"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

APPROVED FOR RELEASE: 09/17/2001 , CIA-RDP86-0051

AUTHORS:

TITLE: SOV/19-59-7-158/369

Th... V.R., ...va, N.M., Mateyuk, N.A.,

...zation of a Single Twisted ... Natural or Artificial Fiber

PERIODICAL: Byulleten', izobreteniy, 1959, Nr 7, pp 34-35 (USSR)

ABSTRACT: Class 29a, 608. Nr 118945 (608873 of 3 October 1958). The above device consists of a housing, containing an upright pipe with hollow walls. To insure a uniform stabilization of a moving single thread in the steam-air medium and on the twisting machine, the pipe is funnel-shaped and placed with its large base, inside a container, filled with water. The container is supported by a plate, and connected with the source of feeding water by means of an angular pipe joint. A nickel-chromium heater is secured to the bottom of the container. The heater encloses a thread guide, fixed on the supporting plate. The upper end of the

Card 1/2

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SOV/19-59-4-162/317

14(1)

AUTHORS: Kremnev, O.A., and Zozulya, N.V.

TITLE: A Heating and Humidifying System

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 4, p 56 (USSR)

ABSTRACT: Class 36d, 1_{16}. Nr 118340 (602192 of 20 June 1958). A system as in title, for heating and humidifying the air in a dwelling space, using a solution of lithium chloride as an intermediate heat carrier.

Card 1/1

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KREMNEV, O. A.,

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AP0049426

and red-hardness (for hardness HRC 60) 625–635°, i.e., values which are usually obtained for highly alloyed V-steels R9F5 and R14F4 with poorer grinding qualities. In steels with higher C, absence of ferrite, after heating to temps. above the pearlite transformation region, provides better dissoln. of carbides. In these steels pptn. of carbides during tempering takes place in a narrower temp. interval, hence the carbides are more dispersed and homogeneous in compn. and size, than in steels with lower C content. Increased C content to 1.0–1.05% is advisable for W-Mo steels, and partly also for R6M5 steel, particularly when they are used instead of highly alloyed V steels, because of their better mech. properties and grinding ability. Jiri Becvar

pc

H2

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--INTENSIFICATION OF THE FINISHING OF A CUT STAPLE FIBER -U-

AUTHOR-(05)-KREMNEV, O.A., BOROVSKIY, V.R., SATANOVSKIY, A.L., KIGEL, T.B., BUGAYCHUK, N.F.

COUNTRY OF INFO--USSR

K

SOURCE--KHIM. VOLOKNA 1970, (2), 53-5 (RUSS)

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--RAYON, TEXTILE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1661 STEP NO--UR/0183/70/000/002/0053/0055

CIRC ACCESSION NO--AP0125283

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 007 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125283

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CON. CONTINUOUS WASHING OF RAYON STAPLE WITH DIL. NAOH SOLN. AT 78DEGREES REQUIRES 135 SEC TO REDUCE ITS S CONTENT BELOW 0.075PERCENT. THE INSERTION OF ROLLERS, WHICH COMPRESS THE STAPLE PERIODICALLY DURING ITS PASSAGE THROUGH THE BATH, AND TEMP. INCREASE TO 95DEGREES REDUCED THIS TIME TO 20-5 SEC. THE WASHING TIME WAS ALSO REDUCED TO 15-20 SEC WHEN VIBRATIONS OF 200 CYCLES-MIN AND 50 MM AMPLITUDE WERE APPLIED TO THE WASH SOLN. HELD AT 80DEGREES. BOTH OF THESE METHODS INCREASED PRODUCTIVITY. THE VIBRATIONS GAVE SOFTER, EASIER TO DRY FIBERS. FACILITY: INST. TEKH. TEPLOFIZ., KIEV, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

15(4) SOV/19-59-7-354/369

AUTHORS: Kremnev, O.A., Borovskiy, V.R., Korostash, M.D., Petrusha, G.I., Tyumenev, Ya.K., Burova, V.M., Timofeyeva, Yu.A. and Zapol'skiy, I.A.

TITLE: A Method of Drying Cocoons

PERIODICAL: Byulleten' Izobreteniy, 1959, Nr 7, pp 72-73 (USSR)

ABSTRACT: Class 82a, 8. Nr 119141 (605185 of 1 August 1958). A method of drying cocoons, with the temperature of the drying agent falling in the drying process. The drying is carried out in a two-zone dryer and with artificial moistening of the drying agent being fed into the chamber. In the first zone, the drying agent has temperature of 125°C and 25% humidity, and in the second zone, a temperature of 95°C and 35 to 40% humidity.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

15(4) SOV/19-59-7-158/369

AUTHORS: Kremnev, O.A., Borovskiy, V.R., Mateyuk, N.A., Filatov, G.M. and Antipova, N.M.

TITLE: A Device for Stabilization of a Single Twisted Thread, Made of Natural or Artificial Fiber

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 7, pp 34-35 (USSR)

ABSTRACT: Class 29a, 6_{08}. Nr 118945 (608873 of 3 October 1958). The above device consists of a housing, containing an upright pipe with hollow walls. To insure a uniform stabilization of a moving single thread in the steam-air medium and on the twisting machine, the pipe is funnel-shaped and placed with its large base, inside a container, filled with water. The container is supported by a plate, and connected with the source of feeding water by means of an angular pipe joint. A nickel-chromium heater is secured to the bottom of the container. The heater encloses a thread guide, fixed on the supporting plate. The upper end of the

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SOV/19-59-7-158/369

A Device for Stabilization of a Single Twisted Thread, Made of Natural or Artificial Fiber

thread guide protrudes above the water level in order to prevent moistening of the thread. The lower end has its inlet enlarged for easing insertion of the thread.

Card 2/2

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

14(1) SOV/19-59-4-162/517

AUTHORS: Kreynev, G.A., and Zozulya, N.V.

TITLE: A Heating and Humidifying System

PERIODICAL: Byulleten' izobreteniy, 1959, Nr 4, p 56 (USSR)

ABSTRACT: Class 36d, 1_{16}. Nr 118340 (602192 of 20 June 1958).
A system as in title, for heating and humidifying the air in a dwelling space, using a solution of lithium chloride as an intermediate heat carrier.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

KREMNEV, O. A.,

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 028

TITLE--DETERMINATION OF THE SOLUBILITY OF MOLYBDENUM CARBONYL IN CARBON MONOXIDE AT HIGH PRESSURE -U-

AUTHOR-(04)-KRICHEVSKAYA, O.D., KREMNEV, V.L., ZELIKHMAN, L.A., BOLOTOVA, K.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 877-9

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MOLYBDENUM COMPOUND, METAL CARBONYL, SOLUBILITY, CARBON MONOXIDE, HIGH PRESSURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0439 STEP NO--UR/0080/70/043/004/0877/0879

CIRI ACCESSION NO--AP0126192

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 028 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126192

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLY. WAS DETD. AT 100-280 ATM. AND 0-30DEGREES. THE CONTENT OF MO(CO) SUB6 IN COMPRESSED CO ROSE WITH INCREASE IN PRESSURE. AN EXPRESSION IS GIVEN FOR THE SOLY. OF MO(CO) SUB6 IN CO AS A FUNCTION OF THE CO PRESSURE.

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USSR

UDC 547.341.26'118.07

LASKORIN, B. N., YAKSHIN, V. V., KREMNEVA, Ye. V., and SKOROVAROV, D. I.

"A Method of Making Monoethers of N-Substituted Thiocarbamoylphosphonic Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292987, Division C, filed 11 Oct 69, published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making monoethers of N-substituted thiocarbamoylphosphonic acids. As a distinguishing feature of the patent, monosubstituted salts of monoalkylphosphites are interacted with alkyl- or arylisothiocyanates in the presence of heat in an organic solvent such as benzene, with subsequent treatment of the resultant product in a mineral acid such as hydrochloric acid, and isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that the process is carried out in the presence of a catalyst such as triethylamine.

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USSR UDC 547.341.26'118.07

LASKORIN, B. N., YAKSHIN, V. V., KREMNEVA, Ye. V., and SKOROVAROV, D. I.

"A Method of Making Monoethers of N-Substituted α-Aminoalkylphosphonic Acids"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 5, Feb 71, Author's Certificate No 292986, Class C, filed 11 Oct 69, published 15 Jan 71, p 101

Translation: This Author's Certificate introduces: 1. A method of making monoethers of N-substituted α-aminoalkylphosphonic acids by interacting phosphites with Schiff bases in the presence of heat with subsequent treatment of the resultant product in a mineral acid such as hydrochloric acid. As a distinguishing feature of the patent, the process is simplified by using monosubstituted ammonium, alkali or alkaline earth salts of monoalkylphosphites as the phosphite, and carrying out the process in the presence of a catalyst such as triethylamine. 2. A modification of this method distinguished by the fact that heating is done to a temperature of 110-120°C.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Acc. Nr: AP0052066 K Ref. Code: UR0396

PRIMARY SOURCE: Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, 1970, Vol 14, Nr 1, pp 29-33

OXYGEN TENSION IN THE WALL OF THE STOMACH, SMALL AND LARGE INTESTINE UNDER NORMAL AND PATHOLOGICAL CONDITIONS

A. P. Krendal', I. M. Epshteyn, S. V. Yelisseyeva

A total of 36 acute experiments were carried out on cats. Using a copper amalgamated electrode pO_2 was determined in the wall of the stomach, small and large intestine. The highest initial pO_2 level was found in the wall of the small intestine, and the lowest — in the large intestine, the stomach occupying an intermediary position. Under pathological conditions (hyper- and hypoxia, hypervolemia, ischemia) alteration of pO_2 level in the wall of the small intestine considerably exceeded these changes in the wall of the stomach and large intestine. The fall of pO_2 caused by blood letting and ligation of the vessels can be compensated by giving pure oxygen to inhale. Different conditions of oxygen sypply of the stomach and intestine are apparently conditioned by peculiarities attending the blood supply and the metabolism of these organs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR UDC: 681.3

BOYKOV, V. N., [redacted], RABINOVICH, V. I., TROFIMOV, O. Ye., SHUL'TS, V. P.

"On Calculating the Precision of Digital Measuring Instruments"

V sb. Teoriya i praktika ispol'z. sredstv tekhn. kibernetiki. Kn. 1 (Theory and Practice in Utilizing the Facilities of Technical Cybernetics--collection of works. Book 1), Novosibirsk, 1970(1971), pp 94-99 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V786)

Translation: The authors consider the effect which improper operation of flip-flops and comparison devices has on the accuracy of a digital device based on the method of binary sweep balancing. In order to explain "in pure form" the nature of the effect which these elements have on the operating precision of the device, a separate analysis is made: for instance, in studying the influence of incorrect flip-flop operation, the comparison device is first assumed as ideal, then real. For the sake of definiteness, distribution of the measured quantity X is assumed to be uniform, and the average modulus of the error is taken as the quality criterion for accuracy of the device. It is noted that all results can be recorded in general form or obtained in the same way for specific distributions of X with the use of many other metrological criteria; e. g., variance or mathematical expectation of the error, etc. V. Mikheyev.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR

UDC: 681.3

BOYKOV, V. N., KRENDEL', Yu. M., RABINOVICH, V. I., TROFIMOV, O. Ye., SHUL'TS, V. P.

