

USSR

UDC: 8.74

BRAKHIN, V., KARGALOV, B., KUZ'MIN, K.

"Interpreting System for the 'Ural-14' Computer Oriented for the Diur-14-1 Controller"

V sb. Elektronno-vychisl. tekhn. i programmir. (Electronic Computer Technology and Computer Programming--collection of works), vyp. 4, Moscow, "Statistika", 1971, pp 5-18 (from RZh-Kibernetika, No 1, Jan 72, Abstract No 1V1011)

Translation: The paper describes the purpose and structure of the IS DIUR-14-1 interpreting system, requirements for standard programs, and the organization of the standard program board. It is noted that the DIUR-14-1 controller-monitor has a modular structure; the operating order of the modules in the IS DIUR-14-1 interpreting system is indicated, and a list of possible troubles in operation of the interpreting system is given. Authors' abstract.

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USSR

UDC 539.4

SVERDLOV, A.I. and KARGAL'SKIY, V.A.

"Reliability Estimates of Composite Materials Structures From Static Test Results"

Moscow, Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 216-220

Abstract: The subject structures consist of alternating layers of metal and glass reinforced plastic bonded together.

It is desired to verify the design load carrying capacity of the structures by static tests. The aging of the plastic due to temperature, humidity and radiation is taken into account by testing to destruction 10-15 specimens aged for different periods of time. The results of these tests are correlated by the theory of probabilities.

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SVERDLOV, A. I. and KARGAL'SKIY, V. A., Prochnost' i Ustoychivost' Tonkostennykh Aviatsionnykh Konstruktsiy, 1971, pp 216-220

It is recommended to test the structure statically under the load equal to the design load increased in the ratio of the original specimen strength to the aged specimen strength.

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Pharmacology and Toxicology

USSR

UDC 617-089.521.65

VANEVSKIY, V. L., KARGAPOLOV, L. N., Chair of Anesthesiology and Reanimation,
Order of Lenin Institute of Advanced Training of Physicians imeni S. M. Kirov,
Leningrad

"Experience in the Application of the New Soviet Myorelaxant Dioxonium in Anesthesi-
ological Practice"

Leningrad, Vestnik Khirurgii imeni I. I. Grekova, Vol 104, No 6, Jun 70, pp 74-77

Abstract: Dioxonium is the diiodomethylate of 1,2-bis-(4'-piperidinomethyl-1,3'-
dioxolanil-2')-ethane. In experiments it exhibited a very high activity in block-
ing N-cholinoreactive systems of skeletal muscles. As distinguished from d-
tubocurarine, dioxonium did not produce histamine-like effects. The drug was
applied in doses of 0.03-0.2 mg/kg in combination with anesthesia in surgery of
the heart, lungs, esophagus, stomach, etc. performed on 141 patients. It produced
a temporary depolarizing neuromuscular block which after 5-6 min changed into a pro-
longed non-depolarizing effect. Intravenous injection of novocain prolonged the
depolarizing phase. Proserine counteracted the residual non-depolarizing block.
The length of action of dioxonium increased from 50-60 min in a dose of 0.05-0.06
mg/kg to 160-180 min in a dose of 0.15-0.20 mg/kg. The blood circulation was not
affected. Blood tests showed that dioxonium lowered the activity of specific
cholinesterase, and did not affect that of nonspecific cholinesterase.

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UDC 632.95

KUKALENKO, S. S., BUROVA, M. S., KARGAPOLOVA, F. V.

"Reaction of Chlorohydrin Ethers With Amines, Phenols, Thiophenols, and Carboxylic Acids"

V sb. Khim. sredstva zashchity rast. (Chemical Means of Plant Protection -- collection of works), vyp. 1, Moscow, 1970, pp 256-262 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12N474)

Translation: In searching for pesticides, ordinary methods were used to synthesize derivatives of chlorohydrin with the general formulas: $RXCH_2CH(OH)CH_2Cl$ (I), $RXCH_2CH(OH)CH_2NR'R''$ (II), $RXCH_2CH(OOCR''')CH_2Cl$ (III) $RXCH_2CHClCH_2Cl$ (IV) (everywhere R is Ph, substituted Ph, R' and R'' = H, C₁-C₈-alkyl, Ph, substituted Ph; R''' = C₁-C₃-alkyl, halogen; X = O, S). A mixture of 128.5 grams of β -chlorophenol, 92.5 grams of freshly redistilled epichlorohydrin and 1 ml of 40% aqueous solution of NaOH is heated in a boiling water bath for 15 hours, generating 150.32 grams of I (R = 4-ClC₆H₄, X = O) (Ia), C₉H₁₀Cl₂O₂, yield 40%, boiling point 131-2°/2, n_D²⁰ 1.5513, d₄²⁰ 1.3202. I (X = S) is obtained analogously,

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KUKALENKO, S. S., et al., Khim. sredstva zashchity rast, vyp. 1, Moscow, 1970, pp 256-262

but with heating of the reaction mixture for 6 hours at 115-120°. The I are obtained (R, X, the molecular formula, the yield in %, the boiling point in °C/mm or the melting point in °C, n_D^{20} , d_4^{20} are given): 2-ClC₆H₄, O, C₉H₁₀Cl₂O₂, 50, 133/2, 1.5519, 1.3260; 3-ClC₆H₄, O, C₉H₁₀Cl₂O₂, 68.4, 154-6/2, 1.5532, 1.3210; 2,4-Cl₂C₆H₃, CO, C₉H₉Cl₃O₂, 65, 184-5/4, 1.5650, 1.4303; 2,4,5-Cl₂C₆H₂, O, C₉H₈Cl₄O₂, 30, 58-1, --, --; Ph, S (Ib), C₉H₁₁ClOS, 79, 142/2, 1.5880, 1.2427; 4-ClC₆H₄, S, C₉H₁₀Cl₂OS, 50, 156-7/2, 1.6010, 1.3437; 4,5-Cl₂C₆H₃, S, C₉H₈Cl₃OS, 77, 185-7/2, 1.6100, 1.4571. To a mixture of 22.1 grams of Ia and 10.12 grams of Et₃N, 12.32 grams of o-anisidine are added at 80° for 30 minutes. The mixture is mixed for 15 hours at 85-100°, separating 8.8 grams of II (R = 4-ClC₆H₄, R' = H, R'' = 2-MeOC₆H₄, X = O), C₁₆O₁₈ClNO₃, yield 54%, boiling point 133-7/4; n_D^{20} 1.5933, d_4^{20} 1.2455. The II are obtained analogously (R, R', R'', X, the molecular formula, the yield in %, the boiling point in °C/mm or the melting point in °C, n_D^{20} , d_4^{20} are given): 4-ClC₆H₄, H, Ph, O, C₁₅H₁₆ClNO₂, 2/5

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KUKALENKO, S. S., et al., Khim sredstva zashchityrast., vyp. 1, Moscow, 1970, pp 256-262

45, 78-80, --, --; 4-ClC₆H₄, H, 3-MeC₆H₄, O, C₁₆H₁₈ClNO₂, 20, 69-70, --, --;
4-ClC₆H₄, H, 2,4-Me₂C₆H₃, O, C₁₇H₂₀ClNO₂, 33, 86-7, --, --; 4-ClC₆H₄, Me, Ph,
O, C₁₆H₁₈ClNO₂, 33, 203-5/10, 1.5925, 1.2183; 4-ClC₆H₄, Et, Ph, O, C₁₇H₂₀ClNO₂,
25, 203-5/5, 1.5872, 1.2414; 4-ClC₆H₄, H, n-C₈H₁₇, O, C₁₇H₂₈ClNO₂, 13, 174-5,
-- --; Ph, H, n-C₈H₁₇, S, C₁₇H₂₉NOS, 20, 66-7, --, --; Ph, Et, Et, S, C₁₃H₂₁NOS,
60, 147-8/2, 1.5480, 1.0722; Ph, H, 2-MeC₆H₄, S, C₁₆H₁₉NOS, 30, 214-6/2, 1.6180,
1.1486; h, H, 3-MeC₆H₄, S, C₁₆H₁₉NOS, 30, 46-8, --, --; Ph, H, Ph, S, C₁₅H₁₇NOS,
42.4, 56-8, --, --; Ph, H, 2,3-Me₂C₆H₃, S, C₁₇H₂₁NOS, 42, 46-7, --, --; Ph, H,
2-MeOC₆H₄, S, C₁₆H₁₉NO₂S, 35, 233-5/5, 1.6150, 1.1852; Ph, H, 4-ClC₆H₄, S, C₁₅
H₁₆ClNOS, 34, 64-5, --, --; Ph, Me, Ph, S, C₁₆H₁₉NOS, 41, 200-2/2, 1.6210,
1.1444; Ph, Et, Ph, S, C₁₇H₂₁NOS, 30, 213-15/4, 1.6090, 1.1789; Ph, n-C₈H₁₇, Ph,
S, C₂₃H₃₃NOS, 25, 238-40/3, 1.5670, 1.0522. The III is obtained by heating a
mixture of I and the corresponding carboxylic acid in an organic solvent in the
presence of H₂SO₄ with continuous redistillation of the water in the form of
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KUKALENKO, S. S., et al., Khim sredstva zashchityrast., vyp. 1, Moscow, 1970, pp 256-262

the azeotrope (R, R^{III}, X, the molecular formula, the yield in %, the melting point in °C or the boiling point in °C/mm, n_D²⁰, d₄²⁰ are given): 2-ClC₆H₄, CCl₃, O, C₁₁H₉Cl₅O₃, 42, 184-5/3, 1.5401, 1.4731; 4-ClC₆H₄, CH₂Cl, O, C₁₁H₁₁Cl₃O₃, 58, 180-1/3, 1.5385, 1.3823; 4-ClC₆H₄, Et, O, C₁₂H₁₄Cl₂O₃, 51, 160-1/5, 1.5194, 1.2471; 4-ClC₆H₄, Pr, O, C₁₃H₁₆Cl₂O₃, 50, 170-2/5, 1.5180, 1.2230; 2,4-Cl₂C₆H₃: CH₂Cl, O, C₁₁H₁₀Cl₄O₃, 51, 183-5/4, 1.5493, 1.4556; 2,4-Cl₂C₆H₃, CCl₃, O, C₁₁H₈Cl₆O₃, 50, 190-3/3, 1.5510, 2.5178; 2,4-Cl₂C₆H₃, Et, O, C₁₂H₁₃Cl₃O₃, 46, 178-80/2, 1.5380, 1.3465; 2,4-Cl₂C₆H₃, Pr, O, C₁₃H₁₅Cl₃O₃, 40, 183-90/2, 1.5253, 1.3103; Ph, Me, S (IIIa), C₁₁H₁₃ClO₂S, 57, 166-9/3, 1.5520, 1.2203; Ph, Et, S, C₁₂H₁₅-ClO₂S, 50, 163-5/3, 1.5402, 1.1751; Ph, Pr, S, C₁₃H₁₇ClO₂S, 42, 183-5/8, 1.5335, 1.1546; Ph, CH₂Cl, S, C₁₁H₁₂Cl₂O₂S, 40, 178-80/2, 1.5740, 1.2900; Ph, CCl₃, S, C₁₁H₁₀Cl₄O₂S, 40, 215-20/34, 1.5650, 1.2528. Ten grams of SO₂Cl₂ are added to 14 grams of IIIa in 30 ml of dry CCl₄ in one hour at 20-25°, the mixture is held for 5 hours at 20°, separating 6.5 grams of III(R = 4-ClC₆H₄, R^{III} = Me, X = S).

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KUKALENKO, S. S., et al., Khim sredstva zashchitvrast., vyp. 1, Moscow, 1970, pp 256-262

$C_{11}H_{12}Cl_2O_2S$, yield 41%, boiling point, $138-40^{\circ}/2$, n_D^{20} 1.5785, d_4^{20} 1.2812.

