*

NOVOSELOK, F.B.; SOKOLOV, V.N.; APUKHTINA, N.P.; SHLYAKHTER, R.A.

Mechanism of the rupture of S-S bonds in polysulfide polymers.
Vysokom.soed. 7 no.10:1726-1730 O '65.

(MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka.

L 24495-66 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP5006973 (A) SOURCE CODE: UR/0190/66/008/002/0207/0212

AUTHORS: Fokina, T. A.; Apukhtina, N. P.; Klebanskiy, A. L.; Nel'son, K. V.;
Solodobnikova, G. S.

ORG: Scientific Research Institute of Synthetic Rubber (Nauchno-issledovatel'skiy institut sinteticheskogo kauchuka)

TITLE: Ionic telomerization of β, β' -dichlorodiethylformal with various unsaturated compounds

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 2, 1966, 207-212

TOPIC TAGS: catalytic polymerisation, organic synthetic process, lead compound

ABSTRACT: Ionic telomerization of β, β' -dichlorodiethylformal (I) with isoprene (II), with divinyl, and with styrene was investigated by using lead tetrachloride as a catalyst. Molar ratio of telogen (II) and telogen (I) was varied from 10:1 to 1:1, respectively. The telomers obtained were colorless viscous resins, except in the case of styrene, which yielded crystalline powder (m.p. 64C). The course of reaction and the resulting products were studied by chemical means and by IR spectroscopy. The reaction was assumed to be a cationic telomerization consisting

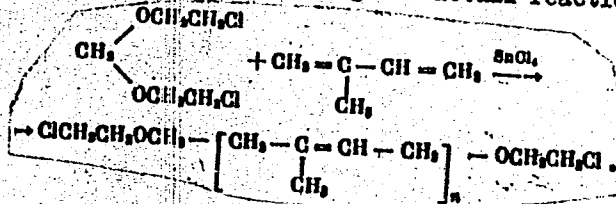
Card 1/2

UDC: 65.095.26

L. 24495-66

ACC NR: AP6006973

of initiation, propagation, and termination steps. Of several possible routes, the one selected as most faithfully representing the actual reaction was:



Depending upon the ratio of reagents, telomers with molecular weights from 1000 to 4000 were obtained. Molecular weights were determined by K. A. Karandina. Orig. art. has: 2 tables, 3 figures, and 3 equations.

SUB CODE: 07/ SUBM DATE: 12/1965/ ORIG REF: 010/ OTH REF: 004

Card 2/2 LC

L 47010-66 EWT(m)/EWP(j)/T IJP(c) WW/RM
ACC NR: AP6027285 (A) SOURCE CODE: UR/0191/66/000/008/0060/0062

AUTHOR: Apukhtina, N. P.; Zaytsev, N. B.; Rappoport, L. Ya; Kozlova, N. V. 45/3

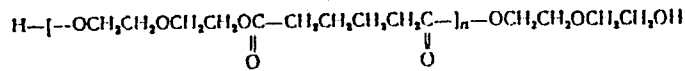
ORG: none

TITLE: Effect of γ radiation on polyesters of adipic acid and diethylene glycol

SOURCE: Plasticheskiye massy, no. 8, 1966, 60-62

TOPIC TAGS: gamma radiation, irradiation effect, polyester plastic, adipic acid, diethylene glycol, radiation chemistry

ABSTRACT: In a study of the effect of γ radiation on saturated aliphatic polyesters (which are used as the main component in urethane polymers), polydiethylene adipates (PDEA) of molecular weight (MW) ~2000 and 4000 of the structure



were irradiated with radiation from Co^{60} . The amount of absorbed energy was determined by ferrous sulfate dosimetry. A study of the dependence of the relative viscosity of benzene solutions of the polyesters on the dose absorbed showed a predominant role of cross-linking of PDEA during the irradiation, this effect being more pronounced as MW increases. IR spectroscopic data indicate that the polyester chains

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UDC: 678.674'460'42.01 : 539.122

L 47010-55

ACC NR: AP6027285

break down at the ester group, forming CO and CO₂; this is associated with a decrease in the quantity of C=O bonds and the appearance of unsaturation in the chain as the dose increases. The cross-linking occurs at the methylene groups. The different positions of the IR bands of α and β methylene groups made it possible to evaluate the relative rates of disappearance of these two types of groups under the influence of γ radiation. The polyester with MW ~4000 irradiated with 200 Mrad converts into a rubberlike elastomer consisting of a mixture of cross-linking and degradation products. Hard, cross-linked polyurethanes were successfully obtained from the irradiated polyesters at equimolar ratios of polyester to 2,4-toluylene diisocyanate at moderate temperatures (60-70°C). The degree of cross-linking of polyurethanes as a function of the dose was determined from the glass transition temperature of the polymers. Orig. art. has: 3 figures and 3 tables.

SUB CODE: 07,12/SUBM DATE: none/ ORIG REF: 002

Card 2/2 vmb

ACC NR: AP7001409

(A)

SOURCE CODE: UR/0413/66/000/021/0110/0110

INVENTOR: Fokina, T. A.; Apukhtina, N. P.; Klebanskiy, A. L.; Nel'son, K. V.;
Solodovnikova, G. S.

ORG: none

TITLE: Preparative method for polyurethans. Class 39, No. 188004 [announced by All-
Union Scientific Research Institute of Synthetic Rubber im. Academician S. V. Lebebev
(Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 21, 1966, 110

TOPIC TAGS: polyurethan², chemical synthesis, diisocyanate, diene^{synthesis}, olefin

ABSTRACT: An Author Certificate has been issued for a preparative method for poly-
urethans from diisocyanates and telomers of dienes, olefins or their mixtures. [B0]

SUB CODE: 11, 07/ SUBM DATE: 29May65/ ATD PRESS: 5109

Card 1/1

UDC: 678.664

FOKINA, T.A.; APUKHTINA, N.P.; KLEBANSKIY, A.L.; SOLODOVNIKOVA, G.S.;
NELESON, K.V.