"On Calculating the Accuracy of Digital Measuring Instruments"

V sb. Teoriya i praktika ispol'z. sredstv tekhn. kibernetiki. Kn. 1 (Theory and Practice in Using the Facilities of Technical Cybernetics. Book 1--collection of works), Novosibirsk, 1970(1971), pp 94-99 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V786)

Translation: The authors consider the effect which improper operation of the flip-flops and the comparison unit has on the accuracy of a digital device based on the method of binary sweep balancing. In order to explain the nature of the effect which these elements "in pure form" have on the accuracy of the device, a separate analysis is made: for instance in studying the effect of improper operation of the flip-flops, the comparison unit is first assumed to be ideal, and then real. It is assumed for the sake of definiteness that the distribution X of the measured quantity is uniform, and the average absolute value of the error is used as the cri-

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USSR

BOYKOV, V. N. et al., Teoriya i praktika ispol'z. sredstv tekhn. kibernetiki. Kn. 1, Novosibirsk, 1970(1971), pp 94-99

terion of accuracy of the instrument. It is noted that all the results may be written in general form or derived in the same way for distributions X using many other metrological criteria (variance of the error, mathematical expectation of the error, etc.). V. Mikheyev.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

JPRS 57208

6-73

V-7. OBTAINING BORON PHOSPHIDES FROM THE GAS PHASE

[Article by B. A. Savel'yev, V. N. Doronin, V. A. Kremev, V. I. Izvekimov, Moscow; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June, 1973, p 18]

On the basis of the results of the thermodynamic analysis of the reactions of joint reduction of boron and phosphorus halogenides and also the experimental study of the processes of reducing boron tribromide and phosphorus trichloride with hydrogen, an estimate was made of the conditions of obtaining boron phosphides from the gas phase.

A study was made of the dependence of the deposition rate of the boron phosphides on the temperature (800-1400 degrees) and the ratio of the phosphorus trichloride to boron tribromide from 1 to 5 (with a constant hydrogen flow rate and feed rate of the reaction mixture).

The conditions of obtaining monocrystalline films of boron phosphides with deposition on silicon are defined.

Some electrophysical properties of the boron phosphide films were investigated.

KRENEV, V.A.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Glaciology

KRENKE, A.N.

CATASTROPHIC ADVANCES OF GLACIERS

[Article by Doctor of Geographic Sciences [illegible] and Candidate of Geographic Sciences [illegible] Akademii Nauk SSSR, Russian, Vol [illegible], No [illegible], [illegible]

The rapid advance of glaciers, connected with an increase in the rate of movement of ice by one to three orders of magnitude as compared with the usual rates, have long attracted the attention of investigators. Such advances, which have often led to natural calamities, have been linked with earthquakes, [illegible] lanches, abundant snowfalls, the appearance of juvenile waters, the interception of neighboring glaciers, and other external factors. They are classed as random phenomena impossible to predict.

Investigations in recent decades, performed both in the USSR and abroad, have established that periodic advances of glaciers are a natural phenomenon stipulated by instability of the glacial systems themselves. Thus the possibility in principle of forecasting that phenomenon is based in its very nature (in the given case it is necessary to distinguish the concepts of "pulsation" and "advance", understanding by pulsation a complete cycle of fluctuations of the dimensions and rates of movement of glaciers, including not only the active but also [illegible] phases). However, still unclear are a number of questions about the causes and mechanism of the transition of glaciers to ultra-rapid movement, factors which determine whether only some glaciers are classified as pulsating, and also clear differences between pulsating and "normal" glaciers. A solution of these questions is hindered especially by an insufficiency of corresponding information.

A group of glaciologists of the Institute of Geography [illegible]

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KRENKE, A.N.

Glaciology

CATASTROPHIC ADVANCES OF GLACIERS

[Article by Doctor of Geographic Sciences [illegible] and Candidate of Geographic Sciences A. [illegible] Akademii Nauk USSR, Russian, Vol [illegible] June 1972, pp [illegible]

The rapid advance of glaciers, connected with an increase in the rate of movement of ice by one to three orders of magnitude as compared with the usual rates, have long attracted the attention of investigators. Such advances, which have often led to natural calamities, have been linked with earthquakes, [illegible], abundant snowfalls, the appearance of avenue waters, the interception of neighboring glaciers, and other external factors. They are classed as random phenomena impossible to predict.

Investigations in recent decades, performed both in the USSR and abroad, have established that periodic advances of glaciers are a natural phenomenon stipulated by instability of the glacial systems themselves. Thus the possibility in principle of forecasting that phenomenon is based in its very nature (in the given case it is necessary to distinguish the concepts of "pulsation" and "advance", understanding by pulsation a complete cycle of fluctuations of the dimensions and rates of movement of glaciers, including not only the active but also calm preparatory phases). However, still unclear are a number of questions about the causes and mechanism of the transition of glaciers to ultra-rapid movement, factors which determine whether only some glaciers are classified as pulsating, and also clear differences between pulsating and "normal" glaciers. A solution of these questions is hindered especially by an insufficiency of corresponding information.

A group of glaciologists of the Institute of Geography of the AS USSR has been studying pulsating glaciers since 19[illegible], when a catastrophic advance of the Medvezhiy in the Pamirs occurred. A systematization is being conducted of material on glacial pulsations, field investigations of pulsating glaciers, constant observations of the evolution of the Medvezhiy glacier as a key

- 69 -

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

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USSR UDC 543.422.4:542.957:547.357.4:546.821'131:547.558.1:547.315.1

BONDARENKO, G. N., KHAR'KOVA, Ye. M., MUSHINA, Ye. A., TEREKHINA, M. P., and KRENTSEL', B. A., Institute of Petrochemical Synthesis Imeni A. V. Topchiyev, Academy of Sciences USSR

"IR Spectra of the Reaction Products of Bis-π-allylnickel Bromide With Titanium Tetrachloride, Triphenylphosphine, and Allene"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 73, pp 1224-1227

Abstract: The IR spectra were studied of the reaction products of bis-π-allylnickel bromide with $TiCl_4$ and triphenylphosphine. It was proposed that there occurs a π → σ isomerization in π-allyl-nickel complex. The π-allyl structure is retained in the reaction of bis-π-allylnickel bromide with allene. During allene polymerization the activity of the complexes decreases in the order $(\pi\text{-}C_3H_5NiI)_2 > (\pi\text{-}C_3H_5NiBr)_2 > (\pi\text{-}C_3H_5Cl)_2$.

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Chemistry

KRENTSEL' B.A.

PHYSIOLOGICALLY ACTIVE SYNTHETIC POLYMERS AND MACROMOLECULAR MODELS OF BIOPOLYMERS

[Article by Doctor of Chemical Sciences B. A. Krentsel', Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol 42, No 4, April 1972, pp 115-117]

Symposium in Riga

The development of polymer science has exerted a revolutionizing influence on the natural sciences as a whole, especially on their physicochemical, biochemical, and biological aspects. New concepts about the creation of physiologically active polymeric substances differing from their low-molecular analogs in their action on living organisms were a reflection of that influence.

Symposia on the creation of physiologically active polymeric substances and study of their properties have become traditional. Two such symposia were held in Riga in 1962 and 1965. On 16-19 November 1971 a third symposium was held at the same place, one which differed from preceding ones by the fact that its program included a new and promising direction -- the development and investigation of macromolecular models of biopolymers. The expansion of theses of the third symposium also was reflected in the composition of its participants, among them were organic chemists, physical chemists, biologists, men of medicine, biochemists -- a total of about 200 persons from various scientific institutions of Moscow, Leningrad, Riga, Kiev and other cities of the country.

Nine plenary reports were heard. V. A. Kropachev analyzed in detail the latest achievements in the use of polymeric substances as carriers of medicinal substances. He cited experimental data showing that the connection of a medicinal substance with a polymeric carrier permits not only increasing the period of its effect but also discovering new medicinal functions. Some positions of his report aroused objections -- for example, the advisability of creating "polymeric" antibiotics. Evidently in that area there still is not sufficiently reliable experimental data for unequivocal decisions and further experimental work is required. The reporter and the participants of the symposium who spoke in the discussion turned attention toward the need

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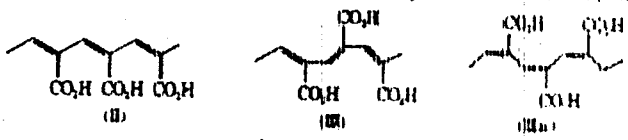
Acc. Nr. AP0100204 Abstracting Service: CHEMICAL ABST. 6-70 Ref. Code UR0062

111851j **Decarboxylation of polymeric acids with conjugated bonds.** Yandarova, M. N.; Geiderikh, M. A.; Kreptsel, B. A. (Inst. Neftekhim. Sin. im. Topchieva, Moscow, USSR). *Izv. Akad. Nauk SSSR, Ser. Khim.* 1970, (1), 78-84 (Russ). The irradn. polymn. of $HC{:}CCO_2H$ (I) in the solid phase gives *trans,trans*-poly(propiolic acid) (II); in the liq. phase, *trans,cis*- (III) and *cis,trans*-poly(propiolic acid) (IIIa) are obtained (G. V. Khutareva, *et al.*, 1965). The decarboxylation of II, III, IIIa,



poly(acrylic acid) (IV) and $\dot{I}\text{-}H_2C{:}CHCO_2H$ copolymers was compared. The conjugation reduces the decarboxylation activation energy of II, III, and IIIa to 6-12.5 kcal/mole as compared with 42.7 kcal/mole for IV. The configuration also affects the decarboxylation rates; III in which there is no H bonding between CO_2H groups is decarboxylated faster than II or IIIa. CPJR

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Acc. Nr: AP0049793 Abstracting Service: CHEMICAL ABST. 5-70 Ref. Code: UR0183

101698a Copolymerization of vinyl chloride with acrylic acid. Ruchinskii, S. P.; Zav'yalov, A. N.; Krutsov, B. K.; Krentsel, B. A. (USSR). *Khim. Volokna* 1970, (1), 75 (Russ). Vinyl chloride (I) and acrylic acid (II) were copolymd. in MeOH contg. some H_2O at atm. pressure and -10 to 5° with an initiating system comprising $(NH_4)_2S_2O_8$, Rongalite, and Cu salts to give I-II copolymer (III), which was more concd. in II than the original monomer mixt., dyed well with basic dyes, had glass transition temp. ~100°, was more sol. in org. solvents than pure I polymer (IV) and formed fibers from acetone and $HCONMe_2$ solns. Fibers of III having 10% and 27.2% II had lower tex, strength, and % elongation than IV fibers, but higher shrink resistance (except for III with 27.2% II heated in air at 130°).

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USSR UDC 669.01:536.425:536.2.001.2

ZINOV'YEV, V. YE., KRUNTSIS, R. P., GEL'D, P. V.

"Effect of Phase Transformation and Thermal Defects on the Thermal Conductivity and Thermal Diffusivity of Ti, Fe, Co, Ni, Pt and certain Steels at High Temperatures"

V sb. Fiz.-khim. osnovy proiz-va stali (Physical-Chemical Principles of Steel Production -- collection of works), Moscow, Nauka Press, 1971, pp 91-96 (from RZh--Metrologiya i Izmeritel'naya Tekhnika, No 3, Mar 72, Abstract No 3.32.979)

Translation: The block diagram is presented for a device on which the method of plane temperature waves is used to measure the coefficient of thermal diffusivity in thin plane-parallel plates of metals and alloys at temperatures above 700° C. Results are presented for measuring the coefficients of thermal diffusivity of Ti, Fe, Co, Ni, Pt and EI929, EI826, EI47B3 and EI435 steel. The thermal conductivity of the given metals and alloys was calculated using the published data on the density and heat capacity. There are 4 illustrations and a 27-entry bibliography.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR UDC: 669.018.5:536.41

KRENTSIS, R. P., KALISHEVICH, G. I., GEL'D, P. V., and ANDREYEVA, L. P.