Fifteen grams of $POCl_3$ are added to 20.22 grams of Ib; the mass is mixed for 5 hours at 60° , separating 19 grams of VI (R = Ph, X = S), $C_9H_{10}Cl_2S$, yield 86.4%,

boiling point $122-4^{\circ}/2$, n_D^{20} 1.5830, d_4^{20} 1.2591. Thirteen grams of $SOCl_2$ are dropped into a mixture of 22 grams of II and 13 grams of C_5H_5N at $-20-0^{\circ}$; the mass is held for 6 hours at 100° , 300 ml of dilute HCl is added, it is extracted with ether, the ether layer is washed with water and a sulfur solution, it is dried, yielding 19 grams of IV (R = 4- ClC_6H_4 , X = O), $C_9H_9Cl_3O$, yield 79.80,

boiling point $133.5-4^{\circ}/1$, n_D^{20} 1.5527, d_4^{20} 1.3455. The IV is obtained analogously (X = O) (R, the molecular formula, the yield in %, the boiling point in $^{\circ}C/mm$, n_D^{20} , d_4^{20} are given): Ph, $C_9H_{10}Cl_2O$, 82.2, $106/1$, 1.5417, 1.2429; 2,4-

$Cl_2C_6H_3$, $C_9H_8Cl_4O$, 65, $145-7/1$, 1.5629, 1.4317; 2,4,5- $Cl_3C_6H_2$, $C_9H_7Cl_5O$, 50, $158-61/1$, 1.5775, 1.5250. Thirty-six milliliters of 30% H_2O_2 are added to a mixture of 18 grams of Ib and 43 ml of ice AcOH; the mixture is heated for 5 hours at $50-75^{\circ}$, isolating 20 grams of 1-phenylsulphonyl-3-chloropropanol, yield 95%, melting point 69° (petroleum ether). The I-IV have herbicidal and fungicidal activity.

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USSR

UDC 547.661.732.51

KUKALENKO, S. S., and KARGAPOLOVA, F. V., All Union Scientific Institute of Chemical Plant Protective Agents

"Chemistry of Organic Pesticides. II. Chloromethylation of 3-Arylbutyric Acids and Some of Their Properties"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 9, Sep 71, pp 1816-1819

Abstract: In a search for new pesticides, chloromethylated 3-arylbutyric acids were synthesized. A mixture of 3-phenylbutyric acid, 30% formaldehyde and concentrated hydrochloric acid was saturated with gaseous HCl at 20-25° and then poured into ice water; 3-(4-chloromethylphenyl) butyric acid (I), m. p. 113-114° crystallized. 3-(2-Methyl-4-chloromethylphenyl)-butyric acid, m. p. 94-95° was similarly obtained. (I) reacts with thionyl chloride to yield an acid chloride, b. p. 135-136°/3 mm. d_4^{20} 1.1211, n_D^{20} 1.5444, which when treated with butylamine in absolute ether gave a butylamide of (I), m. p. 77-78°. Refluxing (I) with ammonium thiocyanate and anhydrous acetone gave 3-(4-thiocyanylmethylphenyl)butyric acid, m. p. 62-63°. Compound (I) reacted with potassium diethyl dithiophosphate, to give 3-(4-diethyldithiophosphorus methylphenyl) butyric acid, a viscous oil, d_4^{20} 1.2068, n_D^{20} 1.5443. Refluxing (I) with

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KUKALENKO, S. S. and KARGAPOLOVA, F. V., Zhurnal Organicheskoy Khimii, Vol 7, No 9, Sep 71, pp 1816-1819

thiourea in anhydrous acetone gives 3-(4-isothiuroniummethylphenyl)butyric acid hydrochloride, m. p. 250°. Similarly the aminomethylphenyl, formylphenyl-, and carboxyphenyl derivatives were obtained, mp 230°, 27-29°, and 204°, respectively.

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1/2 020

UNCLASSIFIED

PROCESSING DATE—30OCT70

TITLE—EXAMINATION OF TRANSAMIDINASE AMIDINOTRANSFERASE ACTIVITY IN THE
BLOOD SERUM OF DOGS WITH EXPERIMENTAL PANCREONECROSIS -U-

AUTHOR—(03)—MARDASHEV, S.R., KARELINA, A.A., KARGASHIN, I.A.

COUNTRY OF INFO—USSR

SOURCE—PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970,
VOL 14, NR 3, PP 8-11
DATE PUBLISHED—70

SUBJECT AREAS—BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS—PANCREATITIS, TRANSFERASE, ENZYME ACTIVITY, NECROSIS,
DIAGNOSTIC MEDICINE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED

PROXY REEL/FRAME—3001/1923

STEP NO—UR/0396/70/014/003/0008/0011

CIRC ACCESSION NO—AP0127324

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127324

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS WORK WAS DONE ON DOGS WITH HEMORRHAGIC PANCREONECROSIS CAUSED BY THE ADMINISTRATION OF BILE INTO THE PANCREATIC DUCT. TRANSAMIDINASE (AMIDINOTRANSFERASE) ACTIVITY WAS REVEALED IN THE BLOOD OF THESE DOGS 6 TO 12 HOURS AFTER THE BEGINNING OF PANCREONECROSIS. IN CASE OF PANCREATITIS CAUSED BY THE ADMINISTRATION OF SODIUM TAUROCHOLATE WITH TRYPSIN INTO THE PANCREATIC DUCT, PANCREONECROSIS OCCURRED COMPARATIVELY LATE AND TRANSAMIDINASE WAS REVEALED IN THE BLOOD 18 HOURS AFTER THE ONSET OF THE AFFECTION.

FACILITY: KAFEDRA BIOKHMII I MOSKOVSKOGO MEDITSINSKOGO INSTITUT.
FACILITY: IM. I. M. SECHENOVA I LABORATORIYA ENZIMOLOGII INSTITUTA BIOMEDKHMII AMN SSR, MOSKVA.

UNCLASSIFIED

KARGIN, B.A.

NR 60572
19 APR 73

(2)

SCATTERING OF THE δ -PULSE FROM A PENCIL BEAM IN THE SEA
(Article by A. M. Gurfink and B. A. Kargin, Leningrad, Optika
Doklady Akademiya Nauk, 1972, Izdatel'stvo Nauka, 1972, pp 02-
70)

In investigations of non-stationary light fields arising during the work of sighting and location systems, an important place is occupied by the question of the propagation of δ -pulse from a narrowly directed radiation source. (The data on pulse different from a δ -pulse, it is sufficient during an impinging an operation of integration of the type of taking with the introduction of the scattering function of the δ -pulse. This is much more precise and simpler than modelling a signal extended in time.)

A considerable number of theoretical and experimental works have recently appeared in which studies have been made of the laws of light fields arising during the illumination of scattering and absorbing media by short narrow directed signal (1-3). However, with reference to specific conditions of scattering of δ -pulse from a narrowly directed radiation source in the sea is investigated, the main attention being given to the time and angular structure of the light field.

Precise analytical solution of the equation of radiation transfer for a stationary and non-stationary narrow beam with a strongly prolate indicatrix of scattering is very unyielding and little suited for practical purposes. Therefore the main importance is acquired by numerical methods of computation, and especially the Monte-Carlo method, which also is used in the paper.

In solving the posed task the following stochastic model of light propagation was adopted: radiative energy is transferred by a proton flux, the motion of which can be considered

USSR

UDC 621.373.826:621.396

ZEGE, E. P., IVANOV, A. P., KATSEV, I. L., KARGIN, B. A.,
KUZNETSOV, S. V., and MIKHAYLOV, G. A.

"Some Problems of Optical Pulse Radar in Natural Dispersing Formations"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl.
(Tenth All-Union Conference on the Propagation of Radio Waves;
Report Theses--collection of works) "Nauka," 1972, pp 337-341 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10B440)

Translation: A method is given for computing the signal/noise ratio of an optical radar system combining receiver and transmitter, under the condition that the signal is propagated in a medium characterized by the probability Λ of photon survival. With increasing distance between the object and the transceiver, the signal/noise ratio varies according to the law

$$\eta \sim \sqrt{r} \exp -(+\chi -1 + \Lambda)r,$$

where r is the distance between the object and the radar and χ is the eigenvalue of the characteristic equation. Bibliography of five. A. I.

USSR

UDC 621.373.826:550.3

IVANOV, A. P., KARGIN, B. A., KUZNETSOV, S. V., and SKRELIN, A. L.

"Propagation of Short Light Pulses in the Upper Layers of the Atmosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 333-336 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10D353)

Translation: Results are given of an analysis, by the Monte-Carlo method, of the radiation of a laser scattered back by the upper layers of a nonuniform atmosphere. The material obtained was used to estimate the signal/noise ratio in the observation of distant objects. Bibliography of one. A. L.

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* USSR

UDC 541.15

SUKHOV, F. F., SLOVOKHOTOVA, N. A., KARGIN (deceased), V. A., Institute of Physical Chemistry imeni L. Ye. Karpov

"The Mechanism of Radiation-Induced Dehydrochlorination of Polyvinylchloride"

Moscow, Khimiya Vysokikh Energiy, Vol 5, No 4, Jul-Aug 71, pp 364-365

Abstract: A very broad band in the infrared spectrum, previously observed during vacuum irradiation of PVC is caused partly by the formation of HCl complexes with oxygen-bearing impurities in the starting polymer. The fact that the 2300 cm^{-1} band does not reach maximum intensity until very high dosages indicates that the polymer is continuing to accumulate some light-quenching particles near this band regardless of the presence of oxygen in them. The fact that part of the absorption in the 2300 cm^{-1} band disappears when the irradiated polymer is heated to 200°K suggests that the particles disappearing at 200°K must have a structure similar to HCl complexes with ethers and carbonyl groups, and further that this disappearance is caused by CH valence oscillations in the carbonium ion $\sim\text{CH}_2-\overset{+}{\text{C}}\text{H}-\text{CH}_2\sim$. Spectral studies confirmed the proposal that the 2300 cm^{-1} band is related to the ion pair

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SUKHOV, F. F., et al., Khimiya Vysokikh Energiy, Vol 5, No 4, Jul-Aug 71,
pp 364-365

$\sim \text{CH}_2 - \overset{+}{\text{C}}\text{H} - \text{CH}_2 \sim \dots \text{Cl}^-$; PVC and IPC alone (of isopropyl chloride, propyl chloride, tert-butyl chloride and polyvinylidenechloride and PVC) exhibited a broad, intensive band at 2300 cm^{-1} .

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MONOMERS WITH CARBONYL OR NITRILE GROUPS WITH METALS
SOME REACTIONS OF THE RESULTING ANIONRADICALS -U-
AUTHOR-(05)-PANASENKO, A.A., GOLUBEV, V.B., ZUBOV, V.P., KABANOV, V.A.,
KARGIN, V.A.

