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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0132098

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE ALLOY HAS THE FOLLOWING
COMPN.: W 55-75, SI 10-25 WT. PERCENT, FE THE REMAINDER.
FACILITY: CHELYABINSKIY POLITEKHNICHESKIY INSTITUT.

UNCLASSIFIED

USER

UDC 621.922.34:666.233

GINZBURG, B. I., Candidate of Economics, NAZAROV, V. I., engineer, Superhard Materials Institute, and MIKHAYLICH, V. V., engineer, VPKI stroydormash (All-Union Planning, Design and Technological Institute of Road Machine Building)

"Utilization of Synthetic Diamonds by the Branch Enterprises"

Moscow, Stroitel'nyye i Dorozhnyye Mashiny, No 3, March 1971, pp 36-37

Abstract: The use of synthetic diamonds by the enterprises of the Ministry of Construction, Road and Utility Machine Building has been investigated by the Superhard Materials Institute. The investigation showed that 89.1% of synthetic diamonds were used in the form of cutting tools, 2.6% in powder form, 8.3% in the form of paste. The use of synthetic diamonds resulted in an increase of the cutting tool wear resistance by 1.1 to 3.0 times, improvement of finish of machined surface, increase of productivity by 7 to 30%.

The total consumption of 147,000 carat of synthetic diamond resulted in savings of 352,400 rubles.

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GINZBURG, B. I., et al., *Stroitel'nyye i Dorozhnyye Mashiny*, No 3, March 1971, pp 36-37

In order to widen the use of synthetic diamonds it is necessary to provide more suitable equipment, such as universal tool sharpeners, and to educate the personnel on the use of synthetic diamonds.

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USSR

UDC: 621.376.4:621.391.82

NAZAROV, V. I.

"Error Probability in Synchronous Detection of Phase-Keyed Signals"

Moscow, Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1077-1080

Abstract: A method is proposed for determining the probability of errors at the output of a synchronous detector when a sinusoidal signal of frequency $R\omega$ arrives at one input (the reference voltage) and an additive mixture of Gaussian noise with zero average standard deviation σ^2 together with a phase-keyed signal of the form

$$u_{1R\omega}(t) = \sum_{i=1}^N u_{oi}(t) = \sum_{i=1}^N U \sin(R\omega(t - t_i) + R\varphi_i)$$

is sent to the other input, where i and N are the serial number and total number of segments of the sine curve (elementary signal packets) of duration τ_0 , $u_{1R\omega}(t)$ and $u_{oi}(t)$ are the instantaneous value of the voltage of the

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USSR

NAZAROV, V. I., Radiotekhnika i Elektronika, Vol. 16, No 6, Jun 71, pp 1077-1080

signal and of the i -th packet, R is the multiplication factor for carrier frequency ω , $t_i = t_0 + (i - 1)\tau_0$, and ϕ is the initial phase of an elementary packet. This signal in turn is the result of multiplication of the carrier frequency (and all components of the frequency spectrum) of a signal with deterministic (rotating) phase of the form

$$u_1(t) = \sum_{i=1}^N U \sin[\omega(t - t_i) + \psi_{\text{inf}}(t) + \psi_{\text{det}}(t)].$$

by the coefficient $R_{\text{min}} \in [n, m]$, where ψ_{inf} and ψ_{det} are respectively the informational and deterministic components of the phase. The probability of errors at the output of the phase detector is determined for various R_{min} . It is assumed that n positions of the keyed phase code are used for transmitting information, and m positions are used for designating the boundaries of elementary packets, code combinations or groups. Special cases of four-phase ($m = R_{\text{max}} = 4$, $n = 2$, $R_{\text{min}} = m/n = 2$), six phase ($m = R_{\text{max}} = 6$, $n = 2$, $R_{\text{min}} = 3$) and eight-phase ($m = 8$, $n = 2$, $R_{\text{min}} = 4$) initial signals are considered.

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USSR

UDC 621.391.17:521.376.4

NAZAROV, V. I. N

"Group Synchronization of Systems for Discrete Information Transmission by the Rotating Phase Method"

Moscow, Radiotekhnika, Vol 25, No 8, August 1970, pp 1-9

Abstract: Intensive research has been going on in the Soviet Union and foreign countries to find new methods for the group synchronization of communication, telemetry, remote control, and data transmission systems. The need for this research is occasioned by the slowness of information transmission under present modes of synchronization and the complexity of the equipment required for correlation techniques, electronic memory, and logic. This paper represents a further estimation of new methods for group synchronization of discrete communication systems with phase and frequency manipulation, based on the rotating phase principle. The author discusses the formation of phase-manipulated signals with redundant manipulation coding, the detection of the group synchronization signal at the reception end, and three methods for the reception of rotating phase signals, and proposes a receiver, shown in block diagram form, for these signals. He finds that the rotating phase method is effective in single- and multichannel systems as well as broad-band signal systems, and asserts that it can be realized by simple techniques specifically applicable to phase telegraphy. 1/1

USSR

UDC 621.373.826:772.99

BURYAK, G. V., ZAVITNEVICH, Yu. V., MIROVITSKIY, D. I., HAZAROV,
V. L., and SAMSONOV, G. A.

"Some Holographic Investigations of Light Dispersion With Models"

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 323-327 (from
RZh--Radiotekhnika, No 10, 1972, Abstract No 10D417)

Translation: A holographic imitator of optical and infrared elec-
tronic systems, designed for studying the peculiarities of func-
tional connections and set units, radio lines, and processes and
phenomena occurring in radio systems, is described. The imitator
contains a laser, a set of holographic or spatial models, a group
of shaping and transforming optical elements, holographic imitators
of range nonuniformities, and a receiver block. The peculiarities
of the range over which the radio waves are propagated are modeled
through a set of functional amplitude, phase, or complex filters.
Results are given of the determination of dispersion diagrams for
various objects for a signal path containing nonuniformities. A
method is described which measures the dimensions of the object and
the distance to it by forming a three-beam diagram of the radiation
in which the direction of two beams are fixed while the third per-
forms angular scanning to sense the contour of the investigated ob-

1/2 015 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CONSTRUCTION GRADE GYPSUM FROM CRYOLITE PRODUCTION SULFATE WASTES
-U-
AUTHOR--NAZAROV, V.P.
COUNTRY OF INFO--USSR
SOURCE--STROIT. MATER. 1970, (3), 18-19
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, EARTH
SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--TECHNICAL STANDARD, GYPSUM, SULFATE, INDUSTRIAL WASTE, CALCIUM
SULFATE, MECHANICAL STRENGTH, CHEMICAL BINDER, METAL OXIDE/(U)60ST 12557
BINDER STANDARD

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1649 STEP NO--UR/0228/70/000/003/0018/0019
CIRC ACCESSION NO--AP0112643
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0112643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHEM. COMPN. OF THE WASTES WAS: CAO 30.16; SO SUB3 47.73; SIO SUB2 1.21; FE SUB2 O SUB3 0.28; AL SUB2 O SUB3 0.95; MGO 0.77; CRYSTN. WATER 18.6PERCENT. THE CONTENT OF CASO SUB4 2H SUB2 O WAS 86PERCENT. DEHYDRATION TOOK PLACE AT 140-40DEGREES IN A BOILER OF 30 L. THE STRENGTH OF THE SAMPLES MADE FROM WASTES WAS 30-60PERCENT HIGHER THAN THAT OF GYPSUM CASTS. THE WASTES CAN ALSO BE ADDED TO A BINDER MADE OF GYPSUM STONE SINCE THE STRENGTH OF GYPSUM INCREASED IN THIS CASE BY 40PERCENT. UNDER INDUSTRIAL CONDITIONS THE WASTES WERE PUT INTO SHAFT MILLS WHERE THEY WERE GROUND AND DRIED. THE MATERIAL HAD THEN A TEMP. OF 60-90DEGREES AND WAS PASSED TO GYPSUM BOILERS OF 15 M PRIME3 WHERE THE PROCESSING TOOK PLACE AT 125-40DEGREES. THE BINDER THUS OBTAINED MET THE REQUIREMENTS OF GOST 125-57, ITS STRENGTH WAS EVEN HIGHER. THE USE OF SULFATE WASTES IN A MIXT. WITH GYPSUM STONE WAS MOST CONVENIENT. INTO THE HOPPER 1 LOAD OF BOTH WAS FED. THE METHOD MAKES IT POSSIBLE TO OBTAIN CONSTRUCTION GRADE GYPSUM OF 1ST QUALITY FROM GYPSUM STONE OF 3RD QUALITY CONTG. CASO SUB4 2H SUB2 O OF 65PERCENT.

UNCLASSIFIED

USSR

UDC: 533.6.011.5:518.5

IVANOV, M. Ya., KRAYKO, A. N., NAZAROV, V. P., Moscow

"Some Results of a Numerical Study of Unconventional Plumes of Ideal Gas"

Moscow, Izv. AN SSSR: Mekhanika Zhidkosti i Gaza, No 4, Jul/Aug 72, pp 102-109

Abstract: The authors give the results of an investigation of supersonic jets of an ideal (inviscid and thermally nonconductive) gas escaping into space with reduced pressure in cases where the cross section of the jet at the nozzle tip is noncircular. The study is based on numerical integration of equations of three-dimensional supersonic flow using a "continuous" difference method of computation which enables flow calculation without isolating the shock waves which are typically formed in this type of problem. Principles governing the behavior of nonstandard exhaust plumes are given for nozzles with elliptical and nearly rectangular output. Calculations were done on the "BESM-6" computer.

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USSR

UDC 547.341

NURTDINOV, S. KH., ISMAGILOVA, N. M., NAZAROV, V. S., ZYKOVA, T. V.,
SALAKHUTDINOV, R. A., SULTANOVA, R. B., and TSIVUNIN, V. S., Kazan' Chemical-
Technological Institute Imeni S. M. Kirov

"Reaction of Aryl- and Diarylchlorophosphites With Cyclic Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 6, Jun 73, pp 1251-1254

Abstract: Phenyl- and diphenylchlorophosphites react with equimolar quantities of cyclohexanone and cyclopentanone upon heating to 130-150° for 17-20 hrs in a closed system, yielding the respective esters of cyclohexen-1-yl(cyclopenten-1-yl)phosphonic acids. The diphenyl ester of cyclohexen-1-ylphosphonic acid (I) reacts with phosphorus pentasulfide converting to the thiophosphonic acid derivative. Bromine adds across the double bond of (I) producing a dibromide which can be dehydrobrominated to diphenyl ester of 2,6-cyclohexadiene-1-ylphosphonic acid.

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USSR

UDC 669.14.018.44

NAZAROV, Ye. G., Central Scientific Research Institute of Ferrous Metallurgy

"Alloying and Heat Resistance of Alloys"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 73,
pp 52-54

Abstract: The effect of chemical composition on the heat resistance of modern Ni-base alloys used in the USA and USSR was examined. The criterion for evaluating heat resistance was the temperature corresponding to long-time strength for 100 hours of testing at a load of $\sigma_{100} = 20 \text{ kgf/mm}^2$. The following American and Soviet alloys were evaluated: KhN77Tyak, KhN70VMYuT, EP199, EP202, EP99, EI826, EI 929, Udimet-500, EP57, MAR-M-211, MAR-M-200, B-1900, ZhS-6, TRW-1900, Udimet-700, ZhS-6K, Rene-100, Ni-100.