Some telomers of styrene obtained in the presence of Friedel-Crafts
catalysts. Vysokm. soed. 7 no.5:946-947 My '65. (MIRA 18:9)

APUKHTINA, Ye.G.

Special features of corona discharge in air at increased pressures.
Elektrichestvo no.11:27-32 N '64. (MIRA 18:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po promyshlennoy
i sanitarnoy oчитke gazov.

APUNEVICH, Ye.V., inzhener.

Experience with gunnite concrete work in tunnels under conditions of heavy flow of artesian water. Gidr. stroi. 26 no.5:28-30 My '57.
(Tunnels)

AFUNIEWICZ, Slawomir, mgr inż.

New technical solutions of problems concerning installations
for traffic safety on railroads. Przegl kolej elektrotech
14 no.6:165-167 Je '62.

APUNIEWICZ, Slawomir, mgr inz.

Introductory information on the theory of track circuits. Przegl
kolej elektrotech 10 [i.e. 15] no.10:273-278 0 '63.

APUNIEWICZ, Slawomir, mgr inz.; MASIEWICZ, Antonio, mgr. inz.

In general, on track circuits and the structure of rail joints. Przegl kolej elektrotech 10 [i.e.15] no.11:307-312 N°63.

APUNIEWICZ, Sławomir; MASIEWICZ, Antonio

Track circuit feeding with increased frequency current.
Przegl kolej elektrotech 15 no.2:39-44 F '63.

APURIN, I.

Subject : USSR/Mining AID P - 837
Card 1/1 Pub. 78 - 22/26
Authors : Apurin, I. and Slobodchikov, G.
Title : The results of the adoption of combined cost and labor
accounting organization in the Malgobekneft Trust Oil
Field
Periodical : Neft. khoz., v. 32, #9, 90-92, S 1954
Abstract : Brief review of the results of local economic control
and accounting of cost and productive work in the oil
well drilling.
Institution: None
Submitted : No date

~~APURIN, I.G.~~

Business accounting in the Malgobek oil field administration.
Neft.khoz.34 no.3:59-61 Mr '56. (MLRA 9:7)
(Malgobek--Oil fields)

ASTAFUROV, V.G.; APURIN, I.G.

Secondary oil recovery methods used in the Malgobek field. Neftianik
2 no.6:12-14 Je '57. (MIRA 10:10)

1. Nachal'nik plenovo-ekonomicheskogo otdela neftepromyslovogo upravleniya Malgobekneft' (for Astafurov).
 2. Nachal'nik finansovogo otdela Neftepromyslovogo upravleniya Malgobekneft' (for Apurin).
- (Ossetia--Secondary recovery of oil)

APURINA, M.S.

ARIYA, S.M.; KOLBINA, Ye.M.; APURINA, M.S.

Chemistry of compounds of variable composition. Part 7: The system
cobalt--tellurium and the enthalpy of cobalt telluride formation.
Zhur. neorg. khim. 2 no.1:23-29 Ja '57. (MLRA 10:4)
(Cobalt tellurides) (Enthalpy) (Systems (Chemistry))

S/078/60/005/011/003/025
B015/B060

AUTHORS: Shchukarev, S. A., Apurina, M. S.

TITLE: The System Nickel - Tellurium

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol. 5, No. 11,
pp. 2410-2413

TEXT: The authors investigated the system nickel - tellurium and checked the earlier established phase conditions in the interval $\text{NiTe}_{1.0}$ - $\text{NiTe}_{2.0}$. Moreover, they for the first time studied the region $\text{Ni} - \text{NiTe}_{1.0}$. An isopiestic method, described previously (Refs. 6,7) was applied. It is stated that the experiments took 60 hours. Experimental results obtained at 900°C with preparations $\text{NiTe}_{>1.0}$ (Table 1) show that in the system investigated at 900°C there is a wide field of homogeneity, which extends at least from the composition $\text{NiTe}_{1.0}$ to $\text{NiTe}_{1.7}$, and, possibly, even further to a higher tellurium content.

Card 1/2

The System Nickel - Tellurium

S/078/60/005/011/003/025
B015/B060

In the interval $\text{NiTe}_{1.0}$ - $\text{NiTe}_{1.95}$ the lattice parameters (Table 2) are dependent, as shown by the X-ray pictures, on the composition, in agreement with previous experimental results. Experiments with preparations Ni - $\text{NiTe}_{1.0}$ show (Table 3) that at 900°C in the system

Ni - Te the compounds $\text{NiTe}_{0.62}$ and $\text{NiTe}_{0.88}$ exist in a very narrow homogeneous region, as well as the phase $\text{NiTe}_{0.66-0.67}$ - $\text{NiTe}_{0.82-0.83}$.

The authors thank Ye. V. Stroganov and I. I. Kozhina for their assistance in taking the X-ray pictures. There are 3 figures, 3 tables, and 11 references: 4 Soviet, 4 German, and 2 US.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: July 30, 1959

Card 2/2

APUSHKIN, G.V., inzh.; BAGIROV, D.D., inzh.; ZLATOPOL'SKIY, A.V., inzh.

Foreign engines of construction and road machines shown at
the International Exhibition. Stroil. i dor. mash. 10 no.8;
12-13 Ag '65. (MIRA 18:9)

3.1710
6.4400

S/058/61/000/002/010/018
A001/A001

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 2, p. 404, # 2Zh502

AUTHOR: Apushkinskiy, G.P.