"Thermal Expansion of Chromium, Manganese, Iron, and Cobalt Silicides"

Tomsk, Izvestiya VUZ--Fizika, No 1, 1972, pp 153-155

Abstract: This brief communication gives the results of measurements made by the authors of the coefficients of linear expansion of various specimens as a function of heat in a temperature range of 100 to 1000° K. The specimens were chromium, manganese, iron, and cobalt silicides having the same cubic structure of the B20 type. The specimens were made of 99.98% Cr by weight; 99.95% Mn; 99.95% Fe; 99.98 Co; and monocrystalline silicon, 99.997% Si in an induction furnace of the MVP-3M type, in an argon atmosphere. After alloying, the specimens were sucked up in quartz capillary tubes 3-4 mm in diameter. The errors made in the measurements did not exceed 2-3%, except for the lowest temperature region of 100-200° K, when the error amounted to 4-5%. Curves are given for the expansion coefficients as functions of the temperature, and a table giving some characteristics of the four types of monosilicides is presented. The authors are connected with the S. M. Kirov Ural Polytechnical Institute.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--THERMAL CONDUCTIVITY AND THERMAL DIFFUSIVITY OF IRON MONOSILICIDE -U-

AUTHOR-(03)-KRENTSIS, R.P., OSTROVSKIY, F.I., GELD, P.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(2), 403-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--IRON COMPOUND, THERMAL CONDUCTIVITY, SILICON COMPOUND, ELECTRICAL CONDUCTIVITY, SILICON SEMICONDUCTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0573 STEP NO--UR/0449/70/004/002/0403/0405

CIRC ACCESSION NO--AP0105558

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2/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105558

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF FESI WERE GROWN FROM THE MELT BY THE CZOCHRALSKI METHOD, THE FESI BEING PREPD. FROM CARBONYL FE AND SEMICONDUCTOR GRADE SI. THE THERMAL COND. WAS MEASURED BY USING EQUIPMENT DESCRIBED PREVIOUSLY (L. P. FILIPPOV, 1967) OVER THE TEMP. RANGE 400-900DEGREES, WHILE THE ELEC. RESISTANCE WAS MEASURED POTENTIOMETRICALLY. AN EQUATION IS GIVEN RELATING THE ELEC. RESISTANCE AND THE THERMAL COND. THIS IS THEN USED TO CALCULATE THE LORENZ NO. FOR FESI OVER THE TEMP. RANGE 1200-1600DEGREES WHERE THE ELEC. RESISTANCE IS ALMOST CONST. THE VALUES OBTAINED WERE L SUBMIN. EQUALS 3.1 TIMES 10 PRIME NEGATIVE8 V PRIME2-DEGREE PRIME2 AND L SUBMAX. EQUALS 3.4 TIMES 10 PRIME NEGATIVE8 V SUB2, DEGREE PRIME2, WHICH ARE SIGNIFICANTLY HIGHER THAN THE VALUE FOR METALS, I. E. 2.45 TIMES 10 PRIME NEGATIVE8 V PRIME2-DEGREE PRIME2.

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1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANISTROPY OF THE THERMAL EXPANSION OF IRON DIGERMANIDE -U-

AUTHOR-(03)-KRENTSIS, R.P., MIKHELSON, A.V., GELD, P.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 933-4

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, SINGLE CRYSTAL, IRON COMPOUND, GERMANIUM COMPOUND, IRON COMPOUND, THERMAL EXPANSION, PHASE TRANSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0583 STEP NO--UR/0181/70/012/003/0933/0934

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2/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LINEAR EXPANSION COEFF. WAS MEASURED AT 90-480DEGREES K BY USING 2 SPECIMENS CUT FROM A SINGLE CRYSTAL OF FEGE SUB2 IN THE DIRECTIONS (001) AND (100). THE DATA OBTAINED ARE GENERALIZED GRAPHICALLY AND THEY INDICATE A CONSIDERABLE ANISOTROPY OF THE PHYS. PROPERTIES OF THE COMPD. FEGE SUB2 AND SHARP ANOMALIES OF THEIR TEMP. DEPENDENCES IN THE REGION OF THE TRANSFORMATION. DIFFERENCE IN SIGN AND THE MAGNITUDE OF THE ANOMALIES ON THE CURVES ALPHA (TAU) ARE APPARENTLY RELATED TO THE DIFFERENCES IN THE CHARACTER OF THE EXCHANGE INTERACTION BETWEEN FE ATOMS LOCATED IN THE SAME AND NEIGHBORING BASIS PLANES OF THE TETRAGONAL STRUCTURE OF FEGE SUB2. THE TEMP. SHIFT OF THE NEEL TEMP. CAN BE ATTRIBUTED EITHER TO BROADENING OF THE TRANSFORMATION OR TO THE PRESENCE OF A SERIES OF SUCCESSIVE PHASE TRANSITIONS.

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UDC (546.72'28 + 546.73'28):548.55

USSR

FROLOV, A. A., KRENTSIS, R. P., and GEL'D, P. V., Ural Polytechnic Institute imeni S. M. Kirov, Sverdlovsk, Ministry of Higher and Secondary Specialized Education RSFSR

"Growth of FeSi and CoSi Single Crystals by Czochralski Method"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 828-829

Abstract: The article describes the growth of FeSi and CoSi single crystals by the Czochralski method. The starting materials were K-0 brand cobalt, V-3 brand carbonyl iron and single-crystal silicon. Single crystals were grown from the melt on a ZhK 01.01 device (with graphite heater) in a vacuum of $5 \cdot 10^{-5}$ mm Hg. Pulling rate 0.5-0.75 mm/min. The crucible and seed rotated in opposite directions at 30 and 45 rpm respectively. In some cases the upper rod remained immobile. The crucibles were of Al_2O_3. The composition of the grown single crystals was determined by X-ray from lattice parameters. The microhard-

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FROLOV, A. A., et al., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 828-829

ness of unetched sections was measured on a PMT-3 device and was found to remain constant according to ingot length, which indicates the mechanical homogeneity of the single crystal.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--THERMAL DIFFUSIVITY AND THERMAL CONDUCTIVITY OF SOLID SOLUTIONS OF SILICON IN IRON AND COBALT -U-

AUTHOR-(04)-KRENTSIS, R.P., ZINOVYEV, V.YE., ANDREYEVA, L.P., GELD, P.V.

K

COUNTRY OF INFO--USSR

SOURCE--FIZ. METAL. METALLOVED. 1970, 29(1), 118-23

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--THERMAL CONDUCTIVITY, SOLID SOLUTION, IRON ALLOY, COBALT ALLOY, SILICON CONTAINING ALLOY, CURIE POINT, THERMAL DIFFUSION, HIGH PURITY METAL, PHONON SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0941 STEP NO--UR/0126/70/029/001/0118/0123

CIRC ACCESSION NO--AP0121543

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2/2 033 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121543

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DIFFUSIVITY OF A SOLID SOLN. OF SI IN FE (UP TO 8.2 WT. PERCENT SI), OF SI IN CO (UP TO 3 WT. PERCENT SI), AND OF PURE CO WAS DETD. IN THE REGION OF THE CURIE TEMP. (T SUBC). IN EACH CASE, THE POLYTHERM OF THERMAL DIFFUSIVITYS HOWS A MIN. IN THE REGION OF T SUBC. AWAY FROM T SUBC, AN APPROX. LOGARITHMIC DEPENDENCE WAS OBSD. OF THERMAL DIFFUSIVITY ON T-T SUBC. THE DEPENDENCE IS MORE COMPLEX CLOSE TO T SUBC. A MIN. IN THE THERMAL COND. POLYTHERMS AT T SUBC ARE A RESULT OF A STRONG PHONON ELECTRON AND PHONON SPIN SCATTERING. THE MECHANISM OF SCATTERING AND TRANSFER IN FERROMAGNETIC SYSTEM IS DISCUSSED. FACILITY: URAL. POLITEKH. INST.IM. KIROVA, SVERDLOVSK, USSR.

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USSR UDC 621.371.332.4

SEMAKOV, V. L., KREPAK, V. N., and YAKIMENKO, I. P.

"Scattering of Electromagnetic Waves by Cylindrical Systems With Heterogeneous Gyrotropic Plasmas"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 5 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 5--collection of works) "Nauka," 1972, pp 22-26 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A377)

Translation: A solution is found for the problem of the scattering of a plane wave by cylindrical objects with radially heterogeneous gyrotropic plasmas. The effect of an external magnetic field, the frequency, and the nature of the radial variation in the electron density of the plasma, is investigated. Six illustrations, bibliography of four. N. S.

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X-7. DISTRIBUTION OF ADMIXTURES IN THE EPITAXIAL LAYERS OF GALLIUM PHOSPHIDE ALLOYED WITH SULFUR AND NITROGEN

Article by [illegible] Zabelina, A. M. Petrov, A. N. Pikhtin, D. A. Yas'kov, V. P. Krepkaya, N. M. Artamonova, Leningrad; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 1331

The properties of monocrystalline layers of gallium phosphide alloyed with nitrogen were investigated. The layers were grown by the method of liquid-phase epitaxy in an open system on GaP substrates alloyed with sulfur obtained by the Czochralski method. Alloying with nitrogen was realized by adding gallium nitride from 0.05 to 1 percent by weight to the GaP-Ga melt. The sulfur got into the melt as a result of solution of the substrate.

By using the measurements of the capacitance of the surface barrier at the GaP-Au contact, a study was made of the concentration distribution of the donors with respect to depth of the epitaxial layer. On the films obtained, a study was made of the optical absorption near the edge of the basic band. On the basis of an analysis of the absorption spectra, the nitrogen concentration in the films was determined as a function of the amount of GaN in the GaP-Ga melt. Results are presented from a study of the electroluminescence of the p-n junctions obtained by the diffusion of zinc in the grown layers. The radiation spectra at room temperature contained two bands with 2.24 electron volt and 2.2 electron volt peaks.

The quantum yield of green radiation is $4 \cdot 10^{-3}$%. The brightness of the diodes at a current density of 10 milliamps/mm^2 was 30 nits; at 100 milliamps/mm^2 it was 1,100 nits.

KREPKAYA, V.P.

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USSR

BELOUSOVA, I. M., BOBROV, B. D., KISELEV, V. M., KURZENKOV, V. N., KREPOSTNOV, P. I.