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USSR

UDC 669.15.018.44

NAZAROV, YE. G.

"Precipitation Hardening of KhN35VTYu Heat-Resistant Alloy"

Sb. tr. TSNII chern. metallurgii (Collection of Works of Central Scientific Research Institute of Ferrous Metallurgy, 1970, vyp. 77, pp42-29 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3I626 by author)

Translation: The author studied the precipitation hardening of the KhN35VTYu alloy in relation to heating and cooling conditions, plastic deformation, and other factors. The properties of the alloy are shown after multistage heat-treatment regimes and after one-time aging. The use of multistage types of heat treatment for alloys of the KhN35VTYu type is inadvisable. Six illustrations. Seven tables. Bibliography with seven titles.

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NAZAROV, Ye. G.

JPRS 58159

6 February 1973

UDC 669.14.018.44.6

TIN AS AN ALLOYING ELEMENT IN HEAT-RESISTANT ALLOYS

Article by Ye. G. Nazarov, S. B. Makhomov, Tsvetkovskiy (General Scientific Research Institute of Prolonged Metallurgy im. I. P. Bardin); Moscow Metallovedeniye I Tomskobskaya Obrabotka Metallov, Russian, No 3, 1972, pp 31-35

Nickel-base alloys, hardened with intermetallic phases of the types Ni₃Ti, Ni₃Al, Ni₃(Al, Ti), Ni₃Nb are used extensively as refractories.

Moreover, nickel forms intermetallic compounds similar to the γ-phase, with silicon, tin, beryllium, etc.

It has been established that the stress-rupture strength of steels and alloys can be increased with additions of these elements [1-3]. A niobium type alloy¹, containing 0.5-5% Ti and 1-10% Sn, has been developed.

However, information about the effect of microadditives of nonferrous metals on the properties of refractory alloys is extremely sparse and the principle of their beneficial action on the properties of alloys has not been established.

The effect of tin on the properties and structure of nickel-chromium alloy of the type KAN78 (E145) is discussed in this article.

Test alloys were melted in a vacuum induction furnace from pure charge materials (Table 1).

The alloys contained 0.02-0.1% Sn, 0.002-0.005% S and up to 0.01% B.

The test specimens were made by extrusion² at 1,000-1,020°C.

¹Japanese Patent No. 2606, cl. 10125, 12 April 1958.
²Extrusion was carried out under the supervision of G. I. Taranenko.

USSR

UDC 669.14.018.44'6

NAZAROV, YE. G. and MASLENKOV, S. B., Central Scientific Research Institute of Ferrous Metallurgy Imeni I. P. Bardin (TsNIICHERMET)

"Tin as an Alloy Component in High-Temperature Alloys"

Moscow, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 33-36

Abstract: Widely used high-temperature materials include nickel-base alloys strengthened with Ni_3Ti ; Ni_3Al ; $Ni_3(Al, Ti)$; $NiNb$ -type intermetallide phases. Nickel also is said to form intermetallide γ' -phase-like compounds with silicon, tin, beryllium, and others. This study concerns the effect of tin on the properties and structure of the nickel-chrome alloy KhN78T (EI435) alloy. The experimental heats contained 0.02-0.17% Si, 0.002-0.005% S, and up to 0.01% B. It is shown that alloying Ni-Cr alloys with up to 7% Sn increases their resistance to plastic deformation, the strength properties at room and higher temperatures, as well as the rupture strength at 700°C; in this case the scale resistance of Kh20N80 remains unaffected at 1000°C. Alloying Ni-Cr alloys with tin has a strengthening effect as a

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USSR

NAZAROV, YE. G., et al, Metallovedeniye i termicheskaya obrabotka metallov, No 3, 1972, pp 33-36

result of precipitation hardening by the separation of the intermetallide phase Ni₃Sn. In alloys of this type the process of precipitation hardening proceeds at a very slow rate. (3 illustrations, 3 tables, 4 bibliographic references).

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1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--HEAT TREATMENT OF AUSTENITIC HEAT RESISTANT STEELS AND ALLOYS -U-

AUTHOR--(02)--NAZAROV, YE.G., MASLENKOV, S.B.

COUNTRY OF INFO--USSR

SOURCE--METALLOVED. TERM. OBRAB. METAL. 1970, (3) 12-19

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--STEEL HEAT TREATMENT, AUSTENITIC STEEL, HEAT RESISTANT STEEL,
ALLOY PHASE COMPOSITION, DISPERSION HARDENING, BIBLIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1938

STEP NO--UR/0129/70/000/003/0012/0019

CIRC ACCESSION NO--AP0108267

UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0108267

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW COVERING STRONGLY, MEDIUM, AND WEAKLY DISPERSED HARDENING ALLOYS. THE TOPICS COVER DOUBLE QUENCHING, DISPERSION AGING, LAVES PHASES, BORIDE PHASES, STRESS REMOVAL, NEW DEVELOPMENTS, AND DETRIMENTAL PHASES.

UNCLASSIFIED

USSR

UDC 669.14.018.65:001.18

~~NAZAROV, YE. G., MASLENKOV, S. B., Central Scientific Research
Institute of Ferrous Metallurgy im. I. P. Bardin~~

"The Present and Future of Heat-Resistant Alloys"

Moscow, Metallovedeniye, No 4, Apr 70, pp 16-28

Abstract: A brief review is given of developments in heat-resistant alloys during the last 30 years. The heat resistance of metallic materials is governed by the following: strengthening the solid solution with dissolution of alloying elements in it and on separation of secondary intermetallides and carbide phases from it; the grain size of the solid solution; dynamics of both hardening and softening; stability of the structure at high temperatures; resistance to scaling and brittleness. Of those factors, the first is constant, while the others are variables and depend on temperature, time, and the medium. With the extension of the service life, great importance is attached to the resistance of alloys to gas corrosion at high temperatures, since oxidation at this stage controls the efficiency of the alloys.

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NAZAROV, YE. G., et al., Metallovedeniye, No 4, Apr 70, pp 16-28

Steels and alloys with carbide strengthening are less heat resistant than alloys strengthened with intermetallides. Primary carbides and chromium carbides have a high dissolution temperature (1150°C and higher) and the presence of some of them in alloys makes possible high-temperature strengthening. Laves phases are thermally stable and have an extended incubation period of formation. Compared to intermetallide γ' -phases, the strengthening effect of the Laves phases is lower. Representative heat-resistant iron-, iron-nickel-, nickel-, and cobalt-base steels and alloys are briefly reviewed, their main features and characteristics described, and designations explained. Tables in the original article provide information on iron- and iron-nickel-base steels and alloys and nickel-, and cobalt-base wrought and cast alloys. The brand names, compositions, origins, service life, and temperatures are also given. Refractor-base alloys with volume-centered cubic lattices, such as vanadium- and chromium-base alloys, are described, including their basic features, compositions, alloying elements, and service temperatures. New trends in the development

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USSR

NAZAROV, YE. G., et al., Metallovedeniye, No 4, Apr 70, pp 16-28

of heat-resistant alloys both in the USSR and elsewhere are analyzed. High-chromium nickel alloys are noted. Research in Japanese austenitic steels and alloys is discussed. Of particular interest is the solubility of ruthenium in nickel and the high melting temperature (1550°C) of Ni₃Ru. Platinum-base alloys and radioactive elements as additions to heat-resistant alloys are mentioned. Particular reference is made to alloys containing technetium (melting temperature 2170°C) obtained in nuclear reactors.

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USSR

UDC 669.245

NAZAROV, YE. G.

"Dispersion Hardening of Type KhN35VTYu Heat-Resistant Alloy"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys - Collection of Works), No 77, Metallurgiya Press, 1970, pp 42-49

Translation: A study was made of dispersion hardening of KhN35VTYu alloy as a function of heating and cooling conditions, effect of hot plastic deformation on dispersion hardening, and other factors.

The properties of the alloy after multi-stage heat-treatment modes and after a single aging treatment are demonstrated.

The use of multi-stage types of heat treatment for alloys such as KhN35VTYu is not desirable. 6 figures; 7 tables; 7 biblio. refs.

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USSR

UDC 542.91:661.718.1

NAZAROV, Yu. V., MUSLINKIN, A. A., and ZHELTUKHIN, V. F., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Interaction of Bis-(hydroxymethyl)phosphinic Acid With Phosphorus Pentachloride"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1806-1808

Abstract: The article describes results of a study of the reaction of bis-(hydroxymethyl)phosphinic acid with phosphorus pentachloride in a phosphorus oxychloride medium at temperatures from 60 to 100°. It was found that the yield of bis-(chloromethyl)phosphinic chloride, other conditions being equal, decreases with a rise in the reaction temperature, while the yield of chloromethylphosphonic dichloride and methyl chloride increases, with the amount of methyl chloride which forms increasing almost proportionally to the chloromethylphosphonic chloride yield. The formation of the latter two products indicates the presence of processes leading to splitting of the P-C bond.

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Vacuum Tubes

USSR

UDC: 621.372.413

ZAKHAROV, A. A., NAZAROVA, A. I.

"Investigation of Some Modes of Operation of the Output Resonator of a Klystron With Distributed Interaction"

V sb. Vopr. elektron. tekhniki (Problems of Electronic Technology--collection of works), Saratov, 1971, pp 3-10 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6B163)

Translation: It is shown how efficiency is affected by the phase and the modulus of reflection from end plates which short the decelerating system of the output resonator in a klystron with distributed interaction. An estimate is made of the possibility of improving the electronic efficiency of a klystron with distributed interaction by selecting the electrons with maximum deceleration from the interaction space. Five illustrations, bibliography of four titles. Resumé.

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1/2 009
TITLE--POLYSILOXANES -U-

UNCLASSIFIED

PROCESSING DATE--13NOV70

AUTHOR--(05)-SOBOLEVSKIY, M.V., NAZAROVA, D.V., VOROPAYEVA, G.V.,
KUZNETSOVA, A.A., GALASHINA, M.L.
COUNTRY OF INFO--USSR

N

SOURCE--U.S.S.R. 265,445
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--POLYSILOXANE, CHEMICAL PATENT, ORGANIC SULFUR COMPOUND,
ORGANIC SILANE, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/1418

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

CIRC ACCESSION NO--AA0128817

UNCLASSIFIED

2/2 009

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0128817

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POLYSILOXANES WITH BOTH THIENYL AND ALKOXY GROUPS ARE PREPD. BY HYDROLYSIS OF ORGANOCHLOROSILANES OF FORMULA RSICL SUB3, WHERE R EQUALS THIENYL, HALOTHIENYL, METHYLTHIENYL, OR ITS MIXT. WITH DI OR TRIFUNCTIONAL CHLOROSILANES, WITH A MIXT. OF H SUB2 O AND ETOH IN THE PRESENCE OF AN ORG. SOLVENT.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--11SEP70
 TITLE--OXIDATIVE THERMAL DEGRADATION OF SOME OLIGOSILOXANES -U-
 AUTHOR--SOBOLEVSKIY, M.V., CHERNYSHEV, E.A., LOTAREV, M.B., VISHNEVSKIY,
 P.N., NAZAROVA, D.V.
 COUNTRY OF INFO--USSR
 SOURCE--PLAST. MASSY 1970, (2), 26-7
 DATE PUBLISHED-----70
 SUBJECT AREAS--CHEMISTRY
 TOPIC TAGS--THERMAL DEGRADATION, OXIDATION, SILOXANE, MOLECULAR STRUCTURE,
 BENZENE DERIVATIVE
 CONTROL MARKING--NO RESTRICTIONS
 DOCUMENT CLASS--UNCLASSIFIED
 PROXY RFEL/FRAME--1987/1057
 STEP NO--UR/0191/70/000/002/0026/0027
 CIRC ACCESSION NO--AP0104455
 UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0104455

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE OXIDATIVE THERMAL DEGRADATION OF OLIGOHETEROCYCLOSILOXANES, OLIGODIMETHYLSILOXANES, OLIGODIETHYLSILOXANES (I), AND OLIGOMETHYLPHENYLSILOXANES OF STRUCTURE II WAS STUDIED BY THERMOGRAVIMETRIC ANAL. UNDER ISOTHERMAL CONDITIONS AT 200-350DEGREES. II HAD THE MAX. RESISTANCE TO OXIDN., WHEREAS I WAS LEAST RESISTANT TO OXIDN. AND ABSORBED O AT 200DEGREES. THE ABSORPTION RATE OF O WAS PROPORTIONAL TO TEMP. FOR ALL OF THE SILOXANES TESTED.