TITLE: Broad-Banded Radiometer Based on Superheterodyne Circuit With a Highly Sensitive Amplifier

PERIODICAL: "Izv. Gl. astron. observ. v Pulkove", 1960, Vol. 21, No. 5, pp. 153 - 161 (Engl. summary)

TEXT: The author describes the principle and design of a broad-banded highly sensitive radiometer for 3-cm wavelength using traveling-wave tubes and a distributed amplifier. See also RZhFiz, 1960, No. 11, 30963

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

AFUSHINSKI, G. P. (Leningrad)

"Spectral Peculiarities of LBV and Gas Discharge Noise Tubes."

report presented at the All-Union Conference on Statistical Radio
Physics, Gor'kiy, 13-18 October 1958. (Izv. vyssh uchev zaved-Radiotekh.,
vol. 2, No. 1, pp 121-127) COMPLETE card under SIFOROV, V.I.)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1ST AND 2ND LETTERS

PROCESSES AND PROPERTIES INDEX

16

APUSHKIN, K. K.

The technology of humic phosphate fertilizers. K. K. Apushkin and E. A. Kurochkina. *Mineral'snye Udobreniya. Inzhenering* 1, No. 4, 90(1935).—Humic phosphates contg. up to 40% H₂PO₄ were obtained by repeatedly treating peat with technical H₂PO₄. In this process peat is partially hydrolyzed to sugars which can reduce Fe, forming with it complex compds., which in their turn inhibit the pptn. of Fe phosphates. The humic phosphates on being treated with liquid NH₃ and KNH₂/NO₂ become ammonized; this permits the prepn. of humic ammonium nitrate phosphates with a ratio of N:P of 1:1, with a humic ammonium nitrate phosphate content of up to 20% in the fertilizer (over 40% of N + P). The humic ammonium nitrate phosphates were obtained not only from peat but also from long-flame coals. Good results were obtained with these compds. in the field. A. A. Bochtlingk.

COMMON VARIABLES INDEX

MATERIALS INDEX

OPEN

ABB-55A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND LETTERS

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

APUSHKIN, K. K.

PROCESSES AND PROPERTIES INDEX

Coagulation and peptization of humic acids by phosphates. I. A study of the conditions for the coagulation of ammoniacal humic acid extracts and the distribution of elements and phosphoric acid. K. K. Apushkin. *Colloid J.* (U. S. S. R.) 1, 405-507 (1935).— The ammoniacal humic acid exts. from peat are reversibly coagulated by acids such as H_2NO_3 , HCl , H_2SO_4 , and HNO_3 and reversibly peptized by alkalis but only very weakly by anions. The coagulating action of the cations Na , K , NH_4 , Ca and Mg depends on their position in the lyotropic series, the acidity of the medium and the formation of insol. compds. For phosphate the acidity is that of $NH_4H_2PO_4$. The distribution of H_2PO_4 between coagulate and filtrate corresponds to the resp. sq. contents, but the NH_4 content of the coagulate is 30-50% high, owing to selective adsorption by the humic acids. With technical instead of pure H_2PO_4 , a considerable excess of phosphate remains in the humic acid coagulate, which also is less completely pept.

E. H. Rathmann

ASB. 55A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

HT UCHIKU, K. K.
ca

15

The coagulation of ammonia-humic acid extract. K. K. Uchikawa. Trans. Sci. Inst. Fertilizers Inst. Japan (U. S. S. R.) No. 127, 36-62(1966).—An ext. of high-moor peat with NH_3 was treated with HCl , HNO_3 , H_3PO_4 , and H_2SO_4 alone or with addns. of electrolytes and the coagulation effects were recorded. Standard procedures were followed. J. S. Joffe

COMMON ILLUSTRATIONS

COMMON TABLES INDEX

ALUMINA METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED

INDEXED

RECORDED

FILED

PROCESSES AND PROPERTIES MODEL

NO. 200 AND 17th COPY

K. K. AMUSHKIN

21

Oxidation-reduction processes in peat. K. K. Amushkin. *Trofyimaya Prom.* 23, No. 2, 20-32 (1946). The oxidation-reduction potentials in peat deposits vary from rH 3.5 to rH 3.5-4. The most intensive oxidizing processes (rH 2.1-3.5) were observed in the upper layer of peat deposits, at the boundary between the loose, live, and the more compact, dead moss. In the lower H₂O-satd. part of the upper layer (immature peat) and in the mature peat the rH dropped to 8-14. Then it rose somewhat as the mineral layer was approached. In the intermediate layers of a deposit oxidizing potentials prevailed, rH 12-18. The rH of peat taken out of the deposit dropped. The rH also changed with temp. (day and night). In aq. media the reaction always shifted toward reduction. The chemistry of the processes is discussed. M. H. H. H.

ASB-51A METALLURGICAL LITERATURE CLASSIFICATION

E-277413-2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
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APUSHKIN E.K.

3008. CAPACITY OF MILLIN PEAT FOR ADSORPTION OF MOISTURE. Apushkin, E.K.
(Izv. Mosk. for. Inst. (From Moscow Peat Inst.), 1953, (2), 88-95; abstr.
in Ref. Zh. Khim. (ref. J. Chem., Moscow), 1955, (19), 44097). A method for
determining sorption capacity for moisture devised by N.E. Pestov for powdered
materials was tried on peat. The sorption capacity of the dust fraction of
milled peat, expressed as a percentage of absolutely dry matter, at a mean
relative air humidity of about 75%, varies between 21.8 and 11.5%. **FU**
Coagulated peat dried in air is more hydrophobic than the original peat. The
sorption capacity depends not only on the relative humidity of the air, it is
also connected with the stability of colloids. In experiments on oxidizing
and reducing processes in aqueous and air media, it was established that the
mechanism of oxidation is different in these two cases and that an aqueous
medium facilitates the occurrence of hydrolytic oxidation, and sometimes also
the intermediate formation of peroxides. The data on the sorption capacity of
the dust fraction of peat reflect the influence of spontaneous heating of peat
in the stack, and also that of the type of peat and the stage of decomposition
it has reached.