"Photodissociative I^{127} Laser in a Magnetic Field"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 65, No 2 (8), 1973, pp 524-536

Abstract: A study was made of the effect of a magnetic field and also a number of other factors on the kinetics of the radiation spectrum of a photodissociative I^{127} laser in the $2\,P_{1/2}-{}^2P_{3/2}$ transition. The behavior of the spectrum of the induced radiation was investigated in the presence and absence of a magnetic field, and the superthin splitting constant of the upper operating level of the iodine atom $A_{1/2}$ was determined experimentally. A broadening of the luminescence line in the operating transition of the iodine atom during collisions with C_2F_7I molecules and also with argon and xenon atoms found. Then the corresponding broadening cross sections and the Van der Waals constants were determined for the interaction of the iodine atom with these gases. The calculated values of the frequencies and amplification factors for the most intense groups of Zeeman components were obtained with a varia-

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BELOUSOVA, I. M., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 65, No 2 (8), 1973, pp 524-536

tion explaining the behavior of the induced radiation spectrum with the variation of the magnetic field. The magnitude of the relaxation between sublevels with different F of the upper operating state $^2P_{1/2}$ was evaluated.

The study of the spectral composition of the induced radiation in the $^2P_{1/2}$-$^2P_{3/2}$ transition of the iodine atom showed that the radiation kinetics of the given laser, which is a complex spectral system, depends on a number of factors such as the magnitude of the magnetic field, the gas pressure in the cell, and the magnitude of the pumping energy. The characteristics of the output radiation of the laser are determined not only by the kinetics of the chemical reactions but also by the structure of the upper and lower transition states, which varies even during the oscillation pulse time. This factor must be considered when constructing various kinetic models of the photodissociative iodine laser. In turn, for a more detailed study of the behavior of the oscillation spectrum in a magnetic field the population kinetics on all sublevels of the investigated transition must be considered.

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USSR UDC: 620.179.16

NIKIFORENKO, Zh. G., SYSKOV, V. A., KREPS, N. S., IGNATINSKIY, I. L., VNIINK, Kishinev

"Ultrasonic Inspection of Bilayer Plates"

Sverdlovsk, Defektoskopiya, No 3, May/Jun 71, pp 87-93

Abstract: In order to evaluate the possibility of inspecting bilayer plates by the ultrasonic reflected pulse resonance method (L. G. Merkulov, V. M. Verevkin, Defektoskopiya, 1965, No 5, p 13) when the contacting liquid can wet only one surface of the plate to feed ultrasonic oscillations into the material being inspected, the authors calculate the shape of a pulse reflected from a plate separating liquid from air, disregarding attenuation. A block diagram of the ultrasonic flaw detector is presented. The proposed device can be used to check for diffusion welds between the layers of double-layer plates. The results of experiments show that the Merkulov-Verevkon method is a sound basis for highly sensitive high-productivity flaw detection.

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USSR

KREPS, V. L.

"Finite Non-coalition Games with Dependent Strategies"

Teoriya Igr [Games Theory -- Collection of Works], Yerevan, 1973, pp 211-215 (Translated from Referativnyy Zhurnal Kibernetika, No 10, 1973, Abstract No 10V457)

Translation: The type of dependence of the strategies of all players is characterized by real function ϕ, which gives the rule for production of a measure in a set of situations from measures in sets of strategies. In case of independence, this function is a product. The relationship between the existence of the situation of equilibrium and the type of dependence is studied.

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I. Brublevskaya

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USSR

UDC 612.822.1+612.82

KREPS, Ye. M., Academician, Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, USSR Academy of Sciences, Leningrad

"Functional Biochemical Changes in the Rat Brain During the Initial Stage of the Effects of Increased Oxygen Pressure"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 2, 1971, pp 494-496

Abstract: The effects of oxygen inhaled under high pressure are usually divided into three stages: the initial, or compensatory stage, the preconvulsive, or forerunner stage, and the convulsive or agonal stage. In this investigation, the behavior of rats, the cholinesterase activity in the cerebral hemispheres, and the concentration of ascorbic acid in the adrenal glands were studied in the initial stage of oxygen toxicity. The tests were done on rats before and after they were kept in a hyperbaric chamber filled with pure oxygen at 2.5 atm. After the 30-40 minute exposure, the orientation and search activity of the rats increased 63%, cholinesterase activity increased 10%, and ascorbic acid concentration decreased 24%. The conclusion was drawn that the initial stage of oxygen toxicity involves not only compensatory mechanisms but also a general sympathetic excitation representing a nonspecific reaction to stress.

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USSR

KREPS, Ye. M., Academician (Editor)

Mekhanizmy regulyatsii fiziologicheskikh funktsiy, Sbornik statey k 40-letiyu nauchnoy deyatel'nosti akademika Vladimira Nikolayevicha Chernigovskogo (Regulatory Mechanisms of Physiological Functions -- Collection of Articles for the 40th Anniversary of the Scientific Activity of Academician Vladimir Nikolayevich Chernigovskiy), Nauka Press, Leningrad, 1971, 316 pp

Translation: Contents:

	Page
Foreword	3
General Problems of Physiology	
E. A. Asratyan, Role of Inhibition in the Fatigue Phenomenon	6
D. A. Biryukov, (Deceased) and V. I. Klimova-Cherkasova, Central Tonic Mechanisms of the Regulatory Functions of the Brain	8
P. G. Borach, Effect of Thermal, Osmotic and Chemical Stimulation of the Hypothalamus on Food and Water Intake	16
I. Ye. Ganelina, M. Ya. Ratner, and A. Ya. Yaroshevskiy, (Deceased) Clinical Observations as Method of Research in Physiology	24
G. V. Gershuni, Some Features of Brain Activity	43
V. S. Gurfinkel' and M. L. Shik, Multilevel Motor Control	48

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USSR

KREPS, Ye. M., Mekhanizmy regulyatsii fiziologicheskikh funktsiy, Sbornik statey k 40-letiyu nauchnoy deyatel'nosti akademika Vladimira Nikolayevicha Chernigovskogo, Nauka Press, Leningrad, 1971, 316 pp

	Page
V. V Zakusov and N. V. Kaverina, Pharmacological Effects on the Central Adrenergic Mechanisms of Regulating Blood Circulation	55
G. P. Konradi and L. A. Vil'de, Reactions of the Capacitive Vessels	63
P. G. Kostyuk and A. I. Pilyavskiy, Neuron Organization of the Rubrospinal System	71
I. T. Kurtsin, Studies in the Field of Viscerocortical Pathology	77
V. V. Parin, Trophic Guarantee of Cardiac Activity	89
V. S. Rusinov and V. L. Ezorkhi, Prolonged Changes in the Membrane Potential of the Neurons and the Possible Functional Role	95
A. D. Slonim, New Data on Physiological Adaptations to an Arid Zone	101
A. V. Solov'yev and L. I. Dvinyaninov, Pathogenesis of Experimental Gastric and Duodenal Ulcers in Dogs	109
New Data on Interoception Studies	
M. G. Amiragova, Cerebral Cortex and Thyroid Gland	115
N. A. Anikina, Resistance of Various Reactive Receptor Systems of the Small Intestines to Metabolic Disturbances	124

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

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USSR

KREPS, Ye. M., Mekhanizmy regulyatsii fiziologicheskikh funktsiy, Sbornik statey k 40-letiyu nauchnoy deyatel'nosti akademika Vladimira Nikolayevicha Chernigovskogo, Nauka Press, Leningrad, 1971, 316 pp

	Page
N. N. Beller, Mechanism of Efferent Effects of the Limbic Cortex on Autonomic Functions	132
Ye. B. Berkhin, Introceptive Connections of the Kidneys	144
R. A. Durinyan, Functional Significance of the Spatial Organization of the Visceral Afferent Systems on the Thalamocortical Level	152
V. Yu. Yermolayeva, Functional Organization of the Cortical and Corticofugal Paths of First and Second Somatosensory Zones of the Brain of a Cat	160
O. B. Il'inskiy, Physiology of Single Mechanoreceptors (Pacinian Corpuscles)	173
G. S. Kan, Study of the Role of the Interoceptive Analysor in the Pathogenesis of Certain Disturbances of Blood Circulation in the Presence of Tuberculosis	185
Ye. L. Kan, Study of the Mechanism of Participation of the Peripheral Innervation of the Spleen in Regulating the Erythrocyte Equilibrium	192

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR

KREPS, Ye. M., Mekhanizmy regulyatsii fiziologicheskikh funktsiy, Sbornik statey k 40-letiyu nauchnoy deyatel'nosti akademika Vladimira Nikolayevicha Chernigovskogo, Nauka Press, Leningrad, 1971, 316 pp

	Page
B. S. Kulayev, Significance of the Interoceptors in the Evolution of Vertebrates and Their Vital Activity	203
K. M. Kullanda, New Data on Analysis of the Properties and Mechanisms of the Genesis and Functional Significance of the Basic Forms of Evoked Potentials in the Somatovisceral Afferent Projection Zones of the Cerebral Cortex	214
T. S. Lagutina, Interaction of the Intero and Exteroceptors in the Process of Establishing the Reflex Acts of Urination and Defication in Ontogenesis	228
O. S. Merkulova, New Experimental Data With Respect to the Morphophysiological Analysis of the Adaptation Phenomenon in the Somatic Reflex Arc	241
S. S. Musyashchikova, Afferent Visceral Representation in the Central Nervous System	258
T. V. Popova, Bioelectric Activity of the Medulla Oblongata in the Presence of Hypothermia and Blood Letting	277

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

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KREPS, Ye. M., Mekhanizmy regulyatsii fiziologicheskikh funkcsiy, Sbornik statey k 40-letiyu nauchnoy deyatel'nosti akademika Vladimira Nikolayevicha Chernigovskogo, Nauka Press, Leningrad, 1971, 316 pp

	Page
V. M. Khayutin, Level of Completion of Vasomotor Reflexes	292
A. Ya. Yaroshevskiy, Erythropoiesis and Its Regulation in the Presence of Certain Internal Diseases	302

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

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UDC 547.26'118 + 547.341 + 547.345

NESTEROV, L. V., KREPYSHEVEVA, N. Ye., SABIROVA, R. A., and ROMANOVA, G. N., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, USSR Academy of Sciences

"Derivatives of Phosphorous Acid. VIII. Reaction of the Dialkyl Trialkylsilyl Phosphites With Aldehydes and Ketones"

Leningrad, Zhurnal Obshchey Khimii, Vol XLI, No 11, 1971, pp 2,449-2,452

Abstract: Dialkyl acyl and tetraalkyl pyrophosphites are known to react with carbonyl compounds according to $(RO)_2POAc + R'R''CO \rightarrow (RO)_2P(O)C(OAc)R'R''$ (R = alkyl, R' = alkyl, aryl, R'' = H, alkyl and Ac = acyl or $P(OR)_2$). In this connection, the reactions of dialkyl trialkylsilyl phosphites with aldehydes and ketones were studied. These reactions were found to proceed along exactly the same lines when Ac = $SiAlk_3$, and the reactions proceed under much less rigorous conditions when Ac = acyl. The aldehydes react rapidly, with release of heat, while the ketones require preheating to 100°C. In all cases, there is formation of the dialkyl esters of α-(trialkylsiloxy)alkylphosphonic acids:

$$(RO)_2POSiAlk_3 + R'R''CO \rightarrow (RO)_2P(O)C(OSiAlk_3)R'R''.$$

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NESTEROV, L. V., et al., Zhurnal Obshchey Khimii, Vol XLI, No 11, Nov 1971, pp 2,449-2,452

These compounds have been known only for a few years, and until now no satisfactory method had been devised for obtaining them. Physical data for the nine compounds obtained, along with laboratory procedures, are given in the paper.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

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UDC 546.611'638'653:543.257.1