UNCLASSIFIED

USSR

UDC 547.341+547.26'118

MOSKVA, V. V., ~~NAZVANOVA, G. F.~~ ZYKOVA, T. V., RAZUMOV, A. I., and CHEMO-DANOVA, L. A., Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Substituted Vinylphosphonic Acid Derivatives. X. α -Alkyl- β -alkoxy-vinylphosphonic and -thiophosphonic Acid Derivatives"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 8, Aug 71, pp 1680-1684

Abstract: For purpose of a more complete study of α -alkyl- β -alkoxy-vinylphosphonic and -thiophosphonic acid derivatives, dialkyl esters of these acids were synthesized by the reaction of their dichlorides with alcohols in the presence of triethylamine or with alkoxides. Hydrolysis of the esters of α -alkyl- β -alkoxyvinylphosphonic and -thiophosphonic acids (7 percent HCl, 80°, 3 hours) gives corresponding phosphorylated aldehydes, which were identified from elemental analysis, by IR and NMR spectra, as well as in the form of their 2,4-dinitrophenylhydrazones. IR and NMR spectroscopy data indicate the presence of keto-enol tautomerism in the aldehydes.

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Phytology

USFR

UDC 581.132

NAZAROVA, I. G. and YEVSTIGNEYEV, V. B., Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow, and Institute of Photosynthesis, Academy of Sciences USSR, Pushchino-na-Poche

"Spectral Properties and Photosensitizing Capacity of Water-Soluble Analogs of Chlorophyll and Bound With a High-Polymer Substrate"

Moscow, Molekulyarnaya Biologiya, Vol 5, No 6, Nov/Dec 71, pp 826-833

Abstract: In photosynthesis it is not the free pigment chlorophyll that is photochemically active, but rather its proteinlipid complex. Hence the properties of the latter and the mechanisms by which it is formed are of considerable interest. It is in connection with this problem that the authors of the present article a) investigated the absorption spectra obtained during the interaction of water-soluble analogs of chlorophyll (chlorophyllin a and b, chlorin e, and rodin g) with the polymer polyvinylpyrrolidone (PVP); and b) attempted to determine the correlation between the degree of bonding of the pigment with the given polymer and its photosensitizing activity.

The authors found that when the chlorophyll analogs were bound with PVP, their absorption spectra showed obvious shifts in the positions of the red and blue maximums and changes in the intensity of absorption. With respect
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NAZAROVA, I. G., and YEVSTIGENEYEV, V. B., Molekulyarnaya Biologiya, Vol 5,
No 6, Nov/Dec 71, pp 826-833

to point b) above, they definitely established the fact that the intensity of
the reaction of photoreduction of methyl red by ascorbic acid is strongly
increased, with the maximum photosensitizing action occurring approximately
in the region of pH 4.5.

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USSR

UDC: 541.49:546.799.3

YELESIN, A. A., ZAYTSEV, A. A., KARASEVA, V. A., ~~NAZAROVA, I. I.~~,
PETUKHOVA, I. V.

"Synthesis of (Methyl Phenyl Phosphonyl) Methyl Phenyl Phosphonic Acid, and an Investigation of Complexing With Trivalent Ions of Americium, Curium and Promethium"

Leningrad, Radiokhimiya, Vol 14, No 3, 1972, pp 374-377

Abstract: The authors studied complexing of trivalent Am, Cm and Pm ions with an organophosphorus compound containing two P=O groups joined by a methyl bridge. This compound, (methylphenylphosphonyl)methylphenylphosphonic acid, was synthesized. The thermodynamic value of its dissociation constant was determined ($pK^{\circ} = 2.04$). Complexing was studied by the ion-exchange method on KU-2 cation-exchange resin. The logarithms of the constants of stability for complexes of Am^{3+} , Cm^{3+} and Pm^{3+} in solutions with constant ionic strength of 0.2 (NH_4ClO_4) were 3.35, 3.35 and 3.40 respectively, which is appreciably higher than the corresponding values with phosphoric and methylphosphonic acids, and approaches the value of the constants with trimetaphosphoric acid. The additional stabilization of these complexes was attributed to the chelate effect associated with ring closure.

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USSR

UDC 621.396.2:621.371.1

NAZAROVA, I. N.

"Network Structure of an Ultrashortwave Automatic Radio Telephone Communications System"

Tr. TsNII mor. flota (Works of the Central Scientific Research Institute of the Maritime Fleet), 1970, vyp. 131, pp 95-101 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A211)

Translation: The honeycomb structure of the network of an ultrashortwave automatic radio telephone communications system and the dependence of the size of the radio zones on the number of mobile stations in the zone are investigated. There are 4 illustrations and a 5-entry bibliography.

1/1

1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTRICAL CONDUCTIVITY IN MF-ALF SUB3-H SUB2 O SYSTEMS -U-
AUTHOR--(03)-DMITREVSKIY, G.YE., FROLKOVA, S.A., NAZAROVA, I.N.
COUNTRY OF INFO--USSR
SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1102-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRIC CONDUCTIVITY, ALUMINUM FLUORIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1110 STEP NO--UR/0078/70/015/004/1102/1104
CIRC ACCESSION NU--AP0123102
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 010

CIRC ACCESSION NO--AP0123102

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ELEC. CONDS. OF ALF SUB3-H SUB2 O,
MF-H SUB2 O (M EQUALS LI, NA, K, RB, CS), AND MF-ALF SUB3-H SUB2 O
SYSTEMS WERE DETD. AT 25, 40, AND 60 DEGREES AND CONC. RANGE OF
0.01-0.40 MOLE-L. (FOR LIF, 0.01-0.04 MOLE-L). AND THE RESULTS ARE
PRESENTED GRAPHICALLY OR IN TABLES. THE SOLYS. OF L1NAF, 4ALF SUB3,
2KF.ALF SUB3, AND 2RBF.ALF SUB3 IN WATER ARE GIVEN. FACILITY:
ODESS. GOS. UNIV., ODESSA, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.669.8:621.396.6.029.63

NAZAROVA, I. N.

"Noise Suppression in Radiotelephone Signals"

Tr. TsNII mor. flota (Transactions of the Central Navy Scientific Institute) No 147, 1971, pp 78-83 (from RZh--Radiotekhnika, No 4, 1972, Abstract No 4A228)

Translation: The need for noise suppression in pauses in speech transmission is verified; a short description is given, with graphical and experimental analysis, of a device for noise suppression, and the reduction in the noise, $\Delta\chi$, during the pauses is found. Two illustrations, bibliography of three titles.
Annotation

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USSR

UDC 595.775

NAZAROVA, I. V., and TIKHVINSKAYA, M. V., Biological Institute, Kazan' University, and Kazan' State Pedagogical Institute

"Fleas of the Water Vole (*Arvicola terrestris*) in the Middle Volga Region"

Leningrad, Parazitologiya, No 5, 1971, pp 413-416

Abstract: Thirteen species were identified among 698 fleas collected from 1,039 water voles caught in the Middle Volga region from 1957 to 1967. *Ceratophyllus walkeri* and *Ctenophthalmus wagneri* constituted 56 and 10% of all the fleas. *Leptopsylla bidentata*, *Ctenophthalmus agyrtes*, and *Amphipsylla rossica* were less common. Only rare specimens of the other eight species were found. The species variety was greatest (all 13) in floodplains of large rivers (Kama, Vyatka, etc.). These floodplains are natural foci of tularemia and the destination of seasonal migrations of the voles, which exchange parasites with other small mammals in these regions. Water voles are highly sensitive to tularemia and their fleas can harbor and spread the disease. It is suggested that in years when the voles are particularly numerous, their burrows should be poisoned in order to destroy both the rodents and their ectoparasites.

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USSR

UDC: 519.4

NAZAROVA, L. A.

"Representations of Large Arrays of Infinite Type"

Moscow, Izvestiya Akademii Nauk SSSR: Ser. Matematicheskaya, Vol 37, No 4, Jul/Aug 73, pp 752-791

Abstract: The author describes representations of large arrays (P. Gabriel, *Unzerlegbare Darstellungen. I*, *Manus. Math.*, v. 6, Fasc. 1 (1972), pp 71-103) which do not contain problems on reducing a matrix pair by similarity transformations. Gabriel had noted that a set of large arrays of finite type coincides with a set of Dynkin schemes without double connections. Moreover, for each such large array there is a puzzling mutual one-to-one correspondence between the set of its indecomposable representations and the set of positive roots of the corresponding Lie algebra. Gabriel recognized that this relation was not accidental but was unable to find the explanation. Corresponding to the large arrays examined in Nazarova's paper are expanded Dynkin schemes (without double connections) which, in turn, have corresponding, simple, (infinite-dimensional) graduated Lie algebras of finite increase.

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USSR

UDC: 534.285

ABRAMOV, G. V., NAZAROVA, L. A.

"Calculation of the Distribution Functions for the Intensity and Phase of an Ultrasonic Field in the Aperture of Planoconcave Elliptical Lenses and Reflectors With Exposure From an Isotropic Emitter"

Tr. Kuybyshev. aviats. in-t (Works of the Kuybyshev Aviation Institute), 1970, vyp. 44, pp 3-12 (from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6A389)

Translation: The authors consider the intensity distribution function of an ultrasonic field in the aperture of a planoconcave lens, and derive expressions which account for the following factors: changes in the cross section of the tubes of energy in the incident and refracted waves, transition through the refracting interface, transition through the flat interface, and attenuation with propagation in the medium and in the lens material. Graphs are given of the intensity distribution function in the aperture of planoconcave elliptical lenses. These graphs are plotted by using expressions derived for lenses made from aluminum, brass, plexiglas and polystyrene. The maximum phase error is given as a function of the

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ABRAMOV, G. V., NAZAROVA, L. A., Tr. Kuybyshev. aviats. in-t, 1970, vyp. 44,
pp 3-12

ratio of the wave impedances of the lens material and the medium, and the phase lead is given as a function of lens thickness. It is noted that the phase distribution function for a quasiplane ultrasonic field of a reflector depends on the accuracy of making the reflector profile and on the precision with which the phase center of the emitter is set on the principal focus of the system. Eight illustrations, one table, bibliography of five titles.
L. K.