APUSHKIN, V. A.

Insulation of hot pipes with slag fiber jackets. Yu. N. Distil and V. A. Apushkin. *Sbornik Material. o Novol'zhim. i Peredovom Opyle i Stroitel'stve* 1953, 13-17; Referat. *Zhurn. Khim.* 1954, No. 60996. — The making, storage, and use of slag-fiber jackets are described. M. Hoch

①

SOV-109-3-6-25/27

AUTHOR: Apushkinskiy, G. P.

TITLE: Improvement of the Sensitivity of a Radiometer by Increasing Its Bandwidth (Povysheniye chuvstvitel'nosti radiometra metodom rasshireniya yego polosy)

PERIODICAL: Radiotekhnika i Elektronika, 1958, Vol 3, Nr 6, pp 852-853 (USSR)

ABSTRACT: The sensitivity of a radiometer can be increased by introducing a pre-amplifying stage which employs a travelling wave tube and operates at the high frequency. The resulting equipment is then as shown in the block schematic on p 853. This consists of: 1) an antenna, 2) an attenuator, 3) an absorber, 4) a ferrite switch, 5) a travelling wave tube, (6) a local oscillator, 7) a filter, 8) a mixer, 9) a distributed amplifier, 10) a detector, 11) an oscillator and a modulator, 12) an audio-frequency filter, 13) a synchronous detector, 14) an integrating network, and 15) a registering device. The measurements showed that the receiver so designed gave a 4-fold increase in the sensitivity as compared with the standard modulator-mixer IF amplifier system. The author expresses his gratitude to A. A. Novysh for his help in the

Card 1/2

SOV-109-3-6-25/27

Improvement of the Sensitivity of a Radiometer by Increasing Its
Bandwidth

design and the equipment and in carrying out the measurements.
The paper contains 1 figure, 1 table and 4 references, 2 of
which are Soviet, 1 English and 1 French. (This work was
presented at the Plenary Session of the Committee on Radio
Astronomy on the 26 November, 1957).

SUBMITTED: August 23, 1957

Card 2/2 1. Radiometers - Sensitivity

3.1710

77967

SOV/109-5-3-21/26

AUTHOR:

Apushkinskiy, G. P.

TITLE:

Broad Band Radiometer With Superheterodyne Circuit and
h-f Amplifier

PERIODICAL:

Radiotekhnika i elektronika, 1960, Vol 5, Nr 3,
pp 514-517 (USSR)

ABSTRACT:

Broadening a radiometer band is one of the methods of improving its sensitivity. Broadening the band of a conventional radiometer by the zero method causes increase of amplification fluctuation, but by the nonzero method, increase of the noise figure. It is, therefore, advantageous to use a TWT low-noise broad-band h-f amplifier. The article describes the diagram of a superheterodyne designed by the author for a wavelength $\lambda = 3.15$ cm. (The report on this design was submitted to the Plenary Session of the Commission on Radioastronomy, Nov. 26, 1957.) (1) Special Features of Separate Stages of a Broad Band Radiometer

Card 1/6

Broad Band Radiometer With Superheterodyne
Circuit and h-f Amplifier

77967

SOV/109-5-3-21/26

Ferrite Modulator. A horn antenna directed into the "sky" was used for modulation. At sensitivities of the order of 0.5° K and time constant $\tau = 1$ sec, the threshold of impedance modulation is not noticeable. For sensitivity, rectangular modulation is more advantageous than sinusoidal. h-f Amplifier With TWT. An amplitude limitation of strong signals in TWT lowers the output of a direct amplification receiver. In this sense, a superheterodyne circuit with TWT as amplifiers has a thousandfold reserve of dynamic range as compared to a direct amplifier circuit. Input to the TWT has forced air-cooling. Broad Band Mixer. Use of a TWT as an amplifier permits the conversion of a powerful signal, disregarding the noise factor of the mixer. A broad band of both high and intermediate frequencies is a prerequisite. The former is achieved by adjusting waveguide (or coaxial) resistance to be equal to the active part of R_{act} of the full resistance of the crystal for

Card 2/6

Broad Band Radiometer With Superheterodyne
Circuit and h-f Amplifier

77967
SOV/109-5-3-21/26

the given band. A broad band is achieved by a low output capacitance of the mixer. The analyzed receiver has $C_{out} < 3pf$ and 200 mc bandwidth. Distributed Amplifier. It is essential to have a low noise figure. In this respect it is advisable to use not less than six tubes in the first stage, as the noise figure decreases with the number of tubes in the stage. The distributed amplifier in the described receiver consisted of four stages with six tubes (type 6Zh1P) in each. Receiver as a Whole, and Its Comparison With Other Receivers. Amplification in various blocks of the analyzed receiver in db is: modulator, -0.2; TWT, 18; mixer, -5; distribution amplifier, 47; low-frequency amplifier, 70. The following table gives comparative data of the investigated receiver and various receivers in the 3-cm range. While direct amplifier receiver has a somewhat higher sensitivity due to broader band, it is inferior to the superheterodyne in dynamic range, which is of importance for certain problems.

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Broad Band Radiometer With Superheterodyne
Circuit and h-f Amplifier

77967

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Table 3.

Type	Circuit	λ , cm	F_e (times)	B (mc)	$T^{\circ}K$ $T = 1 \text{ sec}$	Where built
Superhet.	Modulator-Mixer-Ampl. Int.	3.2	20	18	2	GAO AS USSR
"	Modulator-TWT-Distr. Ampl.	3.15	10	150	0.3	" "
Dir. Ampl.	TWT-TWT-TWT	3.7	10	1,000	0.1	U.S.