COUNTRY OF INFO-USSR

SOURCE-VYSOKOMOL. SOEDIN., SER. A 1970, 1294, 865-72

DATE PUBLISHED-70

SUBJECT AREAS-CHEMISTRY

TOPIC TAGS-MONOMER, CARBONYL RADICAL, NITRILE, SODIUM, MAGNESIUM,
ACRYLATE, ACETONE, BENZOIC ACID, FREE RADICAL, OLIGOMER

CONTROL MARKING-NO RESTRICTIONS

DOCUMENT CLASS-UNCLASSIFIED

PROXY REEL/FRAME-2000/0683

CIRC ACCESSION NO-AP0124355

STEP NO-UR/0459/70/012/004/0865/0872

UNCLASSIFIED

272 022

CIRC ACCESSION NO—AP0124355

UNCLASSIFIED

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE VAPORS OF NA OR MG WERE
 CONDENSED ON A SURFACE, COOLED WITH LIQ. N, TOGETHER WITH THE VAPORS OF
 ME METHACRYLATE, ME ACRYLATE, ME BUTYRATE, ET BENZOATE, ACH, ETCHO, ISO
 PRCHO, TERT BUCHO, ACROLEIN, ACETONE, H SUB2 C:CHCN, H SUB2C:CMECN, OR
 ETCN. THE CONDENSATE CONTAINED FREE RADICALS. THE REACTIONS OF THESE
 MONOMERS WITH NA OR MG GAVE ANION RADICALS, SUCH AS (ME SUB2 CO), WHICH
 INITIATED THE OLIGOMERIZATION BY ANIONIC MECHANISM. FACILITY:
 MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

TITLE—REACT

USSR

UDC: 541.49:541.6

DAVYDOVA, S. L., PLATE, H. A., ~~KARGIN, V. A., deceased~~

"Synthesis and Chemical Conversions of Metal-Containing Macromolecules"

Moscow, Uspekhi Khimii, Vol 39, No 12, Dec 70, pp 2256-2286

Abstract: The article is a survey covering the most important papers on synthesis and chemical conversions of metal-containing polymers of various types. In this review, the term metal-containing polymer compounds means organometallic polymers with organic principal chains in which there is a direct carbon-metal bond (regardless of the type of metal), salt-like compounds, particularly those with macromolecule-oxygen-metal bonds, and also complex polymer compounds which contain coordination bonded atoms of 3d-transition metals. Where possible, the reactivities of the metal-containing macromolecules and their low-molecular analogs are compared. The survey mentions unsuccessful attempts at synthesizing metal-containing macromolecules and their conversion products; papers in which the authors assumed synthesis of these compounds from the change in color of the reaction mixture alone. The article contains the following sections: 1. Introduction; 2. Organometallic polymers -- derivatives of metals of groups I, II and III. Use of lithium-containing polymers for initiating polymerization and synthesizing polyfunctional polymers; 1/2

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DAVYDOVA, S. L., et al., Uspekhi Khimii, Vol 39, No 12, Dec 70, pp 2256-2286

3. Organometal polymers -- derivatives of heavy metals. Metallized polymers and stabilization; 4. Complexes of transition metals with macromolecular ligands: a. reactions with participation of the metal-ligand bond; b. reactions of the coordinated macromolecule; 5. Factors which determine the properties of various types of polymer-metal chemical bond; 6. Peculiarities of chemical conversions of metal-containing macromolecules due to their polymer nature.

2/2

1/2 026 UNCLASSIFIED PROCESSING DATE--2306170
TITLE--ROLE OF THE COOPERATIVE INTERACTION OF GROWING CHAINS AND
MACROMOLECULAR MATRIXES DURING POLYMERIZATION -U-
AUTHOR--(05)-OSADA, YE., ANTIPINA, A.D., PAPISOV, I.M., KABANOV, V.A.,
KARGIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR, 1970, 191(2), 379-402 (PHYS CHEM)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MACROMOLECULE, METHACRYLIC ACID, POLYMERIZATION, HYDROGEN
BONDING, CHEMICAL REACTION RATE, MOLECULAR INTERACTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/1127 STEP NO--UR/0020/70/191/002/0379/0402
CIRC ACCESSION NO--AT0119981
UNCLASSIFIED

2/2 026

. UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0119981

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. K SUB2 S SUB2 O SUB8 INITIATED POLYMN. OF METHACRYLIC ACID (I) IN AQ. MEDIA AT 50DEGREES IN THE PRESENCE OF POLYETHYLENE GLYCOL (II) OF VARIOUS MOL. WTS. WAS STUDIED TO ESTABLISH THAT THE PROPOSED COOPERATIVE INTERACTION BETWEEN THE GROWING POLY(METHACRYLIC ACID) (III) CHAIN AND THE II MATRIX AROSE FROM H BONDING BETWEEN CO SUB2 H GROUPS AND II O ATOMS. THE POLYMN. RATE OF I FELL GREATER THAN 10 TIMES AS II MOL. WT. INCREASED FROM SIMILAR TO 100 TO SIMILAR TO 10,000. LOW MOL. WT. II DID NOT FORM STRONG COMPLEXES WITH III AS SHOWN BY INDEPENDENCE OF THE REDUCED VISCOSITY OF III IN THE PRESENCE OF II ON II MOL. WT. LESS THAN 1000. THE INITIAL RATE WAS INDEPENDENT OF II CONC. APPARENTLY, III MUST ATTAIN SUFFICIENT LENGTH FOR COOPERATIVE INTERACTION WITH II BEFORE POLYMN. CONTINUES ON THE MATRIX. AFTER ATTAINING A 3-4PERCENT YIELD (BASED ON II) OF III OR ADDING THE CALCD. AMT., THE POLYMN. RATE INCREASED TO THAT OBSD. IN THE ABSENCE OF II. AT HIGH PH, WHERE MONOMER AND III CHAINS WERE IONIZED, THE REACTION RATES IN THE PRESENCE AND ABSENCE OF II COINCIDE; BUT WITH LOWERING OF PH, THE RATE INCREASED INSIGNIFICANTLY IN THE PRESENCE OF II WHILE THE RATE IN THE ABSENCE OF II INCREASED. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0052528

Abstracting Service:

CHEMICAL ABST. 5-7c

Ref. Code:

4R 0459

KARGIN V.A.

101288s Theory of necking during polymer elongation. An-
 drianova, G. P.; Kargin, V. A. (Inst. Neftekhim. Sin. im. Top-
 chieva, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1),
 3-9 (Russ). A theory of necking was developed in terms of the
 free vol. theory. The theory was based on 2 assumptions: (1)
 the glass transition temp. (T_g) had a certain const. value relative
 to free vol. regardless of whether the resulting free vol. was due to
 a change in temp. or external stress; (2) the change in sample vol.
 during deformation below T_{g0} (where T_{g0} is T_g without stress) re-
 flected the total increase in free vol. Increasing the stress low-
 ered T_g , and if the drawing was carried out below T_{g0} , necking
 occurred when the stress was great enough to lower T_g from T_{g0}
 to the operating temp. CKJR

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REEL/F.RAME
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ic. Nr. **AT0100197** - Abstracting Service:
- CHEMICAL ABST.

Ref. Code

6750 4R 0020

- 111989k Highly elastic deformation of 1,4-butanediol dimethacrylate-hexyl methacrylate copolymer. Karpin, V. A.; Khalikov, D. Kh.; Shibaev, V. P.; Plate, N. A.; Zemanovskaya, A. F. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(2), 376-9 [Phys Chem] (Russ). An attempt was made to det. the values of the individual terms of the elastic stretching force $f = (\partial H / \partial \lambda)_{P,T} - T(\partial S / \partial \lambda)_{P,T} = (\partial H / \partial \lambda)_{P,T} + T(\partial f / \partial T)_{P,\lambda}$ where λ = the degree of stretching, H = enthalpy, S = entropy, P = stress, and T = the temp.; as well as f_i/f , where f_i = the energy component of f , for 1,4-butanediol dimethacrylate-hexyl methacrylate copolymer (I). The stress relaxation and thermoelastic properties of I films ($30 \times 5 \times 1$ mm) were measured with a special dynamometer (M. E. Misюреvich, 1969). The f was almost identical at high and low temps. This, together with the absence of residual deformation, indicated the complete reversibility of the highly elastic deformation. However, despite the fact that $(\partial f / \partial T)_{P,\lambda}$ for I at $\lambda > 1.10$ was pos., f was not directly proportional to T . DBJR -

REEL/FRAME

19841579

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Acc. Nr.

AP0048828

Abstracting Service:
CHEMICAL ABST.

Ref. Code

UR0459

5-70

90933v Adsorption behavior of crystalline polyester and polyamides in a wide temperature range. Bogaevskaya, T. A.; Gatovskaya, T. V.; Kargin, V. A. / Fiz.-Khim. Inst. im. Karpova, Moscow, USSR. Vysokomol. Soedin., Ser. A 1970, 12(1), 243-7 (Russ). The adsorption properties of poly(ethylene sebacate) (I), polycaprolactam (II), and hexamethylenediammonium adipate-hexamethylenediammonium sebacate-II copolymer (III) were investigated at 30-225°. The adsorption of EtOAc by I films was described by hyperbolic isotherms, indicating a strong interaction between I and EtOAc leading to increased flexibility and mobility of the individual structural elements. Significant structural changes were detected at the same temp. at which "capillary condensation" of the sorbate vapors is obsd. Structural transformations in this case also apparently occurred via melting of material with low ordering. Decompn. of the supramol. structure occurred at >95°. The melt of the cryst. polymer was not a homogeneous, mol. dispersed system but contained ordered regions. Little adsorption (<1%) of n-hexadecane by II was obsd. from 130-230°.

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AP0048828

indicating that II is densely packed with few defects in its supra-
mol. structure. II adsorbed 8-9% *n*-decyl alc. (IV) at 130-225°
indicating weak interaction between II and IV. "Capillary con-
densation" was not obsd. with II apparently because of its homo-
geneity and lack of flaws. III adsorbed IV much more than II at
all temps. (130-225°), indicating that it had more defects in its
supramol. structure and had more loosely packed structural ele-
ments. DBJK J

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Acc. Nr. **AP0048842**

Abstracting Service:
CHEMICAL ABST.

5-70

Ref. Code
UR0459

90929y Effect of the flexibility of the main chain on the structure of crystalline polymers and copolymers with long side branches. Shibaev, V. P.; Petrukhin, B. S.; Plate, N. A.; Kargin, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 140-8 (Russ). X-ray diffractometric data, thermogravimetry, and detns. of m.p., entropy (ΔS) and enthalpy (ΔH) of melting show that in atactic or isotactic title polymers (I) the character of the side chain packing is detd. by the flexibility of the main chain. Poly(vinyl stearate), poly(*n*-heptadecyl acrylate), poly(*n*-octadecyl acrylate), and poly(hexadecyl acrylate) have relatively high m.p., ΔS , ΔH , and 2-layer side chain packing. Poly(hexadecyl methacrylate) and hexadecyl acrylate-iso-Pr acrylate copolymer have relatively low m.p., ΔS , ΔH , and single-layer side chain packing. All I have hexagonal crystal structure. CPJR

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REEL/FRA
19800609

Acc. Nr:

AP0052504

Abstracting Service:
CHEMICAL ABST. 5-7c

Ref. Code:

4X0960

2

101133u Polymerization of methyl methacrylate in the presence of sulfuric and phosphoric acids. Vengirova, N. A.; Gerasimova, V. R.; Zubov, V. P.; Kabanov, V. A.; Karzin, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 48-50 (Russ). The photopolymerization of Me methacrylate (I) in the presence of H₂SO₄ or H₃PO₄ was studied at -10 to +100°. Polymn. in the I-H₂SO₄ system was initiated by uv light ($\lambda = 313 \text{ m}\mu$) without a sensitizer, whereas polymn. in the I-H₃PO₄ system was initiated by uv light without a sensitizer, as well as in the presence of benzil at $\lambda = 365 \text{ m}\mu$. The polymn. rates and the mol. wts. of poly(Me methacrylate) (II) increased with increasing I-acid ratio, presumably due to a chem. activation of the monomer or the propagating macroradical by the acids. Max. polymn. rate and mol. wt. of II were obtained in the presence of 80% H₂SO₄, suggesting that the chain termination rate const. varied in the presence of H₂SO₄. The polymn. rate of I in the presence of either acid obeyed the Arrhenius equation; the activation energy was 4.9 kcal/mole (in the presence of H₂SO₄) and 5.0 kcal/mole (in the presence of H₃PO₄). The microtacticity of II was essentially independent of the polymn. temp., indicating that the acid bound to the reactive center participated in chain propagation. CKJR

REEL/FRAME
19821145

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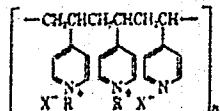
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KARGIN V.A.