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1/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--REACTION OF TETRAKIS, PYRIDINE, COMPLEXES OF PALLADIUM, II, AND RHODIUM, III WITH NITRIC ACID -U-

AUTHOR--(02)--NAZARGVA, L.A., LEONOVA, T.N.

COUNTRY OF INFO--USSR

N

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1151-2

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL REDUCTION, PYRIDINE, NITRIC ACID, CHLORIDE, PLATINUM, ORGANIC COMPLEX COMPOUND, PALLADIUM COMPOUND, RHODIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3004/2030

STEP NO--UR/0078/70/015/004/1151/1152

CIRC ACCESSION NO--AP0132287

UNCLASSIFIED

272 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132287

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF K SUB2 (PDCL SUB4) WITH PYRIDINE GAVE (PD(PY) SUB4)CL SUB2 WHICH IN THE PRESENCE OF CONCD. HNO SUB3 GAVE A YELLOW PPT. OF TRANS-(PD(PY) SUB2 CL SUB2). REACTION OF (RH(PY) SUB4 CL SUB2)CL.6H SUB2 O WITH CONCD. HNO SUB3 AT ELEVATED TEMP. GAVE SHINY YELLOW CRYST. (RH(PY) SUB4 CL SUB2)NO SUB3 .2H SUB2 O. APPARENTLY THE INVESTIGATED COMPLEXES DO NOT BEHAVE LIKE ANALOGOUS PT(II) TETRAMINES WHICH ON REACTION WITH HNO SUB3 GIVE PRODUCTS CONTG. INCREASED CONCN. OF N.

UNCLASSIFIED

L/2 019 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--COMPLEXES OF MESSENGER RNA WITH PROTEIN IN THE POLYRIBOSOMAL ZONE
OF PLANT CELL EXTRACTS -U-
AUTHOR--(03)-AITKHIZHIN, M.A., NAZAROVA, L.M., BEKLEMISHEV, A.B.
COUNTRY OF INFO--USSR
SOURCE--VESTN. AKAD. NAUK KAZ, SSR 1970, 26(3), 56-8
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--RNA, PROTEIN, RIBOSOME, PLANT PHYSIOLOGY, UV
SPECTROPHOTOMETER, RADIOACTIVITY MEASUREMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3002/0470 STEP NO--UR/0031/70/G26/003/0056/0058
CIRC ACCESSION NO--AP0128040
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC. ACCESSION NO--AP0128040

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SHOOTS OF PISUM SATIVUM WERE INCUBATED IN KH SUB2 PRIME32 PD SUB4 FOR 12 HR. AFTER STIRRING IN BUFFER (0.5M SUCROSE, 0.05M TRIS, 0.07M MGCL SUB2, 0.025M KCL, 0.005M MERCAPTOETHANOL), PH 7.6 SEPD. FRACTIONS OF RIBOSOMES WERE OBTAINED BY CENTRIFUGATION AND ULTRACENTRIFUGATION. RIBOSOME FRACTIONS WERE STUDIED BY UV SPECTROPHOTOMETRY AND RADIOACTIVITY MEASUREMENT. THE HIGHEST RADIOACTIVITY WAS FOUND IN HEAVY RIBOSOMES. MONO AND POLYRIBOSOME COMPONENTS WITH THE ACTIVITY OF 1.500, 1.460, AND 1.390 G-CM PRIME3 WERE DETECTED. IT WAS CALCD. THERE ARE COMPLEXES OF MESSENGER RNA WITH PROTEIN IN RATIO OF 20 PERCENT RNA-80PERCENT OF PROTEIN, BECAUSE FREE RNA HAS THE ACTIVITY 1.800 G-CM PRIME3.

UNCLASSIFIED

USSR

VASIL'YEV, L. A., KURAMSHIN, T. A., NAZAROVA, L. P. and
TRAVNIKOVA, L. I.

"Measurement of Pressure of Light and Aerodynamic Forces
Acting on Complex Shape Body in Free-Molecule Flow"

Leningrad, Aerodinamika Razrezhennykh Gasov, 1970, pp 113-118

Abstract: The principle of the method is to measure the intensity of reflected light from an illuminated body in all directions in space, then to calculate the pressure of light force by integrating the intensity of light.

A model of the body to be investigated made of the same material is placed on a gimbals mount, it is illuminated by a collimator mounted in a fixed position relative to the model. The model is rotated in all directions relative to a stationary photocell located at a distance exceeding 50 times the size of the model. The intensity of reflected light measured by the photocell is integrated by means of a computer.

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USSR

VASIL'YEV, L. A., et al., Aerodinamika Razrezhennykh Gasov, 1970, pp 113-118

As to the aerodynamic forces it has been shown in reference [17] that they can be determined by measuring the pressure of light, provided that the distribution of reflected light is similar to the distribution of molecules reflected from the body during its travel through the free-molecule flux.

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USSR

N

UDC 615.285.7.015:551.581(213)

ATABAYEV, Sh. T., KHASANOV, Yu. U., and NAZAROVA, L. S., Candidates of Medical Sciences, Uzbek Scientific Research Institute of Sanitation, Hygiene, and Occupational Diseases

"Persistence of the Pesticide Aldrin in a Hot Climate"

Moscow, Gigiyena i Sanitariya, No 4, 1970, pp 108-109

Abstract: Aldrin is used in Tashkent, Andizhan, Fergana, and Khorezm oblasts to treat cotton seeds and control various insects. The pesticide tends to disappear fairly quickly in the upper soil layers due to the effect of high temperature (decomposition), microbiological processes, uptake by plants, and removal by irrigation. However, it was found to persist in the 70-100 cm layer for 5 years or more. The amount persisting varies with the soil group. The residue is greater in meadow-bog soils than in clayey or sandy soils, because there is more organic matter and, consequently, greater uptake of aldrin in the former than in the latter. Aldrin constitutes a health hazard because soils sprayed with it or soils in which treated seeds of plants are grown become a secondary source of pollution of open bodies of water, which are used by a large part of the Uzbek population for drinking and household purposes.

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006

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--STABILITY OF COMPLEXES OF CADMIUM WITH D
PROPANOL AND WATER ACETONE SOLUTIONS -U-

AUTHOR--(02)--NAZAROVA, L.V., BUDU, G.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(5), 1261-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--STABILITY CONSTANT, CADMIUM COMPLEX, PHENANTHROLINE, ORGANIC SOLVENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0946

CIRC ACCESSION NO--AP0137974

STEP NO--UR/0078/70/015/005/1261/1265

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PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0137974

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CO(PHEN) SUB3 PRIME2 POSITIVE (I),
WHERE PHEN EQUALS O PHENENTHROLINE, FORMS IN AQ. FROM AND AQ. ME SUB2 CO
SOLNS. IN THE PRESENCE OF AN EXCESS OF THE LIGAND. THE STABILITY OF I
DECREASES WITH INCREASING ORG. SOLVENT CONC. STABILITY CONSTS. (BETA)
ARE TABULATED. THE BETA FOR I CHANGED WITH ORG. SOLVENT CONC.
ANALOGOUSLY TO THE BETA OF (PHEN H) PRIME POSITIVE.

UNCLASSIFIED

Acc. Nr:

AP0048484

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code:

UR0070

104779p Dislocation structure arising in threadlike sapphire crystals during deformation under concentrated loading. Bulygina, T. I.; Nazarova, M. P.; Svetlov, L. L. (USSR). *Kristallografiya* 1970, 15(1), 98-102 (Russ). Crystals obtained as a result of the high-temp. oxidn. of Al powder or TiAl₃ in a flux of humid H₂O were investigated. The crystals, in the form of optically transparent plates (20-30 μ thick, 100-200 μ wide, 3-5 mm long) were subject to indentation under a load of 20 g over 5-10 sec, followed by heating in a H-O flame at >1000°. The effect of deformation was detd. by etching the samples in H₃PO₄ at 320°. Under these conditions the prismatic loops of dislocation shifted according to their Burgers vectors. The results obtained showed a similarity in the behavior of sapphire and brittle semiconductors, which may be explained by the action of a similar mechanism of plastic deformation at room temp. J. Pabis-Machej

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UDC 681.3.06:537.951.2

AKSENOV, V.I., NAZAROVA, M.V.

"Numerical Solution Of The Problem Of Transmission Of Very-Low Frequency Electromagnetic Waves Through The Lower Atmosphere"

Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1353-1361

Abstract: The paper is concerned with the development of an algorithm and a program of numerical integration of a system of equations describing the propagation of electromagnetic waves in a plane-stratified magnetoactive plasma. The polarization, the angle of incidence of the wave, and the orientation of the external magnetic field are arbitrary. The algorithm is based on numerical integration of a system of field equations with the use of a subprogram of correction of the solution and reduction of its continuity. The method of calculations developed is used for an analysis of the peculiarities (not previously investigated in other works) of the transmission of very-low frequency (VLF) electromagnetic waves through the lower atmosphere. The program developed makes it possible in the VLF band to determine the matrix of the coefficients of reflection, the components of the wave field at any level in the ionosphere, the value of the transmission coefficient, and the vector direction of the energy flow. The method

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USSR

AKSENOV, V. I., NAZAROVA, M. V., Radiotekhnika i elektronika, Vol XVII, No 7, July 1972, pp 1353-1361

of solution used in this paper can be used for study of the propagation of electromagnetic waves in any plane-stratified anisotropic media for which it is impossible to use more simple approximation methods. The authors thank L.A. Shekulin and I.V. Lishin for discussion of the work. 7 fig. 14 ref. Received by editors, 23 June 1971.

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USSR

UDC 621.371.029.4

AKSENOV, V. I. and NAZAROVA, M. V.

"Theoretical Investigation of the Passage of Ultra-Long Waves Through the Lower Ionosphere"

Moscow, V sb. X Vses. konf. no rasprostr. radiovoln. Tезisy dokl. Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 3--collection of works) "Nauka," 1972 pp 114-118 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A370)

Translation: An algorithm proposed earlier by the authors for computing the fields in a plane-layer anisotropic plasma is used for investigating the angular, frequency, latitude, and azimuthal dependences of the transmission coefficient of ultra-long waves (1-100 kHz) through the lower ionosphere. Two illustrations, bibliography of two. N. S.

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USSR

UDC 621.371.029.4

AKSENOV, V. I. and NAZAROVA, M. V.

"Investigating the Interference Structure of Ultra-Long Wave Radio Fields in the Ionosphere"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 3 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 3--collection of works) "Nauka," 1972 pp 119-123 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A371)

Translation: This paper is devoted to a theoretical analysis of the spatial structure for the field of a grounded ultra-long wave transmitter in the ionosphere resulting from interfering radiation incident on the lower boundary of the ionosphere. The results of the computations are compared with the experimental data obtained by the artificial earth satellite "Kosmos-259". Resume

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USSR

UDC 538.576.454.001.572

AKSENOV, V. I., and NAZAROVA, M. V.