So, for instance, for the observation of solar radio-fluctuations a dynamic range better than 10^5 (maximum for TWT-TWT-TWT) is required, and a receiver with distr. amplifier (10^9) is preferable. (2) Operation of Receiver. The receiver described above is used for radio-astronomical observations with an antenna. Observations by the author conjointly with Yu. N. Parlyskiy of

Card 4/6

Broad Band Radiometer With Superheterodyne
Circuit and h-f Amplifier

77967

SOV/109-5-3-21/26

Crab-Shaped Nebula confirmed the calculated sensitivity of the receiver: $T = 0.3^{\circ}$ K at $\tau = 1$ sec. Figure 2 shows one of the recordings of Crab-Shaped Nebula. An antenna with "knife" diagram 2.5×20 , time constant $\tau = 2.5$ sec, was used. The help of S. E. Khaykin, N. L. Kaydanovskiy, V. N. Umetskiy, and A. A. Novysh is acknowledged. There are 4 tables; 2 figures; and 16 references, 8 Soviet, 6 U.S., 1 German, 1 French. The U.S. references are: F. D. Drake, H. I. Ewen, Proc. I.R.E., 1958, 46, 1, 53; Peter D. Strum, Proc. I.R.E., 1958, 46, 1, 43; E. L. Ginzton, W. R. Hewlett, J. H. Jasberg, J. D. Noe, Proc. I.R.E., 1948, 36, 8, 956; A. van der Ziel, Noise, N.Y., 1954, 187; L. E. Alsop, J. A. Giordmeine, C. H. Mayer, C. H. Townes, Columbia Univ., N.Y. and U.S. Naval Research Lab., Washington, Observations of Discrete Sources at 3-cm Wavelength Using a Maser, 1958; also Proc. I.R.E., 1959, 47, 6, 1062.

SUBMITTED:
Card 5/6

June 8, 1959

Broad Band Radiometer With Superheterodyne
Circuit and h-f Amplifier

77967
SOV/109-5-3-21/26

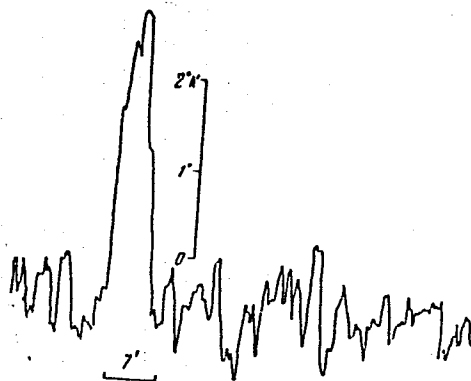


Fig. 2. Recording of Crab Nebula transmission. Antenna
temperature 3° K.

Card 6/6

3,1710

S/194/61/000/003/045/046
D201/D306

AUTHOR: Apushkinskiy, G.P.
TITLE: A wide-band superheterodyne microwave radiometer
PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,
no. 3, 1961, 10, abstract 3 K76 (Izv. gl. astron.
observ. v Pulkove, 21, no. 5, 1960, 153-161 (Eng-
lish summaries))

TEXT: A modulated radiometer, operating at a wavelength of 3.15 cm, is described. Its circuit consists of a ferrite modulator, frequency converter, HFTWT amplifier, distributed 150 mc/s bandwidth amplifier, detector, LF amplifier, synchronous detector with integration and automatic recorder. The main characteristics are as follows: noise factor 10, sensitivity 0.3° at $\tau = 1$ sec, dynamic range 10^{10} . The receiver is used with the large radiotelescope of the Main Astronomical Observatory AS USSR. 17 references.
[Abstracter's note: Complete translation]

Card 1/1

3,1710
3,2500 (1080)

30753
S/141/61/004/003/004/020
E133/E435

AUTHORS: Kaydanovskiy, N.L., Ikhsanova, V.N.,
Apushkinskiy, G.P., Shivriv, O.N.

TITLE: Observations of lunar radio emission at a wavelength
 $\lambda = 2.3$ cm, using the large Pulkovo radiotelescope

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika,
1961, Vol.4, No.3, pp.428-432

TEXT: It has been shown (Ref.1: V.S.Troitskiy, Astron.zh., 31,
511 (1954)) that measurements of the brightness temperature at the
centre of the lunar disc permit an estimate to be made of the
equivalent conductivity of the lunar surface material. Such
measures, carried out over the course of a lunation, demand great
stability of the instrument used. In order to minimize the
stability requirements, the antenna temperature was determined
indirectly by measuring the displacement (x) of the centre of
gravity of the emitted lunar radiation from the geometrical centre
of the Moon. Using this method, the amplification coefficient of
the system only has to remain constant during the course of one
observation. The use of the displacement x is discussed in the
Card 1/43

Observations of lunar radio ...

30753
S/141/61/004/003/004/020
E133/E435

paper of N.L.Kaydanovskiy and his team (Ref.2: Izv. AN SSSR, M., 1956, p.347). The results there are inaccurate owing to the fact that the lower reflectivity of the Moon, towards the limb, was ignored. The antenna temperature is derived from the displacement in the way which has been described by Troitskiy (Ref.1). Only the first harmonic term is retained in the present paper. The variation of x with the amplitude of the variable component of the brightness temperature at the centre of the disc is thus obtained. The theory of Troitskiy assumes that the Moon's orbit lies in the ecliptic plane and that there is no libration. This approximation is applicable except near new, or full, moon. At these latter times, however, the displacement of the centre of gravity of the lunar radiation is small and, therefore, the deviations can also be ignored at these points. The authors discuss the use of an antenna with a low half-width in one coordinate and a considerably greater half width in the other coordinate (Fig.2). Such an antenna can be used so long as the pattern is elongated parallel to the plane of the Earth-Moon axes, so long as it is trailed in a direction perpendicular to this. Observations of the Moon were made in October-December 1959 at Card 2/1/3

4

Observations of lunar radio ...