KRESHKOV, A. P., SAYUSHKINA, Ye. N., and TIMASHEVA, K. A.,
Moscow Institute of Chemical Technology imeni D. I. Mendeleyev

"Analysis of Binary Mixtures of Gallium, Indium, and Thallium Salts by Methods of Potentiometric Titration and Ion Exchange in Non-Aqueous Solutions"

Moscow, Zavodskaya Laboratoriya, Vol 37, No 12, 1971,
pp 1421 –1424

Abstract : The behavior of chlorides, nitrates, and sulfates of gallium (III) and indium (III), nitrate of thallium (I), and accompanying elements [Sn (II), Cd (II), Cu (II), Co (II)] in non-aqueous solutions was investigated. For the quantitative determination of nitrates and gallium and indium chlorides and their accompanying elements, a mixed solvent, water-acetone (1:4), was selected in which the salts show like acids and are titrated potentiometrically by 0.1 ethanolic solution of

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USSR

KRESHKOV, A. P., et al., Zavodskaya Laboratoriya, Vol 37, No 12, 1971, pp 1421-1424

KOH. Thallium nitrate develops a neutral character in water-acetone media. For its determination, the ion exchange on cationite SVD-3 in H-form is used. For the determination of thallium and indium sulfates and other elements and also mixes of sulfates with nitrates (or chlorides), the cationite SVD-3 in H-form is used with following potentiometric titration of separated acids by 0.1-normal methanol solution of diphenylguanidine. Determinations of salts and their mixtures are described. Two illustr., two tables, 13 biblio. refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--DIFFERENTIATED DETERMINATION OF XYLENE AND TOLUENE ISOMERS IN NONAQUEOUS SOLVENTS -U-

AUTHOR-(03)-KRESHKOV, A.P., GURETSKIY, I.YA., SMOLOVA, N.T.

COUNTRY OF INFO--USSR

SOURCE--MATER. IKH PRIMEN. 1970, (2), 53-6

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--XYLENE, TOLUENE, OXIDATION, CARBOXYLIC ACID, POTENTIOMETRIC TITRATION, ISOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605012/D08 STEP NO--UR/0303/70/000/002/0053/0056

CIRC ACCESSION NO--AP0140297

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 015 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140297

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MIXTS. OF PHME AND O, M, AND P XYLENE WERE OXIDIZED 40-5 MIN WITH KMNO SUB4 SOLN. AT 95-80DEGREES TO GIVE BZOH AND THE CORRESPONDING DIBASIC ACIDS. IR SPECTRA AND GAS CHROMATOG. SHOWED THAT ONLY CARBOXYLIC ACIDS WER FORMED, THERE WAS NO DECARBOXYLATION. EACH PRODUCT GIVES A CHARACTERISTIC POTENTIOMETRIC TITRN. CURVE AND CAN BE DETD. IN THE PRESENCE OF OTHER COMPONENTS. THE TITRNS. WERE CARRIED OUT IN AN ACETONE WATER MECN ISO PROH MIXT. AGAINST ISO PROK. THE MEAN ARITHMETIC DETN. ERROR WAS LESS THAN OR EQUAL TO 5.36PERCENT.

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Acc. Nr. AP0049838 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code UR0075

K

106738y Theoretical curves of the conductometric titration of acids and bases in nonaqueous solutions. Khudyakova, T. A.; Kreshkov, A. P. (Gorki Polytech. Inst., Gorki, USSR). 27.

Anal. Khim. 1970, 25(1), 11–17 (Russ). Equations were derived for titrn. curves of acids and bases in nonaq. solvents, permitting the calcn. of equil. concns. of solvated H ions, acid anions, and base cations during the titrn. Ion concn. dependences were found and theoretical curves of the conductometric titrn. of acids of different strength by strong and weak bases in a nonaq. solvent with $pK_s = 20$ were derived. Chaim Weiner

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Acc. Nr: AP0053426 Abstracting Service: CHEMICAL ABST. Ref. Code: UR 0079

110619c Acid-base properties of alkyl(aryl)fluorosilanes in nonaqueous media. Dronov, V. A.; Kreshkov, A. P.; Romanova, A. D. (USSR). *Zh. Obshch. Khim.* 1970, 40(1), 104-9 (Russ). Conventional syntheses gave the following: Me_3EtSiF, b. 51°, d^{20} —, n_D^{20} — (n_D^{20} 1.3570); Me_3PrSiF, b. 77°, —, 1.3708; Me_3PhSiF, b. 155-7°, —, 1.5471; $(PhCH_2)SiMe_2F$, b_{10} 104°, 0.9743, 1.4838; $MeEt(PhCH_2)SiF$, b. 200-2°, 0.9063, 1.4702; $MePh(PhCH_2)SiF$, b. 117°, 1.0610, 1.5481; $MePh_2SiF$, b_{18} 164.5°, 1.077, 1.5482; Et_3SiF, b. 109-10°, 0.8303, 1.3906; Et_2PhSiF, b_8 77-8°, 0.9837, 1.4880; $Et_2(PhCH_2)SiF$, b_{20} 96°, 0.9828, 1.4942; $PhSiFCl_2$, b. 157-9°, —, 1.5203; Ph_2SiFCl, b_{10} 131-2°, —, 1.5471; $MePhSiF_2$, b_4 108-10°, 1.2000, 1.5330; $PhSiF_2Cl$, b. 129-30°, —, 1.4575; $PhSiF_3$, b. 102-5°, 1.2270, 1.4106; and $PhSiCl_3$, b_{100} 225°, 1.2220, 1.5821; also: $MePh_2SiCl$, b_{15} 191°; $MePhSiCl_2$, b_{100} 223-5°; $MePh(PhCH_2)SiCl$, b. 149°; $Me_2PhSiCl$, b. 190-1°; and $Et_2PhSiCl$, b_9 100-2°. Ir spectral curves of 12 of these were shown and their thermodynamic acidity was detd. by potentiometric titrn. in dry MeOH and EtOH relative to dry HCl in the same solvents. The relative values of such acidity expressed in units of pK (—SiR_3) were, in MeOH and EtOH, resp.: Et_3SiF, 10.0, 10.0; $MeEt(PhCH_2)SiF$ 10.2, 9.56; Me_2PhSiF 9.55, 9.14; $MePh(PhCH_2)SiF$, 9.20, 8.80; and Me_3SiF, 10.43, 9.69. Unlike chlorosilanes, the substituent groups had considerable effect on the acidity of the fluorosilanes. This is ascribed to the low polarizability of these.

G. M. Kosolapoff

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19830451

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--CHEMICAL ANALYTICAL BEHAVIOR OF SULFUR CONTAINING ALIPHATIC DICARBOXYLIC ACIDS IN NONAQUEOUS SOLVENTS -U-

AUTHOR-(03)-KRESHKOV, A.P., ALDAROVA, N.SH., TANGANOV, B.B.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 362-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC SOLVENT, ALIPHATIC DICARBOXYLIC ACID, CHEMICAL ANALYSIS, THIOL, DISSOCIATION CONSTANT, POTENTIOMETRIC TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0685 STEP NO--UR/0075/70/025/002/0362/0368

CIRC ACCESSION NO--AP0113556

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0113556

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POTENTIOMETRIC TITRN. OF S CONTG. DICARBOXYLIC ACIDS IN A MEOH, ETOH, HEXANOL, ACETOPHENONE, HCONME SUB2, AND MECN WAS STUDIED. ACIDITY CONSTS., PK SUBA FOR BETA,BETA PRIME,THIODIPROIONIC, DELTA,DELTA PRIME,THIODIVALERIC, OMEGA,OMEGA PRIME,THIODIENANTHIC, OMEGA,OMEGA PRIME,THIODIPELARGONIC, AND OMEGA,OMEGA PRIME,THIODIUNDECANIC ACIDS IN THE ABOVE SOLVENTS WERE EVALUATED. THE CONDITIONS FOR THE DETN. OF OMEGA,OMEGA PRIME,THIODICARBOXYLIC ACIDS IN NONAQ. SOLVENTS BY THE CALCN. OF THE TITRN. CONST., PK SUBT, VALUES WERE EXPLAINED. ALIPHATIC MONOHYDRIC NORMAL ALCS. HAVE A LEVELING ACTION ON OMEGA,OMEGA PRIME,THIODICARBOXYLIC ACIDS, WHICH BEHAVE IN ALC. SOLNS. AS WEAK ACIDS (PK SUBA EQUALS 9-11). THE DEPENDENCES PK SUBA-PK SUBS (CONST. OF SOLVENT AUTOPROTOLYSIS) AND PK SUBT-PK SUBS FOR THE STUDIED COMPDS. HAVE A LINEAR CHARACTER, PROVING THE EFFECT OF THE SOLVENT ON THE ACID BASE PROPERTIES AND CONDITIONS OF QUANT. DETN. OF THE ACIDS. THE SEP. DETN. OF THE 2 CARBOXYL GROUPS OF DIACARBOXYLIC ACIDS CONTG. S IN THE C CHAIN INCREASE IN THE SERIES OF HCONME SUB2 IS SMALLER THAN MECN IS SMALLER THAN ME SUB2 CO. A METHOD WAS DEVELOPED FOR THE QUANT. DETN. OF DICARBOXYLIC ACIDS IN DIFFERENTIATING SOLVENTS WITH A STD. C SUB6 H SUB6-MEOH SOLN. OF ET SUB4 NOH. FACILITY: MOSCOW CHEM. TECHNOL. INST., MOSCOW, USSR.

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Soviet Inventions Illustrated, Section I Chemical, Derwent,

228316 DETERMINATION OF BOUND SULPHURIC ACID in cellulose esters during their prod. can be carried out by a rapid, accurate and highly sensitive method consisting of dissolving a sample of the material to be analysed in a chloroform methanol mixture, adding a solution of methylene blue in aqs. HCl, and photometrically analysing the coloured organic phase, which separates. In an example, a 100 mg sample was dissolved in a 10:1 chloroform methanol mixture in a 100 ml. measuring flash; a 10 ml. aliquot portion was mixed with 10 ml. of the 10:1 chloroform-methanol mixt. and 40 ml. of a soln. of methylene blue (10 mg/l) in 0.01 N HCl; the mixture was shaken for 10 secs, and after 10 mins the organic phase was separated and subjected to photometric analysis. 24.7.67. as 1176844/23-4 KRESHKOV A.P. et al. Vladimir Synthetic Resins Res. Inst. (25.7.63) Bul. 31/8.10.68. Class 421 Int. Cl. G 01n

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

AA0044227

Kreshkov, A. P.; Yemelin, Ye. A.; Yevgrafova, L. V.; Solov'yeva, O. A.