"Coefficients of Reflection and Transmission of Ultralong Waves in a Model of the Lower Ionosphere With Exponential Profiles of V and v"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1113-1119

Abstract: Coefficients of transmission and reflection are found for an ionospheric model of the form

$$v(z) = 2\pi f_H \exp(p - qz); \quad f_H = \text{const};$$

$$N(z) = N_0[1 + \exp 2(qz - p)],$$

where v is the effective number of collisions, f_H is the gyrofrequency of an electron, and N is electron concentration. The problem reduces to solving the equation

$$\frac{d^2 F}{dz^2} + k^2 \epsilon(z) F = 0.$$

for a layer of the form

$$\epsilon(z) = 1 \pm aN_0[e^{2(qz-p)} \mp e^{qz-p}].$$

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USSR

AKSENOV, V. I., and NAZAROVA, M. V., Radiotekhnika i Elektronika, Vol 16, No 7, Jul 71, pp 1113-1119

where $\alpha = e^2/\pi m f_H F$; e , m are the charge and mass of an electron; f is the wave frequency. The solutions of the wave equation, which are expressed in terms of Whittaker functions, are analyzed. The resultant formulas define the coefficients of transmission and reflection of a plane electromagnetic wave incident on the layer from above or from below. The frequency dependence of these coefficients is studied for the case of longitudinal propagation of ultralong waves in a plane laminar magnetically active ionospheric plasma (angle between the wave vector and the external magnetic field equal to zero with exponential profiles $N(z)$ and $\nu(z)$). The proposed model of the lower ionosphere is close to reality and has never been previously studied. If information is available on the change in electron concentration over a 24-hour period, the results found in this paper can be used to determine the diurnal variation in the coefficients of transmission and reflection of ultralong waves in the ionosphere. The formulas derived can also be used to find the electron concentration profile when the coefficients of transmission (or reflection) are known on several frequencies in the ultralong wave band.

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USSR

KLYSHKO, D. N., NAZAROVA, N. I., and KHOKHLOV, R. V.

"Parametric Light Scattering in the Field of an Ultrasonic Wave"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol. 61, No. 4(10), October 1971, pp 1422-1426

Abstract: This article considers another possible method for compensating the dispersion of light in cubic crystals without inversion centers by using auxiliary ultrasonic pumping of a particular frequency and wave vector satisfying the condition of quadruple wave synchronism. Besides the pumping wave, the other three waves are those involved in the reaction $\omega_3 \rightarrow \omega_1 + \omega_2$, where ω_3 is the frequency of the incident light on a crystal, and ω_2 and ω_1 are the frequencies of the scattered waves. Experiments involving these waves provide useful information concerning the characteristics of crystals asymmetrical with respect to their center, particularly the dispersion of the refractive indices in the infrared region of the spectrum. From their computations, the authors conclude that it is possible to observe parametric light scattering in cubic piezoelectric crystals through the use of the auxiliary ultrasonic pumping. They are connected with the M. V. Lomonosov Moscow State University.

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Acc. Nr: *W*
AP0043684

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 3, pp 878-886

SCATTERING OF LIGHT BY LIGHT
IN A NONCENTRALLY SYMMETRICAL MEDIUM

D. N. Klushko, N. I. Nazarov

The main characteristics (intensity, dependence of frequency on scattering angle, line shape) of the radiation scattered by a transparent crystal not possessing a symmetry center are calculated. Scattering due to the quadratic and cubic terms in the macroscopic polarizability expansion in amplitude of the incident light (which is assumed to be monochromatic) is considered. It is shown that as a rule the efficiency of two consecutive three-photon processes is greater than the efficiency of a four-photon process. The effect of the finite cross section of the incident light beam is taken into account.

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19770088

Feb 21

USSR

UDC 517.1:615.7/9

NAZAROVA, O.

"On the Problem of the Change in Activity of Cholinesterase of the Blood of Animals Under the Effect of Magnesium Chlorate"

Tr. Turkm. med. in-ta (Works of the Turkmen Medical Institute), 1971, 15, pp 144-146 (from RZh-Biologicheskaya Khimiya, No 17, Sep 71, Abstract No 17F2086)

Translation: Feeding magnesium chlorate (I) to rabbits in doses of 0.04 or 0.4 g/kg for 30 days caused an increase in the activity of pseudocholinesterase and a reduction in the period after completion of inoculation; the changes in activity of pseudocholinesterase are more pronounced after a larger dose of I. The activity of true cholinesterase of the blood was suppressed by a dose of 0.4 g/kg of I during the ingestion period and for 3-4 months after completion of ingestion. Compound I in a dose of 0.04 g/kg did not change the activity of cholinesterase. It is concluded that the activity of cholinesterase of the blood may serve as an early indication of magnesium chlorate poisoning.

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USSR

NAZAROVA, O. B.

"Change in the Activity of Blood Cholinesterase Due to the Action of Magnesium Chlorate on Intact Skin"

Zdravookhran. Turkmenistana (Turkmenistan Public Health), 1973, No 5, pp 3-5 (from RZh-Biologicheskaya Khimiya, No 24, Dec 73, Abstract No 24F 2176)

Translation: Onto a shaven skin patch of rabbits (4 X 5 cm²), 8-10 drops of 40%, 12%, and 1.5% solution of Mg chlorate were deposited (I, cotton defoliant, daily administration for 30 days). Prior to the experiment, during the application period (7, 14, and 30 days) and 15 and 30 days after the completion of the regimen, the general state, local changes on the skin and the activity of CE in blood serum and in the erythrocytes (ER) were determined. It was shown that, due to the action of a 40% solution of I at the 7th day, the activity of CE in blood and ER dropped by 26 and 30.9% respectively; on the 14th day by 36.2 and 43.0% respectively, at the 21st day, in absence of obvious toxic manifestations, the activity of CE in blood and ER dropped by 30.9 and 38.8% respectively; 15 days after completion of the exposure to I, the activity of CE in blood and ER was lowered by 19.6 and 29.1% respectively. The recovery of the CE activity was observed 30 days after completion of the experiment. In case of lower

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USSR

NAZAROVA, O. B., Zdravockhran. Turkmenistana, 1973, No 5, pp 3-5

concentrations of I, the changes in the activity of CE were analogous but weaker, its recovery being much faster. The conclusion was reached that one should not neglect the toxic activity of I (for example the toxicity of a 12% solution of I), because of the fact that I slowly penetrates the intact skin and is capable of causing local as well as general changes in the organism.

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USSR

UDC 620.193.01:669.295

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TOMASHOV, N. D., RUSKOL, YU. S., AYUYAH, G. A., IVANOV, YU. M., PLAVNIK, G. M., and NAZAROVA, R. I., Academy of Sciences USSR, Institute of Physical Chemistry

"The Effect of Alloying Elements on the Corrosion Behavior of Titanium"

Moscow, Zashchita Metallov, Vol 9, No 1, Jan-Feb 73, pp 10-15

Abstract: The method of potentiostatic polarization curves, corrosion tests, and electron diffraction investigations were applied to investigate the corrosion and electrochemical properties of alloys based on titanium iodide with small additions of chromium, molybdenum, niobium, aluminum, manganese, and tin in a 40% H₂SO₄ solution at 80° under natural aeration, conditions.

The structure of the anodic oxide films developing on these alloys was analyzed. The passivation and full passivation potentials were found to be practically independent of the nature and concentration of the alloying addition, whereas the critical passivation currents and the currents in the passive zone varied significantly. Aluminum impairs the corrosion properties of titanium both in the active and passive states. Manganese and chromium increase the rate of corrosion in the active state and decrease it in the passive state. Niobium, on the other hand, reduces titanium corrosion rate in the active state and increases it in the passive state. One figure, three tables, thirteen bibliographic references.

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UDC 620.193.01

USSR

TOMASHOV, N. D., CHUKALOVSKAYA, T. V., CHERNOVA, G. P., PLYVNIK, G. M.,
NAZAROVA, R. I., ZAKHAROV, A. P., and SHESHENINA, Z. YE., Academy of Sciences
USSR, Institute of Physical Chemistry

"Structural Study of Surface Layer on Ti-Pd Alloys"

Moscow, Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

Abstract: The article describes results of an electron microscopic, electron diffraction, and X-ray study of the surface layer forming on Ti-Pd alloy (Ti-0.2 percent Pd and Ti-1 percent Pd) during corrosion in 40 percent H₂SO₄ and 20 percent HCl at 100°. The electron microscopic study of the surface of Ti-Pd alloys after their corrosion confirms the supposition as to the accumulation of palladium on the surface in the form of very finely dispersed crystalline formations. After treatment of the surface with hot concentrated HNO₃, which dissolves Pd, the electron microphotographs show no particles.

In the case of Ti-1 percent Pd palladium mainly forms very fine particles on the surface. The Pd accumulations on Ti-0.2 percent Pd alloy reveal a tendency towards the branched growth of primary crystallization centers.

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TOMASHOV, N. D., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

The results of the electron diffraction study of the surface of Ti-1 percent Pd alloy show that after corrosion in 20 percent HCl at 100° there are strong lines characteristic of Pd and very weak lines characteristic of TiO₂ and TiH₂. After treatment of the alloy in HNO₃ the lines characteristic of Pd disappear, and only TiH₂ and TiO₂ are found on the surface. The relative intensity of the reflections characteristic of Pd increases with an increase in the corrosion time, while it decreases for TiH₂ and TiO₂. After corrosion in 40 percent H₂SO₄ at 100° reflections characteristic of Pd, TiH₂, and TiO₂ are observed. However, the intensity of the Pd-characteristic lines is considerably weaker than after corrosion in 20 percent HCl at 100°, and they are of a diffuse character, while the intensity of the reflections characteristic of TiH₂ and TiO₂ is stronger.

X-ray analysis of the powdered surface layer that forms on Ti-1 percent Pd alloy shows that after corrosion in 20 percent HCl at 100° the alloy

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TOMASHOV, N. D., et al., Zashchita Metallov, Vol 8, No 3, May-Jun 72, pp 291-294

preferentially contains metallic palladium. After corrosion of the alloy in 40 percent H_2SO_4 at 100° , along with the strongest Pd lines, considerably weaker lines characteristic of Ti_2N are observed.