30753
S/141/61/004/003/004/020
E133/E435

$\lambda = 2.3$ cm on the large Pulkovo telescope. The angular resolution of the antenna was $2'$ in one direction and $20'$ to 1° in the other. The observations were made with the Moon at upper culmination in order to fulfil the conditions mentioned in the previous paragraph. Fig.4 shows the variation of x with lunar phase. $x = 0'.17 (\omega t - 35^\circ)$, where t is counted from the new Moon. The accuracy of this expression is $\pm 30\%$. The amplitude of the variable component at the centre of the lunar disc is, hence, derived as $13.5 \pm 4^\circ\text{K}$. Acknowledgments are expressed to S.E.Khaykin and A.A.Novysh. There are 4 figures and 4 Soviet-bloc references.

ASSOCIATION: Glavnaya astronomicheskaya observatoriya AN SSSR
(Main Astronomical Observatory AS USSR)

SUBMITTED: October 7, 1960

Card 3/4

APUSHKINSKIY, G.P.

Problem concerning the sensitivity of radiometers. Radiotekh. i
elektron 6 no.8:1328-1329 Ag '61. (MIRA 14:7)
(Radiometer)

L 08372-67 EWT(1) GW/WS-2

ACC NR: AR6028148

SOURCE CODE: UR/0058/66/000/005/H063/H063

AUTHOR: Apushkinskiy, G. P.; Molchanov, A. P. 42

TITLE: Radioastronomic observations of the solar eclipse of 30 May 1965 at wave-lengths 1.27 and 3.27 cm

SOURCE: Ref. zh. Fizika, Abs. 5Zh451

REF. SOURCE: Solnechnyye dannyye, no. 7, 1965, 61-65

TOPIC TAGS: solar eclipse, radio astronomy, antenna directivity, antenna temperature

ABSTRACT: Results are presented of observations of the total solar eclipse of 30 May 1965 on the Manuae Island ($\phi = -19^{\circ}15'43''$, $\lambda = -158^{\circ}57'43''$) at wavelengths 1.27 and 3.27 cm. The ratio of the lunar radius to the solar radius was 1.048. The widths of the lobes of the directivity pattern were 1.2° and 0.8° at 3.27 and 1.27 cm respectively. The effective antenna temperature for the unobscured sun was 1500 and 750K; the width of the recording track was 25 and 5K respectively at these wavelengths. The time constant for recording was approximately 1 second. The ratio radius determined from the observations was (1.010 ± 0.002) solar radii at 1.27 cm and (1.034 ± 0.003) solar radii at 3.27 cm. This has confirmed that at wavelenths shorter than 2 cm the radius decreases from 1.03 to 1.01 solar radius, and in the region of 1.27 cm it apparently is independent of the wavelength, and $r = 1.01$. The existence of

Card 1/2

Card 2/2 nst

APUSHKINSKIY, P. N.

FA29T24

USSR/Electricity

Sep 1947

Cables, Electric
Cables - Sheaths

"Locating Breaks in Impregnated Cables," P. N. Apush-
kinskiy, 3 pp

"Elektrichestvo" No 9

In many cases there is a break in the impregnating material in a cable, causing an arc-over between the inner conductor and the sheathing. The location of such breaks is difficult because of the nonrupture of the sheathing. The author discusses the advantages and shortcomings of Starr's and Gooding's methods of locating such ruptures. Discusses the apparatus used in locating these breaks and gives a schematic diagram of the apparatus. LC 29T24

DARBINYAN, M.V.; AVAKYAN, S.N.; APYAN, S.S.

Complex compounds of trivalent cerium with 1-dimethylamino-2-butyne.
Izv. AN Arm.SSR. Khim. nauki 18 no.2:214-215 '65. (MIRA 18:11)

1. Yerevanskiy gosudarstvennyy universitet, kafedra khimii.
Submitted November 5, 1964.

APYKHTIN, F. S.

OK

Carrotting hair. M. V. Smolovik and F. S. Apkhtin.
Russ. 29,900, Apr. 30, 1941. Hair is treated with aq.
H₂O₂, H₂SO₄ and a sol. salt of V as catalyst.

25

COMMON ELEMENTS

COMMON VARIANTS NOTED

ASB-35A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Handwritten text in Cyrillic script, possibly a signature or initials.

APYKHTIN, P.S., inzh.

Washing wool in a neutral medium or an isoelectric zone.

Tekst.prom. 17 no.10:11 O '57.

(MIRA 10:12)

(Woolen and worsted manufacture)

YAVORSKAYA, Z.A.; APYKHTIN, F.S.

Experience in the decating of felt footwear. Tekst. prom. 24 no.7:
76-77 J1 '64. (MIRA 17:10)

1. Starshiy inzh.-tehnolog Ukrainского nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (UkrNIITP) (for Yavorskaya).
2. Zaveduyushchiy sektorom valyal'no-voylochnykh i fatrovyykh izdeliy Ukrainского nauchno-issledovatel'skogo instituta tekstil'noy promyshlennosti (for Apykhtin).