Vladimirskiy Nauchno - Issledovatel'skiy

Institut Sinteticheskikh Smol

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 009 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--EVALUATION OF NONAQUEOUS SOLVENT AUTOPROTOLYSIS CONSTANTS -U-

AUTHOR-(04)-KRESHKOV, A.P., ALDAROVA, N.SH., SMOLOVA, N.T., RYAGUZOV, A.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(4), 1126-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALIPHATIC ALCOHOL, GLYCOL, KETONE, DICARBOXYLIC ACID, SOLVENT ACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0795 STEP NO--UR/0076/70/044/004/1126/1127

CIRC ACCESSION NO--AP0136229

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 009

CIRC ACCESSION NO--AP0136229

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTOPROTOLYSIS CONSTS., PK SUBS, WERE ESTD. FOR A NO. OF ALIPHATIC ALCS. (MEOH TO OCTANOL), GLYCOLS, AND KETONES FROM THE LINEAR RELATIONSHIP PK SUBS VS. PK SUBA, WHERE PK SUBA WAS THE ACID CONST. OF A DICARBOXYLIC ACID IN A GIVEN SOLVENT GROUP, AND FROM THE EXPRESSION PK SUBS EQUALS E SUBS -K SUBES, WHERE E SUBS IS THE RELATIVE ACIDITY SCALE AND K SUBES THE COEFF. OF THE RELATIVE ACIDITY SCALE. THE K SUBES VALUES FOR THE SOLVENTS DECREASED IN THE ORDER KETONES GREATER THAN ALCS. GREATER THAN GLYCOLS GREATER THAN H SUB2 O. FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EVALUATION OF AUTOPROTOLYSIS CONSTANTS FOR NONAQUEOUS SOLVENTS BY CORRELATION EQUATIONS, PK,F PKA MH -U-

AUTHOR-(04)-KRESHKOV, A.P., ALDAROVA, N.SH., TANGANOV, B.B., SLAVGORODSKAYA, N.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(1), 241-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDROGEN ION CONCENTRATION, PROPANOL, BUTANOL, ACETONE, SOLVENT ACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0875 STEP NO--UR/0076/70/044/001/0241/0243

CIRC ACCESSION NO--AP0124538

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124538

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THEORETICAL RELATIVE ACIDITIES WERE CALCD. FOR NON AQ. SOLVENTS. A LINEAR CORRELATION PK SUBA EQUALS 0.0145, E SUBB 9.71 (E SUBB IS THE RELATIVE ACIDITY) WAS FOUND FOR ALKANOLS. AUTOPROTOLYSIS CONSTS. ARE LINEARLY RELATED TO PK SUBA; PK SUBS EQUALS 0.843, PK SUBA 1.74. THIS EQUATION WAS USED FOR THE PREDICTION OF THEORETICAL ACIDITIES OF PROH, BUOH, N,HEXANOL, N,HEPTANOL, N,OCTANOL, ACETONE, MECOET, AND MECOPR. THE AUTOPROTOLYSIS OCNSTS. OF THE COMPDS. NOT USED IN THE CORRELATION ARE IN GOOD AGREEMENT WITH PUBLISHED DATA. FACILITY: MOSK. KHIM. TEKHNOL. INST. IM. MENDELEEVA, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--EFFECT OF ACETONITRILE AND WATER ON THE DIFFERENTIATING ACTION OF ACETONE WITH RESPECT TO PHTHALIC ACID ISOMERS -U-

AUTHOR-(04)-KRESHKOV, A.P., GURETSKIY, I.YA., SMOLOVA, N.T., RYAGUZOV, A.I.

K

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 451-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ACETONITRILE, ACETONE, PHTHALIC ACID, ISOMER, CALCULATION, ELECTROLYTE, POTENTIOMETRIC TITRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/2056 STEP NO--UR/0075/70/025/003/0451/0457

CIRC ACCESSION NO--AP0125643

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125643

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EQUATION FOR CALCG. THE PK OF ELECTROLYTES IS SUGGESTED WHICH CAN BE APPLIED ONLY IF THE POTENTIOMETRIC TITRN. IS ACCOMPANIED BY PPT. FORMATION. BY MEANS OF THIS EQUATION, THE PK OF O, M, AND P,PHTHALIC ACIDS WERE CALCD. THE EFFECTS OF H SUB2 O AND MECN ON THE DIFFERENTIATING ACTION OF ME SUB2 CO WITH RESPECT TO PHTHALIC ACID ISOMERS WERE STUDIED. H SUB2 DECREASES THE ACTION AND MECN HAS NO ESSENTIAL EFFECT ON THE DIFFERENTIATING ACTION OF ME SUB2 CO. THIS WAS TAKEN INTO ACCOUNT DURING THE DEVELOPMENT OF THE METHOD FOR ANALYZING MIXTS. OF PHTHALIC ACID ISOMERS IN A MIXED ME SUB2 CO,MECN,H SUB2 O $OLVENT. FACILITY: MOSCOW CHEM.-TECHNOL. INST., MOSCOW, USSR.

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USSR UDC: 621.396.6-181.5

KRESIN, O. M., STAROS, F. G., YAKOVLEV, A. S.

"A Method of Determining the Temperature Fields of Planar Systems"

Elektron. tekhnika. Nauchn.-tekhn. sb., Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1970, vyp. 5(26), pp 105-113 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V216)

Translation: Methods are developed for calculating and analyzing the temperature fields of fuel elements and groups of elements of arbitrary topology. The proposed method is applicable to calculations in thin-film and integrated microcircuits and mosaic circuit assemblies, as well as in designs which utilize ferrite films. Resumé.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--BEHAVIOR OF PLUTONIUM-239 IN RABBITS DURING THE INHALATION OF AMMONIUM PENTACARBONATOPLUTONATE -U-

AUTHOR-(02)-TSEVELEVA, I.A., KRESLOV, V.M.

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(2), 307

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLUTONIUM ISOTOPE, RABBIT, HALF LIFE, LUNG, BLOOD CHEMISTRY, LIVER, BONE, RADIATION DOSAGE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/605004/811 STEP NO--UR/0205/70/010/002/0307/0307

CIRC ACCESSION NO--AP0139607

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 035 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0139607

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISTRIBUTION AND KINETICS OF PRIME239 PU FOLLOWING A SINGLE INHALATION OF (NH SUB4) SUB5 PU(CO SUB3) SUB5 (1.5 AND 5.0 MU CI) WAS STUDIED IN RABBITS OVER 2 YEARS. REMOVAL OF PRIME239 PU FROM THE LUNGS DID NOT DEPEND SIGNIFICANTLY ON THE AMT. OF RADIOISOTOPE ADMINISTERED AND WAS DESCRIBED WITH THE HELP OF 3 EFFECTIVE HALF LIVES (T SUBEFF): 61.5PERCENT WITH T SUBEFF EQUALS 3 DAYS, 35.2PERCENT WITH T SUB3FF EQUALS 35 DAYS, AND 2.7PERCENT WITH T SUB3FF EQUALS 174 DAYS. ABOUT 10-15PERCENT OF THE DOSE ADMINISTERED WAS REMOVED FROM THE LUNGS INTO THE BLOOD AND WAS THEN DEPOSITED IN APPROX. EQUAL AMTS. IN THE LIVER AND SKELETON. THE CONTENT OF PRIME239 PU DID NOT CHANGE IN THESE ORGANS SIGNIFICANTLY DURING 2 YEARS. THE ABSORBED DOSE OF RADIATION IN THE LUNGS, LIVER AND SKELETON, CALCD. FOR THE PERIOD OF 2 YEARS, WAS 3240, 490, AND 165 RADS, RESP. FACILITY: INST. BIOFIZ., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR

UDC 539.4.012

KRESTIN, G. S., LIBATSKIY, L. L., YAREMA, S. YA., Physical Mechanics Institute of the Ukrainian SSR Academy of Sciences, L'vov, L'vov Polytechnic Institute

"Stressed State of a Disc with a Diametral Crack"

Fiziko-Khimicheskaya Mekanika Materialov, Vol 8, No 2, 1972, pp 69-73

Abstract: A solution of the integral equation of the symmetric problem in the form of a series with respect to λ (λ is the crack length reduced to the disc diameter) is found for a disc with a central diametral crack with arbitrary symmetric andantisymmetric loads. Formulas are also found for determining the stress intensity coefficients with accuracy to terms of order λ^{12}. Graphs are presented showing the variation of the critical value of concentrated normal and tangential forces as a function of the crack length and the variation of the corresponding distributed loads.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

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UDC 542.91:547.1'118:541.69

KRESTKIN, A. P., VOLKOVA, R. I., GODOVIKOV, N. N., KABACHNIK, M. I., KARDANOV, N. A., Institute of Organoelemental Compounds of the Soviet Academy of Sciences; Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov of the Soviet Academy of Sciences

"Interaction of S-(β-Alkylmercaptoethyl)diphenylthiophosphinates, O-(β-Alkylmercaptoethyl)diphenylphosphinates and Their Iodomethylates With Butyrylcholinesterase"

Moscow, Izv. An SSSR: Ser. Khimicheskaya, No 3, Mar 73, pp 622-627

Abstract: The paper gives the results of research on the kinetics of inhibition of butylcholinesterase by S- β-alkylmercaptoethyl diphenylthiophosphinates, O- β-alkylmercaptoethyl diphenylphosphinates and their methiodides. It is found that these substances have a combination type of inhibiting action which increases with the length of the alkyl radical bound to the sulfide or sulfonium sulfur atom.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR

UDC: 681.396.96:681.373

KRESPNIKOV, E. A.

"Experimental Studies of Radar Characteristics of Hydrometeorological Formations in the Millimeter Range"

Tr. Sev.-Zap. nauch. politekhn. in-t (Works of the Northwest Polytechnical Correspondence Institute), 1972, No 20, pp 12-13 (from Referativnyy zhurnal, No 12, Dec 72, abstract No 12G25 [résumé])

Translation: The paper describes equipment for studying the radar characteristics of various objects by the method of hydromechanic modeling, and gives the measurement procedure.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

UDC 54-162.2:546.799.4

USSR

KRESTOV, G. A., and KRESTOVA, N. V.

"Temperature of Coefficients and Variations in the Interionic Distance of Crystalline Compounds of Plutonium at Various Temperatures"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 600-606

Abstract: The authors investigated temperature coefficients and changes in interionic distances as a function of temperature for some plutonium halides and chalcogenides. The data necessary for the computations were taken from recent literature on this class of compounds. It was found that the numerical values of the ionic components of the temperature coefficients and changes in interionic distances of the investigated salts increase with a rise in temperature. This increase is comparatively small over a considerable temperature range. The maximum change in the radius of the trivalent plutonium ion is 0.02 Å, while that of the tetravalent plutonium ion is 0.01 Å. The radii of the halide and chalcogenide ions vary over the same range. The change in interionic distances from 293.15°K to the melting point of the salt reaches 0.05 Å.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--CHANGES IN THE ENTROPY COMPONENT OF FREE ENERGY CHANGE DURING THE HYDRATION OF MONATOMIC IONS AT VARIOUS TEMPERATURES -U-

AUTHOR-(02)-KRESTOV, G.A., ABRASIMOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(1), 41-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--HYDRATION, ENTROPY, WATER, THERMAL EFFECT, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/1919 STEP NO--UR/0153/70/013/001/0041/0043

CIRC ACCESSION NO--AT0114359

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0114359

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A TABLE IS PRESENTED OF THE CHANGES IN THE ENTROPY COMPONENTS OF THE FREE ENERGY CHANGE, T DELTA S SUBI, T DELTA S SUBII, T DELTA S SUB(LONG RANGE), AND T DELTA S SUB(SHORT RANGE), FOR HYDRATION OF THE IONS LI POSITIVE, NA POSITIVE, K POSITIVE, RB POSITIVE, CS POSITIVE, CA PRIME2POSITIVE, SI PRIME2POSITIVE, BA PRIME2POSITIVE, CD PRIME2POSITIVE, CL NEGATIVE, BR NEGATIVE, I NEGATIVE AT 0, 25.15, 40, 60, 80, AND 100DEGREES. THE BASIC INFLUENCE ON THE TEMP. DEPENDENCE OF THE ENTROPY OF HYDRATION IS THAT OF THE STRUCTURAL COMPONENT T DELTA S SUBII AND PARTICULARLY THAT OF T DELTA S SUB(SHORT RANGE). STRUCTURAL CHANGES OF WATER WITH INCREASING TEMP. INHIBIT IONIC HYDRATION. FACILITY: IVANOV. KHIM.-TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 026 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0116980