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1/3 038 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--CORROSION RESISTANCE OF REFRACTORY MATERIALS IN ANTIMONY SALT MELTS

-U-
AUTHOR--(04)-BULDAKOV, A.A., ROZLOVSKIY, A.A., IGNATOVA, T.S., NAZAROVA,

U
COUNTRY OF INFO--USSR

SOURCE--OGNEUPORY 1970, 35(1), 35-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MAGNESIUM OXIDE, ALUMINUM OXIDE, TIN, ALLOY, REFRACTORY
MATERIAL, ANTIMONY, SODIUM CHLORIDE, POTASSIUM CHLORIDE, ELECTROLYTE,
LEAD, IRON, COPPER, CORROSION RESISTANCE, METAL POWDER/(U)SUZ ANTIMONY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1993/1955

STEP NO--UR/0131/70/035/001/0035/0037

CIRC ACCESSION NO--AP0114373

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114373

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CORROSION RESISTANCE OF A LARGE NO. OF REFRACTORY MATERIALS SIMULTANEOUSLY IN CONTACT FOR 250 HR WITH SB SALTS AND NA CL PLUS KCL SOLN. AT 800DEGREES IN AN EXPTL. INDUSTRIAL ELECTROLYZER WAS DETD. THE ELECTROLYTE CONTAINED EQUI MOLAR MIXT. OF TECH. GRADE NA CL AND KCL. INTERACTION OF THE MATERIALS USED OCCURRED NOT ONLY WITH CHLORIDES BUT ALSO WITH SOLNS. OF NA AND K IN THESE CHLORIDES. THE ELECTROLYTE WAS SATD. WITH IMPURITIES CONSISTING OF PB 0.25-0.60, FE 0.04-0.28, CU 0.008-0.07, NI 0.001, AS 0.01-0.054, AND S 0.14-0.595PERCENT. RECTANGULAR PRISMS OR TABLOID SHAPED SPECIMENS OF MGO, AL SUB2 O SUB3, AIN, SI SUB3 N SUB4, BN, 80BN PLUS 20SI SUB3 N SUB4, 60BN PLUS 40SI SUB3 N SUB4, 78SI SUB3 N SUB4 PLUS SIC, 20MGO PLUS 80SI SUB3 N SUB4, 40MGO PLUS 60SI SUB3 N SUB4, KMG SUB3 SI SUB3 ALO SUB10 F SUB2 AND OF CEMENT OF MG PHOSPHATE WITH CARBORUNDUM FILLER WERE TESTED. THESE WERE PLACED VERTICALLY IN A GRAPHITE CRUCIBLE OF 30 MM HEIGHT AND 20 MM DIAM. WHICH WAS HALF FILLED WITH POWDER OF SB (SU-2 GRADE). AN OPENING OF 4 MM DIAM. WAS MADE IN THE UPPER PART OF THE CRUCIBLE FOR CIRCULATION OF THE ELCTROLYTE. THESE SPECIMENS WERE THEN SUBJECTED TO THE ACTION OF SB MELT AND THE ELECTROLYTE AT 800DEGREES CRUCIBLE WAS HEATED IN A SILT OVRN. SPECIMENS WERE THEN WEIGHED AFTER BOILING IN DISTD. WATER FOR 14 HR AND DRIED AT 150DEGREES FOR 10 HR. THE OUTER APPEARANCE AND THE CONDITION OF SPECIMENS AFTER TESTING HAVE BEEN GIVEN.

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PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0114373

ABSTRACT/EXTRACT--MGU, AL SUB2 O SUB3, AIN, 20MGO PLUS 80SI SUB3 N SUB4,
40MGO.60SI SUB3 N SUB4, AND KMG SUB3 SI SUB3 ALO SUB10 F SUB2 ARE
RECOMMENDED AS QUALITY MATERIALS FOR REFINING OF SB FROM ALLOYS BECAUSE
OF THEIR GOOD CORROSION RESISTANCE. FACILITY: VOST. INST.
OGNEUPOR., SVERDLUVSK, USSR.

UNCLASSIFIED

Acc. Nr:

AP0048372

Abstracting Service:

INTERNAT. AEROSPACE ABST 5-70

Ref. Code:

URO293

A70-24322 # Meteoroid matter in the vicinity of the earth
 (Meteoroid veshchestvo v okrestnosti zemli). T. N. Nazarov.
Kosmicheskie Issledovaniia, vol. 8, Jan.-Feb. 1970, p. 154-156. 13
 refs. In Russian.

Survey of Soviet and American experimental data for sporadic
 meteoroid particles in the earth's vicinity at distances greater than
 200 km from its surface. Attention is given only to results obtained
 with sensors measuring the same parameter (kinetic energy). The
 data show a higher spatial density of solid interplanetary material in
 the earth's vicinity than in the zodiacal cloud. T.M.

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REEL/FRA
19800080

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USSR

UDC 66.094.53:678.53:678.744:661,728

PREDVODITELEV, D. A., NAZAROVA, V. A., All-Union Institute of Artificial Fibers

"Synthesis of Phosphorus-Containing Derivatives of Polyhydroxy Compounds, by the Action of Oxaphospholanes"

Leningrad, Zhurnal Prikladnoy Khimii, 1971, Vol 44, No 8, pp 1845-1849

Abstract: As phosphorylizing agents, the anhydrides of the phosphorus acids possess strong advantages, since when they act on hydroxyl-containing compounds, no side-products which might destroy the initial polyhydroxy compounds are produced; but the formerly used acids of pentavalent phosphorus were inadequate in having a low reactivity. For this reason the development of synthetic methods for phosphorus-containing esters is of great interest. An approach is made by the author by using as acylating reagents, the mixed anhydrides of pentavalent phosphorus and of the carboxylic acids--and in particular that of a β -carboxydiethylphosphinic acid. All these offer advantages in the preparation and with regard to the amount of extraction of phosphorus by 1/1 the polymer.

USSR

UDC 615.31:547.722.5.012.1:542.9

NAZAROVA, Z. N., and POTEKIN, G. F., Rostov University

"Synthesis of Some Furylnitroolefins With Potential Biological Activity"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 10, Oct 72, pp 5-8

Abstract: The article describes the synthesis by the authors of new β -(5-nitrofuryl-2)- α -bromonitroethylene and β -(5-nitrofuryl-2)- α -phenyl-nitroethylene, as well as corresponding furyl-, 5-methylfuryl- and 5-halofurylnitroolefins, and considers the effect of substituents in the furan nucleus and side chain on their physiological activity. Yu. N. Il'ina took part in a portion of the work. The article also describes tests of some β -(furyl-2)-nitroolefins at the Chair of Microbiology of Rostov Medical Institute under the direction of Professor A. A. Kashayeva and at the All-Union Scientific Research Pharmacochemical Institute imeni S. Ordzhonikidze.

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1/2 012 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MECHANISM OF ADSORPTION OF METAL IONS ON CARBOXYLIC CATION
EXCHANGERS. IV. ADSORPTION OF URANYL ION ON KB-4 RESIN -U-
AUTHOR-(03)-CHUVELEVA, E.A., NAZAROV, P.P., CHMUTOV, K.V.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 166-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATION EXCHANGE RESIN, BENZENE DERIVATIVE, URANIUM COMPOUND,
COMPLEX COMPOUND, CALCULATION/(U)KB4 ION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1403 STEP NO--UR/0076/70/044/001/0166/0170
CIRC ACCESSION NO--AP0116850
UNCLASSIFIED

272 012

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0116850

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION WAS ACCOMPLISHED ON CATION EXCHANGERS OF THE TYPE KB-4, CONTAINING DIFFERENT AMOUNTS OF DIVINYLBENZENE. THE CONSTS. OF COMPLEX FORMATION OF UO SUB2 PRIME2 POSITIVE WERE CALCD. ON THE BASIS OF EXPTL. DATA. FACILITY: INST. FIZ. KHIM., MOSCOW, USSR.

UNCLASSIFIED

1/2 C14 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--CHEMISTRY OF ETHERS WITH UNSATURATED RADICALS. XVI. REACTION OF A
GRIGNARD REAGENT WITH 2, METHOXY, 2, METHYL, 3, ALKYNES -U-
AUTHOR--(04)--KRYAN, G.M., GASPARYAN, S.M., MELKONYAN, N.K., NAZARYAN, A.A.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 912-15
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ETHER, FREE RADICAL, GRIGNARD REAGENT, METHOXY COMPOUND,
ALKYNE, GAS CHROMATOGRAPH, DIMERIZATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1335 STEP NO--UR/0366/70/006/005/0912/0915
CIRC ACCESSION NO--AP0165009

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135009

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTIONS OF RC TRIPLE BOND
 CCME SUB2 CME (R IS ME, ET, PR, BU) WITH R PRIME1 MGBR (R PRIME1 IS ME
 OR ET) PROCEED BY A FREE RADICAL MECHANISM (G. M. MKRYAN, ET AL., 1966,
 1967, 1968). THE RADICALS RC TRIPLE BOND CC.ME SUB2 (I) AND R PRIME1.
 INTERACT GIVING R PRIME1 R PRIME1, RC TRIPLE BOND CCME SUB2 R PRIME1,
 AND RC TRIPLE BOND CCME SUB2 CME SUB2 C TRIPLE BOND CR. I REARRANGES TO
 RC.:C: CME SUB2 WHICH THEN DIMERIZES GIVING MC SUB2 C:C:CROR:C:CME SUB2
 (II) AND RC TRIPLE BOND CCME SUB2 CR:C:CME SUB2 OR I REACTS WITH R
 PRIME1. GIVING RR PRIME1 C:C:CME SUB2 (III). II AND III WERE DETECTED
 BY GAS CHROMATOG. ONLY. FACILITY: VSES. NAUCH.-ISSLED. PROEKT.
 INST. POLIM. PROD., USSR.

UNCLASSIFIED

1/3 014 UNCLASSIFIED PROCESSING DATE—30OCT70
TITLE—MECHANISM OF 1,3 DIOL CONVERSIONS IN THE PRESENCE OF ACIDIC
CATALYSTS. 2. CONVERSION OF 2,4 PENTANEDIOL AND 2 METHYL 2,4 PENTANEDIOL
AUTHOR—(03)—SHARF, V.Z., FREYDLIN, L.KH., NAZARYAN, A.A.

COUNTRY OF INFO—USSR

SOURCE—IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 597-602

DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY

TOPIC TAGS—CHEMICAL REACTION MECHANISM, PENTANE, ALCOHOL, CATALYST,
DEHYDRATION, STEREOCHEMISTRY, CARBONYL COMPOUND, ISOMER DIENE

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/0839

STEP NO—UR/0062/70/000/003/0597/0602

CIRC ACCESSION NO—AP0124506

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PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124506

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONVERSIONS OF 2,4 PENTANEDIOL AND ITS 2 ME ANALOG OVER CA SUB3 (PO SUB4) SUB2 OR AL SUB2 O SUB3 CATALYSTS IN THE TEMP. INTERVAL 140-360DEGREES WERE SHOWN GRAPHICALLY. THE DEHYDRATION OF THESE ALCS. OCCURS SPECIFICALLY IN RESPECT OF THEIR STEREOCHEMISTRY AND RESULTS IN TRANS 1,3 PENTADIENE FROM THE 1ST ALC. ALSO, APPRECIABLE DECOMPN. TAKES PLACE: THE PHOSPHATE CATALYSTS LEADS TO ME SUB2 CO AND ISO PROH, WHILE AL SUB2 O SUB3 GIVES ALSO OSME ACH. THE CARBONYL COMPS. ARE FORMED BY EITHER ISOMERIZATION OR DEHYDRATION PRODUCTS SUCH AS THE EPOXIDE OR UNSATD. ALC. OR BY DEALDOLIZATION OF THE KETOL FORMED AS AN INTERMEDIATE. IN THE CASE OF THE PHOSPHATE CATALYST THE CLEAVAGE IS CAUSED BY H TRANSFER FROM THE HO GROUPS OF THE DIOL TO THE CARBONYL GROUP TO FORM THIS KETOL, WHICH THEN CLEAVES BY DEALDOLIZATION. THE REACTIONS OCCUR IN THE 100-50DEGREES INTERVAL, AT WHICH DEHYDRATION CANNOT TAKE PLACE. OVER AL SUB2 O SUB3 THE DECOMPN. OF THE DIOL IS LESS PRONOUNCED AND CLEAVAGE VIA THE KETOL IS INHIBITED BY H SUB2 O GENERATED IN THE REACTION OWING TO POISONING OF THE CATALYSTS IN RESPECT OF THE H TRANSFER REACTION. DEHYDRATION OF THE 1ST DIOL OVER CA SUB3 (PO SUB4) SUB2 AT 290DEGREES YIELDS MIXED UNSATD. ALCS. CONTG. 68PERCENT 4 PENTEN 2OL AND 32PERCENT TRANS 3 PENTEN 2 OL, WHILE GREATER THAN 325DEGREES THE PRODUCT IS ONLY 4 PENTEN 2 OL; AS THE TEMP. IS RAISED THE YIELDS OF THESE ALCS. DECLINE AND THAT OF DIENE RISES, AND THE FINAL PRODUCT CONTAINS 75-100PERCENT TRANS PIPERYLENE AND 0-20PERCENT CIS ISOMER; THE YIELD OF 1,4 PENTADIENE IS LESS THAN 5PERCENT.