APIKHTIN, N.G. (Moskva)

Permanent axes of rotation of a rigid body with a fixed point in
the case of the existence of Goriachev integrals. Prikl. mat.
i mekh. 27 no.5:894-898 9-0 '63. (MIRA 16:10)

AFYKHTIN, N.G. (Moskva)

Stability of certain permanent revolutions of a solid body.
Prikl. mat. i mekh. 29 no.2:375 379 Mr.-Ap '65. (MIRA 18:6)

ACCESSION NR: AP4015975

S/0040/63/027/005/0894/0898

AUTHOR: Apykhtin, N. G. (Moscow)

TITLE: On permanent axes of rotation of a solid body with a fixed point in the case of the existence of D. N. Goryachev integrals

SOURCE: Prikl. matem. i mekhan., v. 27, no. 5, 1963, 894-898

TOPIC TAGS: space coordinate, space geometry, Euler equation, rotation, free body rotation, three dimensional rotation, Goryachev integral, solid dynamics, force function

ABSTRACT: The relationships of rotational motion for a solid body with one fixed point are presented. Starting with two rectangular coordinate systems, one fixed within the rotating body and the other stationary in space, and using Euler's dynamics equation, the author developed an expression for the moments of external forces relative to axes fixed within the rotating body. Then four considerations were discussed: 1) the attraction of various points of the solid to a stationary plane, 2) the attraction of a point on the solid's axis of symmetry to a stationary plane, 3) the effect of a constant force upon the solid, and 4) the attraction of

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ACCESSION NR: AP4015975

the body to a stationary plane. By using the integrals proposed by D. N. Goryachev (Nekotory*ye obshchiye integraly* v zadache o dvizhenii tverdogo tela, Varshava, 1910; Novy*ye sluchai integriruyemosti dinamicheskikh uravneniy Euler, Kar'kov, 1916), the author developed relationships involving force functions, direction cosines, moments of inertia, and angular velocity. Various cases were studied and results were compared with earlier work by F. deBrun (Rotation kringen fix punkt Ofversigt of Kongl. Svenska vetenskaps-Akademiens Vorhandlingar. Stockholm, 1893), and by V. V. Beletskiy (Nekotory*ye voprosy* dvizheniya tverdogo tela v n'yutonovskom pole sil. PMM, 1957, t. 21, vy*p. 6; Ob integriruyemosti uravneniy dvizheniya tverdogo tela okolo zakreplennoy točki pod deystviyem tsentral'nogo n'yutonovskogo polya sil. Dokl. AN SSSR, 1957, t. 113, No. 2). The author thanks V. V. Rumyantsev for his attention to this work. Orig. art. has: 1 figure and 29 equations.

ASSOCIATION: none

SUBMITTED: 10May63

SUB CODE: ME

Card 2/2

NO REF SOV: 005

ENCL: 00

OTHER: 003

1 4534-05 BWT(d) IJP(c)

ACCESSION NR: AF50164P

OR 1965 04 01 01 05/0309

AUTHOR: Apyditin, N. G. (Moscow)

TITLE: On the stability of some permanent rotations of a solid body

SOURCE: Prikladnaya matematika i mekhanika, v. 20, no. 2, 1965, 125-128

TOPIC TAGS: force field, inertial system, stability condition, equation of motion, etc.

ABSTRACT: The stability of permanent rotations of a solid body, relative to the axes of symmetry, is investigated. The stability condition is obtained.

$$U(x_1, x_2) = \dots$$

of the rotating body relative to the movable axes x_1, x_2, x_3 is given by \dots

1 45384-65

ACCESSION NR: AP6010087

axes. The characteristic stability equations are given by

$$\sigma^4 (\sigma^4 + g_1 \sigma^2 + F_2) = 0$$

$$F_2 = 1 - \frac{1}{2} \omega^2 (3A_1 + 3A_2 - 3A_3) - \frac{1}{2} \omega^2 (3A_1 + 3A_2 - 3A_3) + \frac{1}{2} \omega^2 (2A_1^2 + A_2^2 + A_3^2)$$

where the instability occurs under one of the following conditions

$$g_1 < 0, \quad F_2 < 0$$

For simplicity, the body is assumed to be symmetric, $A_1 = A_2$, and two axes are considered around which the constant rotation can exist

$$I_1 \neq 0, \quad I_2 \neq 0, \quad \omega^2 = a / (\epsilon - 1) I_3^{2\epsilon}, \quad \epsilon = A_2 / A_1$$

$$I_1 = I_2 = 0, \quad I_3 = 1, \quad \omega - \text{any magnitude}$$

The necessary and sufficient conditions for stability of these motions are determined by constructing the Lyapunov functions by the method of N. J. Chetaev (*Ob ustoychivosti vrascheniya tverdogo tela s odnoy nepodvizhnoy tochkoy v sluchaye Langranzha*, PMM, 1954, t. 18, 1). Another motion of the same symmetric body is studied under a constant force relative to the movable coordinate system, and the stability of this motion is also investigated.

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ACCESSION NR: AP5010637

variable γ_1 . Finally, an attractive-repulsive force field is considered which is expressed by the force function

$$2U = \mu (A_2 - A_1) (\theta_1^2 - \theta_2^2)$$

The corresponding permanent rotation is given by

$$a = \beta = \alpha' = \beta' = 0, \quad \gamma' = \gamma_1$$

and the characteristic equation by

$$A_1 \theta^4 + A_2 \theta^2 - \mu^2 (A_2 - A_1) = 0$$

"The author thanks V. V. Rumyantsev for his influence on the work." Orig. art. has: 25 equations.

ASSOCIATION: none

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: ME

AND REF COT: 005

OTHER: 002

Co 3/3

APYKHINA, M.N., assistant

Calculating the variant of multiple repeated movements of the operator working with multiple units on a conveyor line. Nauch. trudy MTILP no.29:99-102 '64. (MIRA 18:4)

1. Kafedra organizatsii proizvodstva i ekonomiki legkoy promyshlennosti Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

APYKHTINA, M.N., aspirant; BASS, I.B., doktor tekhn.nauk, prof.

Improving the production line systems for the manufacture of men's suits. Izv.vys.ucheb.zav.; tekhn.prom. no.4:13-24 '60.

(MIRA 13:10)

1. Moskovskiy tekhnologicheskiy institut legkoy promyshlennosti.
Rekomendovana kafedroy organizatsii proizvodstva i ekonomiki
legkoy promyshlennosti.