Acc. Nr: AP0042509 Abstracting Service: 4-76 Ref. Code: U.R.0459
CHEMICAL ABST.

86675v Synthetic polymeric analogs of enzymes with ester-ase activity. Kirsh, Yu. E.; Pluzhnikov, S. K.; Shomina, T. S.; Kabanov, V. A.; Kargin, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Vysokomol. Soedin., Ser. A* 1970, 12(1), 188-204 (Russ). Polymeric catalysts (I, R = Me, Et, Pr, iso-Pr, Bu, iso-Bu, isoamyl, PhCH₂, and X = Cl, Br, I) were prepd. by partial N-alkylation of poly(4-vinylpyridine) with the corresponding alkyl halide at 60-70° in 10:1 MeNO₂-MeOH. I had high



catalytic activity and selectivity in the hydrolysis of esters such as p-NO₂C₆H₄OAc. The active centers for the catalysis were the unsubstituted pyridine rings. The catalytic activity of an unalkylated link was 10⁻⁶-10⁻³ times greater than that of the simplest analog, 4-ethylpyridine. The kinetic behavior of I was similar to that of α-chymotrypsin. The kinetic parameters for each step of the hydrolysis were calcd., and their dependence on the nature of

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AP0042509

the substituents and macromol. dimensions were detd. The catalytic activity of I was a function of their shape in soln. and the type of solvent. The high catalytic activity of I was explained by the development of local hydrophobic cavities, each of which contains a nucleophilic group (pyridine ring) and is surrounded by hydrophobic substituents.

DEJR

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19760475

1/2 053 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--MODIFICATION OF THE SUPRAMOLECULAR STRUCTURE AND MECHANICAL
BEHAVIOR OF POLYCAPROLACTAM BY PHYSICAL METHODS -U-
AUTHOR--(04)--KARGIN, V.A., SOGOLOVA, T.I., SHAPUSHNIKOVA, T.K., KORSHUNOVA,
N.T.
COUNTRY OF INFO--USSR *K*
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 649-55
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS
TOPIC TAGS--MOLECULAR STRUCTURE, PLASTIC MECHANICAL PROPERTY, CAPROLACTAM,
POLYMERIZATION, PLASTIC FABRICATION, MOLECULAR WEIGHT, POLYMER
STRUCTURE, NUCLEATION, FILLER, POLYMER PHYSICAL PROPERTY, GRAPHITE,
ALUMINUM OXIDE, KAOLIN, TALC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0298 STEP NO--UR/0459/70/012/003/0649/0655
CIRC ACCESSION NO--AP0111492
UNCLASSIFIED

2/2 053

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYS. PROPERTIES (IMPACT STRENGTH (I), HARDNESS (H), BENDING STRENGTH (B), RUB RESISTANCE (R)), OF POLYCAPROAMIDE (I), OBTAINED BY THE POLYMN. DIRECTLY IN THE MOLD WERE EFFECTIVELY REGULATED BY CHANGING THE TEMP. OF THE MOLDING MIXT. PREPN. THE MIXT. CONTAINED THE MONOMER, 0.3 MOLE PERCENT (ON MONOMER WT.) NA METAL, AND 0.3 MOLE PERCENT N,ACETYLCAPROLACTAM (POLYMN. ACTIVATOR) AND WAS PREPD. AT 110DEGREES-94DEGREES. THE MOLDING WAS CARRIED OUT 1.5 HR AT 180 PLUS OR MINUS 2DEGREES AND THE COOLING RATE WAS 2DEGREES-MIN. WHEN THE POLYMN. MIXT. WAS PREPD. AT 110-25DEGREES, I HAD HIGH I BUT LOW H AND B; 133-7DEGREES MIXT. PREPN. TEMPS. INCREASED H AND B, BUT DECREASED I; 185-97DEGREES MIXT. PREPN. TEMPS. INCREASED R CONSIDERABLY. THE MIXT. PREPN. TEMPS. NOT ONLY AFFECT THE MOL. WT. OF I, BUT ALSO ALTER ITS STRUCTURE. THE ADDN. TO THE POLYMN. MIXT. OF 0.5 WT. PERCENT POWD. PBO, AL SUB2 O SUB3, TiO SUB2, GRAPHITE, TALC, OR KAOLIN AS THE NUCLEATION CENTERS ALSO CHANGES I, H, B, AND R. THE USE OF ACTIVE SUPPORTS (TEFLON, GLASS, AL FOIL) AS THE MOLD LINGS ALSO MODIFIES THE STRUCTURE AND THE PHYS. PROPERTIES OF I.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--POLYMERS AND COPOLYMERS BASED ON VINYLPHOSPHONIC ACID
DIETHYLENIMIDE -U-
AUTHOR--(04)-NADZHIMUTDINOV, SH., KARGIN, V.A., USMANOV, KH.U., BRUEVICH,
G.YU.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 260,887
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70

K

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMER, ORGANIC PHOSPHORUS COMPOUND, PHOSPHONIC ACID,
IMIDE, CHEMICAL PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0241

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0111435

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AA0111435

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. VINYLPHOSPHONIC ACID
DIETHYLENIMIDE WAS POLYMD. OR COPOLYMD. WITH VINYLPIRROLIDINONE IN THE
PRESENCE OF RADICAL POLYMN. INITIATORS DURING HEATING TO PROVIDE BIOL.
ACTIVE PRODUCTS.

UNCLASSIFIED

1/2 049 UNCLASSIFIED PROCESSING DATE--02JCT70
TITLE--SUPRAMOLECULAR STRUCTURE OF BLOCK POLYSTYRENE AND POLYCARBONATE -U-
AUTHOR--(05)--GERASIMOV, V.I., KARGIN, V.A., NOVIKOV, N.P., SALUYENYA, S.S.,
CHERNYAVSKAYA, O.A.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 382-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--MOLECULAR STRUCTURE, LASER RADIATION, POLYSTYRENE RESIN,
POLYCARBONATE, X RAY DIFFRACTION, ELECTRON MICROSCOPY, IR SPECTROSCOPY,
POLYMER STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1989/0253

STEP NO--UR/0459/70/012/002/0382/0387

CIRC ACCESSION NO--AP0106909

UNCLASSIFIED

2/2 049

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106909

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LASER IRRADN. OF RELATIVELY LOW ENERGY CAUSES THE SEPN. BETWEEN MOL. AGGREGATES (N., 1968); HIGHER ENERGY LASER BEAMS PRODUCE MICROFISSURES. X RAY DIFFRACTOMETRY, ELECTRON MICROSCOPY, AND IR SPECTROSCOPY OF BLOCK POLYSTYRENE (I) AND POLYCARBONATE (II) SAMPLES BEFORE AND AFTER LASER IRRADN. SHOWED THAT BOTH ARE AMORPHOUS; I HAS A GLOBULAR AND II A FIBRILLAR STRUCTURE.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--ALDEHYDE AND KETONE POLYMERIZATION -U-
AUTHOR--(031)-KABANOV, V.A., KARGIN, V.A., ZUBOV, V.P.
COUNTRY OF INFO--USSR **K**
SOURCE--U.S.S.R. 134,862
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--06JAN70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, ALDEHYDE, KETONE,
CONDENSATION REACTION, MOLECULAR WEIGHT, SEMICONDUCTOR MATERIAL, ZINC
CHLORIDE, ALUMINUM CHLORIDE, ORGANIC SEMICONDUCTOR, HEAT RESISTANT
PLASTIC, CATALYTIC POLYMERIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0128 STEP NO--UR/0482/70/000/000/0000/0000
CIRC ACCESSION NO--AA0111322
UNCLASSIFIED

2/2 034

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AA0111322

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYMERS WERE PREPD. BY THE POLYCONDENSATION OF ALIPHATIC ALDEHYDES OR KETONES HAVING ALPHA H ATOMS, SUCH AS ACETONE OR ACH, AT 100-300DEGREES. TO OBTAIN HIGH MOL. WT., HEAT RESISTANT POLYMERS WITH SEMICONDUCTOR PROPERTIES, GROUP II, III, IV, V, AND VIII METAL HALIDES, SUCH AS ZNCL SUB2 OR ALCL SJ83, WERE USED AS CATALYSTS AND WERE ADDED TO THE REACTION AS SOLNS. IN THE CORRESPONDING MONOMERS.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--09GCT70
TITLE--EFFECT OF THE FORMATION OF ION PAIRS ON RADICAL HOMO AND
COPOLYMERIZATION OF 2,METHYL,5,VINYLPYRIDINE AND
AUTHOR--(04)--GEORGYEVA, V.R., ZUBOV, V.P., KABANOV, V.A., KARGIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--DUKL. AKAD. NAUK SSSR 1970, 190(5), 1128-31
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--POLYMERIZATION, PYRIDINE, VINYL COMPOUND, SULFATE,
HETERUCYCLIC NITROGEN COMPOUND, METHANOL, COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/2013 STEP NO--UR/0020/70/190/005/1128/1131
CIRC ACCESSION NO--AT0112968
UNCLASSIFIED

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2/2 020

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0112968

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE HOMOPOLYMN. RATE (UPSILON) OF 1,2-DIMETHYL,5-VINYLPYRIDINIUM METHYL SULFATE (I) AT 50DEGREES IN H SUB2 O,MEOH MIXTS. CONTG. (ME SUB2 CCN) SUB2 N SUB2 IS FASTER THAN THAT OF THE HOMOPOLYMN. OF ITS FREE BASE (II) UNDER THE SAME CONDITIONS. THE INCREASE IN MEOH CONCN. ABOVE 70PERCENT INCREASES THE UPSILON OF I SHARPLY. THE UPSILON OF II DECREASES LINEARLY WITH MEOH CONCN. THE COPOLYMN. REACTIVITY RATIOS (R SUB1 FOR II AND R SUB2 FOR I) ALSO CHANGE WITH THE SOLVENT COMPN. (SOLVENT, R SUB1, AND R SUB2 GIVEN): MEOH, 0.58, 0.98; 4:1 MEOH:H SUB2 O, 0.54, 0.42; 1:1 MEOH,H SUB2 O 0.30, 0.01. IN MEOH (OR MEOH RICH SOLNS.), A LARGE NO. OF THE GROWING MACRO RADICALS FORMS IONIC PAIRS WITH MESO SUB4 PRIME NEGATIVE, WHICH DECREASES THE ELECTROSTATIC REPULSION BETWEEN THE PYRIDINE GROUPS IN THE TRANSITION COMPLEX III, I.E., INCREASES OF UPSILON OF I. FACILITY: MOSK. GDS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 013

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--ASCORBATE OXIDASE ACTIVITY OF A COMPLEX OF CU PRIME2 POSITIVE AND
POLY(4,VINYLPYRIDINE) PARTIALLY ALKYLATED BY BROMOACETIC ACID -U-
AUTHOR-(04)-VENGEROVA, N.A., KIRSH, YU.E., KABANOV, V.A., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSR 1970, 190(1), 131-4

DATE PUBLISHED-----70

K

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CATALYST ACTIVITY, COMPLEX COMPOUND, BROMINATED ORGANIC
COMPOUND, OXIDATION, COPPER COMPLEX, PYRIDINE, ALKYLATION, ACETIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1985/1902