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OSTWALD SOLY. COEFF. 10 PRIME3 GAMMA OF AR IN H SUB2 O DECREASES FROM 30 AT 25DEGREES TO 19 AT 70DEGREES. FOR SOLNS. CONTG. 0.25 MOLE FRACTION (CH SUB2 OH) SUB2 IN H SUB2 O, 10 PRIME3 GAMMA IS 27 ESSENTIALLY INDEPENDENT OF TEMP. AT HIGHER CONCNS. OF GLYCOL, THE SOLY. OF AR INCREASES WITH TEMP., I.E., FOR 0.6 MOLE FRACTION GLYCOL FROM 10 PRIME3 GAMMA EQUALS 28 AT 25DEGREES TO 37 AT 70DEGREES. THERMODYNAMIC DATA ARE CALCD. FROM THE SOLY. TEMP. RELATIONSHIPS. DELTAF SUBSOLN. SHOWS LITTLE VARIATION WITH CONCN. OF (CH SUB2 OH) SUB2 AND IS SIMILAR TO 4000 CAL-MOLE AT 25DEGREES AND 4700 CAL-MOLE AT 70DEGREES. DELTASDEGREES AT 70DEGREES DECREASES FROM 5700 CAL-MOLE IN H SUB2 O TO 3500 CAL-MOLE IN H SUB2 O CONTG. 0.7 MOLE FRACTION GLYCOL. ABOVE A 0.15 MOLE FRACTION GLYCOL, DELTAHDEGREES SUBSOLN. SHOWS LITTLE EFFECT OF TEMP. AND INCREASES FROM MINUS 500 CAL-MOLE AT 0.15 MOLE FRACTION TO 1000 CAL-MOLE AT 0.7 MOLE FRACTION. IN THE SAME RANGE, DELTASDEGREES SUBSOLN. INCREASES FROM MINUS 15 TO MINUS 10 ENTROPY UNITS. FACILITY: IVANOV. KHIM.-TEKHNOL. INST., IVANOVO, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Acc. Nr. AP0034105 Abstracting Service: CHEMICAL ABST. 4-70 Ref. Code UR 0078

74180s Derivatographic method for determining the coordination numbers of some trivalent ions of rare earth elements. [redacted] A.; Kurnkina, G. I. (USSR). Zh. Neorg. Khim. 1970, 15(1), 73-6 (Russ). A new method was developed for detn. of coordination nos. of ions of rare earth elements by DTA. Tri-valent Pr, Nd, Sm, Eu, Gd, Er, Yb, and Y ions are 6 coordinated. Calcn. of entropy (S) of a mole of H_2O close to a 3-valent ion, and of a mole of H_2O in pure solvent (S_s and S_1, resp.) showed that, with increasing radius of cations the value of S_s decreases and approaches the value of S of ice (9.4 e.u.).

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REEL/FRAME

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USSR

UDC 54-162.2:546.799.4

KRESTOV, G. A., and KRESTOVA, N. V.

"Temperature of Coefficients and Variations in the Interionic Distance of Crystalline Compounds of Plutonium at Various Temperatures"

Leningrad, Radiokhimiya, Vol 12, No 4, 1970, pp 600-605

Abstract: The authors investigated temperature coefficients and changes in interionic distances as a function of temperature for some plutonium halides and chalcogenides. The data necessary for the computations were taken from recent literature on this class of compounds. It was found that the numerical values of the ionic components of the temperature coefficients and changes in interionic distances of the investigated salts increase with a rise in temperature. This increase is comparatively small over a considerable temperature range. The maximum change in the radius of the trivalent plutonium ion is 0.02 Å, while that of the tetravalent plutonium ion is 0.01 Å. The radii of the halide and chalcogenide ions vary over the same range. The change in interionic distances from 298.15°K to the melting point of the salt reaches 0.05 Å.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR UDC 534.1+539.3

BYKOVTSEV, G. I., (Voronezh), and KRETOVA, L. D., (Voronezh)

"Shock Waves Propagation in Elastic Plastic Media"

Moscow, Prikladnaya Matematika i Mekhanika, Vol 36, No 1, 1972, pp 106-116

Abstract: The problem of shock wave propagation in elastic-plastic media is considered. It is shown that neutral shock waves on which plastic deformations are continuous, and waves on which plastic deformations are discontinuous can exist in ideal and hardening elastic media. Conditions of existence of the second type waves are formulated and velocities of all mentioned waves in ideal-plastic bodies are determined at arbitrary prominent yield and Tresca conditions, and also in hardenening bodies at kinematic ardisotropic hardening. Basic relationships for discontinuities in transition through waves surfaces are derived. The behavior of shock waves in propagation process under the von Mises and Tresca yield conditions is investigated using the secondorder kinematic compatibility conditions. It is shown that shock waves intensities vary in accordance with laws of geometric optics.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

UNCLASSIFIED PROCESSING DATE--09OCT70

1/2 011

TITLE--MOLECULAR WEIGHT OF MALATE DEHYDROGENASE OF SOYBEAN COTYLEDONS -U-

AUTHOR-(02)-BRONJVITSKAYA, Z.S., KRETOVICH, V.L.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 461-3

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AGRICULTURE CROP, DEHYDROGENASE, ULTRACENTRIFUGE, GEL, FILTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0936 STEP NO--UR/0020/70/190/002/0461/0463

CIRC ACCESSION NO--AT0105805

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 011 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AT0105805

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ULTRACENTRIFUGATION OF THE TITLE MATERIAL YEILDED 2 FORMS OF THE ENZYME FROM THE LEAF MATERIAL, ONE FRACTION HAVING A MOL. WT. OF SIMILAR TO 275,000, THE OTHER 69,000. ADJUSTMENT OF PH TO 6.2 OR TREATMENT WITH CSCL, NACL, OR UREA DISSOCD. THE FORMER FRACTION INTO THE LATTER FORM. AT A LOW CONCN. OF NACL (0.1N) THIS DID NOT OCCUR. USING THE TAGGED PROTEIN TECHNIQUE AND GEL FILTRATION THE SPECIMENS OF THE TITLE ENZYME DERIVED FROM THE COTYLEDONS WAS FOUND TO HAVE MOL. WTS. OF SIMILAR TO 140,000-145,000 IN THE HIGHER FRACTION AND 67,000-70,000 IN THE LOWER FRACTION. EVIDENTLY THESE ARE TETRAMER AND DIMER UNITS. FACILITY: INST. BIOKHIM. IM. BAKHA, MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--INFLUENCE OF LIGHT, DARKNESS AND NITROGEN NUTRITION ON KETO AND AMINOACIDS CONTENTS IN KIDNEY BEAN SPROUTS -U-

AUTHOR-(04)-KRETOVICH, V.L., GEYKO, N.S., TSENOVA, M.P., VERKHOTUROVA, G.S.

COUNTRY OF INFO--USSR

SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA BIOLOGICHESKAYA, 1970, NR 2, PP 302-305

DATE PUBLISHED--------70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--PLANT PHYSIOLOGY, LEGUME CROP, AMINO ACID, NITROGEN, NUTRITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0475 STEP NO--UR/0216/70/000/002/0302/0305

CIRC ACCESSION NO--AP0117711

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 010 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0117711

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT WAS FOUND THAT ILLUMINATION OF YOUNG KIDNEY BEAN PLANTS ENHANCES ACCUMULATION OF AMINOACIDS AND KETOACIDS IN THE LEAVES. THE KETO AND AMINOACIDS CONTENTS IN THE LEAVES IS HIGHER THAN IN THE STEMS AND ROOTS. ILLUMINATION OF THE PLANTS CONSIDERABLY INCREASES INCORPORATION OF C PRIME14 FROM C PRIME14 O SUB2 INTO THE KETOACIDS. NITROGEN STARVATION OF PLANTS ENHANCES THE ACCUMULATION OF KETOACIDS IN THE LEAVES. UTILIZATION OF KETOACIDS FOR AMINOACID SYNTHESIS IN THE LEAVES IS MORE ACTIVE ON AMMONIA NITROGEN THAN ON NITRATE NITROGEN. THUS ON AMMONIA NITROGEN THE KETOACID CONTENTS IN THE LEAVES IS LOWER THAN ON OTHER SOURCES OF NITROGEN.

FACILITY: A. N. BACH INSTITUTE OF BIOCHEMISTRY ACADEMY OF SCIENCES USSR. FACILITY: TECHNOLOGICAL INSTITUTE OF FOOD INDUSTRY, MOSCOW.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 014 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF GIBBERELLIC AND INDOLEACETIC ACIDS ON PLANT MALATE DEHYDROGENASE ACTIVITY -U-

AUTHOR-(03)-KRETOVICH, V.L., SEVERNAYA, T.A., BUTENKO, R.G.

K

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 474-5

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GIBBERELLIC ACID, INDOLE DERIVATIVE, PLANT PHYSIOLOGY, DEHYDROGENASE, ENZYME ACTIVITY, INHIBITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1475 STEP NO--UR/0020/70/191/002/0474/0475

CIRC ACCESSION NO--AP0133469

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 C14 UNCLASSIFIED PROCESSING DATE--23NOV70

CIRC ACCESSION NO--AT0130404

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INDOLE,3,ACETIC ACID AT 10 PRIME NEGATIVE3-10 PRIME NEGATIVE6 M INHIBITED MALIC DEHYDROGENASE FROM CORN ROOTS AND FROM BOTH NATURAL AND CULTURED TOBACCO PITH PARENCHYMA IN VITRO. GIBBERELLIC ACID HAD NO SUCH EFFECT. FACILITY: INST. BIOKHIM. IM. BAKHA, MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

USSR

UDC 621.315.592

UFIMTSEV, V.B., SHUMILIN, V.P., KOSTIN, G.V., KRESTOVNIKOV, A.N.