(Assembly-line methods) (Clothing industry)

APYKHTINA, M.N., assistant

Systems of the improved designs of the working elements
of the conveyor for the manufacture of men's suits. Nauch.
trudy MTILP 25:194-204 '62. (MIRA 16:8)

1. Kafedra organizatsii proizvodstva i ekonomiki predpriyatiy
legkoy promyshlennosti Moskovskogo tekhnologicheskogo insti-
tuta legkoy promyshlennosti.

APYKHTINA, M.N., assistant

Calculating the variant of combining other work with the multiple-machine operation in a continuous production line. Nauch. trudy MTILP no.27:27-29 '63. (MIRA 17:11)

1. Kafedra organizatsii porozvedstva i ekonomiki legkoy promyshlennosti Moskovskogo tekhnologicheskogo instituta legkoy promyshlennosti.

ARABACHYAN, E., inzh.

New method for eliminating low-grade nickel coatings. Prom.
Arm. 6 no.11:36-37 N '63. (MIRA 17:1)

1. Khar'kovskiy velosipednyy zavod.

ARABADZHAN, A.S.; BERGMAN, A.G.

Interaction of lithium and sodium chlorides and bromides in melts. Zhur.neorg.khim. 7 no.9:2226-2229 S '62. (MIRA 15:9)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut
tekhologii mashinostroyeniya.
(Alkali metal halides) (Systems (Chemistry))

BUKHALOVA, G.A.; ARABADZHAN, A.S.

Investigation of the ternary system consisting of lithium, sodium,
and calcium chlorides. Zhur.neorg.khim. 7 no.9:2230-2232 S '62.
(MIRA 15:9)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut
tekhnologii mashinostroyeniya i Rostovskiy-na-Donu inzhenerno-
stroitel'nyy institut.

(Alkali metal chlorides) (Calcium chloride)

ARABADZHAN, A.S.; BERGMAN, A.G.

Melting diagram of the ternary system consisting of lithium, sodium, and potassium bromides. Zhur.neorg.khim. 8 no.3:720-722 Mr '63.

(MIRA 16:4)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

(Alkali metal bromides)

(Melting points)

BERGMAN, A.G.; ARABADZHAN, A.S.

Effect of the shift of equilibrium on melting diagrams of the systems with solid solutions. Zhur.neorg.khim. 8 no.3:723-728 M^r '63.

(MIRA 16:4)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

(Phase rule and equilibrium)

(Solutions, Solid)

BERGMAN, A.G.; ARABADZHAN, A.S.

Melting diagram of the ternary system Li || F, Cl, Br. Zhur.-
neorg.khim. 8 no.5:1228-1229 My '63. (MIRA 16:5)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii
mashinostroyeniya.

(Lithium halides) (Melting points)

BERGMAN, A.G.; ARABADZHAN, A.S.

Reciprocal system consisting of chlorides and bromides of lithium and thallium. Zhur. neorg. khim. 8 no.6:1453-1454, Je '63. (MIRA 16:6)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya. (Systems(Chemistry)) (Fused salts)

BERGMAN, A.G.; ARABADZHAN, A.S.

Reciprocal system consisting of chlorides and bromides of
lithium and sodium. Zhur. neorg. khim. 8 no.8:1928-1932

Ag '63.

(MIRA 16:8)

(Alkali metal halides)

(Systems (Chemistry))

BERGMAN, A.G.; ARABADZHAN, A.S.

Reciprocal system consisting of chlorides and bromides of lithium
and silver. Zhur.neorg.khim. 8 no.9:2148-2150 S '63.
(MIRA 16:10)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut
tekhnologii mashinostroyeniya.

ARABADZHAN, A.S.; BERGMAN, A.G.

Quaternary reciprocal system consisting of chlorides and bromides of lithium, sodium, and potassium. Zhur. neorg. khim. 9 no.2: 425-431 F'64. (MIRA 17:2)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya.

ARABADZHAN, A.S.; BERGMAN, A.G.

Reciprocal system consisting of the chlorides and bromides
of silver and thallium. Zhur. neorg. khim. 9 no.7:1769-
1771 J1 '64. (MIRA 17:9)

1. Rostovskiy-na-Donu nauchno-issledovatel'skiy institut
tekhnologii mashinostroyeniya.

YEVDOKIMOV, F.I., inzh.; ARABADZHEV, A.M., inzh.

Decreasing labor consumption is a matter of chief importance. Stankht.
stroit. 8 no.7:9-11 JI '64. (MIRA 17:10)

1. Donetskij nauchno-issledovatel'skiy ugol'nyy institut.

IVANOV, N.I.; DZYUBA, Yu.S.; NORENKO, N.A.; YEVDOKIMOV, F.I.; ANABADZHEV,
A.M.; MEL'NIKOV, V.I.

Efficiency of overall mechanization in Donets Basin mines.

Biul.tekh.ekon.inform.Gos.nauch.--issl.inst.nauch.i tekh.
inform. 17: ~~no. 10: 13-16~~ '64.

(MIRA 18:4)

ARABADZHI, M.S.

Calculating the excess density of rocks under natural manner of
occurrence. Trudy MINKHIGP no.43:63-66 '63. (MIR/ 17:4)

ARABADZHI, M.S.; VASIL'YEV, Yu.M.; MIL'NICHUK, V.S.

Using mathematical statistics in petroleum geology. Izv. vys.
ucheb. zav.; neft' i gaz 8 no.4:3-8 '65. (MIRA 18:5)

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

ARABADZHI, M.S.; VASIL'YEV, Yu.M.; MIL'NICHUK, V.S.

Seismic investigations in the northern Caspian Sea region. Trudy
MINKHIGP no.43:168-177 '63. (MIRA 17:4)

ARABADZHI, M.S.; VASIL'YEV, Yu.M.; MIL'NICHUK, V.S.

Seismic errors in the central and western regions of the
Caspian Lowland. Izv. vys. ucheb. zav. i gaz 5
no.1183-7 '62. (MIRA 1786)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
imeni akademika I.M. Gukina.