STEP NO--UR/0020/70/190/001/0131/0134

CIRC ACCESSION NO--AT0101946

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0101946

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CATALYTIC ACTIVITY OF THE TITLE COMPLEX (I) IN THE OXIDN. OF ASCORBIC ACID (II) BY O WAS COMPARED WITH THAT OF CU PRIME2 POSITIVE ALONE AND ITS LOW MOL. WT. ANALOG, PYRIDINIUM BROMOACETATE (III). THE OXIDN. WAS STUDIED IN 0.02M ACETATE BUFFER AT PH 4.3 AND 25 PLUS OR MINUS 0.1DEGREE. IN THE PRESENCE OF I, THE OXIDN. RATE INCREASED, AND THE RATE WAS LESS EFFECTIVELY ACCELERATED BY THE INCREASING II CONC. THIS SUGGESTED THE FORMATION OF A MICHAELIS COMPLEX AS OBSD. IN ENZYME REACTIONS. COMPARISON OF THE I DISSOCN. CONCT. ((2.5 PLUS OR MINUS 0.5) TIMES 10 PRIME NEGATIVE3) WITH THAT OF THE CU PRIME2 POSITIVE PYRIDINE COMPLEX INDICATED THAT CU PRIME2 POSITIVE IN I WAS ASSOCD. WITH THE UNALKYLATED PYRIDINE RINGS. III HAD NO EFFECT ON THE OXIDN. OF II IN THE PRESENCE OF CU PRIME2 POSITIVE. I WAS GREATER THAN 10 PRIME3 MORE ACTIVE THAN CU PRIME2 POSITIVE ALONE. SINCE 100DMETHYLATED POLY(4,VINYLPYRIDINE) (DEGREE OF SUBSTITUTION 70PERCENT) DID NOT CHANGE THE ACTIVITY OF CU PRIME2 POSITIVE, THE HO SUB2 CCH SUB2 GROUPS OF I WERE ALSO RESPONSIBLE FOR INCREASING THE CATALYTIC ACTIVITY. THE INCREASED ACTIVITY WAS THUS ASSUMED TO BE DUE TO THE FORMATION OF ACTIVE CAVITIES CONTG. PYRIDINE RINGS SURROUNDED BY HO SUB2 CCH SUB2 GROUPS IN THE MACROMOL. COILS OF I.

UNCLASSIFIED

030

UNCLASSIFIED

PROCESSING DATE--30OCT71

TITLE--MORPHOLOGY OF SUPRAMOLECULAR FORMATIONS ARISING DURING THE BULK
POLYMERIZATION OF VINYLIDENE CHLORIDE -U-

AUTHOR--(03)-BORT, D.N., VISHNEVSKAYA, I.N., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 176-9

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--MOLECULAR STRUCTURE, POLYMERIZATION, VINYLIDENE RESIN,
ELECTRON MICROSCOPY, NITRILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0672

STEP NO--UR/0460/70/012/003/0176/0179

CIRC ACCESSION NO--AP0124344

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124344

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. IN THE BULK POLYMN. OF H SUB2
C:CCL SUB2, IN THE PRESENCE OF (ME SUB2 CCN)SUB2 N SUB2, EVEN AT
0.1PERCENT CONVERSIONS THE FORMATION OF 2 STRUCTURAL TYPES, GLOBULES AN.
PLATELETS, WAS OBSD. BY ELECTRON MICROSCOPY.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ELECTRON MICROSCOPIC STUDY OF THE MULTIAXIAL STRAIN OF
POLYPROPYLENE THIN FILMS -U-
AUTHOR--(02)-KARGIN, V.A, GORINA, I.I.
COUNTRY OF INFO--USSR *K*
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 353-8
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--ELECTRON MICROSCOPY, POLYPROPYLENE, PLASTIC FILM, MOLECULAR
STRUCTURE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1236 STEP NO--UR/0460/70/012/005/0353/0358
CIRC ACCESSION NO--AP0134910
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134910

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MULTIDIRECTIONAL DEFORMATION UP TO 130PERCENT IN THIN FILMS OF ISOTACTIC POLYPROPYLENE DID NOT CHANGE THE SHAPE OF THE SPHERULITES. FURTHER DEFORMATION CONVERTED THE SPHERULITES INTO SINGLE FIBRILS WITH CROSS SECTIONS LESS THAN OR EQUAL TO 100 ANGSTROM. FACILITY: INST. NEFTEKHIM. SIN. IM. TOPCHIEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--INFLUENCE OF THE SURFACE OF THE POLYMERIC PHASE ON THE RATE OF BULK
POLYMERIZATION OF VINYL CHLORIDE -U-
AUTHOR-(04)-MARININ, V.G., BORT, D.N., KALININ, A.I., KARGIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B, 1970, 12(5), 391-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL REACTION RATE, VINYL CHLORIDE, POLYMERIZATION,
SURFACE PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1229 STEP NO--UR/0460/70/012/005/0391/0395
CIRC ACCESSION NO--AP0134903
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONC. OF MONOMER SWOLLEN
POLY(VINYL) CHLORIDE) PARTICLES IS CONST. DURING BULK POLYMN. THE
POLYMN. RATE (W) INCREASES WITH INCREASING SURFACE AREA (A). A VS. W
RELATIONS ARE LINEAR ONLY AT HIGH W VALUES.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SELF HEALING OF CRACKS IN POLYMERS. I. EFFECT OF TEMPERATURE AND
CROSSLINKS ON THE SELF HEALING OF CRACKS IN POLY,VINYL ACETATE -U-
AUTHDR--(04)-MALINSKIY, YU.M., PROKOPENKO, V.V., IVANOVA, N.A., KARGIN,
V.A.
COUNTRY OF INFO--USSR K
SOURCE--MEKH. POLIM. 1970, 6(2), 271-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--POLYVINYL ACETATE, THERMAL EFFECT, POLYMER CROSSLINKING,
TRANSITION TEMPERATURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0914 STEP NO--UR/0374/70/006/002/0271/0275
CIRC ACCESSION NO--AP0134643
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNSTRESSED POLY(VINYL ACETATE) (I) UNDERWENT RAPID SELF HEALING AT THE APEX OF THE CRACKS AT TEMPS. CLOSE TO THE GLASS TRANSITION TEMP. AND FLOW POINT (T SUB1). THE EFFECT OF I-CROSSLINKING ON THE "REST" COEFF. (BETA) SUGGESTED THAT THE RAPID INCREASE IN BETA AND T SUB1 WAS DUE TO ENHANCED DIFFUSION AND RELAXATION. CROSSLINKING OF I LOWERED BETA AND THE TEMP. AT WHICH MAX. SELF HEALING OCCURRED. THE HIGHLY ELASTIC AND PLASTIC MECHANISMS OF SELF HEALING WERE DISCUSSED. FACILITY: NAUCH.-ISSLED. FIZ-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--STRUCTURE OF CELLULOSE ACETATE SOLUTIONS IN SOLVENT PRECIPITATING
AGENT MIXTURES -U-
AUTHOR--(104)--VOLYNSKIY, A.L., ORLOVA, T.M., BAKYEV, N.F., KARGIN, V.A.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 202-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--CELLULOSE RESIN, ACETATE, SEDIMENTATION, ELECTRON MICROSCOPY,
POLYMER STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0678 STEP NO--UR/0460/70/012/003/0202/0204
CIRC ACCESSION NO--AP0124350
UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124350

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELECTRON MICROSCOPY, DETN. OF
SEDIMENTATION CONSTS., AND VISCOSITY OF CELLULOSE ACETATE SOLNS. IN
DIOXANE CONTG. IS LESS THAN OR EQUAL TO 25PERCENT H SUB2 O OR LESS THAN
OR EQUAL TO 15PERCENT DECALIN SHOWED THAT WHEN THE CONC. OF THE
PRECIPITANT APPROACHES THE POINT AT WHICH PHASE SEPN. TAKES PLACE, THE
POLYMER MOLS. AGGREGATE, FORMING FIBRILLAR STRUCTURES. FACILITY:
MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--ELECTRON MICROSCOPIC STUDY OF THE INTERACTION OF OPPOSITELY CHARGED
POLYELECTROLYTES IN SOLUTIONS -U-
AUTHOR-(03)-ROGACHEVA, V.B., MIRLINA, S.YA., KARGIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 340-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ELECTROLYTE, ELECTRON MICROSCOPY, POLYMER, ACRYLIC ACID, VINYL
COMPOUND, PYRIDINE, BROMINATED ORGANIC COMPOUND, POLYMER STRUCTURE,
STYRENE, SULFONIC ACID

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3007/0990

STEP NO--UR/0460/70/012/005/0340/0343

CIRC ACCESSION NO--AP0136420

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136420

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REACTION OF POLY(ACRYLIC ACID) (I) WITH POLY (4,VINYL,1,ETHYLPYRIDINIUM BROMIDE) IN AQ. SOLNS. GAVE GLOBULAR STRUCTURES, WHEREAS IN AQ. SOLNS. CONTG. ETOH OR DMF, CROSSLINKED FIBRILLAR STRUCTURES WERE FORMED. NEUTRALIZATION OF POLY (4,VINYL,1,BENZYLPIRIDINIUM HYDROXIDE) WITH I OR POLY(STYRENESULFONIC ACID) AFFORDED ELONGATED UNITS COMPOSED OF A LARGE NO. OF MACROMOLS, BUT HAVING NO DEFINITE STRUCTURE. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--FORMATION OF SUPRAMOLECULAR STRUCTURES IN FILMS OF CRYSTALLINE
POLYMERS -U-
AUTHOR--(05)-KARGIN, V.A., SOGOLOVA, T.I., BELYY, V.A., MIRONOVICH, L.L.,
SAVKIN, V.G.
COUNTRY OF INFO--USSR *K*
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 215-18
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--MOLECULAR STRUCTURE, CRYSTALLINE POLYMER, CAPROLACTAM,
CRYSTALLIZATION, SPHERULITE, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1675 STEP NO--UR/0460/70/012/003/0215/0218
CIRC ACCESSION NO--AP0125296
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE—30OCT70

CIRC ACCESSIGN NO--AP0125296

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF SUPRAMOL. STRUCTURES IN CRYSTL. POLYCAPROLACTAM (I) DEPENDED ON THE PRESENCE OF HOMOGENEOUS AND HETEROGENEOUS NUCLEATION AGENTS IN I MELTS, THE RATIO OF WHICH WAS A FUNCTION OF CRYSTN. TIME AND CRYSTN. TEMP. HETEROGENEOUS CRYSTN. SITES WERE MORE HEAT RESISTANT THAN HOMOGENEOUS ONES. SPHERULITES FORMED ON HETEROGENEOUS CRYSTN. SITES HAD A MORE ORDERED CRYST. STRUCTURE.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--BEHAVIOR OF SPHERICAL POLYMER PARTICLES UNDER CONDITIONS OF STRAIN
DEFORMATION -U-
AUTHOR--(04)--KARGIN, V.A., SOGOLOVA, T.I., SHAPOSHNIKOVA, T.K., TOPURIDZE,
N.S.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(4), 906-10
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--NATURAL RUBBER, BUTADIENE STYRENE RESIN, ELONGATION, MATERIAL
DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1685

STEP NO--UR/0459/70/012/004/0906/0910

CIRC ACCESSION NO--AP0125306

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125306

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF THE SPHERICAL DROPLETS OF NATURAL RUBBER LATEX OR BUTADIENE STYRENE COPOLYMER LATEX TO PARTIALLY EVAPD. SOLNS. OF THESE RUBBERS IN C SUB6 H SUB6, FOLLOWED BY EVAPN. GAVE MODELS OF FILMS CONSISTING OF AMORPHOUS PHASE AND LARGE (5-300 MU DIAM.) GLOBULES. THE OPTICAL MICROSCOPY OF THESE MODELS SUBJECTED TO ELONGATING STRESSES SHOWED THAT THE DEFORMATION OF THE GLOBULES (CONTINUOUS OR STEPWISE) DEPENDS ON THEIR NO., DISTRIBUTION, AND INTERACTIONS WITH THE AMORPHOUS PHASE. FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 541.13:541.515:543.422.27

IL'YASOV, A. V., KARGIN, YI. M., MORZOVA, I. D., CHERNOKAL'SKIY, B. D., VAFINA, A. A., MEL'NIKOV, B. V., GEL'FOND, A. S., MUKHTAROV, A. SH., and GALYAMETDINOV, YU. G., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR, and Kazan' Chemical-Technological Institute Imeni S. M. Kirov

"Electrochemically Generated Free Radicals. 9 Communication. Reduction of Some Nitrophenylarsine Derivatives and EPR Spectra of Their Anion Radicals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, pp 2174-2178

Abstract: The mechanism of polarographic reduction of nitrophenyldiethylarsines and their oxides and sulfides in an aprotic medium was studied. These compounds exhibit two reduction waves, the first one corresponding to a one-electron wave, the process being reversible. The second wave is typical of a 3e-process. A diagram for the sequential chemical processes of these compounds after the capture of second electron has been proposed. Both waves represent a stepwise oxidation of the unstable dianion of the substituted nitrobenzene; the phenyl ring -- arsenic system remains untouched in this process. Novel organoarsine anion radicals have been obtained by electrochemical reduction and studied by the EPR method. Delocalization of the unpaired electron in these anion
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USSR

IL'YASOV, A. V., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 10, Oct 72, pp 2174-2178

radicals has been investigated analyzing possible reasons for a considerable decrease of the spin density on the arsenic atom during the transition from tetracoordinated arsenic atom of the anion radicals to a tri-coordinated one.