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PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124506

ABSTRACT/EXTRACT--2 METHYL 2,4 PENTANEDIOL REACTS ON AL SUB2 D SUB3 EVEN AT 135DEGREES, WHILE AT 190DEGREES THE CONVERSION REACHES 30PERCENT, FORMING HOEME SUB2 CH SUB2 CHMEOH AND ISOMERIC 2 METHYLPENTADIENES, ALONG WITH ME SUB2 CO AND ISO. PROH. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--1,3-DICL CONVERSION MECHANISM IN THE PRESENCE OF ACID CATALYSTS. 1.
CONVERSION OF 1,3-PROPANEDIOL, 1,3-BUTANEDIOL AND BETA OXIDES ON CALCIUM
AUTHOR--(04)--FREYDLIN, L.KH., SHARF, V.Z., BARTOK, M., NAZARYAN, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 310-14

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PROPANE, BUTANE, HYDROXYL RADICAL, ORGANIC OXIDE, ACID
CATALYSIS, FURAN, EPOXIDE, KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/0749

STEP NO--UR/0062/70/000/002/0310/0314

CIRC ACCESSION NO--AP0124419

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124419

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PRODUCTS FORMED BY PASSAGE AT 275-350DEGREES OVER CA SUB3 (PO SUB4) SUB2 OF HO(CH SUB2) SUB3 OH, TETRAHYDROFURAN, AND ALLYL ALC. WERE TABULATED FOR EACH TEMP. IN 25DEGREE STEPS. SIMILAR DATA ARE REPORTED FOR HO(CH SUB2) SUB2 CHMEOH AND 2,METHYLTETRAHYDROFURAN, BOTH RUN OVER 230-300DEGREES. THE 1,3,DIOLS ARE CONVERTED INTO A MIXT. OF SATD. AND UNSATD. ALCS., ALDEHYDES, KETONES, EPOXIDES, AND OTHER COMPS. DEHYDRATION OCCURS BY 2 PATHS TO AN UNSATD. ALC. AND TO A CYCLIC OXIDE, WITH INTRAMOL. CYCLIZATION BEING PREDOMINANT. OXIDES ARE THEN CONVERTED BY ISOMERIZATION TO UNSATD. ALCS. AND CARBONYL COMPS. MUCH OF THE SATD. ALCS. AND UNSATD. ALDEHYDES IS FORMED BY THE H TRANSFER REACTIONS. 2,2,DIETHYL,1,3,PROPANEDIOL GAVE 11PERCENT 3,3,DIETHYLTRIMETHYLENE OXIDE, 18PERCENT ISOMERIC HEPTENOLS, AND 71PERCENT MIXED PRODUCTS AT 300DEGREES; 2,BUTYL,1,3,PROPANEDIOL GAVE NO TRIMETHYLENE OXIDE DERIVS. BUT 20PERCENT ISOMERIC HEPTENOLS AND 80PERCENT MIXED PRODUCTS. 2,BUTYLTRIMETHYLENE OXIDE WAS 98PERCENT CONVERTED TO ALCS. AND OTHER PRODUCTS AT 300DEGREES. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

AP9049814

PRIMARY SOURCE: Izvestiya, AN ArmSSR. F1
pp 53-57

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THE FLUCTUATIONS OF THE TRACK BRIGHTNESS IN THE
STREAMER CHAMBER

T. L. ASATIANI, K. A. GAZARIAN, W. N. IMIROW, W. A. IVANOV,
A. A. NAZARIAN

The analysis of the fluctuations of streamer track brightness is presented. It is shown that these fluctuations are mainly related to the energy losses ionization. Method of identification of fractionally charged particles and multi-charged nuclei by counting the number of electrons on the streamer track is proposed.

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1948 0125

19

F. Mathematical Problems in Semiotics

USSR

NAZARYAN, G. A.

"Some Estimates of the Realization of Boolean Functions in Algorithmic Languages"

Dokl. AN ArmSSR [Reports of Academy of Sciences, Arm. SSR], 1972, Vol 55, No 5, pp 129-133 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V834)

Translation: The following results, relating to a trend based on the works of A. A. Markov, I. D. Zaslavskiy and V. A. Kuz'min, are formulated within the framework of constructive mathematics. Let M be a recursively denumerable set of Boolean functions, M_n be a subset of M of Boolean functions of n variables, $d_M(n) = |M_n|$ be the power of M_n (d_M in constructive arithmetic is generally not a function but a pseudo-function). The list $L \langle A_j, A_i, \Omega, \mathcal{A} \rangle$ is called an algorithmic language if A_j, A_i are alphabets, $\Pi \langle A_i \cup A_j, \Omega \rangle$ are certain sets of words in A_i, \mathcal{A} is a normal algorithm in $A_i \cup A_j$ such that $\forall P$ (words in A_j) and $\forall X \in \Omega! \mathcal{A}(X \cup P) \supset \mathcal{A}(X \cup P)$ is a word in A_j . Words from Ω refer to the expressions of this language.

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NAZARYAN, G. A., Dokl. AN ArmSSR, 1972, Vol 55, No 3, pp 129-133

If $L_1 \rightarrow \langle A_{j_1}, A_{i_1}, \Omega_1, \mathcal{U}_1 \rangle$ and $L_2 \rightarrow \langle A_{j_2}, A_{i_2}, \Omega_2, \mathcal{U}_2 \rangle$ are two languages, while normal algorithm \mathfrak{D} in $A_{j_1} \cup A_{j_2}$ performs fixed, mutually unambiguous mapping of the set of all words in A_{j_1} and the set of all words in A_{j_2} . Normal algorithm \mathfrak{Z} in $A_{i_1} \cup A_{i_2}$ refers to a translator from L_1 to L_2 , if it can be applied to any message in language L_1 , where $\mathfrak{Z}(X) \in \Omega_2$ and $\forall P$ in A_{j_1} , $\mathfrak{D}(\mathcal{U}_1(X \square P)) = \mathcal{U}_2(\mathfrak{Z}(X) \square \mathfrak{D}(P))$. All statements in language L are numbered in lexicographic order, and the normal algorithm \mathfrak{L} in $A_i \cup \{0, 1\}$ refers to the criterion of complexity of language L if for any statement X in L

$$|\mathfrak{L}(X) \& \mathfrak{Z}(X) = l(\mathfrak{G}(X)),$$

where $\mathfrak{G}(X)$ is the number X (more precisely, the binary representation of this number), while l is the length of the binary representation of the number X . If L_1, L_2 are the criteria of complexity of languages L_1 and L_2 respectively, then translator \mathfrak{Z} from L_1 to L_2 is called additively (or multiplicatively) limited, if there are constants c and d such that

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NAZARYAN, G. A., Dokl. AN ArmSSR, 1972, Vol 55, No 3, pp 129-133

$\forall X \text{ in } L_1$

$$\begin{aligned} \mathcal{L}_2(\mathcal{E}(X)) &< \mathcal{L}_1(X) + c \\ (\mathcal{L}_2(\mathcal{E}(X)) &< c\mathcal{L}_1(X) + d) \end{aligned}$$

and asymptotically limited if

$$\overline{\lim}_{\mathcal{L}_1(X) \rightarrow \infty} \frac{\mathcal{L}_2(\mathcal{E}(X))}{\mathcal{L}_1(X)} < 1$$

(This formula, like the others, is understood constructively). Language L is universal (α -optimal, β -optimal, γ -optimal) if for any language L_1 we can construct a translator (additively, asymptotically or multiplicatively limited translator, respectively) from language L_1 into L . N. P. Ter-Zakharyan, in the article from which the definitions presented above were taken (RZHMat, 1970, 6A72), proved that the language of normal algorithms, also defined there, is β -optimal. Suppose $L = \langle A_j, A_i, \Omega, V \rangle$ is a β -optimal language with complexity criterion L . Statement X in L realizes the Boolean function f of n variables $-X \xrightarrow{L} f$, if for any word P of length n in $A_0 = \{0, 1\}^n$ $V(X \square P) = f(P)$. We define

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NAZARYAN, G. A., Dokl. AN ArmSSR, 1972, Vol 55, No 3, pp 129-133

the pseudofunction L_M :

$$L_M(n) = \max_{f \in M_n} \min_X \{L(X) / X \Rightarrow f\}.$$

The author formulates Theorem 1: 1) if $d_M(n) \rightarrow \infty$, then $L_M(n) \sim \text{Id}_M(n)$; 2) if $\exists C_1 \forall n (d_M(n) < C)$, then $\exists C_2 \forall n (L_M(n) < C)$. For a Q-normal algorithm or Turing machine in alphabet $A = \{a_1, \dots, a_k\}$, where $a_1 = 0$, $a_2 = 1$, the realization $Q \Rightarrow f$ is defined, where f is a Boolean function of n variables, if for any binary word P of length n , Q converts word P into $f(P)$. The complexity of the normal algorithm Q refers to the length of its mapping $[Q^a]$, while the complexity of a Turing machine Q refers to the number of its internal states $N(Q)$. $\mathcal{D}_M^k(n) = \max_{f \in M_n} \min_Q \{[Q^a / Q \Rightarrow f]\}$ and similarly we define $\mathcal{D}_M^k(n)$ for a Turing machine by replacing $[Q^a]$ with $N(Q)$.

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NAZARYAN, G. A., Dokl. AN ArmSSR, 1972, Vol 55, No 3, pp 129-133

Theorem 2: 1) if $d_M(n) \xrightarrow{n \rightarrow \infty} \infty$, then $\mathfrak{D}_M^k(n) \sim \frac{Id_M(n)}{\log k}$; 2) if $\exists C_1 \forall n$
 $(d_M(n) < C)$, then $\exists C \forall n (\mathfrak{D}_M^k(n) < C)$ (for normal algorithms), and

Theorem 3: 1) if $d_m(n) \xrightarrow{n \rightarrow \infty} \infty$, then $\mathfrak{D}_M^k(n) \sim \frac{Id_M(n)}{(k-1)Id_M(n)}$;
 2) if $\exists C_1 \forall n (d_M(n) < C_1)$, then $\exists C \forall n (\mathfrak{D}_M^k(n) < C)$.