"Concerning The Character Of The Change Of Composition Of The Vapor Phase Above Type $A^{III}B^{V}$ Compounds"

Sb.nauch.tr.po probl. mikroelektron. Mosk. in-ta elektron. tekhn. (Collection Of Scientific Works On Problems Of Microelectronics. Moscow Institute Of Electronics Technology), 1972, Issue 8, pp 151-156 (from RZh:Elektronika i yeye primeneniye, No 9, Sept 1972, Abstract No 9B100)

Translation: The paper considers the inverse character of the vapor phase during replacement of the condensate of the element B^{V} by the condensate of the compounds $A^{III}B^{V}$. From thermodynamic data the temperature dependences are calculated of the vapor pressure of 2- and 4-atom molecules of component B^{V} above the six compounds: InSb, GaSb, InAs, GaAs, InP, and GaP. Calculations are made for the reactions

$$A^{III}B^{V}_{cond} \rightleftharpoons A^{III}_{cond} + \frac{1}{n} B^{V}_{n\ gas}.$$

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--SATURATED VAPOR PRESSURE OF MERCURY TELLURIDE -U-

AUTHOR-(04)-LEVITSKAYA, T.O., VANYUKOV, A.V., KRESTOVNIKOV, A.N., BYSTROV, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 559-60

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MERCURY COMPOUND, TELLURIDE, VAPOR PRESSURE, THERMAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0834 STEP NO--UR/0363/70/006/003/0559/0560

CIRC ACCESSION NO--AP0118010

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SATD. VAPOR PRESSURE FOR HGTE WAS DETD. OVER COMPNS. CORRESPONDING TO THE HG AND TE BOUNDARIES OF THE HOMOGENEITY REGION, USING THE STATIC COMPENSATION METHOD. THE PRESSURE OVER HGTW ENRICHED WITH HG IS CONSIDERABLY HIGHER THAN THE PRESSURE OVER HGTE ENREICHED WITH TE. THE VAPOR PRESSURE ABOVE HGTE SATD. WITH TE REMAINS CONST. AT 460-560DEGREES INDICATING A CONST. COMPN. OF THE SOLID PHASE; ABOVE THIS POINT, IT BEGINS TO INCREASE, ATTESTING TO ENRICHMENT OF THE SOLID PHASE BY TE AT HIGHER TEMPS. THE HEAT OF FORMATION FOR HGTE IS 16.3 KCAL-MOLE AND THE HEAT OF FUSION, 8.5 KCAL-MOLE. THE M.P. OF HG SUB1-X TE WAS 668DEGREESC, WHICH IN GOOD AGREEMENT WITH THE DTA CURVES; THE CORRESPONDING PRESSURE IS 12.5 ATM. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW. USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Inorganic Compounds

UDC 541.11

USSR

UFIMTSEV, V. B., SHUMILIN, V. P., KRESTOVNIKOV, A. N., and VIGDOROVICH, V. N., Moscow Institute of Steels and Alloys

"Dissociation Pressure of Indium and Gallium Phosphides"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 44, No 4, Apr 70, pp 1120-1122

Abstract: An experimental study of the dissociation pressure of indium and gallium phosphides in the solid state using Knudsen's effusion method is described. lg p=-A/T+B-type equations were derived and heats of sublimation determined. Tables in the original article show the rated characteristics of the vapor phase for indium phosphide and data on the temperature dependence of the dissociation elasticity of indium and gallium phosphides. Evaluation of the experimental data by the method of least squares yielded equations describing the temperature dependence of phosphorus vapor pressure. The heats of sublimation derived from these equations are:

$\Delta H_{945}=49.691\pm1.675$ (for InP) and $\Delta H_{1126}=65.750\pm0.819$ kcal/mole (for GaP).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 034 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--NEUTRAL DEFECTS IN MERCURY TELLURIDE -U-

AUTHOR-(03)-LEVITSKAYA, T.D., VANYUKOV, A.V., KRESTOVNIKOV, A.N.

K

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 556-8

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, MATERIALS

TOPIC TAGS--SINGLE CRYSTAL, CRYSTAL LATTICE DEFECT, HALL EFFECT, THERMAL EFFECT, IONIZATION, CHEMICAL BONDING, MERCURY COMPOUND, TELLURIDE, CRYSTAL GROWTH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1889 STEP NO--UR/0363/70/006/003/0556/0558

CIRC ACCESSION NO--AP0115708

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

2/2 034 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115708

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY OF THE KINETICS OF ANNEALING OF HGTE SINGLE CRYSTALS GROWN BY THE BRIDGMAN TECHNIQUE INDICATES THAT THEY CONTAIN NEUTRAL DEFECTS. THIS IS ILLUSTRATED WELL BY COMPARING THE CHANGE IN THE TEMP. DEPENDENCE OF THE HALL COEFF. AND THE CURRENT CARRIER MOBILITIES AS A FUNCTION OF THE ANNEALING TIME AT VARIOUS TEMPS. THE OBSD. RAPID CHANGE IN THE PROPERTIES AT 204 AND 300DEGREES CAN BE CAUSED ONLY BY THE IONIZATION OF NEUTRAL DEFECTS ALREADY EXISTING IN THE CRYSTALS. DEFECTS THAT ARE NEUTRAL AT 204DEGREES BECOME IONIZED AT 353.5DEGREES, WHICH IS REFLECTED IN THE HALL CONST. AND THE CARRIER MOBILITY VALUES. SHORT TERM HIGH TEMP. TREATMENT OF SAMPLES ANNEALED AT 356.5DEGREES DOES NOT CHANGE THE PROPERTIES OF THE HGTE. THUS, NEUTRAL DEFECTS ARE PRESENT IN HGTE AFTER CRYSTN. BY THE BRIDGMAN METHOD, WHICH INHIBIT THE DIFFUSION OF HG INTO THE CRYSTAL WHICH REMAINS NEUTRAL TO SIMILIAR TO 360DEGREES BUT IONIZES AT HIGHER TEMPS. INASMUCH AS IONIZATION OF THESE DEFECTS LEADS TO AN INCREASE IN THE ACCEPTOR CONCN., THEY APPARENTLY REPRESENT EXCESS TE ATOMS. MORE LIKELY THAN NOT, THIS TYPE OF DEFECT IS ASSOCD. WITH THE CHANGE IN THE POSITION OF EXCESS TE IN THE LATTICE, POSSIBLY WITH THE EMERGENCE OF TE-TE BONDS. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

Semiconductor Technology

USSR

UDC 537.311.33:536.7

VIGDOROVICH, V. N., KRESTOVNIKOV, A. N., and UFIMTSEV, V. B., Moscow Institute of Electronic Engineering, Moscow Institute of Steel and Alloys

Moscow, Ministry of Higher and Secondary Specialized Education USSR

"Questions of the Topology and Thermodynamics of p-T-x Constitution Diagrams of Semiconductor Systems"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 708-713

Abstract: The article considers results of a generalized theoretical analysis of heterogeneous equilibria in semiconductor systems. The heterogeneous equilibria of decomposing semiconductor compounds and phase equilibria at the point of congruent crystallization of semiconductor compounds are considered. It is shown that the theory of regular solutions is applicable to an analysis of the curves for the three-phase equilibrium: $AB_{sol.} \rightleftarrows$ (solution A and B)$_{liq.} \rightleftarrows$ component $B_{vap.}$. The thermodynamics of phase equilibria in systems with continuous series of solid and liquid solutions are considered, as well as changes in vapor-phase composition in the replacement of condensate $B_{sol.}$ by condensate $AB_{sol.}$.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002201610009-0

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--TOPOLOGY AND THERMODYNAMICS OF THE P,T,X DIAGRAMS OF SEMICONDUCTING SYSTEMS -U-

AUTHOR-(03)-VIGDOROVICH, V.N., KRESTOVNIKOV, A.N., DMITSEV, V.B.

COUNTRY OF INFO--USSR

SOURCE--IZVEST. AKAD. NAUK SSSR, NEORG. MATERIALY, APR. 1970, 6, (4), 708-13

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THEORETIC PHYSICS, THERMODYNAMIC ANALYSIS, GALLIUM ARSENIDE SEMICONDUCTOR, INDIUM ARSENIDE SEMICONDUCTOR

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A GENERAL THEORETICAL ANALYSIS OF THE TEMP., PRESSURE, COMPOSITION DIAGRAMS OF SEMICONDUCTING SYSTEMS OF THE A PRIMEIV A PRIMEIV AND A PRIMEIII B PRIMEV-A PRIMEIII B PRIMEV TYPES SUCH AS GAAS-INAS AND ITS ANALOGUES IS PRESENTED. THE THEORY OF REGULAR SOLUTIONS MAY BE VALIDLY APPLIED TO THE ANALYSIS OF THE THREE PHASE EQUILIBRIUM CURVES OF THESE SYSTEMS. PHASE EQUILIBRIA IN SYSTEMS HAVING A CONTINUOUS SERIES OF SOLID AND LIQUID SOLUTIONS ARE DISCUSSED FROM THE THERMODYNAMIC POINT OF VIEW.

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1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--DISSOCIATION PRESSURE FOR INDIUM PHOSPHIDE AND GALLIUM PHOSPHIDE -U-

AUTHOR-(04)-UFIMTSEV, V.B., SHUMILIN, V.P., KRESTOVNIKOV, A.N., VIGDOROVICH, V.N.

COUNTRY OF INFO--USSR

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TOPIC TAGS--INDIUM COMPOUND, PHOSPHIDE, DISSOCIATION, PRESSURE, GALLIUM COMPOUND

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CIRC ACCESSION NO--AP0123148

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISSOCN. PRESSURES OF INP AND GAP WERE STUDIED BY THE KNUDSEN EFFUSION METHOD AT T 879-1011DEGREES K FOR INP AND 1030-1223DEGREESK FOR GAP. THE RESULTS ARE TABULATED. APPLICATION OF THE LEAST SQUARE METHOD TO THE EXPTL. DATA PRODUCED THE FOLLOWING EQUATIONS THAT DESCRIBE THE TEMP. DEPENDENCE OF P VAPOR PRESSURE OVER SOLID INP AND GAP: LOG P (MM HG) EQUALS (MINUS10,859 PLUS OR MINUS 366-T) PLUS (9.9241 PLUS OR MINUS 0.0699) FOR INP; LOG P (MM HG) EQUALS (MINUS 14,150 PLUS OR MINUS 179-T) PLUS (11.0000 PLUS OR MINUS 0.0722) FOR GAP. THE HEAT OF SUBLIMATION DERIVED FROM THESE EQUATIONS IS DELTAH SUB945DEGREES EQUALS 49.691 PLUS OR MINUS 1.675 FOR INP AND DELTAH SUB1126DEGREES EQUALS 65.750 PLUS OR MINUS 0.819 KCAL-MOLE FOR GAP. FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

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TITLE--INVERSION OF VAPOR PHASE COMPOSITION OVER A PRIMEIII B PRIMEV TYPE SEMICONDUCTOR COMPOUNDS -U-

AUTHOR-(04)-UFIMTSEV, V.B., KRESTOVNIKOV, A.N., KOSTIN, G.V., SHUMILIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(5), 1360

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SUBJECT AREAS--PHYSICS

TOPIC TAGS--SEMICONDUCTOR MATERIAL, INDIUM, GALLIUM, ANTIMONY, ARSENIC, PHOSPHORUS, VAPOR STATE, PHASE COMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

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CIRC ACCESSION NO--AP0136324

ABSTRACT/EXTRACT--(U) GP-0-- ABSTRACT. EQUIL. VAPOR PRESSURES OF B SUB2 PRIMEV AND B SUB4 PRIMEV OVER A PRIMEIII B PRIMEV SOLIDS WERE CALCD. FROM KNOWN THERMODYNAMIC PROPERTIES AND CORRELATED BY THE EQUATION LOG P EQUALS MINUS (A-T) PLUS B FOR A PRIMEIII EQUALS IN OR GA AND B PRIMEV EQUALS SB, AS, OR P. THE VALUES OF A ARE GREATER FOR B SUB4 THAN FOR B SUB2 OVER A PRIMEIII B PRIMEV WHILE WITH PURE SOLID B, THE REVERSE IS TRUE. FACILITY: MOSK. TEKHNOL. INST. STALI SPLAVOV, MOSCOW, USSR.

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