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Free Radicals

USSR

UDC 541.13+541.515+542.941+661.718.1

IL'YASOV, A. V., ~~KARGIN, Yu. M.~~ LEVIN, Ya. A., MOROZOVA, I. D., MEL'NIKOV, B. V., VARINA, A. A., SOTNIKOVA, N. N., and GALEYEV, V. S., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Acad. of Sciences

"Electrochemically Generated Free Radicals. 6. The Reduction Mechanism of Certain Organophosphorus Compounds, and the Electron Paramagnetic Resonance Spectra of the Anion Radicals Formed"

Moscow, Izvestiya Akademii Nauk SSR, Seriya Khimicheskaya, No 4, 71, pp 770-776

Abstract: A series of organophosphorus compounds was studied in connection with their electrochemical reduction, using several methods. The electron paramagnetic method was applied in the case of electrochemically generated anion radicals of triphenylphosphine, its oxides, and the diethyl ester of β -styrylphosphonic acid.

Graphical data accompanying the paper include classical and commutated polarograms for the various compounds, and electron paramagnetic spectra for free radicals; numerical electrochemical data are given for nine organophosphorus compounds tested.

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Free Radicals

UDC 541.13+541.515

USSR

IL'YASOV, A. V., KARGIN, Yu. M., LEVIN, Ya. A., and MEL'NIKOV, B. V., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences of the USSR

"Electrochemically Generated Free Radicals. Report 5. Activation Energy of the Current-Determining Process and Subsequent Chemical Reactions"

Moscow, IAN SSSR, Seriya Khimicheskaya, No 9, Sep 70, pp 1,979-1,983

Abstract: A method is proposed for studying the mechanism of an electrochemical process and for a quantitative evaluation of kinetic parameters of the initiated or subsequent chemical reaction by measuring the activation energy of the limiting current in polarography and commutator polarography. Analysis of various special cases for both cathode and anode processes shows that secondary paramagnetic products must be taken into account in interpreting the electron paramagnetic spectra of electrochemically generated anion radicals. The method proposed in this paper was used to study the mechanism of reduction and generation of anion radicals of a number of organophosphorus and carbonyl compounds. The results are to be published in subsequent reports.

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1/2 039 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--EPR STUDIES OF THE RADIOLYSIS OF SOME ALLYL MONOMERS IN THE SOLID
STATE -U-
AUTHOR--(02)-DAKIN, V.I., KARPOV, V.L. K
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 409-15
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--EPR SPECTRUM, POLYMER, TRIAZINE, ELECTRON EFFECT, RADIATION
EFFECT, RADIOLYSIS, ETHER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1989/0250 STEP NO--UR/0459/70/012/002/0409/0415
CIRC ACCESSION NO--AP0106906
UNCLASSIFIED

2/2 039

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0106906

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA WERE OBTAINED FOR
ROAC, RO SUB2 CH SUB2 CH:CH SUB2, RO SUB2 C(CH SUB2) SUB4 CO SUB2 R, RO
SUB2 C(CH SUB2) SUB8 CO SUB2 R, O,RO SUB2 C, C SUB6 H SUB4 CO SUB2 R,
(RO) SUB3 PO, 2,4,6-TRIS(ALLYLOXY)-S-TRIAZINE, AND ROR (R EQUALS H SUB2
C:CHCH SUB2), WHICH WERE RADIOLYZED BY A BEAM OF FAST ELECTRONS AT
100DEGREEK. THE EPR SPECTRA OF THESE ETHERS AT 100DEGREEK SHOWED THE
PRESENCE OF R; AT THIS TEMP. THERE IS NO RECOMBINATION OF THESE
RADICALS. AT TEMPS. LARGER THAN 100DEGREEK POLYMERIC RADICALS CONTG.
MINUS OC TIMES HCH:CH SUB2 END GROUPS ARE PRESENT.

UNCLASSIFIED

USSR

UDC 543.544

BARKETOV, E. S., KOPYLOVA, V. D., KARGMAN, V. B., DRUSIN, M. I.
and SALDADZE, K. M., Scientific-Research Institute of Plastics,
Moscow, State Committee

"A Study of Anion-Exchange Resins with Complexing Properties"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XXV, No 3, Mar 70,
pp 440-444

Abstract: In connection with obtaining new ion-exchange materials, researchers have devoted much attention to the synthesis of selective ionites which will absorb ions of one or several elements on a selective basis. These efforts have usually been complicated with various difficulties, including the necessity for multistage synthesis.

To overcome these difficulties, the authors studied the complexing properties of new anion-exchange resins based on copolymers of N-(β -(5-vinylpyridyl-2)ethyl)amines and N, N'-di(β -(5-vinylpyridyl-2)-ethyl-substituted diamines, in connection with bivalent copper, cobalt and nickel cations.

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USSR

BARKETOV, E. S., et al., Zhurnal Analiticheskoy Khimii, Vol XXV,
No 3, Mar 70, pp 440-444

It was found that the anion-exchange resins which contained ethylene-diamine groups had the strongest complexing capability. These have a comparatively high capacity for cations, which they sorb from very dilute solutions (less than $10^{-3}N$). In addition, macroporous resins of this type showed more intense sorption kinetics than those of gel structure.

2/2

USSR

UDC 621.315.612.5

KARGOLOVA, N. P., POPLAVKO, Yu. M., ISUPOV, V. A.

"Investigation of the Anisotropy of a Piezoelectric Ceramic"

Vestn. Kiyev. politekhn. in-ta. Ser. radioelektron. (Kiev Polytechnical Institute Herald. Radio Electronic Series), 1971, No 8, pp 15-17 (from RZh-Radiotekhnika, No 12, Dec 71, Abstract No 12V646)

Translation: A study is made of the tensor of permittivity ϵ of polarized piezoelectric ceramic materials of various compositions. The anisotropy of ϵ was measured on frequencies of 1 kHz and 27.3 GHz. As was to be expected, anisotropy of ϵ at 1 kHz was observed for all investigated compositions of the ceramic. On superhigh frequencies, ϵ does not retain its anisotropy in all materials. The results are explained by means of notions of the movement of domain boundaries in an electric field. Resumé.

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1/2 031 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--DIELECTRIC ANISOTROPY OF POLARIZED FERROELECTRIC CERAMICS AT
ULTRAHIGH FREQUENCY -U-
AUTHOR--(03)-KARGOPOLOVA, N.P., POPLAVKO, YU.M., ISUPROV, V.A.
COUNTRY OF INFO--USSR **K**
SOURCE--FIZ. TVERD. TELA 1970, 12(2) 624-7
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--ANISOTROPY, DIELECTRIC PROPERTY, PIEZOELECTRIC CERAMIC, BARIUM
TITANATE, ZIRCONATE, ULTRAHIGH FREQUENCY, MICROWAVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0138

STEP NO--UR/0181/70/012/002/0624/0627

CIRC ACCESSION NO--AP0054934

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054934

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PEROVSKITE CERAMICS WERE INVESTIGATED OF THE COMPN. BATIO SUB3, BASN SUB0.05 TI SUB0.95 O SUB3, DIFFERENT MODIFICATIONS OF THE CERAMICS TSTC (RHOMBO HEDRAL TETRAGONAL BA TITANATE ZIRCONATE), AND THE CERAMIC PB SUB0.6 BA SUB0.4 N3 SUB2 O SUB6 WITH THE STRUCTURE OF TETRAGONAL K-W BRONZE. MEASUREMENTS OF THE DIELEC. CONST. EPSILON WERE CARRIED OUT AT 1 KHZ AND 27 GHZ IN WEAK FIELDS. MICROWAVE MEASUREMENT WERE CARRIED OUT BY THE WAVE RESONANCE METHOD.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ROENTGENOTHERAPY OF POSTOPERATIVE ANASTOMOSITIS -U-

AUTHOR--(02)--KANTOROVICH, I.Z., KARIBOV, YU.I.

CCOUNTRY OF INFO--USSR

SOURCE--KHIKURGIYA, 1970, NR 6, PP 43-46

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOTHERAPY, SURGERY, ARTERIAL ANASTOMOSIS, ABDOMEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3002/1768

STEP NO--UR/0531/70/000/006/0043/0046

CIRC ACCESSION NO--AP0129136

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129136

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS THE TECHNIQUE AND RESULTS OF ROENTGENOTHERAPY OF ACUTE POSTOPERATIVE ANASTOMOSITIS IN 34 PATIENTS OF WHOM IN 28 CASES A GOOD RESULT WAS ACHIEVED. AFTER THE FIRST SEANCES OF IRRADIATION THERE OCCURRED A CESSATION OF VOMITING, THE PAIN IN THE ABDOMINAL CAVITY DECREASED AND THE GENERAL STATE IMPROVED. INFLITRATES IN THE ABDOMINAL WALL REDUCED IN SIZE AND GRADUALLY DISAPPEARED. RESTORATION OF THE ANASTOMOTOTIC PATENCY WAS NOTED ROENTGENOLOGICALLY. SINGLE LOCAL DOSES OF IRRADIATION DROPPED DOWN TO 7-20 RAD, THE TOTAL DOSES DOWN TO 100 RAD. REDUCTION OF THE IRRADIATION FIELDS, SINGLE AND TOTAL DOSES OF IRRADIATION, ALTERATIONS IN THE RHYTHM OF IRRADIATION (EVERY ALTERNATING DAY) SIGNIFICANTLY SHORTENED THE TERM OF TREATMENT AND THE TOTAL RADIATION EXPOSURE OF THE PATIENTS ORGANISM. X RAY THERAPY IS AN EFFECTIVE MEANS OF TREATING POSTOPERATIVE ANASTOMOSITIS. FACILITY: RENTGENOVSKOYE OTDELENYE GURGDSKOY KLINICHESKOY OBL'NITSY NO. 1 IMENI N. I. PIROGOVA. FACILITY: RENTGENOTERANEVTICHESKIY OTDEL MOSKOVSKOGO NI RENTGENO-RADIOLOGICHESKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 577.4

KARIBSKIY, V. V.

"Setting Memory Elements to Given States and Detecting Failures in a Digital Circuit"

V sb. Tekhn. diagnostika (Technical Diagnostics — collection of works), Moscow, Nauka Press, 1972, pp 218-223 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V412)

No abstract

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- 28 -

USSR

UDC 621.565.83:428.84

GANIN, YE. A., KARICHEV, Z. R., LEBEDEV, V. F., RATNER, V. M., RAYETSKIY, A. S., SIMONOV, V. A.