Language L is called a Boolean resolvable language if the following problem is effectively resolved: determine for any selected statements X in L and Boolean function f whether X realizes function f. These languages are, for example, the language of contact circuits, the language of circuits of functional elements in a given base, the language of primitively recursive functions, etc. The author formulates

Theorem 4, from which it follows that Boolean functions "rather simply" realized using normal algorithms or Turing machines and "rather difficultly" using contact circuits, functional circuits or primitively recursive functions are quasipossible. 12 Biblio. Refs. A. Muchnik

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1/2 011 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--TNB 2 APPARATUS USED FOR CARBONATE SAPONIFICATION OF OXIDIZED
PARAFFINS IN THE PRODUCTION OF SYNTHETIC FATTY ACIDS -U-
AUTHOR-(05)-YEFIMOV, V.T., NAZARYAN, M.M., MOSKVIN, V.D., BOLOTIN, I.M.,
KOVAL, L.P.
COUNTRY OF INFO--USSR

SOURCE--MASLO-ZHIR, PROM. 1970, 36(3), 21-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CARBONATE, SAPONIFICATION, ALKANE, FATTY ACID, CHEMICAL PLANT
EQUIPMENT, CHEMICAL REACTOR/(U)TNB2 CHEMICAL EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1997/0550

STEP NO--UR/9085/70/036/003/0021/0025

CIRC ACCESSION NO--AP0119469

UNCLASSIFIED

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PROCESSING DATE--23OCT7C

CIRC ACCESSION NO--AP0119469

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OPTIMUM OPERATING PARAMETERS WERE DETD. FOR THE TITLE APP. THE APP. CONSISTED OF A MIXER AND A CASCADE OF 4 SEQUENTIALLY CONNECTED REACTORS. THE EFFECTS OF TEMP. OF THE NA SUB2 CO SUB3 SOLN. USED AND OF THE OXIDIZED PARAFFIN, THE CONC. OF THE NA SUB2 CO SUB3 SOLN., THE SAPON. TEMP. OF THE CARBONATE MASS, THE PRODUCTIVITY OF THE APP., AND THE H SUB2 O CONSUMPTION DUE TO MIXING AND CO SUB2 STRIPPING WERE DETD. THE DEPENDENCE OF THE ACID NO. OF THE CARBONATE MASS ON THE RESIDENCE TIME IN THE APP. WAS PLOTTED FOR VARIOUS PARAFFIN-NA SUB2 CO SUB3 RATIOS (1:0.21-0.26) AND TEMPS. (50-100DEGREES). THE NA SUB2 CO SUB3 DECOMP. RATES AT VARIOUS TEMPS. OF THE OXIDATE AND OF THE NA SUB2 CO SUB3 WERE ALSO DETD. THE APP. DESCRIBED IS THE MOST SUITABLE ONE FOR THE ABOVE CARBONATE SAPON. BECAUSE IT PROVIDES COMPLETE REMOVAL OF CO SUB2 AND A HIGH DEGREE OF NA SUB2 CO SUB3 DECOMP. FACILITY: KHAR'KOV. POLITEKH. INST. IM. LENINA, KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 539.3

KARANDAKOV, G. V., KEROPYAN, K. K., NAZATROV, V. M.

"Calculation of the Circular Anisotropy, Orthotropy and Isotropy of a Plate of Constant Rigidity on an Elastic Base by the Electric Modeling Method"

Tr. Novocherkas. politekhn. in-ta (Works of Novocherkassk Polytechnical Institute), 1972, No. 253, pp 66-71 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V170)

Translation: The possibility of applying multilayer grid electric models of biharmonic operators to calculate circular anisotropic, orthotropic and isotropic plates on a single-layer elastic base with two characteristics is established. The electrical models used in the paper are distinguished from the familiar models in that the biharmonic operators are directly modeled, not requiring their division into systems of second-order operators. 6 ref. Authors' abstract.

USSR

UDC: 539.21:536.72

KHON, Yu. A., FADIN, V. P., and NAZHALOV, A. I.

"Theory of the Ordering Phenomenon in Triple Alloys, Part I"

Tomsk, Izvestiya VUZ--Fizika, No 1, 1972, pp 17-22

Abstract: As indicated by the title, the present article is the first part of a two-part article dealing with the phenomenon of atomic ordering in triple alloys with center-faced crystal lattices from a theoretical point of view. In this first part, an investigation is made of possible types of superstructures in such triple alloys, with computations made on an alloy model, taking into account the interaction of atoms in the first two coordination spheres. The conditions of existence of the various types of superstructure are also investigated. The second part of this paper will theoretically investigate the effect of the interatomic action on the nature of the atomic distribution in such triple alloys, using the same sort of model as that mentioned above. The authors are associated with the V. D. Kuznetsov Siberian Physico-Technical Institute at the Tomsk State University.

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USSR

Aerosols

UDC 615.453.28.014.23.002.5

MAR'YASIN, B. YA., NAZHETKIN, K. P., MARTYNTSEVA, M. N., and TSETLIN, Y. M.,
All Union Scientific Research Institute of Medical Polymers, All Union Scientific
Research Institute of Disinfection and Sterilization, Moscow

"Investigation of Sprayers for Aerosol Cylinders"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol. 6, No 1, Jan 72, pp 39-42

Abstract: Nitrogen is often used as a propellant in forming aerosol preparations. To use it effectively, special atomizers are required as nitrogen is insoluble in most solvents and is being used only to propel the product out of the cylinders. The basic working unit in such atomizers is a centrifugal sprayer with feeding channels. The centrifugal forces press the product against the walls of the sprayer producing a thin film which breaks down into fine droplets -- the aerosol particles. Data used for calculations of centrifugal sprayer parameters include liquid utilization per second, pressure, viscosity, and base angle of the jet. When a finely dispersed aerosol is required, the angle must be increased. Most calculations used in constructing the sprayers are assuming constant pressure which is not the case under real conditions, as the pressure in the cylinders drops continually. The jet angle becomes smaller with a decrease in the pressure inside the cylinder; this effect

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USSR

MAR'YASIN, B. YA., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 1, Jan 72, pp 39-42

is quite strong at pressures below 3 atms. The relationship between the length of the stream and the pressure is more complex: it decreases continuously as the pressure drops to 3-3.5 atms., then it begins to increase again. The diameters of the particles increase linearly, as the pressure is dropped. The crucial points occur at about 3 atm pressure, so the aerosol cylinders should be constructed in a way assuring a final pressure of 3 atms.

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USSR

UDC 669.295.5:788:539.219

KOLACHEV, B. A., ~~NAZIMOV, O. P.~~, and GABIDULLIN, R. M., Moscow
Institute of Aviation Technology, Department of Metal Science
and Hot Metal Working

"Thermal Diffusion of Hydrogen in Titanium and VT15 Alloy"

IVUZ, Tsvetnaya Metallurgiya, No 2, 1971, pp 99-103

Abstract: Experiments are described which confirm the phenomenon of thermal diffusion of hydrogen in titanium alloys. The thermal diffusion of hydrogen was studied in technical titanium containing 0.045% Si, 0.011% O₂, 0.06% N₂, and 0.012% C, and in β

titanium VT15 alloy containing 3.7% Al, 10.6% Cr, 7.35% Mo, 0.03% C, 0.11% Fe, 0.04% Si, and 0.011% O₂. The studies were performed

on forged material produced from an ingot made in an arc furnace with a consumable electrode. The data indicated that thermal diffusion of hydrogen actually can result in concentrations in the cold areas of the specimen sufficient to cause hydrogen brittleness. As the temperatures at which thermal diffusion is

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USSR

KOLACHEV, B. A., et al., Tsvetnaya Metallurgiya, No 2, 1971,
pp 99-103

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but if parts of these alloys are cooled to low temperatures
after operating at high temperatures, brittleness becomes possible
once again.

2/2

USSR

UDC 669.295.5:788:539.219

KOLACHEV, B. A., NAZIMOV, O. P., and GABIDULLIN, R. M., Moscow
Institute of Aviation Technology, Department of Metal Science
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USSR

KOLACHEV, B. A., et al., Tsvetnaya Metallurgiya, No 2, 1971,
pp 99-103

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1/2 010 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--POLYAMIDE INDOLE -U-
AUTHOR--(04)-KUDRYAVTSEV, G.I., ODNORALOVA, V.N., NAZINOVA, N., SHABLYGIN,
M.V.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(5), 371-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CONDENSATION REACTION, AMIDE, INDOLE DERIVATIVE, TOLUENE,
CHLORINATED ORGANIC COMPOUND, AROMATIC ANINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1233 STEP NO--UR/0460/70/012/005/0371/0373
CIRC ACCESSION NO--AP0134907
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0134907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POLYCONDENSATION OF ISOPHTHALOYL DICHLORIDE WITH 2,4-DIAMINOTOLUENE GAVE I, WHICH WAS CYCLIZED TO II BY SWELLING I FILMS IN ETONA OR AC SUB2 O AND HEATING THEM TO 340DEGREES IN VACUO. I AND II LOSE LESS THAN OR EQUAL TO 5 WT. PERCENT DURING HEATING IN AIR AT LESS THAN OR EQUAL TO 400DEGREES. THE WT. LOSS OF II REACHED 15PERCENT AT 460DEGREES. I IS NOT SOL. IN AMIDES OR CONCD. H SUB2 SO SUB4. FACILITY: VSES. NAUCH.-ISSLED. INST. ISKUSSTV. VOLOKNA, MYTISHCHI, USSR.

UNCLASSIFIED

I/2 015 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EFFECT OF THE MAGNETIC TREATMENT OF WATER ON ION EXCHANGE -U-
AUTHOR--(02)-IVANOVA, G.K., NAZIN, A.G.
COUNTRY OF INFO--USSR N
SOURCE--ELEK. STA. 1970, 41(2), 41-3
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ADSORPTION, ANION EXCHANGE RESIN, SORPTION, MAGNETIC FIELD EFFECT, WATER/(U)AV17 ANION EXCHANGE RESIN, (U)IRA410 ANION EXCHANGE RESIN
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1292 STEP NO--UR/0104/70/041/002/0041/0043
CIRC ACCESSION NO--AP0134966
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--20NOV70

GIRC ACCESSION NO--AP0134906

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LAB. INVESTIGATIONS (VERIFIED UNDER INDUSTRIAL CONDITIONS) WERE MADE BY USING SULFOCOAL (CATION EXCHANGER PREPD. TREATING COAL WITH FUMING SULFURIC ACID) AND ANION EXCHANGERS AV-17 AND IRA-410. INCREASE IN THE SORPTION CAPACITY OF THE ION EXCHANGER DURING LAB. TESTS WAS 4-8PERCENT FOR FIELDS OF H EQUALS 1000 OE, AND 19-26PERCENT FOR H EQUALS 3000 OE. THIS INCREASE WAS NOT ONLY RELATED TO A CHANGE IN THE SOLN. PROPERTY BUT ALSO TO CHANGES IN THE STRUCTURE OF ION EXCHANGER. TESTS CONDUCTED ON A PILOT PLANT SCALE VERIFIED THE LAB. DATA. IN CONTROL EXPTS. (WITHOUT PREVIOUS MAGNETIZATION) FE ABSORPTION CAPACITY WAS 4.69 G,EQUIV.-M PRIMEBP IN THE 1ST CYCLES WITH INITIAL MAGNETIZATION IT DECREASED TO 2.11 G,EQUIV.-M PRIMEB. PROBABLY, A PROTECTING FILM FORMED GRADUALLY ON THE NONPROTECTED PARTS OF THE FILTER ALONG WITH A SPECIFIC FILTRATION FILM.

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