"Experimental Thermoelectric Air Conditioner"

Moscow, Kholodil'naya tekhnika, No. 9, Sep 71, pp 12-15

Abstract: The thermoelectric room air conditioner developed by the authors that has thermobatteries with a coaxial flow of heat and electric current is described. The air conditioner consists of a thermoelectric battery unit, a power supply unit, and a system for automatically maintaining a given temperature level. Air conditioning occurs in the thermoelectric battery unit where the air is heated, cooled and cleaned of dust depending on the operating regime of the batteries. Air from the room is pumped through the battery unit as a result of rarefaction produced by a turbine fan and again enters the room. The hot junctions of the air conditioner are cooled by tap water. The thermoelectric battery unit consists of 24 batteries which are fastened in a circle on two bands of brackets forming a complete cylinder, with the internal diameter connected with the input opening of the turbine. The semiconducting materials of the thermocouples were the ternary alloys Bi Te Sb and Bi Te Se which are widely used in thermo-

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USSR

GANIN, YE. A., et al, Kholodil'naya tekhnika, No. 9, Sep 71, pp 12-15

electric refrigeration devices. The power supply of the thermobatteries was 220 amp and was chosen on the basis of their maximum cold productivity which was 90-100 kcal/hr. Tests showed that for a water temperature of 20°C and an air temperature of 25°C, the refrigeration capacity of the air conditioner was about 2200 kcal/hr. This required a power of 3.2 kW and the air was cooled in the conditioner to 9°C. When the air conditioner was used as a heat pump, tests showed that for temperatures of the cooling order of 6°C and air temperatures of 12°C, the amount of heat obtained was approximately 3100 kcal/hr. The air conditioner weighed about 100 kg. It is noted that despite the greater requirement for electrical energy as compared with compression air conditioners, the cost of using thermoelectric conditioners may be lower since the necessity for expensive maintenance and capital repairs is avoided.

- END -

CSO: 1861-W

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USSR

UDC 541.138

MUCHNIK, G. F., RUBASHOV, I. B., VLASOV, V. M., GANIN, YE. A., KARTICHEV, Z. R.,
and POSTANOGOV, V. P., Moscow

"Study of the Leakage of Fuel Gases Into Electrolyte Chambers of Fuel Cells"

Moscow, Elektrokimiya, Vol 8, No 5, May 72, pp 690-694

Abstract: It was shown that the average rate of leakage of a gas into an electrolyte is affected to a great degree by such factors as current charge, temperature of the elements, battery, pressure drop between the gaseous and electrolytic sides of the electrolytes, and the concentration of the electrolyte. The type of the functional curves obtained experimentally agree sufficiently well with those obtained from theoretical calculations of diffusion leakage, however, under experimental conditions this effect is much stronger, especially in case of temperature. The leaking gas consists almost exclusively of hydrogen. It was shown that gas mobility does not affect the rate of leakage if water vapor tension is kept constant. An increased rate of the leakage observed with a higher rate of moisture removal from the surface of the electrolyte is evidently due to a shift in the equilibrium in the pores in presence of secondary menisciuses.

1/1

USSR

UDC: 621.317.335.3

YATSYNINA, N. L., KARIKH, N. M.

"Behavior of Radio Engineering Materials in the Phase Transition Region"

Dokl. Vses. nauchno-tekhn. konferentsii po radiotekhn. izmereniyam. T. 1 (Reports of the All-Union Scientific and Technical Conference on Radio Engineering Measurements. Vol. 1), Novosibirsk, 1970, pp 155-157 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12A356)

Translation: The authors analyze measurement errors of an installation used for studying the frequency and temperature dispersion of magnetodielectrics and ferroelectrics close to the points of phase transitions. It is shown that the predominant components are errors which depend on the magnetic permeability and thickness of the specimen. A measurement accuracy of up to 1.5-3 percent may be achieved by varying the thickness. One illustration, three titles. N. S.

USSR

X UDC 621.372.413(088.8)

KUGAYEVSKIY, A. F., YATSYNINA, N. L., KARIKH, N. M., IVANNIKOV, YU. A.

"Coaxial Resonator"

USSR Author's Certificate No 252430, Filed 27 May 68, Published 6 Feb 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B127F)

Translation: The proposed resonator is designed for measuring the electrical parameters of materials. It consists of two sections connected to each other. In order to improve the Q-factor of the resonator and increase the accuracy of the measurements, one section of the resonator is fastened on a moving spring-loaded carriage. The internal conductor of the resonator is equipped with a tip which is supported on a threaded bushing of a bracket which is fastened to the base of the carriage. There is one illustration.

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Power, Turbine, Engine, Pump

USSR

UDC: 62-235.5

MALYUTIN, P. V., GUNYAYEV, G. M., VOPONTSOV, I. A., RUMYANTSEV, A. F.,
BARDINA, N. P., STEPANENKO, M. D., KARIMBAYEV, T. D., KISELEV, Yu. A.,
GORSHKOV, L. A.

"A Turbine Blade"

Moscow, Otkrytiya, Izobreneniya, Promyshlennyye Obratzsy, Tovarnyye Znaki,
No 21, Jul 72, Author's Certificate No 344168, Division F, filed 31 Aug 70,
published 7 Jul 72, p 135

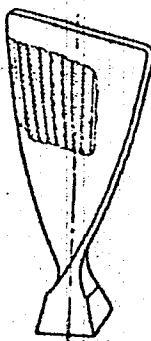
Translation: This Author's Certificate introduces a turbine blade for an axial compressor made of a laminar composition material. As a distinguishing feature of the patent, the rigidity and vibration strength are increased by making the blade from alternating layers of glass and carbon fiber fillers oriented relative to the longitudinal axis of the blade, 34-45% of the fiberglass-filled layers being oriented at angles from 0 to $\pm 15^\circ$, while 5-15% of the fiberglass-filled layers are oriented at angles from ± 75 to 90° , 20-30% of the carbon fiber-filled layers are oriented at angles from 0 to $\pm 15^\circ$, and 20-30% of the carbon fiber-filled layers are oriented at angles from ± 45 to $\pm 60^\circ$.

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USSR

MALYUTIN, P. V. et al., USSR Author's Certificate No 344168



2/2

USSR

UDC: 621.78.015.4

KARIMBAYEV, T. D.

"Concerning the Effect of Static Loads on the Natural Oscillations of Tapered Shells"

V sb. Prochnost' i dinamika aviats. dvigateley (Strength and Dynamics of Aircraft Engines--collection of works), vyp. 6, Moscow, "Mashinostro-yeniye", 1971, pp 5-22 (from RZh-Raketostroyeniye, No 7, Jul 71, Abstract No 7.41.187)

Translation: The theory of shallow shells is used as a basis for studying the natural oscillations of truncated conical shells. The effect of the prestressed state of the shell on the spectrum of natural frequencies is evaluated. The stressed state results from variable pressure along the generatrix as well as from meridian forces uniformly distributed over the end face. In contrast to a number of existing papers on investigation of natural oscillations of tapered shells, the form of oscillations given is such that it exactly satisfies the boundary conditions on the end faces of the shell. Graphs are given for the spectrum of natural frequencies as a function of the forces and the interaction between meridian and normal forces, and also for the critical loads and natural frequencies as functions of the angle of taper. Five illustrations, bibliography of ten titles. Resumé.

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USSR

UDC: 629.78.015.4

KARIMBAYEV, T. D., SHUKUROV, S.

"Stability and Free Oscillations of Shells Close to Cylindrical When Subjected to Torque"

V sb. Prochnost' i dinamika aviats. dvigateley (Strength and Dynamics of Aircraft Engines--collection of works), vyp. 6, Moscow, "Mashinostroyeniye", 1971, pp 37-68 (from RZh-Raketostroyeniye, No 7, Jul 71, Abstract No 7.41.188)

Translation: The small-parameter method is used to analyze the problem of stability and free oscillations of shells of revolution distinguished from cylindrical shells by a parabolic profile. For the shells which are studied, the authors determine the mutual influence of the stressed state caused by the action of twisting moments distributed over the end face of the shell, and the spectrum of natural frequencies. Approximate expressions are given for the critical torque. These expressions can be used to account for the slight flexibility of a shell. A detailed description is given of a procedure for carrying out tests and processing experimental data on the stability of close to cylindrical shells subjected to torque. Eight illustrations, two tables, bibliography of six titles.

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USSR

UDC: 539.3:534.1

KARIMBAYEV, T. D., SHUKUROV, S.

"Stability and Free Oscillations of Close to Cylindrical Shells Subjected to a Twisting Moment"

V sb. Prochnost' i dinamika aviats. dvigateley. Vyp. 6 (Strength and Dynamics of Aircraft Engines--collection of works, No 6), Moscow, "Mashinostroyeniye", 1971, pp 37-68 (from RZh-Mekhanika, No 7, Jul 71, Abstract No 7V206)

Translation: The small-parameter method is used to study the problem of stability and free oscillations of shells of revolution which differ from cylindrical in their parabolic contour. It is shown for the investigated shells that there is a mutual influence between the stressed state due to the action of twisting moments distributed over the end face of the shell and the spectrum of natural frequencies. Approximate expressions are presented for the critical twisting moment which enable accounting for the slight deformation of the shell. A detailed description is given of the procedure for testing and for processing experimental data on the stability of close to cylindrical shells subjected to a twisting moment. Authors' abstract.

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USSR

UDC 621.316.721

RAKHIMOV, G.R., KARIMBERDYEV, T.

"Electromagnetic Current Regulator"

Dokl. AN UzSSR (Proceedings of the Academy of Sciences, Uzbek SSR), 1970, No 6, pp 18-20 (From RZh--Elektronika i yeye primeniye, No 12, December 1970, Abstract No 12B564)

Translation: The circuit is considered of an a-c regulator in which the load is connected between the midpoint of the secondary winding of a transformer and the midpoint of two series-connected linear inductances, one of which is directly connected with one end of the secondary winding of the transformer, and the second is connected with the second end of the secondary winding across a nonlinear ferromagnetic element, the nature of which is approximated by a binomial of the third power. The differential equations of the system are considered and the dependence of the current in the load on the input voltage is derived. It is shown that after determining the magnitude of the input voltage of the regulator, the load current practically does not depend on the input voltage. 2 ill. B.D.

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USSR

UDC 621.316.721

RAKHIMOV, G.R., KHASANOV, P.F., KARIMBERDIYEV, T.

"Some Variations Of The Balanced Circuits Of Nonautooscillating Current Regulators"

[Nauchn.tr.] Tashkent. politekhn. in-t ([Scientific Works] Tashkent Polytechnical Institute), 1970, No 65, pp 220-224 (from RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B565)

Translation: The circuits are considered of nonautooscillating current regulators (NCR) which can be fulfilled with a power supply from a single-phase or 3-phase net. Both NCR types are fulfilled by a differential or bridge circuit. Instead of a power transformer, an autotransformer can be used in the NCR if galvanic decoupling of the supply circuit and load is not required. For all balanced NCR a saturation choke coil is required, the core of which the NCR has. For production of a regulated current, parallelism is required of the volt-ampere characteristics of all arms of the power transformer and achievement of a shift of the current axis of the volt-ampere characteristic. Balanced NCR operate with a wide range of variations of the voltage supply, and load. The dependence of the stabilization factor of balanced NCR on a change of frequency of the power supply is insignificant. 5 ill. 2 ref. V.Sh.

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USSR

UDC 547.972/73

RAKHIMKHANOV, Z. B., SADYKOV, A. S., ISMAILOV, A. I., and KARIMDZHANOV, A. K.,
Scientific Research Institute of Chemistry and Technology of Cotton Cellulose,
Tashkent

"Anthocyanins of Hibiscus Cannabinus"

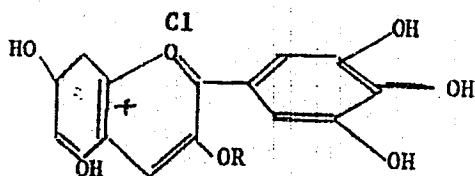
Tashkent, Khimiya Prirodnykh Soyedineniy, No 6, 1971, pp 723-727

Abstract: A study was made of the anthocyanins of Hibiscus cannabinus var. simplex (kenaf). Two anthocyan glycosides were isolated from the flowers of this plant. One of them was the new glycoside called cannabinin and the other, myrtilin, which was isolated from kenaf flowers for the first time. The ratio of cannabinin to myrtilin in the kenaf anthocyanins was about 4:1. Experimental procedures, yields and some physical and chemical characteristics of the products are presented for isolation of the anthocyanins, obtaining cannabinin, acid hydrolysis of cannabinin, fermentative hydrolysis of cannabinin, oxidation of cannabinin with hydrogen peroxide, acid hydrolysis of bioside, isolation of myrtilin, acid hydrolysis of myrtilin, fermentative hydrolysis of myrtilin, oxidation of myrtilin with hydrogen peroxide and basic splitting of delphinidin. The new substance has $\lambda_{\max} = 531 \text{ nm}$. It is characterized as delphinidin-3- β -D-glucoside- β -D-xyloside (cannabinin):

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USSR

RAKHIMKHANOV, Z. B., et al., Khimiya Prirodnikh Soyedineniy, No 6, 1971, pp 723-727



R = glucosyl-xyloside

USSR

UDC 629.7.015.4

KARIMOV, A. Kh.

"Matrix of Aerodynamic Induction Coefficients for a Wing of Arbitrary Plan Form at Supersonic Speeds"

Kazan', IVUZ Aviatsionnaya Tekhnika, No 4, 1971, pp 107-110

Abstract : A method for the calculation of the matrix of aerodynamic induction coefficients of a wing of arbitrary plan form at supersonic speeds is presented by which the wing or the wing-tail group combination is divided into trapeziform sections with bases parallel to the plane of symmetry of the wing. There are no restrictions as to sizes or locations of these bases for which the induction coefficients are calculated. On the basis of the suggested method, the program for the calculation of the matrix on the electronic digital computer BESM-4 was worked out. The exactness of the numerical method is illustrated on the example of load distribution on a semicircular wing with supersonic fore and mixed aft edges. Two illustr., 12 formulas, three biblio. refs.

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USSR

UDC 629.7.015.4

KARIMOV, A. Kh.

"Determination of the Aerodynamic Characteristics of an Elastic Swept Wing in a Subsonic Stream"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 3, 1970, pp 5-13

Abstract: An approximate method for calculating the aerodynamic loads acting upon an elastic swept wing, the lift of which is given, is proposed. In calculation of the elastic deformations, the wing is represented by a beam subjected to flexure and torsion. When determining the deformations, account is taken of the redistribution of the aerodynamic loads brought about by these deformations. The aerodynamic forces acting upon a swept wing in a subsonic stream of gas are calculated by means of the method of S. M. Belotserkovskiy. The procedure for calculating the aerodynamic loads upon the wing for various laws of elastic deformation of the middle surface is presented. The proposed method is used for calculation of the external loads upon the aircraft and when solving problems of static aeroelasticity. 4 figures, 4 bibliographic entries.

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UR 0482

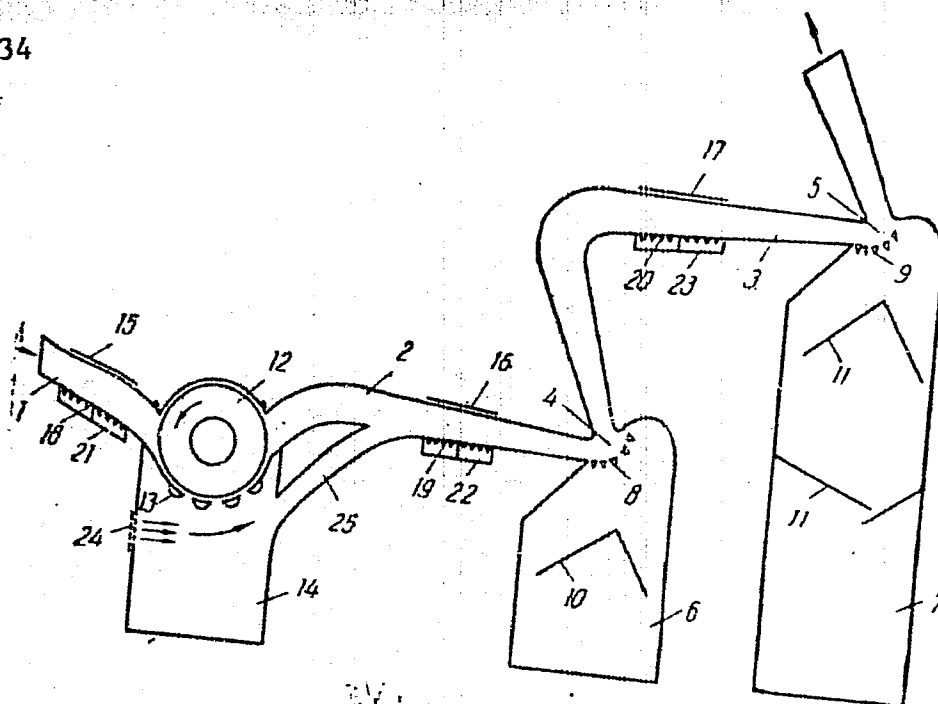
Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

240906 AERODYNAMIC CLEANING OF FIBROUS MATERIALS
whereby the efficiency of the process,
based on the inherently differing inertia of fibres
and waste materials is improved by subjecting the
material to the action of electrostatically charged
fields during its passage through the system. The
fibrous material passes in an air current along
tubes 1, 2 & 3, which have sharp bends and form
separate cleaning sections. During its passage,
the material is subjected to the action of
electrostatic fields created by oppositely charged
electrodes. This causes better separation, and
hence more efficient cleaning of the fibres. The
separated waste material falls through gratings
into the waste chambers located under each cleaning
section.

13.10.63. as 861608/28-12, HUDNIKOV, V.I. and
KARINOV, KH.A. (14.8.69) Bul. 13/1.4.69. Class
29a, Int. Cl. D 01b. 7

19791485

AA0047834



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19791486

1/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF SURFACE ACTIVE AGENTS FOR DRYING THE EXTERIOR FACINGS IN GAS
STORAGE WELLS -U-
AUTHOR-(04)-KARIMOV, M.F., KAYGURODOV, V.A., KVASOV, V.P., PARFENOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--GAZOV. PROM. 1970, 15(3), 23-4 *K*
DATE PUBLISHED--70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--SURFACE ACTIVE AGENT, SURFACE TENSION, NATURAL GAS, POL
STORAGE, UNDERGROUND FACILITY, CHEMICAL DRYING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/2092 STEP NO--UR/0492/70/015/003/0023/0024
CIRC ACCESSION NO--AP0127465
UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--APO127465

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SUITABILITY OF SURFACE ACTIVE AGENTS IS DETD. BY THEIR FOAMING CHARACTERISTICS AND ISOTHERM OF SURFACE TENSION. THEIR OPTIMUM CONC. IS DETD. BY THE MIXING COEFF., WHICH IS DETD. BY MIXING THE SOLN. WITH N. FACILITY: UFIM. NETF. INST., UFA, USSR.

UNCLASSIFIED

USSR

UDC 621.375.121

K
KARIMOV, R. K.

"Problem of Determining the Amplification Coefficient of an Amplifier Cascade with Distributed Amplification with Identical Lines"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 2
(Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 2), Leningrad, 1970, pp 186-190 (from RZh-Radio-tekhnika, No 8, Aug 70, Abstract No 8 D90)

Translation: The matrix of an amplifier cascade with distributed amplification is obtained in simple form. The cascade is made up of $n = 2^p$ elements with identical delay lines without considering the transfer admittance of the amplifying elements. The amplification coefficient of this cascade is determined.

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acc. Nr. **AT0107999**

Abstracting Service:
CHEMICAL ABST. 6-70

Ref. Code
UR0423

K

125814m Segregation of silver during the growth of antimony telluride single crystals from a melt. Sherov, P.; Karimov, S.; Mavlonov, Sh. (Fiz.-Tekh. Inst. im. Umarova, Dushanbe, U.S.S.R.). Dokl. Akad. Nauk Tadsh. SSR 1970, 13(2), 19-21 (Russ). The distribution coeff. (*K*) of Ag in the process of growing Sb₂Te₃ single crystals, contg. desired amts. of Ag, was detd. with the aid of ¹¹⁰Ag. The melt contained $3 \times 10^{-3}\%$ Ag. The ratio *C/C₀* at different sections of the crystal increased with the length of the crystal. The increase was most pronounced at high rates of growth, i.e. 12 mm/hr. At 6 mm/hr, $K' = 1.5 \times 10^{-1}$. GBJR]

CB

18

REEL/FRA
19891579

1/2 018

UNCLASSIFIED

PROCESSING DATE--18SEP70

TITLE--EFFECT OF SURFACE STATE AND ILLUMINATION ON PHENOMENA IN STRONG
ELECTRIC FIELDS IN GERMANIUM CONTAINING A GOLD IMPURITY -U-

AUTHOR--(021)-KARIMOVA, I.Z., STAFEYEV, V.I.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970 4(1) 213-16

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--GERMANIUM, SILVER, ELECTRIC FIELD, DOPED ALLOY,
ILLUMINATION, VOLT AMPERE CHARACTERISTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1824

STEP NO--UR/0449/70/004/001/0213/0216

CIRC ACCESSION NO--AP0054658

UNCLASSIFIED

2/2 018

CIRC ACCESSION NO--A00054658

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME DATA, WHICH CONFIRM THE INJECTION DOMAIN MODEL GIVEN BY STAFEEV (1970), ARE PRESENTED CONCERNING THE EFFECT OF SURFACE STATE AND ILLUMINATION ON PROPERTIES OF AU DOPED GE IN STRONG ELEC. FIELDS. THE INJECTION OF MINORITY CARRIERS FROM THE SURFACE WAS STUDIED, WHILE INJECTION FROM CONTACTS WAS EXCLUDED BY CREATION OF ANTI-NEG. CONTACTS. THE CURRENT VOLTAGE CHARACTERISTICS OF THE SAMPLES WITH VARIOUS QUALITIES OF THE SURFACE WERE MEASURED DURING IMMERSION OF THE SAMPLES IN LIQ. N AND D. FURTHERMORE, THE EFFECTS OF CONTINUOUS AND PULSED ILLUMINATION WERE ANALYZED. THE RESULTS CANNOT BE EXPLAINED WITHOUT CONSIDERATION OF THE INJECTION OF MINORITY CARRIERS FROM THE NEAR SURFACE REGION AND OF THE CREATION OF INHOMOGENEITIES. THE LATTER FACTOR IS CONTROLLED BY SURFACE STATE AND ILLUMINATION. THE INJECTION DOMAIN MODEL ALLOWS ONE TO EXPLAIN REASONABLY ALL THE PHENOMENA.

UNCLASSIFIED

USSR

KARIMOVA, M.

"Integration of Processing of Information Using Algorithmic Languages"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 51, Tashkent, 1972, pp 20-23 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V677, by the author).

Translation: The stages are described for calculation of operational and economic indicators using correlation-regression methods, allowing the quality of planning and normalization of operations to be improved.

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